

Marine Stewardship Council Full Assessment

Final Report

For The

ISF Norwegian & Icelandic herring trawl and seine (Icelandic summer-spawning herring report)

Facilitated By the

Icelandic Sustainable Fisheries (ISF)

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Foreword

The MSC Fisheries Standard sets out requirements that a fishery must meet to enable it to claim that its fish come from a well-managed and sustainable source. The standard applies to wild-capture fisheries that meet the scope requirements. The MSC Fisheries Standard comprises three core principles:

Principle 1: Sustainable target fish stocks

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

Principle 2: Environmental impact of fishing

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

Principle 3: Effective management

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

A full description of the MSC Fisheries Certification Requirements and Processes followed during this assessment can be found in MSC Fisheries Certification Requirements and Guidance. This assessment uses the version of the MSC Standard and follows the processes outlined in the MSC Fisheries Certification Requirements (FCR) v2.0 re-released on 1st October 2015. The definitive version of all documents is maintained on the MSC's website www.msc.org. Any discrepancy between copies, versions or translations shall be resolved by reference to the definitive English version.

Readers should verify that they are using the copy of the MSC FCR (and other documents) that are relevant to this assessment. Updated documents, together with a master list of all available MSC documents, can be found on the MSC's website.

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Glossary

ACOM	ICES Advisory Committee
AEWA	Agreement on the Conservation of African-Eurasian Migratory Waterbirds
B_{pa}	Precautionary reference point for spawning stock biomass
B_{lim}	Limit biomass reference point, below which recruitment is expected to be impaired.
CAB	Conformity Assessment Body
CITES	Convention on International Trade in Endangered Species of Wild Fauna
CMS	Convention on Migratory Species
DoF	Directorate of Fisheries
EC	European Commission
EEZ	Exclusive Economic Zone
ETP	Endangered, threatened and protected species
EU	European Union
F	Fishing Mortality
FAO	UN Food and Agriculture Organisation
FCR	Fishery Certification Requirements
FFSÍ	Federation of Captains and Mates (Farmanna- og fiskimannasamband Íslands)
F_{lim}	Limit reference point for fishing mortality that is expected to drive the stock to the biomass limit
F_{pa}	Precautionary reference point of fishing mortality expected to maintain the SSB at the precautionary reference point
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Sea
INAO	Icelandic National Audit Office (Ríkisendurskodun)
ISBF	Introduced Species Based Fishery
ISF	Icelandic Sustainable Fisheries
ITQ	Individual Transferable Quota
IUU	Illegal, Unregulated and Unreported fish catches.
IUCN	International Union for the Conservation of Nature
LTL	Low Trophic Level species
LTMS	Long-Term Management Strategy
MCS	Monitoring, Control and Surveillance
MFRI	Marine and Freshwater Research Institute
MII	Ministry of Industries and Innovation
MRI	Marine Research Institute. This institute was merged with a small Institute of Freshwater Fisheries (Veiðimálastofnun) to form MFRI July 1 2016
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
NAMMCO	North Atlantic Marine Mammal Commission
NAO	North Atlantic Oscillation
NASBO	National Association of Small Boat Owners
NEAFC	North East Atlantic Fisheries Commission
NEA	North East Atlantic
NGO	Non-Governmental Organisation
nm	Nautical mile
OSPAR	Oslo-Paris Convention (Convention for the Protection of the Marine Environment of the North-East Atlantic)
P1	MSC Principle 1

P2	MSC Principle 2
P3	MSC Principle 3
PC	Proportional Connectance
PI	MSC Performance Indicator
RFMO	Regional Fisheries Management Organisation
SI	Scoring Issue
SSB	Spawning Stock Biomass
SURF	Supportive Role to Fishery ecosystems
TAC	Total Allowable Catch
UoA	Unit of Assessment
UoC	Unit of Certification
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
VM	Union of Marine Engineers and Metal Technicians (Félag vélstjóra og málmtæknimanna)
VME	Vulnerable Marine Ecosystem
VMS	Vessel Monitoring System
WGBYC	ICES Working Group on Bycatch
WGPELA	ICES Working Group on Pelagic Stocks
WGWIDE	ICES Working group on Widely Distributed Stocks

1. Executive Summary

This report provides details of the MSC re-assessment process for the ISF Norwegian and Icelandic herring trawl and seine fishery for Iceland Sustainable Fisheries. The fishery was first certified in May 2014. The re-assessment process began in **September 2018** and was transferred from Lloyd's Register to SAI Global on **July 12th 2019**.

IMPORTANT NOTE: The re-assessment process for the two stocks, Icelandic summer-spawning herring and Norwegian-Icelandic spring-spawning herring are following different timelines. Consequently, this report only covers the Icelandic summer-spawning herring component. The fishery for Norwegian-Icelandic spring-spawning herring is considered in a separate report. This separation of the two components of the fishery was announced on February 20th, 2020.

The report includes an introduction to the fishery, the results of the assessment, the rationales that substantiate the scores for each performance indicator (PI) and a recommendation as to whether the fishery is eligible for Certification. The fishery under assessment is defined by the Units of Assessment (UoA) and Units of Certification (UoC) as outlined in Description of the UoAs and Description of proposed UoCs and other eligible fishers (section 3).

The SAI Global Assessment Team consisted of Virginia Polonio (Lead Assessor and responsible for Principle 2 and traceability), Maciej Tomczak (responsible for Principle 1) and Conor Donnelly (responsible for Principle 3). A change in the Re-assessment Team was announced in October 2019 (see section 8.8). Virginia Polonio was no longer available to be part of the Re-Assessment Team and was replaced as Lead Assessor by Géraldine Criquet. Conor Donnelly who was already part of the Team as assessor responsible for Principle 3 took over additional responsibility for Principle 2 and Traceability. Brief summaries of the authors are set out in Section 2.

The **Eligibility Date** for this assessment is **13th November 2020**, which is the date on which the current period of certification is due to end for the Icelandic summer-spawning herring component. Note: this certificate expiry date was set following the acceptance of the Variation Request (VR) to further extend the validity of the certificate for this component (25th February 2020 – see VR and response in section 8.7.2 of this report) and the application of the 6-month certificate extension from the 27th March 2020 MSC Covid-19 derogation (reproduced in full in section 7.1 of this report).

1.1. Assessment process and summary of assessment activities

This assessment was conducted according to requirements laid out in MSC Fisheries Certification Requirements (FCR) v.2.0. A comprehensive programme of stakeholder consultations was carried out as part of this assessment, complemented by a full and thorough review of relevant literature and data sources. The following MSC Scheme Documents and report template were used during the assessment:

MSC Scheme Document	Version and Issue Date
Version of MSC Certification Requirements Methodology Used	FCR Version 2.0, 1 st October 2014.
Version of Full Assessment Reporting Template	Version 2.0
Version of MSC Assessment Tree Used	FCR Version 2.0, 1 st October 2014.
Default Assessment Tree Used	Yes
Adjustments made to Assessment Tree	Not applicable.
Risk Based Framework	Announced for PI2.2.1 but subsequently not required

1.2. Main strengths and weaknesses of the Icelandic summer-spawning herring component of ISF Norwegian and Icelandic herring trawl and seine

The main strengths and weakness of the fishery identified by the Assessment Team are as follows:

Strengths	Weaknesses
The stock is well researched and understood. Annual stock assessments are carried out along with regular benchmarking to ensure that the stock assessment is appropriate for the stock. Fishery managers have requested advice from ICES about the management of the stock and have adopted a management plan that is consistent with ICES advice on the MSY approach.	Recent stock assessment indicates that the status of Icelandic summer-spawning herring is below MSY $B_{trigger}$ and almost at B_{lim} so the stock cannot be said to be fluctuating around its target reference point.
Icelandic summer-spawning herring is entirely under the jurisdiction of the Icelandic Government, which has been proactive in responding to concerns about stock status and developing a new management plan that was considered by ICES to be appropriate for the stock.	The Harvest Control Rule (HCR) is single species and does not take into account the ecological role of the stock.
A rebuilding plan is in place for the stock. It has been subject to MSE evaluation and ICES consider it precautionary and in accordance with the ICES precautionary approach.	Icelandic spring-spawning herring is an IPI stock. Only very limited mixing occurs within the fishery (<2%). Impacts are mitigated by the lack of temporal overlap in distribution of the two stocks.
The fishery targets herring shoals, and very few other species are caught in the herring fishery. There is evidence of a very low level of interaction with Endangered, Threatened & Protected (ETP) species. The fishing gear ensures that there are no adverse impacts on marine habitats or vulnerable marine ecosystems	
Iceland has a well-founded legal and administrative system which established formal links between the provision of scientific advice and the management of the fishery.	

1.3. Overall conclusion and recommendation

A rigorous assessment against the MSC Principles and Criteria was undertaken by the assessment team and detailed, fully referenced scoring rationale is provided in the scoring tables in section 8.1 of this report.

The fishery achieved the minimum required score of 80 or above on the MSC Principles independently and did not score less than 60 against any Performance Indicator (PI). Final Principle level scores are shown in the table below.

Principle	Icelandic summer-spawning herring	
	UoA 1	UoA 2
Principle 1 – Target Species	86.7	86.7
Principle 2 – Ecosystem	88.7	89.3
Principle 3 – Management System	92.3	92.3

1.4. Certification recommendation

On completion of the scoring process, the Assessment Team has provisionally recommended that ISF Norwegian and Icelandic herring trawl and seine - **Icelandic summer-spawning herring component** is eligible to be certified according to the MSC Principles and Criteria for Sustainable Fishing.

1.5. Conditions

One condition identified in the first certification cycle remains open at re-assessment. The condition relates to PI 1.1.1 Stock status and requires that the stock is fluctuating around its target reference point.

The condition was raised by the previous CAB, Lloyd's Register, at the third surveillance of the first cycle, in 2017. Lloyd's Register noted ICES' evaluation of the stock indicated that recovery was dependant on recruitment to the spawning stock biomass and that this could take until 2022. This meant the requirements of SG80 may not be met within the first certification cycle. They further noted that this is due to the biology of the stock rather than any delay in the implementation of management measures and as such, this constituted 'exceptional circumstances' in line with MSC FCR v2.0 §7.11.1.3. As per that requirement, Lloyd's Register set out the significant and measurable improvements that must be achieved, and the score that must be achieved by the end of the certification period; and also, what constitutes a successful overall outcome over a longer, specified time period. Taking into account the ICES advice, it was specified that the condition must be met by 2022.

Progress was on target at the fourth surveillance of the first cycle. At re-assessment, SG80 is not yet met but progress continues to be on target and milestones have been specified for the new certification cycle.

No other conditions were identified at re-assessment.

2. Authorship and Peer Reviewers

2.1. Assessment Team

Dr. Géraldine Criquet, Lead Assessor (from October 2019)

Géraldine is an MSC approved Fisheries Lead Assessor for SAI Global - experienced fishery scientist in both Finfish and Shellfish fisheries, and ecosystems considerations. Géraldine holds a PhD in Marine Ecology (École Pratique des Hautes Études, France) which focused on coral reef fisheries management, fish biology and ecology and ecosystem impacts. She worked 2 years for the Institut de Recherche pour le Développement (IRD) at Reunion Island for studying fish target species growth and connectivity between fish populations in the Indian Ocean using otolith analysis. She has also been involved during 2 years in stock assessments of small pelagic resources in the Gulf of Biscay as part of a collaborative project with IFREMER. She served as Consultant for FAO on a Mediterranean Fisheries Program (COPEMED) and developed and implemented a monitoring program of catches and fishing effort in the Marine Natural Reserve of Cerbère-Banyuls (France). Géraldine is an experienced full time MSC Lead Assessor with SAI Global, successfully leading MSC certifications and assessment teams and acting as Principle 2 expert for multiple MSC Pre, Full and Surveillance audits in Europe and North America.

Virginia Polonio, lead assessor and responsible for P2 and traceability (prior to October 2019).

Virginia has a degree in Environmental Sciences (B.S.c. University of Cádiz). She has a Master degree (M.Sc. University of Cádiz) in Fisheries Management and Aquaculture. She obtained her PhD in Biodiversity and Natural resources at the University of Oviedo and during her PhD she gained experience in the field of research of fisheries and Vulnerable Marine Ecosystems (VMEs). During her PhD, she gained skills in the fields of benthic ecology and management of ecosystems.

She has participated in the Spanish National Basic Plan of Data to collect and evaluate the fishing activities in ICES and CEEAF areas where Spanish fleets realize their activities. She carried out feeding habit and age/size studies of *Pagellus Bogaraveo* and others commercial species (hake, anchovy, sharks, mackerel, squid, etc.) to define trophic and predation levels of commercial species in the Gulf of Cadiz and the Strait of Gibraltar.

She has worked on several full assessments such as ISF Capelin, ISF Mackerel, CSHMAC Herring, Cantabrian Sardine, North Atlantic Albacore, Squat lobster, Blue sharks and Swordfish, among others as a Lead Assessor and Team member responsible for P2. She has also participated in Surveillances and pre-assessments acquiring experience in the MSC certification.

She is a full-time employee at SAI Global and she will be Lead assessor and P2 expert in this audit.

Maciej T. Tomczak, responsible for P1.

Maciej is a marine ecologist with a PhD in Oceanology from the Institute of Oceanology at Gdansk University and Sea Fisheries Institute in Gdynia, Poland. During his professional career worked at DTU-Aqua in Denmark and Stockholm University (Sweden). During his work at Stockholm University he is responsible for fisheries analysis at ecosystem context. For 18 years, he was highly involved in activities within the International Council for the Exploration of the Sea (ICES). Among other ICES activities he was co-chairing the ICES/HELCOM Working Group on Integrated Assessment of Baltic Sea and number of workshops. He is an author of more than 30 of scientific publication and number of reports in the field of fisheries ecology. He has extensive knowledge about fisheries assessments, ecological modeling and ecosystem-based fisheries management.

Conor Donnelly, responsible for P3 and, from October 2019, also P2 and traceability.

Conor is an experienced marine ecologist and environmental manager with a background of over 17 years at the UK statutory nature conservation body, Natural England, where he was Senior Marine Adviser responsible for marine delivery across the East Midlands, Norfolk and Suffolk. He has a BSc. in Environmental Science from

King's College, University of London and an MRes. in Marine and Coastal Ecology and Environmental Management from the University of York.

Conor has extensive experience of working with fisheries managers, the fishing sector, local communities and eNGOs, particularly from assessing the environmental impacts of mussel, cockle and shrimp fisheries in The Wash, UK and providing advice on their management. He was Natural England's representative on the Eastern Inshore Fisheries and Conservation Authority and its predecessor. He also advised and supported the UK's Department for Environment, Food and Rural Affairs (Defra) on fisheries casework in the southern North Sea under the Common Fisheries Policy (CFP) including meetings with other member states. Other experience includes Marine Protected Area designation, conservation advice and condition assessment; conservation legislation and policy; and working with partners and stakeholders to deliver positive environmental outcomes. Conor is certified as a Fisheries Team Leader under MSC FCR versions 1.3, 2.0 and 2.1 and an ISO lead auditor.

2.2. Peer Reviewers

Peer Reviewer shortlist announcement has been published on 22nd August 2019¹.

On the 24th January 2020, the Peer Review College confirmed that they have selected the following peer reviewers, matching the required competencies for the fishery, and with no conflicts of interest:

- Giuseppe Scarcella
- Nancie Cummings

A summary of their experience and qualifications is provided below.

Giuseppe Scarcella

Dr Giuseppe Scarcella has a PhD in Marine Biology and Ecology and has been a contracted research scientist at the Italian Institute of Marine Sciences - National Research Council since 2008. During these years, he has gained experience in benthic ecology, and population dynamics. He has considerable international field knowledge, such as with EU working groups (DGMARE), STECF, ICES, GFCM, and the FAO regional projects MedSudMed, Adriamed and Eastmed. In addition, he is collaborating with numerous scientific institutions in the horizontal framework project MAREA (scientific advice for the implementation of the Common Fisheries Policy in the Mediterranean Sea). As a scientist at CNR-ISMAR, Dr Scarcella is responsible for the sampling design and statistical analyses of several fisheries research programs in the Mediterranean and Black sea, including on artificial structures and their impact on the marine environment. In the framework of such activities he has gained experience in stock assessment, management plans, benthic ecology, fish assemblages of artificial structures, analysis of stomach contents, fisheries ecology, and the application of EAF principles to fisheries management. In 2010 he moved to Cyprus, where he is collaborating as a consultant. Dr Scarcella is an experienced MSC assessor covering Principle 1 and 3 issues. In the last five years he worked as MSC assessor in several areas including the Mediterranean Sea, North Sea, Iceland, South Pacific and South Africa.

Nancie Cummings

Ms. Nancie Cummings, a fisheries marine scientist for 35 years, has extensive experience in marine and estuarine fish science, population dynamics assessment and fisheries management, and data collection and sampling design for marine resources. Ms. Cummings has been a federal fishery biologist based in Miami, Florida since 1983 and has been lead stock assessment analyst of fishery evaluations since 1984 for the Gulf of Mexico and South Atlantic. She has extensive experience and is familiar with the management systems in use for federally managed fisheries resources. Ms. Cummings has extensive experience using robust fisheries

¹ <https://fisheries.msc.org/en/fisheries/isf-norwegian-icelandic-herring-trawl-and-seine/@assessments>

analytical procedures including Virtual Population Analysis (VPA), production models (ASPIC) and using fishery statistical catch at age models (Stock Synthesis). As a Lead Assessment Analysts, she carries out fishery stock evaluations for status determinations, and conducts projections of federally managed marine resources including reefish, mackerels, tunas, and shellfish. Ms. Cummings has extensive experience working with commercial and recreational fisheries constituent groups, state agencies, tribal groups, national and international advisory groups, and academic institutions. Ms. Cummings has published in peer-reviewed journals and symposium proceedings, presented results of stock assessment evaluations, status determinations, and future projections at national and international meetings, federal government management agencies meetings. Ms. Cummings has experience in application of data poor stock assessment techniques and recent experience developing and leading Data Limited Stock Assessment Workshops (2) in the U.S. and in an International forum through the Gulf and Caribbean Research Institute (GCFI). Ms. Cummings is the Regional focal point for the FAO, Western Central Atlantic Commission (WECAFC) Fishery Monitoring System (FRMS), the Vice Chair of the FAO, FRMS Committee, a member of the WECAFC Scientific Advisory Group (SAG), and acts as technical monitor for the Cooperative State-Federal Statistics Puerto Rico and US Virgins cooperative statistics programs. Ms. Cummings completed an M.S. degree in Fisheries from the College of Fisheries, University of Washington conducting a population assessment of Pacific Cod in the Gulf of Alaska and Bering Sea and a Bachelor of Science degree in Biology from Erskine College

Their peer reviews have been verified for completeness and anonymised before having been sent to SAI Global for the assessment team to provide responses to comments.

3. Description of the Fishery

3.1. Unit(s) of Assessment (UoA) and Scope of Certification Sought

3.1.1. Eligibility for Certification against MSC Standard

SAI Global confirms that the fishery entering assessment is within the scope requirements (FCR, 7.4) for MSC fishery assessments (FCR 7.8.3.1):

- The target species is not an amphibian, reptile, bird or mammal.
- The fishery does not use poisons or explosives.
- The fishery is not conducted under a controversial unilateral exemption to an international agreement.
- The fishery does not include an entity that has been successfully prosecuted for a forced labour violation in the last 2 years.
- The fishery includes a mechanism for resolving disputes.
- The fishery under assessment is not an enhanced fishery.
- The fishery under assessment is not an Introduced Species Based Fishery (ISBF).
- The UoA and UoC have been confirmed.
- There are no other eligible fishers as the Icelandic pelagic fleet is entirely included within the UoC.
- Icelandic summer-spawning herring are not considered to be a “Key LTL species” following the criteria defined in the box SA1 of the FCR 2.0 (more details, section 3.3.7).
- Other fisheries certified in the area have been harmonised with ISF Norwegian and Icelandic herring trawl and seine (for more details see section 4.1)

3.1.2. Units of Assessment (UoAs)

An MSC Unit of Assessment (UoA) is defined as:-

“The full scope of what is being assessed. The target stock(s) combined with 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 of the proposed Unit of Certification. In some fisheries, the UoA and UoC may be further defined based on the specific fishing seasons and/or areas that are included.” (MSC-MSCI Vocabulary, v1.2, 28 March 2019)

The Units of Assessment (UoAs) considered in this report are defined in the tables below.

Table 1. UoA 1 – Icelandic summer-spawning herring pelagic trawl

Species:	Atlantic herring (<i>Clupea harengus</i>)
Stock:	Herring in the Northeast Atlantic (Icelandic summer-spawning stock)
Geographical area:	FAO 27, ICES Subarea Va within Iceland EEZ
Harvest method:	Mid-water trawl
Client group:	<p>Iceland Sustainable Fisheries ehf.</p> <p>The parties (i.e. vessels, fleets and/or any other client group members) that are currently eligible to access this fishery certificate are all current members of Iceland Sustainable Fisheries ehf.; an up-to-date list of current ISF members is available on the ISF webpage: https://www.icelandsustainable.is/isf-partners.html</p> <p>Eligible product may be supplied to Client Group members by all registered Icelandic vessels, as well as by Norwegian, Faroese and Greenlandic vessels with valid permits to operate within the Icelandic EEZ. A list of vessels with valid licences for fishing within the Icelandic EEZ is available from the Fisheries Directorate upon request.</p>
Other eligible fishers:	The Unit of Certification includes all eligible fishers. Other entities that may share the certificate as new client group members include other Icelandic companies in the fishing industry, including producers and sales organisations, that are not currently ISF members.

(or other entities that may share the certificate as new client group members)	ISF have previously provided a statement of their understanding and willingness for reasonable certificate sharing arrangements with respect to this fishery which can be viewed on the MSC webpage for this fishery. Entities interested in becoming ISF members should contact ISF directly.
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Table 2. UoA 2 – Icelandic summer-spawning herring purse seine

Species:	Atlantic herring (<i>Clupea harengus</i>)
Stock:	Herring in the Northeast Atlantic (Icelandic summer-spawning stock)
Geographical area:	FAO 27, ICES Subarea Va within Iceland EEZ
Harvest method:	Purse seine
Client Group:	<p>Iceland Sustainable Fisheries ehf.</p> <p>The parties (i.e. vessels, fleets and/or any other client group members) that are currently eligible to access this fishery certificate are all current members of Iceland Sustainable Fisheries ehf.; an up-to-date list of current ISF members is available on the ISF webpage: https://www.icelandsustainable.is/isf-partners.html</p> <p>Eligible product may be supplied to Client Group members by all registered Icelandic vessels, as well as by Norwegian, Faroese and Greenlandic vessels with valid permits to operate within the Icelandic EEZ. A list of vessels with valid licences for fishing within the Icelandic EEZ is available from the Fisheries Directorate upon request</p>
Other Eligible Fishers:	<p>The Unit of Certification includes all eligible fishers. Other entities that may share the certificate as new client group members include other Icelandic companies in the fishing industry, including producers and sales organisations, that are not currently ISF members.</p> <p>ISF have previously provided a statement of their understanding and willingness for reasonable certificate sharing arrangements with respect to this fishery which can be viewed on the MSC webpage for this fishery. Entities interested in becoming ISF members should contact ISF directly.</p>

These Units of Assessment were used as they are compliant with client wishes for assessment coverage and in full conformity with MSC criteria (see section 3.1.1).

3.1.3. Other eligible fishers

The Unit of Certification includes all eligible fishers. Other entities that may share the certificate as new client group members include other Icelandic companies in the fishing industry, including producers and sales organisations, that are not currently ISF members.

Details of eligible fishing vessels and members of the client group are provided in section 5.3 of this report.

3.1.4. Proposed Units of Certification (UoC)

An MSC Unit of Certification (UoC) is defined as:-

“The unit entitled to receive an MSC certificate. The target stock(s) combined with 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 entities initially intended to be covered by the certificate. Note: other eligible fishers may be included in some Units of Assessment but not initially certified (until covered by a certificate sharing arrangement).” (MSC-MSCI Vocabulary, v1.2, 28 March 2019)

The proposed Units Of Certification for this fishery are as defined below.

Table 3. UoC 1 – Icelandic summer-spawning herring pelagic trawl

Species:	Atlantic herring (<i>Clupea harengus</i>)
Stock:	Herring in the Northeast Atlantic (Icelandic summer-spawning stock)
Geographical area:	FAO 27, ICES Subarea Va within Iceland EEZ
Harvest method:	Mid-water trawl
Client Group:	<p>Iceland Sustainable Fisheries ehf.</p> <p>The parties (i.e. vessels, fleets and/or any other client group members) that are currently eligible to access this fishery certificate are all current members of Iceland Sustainable Fisheries ehf.; an up-to-date list of current ISF members is available on the ISF webpage: https://www.icelandsustainable.is/isf-partners.html</p> <p>Eligible product may be supplied to Client Group members by all registered Icelandic vessels, as well as by Norwegian, Faroese and Greenlandic vessels with valid permits to operate within the Icelandic EEZ. A list of vessels with valid licences for fishing within the Icelandic EEZ is available from the Fisheries Directorate upon request.</p>

Table 4. UoC 2 – Icelandic summer-spawning herring purse seine

Species:	Atlantic herring (<i>Clupea harengus</i>)
Stock:	Herring in the Northeast Atlantic (Icelandic summer-spawning stock)
Geographical area:	FAO 27, ICES Subarea Va within Iceland EEZ
Harvest method:	Purse seine
Client Group:	<p>Iceland Sustainable Fisheries ehf.</p> <p>The parties (i.e. vessels, fleets and/or any other client group members) that are currently eligible to access this fishery certificate are all current members of Iceland Sustainable Fisheries ehf.; an up-to-date list of current ISF members is available on the ISF webpage: https://www.icelandsustainable.is/isf-partners.html</p> <p>Eligible product may be supplied to Client Group members by all registered Icelandic vessels, as well as by Norwegian, Faroese and Greenlandic vessels with valid permits to operate within the Icelandic EEZ. A list of vessels with valid licences for fishing within the Icelandic EEZ is available from the Fisheries Directorate upon request.</p>

3.1.5. Final UoC(s) (PCR ONLY)

The PCR shall describe:

- The UoC(s) at the time of certification.
- A rationale for any changes to the proposed UoC(s) in section 3.1(c).
- Description of final other eligible fishers at the time of certification.

(References: FCR 7.4.8-7.4.10)

3.1.6. Total Allowable Catch (TAC) and Catch Data UoC1: Icelandic summer-spawning herring, pelagic trawl

The most recent TAC and catch data for this UoC are presented below. Note that since 1990 the fishing season started in October of the first year.

Table 5. TAC and catch data UoC 1 (source: MFRI, 2020a and catch data provided by Directorate of Fisheries).

TAC	Year	2019/20	Amount	34,572t
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UoA share of TAC	Year	2019/20	Amount	34,572t
UoC share of TAC	Year	2019/20	Amount	34,572t
Total green weight catch by UoC	Year (most recent)	2019/20	Amount	26,873t
	Year (second most recent)	2018/19	Amount	40,358t

UoC2: Icelandic summer-spawning herring, purse seine

The most recent TAC and catch data for this UoC are presented below. Note that since 1990 the fishing season started in October of the first year. The gear has not been used significantly in recent years.

Table 6. TAC and catch data UoC 2 (source: MFRI, 2020a and catch data provided by Directorate of Fisheries).

TAC	Year	2019/20	Amount	34,572t
UoA share of TAC	Year	2019/20	Amount	34,572t
UoC share of total TAC	Year	2019/20	Amount	34,572t
Total green weight catch by UoC	Year (most recent)	2019/20	Amount	2,929t
	Year (second most recent)	2018/19	Amount	0t

3.2. Overview of the fishery

This fishery assessment considers fishing by Icelandic vessels for Iceland summer spawning herring using two different types of fishing gear.

An overview of the fishery is provided in this section. A more detailed account is provided in later sections. The status of the target stocks are described in section 3.3 of this report; interactions with the marine environment are considered in section 3.4; and the management system for the fishery is examined in section 3.5. This information forms the basis of the scoring of the fishery against the MSC Standard, which is presented in detail in section 8.1 of this report.

3.2.1. History of the Icelandic herring fishery

The herring fishery in Iceland has been based on two herring stocks: Norwegian-Icelandic (or Atlanto-Scandian) spring-spawning herring; and Icelandic summer-spawning herring.

The Norwegian-Icelandic spring-spawning herring was by far the most important herring stock during the 20th century and combined with Icelandic summer-spawning herring these two fisheries were extremely important for the Icelandic economy during the first part of the 20th century and until the late 1960s when both collapsed almost at the same time.

The Icelandic summer-spawning herring migrates around the Icelandic EEZ but does not significantly migrate outside it. All fishing for Icelandic summer-spawning herring is therefore controlled by Icelandic authorities (ICES, 2019h).

The Icelandic summer-spawning herring exploitation sharply increased in the early 1960s. That high fishing mortality and an eventual recruitment failure caused the stock collapse in the late 1960s (Jakobsson, 1980). As a consequence, a fishing ban was enforced from 1972 to 1975. The stock recovered fairly quickly and in 1976 limited fishing was allowed under a quota system. In 1979 individual transferable quotas were introduced into this fishery. In 1984 this management system was introduced into the important groundfish fisheries in Iceland and is now the prevalent system of management in Icelandic fisheries. Following the re-opening of the fishery, catches gradually increased to over 100,000 t. In recent years 2015-2018 catches decreased to the level of 35,000t (see Figure 1).

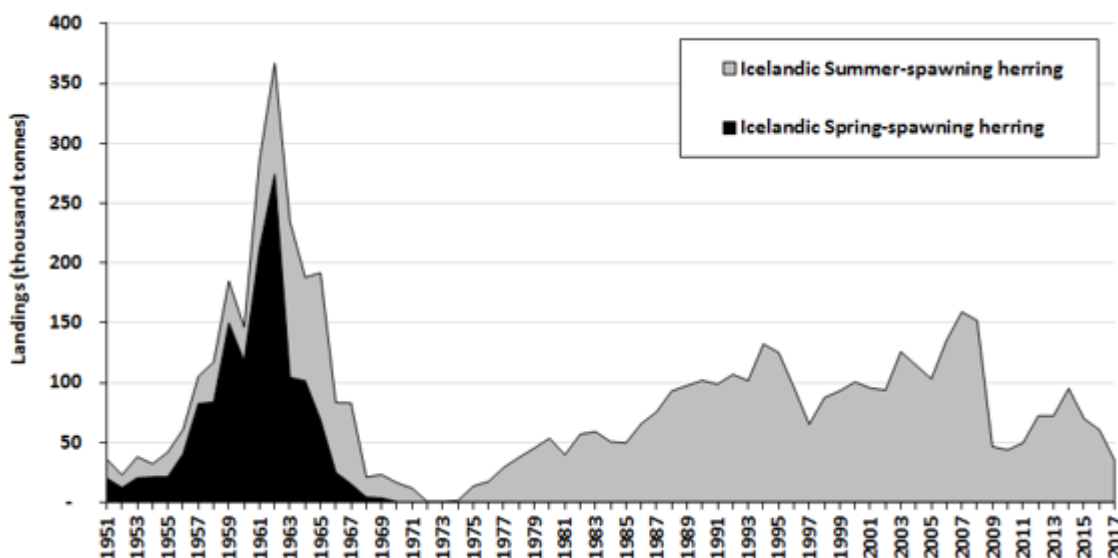


Figure 1. Total catch of Icelandic summer and Icelandic spring spawning herring in Icelandic waters (1950 to 2017) (Source: http://dt.hafogvatn.is/astand/2018/30_sild.html)

The vessels involved in the fishery have changed over time, prior to 2000 the fleet consisted of multi-purpose vessels, mostly under 300 GRT, operating with purse seines and driftnets. Since then larger vessels (up to 1500 GRT) have gradually taken over the fishery, so that they now represent the whole herring fishing fleet. In turn, the number of vessels involved has shown a decreasing trend from around 30 in the 2000s to 15 in 2010. The vessels now prosecuting the fishery are a combination of purse-seiners and pelagic trawlers operating in the herring (Icelandic summer-spawning and Norwegian-Icelandic spring spawning), capelin *Mallotus villosus*, blue whiting *Micromesistius poutassou* fisheries and in recent years also the North-East Atlantic mackerel (*Scomber scombrus*) and Mueller's pearlside (*Maurolicus muelleri*) fisheries (ICES, 2019h).

From the 1997/1998 to the 2007/2008 fishing season, there was a fishery for Icelandic summer-spawning herring off both the west and east of Iceland, with a gradual increase off the west coast over this period. In the period 2006-2012 most of the catches were taken in a small area on the west coast, within the southern part of Breiðafjörður bay, while in 2014 the fishery entirely took place offshore to the west of Iceland (in Kolluáli). The inshore fishery is almost exclusively prosecuted by purse seine fisheries, whereas in the offshore fishery the most common gear used are pelagic trawls, first introduced in 1997/1998. In 2014, and in more recent years, purse seine gears have mostly not been used at all (see Table 6).

The directed fishery for Icelandic summer-spawning herring occurs mainly in the winter. In addition to this fishery, Icelandic summer-spawning herring are also a by-catch in the mackerel and Norwegian-Icelandic spring-spawning herring fishery in the summer. In the last fishing season, 76% of catches were made in the directed fishery, mostly in November 2019, and the remaining 24% caught between June and October in the mackerel and Norwegian-Icelandic spring-spawning fishery (MFRI, 2020g).

Practically all of the catch is exported and most of it is frozen and intended for human consumption. Fishing of herring is an important part of the fisheries in Iceland, which, until recently was the single largest contributor to the country's net foreign exchange earnings (now tourism)².

² <https://knowledge.wharton.upenn.edu/article/icelands-economic-recovery/>

3.2.2. Fishing methods

This fishery assessment considers fishing for herring using pelagic / mid-water trawls and purse seines (Figure 2). The general operation and configuration of these fishing gears is illustrated in the figure below. Pelagic trawls are towed by a vessel (or in the case of pair trawls by two vessels) at the surface of the water or in the water column. Purse seines are used to encircle a shoal of fish. A key characteristic of both fishing methods is that they are designed to catch the target species in the water column, with no seabed contact. As noted in the previous section in the last few years the fishery has been fished almost entirely using pelagic trawls.

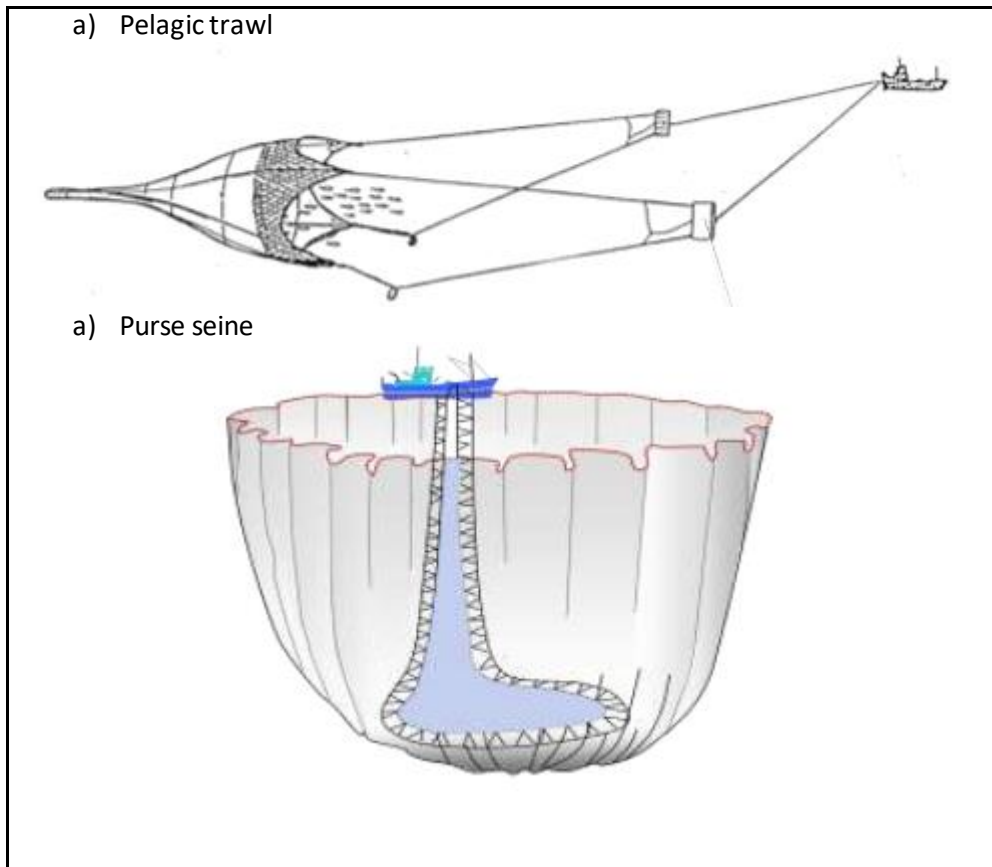


Figure 2. Diagram of typical pelagic trawls and purse seines used to catch herring (source: Seafish 2011a, 2011b)

The fishery for Icelandic summer-spawning herring is conducted entirely in the Icelandic EEZ (Figure 3).

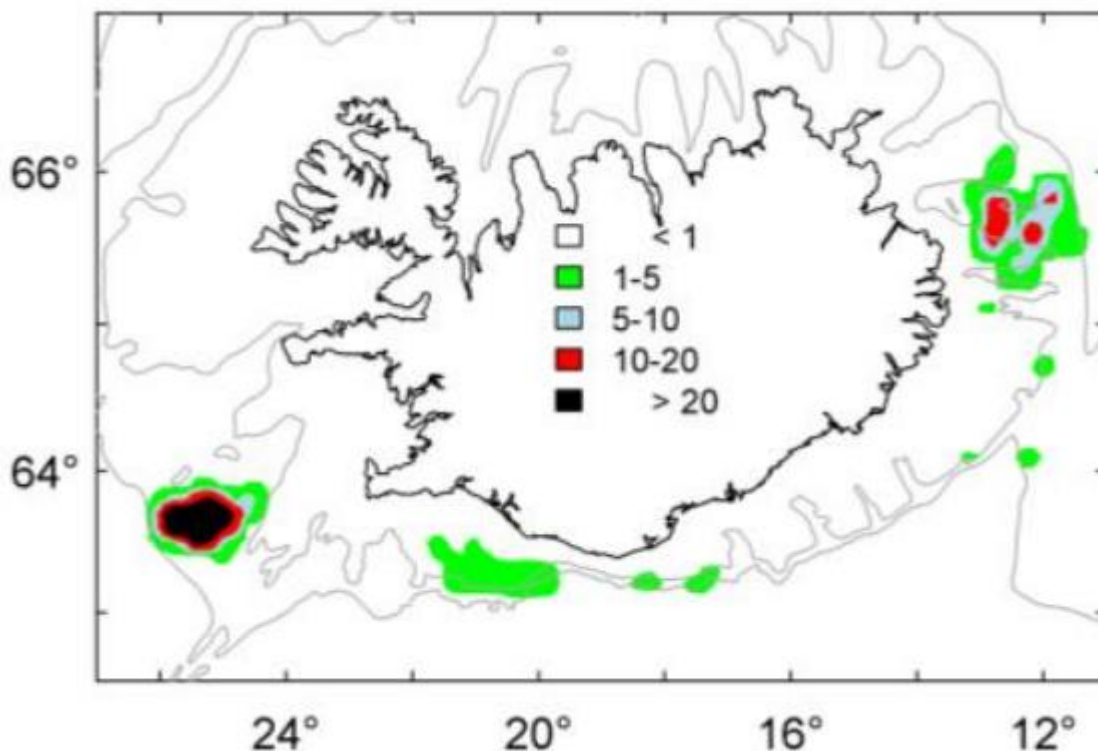


Figure 3. Map showing fishing areas for Icelandic summer-spawning herring in 2019/20 fishing season. Shading indicates yield of herring (tonnes / nmi²) (source: MFRI, 2020a).

Vessels switch between the two types of gear based on the spatial distribution of herring, in years where herring are highly aggregated they are targeted primarily with purse seines and when they are dispersed over a wider area in offshore waters they are targeted primarily with pelagic trawls. Vessel involved in Icelandic pelagic fisheries use suites of advanced electronics to identify the species composition of target shoals before they deploy their fishing gear. As a consequence of the highly targeted nature of the herring fishery, yields are generally extremely homogenous, comprising high proportions of the target species.

Purse seine fisheries for Icelandic summer-spawning herring have historically taken place mainly in coastal waters to the east and west of Iceland and are recognised as clean fisheries that target dense aggregations of herring. As such, there is very little mixing with any other stocks, herring or otherwise, and purse seine catches are considered to have negligible impacts on non-target species.

Pelagic trawls are the preferred method in offshore waters where they are used to target overwintering aggregations of herring. As noted in the previous section, in recent years, there has been a change in distribution of herring so that most of the stock overwinters in offshore waters to the west of Iceland and this explains the dominance of the pelagic trawl in the fishery since 2014/2015. This change is not considered to affect the selectivity of the fishery because the fishery is still targeting dense schools of overwintering herring and the catches in these fisheries tend to be quite homogenous, containing almost exclusively Icelandic summer-spawning herring.

3.2.3. Fishery client

The client for this fishery assessment is Icelandic Sustainable Fisheries (ISF). ISF was founded in 2012 by companies engaged in fishing, production and sales of Icelandic fish products. The purpose of ISF is to obtain certification of fishing gear and fish stocks around Iceland against the MSC Standard, with the objective of demonstrating to buyers and consumers that all fisheries around Iceland are managed sustainably.

Information about ISF is available from their website (<https://www.icelandsustainable.is/>). Details of the ISF vessels that are included in the UoC are provided in section 5 of this report.

3.3. Principle One: Target Species Background

Principle 1 of the Marine Stewardship Council standard states that:

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

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

In the following section the key factors which are relevant to Principle 1 are outlined for the target stock under consideration, Icelandic summer-spawning herring. To start with a brief summary of herring life histories is set out below.

3.3.1. Herring life histories

The target species for the fishery under certification is Atlantic herring (*Clupea harengus*). It is one of the most abundant fish species in the world. Atlantic herrings can be found on both sides of the Atlantic Ocean, congregating in large schools. They can grow up to 45 centimetres in length and weigh more than 0.5 kilograms. Herring feed on copepods, krill and small fish, while their natural predators are seals, whales, cod and other larger fish (FAO Species Factsheet: <http://www.fao.org/fishery/species/2886/en>).

Atlantic herring is a pelagic species, with stocks widely distributed throughout the north-east Atlantic, ranging from the Arctic Ocean in the north to the English Channel in the south. Young herring are typically found close inshore, in estuaries or in sea lochs, whilst adult shoals generally occur further offshore. Herring often travel large distances between spawning, nursery and feeding grounds. During daytime, herring shoals remain close to the sea bottom or in deeper waters – though this is not so in all cases. At dusk they move toward the surface and disperse over a wide area. The herring is a very tender and fragile fish with large and delicate gill surfaces and scales. It has a low level of pollution tolerance and it has retreated from many heavily impacted estuaries worldwide. It is this characteristic that enables herring to serve as a bio-indicator of cleaner and more oxygenated waters (<http://www.clupea.net/biology/biology.html>).

Herring are demersal spawners. Shoals of herring gather on the spawning grounds and spawn more or less simultaneously - releasing eggs in a single batch. Eggs are laid on the sea bed, on stones, gravel or sand beds. A female herring may deposit from 20,000 up to 120,000 eggs, depending on age and size. The eggs sink to the bottom, where a mucous coat enables them to form layers or clumps. Incubation time varies between 10 to 40 days depending on temperature. Herring larvae are between 5 and 6mm at the time of hatching, and early nutrition is provided by a small yolk sac. Only the eyes are well pigmented and the rest of the body is semi-transparent - virtually invisible underwater. The newly hatched larvae drift with oceanic currents. By the age of one-year, herring have a typical length of 10cm, and first spawning occurs at 3 years old. Adult herring have been reported as old as 20 years, but this is very uncommon.

Herring play an important role in temperate and cold water food chains, consuming zooplankton (copepods, larval snails, diatoms, mysids, euphausiids etc.) and juvenile sandeels. There are no marked differences between the diets of small and large herring; only the proportions of the different food items change with size. Young herring typically capture prey individually, but where prey concentrations reach very high levels, such as micro-layers that occur at fronts, herring are able to swim forwards with open mouth and expanded opercula. Additional information is available at <http://www.fao.org/fishery/species/2886/en>.

Herring stocks can be categorised by their different spawning areas and times. Some different stocks are known to mix together for parts of the year but during the spawning season they migrate to their separate spawning areas. Although herring can be found spawning in almost any month, the majority of the Icelandic stock are summer spawners, spawning in July (ICES 2018d, 2018e). It is a coastal stock and does not leave Icelandic waters.

There is small population of Icelandic spring-spawning herring which has not recovered from overfishing in the 1970s but is known to co-habit with the summer-spawning stock in the autumn (ICES, 2019h).

The other larger herring stock in the area is the Norwegian-Icelandic spring-spawning herring (also known as Atlanto-Scandian herring). Icelandic summer-spawning herring has quite a separate distribution pattern to the Norwegian-Icelandic spring-spawning herring, so they do not mix extensively in Icelandic coastal waters, although there is evidence of increased levels of mixing in recent years, with greater numbers of summer-spawning herring turning up in catches of Norwegian-Icelandic spring-spawning herring. In the past the two stocks shared similar feeding grounds in early summer, north or east of Iceland. This may to some degree explain recent changes in distribution related to increase in biomass.

The implications of stock mixing on traceability is considered further in section 5.3.

The ICES Stock Annex (ICES, 2019h), notes that “*the Icelandic summer-spawning herring is constrained to Icelandic waters throughout its lifespan. Results from various researches including, tagging experiments around middle of last century, studies on larval transport, and studies on migration pattern and distribution, all suggest that the stock is local to Icelandic waters. Recent studies on stock structure on herring in Northeast Atlantic support this distinction, both on basis of otoliths shape analyses and micro-satellite analyses. In catches and surveys, the maturity stage is used successfully to distinguish Her-5a from the other herring stocks*”. For this reason, the stock structure of Icelandic summer-spawning herring is classified as “A. Single population” in terms of Table G2 of the MSC FCR v2.0.

As indicated initially, this report does not intend to provide a scientifically comprehensive description of the species. Interested readers should refer to sources that have been useful in compiling the following summary description of the species. These include:

- » Icelandic Ministry of fisheries and Agriculture website <http://www.fisheries.is>
- » Fishbase: <http://www.fishbase.org/Summary/SpeciesSummary.php?ID=24&AT=herring>
- » ICES Fishmap: <http://www.ices.dk>
- » FAO Species Factsheet: <http://www.fao.org/fishery/species/2886/en>

3.3.2. Stock status and reference points

The 2019 estimate of SSB at spawning time was 212,481t after accounting for infection mortality. The stock was at high levels until the late 2000s but since then a substantial reduction has taken place despite a low fishing mortality. The reduction is a consequence of mortality induced by *Ichthyophonus* outbreak in the stock in 2009–2011 and 2017–2018 in addition to small year classes entering the stock since around 2005, particularly the 2011–2014 year classes. Hence, SSB will be below $MSY B_{trigger}$ in 2018 but above the $MGT B_{trigger}$ and B_{lim} (Table 7).

The assessment (Figure 4) indicates that the harvest rate in 2018 (0.145) was below $HR_{MGT} = 0.15$, and the fishing mortality (weighted average for ages 5–10; 0.175) was below $F_{pa} = F_{MSY} = 0.22$. The low F during 2009 to 2011 was related to a cautious TAC and apparent overestimation of mortality induced by the *Ichthyophonus* outburst. The estimated number of herring that died in Kolgrafafjörður in the two incidents of mass mortalities (Óskarsson *et al.* 2018a) were added to the catches in 2012 and is also included in the high F that year.

Annual recruitment, as billions of fish at age 3 years, is shown in Figure 4. The strong year classes of 1999, 2000 and 2002 led to the SSB reaching a high level between 2006 and 2009. Recruitment subsequently fell, in line with the *Ichthyophonus* fuelled decline, reaching a very low level in 2014 (2011 year class). Recruitment continued to fall in 2015, 2016 and 2017 (2012, 2013, 2014 year classes). Recruitment predicted from a survey index at age 1 in 2017 is 360000 thousand. However, recruitment in the final year of the assessment is consistently overestimated (ICES 2019j).

Table 7. Herring in Division 5.a, Icelandic summer-spawning herring. Reference points, values, and their technical basis. All weights are in tonnes (source: ICES, 2019j).

Framework	Reference point	Value	Technical basis
MSY approach	MSY $B_{trigger}$	273000	B_{pa}
	F_{MSY}	0.22	HCS model for simulated harvest rules
Precautionary approach	B_{lim}	200000	SSB with a high probability of impaired recruitment
	B_{pa}	273000	$B_{pa} = B_{lim} \times e^{1.645\sigma}$, where $\sigma = 0.19$
	F_{lim}	0.61	The F that leads to $SSB = B_{lim}$, given mean recruitment
	F_{pa}	0.45	$F_{pa} = F_{lim} \times \exp(-1.645 \times \sigma)$, where $\sigma = 0.18$
Management plan	MGT $B_{trigger}$	200000	Stochastic simulations
	HR_{MGT}	0.15	Management plan, independent of <i>Ichthyophonus</i> infection in the assessment year

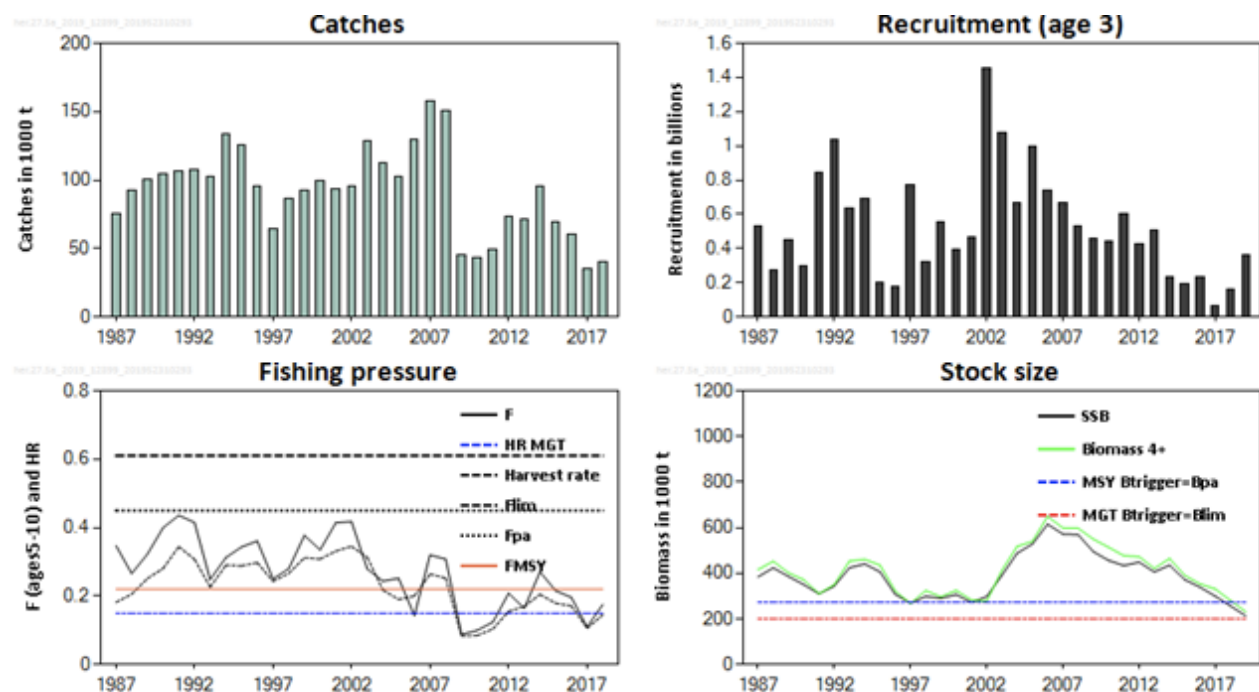


Figure 4. Herring in Division 5.a, Icelandic summer-spawning herring. Summary of the stock assessment. Harvest rates are calculated based on biomass age 4+. All biomass reference points refer to SSB levels (SSB is shown as a black line). HR_{MGT} and MGT $B_{trigger}$ correspond to the values in the management plan. MGT $B_{trigger} = B_{lim}$ and $B_{pa} = MSY B_{trigger}$; therefore, the horizontal lines displaying these points in the graph overlap. The recruitment estimate for 2019 is a survey estimate and not estimated by the model (source: ICES, 2019j).

3.3.3. Harvest strategy

The fishery for the Icelandic summer-spawning herring stock takes place entirely within the Icelandic EEZ and, with the exception of some of the by-catches, landings are made only by Icelandic vessels into Icelandic ports. The management strategy is therefore under the control and jurisdiction of Iceland.

There are a number of measures in place, backed by regulations, to ensure the sustainable exploitation of the resource. These include the protection of juveniles (<28cm in length) by short notice area closures if the proportion of juveniles in catches exceeds 25% (Regulation no. 376, 8 October 1992). Regulations also deal with the quantity of permitted bycatch and also a ban on the use of pelagic trawls within the 12nm zone to protect juveniles. These regulations are rigorously monitored by the Ministry with observers at sea and through the Icelandic coastguard inspection vessels.

Policy decisions on Icelandic summer-spawning herring are adopted by the Icelandic Ministry of Fisheries (Regulation no. 770, 8. September 2006). According to that regulation, several measures are enforced:

1. Protection of herring juveniles (≤ 27 cm): area closures are enforced if the proportion of juveniles is high.
2. Limit bycatch of juveniles of other fish species: mid-water trawling is only allowed outside of the 12 nautical miles zone with some additional area restrictions (see Figure 9)
3. Minimum mesh size (stretched) is 63 mm.
4. TACs apply from 1st September to 1st May in the following year.

For the fishing season 2011/2012, a regulation was enforced that prohibited fishing on the stock outside of the area of Breiðafjörður. This was because small herring were mixed with adults in the other areas and there was a lower prevalence of infection there. Furthermore, because of higher infection rates in the Breiðafjörður area, the fishery would target a greater proportion of fish already subjected to infection mortality. No closure was enforced in this herring fishery in 2018/19 (ICES, 2019j).

Since 1985, the TACs set have been more or less in line with advice given by ICES and MFRI with some small discrepancies. Survey indices were included incorrectly in last year's assessment. This error resulted in 7% lower advice for 2018/2019. The error has now been corrected (ICES, 2019j).

The management strategy for Icelandic fish stocks, in general, is to maintain the exploitation rate at the level which is consistent with the Precautionary Approach and that generates maximum sustainable yield (MSY) in the long term (Government of Iceland, 2018).

Confirmation of the implementation of the new harvest control rules was provided by the Icelandic Government in July 2017 (Stjórnarráðið, 2017). The HCR and Management plan are in place and TAC was set according to Iceland management plan Rule 5 (see government offices of Iceland website <https://www.government.is/news/article/?newsid=cf30e5ad-584f-11e8-9429-005056bc4d74>).

3.3.4. Harvest control rule

The Icelandic Ministry of Industries and Innovation fisheries management plan has been implemented since 2017. The rule has been evaluated by ICES (ICES, 2017a, ICES, 2017b) and is considered to be precautionary and conforms to the ICES MSY approach. According to the rule, the TAC for the fishing year $Y/Y+1$ (September 1 of year Y to August 31 of year $Y+1$) is calculated as follows:

$$\begin{aligned} \text{When } SSBY \text{ is equal to or above } MGT B_{\text{trigger}}: TAC_{Y/Y+1} &= HR_{MGT} * B_{\text{Ref}, Y} \\ \text{When } SSBY \text{ is below } MGT B_{\text{trigger}}: TAC_{Y/Y+1} &= HR_{MGT} * (SSBY / MGT B_{\text{trigger}}) * B_{\text{Ref}, Y} \end{aligned}$$

The spawning-stock biomass trigger ($MGT B_{\text{trigger}}$) is defined as 200 kt, the reference biomass is defined as the biomass of herring of ages 4 and older, and the target harvest rate (HR_{MGT}) is set to 0.15.

3.3.5. Information and monitoring

The fishery under assessment is operated exclusively by an Icelandic fleet. Vessels consist of purse seiners and pelagic trawlers operating in the herring (Icelandic summer-spawners and Norwegian-Icelandic spring-

spawners), capelin (*Mallotus villosus*), blue whiting (*Micromesistius poutassou*) fisheries, and in recent years also the NE-Atlantic mackerel (*Scombrus scombrus*) and Mueller's pearlside (*Maurolicus muelleri*) fisheries.

Description of data available for the stock: several fishery indices (catch at age data), fishery information on the distribution of the stock, fishery independent abundance indices (survey indices from three surveys) and estimates of maturity at age, weight at age and natural mortality. Data sources are landing reports, scientific surveys and catch sampling.

Description of data available for the stock (ICES, 2018d):

- i. Landings: the Icelandic Directorate of Fisheries collects information on catch landed in the harbours and catch registered in the digital logbook (information on timing, location, fishing gear, catch size and species composition of each fishing operation by vessel).
- ii. Discards: Illegal in Icelandic waters and considered to be insignificant in the fishery of Icelandic summer-spawning herring, with a few exceptions in the past 35 years during 1990-1995.
- iii. Age, length, weight composition: Ages, lengths and weights are sampled over the whole fishing area. Sampling information is used to convert the total catch into catch at age. Weight at age only represents fishing period (September to January).
- iv. Natural mortality: Constant natural mortality is assumed ($M=0.1$) for all ages and years. There is not direct estimate of M , but Jakobsson *et al.* (1993) assessed level of M ranged between 0.1 and 0.15. For the years 2009-2011, because of the *Ichthyophonus* infection, M infection has been added to the fixed natural mortality of the stock (Óskarsson and Pálsson, 2011). Observations of an ongoing new infection in the winter 2016/17 are considered to result in significant infection mortality in the spring 2017. It called for applying additional infection mortality for 2017, and applying the results by Óskarsson *et al.* (2017) was considered to be the most reasonable approach. It means that the estimates of M caused by the infection in 2016/17 should be multiplied by 0.3 and added to the fixed M . For future assessments, the prevalence of infection will need to be monitored (ICES, 2018d).
- v. Maturity at age: Since 2006, the maturity ogive that has been adopted is constant and based on analyses of catch and survey data. But, in recent years spatial distribution of the stock has differed from previous years so reliable estimates of age at maturity independent of the stock distribution are needed.
- vi. Abundance indices: Indices from a scientific survey covering the adult stock and incoming year classes (autumn/winter acoustic survey) are used in the assessment. Additionally, there is a spawning acoustic survey to get estimates of prevalence of *Ichthyophonus* infection and also covering the adult stock, which has not yet been used in the assessment because the time-series starts in 2009 and an occasional juvenile survey whose age 1 index will be used to predict the number at age 3 (recruits) in the short-term projections.
- vii. Prevalence of *Ichthyophonus* infection: Prevalence of the infection has been estimated from catch samples and the mean values for the stock weighed by results of the acoustic surveys.

3.3.6. Stock assessment

The assessment of the Icelandic summer-spawning herring stock uses the assessment tool NFT-ADAPT (VPA/ADPAT version 3.3.0, NOAA Fisheries Toolbox 2014³).

The NFT-ADAPT model is an implementation of the age-structured estimation model first introduced by Gavaris. It incorporates features introduced by Conser, Mohn, and Restrepo in other versions of the ADAPT code. Population cohorts are estimated by a backward projection method that requires specification of a guess of the number of survivors in the last year and a decision rule for estimating the fishing mortality rate on the oldest age group in all remaining years. Catch is assumed to be measured without error. Backward projection can be based on either solution of the catch equation or by use of Pope's approximation. Population estimates are chosen so as to minimize the sum of squares difference between the population abundance and a set of

³ <http://nft.nefsc.noaa.gov>

one or more abundance indices. The IMSL implementation of the Levenburg-Marquardt method is used to solve the nonlinear least squares problem. Catchability coefficients are estimated as functions of population estimates and observed indices. Bootstrapping is used to estimate the precision of all model parameters and all quantities that are functions of model parameters.

In order to explore the data this year, two models were run, NFT-ADAPT, which has been used as the basis for the assessments since 2005 and a separate model also used in the MSE in 2017 for the stock (ICES, 2017a). Applying NFT-ADAPT was evaluated at benchmark assessment in January 2011 (ICES, 2011) and was found to be appropriate as the principal assessment tool for the stock. The catch data used were from 1987/88–2017/18 and survey data from 1987/88–2017/18.

Other input data consisted of:

- i. mean weight at age;
- ii. maturity ogive;
- iii. natural mortality, M , that was set to 0.1 for all age groups in all years, except for 2009–2011 and 2017 where additional age dependent mortality was applied because of the Ichthyophonus infection (ICES, 2018d, Óskarsson et al. 2018b);
- iv. proportion of M before spawning was set to 0.5; and
- v. proportion of F before spawning was set to 0. Thus, in comparison to last year's assessment, all the input data are the same with an additional year of data.

As given by ICES (2018d):

“retrospective analyses indicate a consistency over the most recent four years, i.e. adding new data to the model does not change the present perception of the stock size much. The small upward revision for the last year is likely caused by the increased M in 2017 (due to infection mortality), and for compensating for it, the model increased the stock size back in time. The retrospective analysis for the fishing mortality and recruits behave, in a same way, well for the last four years. The retros observed for SSB in 2011 and 2012 are related to high survey indices in the preceding autumns as also seen as difference between observed and predicted survey values. The mass mortality, which was added to the catches in 2012 in the assessment as presented earlier (ICES, 2011) are probably also partly explaining this pattern at that time. A revision of the number at age 3 of the 2008 and 2009 year classes (in 2011 and 2012) is also apparent retrospectively, which is related to their high survey indices at age 3. Like demonstrated and analysed earlier (ICES, 2014 benchmark), the main difference between observed and predicted survey values from the NFT-Adapt model was for the period 1999–2004, where the observed values were well above the predicted, otherwise they fitted relatively well. Like seen in the residual plot (Figure 5) the observed value for the 2009 survey was lower than predicted and the vice versa for the 2012 survey (referring to the beginning of the year). The low survey value in 2009 is likely an underestimate due to distribution of the stock that year in the fjord west of Iceland, while the positive block during 2000–2004 was previously found to be mainly caused by the large 1999 year class (ICES, 2014) and possibly changes in the catchability of the survey. However, an exploratory run in NFT-Adapt done in the 2011 assessment (ICES, 2011b) where these years were excluded in the tuning, did not change the point estimate of the stock size in the latest year (1 January 2011), implying that the terminal point estimates in the final run was not driven by this residual block”.

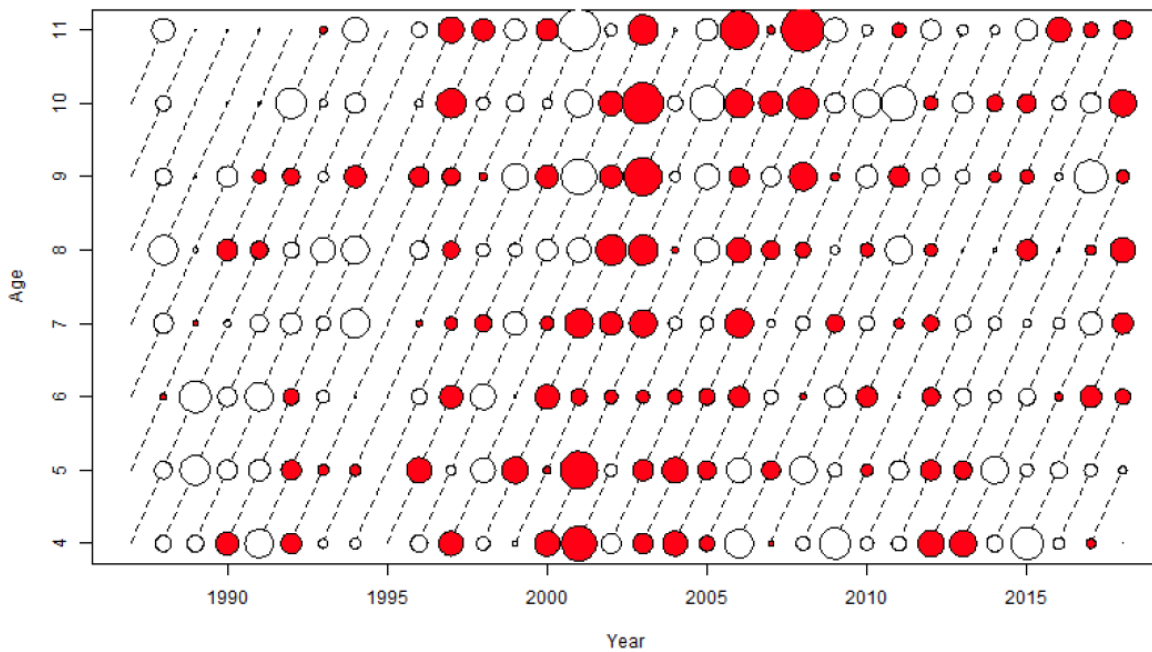


Figure 5. Residuals of NFT-Adapt run in 2018 from survey observations (moved to 1 January). Filled bubbles are positive (i.e. survey estimates higher than the assessment) and open negative. Max bubble = 1.71 (source: ICES 2019e).

The two models explored, NFT-Adapt and the separable model Muppet, gave almost identical stock size estimates for final year of the assessments. The historical estimates of stock size were also similar (ICES, 2018d). Assessment is based on catch-at-age data and abundance indices from an acoustic survey in autumn, 1987/88-2011/12. Discards are not included as they are assumed to be negligible.

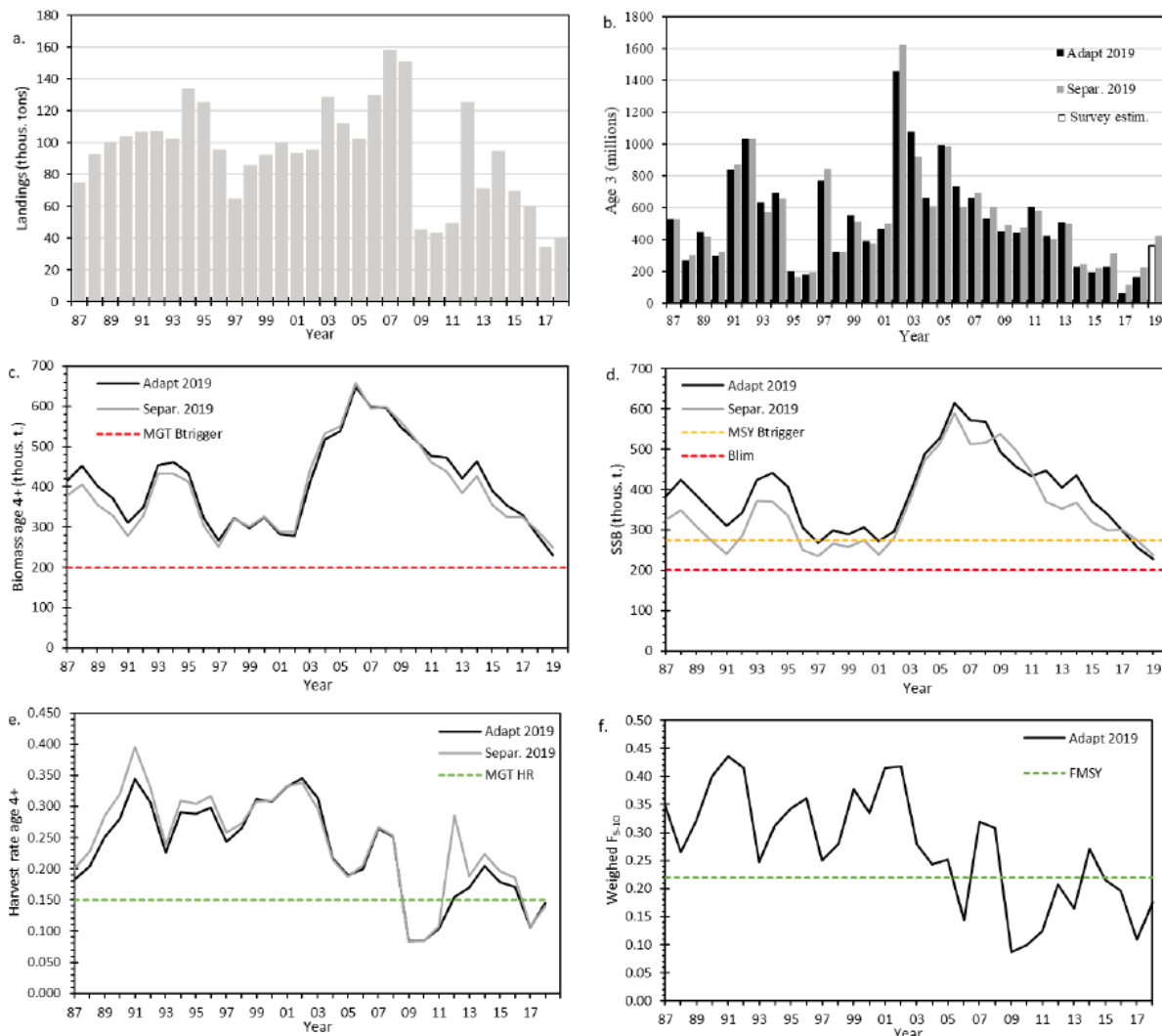


Figure 6. Comparisons of the final NFT-Adapt run in 2019 and a run from Separable model (Muppet) in 2018 concerning (a) landings, (b) number at age-3 (recruitment), (c) biomass of age 4+ (reference biomass), (d) SSB, (e) harvest rate of the reference biomass (HRMGT shown), and (f) N-weighted F for age 5–10. Some reference points are also shown. Note that the mass mortality in Kolgrafaþjörður in the winter 2012/13 is included in harvest rate for Muppet and not in Adapt. Note that the estimates of number at age 3 in 2017 from Adapt 2019 is not model estimates but derive from survey estimates (source: ICES 2019e).

As noted by ICES (ICES, 2018d), there are number of factors that could lead to uncertainty in the assessment. Two of them are addressed here. Additional natural mortality caused by the Ichthyophonus infection was set for the first three years of the outbreak and in 2017. This quantification of the infection mortality based on Óskarsson *et al.* 2018b is considered to improve the assessment and reduce its uncertainty. For the most recent years where new infection reappeared (2017 and 2018), more accurate estimation of the infection mortality will be possible, but until then, this approach will add uncertainty to the assessment. It is worth noticing that increasing the value of M has been shown to increase the historical perception of the stock's size but has minor impacts on the assessment of the final year and the resulting advice. The signals from the year 2017 catches and the survey give somewhat contradictory results regarding the size of the 2013-year class, while both indicate a record small 2014 year class. The size of these year classes is probably not very well determined yet, which adds uncertainty to the assessment. Like the 2014-year class, the 2011-year class was seen to be very small at age 3 in both catches and survey, however, this turned out to be too pessimistic an estimate. The same could possibly also apply for the 2014-year class, meaning that the catches and the survey possibly did not cover its spatial distribution adequately. From 2013, estimates of the infection prevalence in

the stock projections have been ignored, based on the explorations indicating that infection was less lethal than assumed earlier (Óskarsson and Pálsson 2013). Regarding, the two incidents of mass mortalities in Kolfgrafafjörður in the winter 2012/2013, estimates of the number of fish died were subtracted from the stock size estimates (ICES, 2018d).

To evaluate the adopted harvest control rules for Icelandic summer spawning herring scientific work prepared by Icelandic scientists on Management Strategy Evaluation (MSE) of harvest control rules for herring, were presented. MSE model based on ADGISAHA model (Figure 7). The ADGISAHA assessment used (ICES 2017d) is based on a statistical catch-at-age model that assumes a constant selection pattern-at-age for the fishery (allowing for changes in selection at pre-determined years). Correlation of residuals of different age groups in the survey used for tuning the assessment is estimated as part of the stock assessment. The simulation analyses to evaluate the HCRs (MSE), which uses the fitted ADGISAHA assessment model as the Operating Model, were based on 1000 iterations for each harvest rate or HCR. The rules were tested in a scenario assuming no further *Ichthyophonus* epidemic and in a scenario assuming an epidemic starting every 10th year on average (and lasting for three consecutive years). In addition, the HCRs were tested including *Ichthyophonus* mortality in the first three years (2017–2019) because of observations of new infection occurring in the winter 2016/2017, presumably causing additional mortality in the spring 2017 and during 2018–2019 if the epidemic resembles the 2009–2011 epidemic.

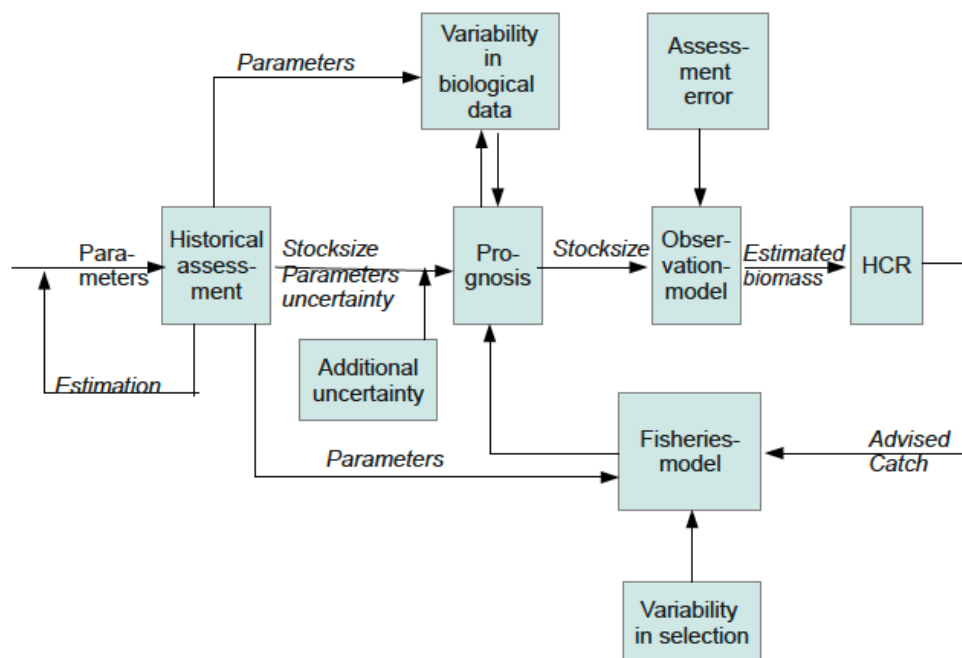


Figure 7. ADGISAHA model structure.

To meet the objectives, an analytical assessment of the stock is done with a model (ADGISAHA) and this model is then used for a forward simulation (i.e. as an “Operating Model” or, in other words, to represent the “true” population and fishery dynamics in the simulation) to evaluate different harvest control rules by accounting for relevant errors, bias and biological variability (i.e. “Management Strategy Evaluation”, MSE).

3.3.7. Ecosystem considerations

Diet composition of the Icelandic summer-spawning herring consists mostly of crustacea (86 to 100%). The only identified fish prey species in herring was capelin and sandeel (*Ammodytes* sp.). Earlier research made by MRI on stomach contents of herring in a relatively restricted area south west of Iceland in 2008 showed in addition that fish eggs and larvae could be a significant part of the diet (Óskarsson *et al.* 2008).

Adult herring is a food resource for various animals in Icelandic waters, including minke whale (*Balaenoptera acutorostrata*), humpback whale (*Megaptera novaeangliae*), several sea bird species, cod (*Gadus morhua*) and pollack (*Pollachius virens*), but the annual consumption of herring by the different predators is relatively unknown. An increased predation of herring by cod has been observed in stomach analyses in the Icelandic groundfish survey since the *Ichthyophonus* outbreak started in the herring stock in November 2008, even if it has not been quantified (ICES, 2018d).

Recruitment of the stock is variable and depends on a number of mechanisms affecting both recruitment success. Two main external drivers on the top of SSB size are the North-Atlantic Oscillation (NAO) winter-index and ocean temperature.

3.3.8. Icelandic summer-spawning herring as a key Lower Trophic Level (LTL) stock

Herring is treated as a default key low trophic level species (see FCR v2.0 SA2.2.9, Box SA1) unless evidence is available to show it is not. The assessment team has considered whether the Icelandic summer-spawning herring stock is not a “key low trophic level species” (key LTL) under the definitions in the MSC requirements and guidance (FCR v2.0 SA2.2.9)

A quantitative Ecopath with Ecosim model was used to evaluate trophic position of Icelandic summer-spawning stock. A model is available for the Icelandic waters ecosystem that details the predator/prey relationship for the stock in question (Ribeiro *et al.* 2018) (see Figure 8). This model, created under the MareFrame project, is credible (well documented and available). The model covers the Icelandic EEZ and includes, as a functional group only the Icelandic summer-spawning herring stock (confirmed by author). As given in the stock description the Icelandic summer-spawning herring stock does not leave modelled area in contrast to the Norwegian-Icelandic spring-spawning herring stock.

In evaluating whether a stock under assessment represents a key LTL stock for the purposes of MSC assessment the Assessment Team is required to consider the trophic position of target stocks to ensure precaution in relation to their ecological role, in particular for species low in the food chain (MSC FCR v2.0 SA2.2.8). The Assessment Team is required to treat a stock under assessment against Principle 1 as a key LTL stock if it is one of the species types listed in Box SA1 and in its adult life cycle phase the stock holds a key role in the ecosystem, such that it meets at least two of the following sub-criteria i, ii and iii:

- i. A large proportion of the trophic connections in the ecosystem involve this stock, leading to significant predator dependency;
- ii. A large volume of energy passing between lower and higher trophic levels passes through this stock;
- iii. There are few other species at this trophic level through which energy can be transmitted from lower to higher trophic levels, such that a high proportion of the total energy passing between lower and higher trophic levels passes through this stock (i.e., the ecosystem is ‘wasp-waisted’).

Guidance to calculate metrics for key LTL species are provided in MSC 2.0 and are as follows:

Key LTL criterion i – Connectance

Connectance criteria require that the LTL stock is eaten by the majority of predators, as stated: “a large proportion of the trophic connections in the ecosystem involve this species, leading to significant predator dependency. The team used the Proportional Connectance (PC) index and weighted SURF index (Supportive Role to Fishery ecosystems).

PC is calculated as follows:

from a diet matrix that has n components, and only requires a knowledge of the interaction between groups, not the proportional diet fraction of each group.

- The total connectance T in a diet matrix is the Number of all positive (non-zero) diet interactions between components (i.e., predator-prey).
- The connectance C of a component is the total number of prey interactions plus the total number of predator interactions of that component calculated from the diet matrix.
- Then the proportional connectance of prey i is $PC_i = C_i/T$

SURF is calculated as follows:

$$SURF_i = \frac{\sum_{j=1}^n (p_{j,i})^2}{T}$$

where p_{ij} is the diet fraction of predator j on prey i (the proportion of the diet of predator j that is made up of prey i) and T. The total connectance T in a diet matrix is the Number of all positive (non-zero) diet interactions between components (i.e., predator-prey). SURF values of less than 0.001 will normally indicate a non-key LTL stock. SURF values of greater than 0.005 will normally indicate a key-LTL stock. SURF has the advantage that it is relatively insensitive to the grouping of predator and prey species; connectance is highly sensitive to them.

Key LTL criterion ii – Energy Transfer

This sub-criterion requires that “a large volume of energy passing between lower and higher trophic levels passes through this stock”; Argument to determine whether is triggered may be based on 1) empirical data, 2) credible quantitative models, and/or 3) information about the relative abundance of the LTL stock in the ecosystem. Where consumer biomass ratio is calculated as the biomass of the candidate key LTL stock, divided by the biomass of all consumers in the ecosystem (i.e., all ecosystem components that are not primary producers or detritus), i.e., Consumer Biomass Ratio = $B_{LTL}/B_{consumers}$; and model-based results suggest that any LTL stock that constitutes more than 5% of the consumer biomass in the ecosystem should be regarded as a key LTL stock.

Key LTL criterion iii – Wasp-waisted-ness

The ‘wasp-waisted-ness’ sub-criterion requires that “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”.

Where: simple food webs will be sufficient to determine whether there are significant other functionally similar species (at a similar trophic level) to the candidate LTL stock; although for the candidate LTL species, the focus is on the adult component of the stock (SA2.2.9.a, SA2.2.9b), the consideration of other species at the same trophic level should consider all life stages (including juveniles) of those species.

The rationale for determining whether Icelandic summer-spawning herring is a key LTL based on these criteria is set out below:

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

There is enough information available in order to estimate a connectivity index (proportional connectance) and SURF of the stock.

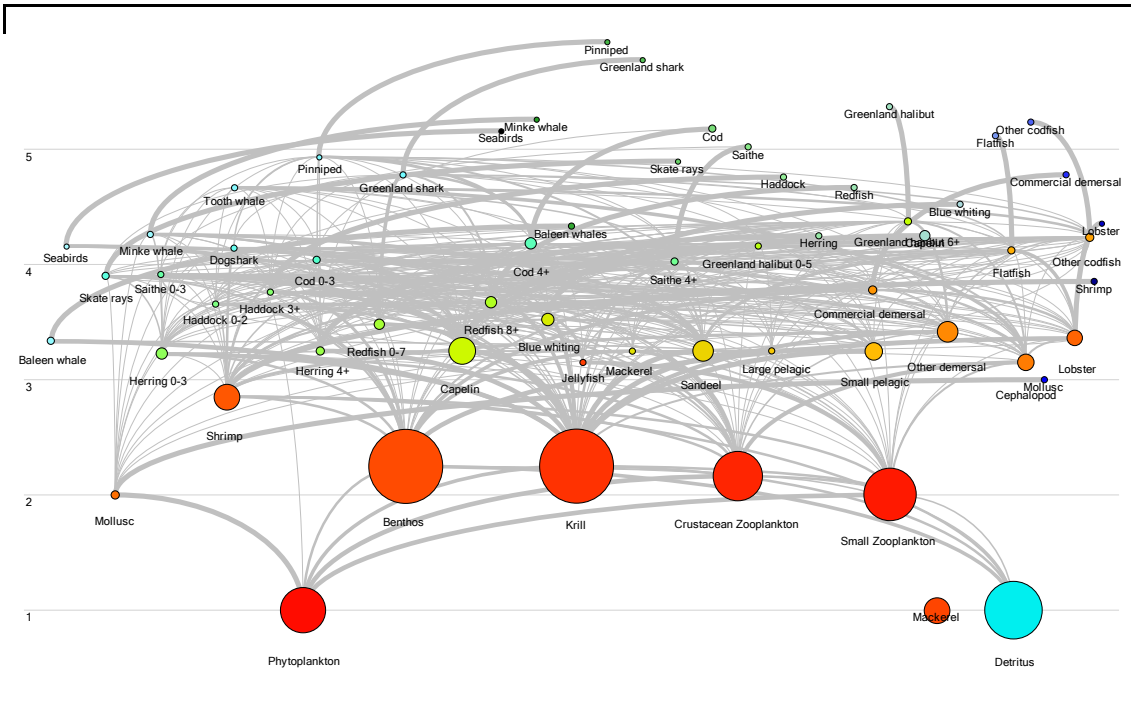


Figure 8. Ecopath model of Icelandic waters showing the distribution of functional groups by trophic level (scale at left of diagram). Larger nodes indicate bigger stock size. Note that this diagram shows the state of the ecosystem in 1984 based on historical information and that the relative size of nodes may have changed subsequently (Source: Ribeiro *et al.* 2018).

Proportional Connectance (PC) and Supportive Role to Fishery ecosystems (SURF):

From model:

$T = 404$, $C_i = 25$, $PC_i = 25/404 = 6\%$ for adult life stage.

$SURF = 0.0004$

The PC index calculated for the Icelandic summer-spawning herring stock is 6%. This would indicate an intermediate zone between non-key LTL and key LTL stock (according to GSA2.2.9 MSC Certification Requirements Guidance V2.0 the threshold for Key LTL is $PC > 8\%$).

The weighted SURF index (Supportive Role to Fishery ecosystems) based on EwE model was calculated as well to investigate if stock in question is KTL.

SURF for adult life stage of Icelandic summer-spawning herring stock is 0.0004, which is below threshold for key LTL species (0.001).

Conclusion for key LTL criterion i – Connectance: not a key LTL stock.

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

Model-based results suggest that Icelandic summer-spawning herring stock constitutes 10% of the consumer biomass in the ecosystem (Table 8). The GSA2.2.9 MSC Certification Requirements Guidance V2.0 give that threshold for Key LTL stocks is “more than 5%”. Stock should be regarded as a key LTL stock.

Conclusion for key LTL criterion ii – Energy Transfer: a key LTL stock.

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

Based on model results we found that there are few other species/functional groups at trophic level like Icelandic summer-spawning herring (between TL 3 and TL4) through which energy can be transmitted from lower to higher trophic levels. Quantified trophic flows constitute small fraction of energy (between 0.02-0.074%) of all flows in the food-web, which indicate non-wasp-waistedness of Icelandic summer-spawning herring stock in the Icelandic waters ecosystem.

Conclusion for key LTL criterion iii – Wasp waisted-ness: not a key LTL stock.

Table 8. Output for the Ecopath model for Icelandic waters. Biomass is given in thousands of tonnes (source: Assessment team based on EwE model results, Ribeiro et al. 2018).

Functional group	Trophic level	Biomass	EE	Q/B
Seabirds	4.160	2.831	0.379	0.005
Minke whale	4.261	81.65	0.287	0.007
Baleen whale	3.333	189.5	0.479	0.015
Tooth whale	4.666	26.84	0.000	0.004
Pinniped	4.934	1.538	0.360	0.009
Greenland shark	4.778	17.50	0.068	0.086
Dog shark	4.142	13.05	0.500	0.066
Skate rays	3.897	220.30	0.500	0.129
Cod				
Cod 0-3	4.036	289.4	0.752	0.121
Cod 4+	4.179	914.0	0.817	0.281
Saithe				
Saithe 0-3	3.913	116.9	0.927	0.052
Saithe 4+	4.021	287.0	0.950	0.109
Haddock				
Haddock 0-2	3.657	119.9	0.631	0.092
Haddock 3+	3.760	147.8	0.975	0.181
Herring				
Herring 0-3	3.223	953.2	0.913	0.053
Herring 4+	3.250	387.3	0.948	0.129
Redfish				
Redfish 0-7	3.481	837.9	0.577	0.047
Redfish 8+	3.668	883.6	0.648	0.136
Greenland halibut				
Greenland halibut 0-5	4.160	110.9	0.242	0.117
Greenland halibut 6+	4.370	220.0	0.404	0.243
Capelin	3.250	4681	0.950	0.263
Blue whiting	3.523	1159	0.220	0.086
Mackerel	3.248	151.6	0.776	0.089
Sandeel	3.250	3030	0.950	0.096
Large pelagic	3.250	68.76	0.950	0.097
Small pelagic	3.250	2193	0.950	0.080
Flatfish	4.118	279.1	0.950	0.095
Other codfish	4.235	470.2	0.950	0.251
Commercial demersal	3.779	431.7	0.386	0.508
Other demersal	3.416	2861	0.950	0.085
Cephalopod	3.151	1995	0.420	0.203
Mollusc	2.000	481.1	0.950	0.300

Lobster	3.359	1784	0.950	0.060
Shrimp	2.853	4217	0.950	0.250
Benthos	2.248	38230	0.950	0.154
Jellyfish	3.150	22.48	0.950	0.300
Krill	2.250	39521	0.950	0.167
Crustacean Zooplankton	2.164	14741	0.950	0.267
Small Zooplankton	2.000	16707	0.950	0.520
Phytoplankton	1.000	12151	0.656	
Detritus	1.000	20466	0.471	

Despite using the EwE model, estimation of B0 and Mix Trophic Impact for the separate food-web components was not possible due to a lack of explanatory simulation runs to the model equilibrium.

The conclusion is that this stock meets 1 of the 3 criteria set by the MSC to define key LTL species (FCR v2.0, SA2.2.9a). This does not meet the threshold for consideration as a key LTL species which requires that at least two of the criteria should be met for the adult life cycle stage. Accordingly, Icelandic summer-spawning herring is not treated as a key LTL species.

3.4. Principle Two: Ecosystem Background

Principle 2 of the Marine Stewardship Council standard states that:

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

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

3.4.1. Interactions with non-target species

Under the MSC Standard, any non-target species in the catch may need to be evaluated with respect to one of three Performance Indicators: as Primary, Secondary, or ETP species.

This section of the report sets out the definitions and criteria that are used to determine which category is appropriate for each non-target species, then examines the data available from the fishery about interactions with non-target species before identifying which category is appropriate for the assessment of each non-target species.

The MSC FCR v.2.0 distinguish two categories of non-target species in the catch from a fishery which are not Endangered Threatened or Protected (ETP) species, namely:-

- **“Primary”** species are defined as those species that are in scope but not target (P1) species *“where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points”*. (FCR at SA3.1.3).
- **“Secondary”** species are then defined by the MSC as fish/shellfish species that do not meet the definition of ‘primary’ species, or species that are “out of scope” of the program but where the definition of endangered, threatened or protected (ETP) species is not applicable (FCR at SA3.1.1).

For primary and secondary species, a ‘main’ designation is then given where either:-

SA3.4.2 A species shall be considered ‘main’ if:

SA3.4.2.1 The catch of a species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA, or;

SA3.4.2.2 The species is classified as ‘Less resilient’ and the catch of the species by the UoA comprises 2% or more by weight of the total catch of all species by the UoA.

a. Teams shall use one or both of the following criteria to determine whether a species should be classified as ‘Less resilient’

i. The productivity of the species indicates that it is intrinsically of low resilience, for instance, if determined by the productivity part of a PSA that it has a score equivalent to low or medium productivity; or

ii. Even if its intrinsic resilience is high, the existing knowledge of the species indicates that its resilience has been lowered due to anthropogenic or natural changes to its life-history.

SA3.4.3 In the case where individuals are released alive they shall not contribute to the definition of ‘main’.

- a. *Teams shall provide strong scientific evidence of a very low post-capture mortality*

SA3.4.4 *In cases where a species does not meet the designated weight thresholds of 5% or 2% as defined in SA3.4.2.1 and SA3.4.2.2, the assessment team shall still classify a species as main if the total catch of the UoA is exceptionally large, such that even small catch proportions of a P2 species significantly impact the affected stocks/populations.*

MSC FCR v2.0

Under SA3.4.5 of MSC FCR v2.0, all other primary or secondary species not considered 'main' shall be considered 'minor' species.

Endangered, Threatened and Protected (ETP) species are defined by the MSC (FCR v 2.0 SA3.1.5), as species that are:

- i) *Recognised by national ETP legislation,*
- ii) *Listed on Appendix I of 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),*
- iii) *Listed in any binding agreements concluded under the Convention on Migratory Species (CMS), or*
- iv) *Classified as 'out of scope' (amphibians, reptiles, birds and mammals) that are listed in the International Union for the Conservation of Nature (IUCN) Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE).*

3.4.2. Information sources

Fishing practices and procedures

Pelagic trawl fisheries for clupeid species of fish tend to be directed fisheries, which yield characteristically homogenous catches. These fisheries tend to make extensive use of sonar equipment to aid in locating and identifying shoals of the target stock, the objective of fishing being to target densely aggregated schools of herring, preferably that feature little mixing with other species.

The vessels in the ISF fleet are designed and operated in a way that avoids the discarding of fish. Before vessels are licensed to operate in the fishery their design and operating procedures have to be approved by the Directorate of Fisheries to ensure that discarding is not possible (see section 3.5.2).

There is always a risk of slippage of catch in pelagic fisheries purse seine and trawl fisheries (meaning that the catch is released from the net toward the end of the fishing operation but before being brought aboard the vessel). Slippage is generally prohibited by law in Iceland (although it is permissible from purse seines if the catch has a high proportion of juveniles). Small or poor-quality fish retained in the catch are processed for fish meal. Both the Directorate of Fisheries and MFRI consider that slippage is an exceptionally rare event in the herring fishery.

The Icelandic Government has made legislation to limit the catch of small non-target fish in pelagic fisheries (Regulation no. 310/2007). This regulation prohibits pelagic trawling in certain areas in the Icelandic EEZ in order to protect small cod which may be abundant in these areas (see figure below). Maps showing the location of these and other closed areas around Iceland are available from the Directorate of Fisheries website⁴.

⁴ <http://www.fiskistofa.is/fiskveidistjorn/veidibann/>

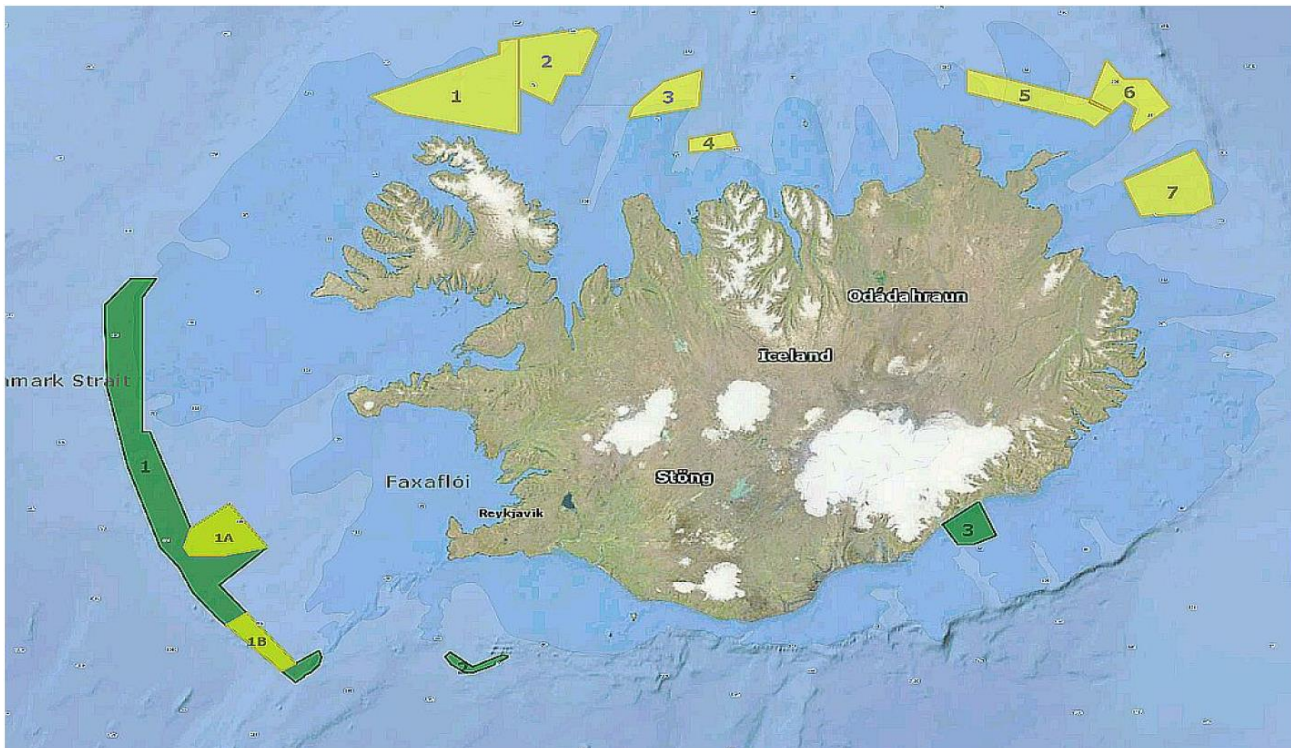


Figure 9. Map showing location of conservation areas for the protection of small fish around Iceland under regulation 310/2007. Pelagic trawling is prohibited in the areas coloured yellow (Nos. 1-7); line fishing is prohibited in the areas coloured green (source: Government of Iceland, 2018a).

The client fishery, the Directorate of Fisheries and MFRI consider that because of the negligible rates of discarding or slipping in the Icelandic herring fishery, the landings data gathered by the Directorate provide an accurate picture of catch composition in the fishery. These data are considered here.

Landings data

A detailed record of catch composition from all fishing trips conducted by Icelandic vessels landing Icelandic summer-spawning herring over the last five years (2015-2019 inclusive) was provided to the Assessment Team by the Directorate of Fisheries. These data have been examined by the assessment team to determine the catch composition of Icelandic fishing vessels using pelagic trawls (UoA 1) and purse seines (UoA 2).

As noted in § 3.2.1, catches of Icelandic summer-spawning herring are mainly taken in the directed fishery in winter. In the last fishing season, 76% of the catches were taken in November 2019 with the remaining 24% taken as by-catch in the mackerel and Norwegian-Icelandic spring-spawning herring fishery from July to October 2019 (MFRI, 2020g). The landings data reflects this showing that the pelagic trawl catch is composed almost entirely of herring (the Icelandic summer-spawning and Norwegian-Icelandic spring-spawning stocks), mackerel and blue whiting. These data relate to 1,325 fishing trips during this period by the pelagic trawl vessels and are shown in Table 9. In recent years catches have been almost entirely by pelagic trawl but there have been some small catches by purse seine in 2015 (c. 10,000t), 2016 (c. 2,000t) and 2019 (c. 3,000t). 18 trips in total were made using this gear over that period and the catch composition is shown in Table 10. Catches in purse seines were 99% Icelandic summer-spawning herring with very small catches of Norwegian-Icelandic spring-spawning herring and blue whiting.

As noted above and in section 3.3.1 some mixing of herring stocks occurs. Icelandic spring-spawning herring (ISPH) mix with Icelandic summer-spawning herring in the autumn. ISPH amount to, on average, 1.4% of the combined catches over the period 1970-2016 (Óskarsson, 2018c). The Icelandic summer-spawning herring

caught as by-catch in the fisheries targeting Norwegian-Icelandic spring-spawning herring and mackerel, in the last three years has formed between 9% and 13% of the combined catches.

Table 9. UoA 1: Catch composition of all fishing trips by Icelandic vessels using pelagic trawls which landed Icelandic summer-spawning herring during the calendar years 2015 to 2019 inclusive (1,325 trips in total). Data provided by the Directorate of Fisheries. The target species is highlighted in orange and species making up more than 1% of the catch are highlighted in pink.

Species/Stock			Average Annual Landings	
Íslenska	English	Scientific name	kg	%
Djúpkarfi	Deep sea redfish	<i>Sebastes mentella</i>	428	0.00
Grálúða/Svarta spraka	Greenland halibut	<i>Reinhardtius hippoglossoides</i>	8,651	0.01
Gulllax/ Stóri gulllax	Greater silver smelt / Greater argentine	<i>Argentina silus</i>	231,180	0.23
Karfi / Gullkarfi	Golden redfish	<i>Sebastes norvegicus</i>	197,532	0.20
Kolmunni	Blue whiting	<i>Micromesistius poutassou</i>	5,477,955	5.49
Langa	Ling	<i>Molva molva</i>	16	0.00
Makríll	Mackerel	<i>Scomber scombrus</i>	10,874,931	10.90
Norsk-íslensk vorgotsíld	Norwegian-Icelandic spring-spawning herring	<i>Clupea harengus</i>	38,740,305	38.84
Síld	Icelandic summer-spawning herring	<i>Clupea harengus</i>	44,309,365	44.43
Porskur	cod	<i>Gadus morhua</i>	15,295	0.02
Ufsi	Saithe	<i>Pollachius virens</i>	34,653	0.04
Ýsa	Haddock	<i>Melanogrammus aeglefinus</i>	142	0.00
Total			99,732,428	100

Table 10. UoA 2: Catch composition of all fishing trips by Icelandic vessels using purse seines which caught Icelandic summer-spawning herring during the calendar years 2015, 2016 and 2019 (the last three years in which the gear was used, comprising 18 trips in total). Data provided by the Directorate of Fisheries. The target species is highlighted in orange and species making up more than 1% of the catch are highlighted in pink.

Species/Stock			Average Annual Landings	
Íslenska	English	Scientific name	kg	%
Karfi / Gullkarfi	Golden redfish	<i>Sebastes norvegicus</i>	1,213	0.02
Kolmunni	Blue whiting	<i>Micromesistius poutassou</i>	6,523	0.13
Norsk-íslensk vorgotsíld	Norwegian-Icelandic spring-spawning herring	<i>Clupea harengus</i>	33,662	0.68
Síld	Icelandic summer-spawning herring	<i>Clupea harengus</i>	4,926,329	99.17
Ufsi	Saithe	<i>Pollachius virens</i>	65	0.00
Total			4,967,792	100

3.4.3. Primary and secondary species

None of the species landed by the Icelandic pelagic sector are protected under national legislation, CITES, or agreements reached under the Convention on Migratory Species (CMS). There are thus no Endangered, Threatened or Protected species in the herring fishery landings from any of the UoAs. All of the species landed by the fishery are “primary” (i.e. subject to management tools), there are no “secondary” species and all of the species landed are also “in scope” (see definitions of catch components in section 3.4.1).

The status of each non-target species that has been reported to be caught by the Icelandic summer-spawning herring fishery is summarised for UoA 1 in Table 11 and for UoA 2 in Table 12 below. Additional information about these species is provided in the rationale for the relevant Performance Indicator. Other species that have empirically derived stock assessments and reference points occur in the UoA catches, namely ling and

haddock in UoA 1 and saithe in UoA 2, but in negligible quantities - in each UoA these species comprise $\leq 0.001\%$ of the total UoA catch. Given the negligible quantities of these species none have been defined as minor primary species for the UoAs. Similarly, deep-sea redfish occur in the catches of UoA 1 but in negligible quantities ($< 0.001\%$) and so are not defined as a minor secondary species.

In both UoAs the catch is less than 400,000 tonnes and is therefore not 'exceptionally large' in terms of SA3.4.4 of the MSC FCR v2.0 and consequently the species which do not meet the designated weight thresholds of 5% and 2% as defined in SA3.4.2.1 and SA3.4.2.2 have not been elevated to 'main' status.

Table 11. Classification of non-target species caught by UoA 1 into "primary" and "secondary" species and "main" or "minor" catch components, based on stock assessments (cited where available) and catch composition (from Table 9).

Species			Reference	Status
Icelandic name	English	Scientific name		
“Primary” species (i.e. subject to management tools & measures designed to achieve stock objectives reflected in either target or limit reference points). These species are assessed under Performance Indicators 2.1.1, 2.1.2 & 2.1.3.				
Norsk-Íslensk vorgotssíld	Norwegian-Icelandic spring spawning herring	<i>Clupea harengus</i>	(ICES, 2019i, MFRI 2019q)	Main
Makríll	Mackerel	<i>Scomber scombrus</i>	(ICES 2019b, MFRI 2019f)	Main
Kolmunni	Blue whiting	<i>Micromesistius poutassou</i>	(ICES 2019a, MFRI 2019d)	Main
Gulllax/Stóri gulllax	Greater silver smelt	<i>Argentina silus</i>	(ICES, 2019c, MFRI, 2020b)	Minor
Karfi / Gullkarfi	Golden redfish	<i>Sebastes norvegicus</i>	(ICES, 2020a, MFRI 2020c)	Minor
Ufsi	Saithe	<i>Pollachius virens</i>	(MFRI 2020d)	Minor
Porskur	cod	<i>Gadus morhua</i>	(MFRI 2020e)	Minor
Grálúða/Svarta spraka	Greenland halibut	<i>Reinhardtius hippoglossoides</i>	(MFRI 2020f)	Minor
“Secondary species” (i.e. not “primary”, within “scope” and not “ETP”). These species are assessed under Performance Indicators 2.2.1, 2.2.2 & 2.2.3.				
No secondary species identified				

Table 12. Classification of non-target species caught by UoA 2 into "primary" and "secondary" species and "main" or "minor" catch components, based on stock assessments (cited where available) and catch composition (from Table 10).

Species			Reference	Status
Icelandic name	English	Scientific name		
"Primary" species (i.e. subject to management tools & measures designed to achieve stock objectives reflected in either target or limit reference points). These species are assessed under Performance Indicators 2.1.1, 2.1.2 & 2.1.3.				
Norsk-Íslensk vorgotssíld	Norwegian-Icelandic spring spawning herring	<i>Clupea harengus</i>	(MFRI 2019q)	Minor
Kolmunni	Blue whiting	<i>Micromesistius poutassou</i>	(ICES 2019a, MFRI 2019d)	Minor
Karfi / Gullkarfi	Golden redfish	<i>Sebastes norvegicus</i>	(ICES, 2020a, MFRI 2020c)	Minor
"Secondary species" (i.e. not "primary", within "scope" and not "ETP"). These species are assessed under Performance Indicators 2.2.1, 2.2.2 & 2.2.3.				
No secondary species identified				

3.4.4. Endangered, Threatened and Protected (ETP) species

The MSC definition of Endangered, Threatened & Protected species is set out in section 3.4.1 of this report. This section of the report considers the information that is available about non-target species that may fall into these categories, and then whether or not there is any evidence of direct interactions with ETP species for this fishery.

Information sources

In addition to the landings data described above (Table 9 and Table 10), information about interactions between Icelandic fisheries and “out of scope” species is available from MFRI observer reports that have been collated by MFRI and submitted to both the ICES Working Group on Bycatch (WGBYC) and also to the North Atlantic Marine Mammal Commission (NAMMCO) (Sigurdsson 2017, ICES 2018i, ICES, 2019p, Granquist *et al.* 2019).

Although the objectives of ICES and NAMMCO are different (both organisations seek to advise on the conservation status of these species; in addition, NAMMCO provides advice on sustainable removals and responsible hunting methods of marine mammals), both ICES and NAMMCO are focussed on the need to ensure that information on fishery-related mortality of cetaceans is accurate and that mitigation measures are introduced to minimise impacts (ICES, 2018a, NAMMCO, 2018).

In addition to the data provided by MFRI and the Directorate of Fisheries, there is also a requirement for fishing vessels to record catches of ETP species in their catch logbook returns. Both MFRI and the client report that no catches have been noted.

Data on non-commercial by-catch including marine mammals and seabirds and Icelandic gears has not been collected systematically until recently. There have been issues noted with regard to reliable recording of by-catch by inspectors and under-reporting of by-catch by fishers in the lumpsucker gillnet fishery. As of February 2014, stricter rules were implemented regarding recording marine mammal by-catch in vessel logbooks (catch of marine mammals and seabirds including the number and species of the animal in question must be reported)(Regulation No.126, 2014)⁵ and also supervision of inspectors. A smartphone app has been developed by the Directorate of Fisheries, which is intended to make both the reporting and identification of bycatch easier for those vessels currently using paper logbooks (not relevant to the vessels in the fisheries under assessment which all use electronic logbooks). The Icelandic Ministry of Industries and Innovation has recently created a Committee for Consultation on Responsible Management of Living Marine Resources which has a specific remit to address bycatch in the gillnet fisheries for lumpfish and cod and in particular data recording and reliability and to propose management measures to reduce bycatch (see Figure 10).

⁵ Regulation No. 126/2014. <https://www.reglugerd.is/reglugerdir/eftir-raduneytum/sjavarutvegsraduneyti/nr/18967>

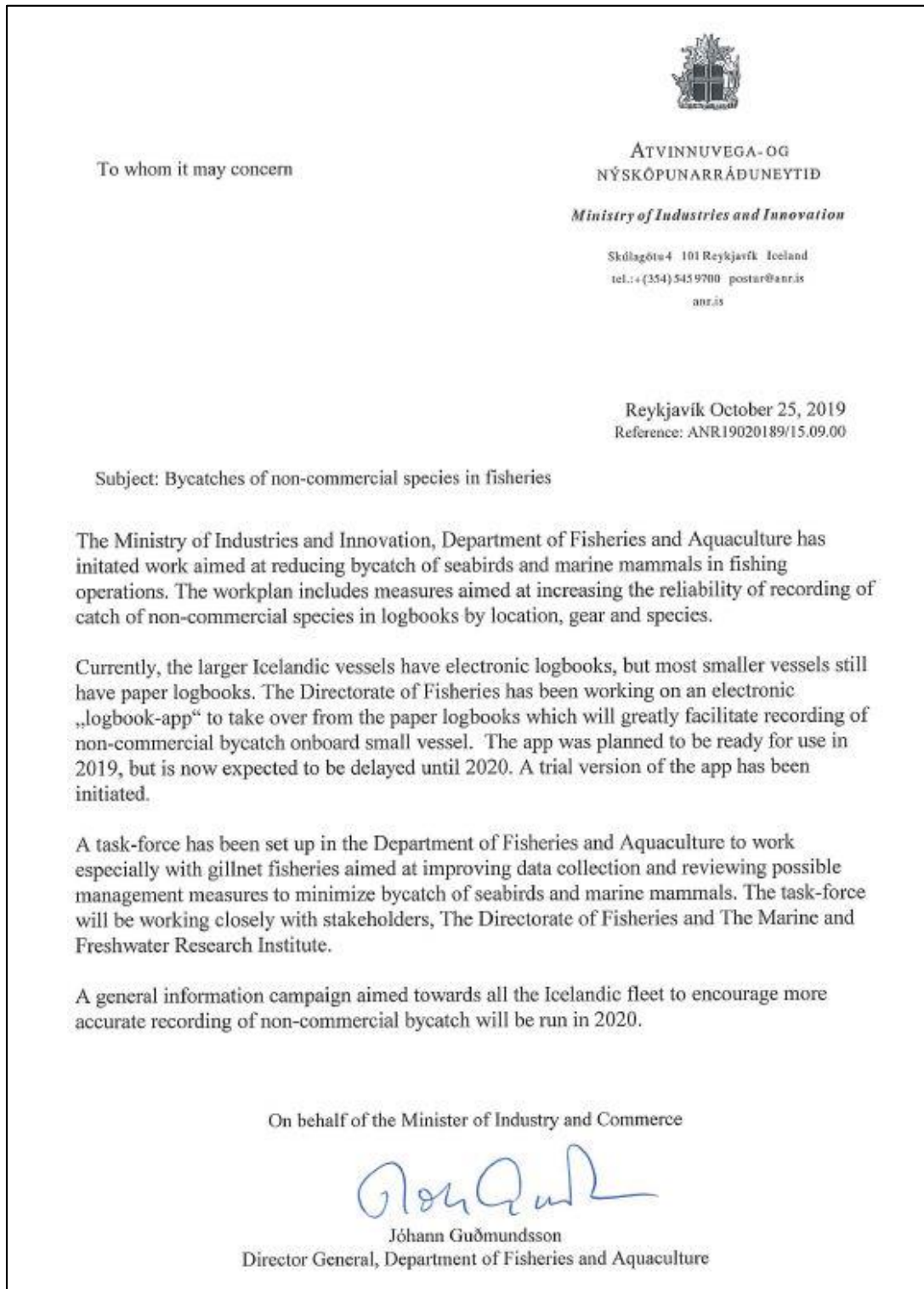


Figure 10. Letter from Ministry of Industries and Innovation, Department of Fisheries and Aquaculture on work to improve the reliability of recording of non-commercial bycatch and to review potential management measures.

However, all of the available information from the landings records, logbook records submitted by the industry and observer records submitted by MFRI to ICES and NAMMCO indicates that interactions between Icelandic pelagic trawl or purse seine vessels and “out of scope” species are negligible. The only species which are impacted by the fishery appear to be those recorded by the Directorate of Fisheries in the landings database.

Information is available about the occurrence of “out of scope” species in the Icelandic ecoregion from the most recent review published by ICES (ICES, 2019q). ICES report that 22 species of seabirds, 6 pinniped species and 23 species of cetaceans are known to occur in the area. Some of these species are declining in abundance (notably fish-eating birds such as Brünnich’s guillemot / thick billed Murre *Uria lomvia*, kittiwakes (*Rissa* spp) and puffins *Fratercula artica*; and also, minke whales *Balaenoptera acutorostrata*). These declines are attributed to reduced abundance of prey species (capelin and sandeels). Elsewhere in the NE Atlantic it has been noted that the herring fishery may assist foraging by Orcas (Similä, 2005).

The following sections of the report considers whether or not any of the species that are known to interact with the fishery should be considered as “ETP species”, by considering the MSC criteria for determining ETP species in turn.

National ETP legislation

The Icelandic summer-spawning herring fishery takes place entirely within the Icelandic EEZ (Figure 3). Consequently, only Icelandic ETP legislation needs to be considered.

Iceland is not an EU Member State, and consequently the list of “prohibited species” set out in the annual TAC Regulation (currently Article 14 of Regulation 124/2019 (EU, 2019)) does not apply to Icelandic vessels or to the fisheries under assessment as it would within the EU EEZ.

Iceland

The Ministry for the Environment and Natural Resources website provides a summary of the Icelandic Government’s commitment to biodiversity (Government of Iceland 2019). The Icelandic Government signed the UN Convention on Biological Diversity in 1992 and it entered into force in 1994. The Government of Iceland adopted a biological diversity strategy in 2008 and a corresponding action plan in 2010.

Statutory protection of species and habitats is provided by the Nature Conservation Act (Government of Iceland, 1999). This Act applies to all of the territory of Iceland, the EEZ and the continental shelf. It enables the Minister for the Environment to protect species and their supporting habitats & ecosystems (at §53). The protection and hunting of wild birds and wild mammals in Iceland is regulated by separate legislation (Government of Iceland, 1994) (as amended), which defines “wild animals” as “*allir fuglar og spendýr, önnur en selir, hvalir, gæludýr og bústofn*” [all birds and mammals other than seals, whales, pets and livestock].

Certain vulnerable fish species are protected in law namely Atlantic halibut *Hippoglossus hippoglossus* under Regulation No. 470, 2012⁶, and porbeagle *Lamna nasus*, basking shark *Cetorhinus maximus* and spurdog *Squalus acanthias* under Regulation No. 456, 2017⁷. These must be recorded in logbooks and landed under the VS catch provisions set out in Act No. 37 1992^{8, 9}; unless they are captured alive in which case they must be released. No other marine species have been protected under Icelandic domestic legislation as ‘Endangered, Threatened or Protected’. Hunting for seals is permitted in Iceland, and whaling is also permitted (for fin and minke whales within the EEZ), subject to strict controls applied by the Government (ICES, 2019k).

None of these species has appeared in the catch records of the Icelandic pelagic fleet catching Icelandic summer-spawning herring between 2015 and 2019 (Table 9 and Table 10).

⁶ Regulation 470/2012: <https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/18302>

⁷ Regulation 456/2017: <https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/0456-2017>

⁸ For further information see Fiskistofa website, ‘Flexibility in the catch system’:

http://www.fiskistofa.is/fiskveidistjorn/stjornfiskveida/#Sveigjanleiki_i_aflamarkskerfinu

⁹ Act 37/1992 on a Special Fee for Illegal Marine Catch. <https://www.althingi.is/lagas/149a/1992037.html>

CITES Appendix 1

The Convention on International Trade in Endangered Species of Wild Fauna (CITES) entered into force in Iceland on 2nd April 2000, subject to reservations for some Appendix I species (rorquals including minke, blue, fin and humpback whales; also, sperm whales & bottle nosed whales) (CITES, 2019a). This means that Iceland is not bound by CITES provisions on trade for these species.

The species recorded in landings from the Icelandic summer-spawning herring fisheries (Table 9 and Table 10) have been cross-referenced with CITES Appendix I (CITES 2019b) using the Species+ database (Species+ 2019). None of the species landed from the herring fishery are listed in Appendix I.

It is noted that killer whale (*Orcinus orca*) are listed in CITES Appendix II and that Iceland has made a reservation to this listing which means that the relevant provisions do not apply within Iceland. Killer whale in Iceland mainly prey upon herring and mackerel. There are on-going studies documenting this association (Sammara *et al.*, 2017a,b, cited in NAMMCO, 2017). Fishermen report that killer whale are generally not seen during trawling for herring. They are frequently observed during the purse seine fishery but fishermen report that interactions with the gear are rare. Adult killer whales are generally able to make their own way out of the net but could cause significant damage if they are caught and need to be cut free. If it looks likely that a killer whale will be caught the gear is released to prevent damage to it.

Convention on Migratory Species

The Convention on Migratory Species (CMS) is an environmental treaty drawn up under the UN Environment Programme. It provides a global platform for the conservation and sustainable use of migratory animals and their habitats. Details of the CMS, its signatories and the agreements that have been drawn up under the convention are available on the CMS website (CMS, 2018).

Iceland is not a party to CMS, but is a party to the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) which is a CMS instrument (CMS, 2019). AEWA covers 255 species of birds that are ecologically dependent on wetlands for at least part of their annual cycle (including many species of divers, grebes, cormorants, waders, gulls, terns, auks and even the South African penguin).

There is no evidence of any interaction between the UoAs and any of the species listed in AEWA¹⁰. By-catch of seabirds in the fisheries under assessment are considered very low. Although a number of bird species are recorded as incidental catch in Icelandic fishing gears, this recorded catch has been confined to gillnets, demersal trawls and long-lines rather than the gears used in the fisheries under assessment (Pálsson *et al.*, 2015; Icelandic reporting to ICES WGBYC, see ICES, 2019d and Table 1.a in ICES, 2018a).

IUCN Red List species

The Icelandic Institute for Natural History has compiled Red Lists for the biota of Iceland to identify species that are threatened or at risk of extinction. The latest Red Lists were published in 2018 for vascular plants, birds and mammals¹¹. Although based upon the IUCN criteria these lists do not constitute the IUCN Red List, neither have they recognised in national legislation, and so are not considered further as ETP.

One of the species listed in the Directorate of Fisheries landings data from the Icelandic summer-spawning fisheries, namely golden redfish, is classified as “vulnerable” (VU) on the IUCN Redlist (Table 13). However, this is not an ‘out of scope’ species (amphibians, reptiles, birds and mammals) as specified in FCR v2.0, SA3.1.5.3 and as such cannot be classified as ETP under this section of the requirements. As shown in Table 9 and Table 10 the landings of golden redfish by the UoAs are, in any case, negligible.

¹⁰ Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA). Species list. <https://www.unep-aewa.org/en/species>

¹¹ Icelandic Institute of Natural History. Red Lists. <https://en.ni.is/resources/publications/red-lists>

Table 13. IUCN Redlist species classified as Vulnerable, Endangered or Critically Endangered in Icelandic pelagic fisheries.

Species	IUCN Redlist classification	Scope of Assessment	Reference
Golden redfish <i>Sebastes norvegicus</i>	VU	Europe	Lorance <i>et al.</i> , 2015

ETP Conclusion

Based upon the information presented above, there are no significant ETP species interactions with Icelandic pelagic fishing vessels catching Icelandic summer spawning herring.

3.4.5. Habitats

Definitions

The MSC FCR v2.0 requires that the interaction of the fishery is assessed with regard to two different types of habitat:-

- **Commonly encountered marine habitats** are defined by the MSC as “...a habitat that regularly comes into contact with the gear used by the UoA...” (FCR at SA3.13.3.1)
- **Vulnerable marine ecosystems (VMEs)** “...shall be defined as is done in paragraph 42 subparagraphs (i)-(v) of the FAO Guidelines...” (i.e., that they have uniqueness or rarity, functional significance, fragility, life history traits that make recovery difficult, and/or structural complexity) (FCR at SA3.13.3.2 & GSA3.13.3.2).

The purpose of this section of the report is to identify which marine habitats that occur in the Units of Assessment could be impacted by the fishery, and to briefly summarise the information available about these habitats and the potential impacts of the fishery on them.

Marine habitats and the UoA

The Icelandic pelagic fleet use mainly pelagic trawls and occasionally purse seine nets. Herring are a pelagic fish which live in the upper part of the water column. The nets used in the fishery are designed only for use in the water column, and not for contact with the seabed.

The herring fishery is confined to the “epipelagic habitat” – the uppermost 200 m of the water column, often called the “sunlit zone”, where most of the ocean’s primary production takes place. The extent of this and other pelagic habitats is shown in Figure 11.

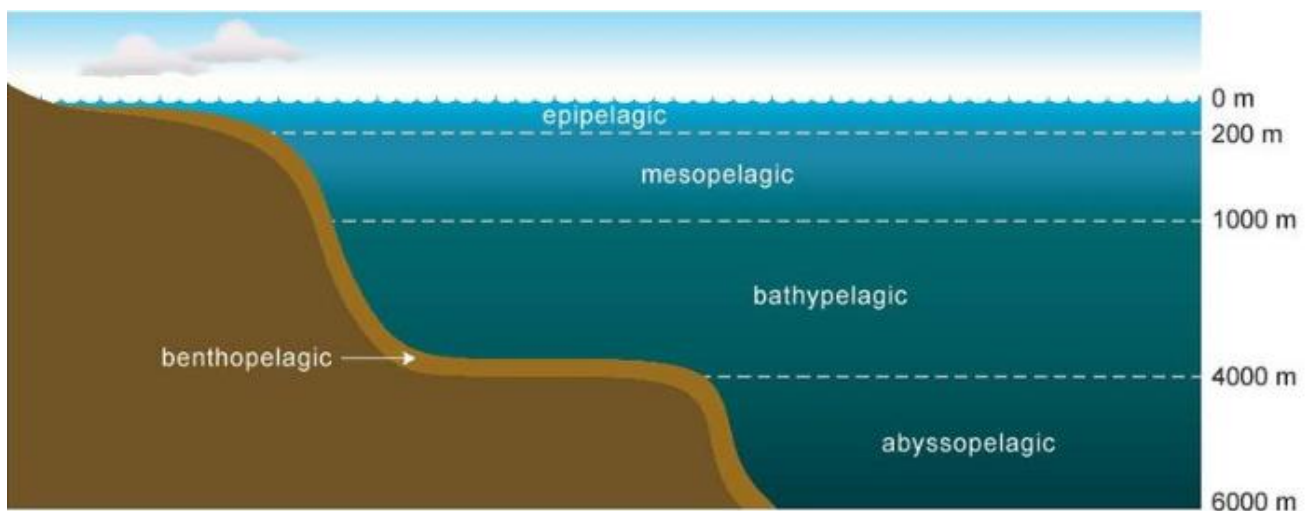


Figure 11. Definitions of pelagic habitats. The uppermost 200 m are the “epipelagic zone” (source: Game, 2008).

Landings data from the Icelandic pelagic fleet and the herring fishery in particular shows that demersal fish species are caught in extremely low volumes (see Table 9 and Table 10), which supports the view that interactions with benthic habitats are very rare. Gear loss is reported to be very rare.

On this basis, the “commonly encountered marine habitat” for the Icelandic herring fishery is the epipelagic zone of the water column. The key features of this habitat are the different water bodies (warm Atlantic seawater and colder Arctic waters (see Figure 15)) which mix together in the NE Atlantic and create a thriving ecosystem (see section 3.4.6 of this report).

Vulnerable marine ecosystems (VMEs)

For the purposes of an MSC assessment, “Vulnerable Marine Ecosystems” (VMEs) are habitats that meet the MSC’s definition of a VME (SA3.13.3.2; GSA 3.13.3.2 and reproduced above) that also have been designated by a responsible agency (see MSC Interpretations number 8 “Designation of vulnerable marine ecosystems” and 9 “Designation of vulnerable marine ecosystems and closed areas” which are reproduced in full in section 7.1). The “responsible agency” for the UoAs in Icelandic waters is the Government of Iceland. A review of the status of VMEs in each jurisdiction is presented below.

Icelandic EEZ

Statutory protection of species and habitats is provided by the Nature Conservation Act (Government of Iceland 1999). The location of benthic habitats is known within the Icelandic EEZ (Figure 12) and Marine Protected Areas have been designated to protect rare or vulnerable habitats in Icelandic, Faroese and International waters (Figure 13).

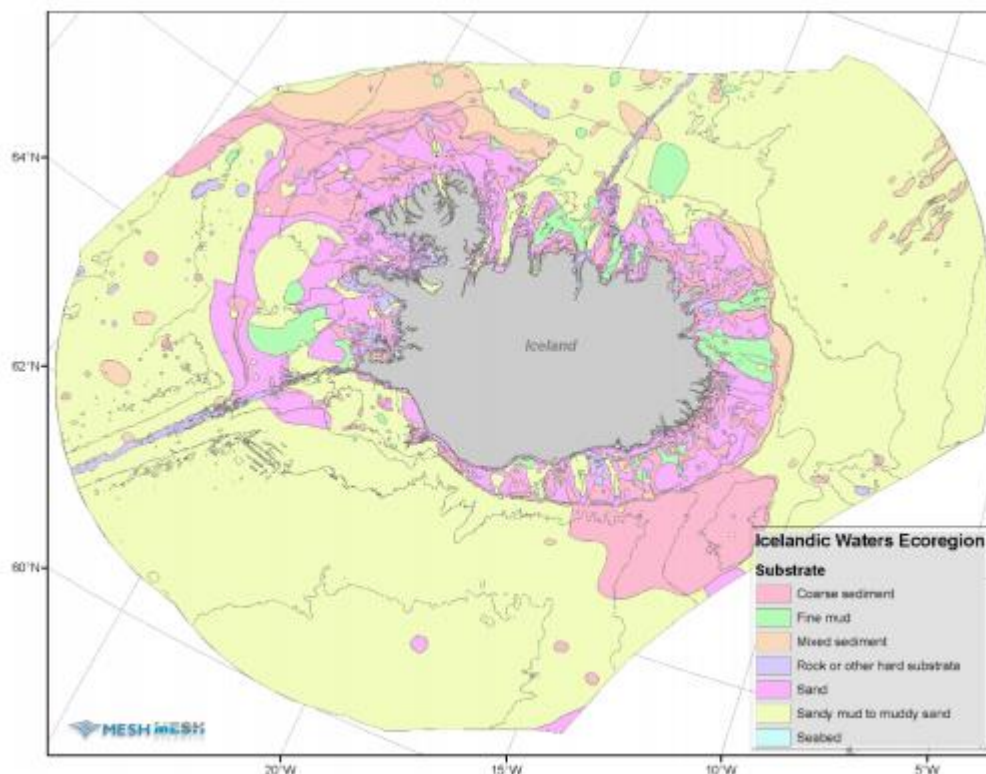


Figure 12. Map of benthic marine habitats around Iceland (source: ICES, 2018j).

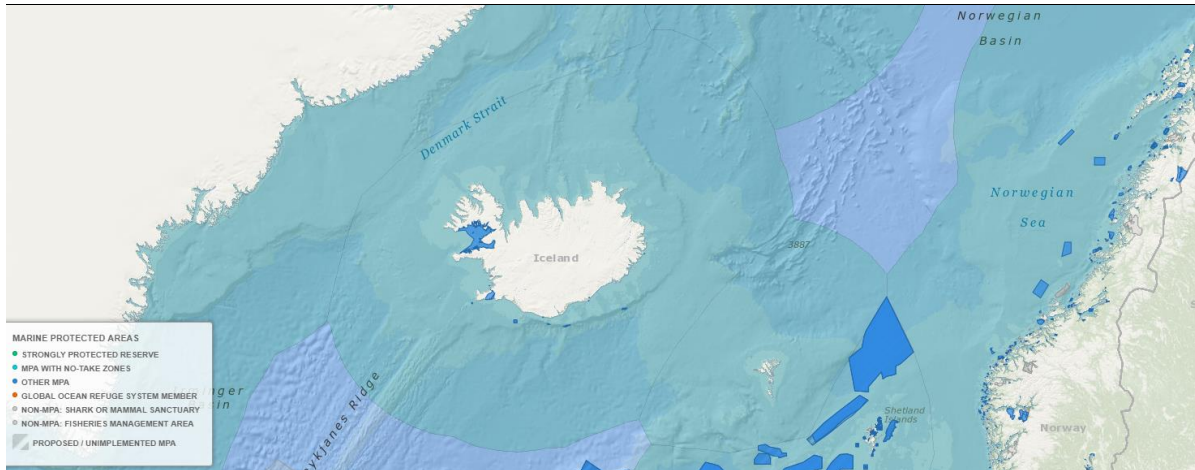


Figure 13. Map of MPAs in the UoA areas (source: Atlas of Marine Protection, 2019).

The impacts of fishing on marine VME habitats in NE Atlantic has recently been reviewed by ICES. This review considered that only benthic fishing gear was likely to cause significant harm to VMEs (ICES 2018m, 2018l). This view is consistent with other reviews of the impacts of fishing gear on marine habitats (Jennings and Kaiser 1998a, ICES 2017c, Hiddink *et al.* 2017).

3.4.6. Ecosystems

To score the ecosystem PIs, it is useful (but not an explicit MSC requirement) to define the ecosystem within which the fishery operates. The MSC does, though, require the ‘key ecosystem elements’ to be defined, and describes them as:-

“the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the UoA; they are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity”

FCR v2.0 at SA3.16.3

The purpose of this section of the report is to identify these key ecosystem elements within the UoA and to review the information available about the potential interactions of the fishery with these elements.

Iceland is located in the North Atlantic, and the fisheries under assessment take place in the Icelandic EEZ (Figure 3). This section of the report therefore provides a brief description of the ecosystem in the NE Atlantic and the characteristics of this ecosystem that are relevant to the UoAs being considered.

Up-to-date reviews of the marine environment in the NE Atlantic are provided by ICES. The area where the ISF Norwegian and Icelandic summer-spawning herring fishery (Icelandic summer-spawning herring UoAs) takes place spans the Icelandic waters ICES ecoregion (Figure 14). The text presented here is based on the most recent ICES reviews of these ecoregions (ICES 2014, 2018j, 2018n), and other relevant sources of information.

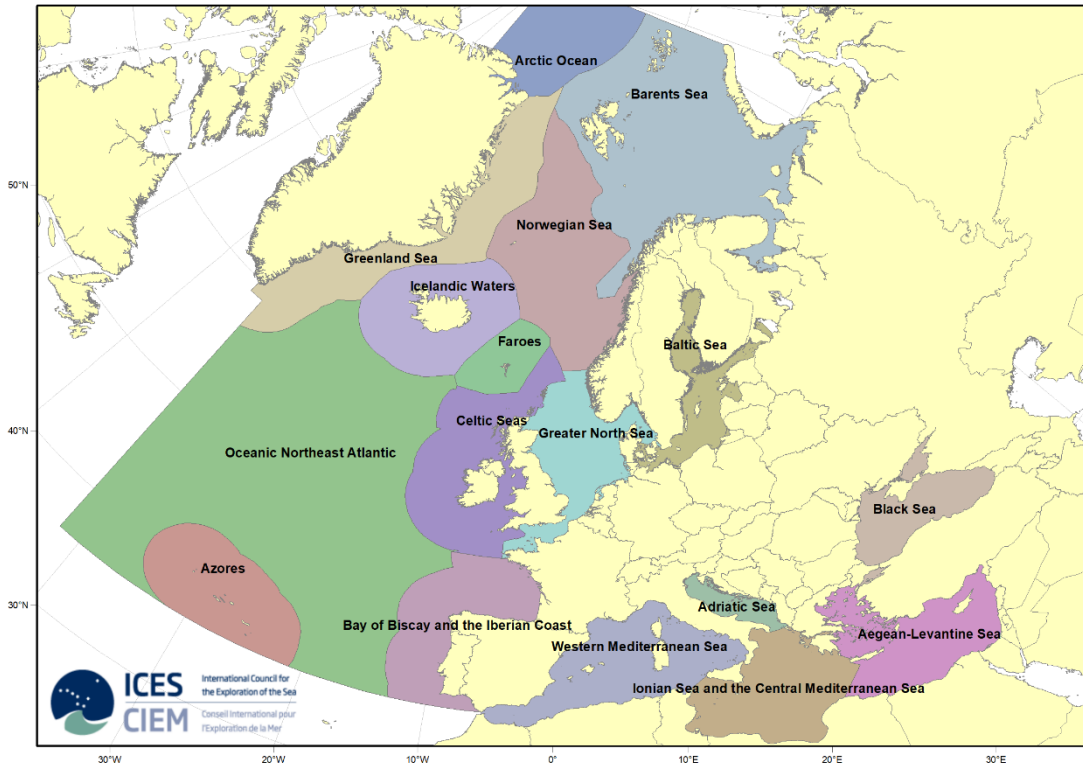


Figure 14. Map of ICES Ecoregions (source: ICES, 2019)

The Icelandic Waters ecoregion covers the shelf and surrounding waters inside the Icelandic EEZ. The region is located at the junction of the Mid-Atlantic Ridge and the Greenland–Scotland Ridge just south of the Arctic Circle. The ocean and coastal shelves are heavily influenced by oceanic inputs.

In the Icelandic Waters ecoregion, water masses of different origin mix (Figure 15). Relatively warm and saline Atlantic water enters the area, both in the southwest as a branch of the Irminger Current and in the east from the Norwegian Sea and over the Jan Mayen Ridge. The East Greenland Current carries cold, low salinity water from the Greenland Sea in the north into the Icelandic Waters ecoregion. Icelandic waters are characterised by strong horizontal and vertical temperature gradients (fronts) to the north-east and south-west of Iceland where warm Atlantic waters flowing north meet colder water flowing south (Valdimarsson and Malmberg 1999).

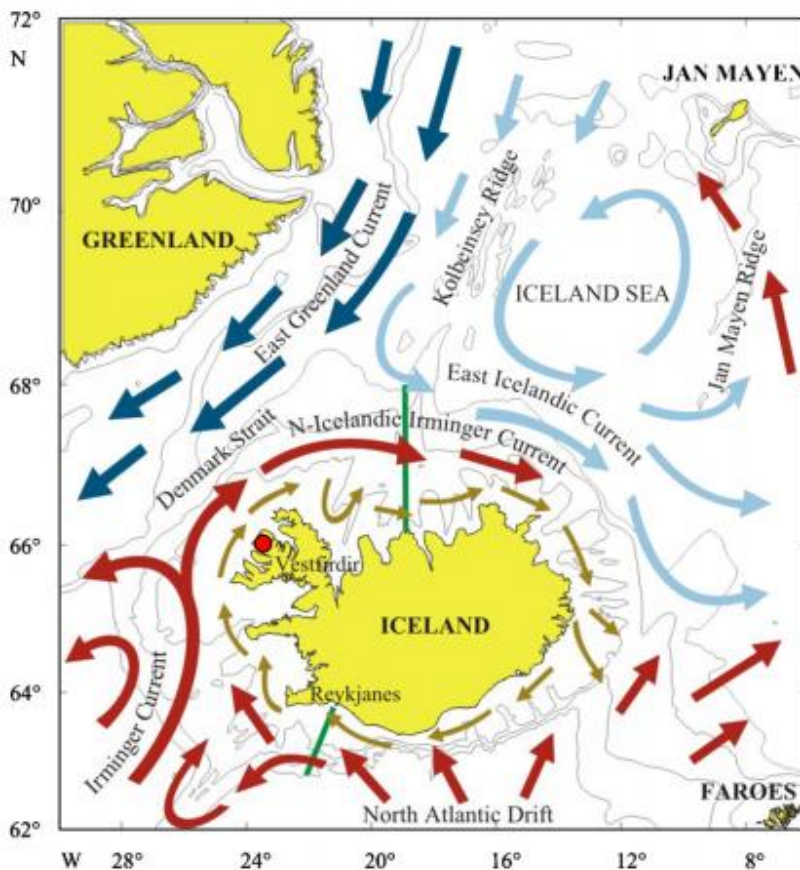


Figure 15. Ocean currents around Iceland (red = warm & saline Atlantic water; blue = cold & low salinity water; green = Arctic water; yellow = Icelandic coastal water) (source: Astthorsson *et al.* 2007)

Work is being carried out to investigate trophic interactions in the pelagic ecosystem around Iceland and in the Norwegian Sea (Petursdottir and Gislason 2009, Skaret and Pitcher 2016, Ribeiro *et al.* 2018). Ecosystem models indicate that the Icelandic waters have a high primary production which supports a large zooplankton population (principally Calanoid copepods) which are in turn a food source for the small pelagic fish (capelin, blue whiting, herring and mackerel) that are abundant in the area. These studies have enabled the functional groups in the ecosystems to be identified as well as the trophic interactions between them (Figure 8). The Faroes shelf ecosystem has also been studied in detail and has very similar characteristics (Gaard *et al.* 2002).

The relative strength of the currents around Iceland and in the Norwegian and Barents seas to the north and west is changing in response to climate change. In general the influence of the warmer Atlantic waters is extending northwards, with a corresponding change in the distribution of phytoplankton, zooplankton and fish species (Astthorsson *et al.* 2007, Carscadden *et al.* 2013, Drinkwater *et al.* 2013, Glen Harrison *et al.* 2013, Head *et al.* 2013). The heat content of Atlantic water in the Norwegian Sea has been above the long-term mean since 2000.

ICES report that in Icelandic waters and in the Norwegian Sea there has been a general decline in the abundance of cetaceans and many seabird species; these changes are thought to be linked to the changes in the ecosystem and both the abundance and location of species such as sandeels and capelin that are important food sources for higher predators (ICES 2018j, 2018n).

A key feature of the ecosystem in Icelandic waters since 2008 has been the decline in the biomass of Icelandic summer-spawning herring caused by the *Ichthyophonus* infection which has increased natural mortality of this stock (ICES 2018j, 2018o).

3.5. Principle Three: Management System Background

Principle 3 of the Marine Stewardship Council standard states that:

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

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

3.5.1. Jurisdiction

The Icelandic summer-spawning herring fishery operates within Icelandic waters entirely under Icelandic jurisdiction.

3.5.2. The Management Framework

Four public institutions are at the heart of Icelandic fisheries management: the MFRI, the Directorate of Fisheries (DoF) and the Ministry of Industries and Innovation (MII) and the Coast Guard also has a role in monitoring fishing activities, gears, fishing locations and discarding.

The MFRI is responsible for biological research and stock assessments and provides advice on Total Allowable Catches (TACs) to the Ministry. Its stock assessments are based on data from extensive research fishing as well as data on catches, length and age composition and sexual maturity of the fish. The MFRI presents its advice at the end of May/beginning of June each year. The MFRI's stock assessments and advice for many important species are reviewed each year by ICES.

There is extensive cooperation between MFRI and marine research institutions in other Coastal States in the North Atlantic on pelagic species, including Icelandic summer-spawning herring.

The MFRI plays an important role in communicating scientific advice to the fishing industry. This communication takes place through the web, newspapers and meetings with people from the industry, including public meetings.

Most of the funding of the MFRI comes from the state budget, but the institute also obtains funds from domestic and international research funds, among them the fund “Verkefnasjóður”. This body receives income from the selling of low value catch and bycatch of banned species (e.g. halibut) and from some fines for illegal fishing collected by the Directorate of Fisheries. The estimated funding of MFRI in 2019 amounts to 4,116 million ISK (30 million EUR). Of that sum 82% is estimated to come from the state budget. The number of employees is 197, and it operates two specially equipped research vessels and the government has promised a third vessel (the cost of that vessel is not included in the sum above).

The Ministry of Industries and Innovation (MII) is responsible for the management of fisheries in Iceland as well as for the implementation of fisheries legislation, including the issuing of relevant regulations. The Ministry's duties include general administration, long-term planning and relations with other fisheries institutions at the international level. The Minister is responsible for deciding the annual TAC. Before making the decision the Minister must consider the Marine and Freshwater Research Institute's (MFRI's) advice for the stock. There are plans for developing Harvest Control Rules (HCR) for all important fish stocks in the Icelandic EEZ. There exists today HCRs for important groundfish species like cod and haddock and pelagic species like the Icelandic Summer-Spawning herring and capelin¹².

¹² See <https://www.government.is/news/article/?newsid=cf30e5ad-584f-11e8-9429-005056bc4d74>

The minister is constitutionally responsible to the Althing (Parliament). As fisheries are so important for the economy of Iceland the Althing has a permanent committee on matters related to fisheries and fish processing¹³. This committee discusses all proposed legislation on these matters and can decide to discuss any aspect of the industry or any concern that some people may have. It can require information on relevant matters from the MII and other public institutions serving the fishing industry.

The Directorate of Fisheries (DoF) is entrusted with the day-to-day administration of fisheries. The DoF is responsible for implementing legislation on fisheries management and it collects and publishes numerical data and other information on fisheries. The DoF issues fishing permits to vessels and licenses scales for weighing landings. It keeps records of quota shares and quotas, including all transfers of quotas and quota shares between vessels. It also checks that vessels do not fish in excess of their quotas.

The primary legislative instrument relating to fisheries management in Iceland and the basis for the Individual Transferable Quota (ITQ) system is the Fisheries Management Act 116/2006¹⁴. The Act states (Art. 1) that the authorities should *“contribute to the protection of (exploitable stocks in Icelandic waters) and their economic exploitation and thereby ensure secure employment and settlement in the country”*¹⁵. It supersedes the Fisheries Management Act 1990 and establishes allocation harvest rights and permit requirements for all participating commercial fishing vessels. These permits represent the initial legal requirement without which a vessel may not obtain the quota necessary to fish for Icelandic quota stocks, like herring. Fishing permits are of two types, a general permit that can be used when fishing with any permissible gear (used by vessels fishing for herring) or a hook-and-line permit. The latter is only available to vessels less than 15 gross tonnes and which are only allowed to fish by line and/or by hand¹⁶. A vessel may only hold one type of fishing permit each fishing year. Commercial fishing permits are cancelled if a fishing vessel has not been fishing commercially for 12 months (Article 4).

The Act governing fishing activities within the Icelandic EEZ (Act No. 79/1997)¹⁷ specifies the Icelandic EEZ and prohibits foreign vessels from fishing within Iceland’s EEZ (unless by prior agreement such as the bilateral agreement with the Faroes for Norwegian-Icelandic herring). It sets out the area vessels are permitted to fish within the EEZ according to fishing vessel size and power (Article 5 of Act No. 79/1997). It grants powers to the Minister to limit fishing to prevent localised overfishing of a specific stock or excessive by-catch of non-target species (Article 7) and requires the Minister to take measures to prevent harmful fishing practices and to preserve sensitive areas (Article 9). It requires the MFRI to be notified of harmful fishing, particularly where the proportion of undersized fish in the catch exceeds advised reference levels, grants powers to the MFRI to declare temporary closures and sets out how these should be implemented (Articles 10 and 11). It grants powers to the Minister to set rules on the minimum size of marine animals which can be caught (Article 14) and sets out penalties for violation of the provisions of the Act (Articles 15-17) which include the power to confiscate fishing gear and catch in the case of major or repeated violations. The Act stipulates that fines assessed in accordance with the Act as well as the value of any confiscated catch and fishing gear, shall accrue to the Icelandic Coast Guard Fund.

Control of discarding of fish is provided for by the Treatment of Commercial Marine Stocks Act No. 57 1996, which prohibits discarding and fishing without sufficient quota. The Act requires the Directorate to monitor and publish information on catches of the fleet (Articles 2-3) and stipulates that fish caught within the Icelandic EEZ, or during trips where a proportion of fishing take place within the EEZ, must be landed to an officially recognised port (Article 5).

¹³ In 2009 its remit was extended to agriculture and its name was changed to the Althing’s Fisheries and Agriculture Committee.

¹⁴ <https://www.althingi.is/lagas/149a/2006116.html>

¹⁵ No. 116/2006, accessible (in Icelandic) at <http://www.atvinnuvegaraduneyti.is/media/Skvrslur/Stjorn-fiskveida-2010-endanlegt.pdf>. An English translation is accessible at <http://extwprlegs1.fao.org/docs/texts/ice3455.doc>.

¹⁶ <http://www.fiskistofa.is/fiskveidistjorn/stjornfiskveida/#Krokaafllamarksbatar>

¹⁷ extwprlegs1.fao.org/docs/texts/ice89476.doc

Within two hours of landing catches are officially separated, weighed and recorded by accredited weighing stations and reported against the appropriate quota allocation following provisions outlined in the Act No 57, 1996 concerning the Treatment of Commercial Stocks, and Regulation No. 745/2016 on Weighing and Recording of Marine Resources¹⁸. The Fishery Management Act also makes provisions for processing at sea, weighing by auction houses and the transfer of quotas to cover landings.

There is a degree of flexibility in the quota management system so that the species composition of catches may be matched with the quota portfolio available to individual fishing vessels. There are a variety of provisions in place to facilitate this flexibility and reduce any potential incentives relating to the discarding of fish:

- A vessel can exceed its allocation for each demersal species, herring, deepwater shrimp and Nephrops in a fishing season by up to, but not exceeding, 5%; the excess is then deducted from that vessel's allocation for that species in the following fishing season. Additionally, a decision may be taken to postpone fishing up to 15% of a vessel's quota for each demersal species, herring, deepwater shrimp and Nephrops in a fishing season and transfer the balance to the following season.
- It is also possible to make some limited quota transfer between different species. Interspecies transfers of quota are based on 'cod-equivalents' a nominal value based around the market value of cod which is set annually by the Ministry as set out in Article 19 of Act No. 116/2006¹⁹. Note that it is not possible to convert quota of other species for cod quota (e.g. cod quota may be exchanged for herring quota, but herring quota may not be exchanged for cod).
- Vessels may also decide not to include part of the vessels catch in its catch quota. This is limited to no more than 0.5% of the vessel's pelagic catch and 5% of other marine catches per fishing year. Further this catch, known as 'VS catch', must be kept separate from the rest of the vessel's catch and weighed and recorded separately; it must be sold at an approved auction and the bulk of the proceedings of the sale must go to the Fisheries Commission Project Fund (established by Act No. 37/1992), 20% going to the vessel (Article 11, Act No. 116/1996).²⁰ The maximum of 20% return on VS catches means that there are limited incentives to land it; however, having the VS catch provisions within the fisheries management system allows the flexibility for vessels to land small catches which are outside their specific quota, preventing discards, improving the treatment of the fishery resource and promoting responsible fishing practices.

3.5.3. Decision-making and Consultation Processes

In Iceland, the institutions, their roles and interactions are clearly defined within the three core areas of resource management: (1) The development of the knowledge base, (2) preparation and implementation of regulations, and (3) the enforcing of the regulations. The interactions between the MII, the DoF, the Coast Guard and the MFRI function well. The role of each institution is well defined, with the Ministry taking political responsibility for decisions, and the Directorate performing the technical work at the behest of the Ministry. Decision-making procedures are well established and allow for expeditious and effective interactions. There is an established, tested and proven annual decision-making process, which ultimately results in the setting of regulations for the following year. The compliance with regulations is subject to a rigorous and efficient enforcement system.

There is legislation in Iceland ("Upplýsingalög" or Freedom of Information Act) which requires ministers and public institutions to reveal existing information. Members of the Althing can obtain detailed information from the Ministry and public institutions by putting questions to the appropriate minister in the Althing.

¹⁸ <https://www.stjornartidindi.is/Advert.aspx?RecordID=884be309-64a5-4367-9e4d-f5e7216b6f40>

¹⁹ <http://www.fiskistofa.is/fiskveidistjorn/stjornfiskveida/thorskigildisstudlar/>

²⁰ http://www.fiskistofa.is/fiskveidistjorn/stjornfiskveida/#Sveigjanleiki_i_aflamarkskerfinu

Before making decisions, the minister consults extensively with stakeholder organisations including Fisheries Iceland (Samtök fyrirtækja í sjávarútvegi) where most of owners of fishing firms and processors in Iceland are organized, the National Association of Small Boat Owners (NASBO, Landssamband smábátæigenda), the Federation of Captains and Mates (Farmanna- og fiskimannasamband Íslands, FFSÍ), the Icelandic Union of Marine Engineers and Metal Technicians (Félag vélstjóra og málmtæknimanna, VM) and the Federation of Seamen (Sjómannasamband Íslands) as well as organisations of those working in fish processing (in Iceland both fishing and fish processing are frequently carried out within the same company). All laws and regulations are published in real time as they come into effect on the Ministry's website.

3.5.4. Monitoring, Control and Enforcement

In Iceland, the Directorate of Fisheries (DoF) has an important role in monitoring, control and enforcement. The DoF licenses fishing vessels, fish processing plants and authorizes harbour scales which are used for weighing all landings of fish. It also monitors the operators of those facilities to ensure that they follow relevant regulations. The DoF gathers information on both catches (including logbook information) from the vessels at sea and information on catches from the authorized harbour scales. This information is sent electronically to the DoF at least once every day and published on the Directorate's website. The website makes available information on the quota positions of every vessel in Iceland, such as its quota allocations for each species and how much it has caught²¹. All trade in quotas and quota shares has to be reported to the DoF.

The DoF is responsible for ensuring that fishers follow regulations on gears, fishing locations and discarding. It also ensures that vessels, provided they are in the quota system, have quotas for the probable catch before leaving harbour. The DoF gets some assistance in monitoring of gear, discarding and fishing locations from the Coast Guard, which also monitors that fishing activities of foreign vessels does not take place inside the Icelandic fisheries zone.

The DoF collects data on fishing and fish catches landed by the Icelandic fleet and monitors compliance with rules on weighing and recording of catches. Other duties include imposing penalties for illegal catches.

The DoF provides supervision on board fishing vessels and in ports of landing, which involves inspecting the composition of catches, fishing equipment and handling methods. The DoF also issues licenses to processing plants and supervises their production. Processors have to meet specific requirements concerning hygiene, equipment and quality control. Approved inspection bodies are responsible for inspection of hygiene, facilities and in-plant monitoring of production, both in processing establishments on land and on board vessels. Accreditation of inspection bodies is required.

The DoF has the right to demand that inspectors are allowed on board fishing vessels as observers. These observers can demand that the vessel goes to a certain fishing location and that certain gear should be used. Requiring repetition of the fishing procedures of the last fishing trip enables inspectors to compare the catches from the two trips. Comparing the catches of different vessels fishing in the same location and using the same gear is also used for monitoring.

A vessel owner who is found to have acted in breach of regulations gets a warning and a fine. Repeated offenses lead to heavy fines, revocation of the vessel's license to fish and possibly to prison sentences. In 2017 the DoF meted out fines to the sum of 21 m.ISK (174,000 EUR)²².

The DoF co-operates with a number of other institutions, including the Icelandic Coast Guard and the Harbour Authorities regarding daily recording of landed catches throughout the country. The Icelandic Coast Guard

²¹ See DoF's website www.fiskistofa.is. Some of the information on this website is also available in English.

²² Directorate of Fisheries' Annual Report 2017

(http://www.fiskistofa.is/media/arsskyrslur/Arsskyrsla_2017.pdf) p. 25.

In 2017 there were 31 cases where offences against regulations led to revocation of fishing licence and 1 offence was sent to the police. (Ibid, p. 24)

monitors fishing activities in Icelandic waters, including surveillance of areas closed for fishing and inspection of mesh sizes and other gear related practices. The Harbour Authorities are responsible for operation of the scales where landings are weighed.

The DoF and the Coast Guard survey and police the fishing of foreign fishing vessels in the Icelandic EEZ and in those cases where landings of catches take place abroad the DoF cooperates with counterparts in the relevant countries for proper weighing of the catch.

All discarding is explicitly banned by Icelandic laws. However, some discarding is known to take place. Discarding in Icelandic fisheries has been estimated on several occasions through co-operative studies by the Marine Research Institute and the DoF. Data collection is mainly related to cod, haddock, saithe (*Pollachius virens*) and golden redfish (*Sebastes marinus*) in demersal trawl fisheries, and plaice (*Pleuronectes platessa*) in the Danish seine fishery. Sampling for other species, such as wolffish, was not sufficient to warrant a satisfactory estimation of discarding. For each species, the discard was estimated by comparing data on length distributions of fish measured at sea and landed catch from the same fishing ground²³. In the most recent report on discarding, published in September 2016²⁴, it is noted that discarding of haddock is low whereas cod has increased in 2015. The discarding in bottom trawl fishing for cod is estimated to be 2.4% of the total catch in 2015, while discarding in long-line fishing for cod is estimated at 1.8%.

The DoF monitors fish processing as well as fishing. All sellers of fish must report the name of the purchaser to whom they sold fish as well as the quantity and price of fish they sold to them. Similarly all purchasers of fish must report the name of their supplier, the quantity they purchased and the price paid. The DoF regularly checks if the output of fish products from a fish processing unit is consistent with the reported input of raw fish. Monitoring of the quota system in Iceland is strengthened by the traceability measures required for exports in a country where over 90% of all fish caught is eventually exported in some form.

Monitoring, Control and Surveillance Information

The Icelandic Coast Guard provided comprehensive information to the Assessment Team on surveillance undertaken and infringements detected. The number of inspections undertaken last year was higher than in recent years (see Figure 16). Air surveillance by the traditional aerial resources (aeroplanes/helicopters) was lower than previous years but in 2019, for the first time a drone was used, and overall surveillance activity was very much higher than in previous years (see Figure 17).

²³ Pálsson *et al.* (2012), Mælingar á brottkasti þorsks og ýsu 2001-2010, Hafrannsóknir No. 160 and Pálsson *et al.* (2013), Mælingar á brottkasti þorsks og ýsu 2011, Hafrannsóknir no. 167, both published by the Marine Research Institute. Both are accessible at <http://www.hafro.is/Bokasafn/Timarit/fjolr.htm>.

²⁴ Sigurdsson *et al.* (2016), Mælingar á brottkasti þorsks og ýsu 2014-2015, Marine and Freshwater Research, September 2016, https://www.hafogvatn.is/static/research/files/hafogvatn2016_003pdf.

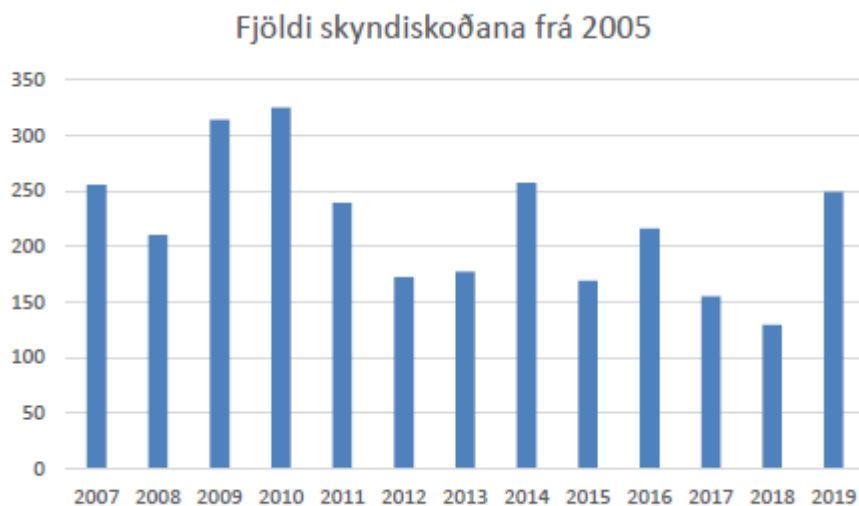


Figure 16. Number of inspections by the Coast Guard from 2005 (source: Coast Guard presentation provided to the assessment team on site visit).

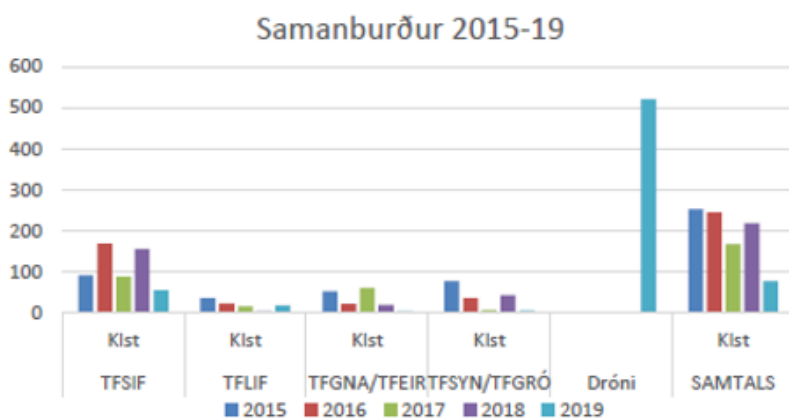


Figure 17. Air surveillance 2015-2019. A drone was used for the first time in 2019. The final column (Samtals) shows total hours air surveillance flown (but does not appear to include drone air time), whilst the other columns show hours by individual aircraft. (source: Coast Guard presentation provided to the assessment team on site visit).

A total of 28 potential infringements were detected which is similar to previous years, most relating to fishing activity VMS and manning (Figure 18).

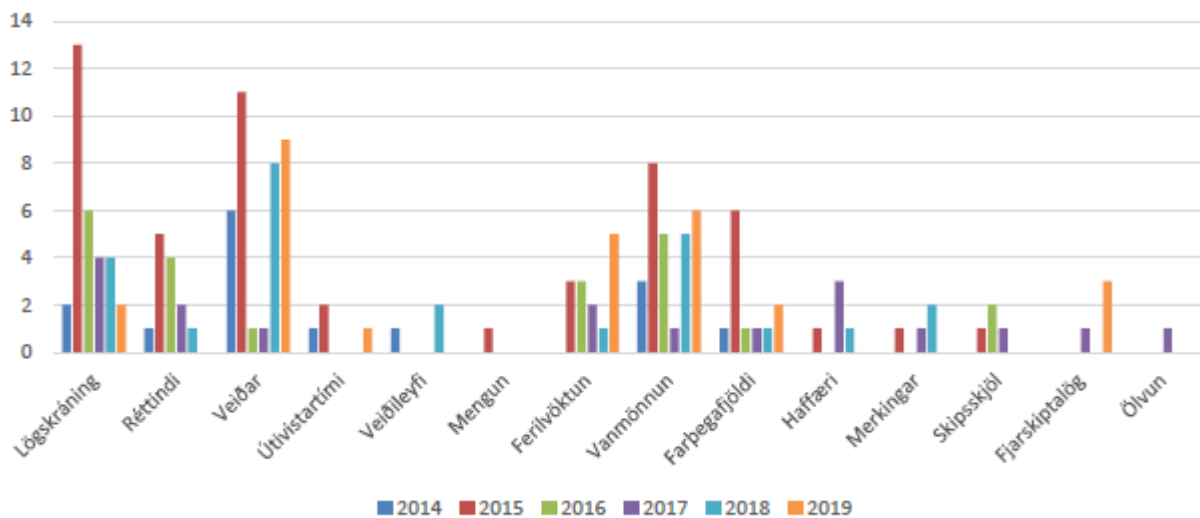


Figure 18. Infringements detected by number during Coast Guard inspections in 2014-2019; Lögskráning – Manning list (registration of crew), Réttindi – License (e.g. Captain’s license), Veiðar – Fishing (e.g. fishing in closed areas, using wrong mesh size), Útivistartími – Time limits (some vessels have restricted time per day for fishing), Veiðileyfi – Fishing permit, Mengun – Pollution, Ferilvöktun – VMS, Vanmönnum – Manning (minimum number of crew required), Farþegafjöldi – Passengers, Haffæri – Sea worthiness, Merkingar – Marking, Skipsskjöl – Ship’s papers, Fjarskiptalög – Communications, Ölvun -intoxication (Source: presentation provided to the assessment team by the Coast Guard).

Surveillance of landings by the Fisheries Directorate was similar in 2018 to previous years (Table 14). In relation to surveillance on board vessels, inspectors attended 27 of the 690 pelagic vessel trips in 2018 which represents 4% of trips (Fiskistofa pers. com.).

Table 14. Surveillance of landings of pelagic fish (source: Fisheries Directorate Annual Report, 2019)²⁵.

	2018			2019		
	No. Landings	No. Monitored	Ratio	No. Landings	No. Monitored	Ratio
Landings of pelagic catches by Icelandic vessels	690	137	19.9%	459	90	20%
Landings of pelagic catches by foreign vessels	191	34	17.8%	47	13	28%
TOTAL	881	171	19.4%	506	103	20%

The Fisheries Directorate detected over 1800 potential violations of fisheries laws and regulations in 2018. The majority of these (1,162), relating to fishing in excess of quota, and a further 399 were due to delays in providing logbooks to the Directorate. The latter mainly arises from late submission of logbooks each month by small vessels using paper logbooks, with each instance registered as an offence. Similarly, the quota infringement relates to each incidence detected of vessels that have taken longer than the 3 days required by law to balance their quota where they have landed fish in excess of their quota (pers. com. Fiskistofa). The pattern of suspected offences and enforcement action taken is similar to previous years, albeit logbook violations appear to be significantly lower in 2018 than recent years (Table 15, Table 16).

²⁵ Fiskistofa Annual Report 2019.

<http://www.fiskistofa.is/umfiskistofu/arsskyrsla-2016/>

Surveillance Section: <http://www.fiskistofa.is/media/arsskyrslur/5.-kafli-Eftirlit.pdf>

Where a suspected violation of the fisheries management legislation has occurred, the case is referred to the Directorate's Legal Department for enforcement action. In 2018, 239 cases were referred, similar to 2017 (220). Breaches of the law are handled in several ways. Some cases are dropped and no further action taken, otherwise action taken ranges from the issue of reprimands, application of administrative fines, suspension or revocation of fishing permits and weighing licenses or, in a small number of cases, sent to the police for criminal action to be taken. There is a specific chapter in the Annual Report summarising the imposition and collection of fees for illegal catches of fish in that year.

Table 15. Overview of suspected offenses recorded in Icelandic fisheries (Source: Fisheries Directorate Annual Reports 2018²⁶, 2017²⁷ and 2016²⁸).

Offenses recorded by the Fisheries Directorate	2018	2017	2016
Violation of fishing license rules	25	36	15
Discards	12	8	4
Violation of rules on weighing of catches	22		
Not landing fish at official landing location	6	5	4
Logbook violations (broken down into:)		719	689
• <i>Not submitting logbooks on time</i>	399	674	657
• <i>Other</i>	58	45	31
Fishing without catch quota	5		
Fishing in excess of quota	1162	1201*	1060*
Violation of Salmon and Trout Fishing Act	3	1	2
Incorrect sorting of catch	14	9	22
Incorrect identification of species	0	11	4
Violation of coastal fishery rules**	4	10	46
Other violations	51	45	14

*This figure represents incidences of fishing both without quota and in excess of quota

**These may also be recorded under other categories

Table 16. Enforcement action taken (Source: Fisheries Directorate Annual Reports 2018, 2017 and 2016).

Offences	2018	2017	2016
Case sent to Police	4	1	4
Reprimands issued (broken down below)	92	96	79
• <i>Due to violation of fishing rules</i>	49	50	14
• <i>Due to violations of weighing and catch registration rules</i>	14	12	31
• <i>Due to violation of logbook rules</i>	27	33	26
• <i>Due to other violations</i>	2	3	8
Suspension of fishing permit	25	31	14
• <i>Due to violation of fishing rules</i>	14		
• <i>Due to violations of weighing and catch registration rules</i>	8		
• <i>Due to violation of logbook rules</i>	3		
• <i>Due to other violations</i>	0		
Suspension of weighing license	6	4	1
Guidance letter sent from Fisheries Control Division	7	6	6
No action taken	59	33	20
Case sent to another authority	5	1	1
Procedure still in progress	53	46	8
Case returned to the inspectors		2	
Fees			
Reminder letter sent for unpaid fishing fees 2018	234	231	145

²⁶ Fiskistofa 2018 Annual Report, Chapter 8. http://www.fiskistofa.is/media/arsskyrslur/8_Fiskistofa-15.-april-2019_Medferd-mala.pdf

²⁷ Fiskistofa 2017 Annual Report, Chapter 8. http://www.fiskistofa.is/media/arsskyrslur/medferd_mala_og_urskurdir.pdf

²⁸ Fiskistofa 2016 Annual Report, Chapter 8. http://www.fiskistofa.is/media/arsskyrslur/kafli8_2016.pdf

Offences	2018	2017	2016
Resulting in suspension of fishing permits	78	89	85
Fees imposed for illegal catches	1150	1201	130
Resulting in suspension of fishing permits	77	25	65

Icelandic National Audit Office Report

In December 2018 the Icelandic National Audit Office (INAO)²⁹ published a report on certain aspects of the Icelandic enforcement system. The report found no direct evidence of large-scale systemic violations but identified a number of areas of weakness in particular in relation to the surveillance of weighing of catches (both at harbour scales and in-house weighing) and the surveillance of discarding. It highlighted that more quantitative data are needed to substantiate the conclusions that discards are low and that there are few irregularities in connection with re-weighing of catches after de-icing. A committee has been established to address the findings of the INAO report with a report due later this year to provide recommendations to the Minister on improvements to the enforcement system.

The Ministry of Industries and Innovation (MII) and Fisheries Directorate noted in a surveillance audit meeting with the CAB Vottunartofan Tún that the issues highlighted in the NAO report were issues they were already aware of and had prioritised as an area to enforce and had already initiated action:

- A recent change to the law gives powers to the Directorate to place inspectors at processing plants suspected of irregularities in the re-weighing of catches after de-icing. Inspectors are in place for 6 weeks at the expense of the plant.
- Every two months the Directorate publishes information on-line which compares the ice percentages recorded at re-weighing by a weighing-license holder when an inspector is present with the average percentages recorded over the 2 month period³⁰. This transparency encourages better compliance - the data is reported to show a narrowing of the difference in ice percentages over time. This is corroborated by studies by the University of Iceland showing the same trend and indicating that irregularities are small in terms of volume, 1-2 % of landed catches, although potentially large in number since they are caused mainly by small vessels with frequent landings. Tún note that the MII and the Directorate assess that these irregularities have reduced by 50% indicating that their actions are driving improvement.
- A further tool, introduced in spring 2019, is the publication on the Directorate's website of vessel catch composition with and without an inspector on board which can give an indication of levels of discarding.

Further, available evidence (e.g. data from scientific cruises held up against information reported by the vessels) still indicates that discards are low and re-weighing irregularities not significant. They note the incentive to cheat is low as there is no overcapacity in the system and there are a range of flexibility mechanisms in place designed to facilitate compliance and reduce the likelihood of overfishing. This includes the ability to transfer quota between years and between species (except cod), so for example, subject to certain limits you can trade quota to cover landings in excess of your quota or count the landings against next year's quota. Also, quota controls are tight with a very transparent system that records and publishes catch and landings in almost real-time, all vessels must use VMS, landings must be weighed by licensed weighers on calibrated scales and there are checks of fishing activity on vessels at sea by Inspectors and the Icelandic Coast Guard and also at landing by Inspectors. Overall, the system is considered to be effective, but the authorities work continuously to refine and improve the system as is evidenced by the above actions.

It is noteworthy that these issues are unlikely to affect the fishery under assessment since pelagic fisheries refrigerate, rather than ice, their catch and discarding is considered negligible.

²⁹ <https://rikisendurskodun.is/wp-content/uploads/2019/01/Eftirlit-Fiskistofu-Stjornsvsluuttek.pdf>

³⁰ Ice ratio figures for July and August. <http://www.fiskistofa.is/umfiskistofu/frettir/ishlutfall-i-juli-og-agust-1>

3.5.5. Long Term and Fisheries-specific Objectives

In relation to long term objectives, long-term management plans exist for major species in the Icelandic EEZ, including pelagic species capelin and Icelandic summer-spawning herring³¹. The management plans are adopted for five-year periods. The MII has asked MFRI to continue working on long-term management plans for other species in the Icelandic EEZ that are targeted by fishermen.

³¹ See <https://www.government.is/news/article/2018/05/15/Haddock/>

4. Evaluation Procedure

4.1. Harmonised Fishery Assessment

The MSC Fisheries Certification Requirements (FCR) set out procedures for ensuring consistency of outcomes in overlapping fisheries (see Annex PB of the FCR). The intention of this process is to maintain the integrity of MSC fishery assessments.

The MSC specifies the harmonisation activities that CABs are required to carry out, which include coordinated certification processes; use of common assessment trees; sharing of fishery information; harmonisation of conclusions, scoring and conditions; and harmonisation meetings between CABs.

In order to identify fisheries with which harmonisation would be required, the assessment team first identified all overlapping MSC fisheries (Table 17).

Table 17. Overlapping fisheries.

Fisheryname	Certification status and date	Performance Indicators to harmonise
ISF Iceland lumpfish	In assessment	P2 and P3, as appropriate
ISF Greenland halibut	Certified (Oct 2017)	P2 and P3, as appropriate
ISF Iceland anglerfish	Certified (Jan 2018)	P2 and P3, as appropriate
ISF Iceland capelin	Certified (Apr 2017)	P2 and P3, as appropriate
ISF Iceland Cod	Certified (Apr 2017)	P2 and P3, as appropriate
ISF Iceland haddock	Certified (Apr 2017)	P2 and P3, as appropriate
ISF Iceland lemon sole	Certified (Jan 2019)	P2 and P3, as appropriate
ISF Iceland mackerel	Certified (Oct 2017); currently suspended	P2 and P3, as appropriate
ISF Iceland multi-species demersal fishery	Certified (Sep 2019)	P2 and P3, as appropriate
ISF Iceland North East Atlantic blue whiting	Certified (Jan 2018)	P2 and P3, as appropriate
ISF Iceland northern shrimp - inshore and offshore	Certified (Oct 2018)	P2 and P3, as appropriate
ISF Norwegian & Icelandic herring trawl and seine	Certified (May 2014)	P2 and P3, as appropriate

Principle 1

This is the only MSC-certified fishery for this stock so Principle 1 scores do not overlap with any other certified or in assessment fishery.

Principle 2

The greatest potential overlap under Principle 2 occurs with those fisheries using the same fishing métiers, namely the pelagic fisheries; ISF Iceland capelin, ISF Iceland mackerel, ISF Iceland North East Atlantic blue whiting and the Norwegian-Icelandic spring-spawning herring component of the ISF Norwegian and Icelandic herring trawl and seine fishery. The Assessment Team also reviewed the other Icelandic fisheries which are all demersal fisheries and operate in different parts of the water column to the pelagic fisheries. Consequently, catch composition and impacts on habitats and the ecosystem are significantly different so that it is not possible to harmonise scores across the Principle 2 components.

With regard to the pelagic fisheries, ISF Iceland mackerel is not considered further here as the fishery has been suspended since October 2017. The ISF capelin fishery uses the same fishing métiers as the ISF herring fishery and is prosecuted by the same fleet under a very similar management regime; however, there are differences between the spatial and seasonal nature of each fishery which means that the Principle 2 impacts are different. The Icelandic summer-spawning fishery is targeted in autumn / early winter (October – December) with a bycatch between June and October in the directed fisheries for mackerel and Norwegian-Icelandic spring-spawning herring, whereas the capelin fishery is a late winter fishery prosecuted between January and March (MFRI, 2019i; MFRI 2018a; ICES, 2019e). The spatial distribution of the Icelandic summer-spawning herring

and capelin fisheries are shown in Figure 19. Scoring is similar across all PIs. The two fisheries score most differently on Performance Indicators (PIs) 2.2.2 and 2.5.1 (see Table 18). For PI 2.2.2 this relates to differences in catch composition between the two fisheries and for PI 2.5.1 this relates to differences in the stock status of the species which affects the evaluation of evidence on the likelihood of disruption to ecosystem structure and function.

Table 18. Principle 2 scores in the Icelandic summer-spawning and Iceland capelin fisheries.

Performance Indicator	Icelandic summer-spawning herring		Iceland capelin
Standard version	FCR v2.0		FCR v2.0
	UoA 1	UoA 2	
2.1.1	90	100	100
2.1.2	90	95	100
2.1.3	100	100	100
2.2.1	100	100	90
2.2.2	80	80	100
2.2.3	85	85	95
2.3.1	80	80	80
2.3.2	80	80	80
2.3.3	80	80	80
2.4.1	100	100	100
2.4.2	95	95	90
2.4.3	85	85	95
2.5.1	80	80	100
2.5.2	95	95	95
2.5.3	90	90	80

The Norwegian-Icelandic spring-spawning herring is being assessed as part of the same re-assessment as the Icelandic summer-spawning herring (albeit running to different timelines as explained in section 1) and rationales and scoring have been made consistent where they overlap. However, similarly to the capelin fishery, although the Norwegian-Icelandic spring-spawning fishery uses the same fishing métier, it operates in quite different areas so Principle 2 impacts are different. Likewise, the blue whiting fishery uses pelagic gears but also fishes in quite different areas so Principle 2 impacts are different (Figure 19).

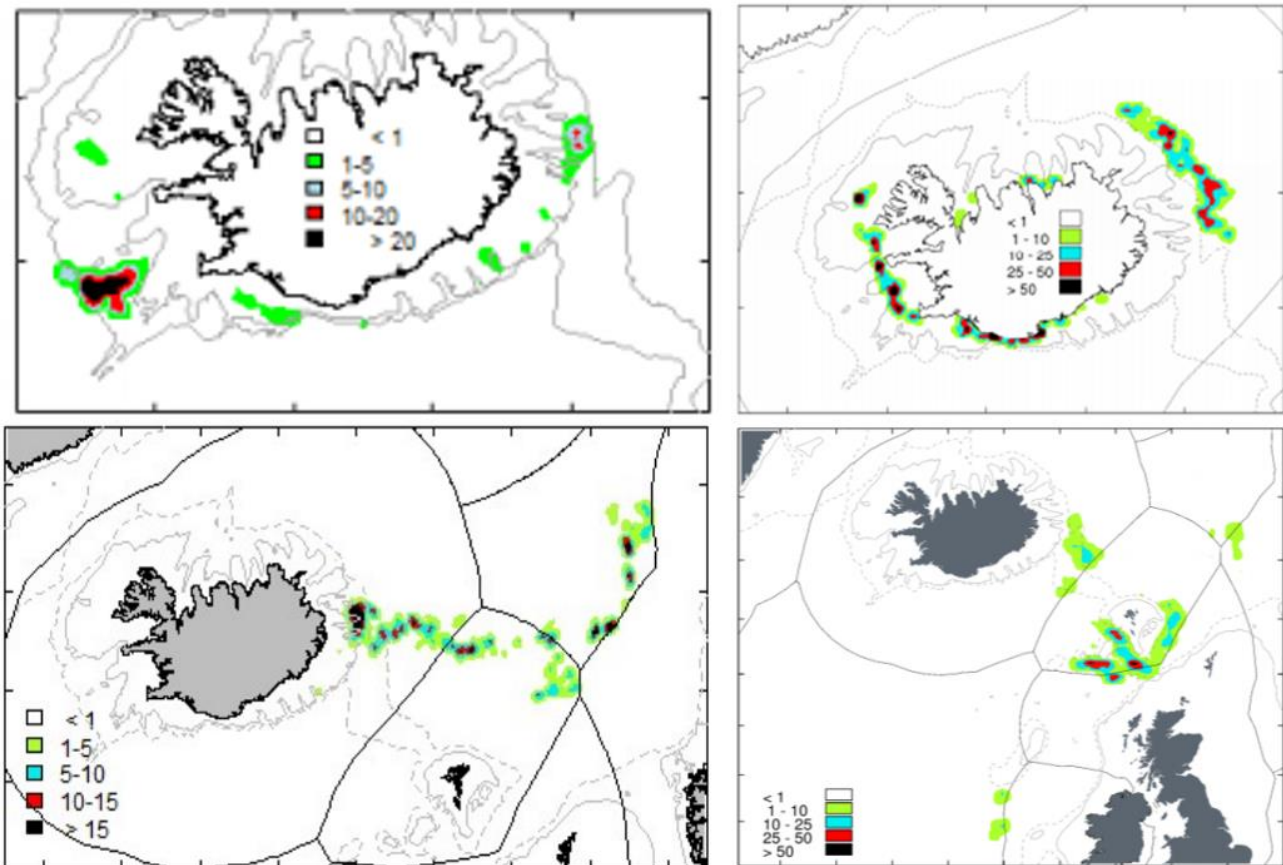


Figure 19. Fishing grounds of the 2018 Icelandic fisheries for Icelandic summer-spawning herring (top left), capelin (top right), Norwegian-Icelandic spring-spawning herring (bottom left) and blue whiting (bottom right) (sources: MFRI, 2019l; MFRI, 2018a; MFRI, 2019q; MFRI, 2019d).

Principle 3

The UoAs under assessment here will overlap with the Principle 3 governance and policy components of the other fisheries that occur entirely within Icelandic waters. This represents all the fisheries in Table 17 with the exception of the shared stocks namely ISF Icelandic capelin, ISF Norwegian and Icelandic herring trawl and seine (Norwegian-Icelandic spring-spawning herring component). Management of these shared stocks incorporates an international component and consequently the management regimes are not directly comparable with Icelandic summer-spawning herring. For those stocks where it is possible to compare, the Assessment Teams conclusions for the governance and policy Performance Indicators are not substantially different (see Table 19).

Table 19. Principle 3 scores for overlapping fisheries.

Performance Indicator	Icelandic summer-spawning herring (UoA 1 & 2)	Iceland lumpfish*	Iceland anglerfish	Iceland cod	Iceland haddock	Iceland lemon sole	Iceland Multi-species demersal fishery	Iceland northern shrimp – inshore and offshore
Standard version	FCR v2.0	v2.01	FCR v2.0	FCR v2.0	FCR v2.0	FCR v2.0	FCR v2.0	FCR v2.0
3.1.1	100	100	100	100	100	100	100	100
3.1.2	95	85	95	100	100	85	95	100
3.1.3	100	100	100	100	100	100	80	100

*In assessment at PCDR stage.

4.2. Previous assessments

The ISF herring fishery was first certified against the MSC Standard in 2014. The fishery has been subject to seven conditions of certification, the status of which are summarised in Table 20 below.

Only those conditions related to the Icelandic summer-spawning herring are being considered here. Of these, only one condition remained open at the time of the re-assessment and remains open during the re-assessment.

Table 20. Summary of Previous Assessment Conditions

Condition	PI	Year closed	Justification
UoAs 1 and 2: Icelandic summer-spawning herring			
1*	1.2.2 – Harvest Control Rules & tools	Closed at 4 th Surveillance (LR, 2019)	A new management plan was developed and adopted by the Icelandic Government for this stock in 2017 and used for both the 2017/18 & 2018/19 fishery.
5*	1.1.1 – Stock Status	Open	<p>This condition was raised at the 3rd surveillance audit in 2017.</p> <p>At the 4th surveillance audit, announced in September 2018, it was found that the stock remains at a level below the target reference point (TRP) and above the point at which recruitment would be impaired (PRI). Fishing mortality (F) has been reduced to levels consistent with the management plan and scientific advice through a reduction in the TAC by the Icelandic Government. Progress at the 4th surveillance audit was considered to be <u>on target</u>.</p> <p>When the condition was raised (by the previous CAB, Lloyd's Register) it was noted that ICES' evaluation of the stock was that recovery was dependant on recruitment to the spawning stock biomass and that this could take until 2022. This meant the requirements of SG80 may not be met within that period of certification. They further noted that this is due to the biology of the stock rather than any delay in the implementation of management measures and as such, this constituted 'exceptional circumstances' in line with MSC FCR v2.0 §7.11.1.3. As per that requirement, they set out the significant and measurable improvements that must be achieved, and the score that must be achieved by the end of the certification period; and also what constitutes a successful overall outcome over a longer, specified time period (i.e. based on ICES evaluation of the likely trajectory for stock recovery under the harvest control rules in place, the stock is likely to recover to a level above the target reference point by 2022). At re-assessment, PI1.1.1 the status of the stock was not sufficient to meet the SG80 requirement and further milestones have been set for the new certification cycle. Further details are provided in §8.1.3 of this report.</p>

**The numbering here relates to the conditions applied to the Norwegian-Icelandic spring-spawning herring and Icelandic summer-spawning herring UoAs. This report only considers the latter stock, so only those conditions relating to its UoAs are shown here.*

4.3. Assessment Methodologies

This fishery was assessed using the Standard Requirements defined within the MSC General Certification Requirements (GCR) v2.0 (Marine Stewardship Council 2015b) and the Process Requirements defined within the MSC Fishery Certification Requirements (FCR) v2.0 (Marine Stewardship Council 2014a).

The MSC FCR (v2.0 at §7.8.4-7.8.5) specify that the assessment methodology shall be stated in the assessment report. This information is set out in the table below.

Table 21. Summary of methodology used in this fishery assessment.

Item	Detail
Version of MSC Certification Requirements Methodology Used	FCR Version 2.0, 1 st October 2014.
Version of Full Assessment Reporting Template	Version 2.0
Version of MSC Assessment Tree Used	FCR Version 2.0, 1 st October 2014.
Default Assessment Tree Used	Yes
Adjustments made to Assessment Tree	Not applicable.
Risk Based Framework	Announced for PI2.2.1 but subsequently not required

Stakeholders were informed of the assessment methodology and the use of the Risk Based Framework (RBF) in the notice issued by Acoura Marine on 9th September 2018. No comments were received. Ultimately, the Assessment Team found sufficient information to be available about the secondary species for their outcome status to be determined using the default assessment tree and RBF was not required.

4.4. Evaluation Processes and Techniques

4.4.1. Site Visits

A site visit for this audit was held in the week commencing 8th October 2018 by Lloyd's Register. Following the change in the Conformity Assessment Body (CAB) a further site visit with the new Assessment Team from SAI Global took place in the week commencing 12th August 2019.

For each site visit a scheduled programme of consultations took place with key stakeholders in the fishery who had responded to the assessment team. These meetings provided an opportunity to discuss different aspects of the fishery in an open and transparent manner.

First site visit October 2018 by Lloyd's Register. Itinerary of field activities:

Day 1. 8th October. Reykjavik

On day 1, the Lloyd's Register assessment team met with Kristinn Hjálmarsson from Iceland Sustainable Fisheries prior to his departure to London to meet his colleagues from other MSC-certified herring fisheries directed at the Norwegian-Icelandic / Atlanto-Scandian spring-spawning herring stock.

Day 2. 9th October. Reykjavik

On day 2, the assessment team met with scientists at the University of Iceland to discuss ecosystem interactions of the fishery under assessment.

Day 3. 10th October. Reykjavik

On day 3, the assessment team visited the Marine and Freshwater Research Institute (MFRI) to discuss the scientific perception of stock status for the Norwegian-Icelandic spring-spawning / Atlanto-Scandian herring stock and the Icelandic summer-spawning herring stock. This was followed by a meeting with the Directorate of Fisheries, the Government organisation responsible for monitoring, control and surveillance of Icelandic fisheries.

Second site visit August 2019 by SAI Global. Itinerary of field activities:

Day 1. 13th August. Reykjavik

On day 1, the SAI Global assessment team met with Kristinn Hjálmarsson from Iceland Sustainable Fisheries, followed by the MFRI and the Directorate of Fisheries.

Day 2. 14th August. Reykjavik

On day 2, the assessment team met with the Ministry of Industries and Innovation and the Icelandic Coast Guard.

Day 3. 15th August. Reykjavik

On day 3, the assessment team met with Kristinn Hjálmarsson from Iceland Sustainable Fisheries.

4.4.2. Consultations

Stakeholder issues

A brief record of the key points discussed in each stakeholder meeting is provided in section 8.3 of this report. No written comments were received prior to or during the site visits. None of the comments made during the site visits require a detailed response from the assessment team.

Interview Programme

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

Meetings were held as follows:

Table 22. List of organisations and individuals met during site visit, week commencing 8th October 2018.

Name	Position	Organisation
Kristinn Hjálmarsson	Project Manager	Icelandic Sustainable Fisheries
Gunnar Stefansson	Professor	University of Iceland
Erla Sturludóttir	Post-Doctoral Researcher	University of Iceland
Guðmundur J. Óskarsson	Stock Assessment Scientist	Hafrannsóknastofnun - Marine and Freshwater Research Institute
Þorsteinn Hilmarsson	Director of Division	Fiskistofa
Saevar Guðmundsson	Head of Department	

Table 23. List of organisations and individuals met during site visit, week commencing 12th August 2019.

Name	Position	Organisation
Kristinn Hjálmarsson	Project Manager	Icelandic Sustainable Fisheries
Guðmundur J. Óskarsson	Stock Co-ordinator - herring	Hafrannsóknastofnun - Marine and Freshwater Research Institute
Birkir Bardarson	Stock Co-ordinator	
Thorsteinn Sigurdsson	Head of Division	
Þorsteinn Hilmarsson	Director of Division	Fiskistofa
Saevar Guðmundsson	Head of Department	
Kristján Freyr Helgason	Head of Iceland's Negotiating Committee	Ministry of Industries and Innovation
Björgólfur H. Ingason	Chief Controller	Icelandic Coast Guard
Birgir Björnsson	Operations	

Summary of Information Obtained

A record of each meeting is provided in section 8.3 of this report. The key points raised were:-

- Stock status

- Icelandic summer-spawning herring: the stock is currently below $MSY_{B_{trigger}}$ but is being managed in accordance with a management plan and ICES advice.
- Environmental impacts
 - Catches of non-target species in the herring fishery are reported to be low.
 - The design of fishing vessels has to be approved by Fiskistofa before construction to ensure that there is no opportunity for discarding fish.
 - There is little or no direct interaction with ETP species.
 - Fishing gear is pelagic and no interactions with protected habitats are known to occur.
 - Ecosystem models are being developed for sea areas relevant to each herring stock.
- Management
 - Governance
 - The Icelandic summer-spawning herring stock is under the jurisdiction of the Icelandic Government, so management is robust.
 - Fishery-specific management
 - Monitoring, Control and Surveillance carried out by Fiskistofa is both risk- and evidence-based, and indicates a high level of compliance with management measures.

4.4.3. Evaluation Techniques

Methodology of information gathering

Stakeholder organisations and individuals having relevant interest in the assessment were identified and consulted during this site visit. The interest of others not appearing on this list was solicited through the postings on the MSC website.

The information used for this assessment was gathered before, during and after the site visits. Published sources of information (such as ICES stock assessment and Working Group reports) were obtained from the internet.

Interviews were conducted with stakeholders during the site visits. The information gathered from these interviews is included in section 8.3 of this report.

The scoring process

Scoring was discussed by the team during the site visit and formally completed afterwards when information requested during the site visit had been made available by the clients and other stakeholders.

The scores were determined using the methodology set out in the MSC FCR v2.0 at section 7.10. In summary, the MSC Principles and Criteria set out the requirements of a certified fishery. The certification methodology adopted by the MSC involves the interpretation of these Principles and Criteria into specific Performance Indicators and Scoring Guideposts against which the performance of a fishery can be measured. In order to make the assessment process as clear and transparent as possible, these identify the level of performance necessary to achieve 100, 80 (a pass score), and 60 scores for each Indicator. A summary of the hierarchy of MSC Principles and Performance Indicators is set out in the figures below:

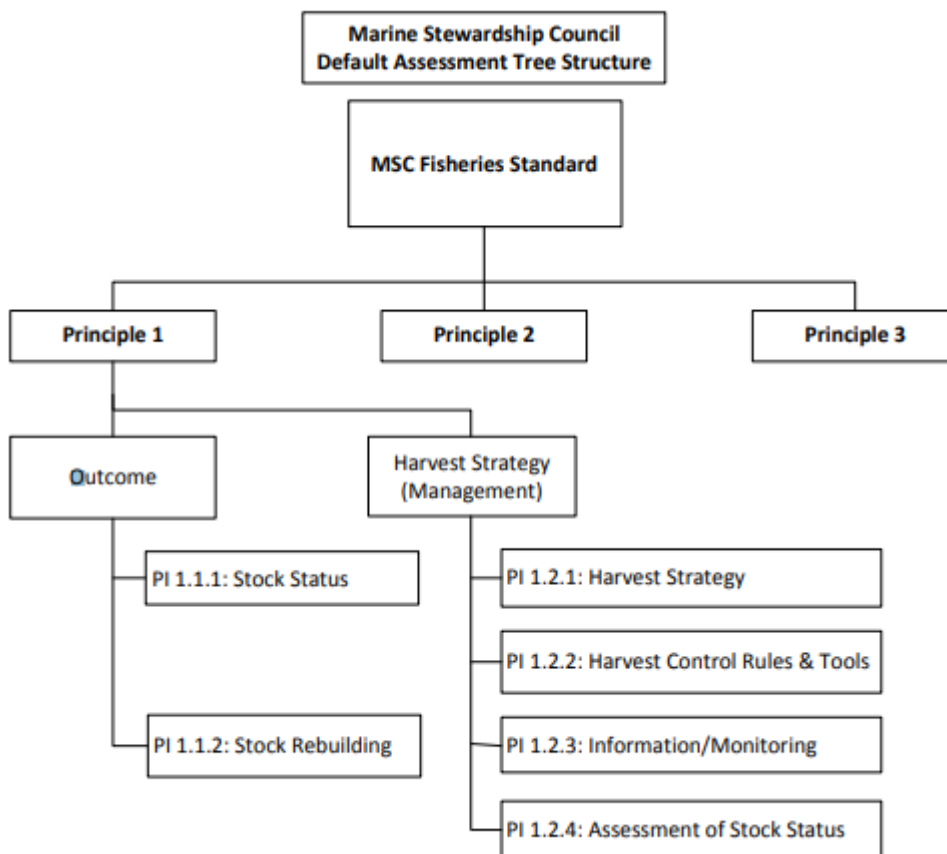


Figure 20. Principle 1 default assessment tree structure (source: MSC FCR v2.0).

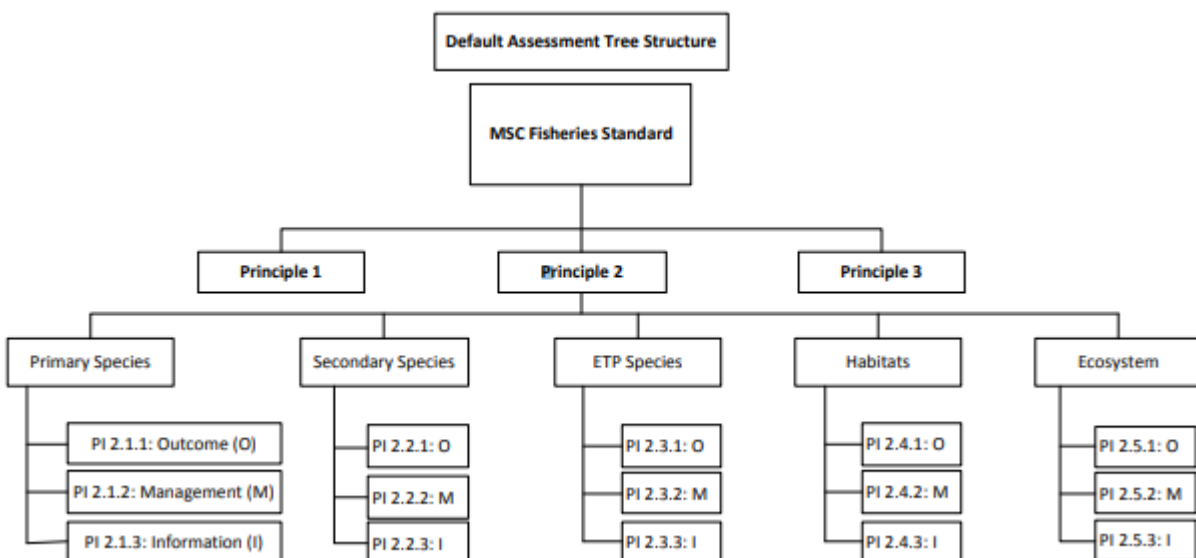


Figure 21. Principle 2 default assessment tree structure (source: MSC FCR v2.0).

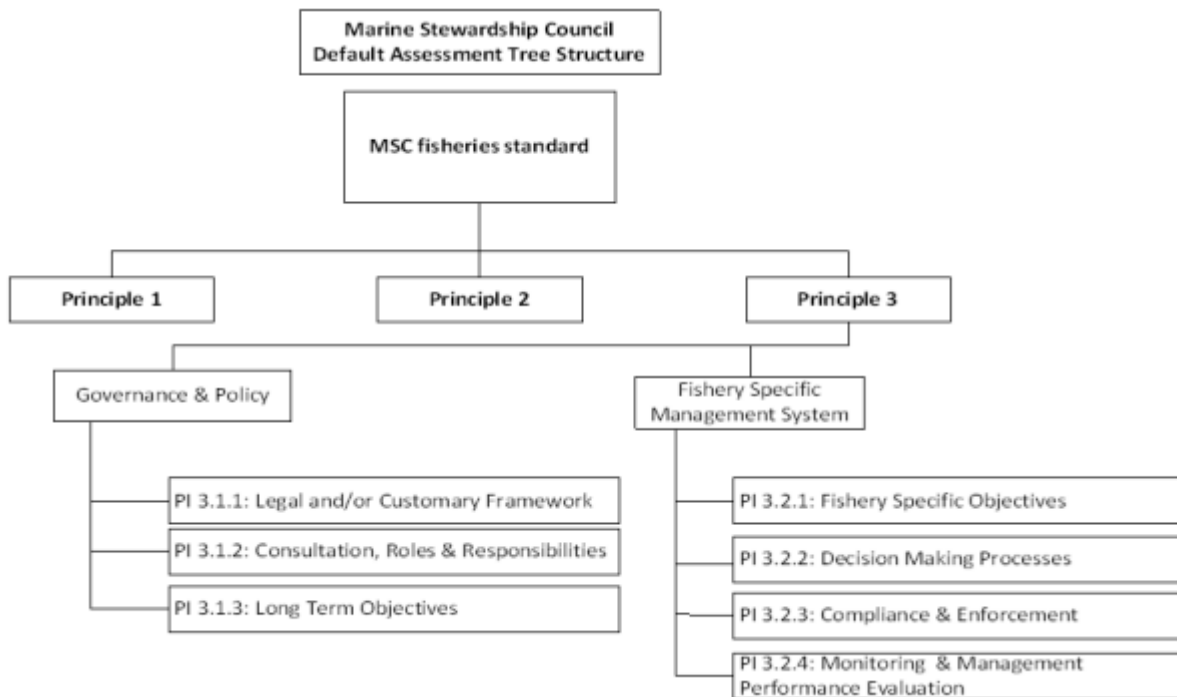


Figure 22. Principle 3 default assessment tree structure (source: MSC FCR v2.0).

For each Performance Indicator, the performance of the fishery is assessed as a 'score'. For the fishery to achieve certification, an overall score of 80 is considered necessary for each of the three Principles, 100 represent ideal best practice and 60 a measurable shortfall. A fishery cannot be certified if a score below 60 is recorded for any PI. As it is not considered possible to allocate precise scores, a scoring interval of five is therefore used in evaluations.

A procedure for determining scores was agreed before scoring took place. In all cases, the team would aim to agree a score (a consensus approach). In situations where team members could not agree on the score that should be awarded for a PI, the lowest score proposed was used as a precautionary measure.

Assessment of the Units of Certification

This report sets out an assessment of two units of assessment (UoAs). The UoAs are differentiated by fishing métier (pelagic trawl and purse seine).

To rationalise the assessment process and to avoid unnecessary duplications, the team has considered the extent to which it is appropriate to combine the Principle 1, 2, and 3 assessments.

For the Icelandic summer-spawning herring fishery, the Principle 1 and 3 assessments have been combined for the trawl and purse seine métiers, on the basis that they prosecute the same stock and operate under the same management regime.

With regard to MSC Principle 2, there is no appreciable difference between the environmental impacts for each UoA with respect to non-target species, ETP species, habitats or ecosystems. On this basis, the assessment has considered the Principle 2 impacts for all components together.

This approach is consistent with that recently adopted for the ISF capelin fishery assessment (SAI Global, 2017) and the previous assessment of the ISF herring fishery when it was first assessed (FCI, 2014). It also ensures that the MSC requirements for considering cumulative impacts of MSC UoAs on Principle 2 components are embedded in the assessment process for this fishery.

Table 24. Summary of rationale for assessment of the three units of assessment.

Principle	UoA 1 – Pelagic trawl	UoA 2 – Purse seine
Principle 1		
All PIs	Both métiers assessed together – each impact the same stock.	
Principle 2		
All PIs	Both métiers assessed together for all components except primary species for which the catch by each UoA does differ. The impacts of both UoAs on the other components; secondary species, ETP, habitats and ecosystems, are sufficiently similar to enable assessment together and cumulative impacts of UoAs have to be taken into account.	
Principle 3		
All PIs	Metiers assessed together – subject to same management regime.	

Scoring elements

Scoring elements were identified and agreed by the team prior to scoring the fishery. Scoring elements were identified using information provided by stakeholders during and following the site visit.

The scoring elements considered in this assessment under Principles 1 and 2 are listed in Table 25 below. Further details on the Principle 2 scoring elements are provided in section 3.4 of this report.

Table 25. Scoring elements considered in this assessment

Component	UoA	Scoring elements	Main/minor*	Data-deficient?
1.1.1 Stock status	1, 2	Icelandic summer-spawning herring <i>Clupea harengus</i>	NA	Not data-deficient
2.1.1 Primary species outcome	1	Norwegian-Icelandic spring-spawning herring <i>Clupea harengus</i>	Main	Not data deficient
		Mackerel <i>Scomber scombrus</i>		
		Blue whiting <i>Micromesistius poutassou</i>		
		Greater silver smelt <i>Argentina silus</i>	Minor	
		Golden redfish <i>Sebastes norvegicus</i>		
		Saithe <i>Pollachius virens</i>		
		Cod <i>Gadus morhua</i>		
		Greenland halibut <i>Reinhardtius hippoglossoides</i>		
	2	Norwegian-Icelandic spring-spawning herring <i>Clupea harengus</i>	Minor	
		Blue whiting <i>Micromesistius poutassou</i>		
		Golden redfish <i>Sebastes norvegicus</i>		
2.4.1 Habitat outcome	1, 2	Pelagic habitats	NA	Not data deficient
2.5.1 Ecosystem outcome	1, 2	Ecosystem function	NA	Not data deficient

* The MSC make a distinction in some Performance Indicators between “main species” (typically those forming 5% or more of the catch or 2% for “less resilient” species) and “minor species” (less than 5% (or less than 2% for “less resilient species)). The MSC rules for identifying main species are set out in MSC FCR v2.0 at SA3.4.2 and associated guidance.

Risk Based Framework (RBF)

As the impacts of the fishery on all relevant components could be quantitatively determined the use of the Risk Based Framework (RBF) was not required.

5. Traceability

5.1. Eligibility Date

The eligibility date for this period of certification is the **13th November 2020**. This is the date on which the existing period of certification for the Icelandic summer-spawning stock component will end. This certificate expiry date was set following the acceptance of the Variation Request (VR) to further extend the validity of the certificate for this component (25th February 2020 – see VR and response in section 8.7.2 of the report) and the application of the 6-month certificate extension from the 27th March 2020 MSC Covid-19 derogation (reproduced in full in section 7.1 of this report). Traceability and segregation systems are in place.

5.2. Traceability within the Fishery

All commercial fishing operations in Iceland are subject to a permit from the Directorate of Fisheries, and all vessels are required to carry an operational VMS system. This provides 24/7 monitoring of vessel movements. This information is used to ensure that vessels observe closed areas, and also to ensure that trans-shipment of fish does not occur at sea.

All catches of fish are recorded in logbooks aboard fishing vessels and all landings are weighed on licensed scales and reconciled with logbook records. All catches taken by Icelandic vessels from stocks that occur entirely or partially within Icelandic waters must be landed and weighed in an Icelandic port (except in exceptional circumstances – see section 5.3 below).

Fish processing is monitored by the Directorate. Records of sale of fish are reported, and checks are made to ensure that outputs from fish processing facilities (both on land and at sea) are consistent with input records.

The principle mechanism for ensuring traceability back to the UoC is through the system of weighing, registration and labelling of catch (set out in Regulation No. 745/2016³²; Act No. 57/1996³³) which ensures all catches are identified and traceable to vessel, catch dates, gear and fishing area.

A summary of the risk assessment of this fishery against MSC traceability factors is presented below.

Table 26. Traceability Factors within the Fishery:

Traceability Factor	Description of risk factor if present. Where applicable, a description of relevant mitigation measures or traceability systems (this can include the role of existing regulatory or fishery management controls)
Potential for non-certified gear/s to be used within the fishery	Only two types of fishing gear are used by pelagic vessels: trawls or purse-seines. Vessels are required to record the type of gear used for each catch in logbooks, and are liable to be inspected at sea by the Icelandic Coastguard. The risk of using non-certified gear is considered to be low.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	Vessel movements are monitored using VMS and electronic logbooks record the location of each catch using GPS data. The risk of vessels fishing for herring outside the UoC is considered to be low.
Potential for vessels outside of the UoC or client group fishing the same stock.	Icelandic summer-spawning herring occurs within the Icelandic EEZ so only Icelandic vessels can target it and currently the ISF herring UoCs include the entire Icelandic pelagic fleet (see section 5.3 for further details). By-catch of the stock does occur in the fisheries for mackerel and Norwegian-Icelandic spring-spawning herring (MFRI, 2019). This means, at present, the only catches of Icelandic summer-spawning herring that occur outside of the UoC would be as by-catch by any non-Icelandic vessels in these fisheries.

³² <https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/20213>

³³ <https://www.althingi.is/lagas/150b/1996057.html>

Traceability Factor	Description of risk factor if present. Where applicable, a description of relevant mitigation measures or traceability systems (this can include the role of existing regulatory or fishery management controls)
	<p>These vessels could land herring at Icelandic ports. All landings are reported and recorded, and quantities of fish landed are reconciled with logbook catch records. This ensures that the Directorate of Fisheries are able to determine the origin of all herring landed.</p> <p>The statutory controls and checks in place ensure that fish caught by non-UoC vessels can be distinguished from certified fish prior to the start of any processing operations. The risk of fish caught by non-UoC vessels becoming mixed with fish from UoC vessels prior to processing starting is therefore considered to be low.</p>
Risks of mixing between certified and non-certified catch during storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction).	Currently all Icelandic herring catches are certified. However, statutory controls are in place that are considered to be adequate in ensuring the risk of mixing of certified and non-certified fish during storage, transport or handling is low. Fish are landed at designated ports in Iceland. Landings abroad are permitted only in certain ports authorised by the Directorate of Fisheries. The same rules apply to these landings as occur in Iceland and so the same traceability mechanisms apply as in Iceland (see section 5.3 below). Given the distribution of this stock in Icelandic coastal waters it is unlikely vessels would need to land abroad. Landings are weighed and reconciled with catch records and sales records. Inputs of unprocessed fish and outputs of fish products are reported to the Directorate of Fisheries, and records throughout the supply chain are reconciled.
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody).	<p>Herring are landed as unsorted catch and are not processed or handled in any way at sea. There is therefore no risk of mixing of fish during processing at sea.</p> <p>The risks of mixing of certified and non-certified fish during processing after landing has not been assessed. Processing facilities would require their own MSC Chain of Custody certification.</p>
Risks of mixing between certified and non-certified catch during transshipment.	Transshipment of fish at sea is prohibited, so there is also no risk of fish from a non-UoC vessel being transferred to a UoC vessel.
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent Chain of Custody is required	The CAB did not identify any other risks related to traceability for this UOA.

5.3. Eligibility to Enter Further Chains of Custody

The certificate for the fishery covers (and will continue to cover if this assessment results in a positive certification determination) fish caught by all registered Icelandic vessels with valid permits to fish for Icelandic summer spawning herring within the Icelandic EEZ. It also includes fish handled by all officially licenced fish auctions, provided these auctions do not take ownership of the catch and/or are not involved in the processing of the catch either as owners of the fish or sub-contractors. A 'live' up-to-date list of these vessels is publicly available on the Directorate of Fisheries website at <http://www.fiskistofa.is/veidar/aflaheimildir/aflahlutdeildalisti/> (select Icelandic summer spawning herring '30. Síld' and current fishing year to see list of vessels with quota).

Fish from eligible fishing vessels, whole and/or semi-processed, landed at any officially approved landing site (port) and/or sold via fish auction and/or kept in cold store facilities in Iceland or in a Third Country, may therefore enter into further certified chains of custody and be eligible to carry the MSC eco-label, provided these are sold through a member of the client group, i.e. shareholder of the Iceland Sustainable Fisheries ehf. and/or its registered certificate sharing entities.

The point of intended change of ownership refers to change in legal ownership of the fish and may occur at the point of landing or further up the chain of custody in the case of vertically-integrated companies (for example, those which have vessels, storage/or and processing capability within a single entity).

Chain of custody will commence as of the first point of sale, change of ownership and/or processing after landing. Auctions that do not take ownership of the fish and merely serve as facilitators of trade do not need chain of custody certification. Auctions that are not members of the client group and that either take ownership of the fish and/or engage in processing the fish after landing, e.g. by gutting or otherwise, must have chain of custody certification. Cooler/freezer storages, be they operated or sub-contracted by fishing companies, do not require Chain of Custody, unless they engage in re-labelling of primary units stored and/or re-packing of the actual product.

In summary, fish from the certified fishery is eligible to be sold into chain of custody provided:

- Fish originates from within the UoA-area and is landed at an eligible landing point listed in Table 27.
- Fish was caught by any registered vessel with a valid permit to fish Icelandic summer spawning herring within the Icelandic EEZ.
- Fish is received directly from a fishing vessel or is sold via any officially licenced auction (provided the auction does not take ownership of the fish or is not engaged in its processing).
- Fish stored after landing in cooler/freezer storage is also eligible for entering into chain of custody, provided the storage does not take ownership of the fish or engages in re-packing of the actual product or re-labelling of basic packaging units of the fish during storage.

The Client, Iceland Sustainable Fisheries Ltd., has issued a statement outlining the general terms of a potential extension of the client group for wider sharing of a potential certificate. A list of current members of the client group can be obtained directly on the ISF website (see <https://www.isf.is/isf-aethildarfyrirtaeligki.html>). Members of the client group who first take ownership of fish after landing, as well as any member and non-member engaged in post-landing processing of the fish, will need to hold MSC CoC certification.

Operators who do not share the certificate but who take ownership of the fish before it is sold to certificate sharers are required to hold MSC Chain of Custody certification. Subcontractors, who do not take ownership of the catch but are involved in the handling of the fish after landing, are required either to be holders of MSC Chain of Custody certification or to be listed as subcontractors on the scope of another MSC Chain of Custody certificate holder.

Buyers that are not members of the client group will need to verify that;

- a. the supplier is CoC certified with herring in scope;
- b. product was derived from one of the Units of Certification, and;
- c. that the product has at some point passed through a member of the ISF client group.
 - i. If condition (c) is not met, buyers may wish to notify the next link of buyers in the chain that the product cannot be marketed to the final consumer with the ecolabel unless and until condition (c) has been met.

Table 27 below lists official points of landing for fish in Iceland. It is a requirement of Icelandic law that all catches taken by Icelandic vessels from stocks that occur entirely or partially within Icelandic waters must be landed and weighed in an Icelandic port (Article 5, Act No. 57/1996³⁴; Article 1, Regulation 745/2016³⁵; Article 6, Regulation 1255/2019³⁶). Landings abroad may occur in exceptional circumstances (for instance, due to

³⁴ <https://www.althingi.is/lagas/nuna/1996057.html>

³⁵ <https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/20213>

³⁶ <https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/1255-2019>

serious engine failure) and requires pre-authorisation from the Fisheries Directorate. These landings must occur only into ports authorised by the Directorate otherwise Inspectors are sent to the port to conduct the landing checks at the expense of the fisher. The same rules apply to these landings as occur in Iceland and so the same traceability mechanisms apply as in Iceland.

Table 27. Official points of landing for fish in Iceland³⁷.

Landing Port	Landing Port	Landing Port	Landing Port
Akranes	Flateyri	Keflavík	Sauðárkrókur
Akureyri	Grenivík	Kópasker	Seyðisfjörður
Arnarstapi	Grímsey	Miðsandur, Hvalfirði	Siglufjörður
Árskógssandur	Grindavík	Mjóifjörður	Skagaströnd
Bakkafjörður	Grundarfjörður	Neskaupstaður	Skarðsstöð
Bíldudalur	Hafnarfjörður	Norðurfjörður	Stöðvarfjörður
Bolungarvík	Hauganes	Ólafsfjörður	Stykkishólmur
Borgarfjörður Eystri	Haukaberghvalla	Ólafsvík	Súðavík
Breiðdalsvík	Hofsós	Patreksfjörður	Suðureyri
Brjánslækur	Hólmavík	Raufarhöfn	Tálknafjörður
Dalvík	Hornafjörður	Reyðarfjörður	Pingeyri
Djúpivogur	Hrísey	Reykholar	Þorlákshöfn
Drangsnes	Húsavík	Reykjavík	Þórshöfn
Eskifjörður	Hvammstangi	Rif	Vestmannaeyjar
Fáskrúðsfjörður	Ísafjörður	Sandgerði	Vopnafjörður

Based on the available information, the assessment team has determined that the product originating from this fishery are eligible to enter further certified chains of custody and be sold as MSC certified and carry the MSC ecolabel.

5.4. Eligibility of IPI stock(s) to Enter Further Chains of Custody

The directed Icelandic summer-spawning herring fishery harvests almost exclusively Icelandic summer-spawning herring. As given at ICES (2019e) Icelandic spring-spawners and not Norwegian-Icelandic spring-spawning herring (also known as Atlanto-Scandian herring) are also harvested within this fishery.

As noted in section 3.3.1, some Icelandic summer-spawning herring is harvested as by-catch in the Norwegian-Icelandic spring-spawning herring fishery.

Icelandic spring-spawning herring as an IPI stock

Icelandic spring-spawning herring (ISPH) mix with the Icelandic summer-spawning herring (ISSH) stock in the directed ISSH fishery in the autumn. The level of mixing is measured by sampling, with fish categorised into the two stocks on the basis of their maturity stage (Óskarsson, 2018c). The proportions in the catches have been measured over time with the ISPH representing below 5% and on average 1.4% during 1970-2016. In autumn 2018, the the proportion of ISPH in the combined catches came to 1.3%.

These non-target catches are practicably indistinguishable from the target species during normal fishing operations. Additionally, the mechanics of the fishing operations are such that it is not commercially feasible to separate catches without significant modification to harvest and processing methods. Taking this into account and, since the catch of ISPH as a proportion of the total combined catches of ISPH and ISSH is less than 15%, ISPH qualifies as an IPI stock in terms of MSC FCR v2.0, §7.4.13.1.

³⁷ <http://www.fiskistofa.is/>

In accordance with MSC FCR v2.0, §7.4.14.2, SAI Global submitted a variation request (see § 8.7.1 of this report) to allow an exemption to the additional assessment requirements for IPI stocks given in PA4.2, with a detailed and substantiated rationale showing that:

- i. *The catch proportion of IPI stocks calculated in 7.4.13.1.c is less than or equal to 2% and the total catch of IPI stock(s) by the UoA does not create a significant impact on the IPI stock(s) as a whole.*
- ii. *CABs shall note that significance will be assessed on the basis of the status of the IPI stock, and the risk that the IPI catch poses to the health of the IPI stock.*

The rationale is as follows:

As noted above, the proportion of ISPH in the combined catches of the IPI and target stocks, is less than the $\leq 2\%$ threshold referred to in i).

The total catch of the IPI stock by the UoA is also not considered to create a significant impact on the IPI stock as a whole due to a lack of temporal overlap between the distributions of the two stocks. The autumn/winter fishery directed at ISSH is limited to the period between September and January. Potential spawning aggregations of ISPH formed near the winter fishing grounds prior to and during the spawning in March (Jakobsson *et al.*, 1969) and have therefore not been detected because of a lack of fishing effort during this period (Óskarsson, 2018c). Consequently, the stock has been protected from fishing pressure due to a lack of temporal overlap.

MSC granted the variation request (see § 8.7.1 of this report) subject to the detailed and substantiated rationale being included in this report. Consequently, catches of ISPH as an IPI stock can enter further certified chains of custody.

Norwegian-Icelandic spring-spawning herring as an IPI stock

Norwegian-Icelandic spring-spawning herring is not defined as an IPI stock in terms of MSC FCR v2.0 §7.4.13.1 as it is certified separately.

6. Evaluation Results

6.1. Principle Level Scores

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

Table 28. Final Principle Scores

Principle	Score	
	UoA 1	UoA 2
Principle 1 – Target Species	86.7	86.7
Principle 2 – Ecosystem	88.7	89.3
Principle 3 – Management System	92.3	92.3

6.2. Summary of PI Level Scores

The scores assigned to each Performance Indicator for each UoA are shown in the table below.

Table 29. Performance Indicator scores for the ISF Norwegian and Icelandic herring trawl & seine fishery, Icelandic summer-spawning herring Units of Assessment. Scores shaded green attain the unconditional pass level. Yellow shading would indicate a conditional pass, and red shading would indicate a fail.

Principle	Component		Performance Indicator (PI)	Score UoA 1	Score UoA 2
One	Outcome	1.1.1	Stock status	60	60
		1.1.2	Stock rebuilding	100	100
	Management	1.2.1	Harvest strategy	85	85
		1.2.2	Harvest control rules & tools	85	85
		1.2.3	Information & monitoring	90	90
		1.2.4	Assessment of stock status	100	100
Two	Primary species	2.1.1	Outcome	90	100
		2.1.2	Management strategy	90	90
		2.1.3	Information/Monitoring	100	100
	Secondary species	2.2.1	Outcome	100	100
		2.2.2	Management strategy	80	80
		2.2.3	Information/Monitoring	85	85
	ETP species	2.3.1	Outcome	80	80
		2.3.2	Management strategy	80	80
		2.3.3	Information strategy	80	80
	Habitats	2.4.1	Outcome	100	100
		2.4.2	Management strategy	95	95
		2.4.3	Information	85	85

Three	Ecosystem	2.5.1	Outcome	80	80
		2.5.2	Management	95	95
		2.5.3	Information	90	90
	Governance and policy	3.1.1	Legal &/or customary framework	100	100
		3.1.2	Consultation, roles & responsibilities	95	95
		3.1.3	Long term objectives	100	100
	Fisheryspecific management system	3.2.1	Fisheryspecific objectives	80	80
		3.2.2	Decision making processes	85	85
		3.2.3	Compliance & enforcement	80	80
		3.2.4	Monitoring & management performance evaluation	100	100

6.3. Summary of Conditions

A condition was raised against Performance Indicator (PI) 1.1.1 in 2017 during the third surveillance of the first certification cycle. The condition was raised because Scoring Issues (SI) a and b scored less than the unconditional pass mark. Progress at the further surveillance in 2019 was judged to be on target. When the condition was raised it was noted ‘exceptional circumstances’ apply in line with MSC FCR v2.0 §7.11.1.3 and that the condition would extend beyond the first certification cycle and should be closed out by 2022. Consequently, this condition remains open at re-assessment and further milestones have been set. These have been adjusted to take into account the 6-month extension to conditions applied by the MSC Covid-19 pandemic derogation (reproduced in full as relevant interpretation 11 in section 7.1 of this report). At re-assessment, PI 1.1.1 was assessed as not meeting SG80 although progress is judged to be on target. Further details of the condition and its milestones are provided in section 8.1.3 of this report.

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
1	<p>Evidence should be provided that 1) it is highly likely that the stock is above the PRI and 2) the stock is at or fluctuating around its target reference point.</p> <p>The assessment team note that recovery of the stock has been evaluated by ICES and it could take until 2022. The present period of certification will end in May 2019. It is possible that the SG80 requirements will not be met during this period of time. This is a consequence of the biology of the stock, rather than any delay in the implementation of management measures.</p> <p>As such, this constitutes “exceptional circumstances”, sensu FCR at §7.11.1.3. In “exceptional circumstances”, the CAB shall spell out the significant and measurable improvements that must be achieved, and the score that must be achieved by the end of the certification period; and also, what constitutes a successful</p>	PI 1.1.1 – Stock Status	Y

	overall outcome over a longer, specified time period (FCR at §7.11.1.3(ii)).		
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6.4. Recommendations

No recommendations have been made for any of the UoAs.

6.5. Determination, Formal Conclusion and Agreement

Following a meeting on 24th September 2020, SAI Global's internal Certification Committee, having considered this report and the Assessment Team's recommendation, determined that:

- ISF Norwegian and Iceland herring trawl and seine – Icelandic summer spawning herring report is to be awarded continuing MSC certification.

(REQUIRED FOR PCR)

1. The report shall include a formal statement as to the certification action taken by the CAB's official decision-makers in response to the Determination recommendation.

6.6. Changes in the fishery prior to and since Pre-Assessment

This is not relevant as this is a re-assessment.

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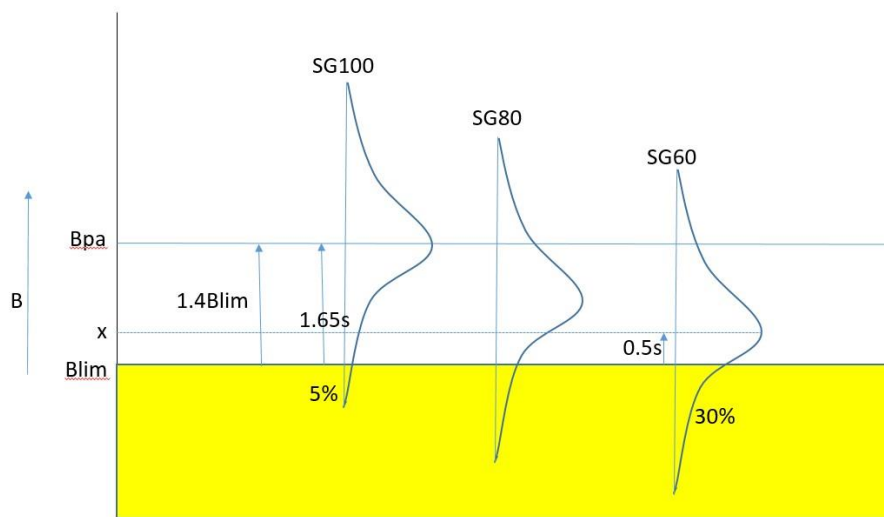
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7.1. Relevant MSC interpretations

The MSC requires that the use in an assessment report of an interpretation from the interpretation log must be properly referenced in a separate Appendix of the report with the date, title and web link of the interpretation being provided.

Relevant Interpretation 1	
Title:	Scoring stock status against Bmsy for ICES stocks (FCR v2.0 – Annex SA PI 1.1.1)
Date:	03/04/2017 (last published 30/08/2018)
Weblink:	https://mscportal.force.com/interpret/s/article/Scoring-stock-status-against-Bmsy-for-ICES-stocks-PI-1-1-1-1527262010506
Question:	In the absence of defining Bmsy, how should CABs and assessment team members evaluate ICES stocks (and defined reference points) against the MSC requirements?
Answer:	<p>MSC requirements (v2.0) Reference points set by ICES are not directly translatable to those described in the MSC Standard – neither in value nor intent.</p> <p><u>The MSC standard requires the following for PI 1.1.1</u></p> <ol style="list-style-type: none"> 1. To score 60: Scoring issue (a) = It is likely (70% probability) that the stock is above the point where recruitment would be impaired (point of recruitment impairment = PRI). 2. To score 80: Scoring issue (a) = It is highly likely (80% probability) that the stock is above the point where recruitment would be impaired (PRI); AND scoring issue (b) = the stock is at or fluctuating around a level consistent with MSY. 3. To score 100: scoring issue (a) = There is a high degree of certainty (95% probability) that the stock is above the PRI; AND scoring issue (b) = 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. <p>Point of Recruitment Impairment (PRI) The ICES reference point B_{lim} can be treated as the PRI.</p> <p><u>Scoring issue (a): stock status with respect to the point of recruitment impairment (PRI)</u></p> <ol style="list-style-type: none"> 1. To meet the 60 scoring guidepost To achieve a 60 score in scoring issue (a) the probability of being below the PRI should be no more than 30% (“likely” above the PRI). In the absence of an explicit probability distribution of stock size, CABs should normally assess this SG as met when the stock is estimated to be at or above 1/3 of the distance between B_{lim} and B_{pa} (though see note^[1]). 2. To meet the 80 scoring guidepost In absence of an explicit probability distribution of stock size, CABs should normally assess this situation as met when the stock is estimated above 1/2 of the distance between B_{lim} and B_{pa} (though see note^[2]). 3. To meet the 100 scoring guidepost MSC requires that a “high degree of certainty” generates only a 5% probability that a stock is less than the PRI. ICES states that, at B_{pa}, there is a very low probability of being below B_{lim}, which can be assumed to be equivalent to the MSC “high degree of certainty”. <p>Maximum Sustainable Yield ICES does not define B_{MSY}, in ICES own words “B_{MSY} is a notional value around which stock size fluctuates when fishing at F_{MSY}. B_{MSY} strongly depends on the interactions between the fish stock and the environment it lives in, including biological interactions between different species. Historical stock size trends may not be informative about B_{MSY} (e.g., when F has exceeded F_{MSY} for many years or when current ecosystem conditions and spatial stock structure are, or could be, substantially different from those in the past).”</p> <p>It does define $MSY B_{trigger}$ (hereafter $B_{trigger}$), which should not be interpreted by CABs as a target reference point equal in intent and outcome to B_{MSY}. Rather $MSY B_{trigger}$ is considered the lower bound of spawning–</p>

	<p>stock biomass fluctuation around B_{MSY}. It is a biomass reference point that triggers a cautious response [ICES 2016].</p> <p>Scoring issue (b): stock status with respect to MSY</p> <p>The guidance states that in ICES assessments, fisheries with $B > B_{trigger}$ <i>may</i> be regarded as fluctuating around MSY. However, a stock with $B > B_{trigger}$ is not necessarily at or fluctuating around B_{MSY}. Irrespective of status with respect to $B_{trigger}$, CABs must ensure that there is evidence that the stock is ‘fluctuating around’ B_{MSY} in contrast to recovering towards B_{MSY}.</p> <p>CABs should consider proxy indicators and reference points (SA2.2.3) where B_{MSY} is not defined by ICES. Fishing mortality rate is usually defined and thus should be used in accordance with SA2.2.4 which states that teams shall demonstrate that F has been low enough for long enough to ensure that corresponding biomass levels have been met (SA2.2.4). In ICES stocks, B_{MSY} is assumed to be achieved through consistent maintenance of fishing mortality at or below F_{MSY}. Consistent with requirements in PI 1.1.2a (Rebuilding PI) MSC recommends that to achieve an assumed status of B_{MSY}, F should have been at or below F_{MSY} for at least 1 Generation Time (GT) from a starting point close to B_{pa} or $B_{trigger}$, and 2 generation times from a starting point close to B_{lim} (Carruthers and Agnew 2016), GT is assumed to be given by the proxy $GT = AM_{50} + 1/M$, where AM_{50} is the age at 50% maturity, and M is natural mortality.</p> <p>An 80 score may also be met where stock size is very substantially higher than B_{pa}, for instance greater than $2 \times B_{pa}$ ($B_{trigger}$) (Froese et al, 2014), irrespective of the above F proxies.</p> <p>Expected values of F</p> <p>In order to ensure that stock status is fluctuating around B_{MSY}, fishing mortality in ICES stocks should only exceptionally be greater than F_{MSY}. F may occasionally be greater than F_{MSY} when allowed for under a management strategy that has its outcome tested to be consistent with B_{MSY}, for instance on one or two planned occasions during recovery, or when $B \gg B_{MSY}$.</p> <p>References</p> <p>Carruthers, T. & D. J. Agnew, 2016. Using simulation to determine standard requirements for recovery rates of fish stocks. Marine Policy 73, pp 146–153</p> <p>ICES, 2015. Advice Basis, July 2015. http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2015/2015/General_context_of_ICES_advice_2015.pdf</p> <p>Froese, R., Coro, G., Kleisner, K. and Demirel, N. (2014), Revisiting safe biological limits in fisheries. Fish and Fisheries. http://onlinelibrary.wiley.com/doi/10.1111/faf.12102/abstract</p> <p>Notes</p> <p>[1] This result is derived from the assumption that the distance between B_{lim} and B_{pa} is 1.645σ, where σ is the standard deviation of the biomass estimate, and 1.645 is the distance in sigma units between the mean of a Gaussian curve when this is B_{pa}, and the point at which 5% of the area under the curve is below B_{lim}. This corresponds to the ICES definition of the relationship between B_{pa} and B_{lim}. The distance in sigma units between the mean and B_{lim} when 30% of the area under the curve is below B_{lim} (corresponding to the 70% probability required for scoring the SG60) is 0.525. The ratio $0.525/1.645$ is approximately $1/3$. Note that non-Gaussian probability distributions of biomass are not unlikely and would give results that deviated in absolute terms from this guidance, although the general principal remains. CABs should take this into account in their scoring.</p>
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[2] Following from note¹, the distance in sigma units between the mean and B_{lim} when 20% of the area under the curve is below B_{lim} (corresponding to the 80% probability required for scoring the SG80) is 0.842. The ratio $0.842/1.645$ is approximately $\frac{1}{2}$. Note that non-Gaussian probability distributions of biomass are not unlikely and would give results that deviated in absolute terms from this guidance, although the general principal remains. CABs should take this into account in their scoring.

Relevant Interpretation 2	
Title:	P2 species outcome PIs - scoring when no main or no minor (or both) (FCR v2.0 - Annex SA PI 2.1.1, 2.2.1)
Date:	14/02/2017
Weblink:	https://mscportal.force.com/interpret/s/article/P2-species-outcome-PIs-scoring-when-no-main-or-no-minor-or-both-PI-2-1-1-1527262009344
Question:	<p>When using the scoring element approach for 2.1.1 and 2.2.1 (version 2.0), what scores would you achieve in the following scenario:</p> <p>Scenario 1: no main species, minor species meet Sib SG100. Here I think we can agree the score is 100</p> <p>Scenario 2: no main species, minor species do not meet Sib SG100. Here it's confusing because the score is different whether you consider that Sla is 'not applicable' or scores 100. So the score here is either 80 or 90.</p> <p>So in essence my question is, in the absence of main species, do you score Sla as not applicable or SG100 met? The same would need to be true for Sib (in the absence of minor species). I'm hoping it's not applicable as that would make a lot more sense from a practical scoring perspective, particularly if you're dealing with multiple scoring elements (it makes no sense for example to score a main species against Sib). On the other hand, if a fishery has no primary or secondary species, you would want to score both SI's as 100 being met.</p>
Answer:	<p>Basically you only score the main species in the 'main' (Sla) scoring issue and the minor in the 'minor' (Sib) for 2.1.1 and 2.2.1.</p> <p>So in your scenario 1, if the fishery has no main species, scoring issue (a) is not applicable, and scoring issue (b) is scored at the 100 level. If it meets it for all species, then score is 100.</p> <p>In scenario 2, if the fishery has no main species, scoring issue (a) is still not applicable. In scoring issue (b) each species will score either 80 or 100 depending on whether the SG100 is met or not (noting previous interpretation on grouping these, see hyperlink).</p>

	<p>Clause SA3.2.1 applies when there are no species within a component at all ('If a team determines that a UoA has no impact on a particular component, it shall receive a score of 100 under the Outcome PI'). If no main or minor primary species, for example, then the automatic 2.1.1 score is 100.</p> <p>Hyperlink: Minor species and scoring element approach at SG100</p>
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Relevant Interpretation 3	
Title:	Minor species and scoring element approach at SG100 (FCR v2.0 - 7.10.7, Annex SA PI 1.1.1, 2.2.1)
Date:	24/10/2016 (last published 30/08/2018)
Weblink:	https://mscportal.force.com/interpret/s/article/Minor-species-and-scoring-element-approach-at-SG100-7-10-7-1527586956233
Question:	<p>Should each P2 "minor" species be assessed as a separate scoring element? We have been considering main retained species as separate scoring elements, while generally regarding the minor species as just a single element. We feel that this is the most correct approach, particularly when you take the weightings of the various scoring elements into consideration (i.e. minor species should not have the same weighting as main species). For very large, mixed species fisheries it also saves a lot of time. Is this approach also correct? It would be great if you could provide us with a bit more guidance on this issue.</p>
Answer:	<p>The MSC recognise that there are time and cost implications of scoring each individual element separately, particularly in cases where there are large numbers of species to assess. After some discussion we have determined that teams should list which main or minor species are assessed in each component to make clear what is being scored as main vs minor. All minor species automatically achieve at least SG80. Then it would be up to the team whether they decide to score these species at SG100 as individuals (some meet SG100, others do not) or to use an 'all or none' approach to scoring. So if all minors meet 100 then it is achieved. If any do not, it stays at SG80. The team then need to record and assess the scores for minor species but they can 'group' how they report these scores.</p> <p>Examples of how this might be presented are given below. The numbered minors could be provided in a table in the background section.</p> <p>Example 1: 'all or none' approach to minors at SG100, so in this case not all meet 100 so all get 80:</p> <p>Main species x: 60 Main species y: 60 Main species z: 80 Minors no. 4-20: 80</p> <p>Overall score: 75 (all meet 60, most achieve 80 or higher, only a few fail to achieve 80). Note: The fact that all minors are 'scored' even if they aren't looked at in detail at SG100 means there is a pull to make the score higher, but it wouldn't be able to meet 80 since one or more main species requires a condition.</p> <p>Example 2: using the 'individual' approach:</p> <p>Main species x: 60 Main species y: 60 Main species z: 80 Minors no. 4-6: 100 Minors no. 7-20: 80</p> <p>Overall: 75 (all meet 60, most achieve 80 or higher, only a few fail to achieve 80) (note above also applies here).</p> <p>This will be considered in more detail in the next review of the requirements.</p>

Relevant Interpretation 4	
Title:	Use of 'if necessary' in P2 management PIs (FCR v2.0 - Annex SA PI 2.1.2, 2.2.2, 2.4.2, 2.5.2)
Date:	24/03/2015 (last published 29/08/2018)
Weblink:	https://mscportal.force.com/interpret/s/article/Use-of-if-necessary-in-P2-management-PIs-2-1-2-2-2-2-2-4-2-2-5-2-PI-2-1-2-1527262011402

Question:	Does the ‘if necessary’ clause in scoring issue (a) of PIs 2.1.2, 2.2.2, 2.4.2 and 2.5.2 mean that it applies to scoring issues (b) and (c), which refer back to the measures or partial strategy? i.e. If measures or partial strategy are not needed because there is no or negligible impact on the specific component, do you still need to score the SG60 and SG80 for ‘management strategy evaluation’ and ‘management strategy implementation’?
Answer:	Although it is not specified in the requirements, the MSC’s intent is that the ‘if necessary’ in scoring issue (a) also pertains to scoring issues (b) and (c). If the fishery does not need to have measures or partial strategy because there is no or negligible impact on Primary, Secondary, Habitats or Ecosystem components, it would meet at least the SG80 level in scoring issues a-c. However, additional scoring issues like shark finning, unwanted catch or compliance with management requirements for VMEs would still need to be scored at all levels if they apply (the shark finning scoring issue is only scored if there is a secondary species that is a shark, as indicated by the curly brackets and confirmed in the guidance).

Relevant Interpretation 5	
Title:	Should species that are listed under the prohibitions set out in EU Fisheries Regulations be regarded as ETP species? (CR v1.3 - Annex CB, FCR v2.0 - Annex SA PI 2.3.1, SA 3.1.5)
Date:	30/08/2018
Weblink:	https://mscportal.force.com/interpret/s/article/Should-species-that-are-listed-under-the-prohibitions-set-out-in-EU-Fisheries-Regulations-be-regarded-as-ETP-species-SA3-1-5-1527262010509
Question:	<p>This is a request for guidance on whether (and to what extent) species that are recognised in EU legislation (either Regulations or under certain circumstances Directives) should be considered ETP species under the MSC Certification Requirements.</p> <p>This question has arisen from (but is not limited to) the wording of Article 12 of EC Regulation 104/2015. This Article prohibits EU vessels “to fish for, to retain on board, to tranship or to land the following species” and then goes on to list various species which are either rare or in decline.</p> <p>NGOs within Europe consider that listing here should make the species “ETP” in MSC assessments.</p> <p>The following information is relevant to this query:-</p> <p>MSC CR Context The MSC CR (both v1.3 and v2.0) defines ETP species in a similar way (at CB3.11.1 and SA3.1.5 respectively):-</p> <p>The team shall define ETP (endangered, threatened or protected species) as follows:</p> <p>a. Species that are recognised by national ETP legislation.....</p> <p>The CR does not specify what is meant by the following terms, and this lies at the heart of this query:-</p> <ul style="list-style-type: none"> ▪ “recognised” – what does this mean? ▪ “national” – does that mean legislation that is made by a national body or that which is enforceable within a nation? ▪ “ETP legislation” – does this mean, for instance that a species that is a rare species and is protected in the UK under (say) the Wildlife & Countryside Act should be considered an ETP species, but one that is protected for the same reasons under the Salmon & Freshwater Fisheries Act should not? Or does “ETP legislation” simply mean legislation that has been put in place to protect species because they are endangered, threatened or protected? <p>Legal context – “direct applicability”</p> <p>Within the European Union, certain EU legislation is “directly applicable”. This means that the EU legislation applies within Member States as if it was national law, with no need for national laws to transpose the EU legislation. This “directly applicable” legislation includes the EU Treaties, EU Regulations (and also Directives or parts of such that have passed their transposition deadline without Member State action).</p> <p>To all intents and purposes, therefore, “directly applicable” legislation is equivalent to national law.</p>

	<p>Legal context – territorial waters and Member State lethargy</p> <p>An added dimension to consider here is that legislation made by an EU Member State can only apply either to all vessels operating in its Territorial Waters or to its own national vessels wherever they are. By contrast, EU Regulations apply throughout the EU, and are enforceable (by Member State authorities) against any vessel working in the EC EEZ. This means that EU legislation is a more effective way of providing ETP protection than Member State legislation.</p> <p>Further to this, the principle of “direct applicability” of Directives was established in order to address the issue of Member State lethargy. Many years ago, several Member States tried to get out of implementing EU Directives simply by failing to make the national legislation required to transpose the Directive in question. The ECJ ruled that this didn’t get them off the hook, and that if a Directive was not transposed before the deadline set out in the Directive, its provisions would become “directly applicable”.</p> <p>The combination of uncertainty about the ETP definition in the CR, coupled with the action that the EC has recently taken to protect certain species has brought this matter to the fore.</p> <p>Consequences</p> <p>The MSC’s view on this matter is important to ensure harmony between MSC assessments within the EU. Whether it is considered that “directly applicable” EU legislation does or does not meet the qualifying criteria for identifying ETP species, there are some far-reach consequences for the MSC standard, including:-</p> <p>If it is considered that EU legislation that is “directly applicable” does not meet the qualifying criteria for identifying ETP species, then this means that the ETP regime within a UoC/UoA is that made up of the patchwork of Member State provisions. It also means that any MS lethargy would constrain the list of ETP species (potentially rewarding such lethargy).</p> <p>On the other hand, if it is considered that “directly applicable” EU legislation does meet the ETP criteria, then all MSC fisheries within the EU will need to keep a close eye on changes to such legislation, including to the prohibitions set out in the annual TAC Regulation.</p> <p>Guidance on this matter is therefore important to ensure harmony and to maintain the MSC Standard.</p>
Answer:	<p>The MSC recognise that there is currently lack of clarity in CR v1.3/FCR v2.0 on designating ETP species, including interpretation of the terms: “recognised”, “national” and “ETP legislation” and are currently undertaking a review of ETP instruments and current requirements, which will be presented to the Technical Advisory Board (TAB) in December 2015 so further clarifications on these terms and examples of interpretation may be provided after this point.</p> <p>With regard to your query on whether species that are recognised in EU legislation should be considered ETP species under the MSC Certification Requirements, the MSC notes that EC Regulations are binding so all Member States are required to implement them. However, Directives and Decisions, such as the EU Marine Strategy Framework Directive, first need to be transposed by Member States into national law before they are considered binding. On this basis, MSC suggests that legal obligations established by EC Regulations be considered by assessment teams as equivalent to a species being recognised by national ETP legislation, and that species included on these Regulations should be scored as ETP.</p> <p>As ETP species include ‘protected’ species (not just endangered/threatened), there may be instruments other than those created specifically for protection of wildlife/endangered species where this protection is provided. For example EC Regulation 104/2015 (see hyperlink) setting fishing opportunities for 2015 lists “prohibited species” such as certain sharks, skates and rays (Article 12). The intent of prohibiting these species (or setting a ‘0’ TAC for them as done prior to 2015) is clarified in the introduction to this document as being particularly because these species have a poor conservation status and that discarding will be beneficial for them due to their high survivability, see point 6:</p>

	<p><i>For some years, certain TACs for stocks of elasmobranchs (skates, sharks, rays) have been set at 0, with a linked provision establishing an obligation to immediately release accidental catches. The reason for this specific treatment is that those stocks are in a poor conservation status and, because of their high survival rates, discards will not raise fishing mortality rates for them; discards are deemed as beneficial for the conservation of these species. As of 1 January 2015, however, catches of these species in pelagic fisheries will have to be landed, unless they are covered by any of the derogations from the landing obligation foreseen in Article 15 of Regulation (EU) No 1380/2013. Article 15(4)(a) of that Regulation allows such derogations for species in respect of which fishing is prohibited and which are identified as such in a Union legal act adopted in the area of the Common Fisheries Policy. Therefore, it is appropriate to prohibit the fishing of these species in the areas concerned (emphasis mine).</i></p> <p>This being the case, the MSC recommends that the assessment team consider the listing of species as prohibited in Article 12 of EC Regulation 104/2015 as equivalent to being recognised by national ETP legislation. However, the MSC recognises that not all species that have a 0 TAC set for a given year (e.g. in other instruments) should normally be considered as ETP, unless the intent of doing so is stated in the instrument as being to specifically to protect the species because of its poor conservation status.</p> <p>As mentioned above, other instruments (EU Directives and Decisions) and national legislation that may not have been designed specifically for ETP species will be considered as part of the review of ETP instruments. This review will feed into the development of interim interpretations that will be used to create clearer requirements, definitions and examples of when species should be designated as ETP in the next Fishery Standard Review process (2018-19).</p> <p>Hyperlink - EC Regulation 104/2015</p>
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Relevant Interpretation 6	
Title:	ETP and 'limits' (FCRv2.0 - Annex SA PI 2.3.1, SA 3.10.1)
Date:	29/08/2018
Weblink:	https://mscportal.force.com/interpret/s/article/ETP-and-limits-PI-2-3-1-1527262007441
Question:	Does the word 'limits' in scoring issue (a) in PI 2.3.1 (ETP outcome) and SA3.10.1 mean quantitative limits?
Answer:	Yes, the intent is that the scoring issue (a) in PI 2.3.1 is scored when there are quantitative mortality limits for that species.

Relevant Interpretation 7	
Title:	Designation of vulnerable marine ecosystems (FCR v2.0 - Annex SA PI 2.4.1, SA 3.13.3.2)
Date:	29/08/2018
Weblink:	https://mscportal.force.com/interpret/s/article/Designation-of-vulnerable-marine-ecosystems-SA3-13-3-2-1527586954502
Question:	Is a habitat a vulnerable marine ecosystem (VME) if it has not been defined or identified as one? Should assessment teams look for evidence on whether or not the UoA encounters potential VMEs, and what sort of evidence should be considered?
Answer:	If a habitat has not been formally defined by a responsible agency as a VME, a CAB would not normally consider it as a VME. However, it could be defined as a VME in future and would then need to be assessed as a VME. Additionally, if assessment teams find or are presented with evidence of potential VMEs, they must consider this evidence and assess the UoA's potential impact and management accordingly. The MSC recognises that stakeholders may present varying qualities of information. If there is scientific evidence to show that vessels keep encountering vulnerable habitat (e.g., observer data showing coral coming up) or if an NGO has information that shows that a potential VME habitat is being impacted, the assessment team should consider it. In these situations, the team may treat the habitat as a VME or not, depending on the information that is available, while adopting a generally precautionary approach. The CAB should provide support for the approach it takes in its scoring rationale.

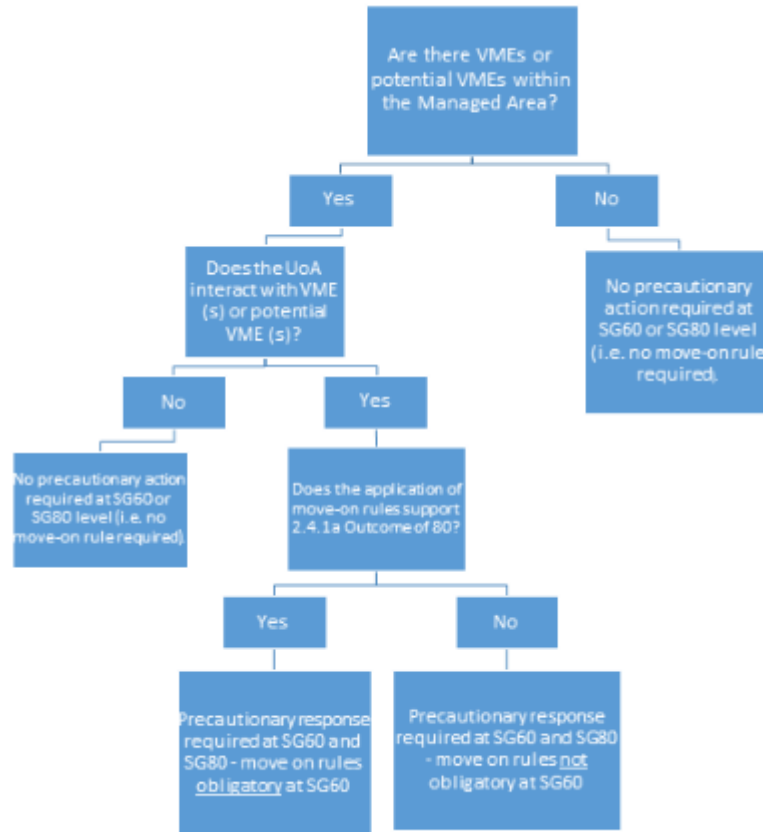
Relevant Interpretation 8	
Title:	Designation of vulnerable marine ecosystems and closed areas (FCR v2.0 - Annex SA PI 2.4.2, SA 3.14.3)
Date:	29/08/2018
Weblink:	https://mscportal.force.com/interpret/s/article/Designation-of-vulnerable-marine-ecosystems-and-closed-areas-SA3-14-3-1527586954502
Question:	What level of governance structure needs to be in place for someone to determine if an area should be closed? How does the assessment team deal with the situation of a VME being identified by the management entity but the entity has yet to close the area at the time of assessment?
Answer:	An area may be closed to fishing by the management entity, or by a client fishery or non-MSC fishery before the management entity has done so. Both such 'varieties' of closed areas should be considered in scoring the UoA. If the management entity has yet to close an area identified as containing a VME, the UoA would not be recognised as avoiding such area unless they are doing so voluntarily. If the UoA does voluntarily choose to avoid the area, any other UoAs would need to do the same in order to meet PI 2.4.2 scoring issue d.

Relevant Interpretation 9	
Title:	Determining relevant management measures, strategies and/or rules in the scoring of PI 3.2.3 SIa (FCP v2.1 - 7.17.9)
Date:	10/05/2019
Weblink:	https://mscportal.force.com/interpret/s/article/Determining-relevant-management-measures-strategies-and-or-rules-in-the-scoring-of-PI-3-2-3-SIa-FCP-v2-1-7-17-9
Question:	In the scoring of PI 3.2.3 scoring issue (a), what is meant by "relevant management measures, strategies and/or rules" at the SG80 and SG100 levels?
Answer:	The scoring guideposts for PI3.2.3 SIa at the SG80 and SG100 levels require assessors to consider the ability of the monitoring, control and surveillance system to enforce relevant management measures, strategies and/or rules. Assessment teams should consider "relevant" to refer to those management measures, strategies and/or rules that have been implemented by the fishery-specific management system to achieve outcomes expressed by MSC's Principles 1 and 2. It is expected that these will have been identified and assessed elsewhere in the assessment tree, including in Principle 1 and in Principle 2. Only these relevant measures, strategies and/or rules should be considered when assessing the ability of monitoring, control and surveillance system at the SG80 and SG100 levels. There is no reference to relevant management measures, strategies and/or rules at the SG60 level. As such, this guidepost may be met where some monitoring control and surveillance mechanisms exist and are implemented in the fishery, with reasonable expectation that they are effective. There is no requirement at this level for these mechanisms to have demonstrated an ability to enforce relevant management measures, strategies and/or rules in place in the fishery.

Relevant Interpretation 10	
Title:	Move-on rules at SG60 for PI2.4.2a. (FCR v2.0 - Annex SA PI 2.4.1, 2.4.2, Table SA 8, Table GSA 3)
Date:	30/08/2018
Weblink:	https://mscportal.force.com/interpret/s/article/Move-on-rules-at-SG60-for-PI2-4-2a-1527586956234
Question:	Are Move-on rules (type of encounter protocol) obligatory at SG60 for PI2.4.2a?
Answer:	<p>It depends on whether there are likely to be interactions with VME (s) and whether they are likely to deliver SG80 or greater for 2.4.1a.</p> <p>If the UoA is likely to interact with a VME (s) or potential VME (s), the response of the fishery needs to be precautionary. In this case avoidance measures based on commonly accepted move-on rules should be instituted (see Table 1 for examples of commonly accepted move-on rules) at SG60 level on the basis that these measures are likely to deliver SG80 or greater for 2.4.1a. In this context, move-on rules may not be applicable for certain fisheries (e.g. pot fisheries) or certain VME indicator taxa/species/features (e.g. deep sea mud habitats) given their low catchability.</p>

If there is no interaction between the VME (s) or potential VME (s), the team does not need to specify a management response for SG60 or SG80. This approach is directed through the "if necessary" clause (see Guidance Table GSA 3 and Table SA8) within the scoring PI (2.4.2a).

See decision key below (Figure 1).



Note: this is not the complete interpretation -see link for tables referred to in text.

Relevant Interpretation 11

Title:	UPDATE 20/05/2020 - Covid-19 pandemic derogation, March 2020 – updated to include additional guidance for CoCCABs/Clients
Date:	15/06/2020
Weblink:	https://mscportal.force.com/interpret/s/article/Covid-19-pandemic-derogation-March-2020
Question:	
Answer:	<p>Chain of Custody Certification Requirements and Fishery Certification Process allowing remote audit and extensions to certificates and associated timelines</p> <p>Date 27 March 2020</p> <p>To: MSC Accredited Conformity Assessment Bodies</p> <p>CC: Assurance Services International, Aquaculture Stewardship Council</p> <p>In response to the Covid-19 pandemic and consideration of the welfare of all individuals participating in the MSC certification system, the MSC issued a derogation to allow for scheduling and conducting remote site visits and audits for Fisheries and Chain of Custody certificate holders (Coronavirus</p>

Announcement, Derogation issued on 28th February 2020). We have received requests from certificate holders to allow for further flexibility given the unprecedented circumstances we now find ourselves in. This derogation supersedes the derogation issued on 28th February 2020.

This derogation **allows a six-month certificate extension for all Fishery and Chain of Custody certificate holders, according to the specifications below. In addition, requirements for in-person site visits do not apply during the period of this derogation.** Fisheries and supply chain certificate holders could proceed with remote auditing with agreement from CABs, where feasible.

Fisheries: Automatic six-month extension shall be applied to all fishery certificates and associated timelines, including deadlines for client action plans, milestones and conditions. This ensures a consistent approach is taken with all fisheries in light of MSC's requirements for harmonisation. The extension shall also apply to audit and assessment activities and timelines specified in the MSC Fisheries Certification Process, with the exception of objections (to be decided by the Independent Adjudicator) and in certain cases, expedited audits. Guidance on expedited audits will be further defined by the MSC.

Fishery clients can opt to proceed with remote audit or assessment activities during this extension period, i.e. to work to existing or revised timelines, with their CABs, should they so choose. MSC expects a sensible and pragmatic approach will be taken to scheduling surveillance audits at the end of this derogation period where existing FCP requirements permitting flexibility in scheduling audits should allow audits to be staggered (i.e. FCP 2.1 clause 7.28.8.1 applies from the new certificate anniversary date).

Supply chain companies: Audits may be conducted remotely, however CABs may issue a six-month extension if this is not feasible due to the impact of Covid-19 to audit due dates and certificate expiry. This approach differs from that applied to fisheries and does not provide an automatic extension.

CABs will not need to submit a variation request to delay audit or assessment activities, to apply certificate extensions or to conduct remote audits or assessments. Certificate holders are expected to continue to conform to the requirements in the MSC Standards during the derogation and this will be subject to review at subsequent audits and assessments once the derogation is lifted. CABs may conduct initial chain of custody audits and fishery assessments remotely.

CABs shall maintain a list of certificate holders where this derogation has been applied and shall make this list available for MSC or ASI on request. The MSC will provide further guidance to support the implementation of this derogation. The MSC will review this derogation on a monthly basis, and may be extended if the Covid-19 disruption continues or intensifies.

For any other questions please contact the MSC Supply Chain Standards (supplychain@msc.org) and Fisheries Standard (fisheries@msc.org) teams. The MSC will continue to monitor the situation and provide any updates.

Date of issue: 27 March 2020

End of validity: 27 September 2020

Sincerely,

Dr. Rohan Currey

Chief Science and Standards Officer

UPDATE 02/04/2020

For more information about how CABs should implement the derogation please refer to the following guidance documents. These (version 2) have been updated on 21/04/2020 to reflect further questions raised by CABs and include clarifications on auditability.

- [Guidance to CABs – Fisheries v2](#)
- [Guidance to CABs – CoC v2](#)

UPDATE 20/05/2020

For more detailed information about how CABs and clients should implement the derogation please refer to the following guidance documents:

- [Additional Guidance for CoC CABs](#)
- [Remote Auditing Clause-by-Clause Guide](#)
- [Guidance for CoC Holders](#)

8. Appendices

8.1. Appendix 1 Scoring and Rationales

8.1.1. Appendix 1.1 Performance Indicator Scores and Rationale – Evaluation Tables

Principle 1 – Sustainable Target Fish Stocks – Evaluation Tables

PI 1.1.1 – Stock Status

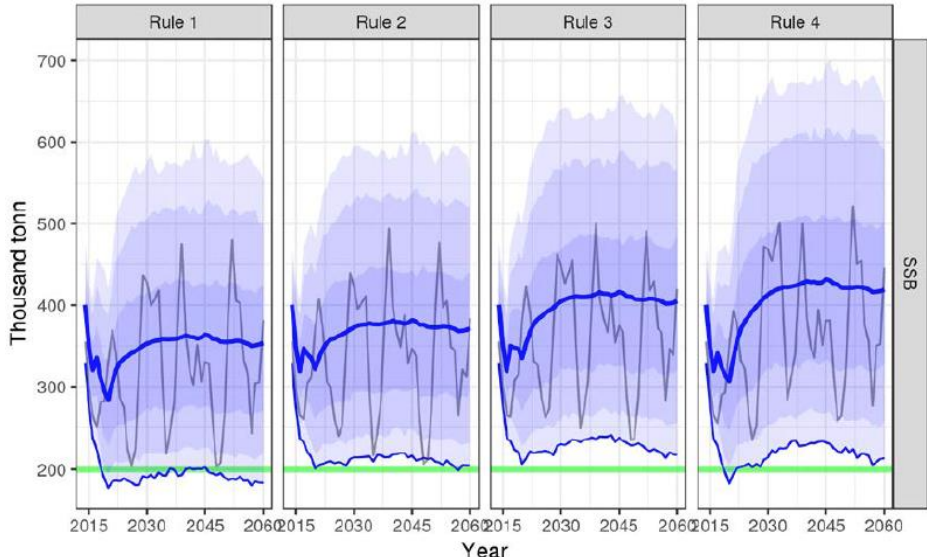
PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Stock status relative to recruitment impairment			
	Guidepost	It is likely that the stock is above the point where recruitment would be impaired (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.
	Met?	Y	N	Not scored
	Justification	It is likely that the stock is above the point where recruitment would be impaired (PRI). Scoring was done according to MSC interpretation “Scoring stock status against B_{MSY} for ICES stocks (FCRv2.0 - Annex SA PI 1.1.1)” (Relevant Interpretation 1 in section 7.1 of this report). The stock (SSB2019) has been estimated at 212,481 tonnes, which is below its B_{pa} reference point (273,000t) but above its B_{lim} (PRI) reference point of 200 000 tonnes (ICES, 2019b). According to FCR v2.0 - Annex SA PI 1.1.1 its likely (70% probability) that the stock is above the point where recruitment would be impaired. SG60 is met. In absence of an explicit probability distribution of stock size, CABs should normally assess this situation as met when the stock is estimated above 1/2 of the distance between B_{lim} and B_{pa} (Annex SA PI 1.1.1). The stock estimate SSB2019 (212,481t) is below B_{pa} (273,000), but just above (6%) B_{lim} (200,000t) (ICES 2019b). According to Annex SA PI 1.1.1 it is not highly likely (80% probability) that the stock is above the point where recruitment would be impaired. SG80 is not met. As SG80 is not met, SG100 is not scored (MSC FCR v2.0, §7.10.5.3). For numerical values see stock status relative to stock reference points at the end of the scoring Table for this PI.		
b	Stock status in relation to achievement of MSY			
	Guidepost		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.
	Met?		N	Not scored
	Justification	According to FCRv2.0 - Annex SA PI 1.1.1 ICES does not define B_{MSY} for ISSH, in ICES own words “ B_{MSY} is a notional value around which stock size fluctuates when fishing at F_{MSY} . B_{MSY} strongly depends on the interactions between the fish stock and the environment it lives in, including biological interactions between different species. Historical stock size trends may not be informative about B_{MSY} (e.g., when F has exceeded F_{MSY} for many years or when current ecosystem conditions and spatial stock structure are, or could be, substantially different from those in the past).” It does define $MSY B_{trigger}$ (hereafter $B_{trigger}$), which should not be interpreted by CABs as a target reference point equal in intent and outcome to B_{MSY} . Rather $MSY B_{trigger}$ is considered the lower bound of spawning–stock biomass fluctuation around B_{MSY} . It is a biomass reference point that triggers a cautious response [ICES 2016]. Scoring issue (b): stock status with respect to MSY		

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing	
		<p>The guidance states that in ICES assessments, fisheries with $B > B_{trigger}$ <i>may</i> be regarded as fluctuating around MSY. However, a stock with $B > B_{trigger}$ is not necessarily at or fluctuating around B_{MSY}. Irrespective of status with respect to $B_{trigger}$, CABs must ensure that there is evidence that the stock is ‘fluctuating around’ B_{MSY} in contrast to recovering towards B_{MSY}. An 80 score may also be met where stock size is very substantially higher than B_{pa}, for instance greater than $2 \times B_{pa}$ ($B_{trigger}$) (Froese et al, 2014), irrespective of the above F proxies.</p> <p>The stock estimate SSB_{2019} (212,481t) is much lower than B_{pa} (273,000), and just above (6%) B_{lim} (200,000t) (ICES 2019j). Because of above and according to Annex SA PI 1.1.1 where $MSY B_{trigger}$ is considered the lower bound of spawning–stock biomass fluctuation around B_{MSY}, the assessment team conclude that stock is not fluctuating around a level consistent with MSY. SG80 is not met. As SG80 is not met, SG100 is not scored (MSC FCR v2.0, §7.10.5.3).</p>	
References		<p>ICES, 2018d. Report of the North-Western Working Group (NWWG). Page 773. ICES, Copenhagen ICES HQ.</p> <p>ICES, 2019j. Herring (<i>Clupea harengus</i>) in Division 5.a, summer-spawning herring (Iceland grounds). In Report of the ICES Advisory Committee, 2019. Page ICES Advice 2019, her.27.5a., https://doi.org/10.17895/ices.advice.4736.</p> <p>FCR v2.0 - Annex SA PI 1.1.1 - Scoring was done according to MSC interpretation log “Scoring stock status against Bmsy for ICES stocks (FCR v2.0 - Annex SA PI 1.1.1)” https://mscportal.force.com/interpret/s/article/Scoring-stock-status-against-Bmsy-for-ICES-stocks-PI-1-1-1-1527262010506.</p>	
Stock Status relative to Reference Points			
	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)	$B_{lim} = PRI$ $MSY B_{trigger}$ B_{pa}	$B_{lim} = 200,000t$ $MSY B_{trigger} = 273,000t$ $B_{pa} = 273,000t$	$SSB_{2019}/B_{lim} = 1.06$ $SSB_{2019}/MSY B_{trigger} = 0.778$
Reference point used in scoring stock relative to MSY (Sib)	B_{lim} $MSY B_{trigger}$ B_{pa}	$B_{lim} = 200\,000t$ $MSY B_{trigger} = 273,000t$ $B_{pa} = 273,000t$	$SSB_{2019}/B_{lim} = 1.06$ $SSB_{2019}/MSY B_{trigger} = 0.778$
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 1 of 1 SIs, SG80 0 of 2 SIs, SG100 0 of 2 SIs)			60
CONDITION NUMBER (if relevant):			1

PI 1.1.2 – Stock rebuilding

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe																																																																																																																																																																																																																			
Scoring Issue		SG 60	SG 80	SG 100																																																																																																																																																																																																																	
a	Rebuilding timeframes																																																																																																																																																																																																																				
	Guidepost	A rebuilding timeframe is specified for the stock that is the shorter of 20 years or 2 times its generation time . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the stock.																																																																																																																																																																																																																	
	Met?	Y		Y																																																																																																																																																																																																																	
	Justification	<p>The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the stock.</p> <p>Generation time (GT) is calculated as $GT=1/M + \text{age at 50\% maturation}$. M is natural mortality and age at 50% maturation is from maturation ogive, and for Icelandic summer-spawning herring 50% or individuals are mature at age 4. Taking into account the increase in M due to <i>Ichthyophonus</i> infestation $M = (0.23)$ (ICES, 2018d), in recent years $GT=8.34$. In relation to the requirements of SG60, a rebuilding time of $2 \times GT = 2 \times 8.34 = 16.68$ (17 years).</p> <p>As given by ICES (2017a) the HCRule-5 adopted by Icelandic government³⁸ should be treated as rebuilding framework, indicating that probability of stock falling below B_{lim} is lower than 5% after 4 years (see table below, rule 5 in red tab):</p> <p>Table 30. Results for harvest control rules 1–4 in the request, with an additional rule 5 (Rule 5 is the same as Rule 4, except that $MGT \text{ Btrigger} = 200 \text{ kt} = B_{lim}$). Annual probabilities of SSB going below $B_{lim} = 200 \text{ kt}$, with and without 15% assessment bias. The following <i>Ichthyophonus</i> scenarios are considered: (a) no epidemic in the coming years, (b) 10% probability of a 3-year epidemic starting in any given year, and (c) an epidemic definitely takes place in 2017–2019, followed by a 10% probability of a new 3-year epidemic starting in any given year. Values above 0.05 (i.e. 5%) are highlighted in bold.</p> <table><tr><th colspan="10">(a) No <i>Ichthyophonus</i> epidemic</th></tr><tr><td colspan="10">Bias = 0</td></tr><tr><td>Rule</td><td>2018</td><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td><td>2024</td><td>2025</td><td>2026</td></tr><tr><td>Rule-1</td><td>0.009</td><td>0.004</td><td>0.007</td><td>0.005</td><td>0.002</td><td>0.003</td><td>0.004</td><td>0.006</td><td>0.005</td></tr><tr><td>Rule-2</td><td>0.009</td><td>0.005</td><td>0.008</td><td>0.005</td><td>0.003</td><td>0.003</td><td>0.004</td><td>0.005</td><td>0.005</td></tr><tr><td>Rule-3</td><td>0.008</td><td>0.004</td><td>0.005</td><td>0.004</td><td>0.002</td><td>0.002</td><td>0.001</td><td>0.000</td><td>0.004</td></tr><tr><td>Rule-4</td><td>0.005</td><td>0.003</td><td>0.004</td><td>0.002</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td></tr><tr><td>Rule-5</td><td>0.005</td><td>0.003</td><td>0.004</td><td>0.002</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td></tr><tr><td colspan="10">Bias = 15%</td></tr><tr><td>Rule</td><td>2018</td><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td><td>2024</td><td>2025</td><td>2026</td></tr><tr><td>Rule-1</td><td>0.019</td><td>0.010</td><td>0.013</td><td>0.013</td><td>0.018</td><td>0.025</td><td>0.017</td><td>0.019</td><td>0.023</td></tr><tr><td>Rule-2</td><td>0.021</td><td>0.012</td><td>0.013</td><td>0.016</td><td>0.020</td><td>0.025</td><td>0.018</td><td>0.019</td><td>0.024</td></tr><tr><td>Rule-3</td><td>0.012</td><td>0.007</td><td>0.009</td><td>0.006</td><td>0.011</td><td>0.007</td><td>0.006</td><td>0.011</td><td>0.010</td></tr><tr><td>Rule-4</td><td>0.008</td><td>0.004</td><td>0.004</td><td>0.005</td><td>0.003</td><td>0.002</td><td>0.000</td><td>0.000</td><td>0.003</td></tr><tr><td>Rule-5</td><td>0.008</td><td>0.004</td><td>0.004</td><td>0.005</td><td>0.003</td><td>0.002</td><td>0.000</td><td>0.000</td><td>0.003</td></tr><tr><th colspan="10">(b) 10% probability of <i>Ichthyophonus</i> all years</th></tr><tr><td colspan="10">Bias = 0</td></tr><tr><td>Rule</td><td>2018</td><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td><td>2024</td><td>2025</td><td>2026</td></tr><tr><td>Rule-1</td><td>0.023</td><td>0.026</td><td>0.024</td><td>0.024</td><td>0.02</td><td>0.018</td><td>0.019</td><td>0.021</td><td>0.029</td></tr><tr><td>Rule-2</td><td>0.015</td><td>0.011</td><td>0.011</td><td>0.014</td><td>0.008</td><td>0.011</td><td>0.008</td><td>0.009</td><td>0.017</td></tr><tr><td>Rule-3</td><td>0.014</td><td>0.010</td><td>0.006</td><td>0.009</td><td>0.007</td><td>0.006</td><td>0.004</td><td>0.006</td><td>0.012</td></tr></table>			(a) No <i>Ichthyophonus</i> epidemic										Bias = 0										Rule	2018	2019	2020	2021	2022	2023	2024	2025	2026	Rule-1	0.009	0.004	0.007	0.005	0.002	0.003	0.004	0.006	0.005	Rule-2	0.009	0.005	0.008	0.005	0.003	0.003	0.004	0.005	0.005	Rule-3	0.008	0.004	0.005	0.004	0.002	0.002	0.001	0.000	0.004	Rule-4	0.005	0.003	0.004	0.002	0.000	0.000	0.000	0.000	0.000	Rule-5	0.005	0.003	0.004	0.002	0.000	0.000	0.000	0.000	0.000	Bias = 15%										Rule	2018	2019	2020	2021	2022	2023	2024	2025	2026	Rule-1	0.019	0.010	0.013	0.013	0.018	0.025	0.017	0.019	0.023	Rule-2	0.021	0.012	0.013	0.016	0.020	0.025	0.018	0.019	0.024	Rule-3	0.012	0.007	0.009	0.006	0.011	0.007	0.006	0.011	0.010	Rule-4	0.008	0.004	0.004	0.005	0.003	0.002	0.000	0.000	0.003	Rule-5	0.008	0.004	0.004	0.005	0.003	0.002	0.000	0.000	0.003	(b) 10% probability of <i>Ichthyophonus</i> all years										Bias = 0										Rule	2018	2019	2020	2021	2022	2023	2024	2025	2026	Rule-1	0.023	0.026	0.024	0.024	0.02	0.018	0.019	0.021	0.029	Rule-2	0.015	0.011	0.011	0.014	0.008	0.011	0.008	0.009	0.017	Rule-3	0.014	0.010	0.006	0.009	0.007	0.006	0.004	0.006
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Rule-3	0.014	0.010	0.006	0.009	0.007	0.006	0.004	0.006	0.012																																																																																																																																																																																																												

³⁸ <https://www.government.is/news/article/?newsid=cf30e5ad-584f-11e8-9429-005056bc4d74>

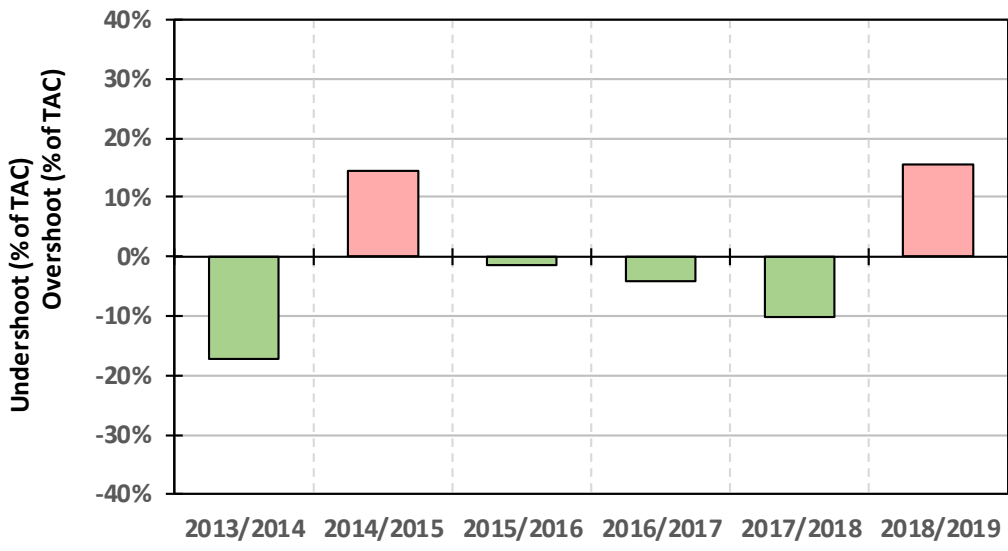
PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe									
		Rule-4	0.019	0.020	0.018	0.017	0.014	0.012	0.006	0.012	0.017
		Rule-5	0.019	0.019	0.016	0.016	0.013	0.010	0.005	0.011	0.016
		Bias = 15%									
		Rule	2018	2019	2020	2021	2022	2023	2024	2025	2026
		Rule-1	0.032	0.041	0.038	0.037	0.050	0.057	0.052	0.055	0.06
		Rule-2	0.022	0.025	0.025	0.027	0.027	0.031	0.025	0.03	0.033
		Rule-3	0.021	0.016	0.017	0.017	0.017	0.019	0.013	0.019	0.025
		Rule-4	0.025	0.029	0.023	0.027	0.024	0.025	0.019	0.025	0.027
		Rule-5	0.025	0.029	0.022	0.027	0.024	0.024	0.017	0.023	0.027
		(c) <i>Ichthyophonus</i> epidemic in 2017–2019 and 10% probability of epidemic after 2019									
		Bias = 0									
		Rule	2018	2019	2020	2021	2022	2023	2024	2025	2026
		Rule-1	0.029	0.045	0.068	0.046	0.037	0.037	0.031	0.032	0.036
		Rule-2	0.017	0.016	0.027	0.018	0.017	0.016	0.011	0.017	0.021
		Rule-3	0.014	0.017	0.026	0.013	0.017	0.010	0.009	0.010	0.018
		Rule-4	0.027	0.034	0.056	0.038	0.027	0.027	0.02	0.022	0.021
		Rule-5	0.026	0.031	0.054	0.036	0.026	0.023	0.016	0.017	0.020
		Bias = 15%									
		Rule	2018	2019	2020	2021	2022	2023	2024	2025	2026
		Rule-1	0.044	0.089	0.126	0.089	0.081	0.082	0.078	0.075	0.078
		Rule-2	0.02	0.027	0.049	0.040	0.039	0.039	0.033	0.037	0.041
		Rule-3	0.017	0.024	0.037	0.026	0.027	0.025	0.019	0.022	0.030
		Rule-4	0.036	0.060	0.083	0.058	0.045	0.049	0.045	0.044	0.046
		Rule-5	0.036	0.059	0.081	0.056	0.043	0.044	0.038	0.039	0.045
As indicated in the figure below applying HCRule-5 will rebuild the stock (median SSB of simulations) above $MSY B_{trigger} = 273,000t$ within less than 1 GT (8 years).											
											
Figure 23. Development of SSB for the different HCRs (note: HCR 5 behaves very similarly to HCR 4). The shaded areas show the 5th, 10th, 25th, 75th, 90th, and 95th percentiles, and the thick blue lines the median. One individual run is shown. The horizontal lines show $B_{lim} = 200$ kt. Assessment bias is 15% and the scenario assumes an <i>Ichthyophonus</i> epidemic during 2017–2019 followed by a 10% probability that a new 3-year epidemic starts in any given year (source: ICES 2017a).											
Based on above SG60 and 100 are met.											
b	Rebuilding evaluation										

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
	Guidepost	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.	There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.
	Met?	Y	Y	Y
	Justification	<p>There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.</p> <p>Available data on stock structure, stock productivity, effort directed to the stock, fleet catches and environmental information is recorded from scientific surveys and fleet information. All those data are sufficient to support the monitoring to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe (see section 3.3.6). SG 60 is met.</p> <p>There is evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.</p> <p>FCR SA2.3.4.1 MSC 2014 required also that Current F shall be “likely” to be less than F_{MSY} to justify an 80 score;</p> <p>The current $F_{2018} = 0.175$ is below F_{MSY} reference point $F_{MSY} = 0.22$ ($F_{2018}/F_{MSY} = 0.795$). Also, there is an evidence that based on simulation modelling (ICES, 2017a) that they will be able to rebuild the stock within the specified timeframe. Over the most recent generation time of the stock, F has only once been above F_{MSY} ($F_{2014} = 0.27$) and once at ($F_{2015} = 0.22$) F_{MSY}. The assessment team considers this as a evidence that F has only exceptionally been greater than F_{MSY} and they will be able to rebuild the stock within the specified timeframe.</p> <p>Simulation modelling results by ICES (2017a) as a reply to Iceland request on evaluation of harvest control rules for a management plan for Icelandic summer-spawning herring (Division 5.a) present MSE evaluation, give the evidence (see Figure 23 and table in SIa) that stock will be able to rebuild the biomass within the specified timeframe. SG80 is met.</p> <p>There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.</p> <p>FCR 2.0 SA2.3.4.2 MSC 2014 required that “current F shall be “highly likely” to be less than F_{MSY} to justify a 100 score”. The current $F_{2018} = 0.175$ is below F_{MSY} reference point $F_{MSY} = 0.22$ ($F_{2018}/F_{MSY} = 0.795$) and historical performance show that F was only exceptionally higher then F_{MSY} (ICES 2019e).</p> <p>As given by ICES (2017a) HCRule-5 adopted by Icelandic government is precautionary and in accordance with the ICES MSY approach (according to ICES lead to B_{MSY} - ICES 2016) and as given at Figure 23 it is highly likely that they will be able to rebuild the stock within the specified timeframe.</p> <p>Based on above SG100 is met.</p>		

PI 1.1.2	Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe
References	ICES, 2017a. Iceland request on evaluation of harvest control rules for a management plan for Icelandic summer-spawning herring (Division 5.a). Pages 1–10. ICES, Copenhagen.
	http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2017/Special_requests/iceland.2017.11.pdf
	Management Strategy and Harvest Control Rules. Ministry of Industries and Innovation. May 15, 2018. https://www.government.is/news/article/?newsid=cf30e5ad-584f-11e8-9429-005056bc4d74
	ICES. 2016d. Advice basis. In Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.
	ICES, 2019e. North Western Working Group (NWWG). ICES Scientific Reports. 1:14. 638 pp. Chapter 11. Icelandic summer-spawning herring. https://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/NWWG/01%20NWWG%20Report%202019.pdf
	ICES, 2019j. Herring (<i>Clupea harengus</i>) in Division 5.a, summer-spawning herring (Iceland grounds). In Report of the ICES Advisory Committee, 2019. Page ICES Advice 2019, her.27.5a, https://doi.org/10.17895/ices.advice.4736 .
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 1 of 1 SIs, SG100 2 of 2 SIs)	
CONDITION NUMBER (if relevant):	
100	

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			
	Guidepost	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.
	Met?	Y	Y	Y
	Justification	<p>The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.</p> <p>A harvest strategy is defined by the MSC as “The combination of monitoring, stock assessment, harvest control rules and management actions which may include an MP or an MP implicit and be tested by MSE”. The key elements of a harvest strategy comprise the control rules in place, the ability of the management system to control effort, the information base and monitoring of stock status and the responsiveness of the management system and fleet to stock status (these elements are listed in MSCFCR GSA2.4). The assessment team has considered the existing Harvest Strategy for Icelandic summer-spawning herring with respect to the MSC definition and these key elements.</p> <p>The Harvest Control Rule (HCR) for Icelandic summer-spawning herring sets a Harvest Rate that is lower than F_{MSY} (H_{MGT} is $F=0.15$; $F_{MSY}=0.22$) and $MGT B_{trigger}=200,000t$. The current harvest rate is lower than management reference points, at 0.145, and the stock is above $MGT B_{trigger}$ (ICES, 2019j).</p> <p>Taking account of the fact that the HCRs in place are precautionary and already control fishing effort at a level that provide for the recovery of the stock biomass; and that the overall harvest strategy has a relatively good track record of responding to new information with appropriate management action, it is expected that the harvest strategy will respond to the state of the stock.</p> <p>On this basis the SG60 requirements are considered to be met.</p> <p>The HCR design follows advice provided by ICES at the request of the Icelandic Government. These HCRs serve to control effort and are responsive to the state of the stock. They have been assessed by ICES and are considered to be precautionary and to conform to the ICES MSY approach. The objective of the HCRs in place is to attain management objectives that are consistent with MSC PI1.1.1. However, catches in fishing season 2018/2019 exceeded the ICES advice and TAC by 5,497t and the stock is below the level required by $MSY B_{trigger}$ (ICES 2019j). At the fishing season 2019/2020 catches have been equal to 30038 tonnes, which is 4534 tonnes less than the national TAC (MFRI, 2020a).</p> <p>However, as stated in section 3.5.2, flexibility is built into the management system so that, “A vessel can exceed its allocation for each demersal species, herring, deepwater shrimp and Nephrops in a fishing season by up to, but not exceeding, 5%; the excess is then deducted from that vessel’s allocation for that species in the following fishing season. Additionally, a decision may be taken to postpone fishing up to 15% of a vessel’s quota for each demersal species, herring, deepwater shrimp and Nephrops in a fishing season and transfer the balance to the following season.”</p> <p>The analysis of TAC changes over time in recent years give an evidence that this rule is working in the case of the harvest strategy for the Icelandic summer-spawning herring stock:</p>		

PI 1.2.1	There is a robust and precautionary harvest strategy in place																							
	<div><table><caption>Undershoot and Overshoot (% of TAC)</caption><thead><tr><th>Year</th><th>Undershoot (% of TAC)</th><th>Overshoot (% of TAC)</th></tr></thead><tbody><tr><td>2013/2014</td><td>-18%</td><td>0%</td></tr><tr><td>2014/2015</td><td>0%</td><td>15%</td></tr><tr><td>2015/2016</td><td>-2%</td><td>0%</td></tr><tr><td>2016/2017</td><td>-5%</td><td>0%</td></tr><tr><td>2017/2018</td><td>-10%</td><td>0%</td></tr><tr><td>2018/2019</td><td>0%</td><td>15%</td></tr></tbody></table></div> <p>Assessment team conclude that SG80 is met.</p> <p>These rules were developed and designed specifically for this stock in response to a condition of MSC certification for the ISF herring fishery that was raised in 2014 in response to the MSC requirement (new at that time) for HCRs to be in place that would attain MSY. See https://www.government.is/news/article/?newsid=cf30e5ad-584f-11e8-9429-005056bc4d74.</p> <p>There is evidence that the harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in P1.1.1 SG80. Assessment team conclude that SG100 is met.</p>			Year	Undershoot (% of TAC)	Overshoot (% of TAC)	2013/2014	-18%	0%	2014/2015	0%	15%	2015/2016	-2%	0%	2016/2017	-5%	0%	2017/2018	-10%	0%	2018/2019	0%	15%
Year	Undershoot (% of TAC)	Overshoot (% of TAC)																						
2013/2014	-18%	0%																						
2014/2015	0%	15%																						
2015/2016	-2%	0%																						
2016/2017	-5%	0%																						
2017/2018	-10%	0%																						
2018/2019	0%	15%																						
b	Harvest strategy evaluation																							
Guidepost	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.																					
Met?	Y	Y	N																					
Justification	<p>The harvest strategy is likely to work based on prior experience or plausible argument.</p> <p>The past performance of the harvest strategy (as defined in FCR GSA 2.4) indicates that it is effective at most cases at controlling the rate of exploitation of this stock, and that it responds to new information about the stock: notably the development and implementation of new HCRs that deliver the MSY approach within 3 years of a request to do so, and ahead of schedule.</p> <p>Based on statistical evidence harvest strategy is likely to work since fisheries (observed catches) complied in most years (except 2018/2019) with recommendations well with in last 30 years (ICES 2019j). SG60 is met.</p> <p>However, catches in fishing season 2018/2019 exceeded the ICES advice and TAC by 5,497t and the stock is below the level required by MSY $B_{trigger}$ (ICES 2019j). However, adopted HCRule-5 (taking in to account 15% bias in assessment and potential <i>Ichthyophonus</i> infestation) have been virtually tested (ICES, 2017b) and was considered precautionary and in accordance with the ICES MSY approach. Management objectives are $HR_{MGT} F=0.15$ and $MGT B_{trigger}=200,000t$, and so far, Harvest Strategy is achieving its objectives (ICES, 2019j). SG80 is met.</p>																							

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		<p>The adopted HCRule-5 (taking in to account 15% bias in assessment and potential <i>Ichthyophonus</i> infestation) and alternative HCR have been fully virtually tested (ICES, 2017b) and HCRule-5 was considered precautionary and in accordance with the ICES MSY approach. The MGT B_{trigger} = 200,000t is the target reference point and evidence exists that the stock is above the MGT B_{trigger} (ICES 2019j).</p> <p>Despite of above to score SG100 harvest strategy need a broader evaluation, taking into account unexpected situation that may happen in the future, for example, impact of environment, ecosystem changes or stock migrations. Current MSE based on single species model does not take into account these factors. SG100 is not met.</p>		
c	Harvest strategy monitoring			
	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Y		
	Justification	Monitoring is in place that is expected to determine whether the harvest strategy is working. Data on: several fishery indices, fishery information on the distribution of the stock, fishery independent abundance indices (survey indices from three surveys) and estimates of maturity at age, weight at age and natural mortality, landing reports, and catch sampling are regularly collected by The Marine and Freshwater Research Institute (MFRI) in Iceland. SG60 is met.		
d	Harvest strategy review			
	Guidepost			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			N
	Justification	The harvest strategy is periodically reviewed and improved as necessary. As stated by ICES at (ICES 2017b) if future observed values were to go outside the range illustrated at MSE evaluation, this would indicate that there is a need to re-evaluate the assumptions of the simulations. However, the harvest strategy review has not been performed so far. SG100 is not met.		
e	Shark finning			
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	The target species, Atlantic herring (<i>Clupea harengus</i>) is not a shark so this scoring issue is not relevant.		
f	Review of alternative measures			
	Guidepost	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.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	SA3.1.6 of MSC FCR v2.0 defines ‘unwanted catch’ as the part of the catch that a fisher did not intend to catch but could not avoid and did not want or chose not to use. Unwanted catch may also be known as non-target’, ‘bycatch’ or ‘discards’ and include species it is prohibited to catch		

PI 1.2.1	There is a robust and precautionary harvest strategy in place
	<p>or part of the catch that is thrown away or slipped and may not survive after release (MSC FCR v2.0, GSA 3.1.6). In cases where there is a negligible unwanted catch of a species, the FCR allows discretion as to whether the SI should be scored provided the decision is made in accordance with a precautionary approach (GSA 3.5.3). A threshold for 'negligible' is not defined but the FCR notes that the team may consider the significance of the catch in relation to things like the proportion of the unwanted catch as part of the total catch or as part of the total amount of unwanted catch, as well as the regularity of the catch occurring when deciding whether it is negligible. It further notes that if there is no unwanted catch of primary species, or no primary species at all, then this SI is not scored.</p> <p>There is little evidence of any unwanted catch. The fishery targets dense schools of over-wintering herring so non-target catches are low and there are measures in place to minimise them. For example, Regulation no. 770, 8 September 2006, prohibits the use of pelagic trawls within the 12 nautical mile fishing zone to limit the bycatch of juveniles of other species.</p> <p>But, in any case, discarding is prohibited by Icelandic law (Article 2 of the Act Concerning the Treatment of Commercial Marine Fish, No. 57/1996). All fish caught must be recorded in vessel logbooks, landed and are counted against the catch quota for the vessel concerned. This law applies to commercially important species (and so covers the target species).</p> <p>There are a range of flexibility mechanisms in place designed to facilitate compliance and reduce the likelihood of discarding. This includes the ability to transfer quota between years and between species (except cod), so for example, subject to certain limits you can trade quota to cover landings in excess of your quota or count the landings against next year's quota. Vessels may also decide not to count part of the vessels catch against its quota. This catch, known as 'VS catch' is limited to 0.5% of the vessel's pelagic catch per fishing year (5% for other marine catches) and must be kept separate from the rest of the catch and weighed and recorded separately; the bulk of the proceedings from it's sale (80%) go to the Fisheries Commission Project Fund or 'VS Fund' (established by Act No. 37/1992), the remainder going to the vessel (Article 11, Act No. 116/2006) (Fiskistofa, 2019). There are checks of fishing activity on vessels at sea by the Directorate's Inspectors and the Icelandic Coast Guard and also at landing.</p> <p>Despite the discard prohibition, penalties and flexibility built into the system some discarding may still occur, likely mainly in the form of high grading. This is considered to be at low levels and can be detected by comparing landings and size compositions between vessels fishing in the same area. A program has been running since 2001 to do this, it mainly focusses on cod and haddock, but various other species have been sampled. The measurements are taken on board commercial vessels by trained inspectors. Should the composition of the catch (species, size) or its quality differ from other vessels fishing in the vicinity, the Fisheries Directorate has powers to place the vessel under closer surveillance by placing an inspector on board for one day or fishing trip. The vessel must pay the Directorate's costs (e.g. inspector wages) if this occurs more than once in a fishing year (Article 13 of Act No. 57/1996). Results of this joint monitoring programme between the Directorate and MFRI are published periodically by the MFRI and referred to in the Directorate's Annual Reports. A further tool introduced in spring 2019 is the publication on the Directorate's website of catch composition with and without an inspector on board which can also indicate whether discarding is occurring. The Coast Guard are investigating other ways to enhance the detection of discarding drawing on experience elsewhere (Norway) and other technologies including aerial surveillance.</p> <p>Given that discarding of commercial species including the target stock is prohibited and there are a range of measures in place to encourage compliance with the law and detect where it is not being adhered to, and acknowledging that some discarding may still occur but is considered to be at low levels, the Assessment team, taking a precautionary approach, consider that any mortality of unwanted catch is negligible and consequently it is not necessary to score this SI.</p>

PI 1.2.1	There is a robust and precautionary harvest strategy in place	
References	<p>ICES, 2019j. Herring (<i>Clupea harengus</i>) in Division 5.a, summer-spawning herring (Iceland grounds). In Report of the ICES Advisory Committee, 2019. Page ICES Advice 2019, her.27.5a. https://doi.org/10.17895/ices.advice.4736.</p> <p>ICES. 2017b. Report of the Workshop on Evaluation of the Adopted Harvest Control Rules for Icelandic Summer Spawning Herring, Ling and Tusk (WKICEMSE). Page 196. Copenhagen, Denmark.</p>	
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 3 of 3 SIs, SG80 2 of 2 SIs, SG100 1 of 3 SIs)		85
CONDITION NUMBER (if relevant):		

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			
	Guidepost	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.
	Met?	Y	Y	N
	Justification	<p>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.</p> <p>The Icelandic Ministry of Industries and Innovation’s fisheries management plan has been implemented since 2017. The rule has been evaluated by ICES (ICES, 2017b) and is considered to be precautionary and conforms to the ICES MSY approach. According to the rule, the TAC for the fishing year Y/Y+1 (September 1 of year Y to August 31 of year Y+1) is calculated as follows:</p> <p>When SSBY is equal to or above MGT B_{trigger}: TAC Y/Y+1 = HR_{MGT}*B_{ref},Y When SSBY is below MGT B_{trigger}: TAC Y/Y+1 = HR_{MGT}* (SSBY/MGT B_{trigger}) * B_{ref},Y</p> <p>The spawning-stock biomass trigger (MGT B_{trigger}) is defined as 200,000 tonnes, the reference biomass is defined as the biomass of herring of ages 4 and older, and the target harvest rate (HR_{MGT}) is set to 0.15.</p> <p>The stock was above MSY B_{trigger} for at least 10 years and since 2016 is reduced below MSY B_{trigger} but above B_{lim} (PRI) which is consistent with MGT B_{trigger}.</p> <p>Despite using limit reference point (B_{lim}), HCR are in place and is able to reduce exploitation rate as the point of recruitment impairment is approached and rebuild stock above B_{lim} in the long run (ICES 2019j). Assessment team conclude that SG60 is met.</p> <p>The HCRs described above are well defined, and in place since 2018 and expected (as described above) to keep the stock fluctuating around MSY B_{trigger} (ICES 2017b). The HCR is able to reduce the exploitation level as shown at ICES 2019j. The decreased trend in SSB is due to high natural mortality caused by an <i>Ichthyophonus</i> infection (2009–2011 and 2017– 2018) and decreasing recruitment. The infection rates of <i>Ichthyophonus</i> remain high, and this is taken into account in the assessment and in the management plan rule by applying a low harvest rate. SG80 is met.</p> <p>The HCR are expected to keep the stock at level consistent with the ICES MSY rule in the long term, however the HCR is single species and do not take into account the ecological role of the stock. Therefore, SG100 is not met.</p>		
b	HCRs robustness to uncertainty			
	Guidepost		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.

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
	Met?	Y		N
	Justification	<p>The HCRs are likely to be robust to the main uncertainties.</p> <p>As described in method section in ICES, 2017a, a Management Strategy Evaluation (MSE) was conducted for the Icelandic summer-spawning herring stock, using computer code that has been used in earlier evaluation of Icelandic cod, haddock, and saithe (but using an alternative method which improves evaluation of uncertainty – assessment team).</p> <p>Future recruitment was simulated from a hockey-stick stock–recruitment function with annual deviations, autocorrelated in time, and fish weights were simulated stochastically, with autocorrelated noise.</p> <p>The MSE runs were conducted with both fixed natural mortality of 0.1 (i.e. no mortality due to <i>Ichthyophonus</i> epidemics) and with different scenarios of continuation of <i>Ichthyophonus</i> epidemics. In the epidemics scenarios, additional natural mortality due to <i>Ichthyophonus</i> infection was set at the level estimated for 2009–2011; the epidemics were assumed to start randomly, with 10% probability in any given year, and to last for three consecutive years. In addition to this, in one of the scenarios, an epidemic was assumed to occur with complete certainty (100% probability) during 2017–2019.</p> <p>The assessment error of the reference biomass and spawning biomass in the assessment year were based on estimates from empirical retrospective patterns of the analytical assessment and resulted in bias of 15%(overestimation of stock biomass). Stochastic error, autocorrelated in time, was then added to the bias term.</p> <p>When rules based on harvest rates are applied (Rules 2–5), no short-term forecast is required because the annual TAC is based on the harvest rate as a proportion of the age 4+ biomass in the beginning of the assessment year. In these rules, the spawning stock, in July, is predicted from the results of the assessment, using half the annual natural mortality of a normal year without <i>Ichthyophonus</i> mortality (i.e. 0.05)</p> <p>Weight-at-age has to be predicted for all the HCRs and prediction error is considered by using the weights-at-age of the previous year.</p> <p>The analyses were based on 1000 iterations for each harvest rate or HCR rule. Based on the above evidence the assessment team conclude that SG80 is met.</p> <p>The HCR have been tested for and take in to account uncertainty i.e. mortality due to <i>Ichthyophonus</i> epidemics, however the HCR is single species and does not take into account the ecological role of the stock. Therefore, SG100 is not met</p>		
c	HCRs evaluation			
	Guidepost	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.
	Met?	Y	Y	Y
	Justification	<p>Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.</p> <p>Continuous data monitoring and annual stock assessments show that targets in terms of catches and biomass are being met from a long-term perspective. There is historical evidence that the tools used are effective in controlling exploitation in most cases (ICES, 2019i). Target F set at</p>		

PI 1.2.2	There are well defined and effective harvest control rules (HCRs) in place
	<p>harvest strategy (www.is.gov) is considered precautionary and reactive to stock status (ICES, 2017b) and current harvest rate ($HR=0.145$; 2018/2019) is lower then $HR_{MGT} = 0.15$ and F_{MSY} (ICES, 2019j). SG 60 is met.</p> <p>In 2018/2019 landings were higher the ICES advice by 5,497t and the fishing season 2018/2019 advice (based on Management plan Rule 5) was the first year of harvest strategy application on Icelandic summer-spawning herring. Despite that, the HCR are effective in achieving the exploitation levels required. Current harvest rate ($HR=0.145$; 2018/2019) is lower then $HR_{MGT} = 0.15$ and F_{MSY} (ICES 2019j) and SSB_{2019} above $B_{MGT}=B_{lim}$. Based on the evidence SG 80 is met.</p> <p>As given by ICES (2019j) the harvest rate is below F_{msy} and HR_{MGT} since 2016 what clearly shows that tools are effective in achieving exploitation level required by HCR. In fishing season 2018/2019 the catches were higher then TAC, but as stated in section 3.5.2, flexibility is built into the management system so that, "A vessel can exceed its allocation for each demersal species, herring, deepwater shrimp and Nephrops in a fishing season by up to, but not exceeding, 5%; the excess is then deducted from that vessel's allocation for that species in the following fishing season. Additionally, a decision may be taken to postpone fishing up to 15% of a vessel's quota for each demersal species, herring, deepwater shrimp and Nephrops in a fishing season and transfer the balance to the following season." Then evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs. SG 100 is met.</p>
References	<p>https://www.government.is/news/article/?newsid=cf30e5ad-584f-11e8-9429-005056bc4d74.</p> <p>ICES. 2017a. Iceland request on evaluation of harvest control rules for a management plan for Icelandic summer-spawning herring (Division 5.a). Pages 1–10. ICES, Copenhagen. http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2017/Special_requests/iceland.2017.11.pdf.</p> <p>ICES. 2017b. Report of the Workshop on Evaluation of the Adopted Harvest Control Rules for Icelandic Summer Spawning Herring, Ling and Tusk (WKICEMSE). Page 196. Copenhagen, Denmark.</p> <p>ICES. 2019j. Herring (<i>Clupea harengus</i>) in Division 5.a, summer-spawning herring (Iceland grounds). In Report of the ICES Advisory Committee, 2019. Page ICES Advice 2019, her.275a. https://doi.org/10.17895/ices.advice.4736.</p>
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 3 of 3 SIs, SG100 1 of 3 SIs)	
CONDITION NUMBER (if relevant):	
85	

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			
	Guidepost	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Y	Y	Y
	Justification	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. Available data on stock structure (stock discrimination based on maturation stage in surveys and commercial catches), stock productivity, effort directed to the stock, fleet catches and environmental information is recorded from scientific surveys and fleet information (ICES, 2019h). All those data are sufficient to support the harvest strategy, mainly to perform the assessment and the short term forecast that determines the catch advice (see section 3.3.6). Assessment team conclude that SG100 is met.		
b	Monitoring			
	Guidepost	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.
	Met?	Y	Y	N
	Justification	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. Several surveys (acoustics) are regularly carried out in the distribution area of the stock to estimate the size, age composition or recruitment of the stock and the prevalence of Ichthyophonus infection in the stock (ICES, 2018d). Data on fishery landings are collected by the Icelandic Directorate of Fisheries (official landings and logbooks) and are reported annually to NWWG (in tonnes by quarter and ICES area). Discards are illegal in Icelandic waters and from Icelandic vessels working outside the EEZ and are considered to be insignificant in that fishery. SG80 is met. Although sufficient information is available to support the harvest strategy and there is a good understanding on the ecosystem dynamics and trophic interactions these are not used in the stock assessment and HCR. SG100 is not met.		

PI 1.2.3		Relevant information is collected to support the harvest strategy		
c	Comprehensiveness of information			
	Guidepost		There is good information on all other fishery removals from the stock.	
	Met?		Y	
	Justification	There is good information on all other fishery removals from the stock. The stock is only harvested by Icelandic fleets, whose landings in harbors and logbooks are collected by the Icelandic Directorate of Fisheries. SG 80 is met.		
References		ICES. 2018d. Report of the North-Western Working Group (NWWG). Page 773. ICES, Copenhagen ICES HQ. ICES, 2019h. Stock Annex: Herring (<i>Clupea harengus</i>) in Division 5.a, summer-spawning herring (Iceland grounds). 26 April 2019. http://ices.dk/sites/pub/Publication%20Reports/Stock%20Annexes/2019/her.27.5a_SA.pdf		
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 3 of 3 SIs, SG100 1 of 2 SIs)				90
CONDITION NUMBER (if relevant):				

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			
	Guidepost		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.
	Met?		Y	Y
	Justification	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA. The assessment includes major relevant information on the biology of the species, the nature of the fisheries and the information collected through directly surveying the stock. Assessment provides with the historical performance of the stock and its exploitation patterns (by age class), information required by the harvest control rule. SG80 and SG100 are met.		
b	Assessment approach			
	Guidepost	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.	
	Met?	Y	Y	
	Justification	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated. The assessment evaluates stock status relative to reference points. SG60 is met. The assessment takes into account the historical performance of the stock and its exploitation patterns (by age class). Estimated spawning stock biomass and average fishing mortality are compared to adopted reference points routinely in order to provide advice (ICES, 2019j). SG 80 is met.		
c	Uncertainty in the assessment			
	Guidepost	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Y	Y	Y
	Justification	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way. Two main sources of uncertainty are identified in the assessment: the mortality due to the <i>Ichthyophonus</i> infection and the size of the recruiting year classes (2013 and 2014). SG60 is met. Major sources of uncertainty in any aspect of the data are given explicit consideration as part of the assessment process; for example, the potential implications of the <i>Ichthyophonus</i> infection affecting the stock (ICES, 2018d). SG 80 is met. An MSE has been undertaken to give probabilistic evaluation of stock status relative to the reference points (ICES, 2017b), for details see section 3.3.6. SG 100 is met.		

PI 1.2.4		There is an adequate assessment of the stock status	
d	Evaluation of assessment		
	Guidepost		The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?		Y
	Justification	<p>The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.</p> <p>In order to test alternative assessment approaches, two models were run, NFT-ADAPT (VPA/ADPATversion 3.3.0 NOAA Fisheries Toolbox) that has been used as the basis for the assessments since 2005 and a separable model also used in the MSE in 2017 for the stock (ICES, 2018d). The hypothesis about exploitation has been rigorously evaluated at (ICES, 2017b). SG100 is met.</p>	
e	Peer review of assessment		
	Guidepost	The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?	Y	Y
	Justification	<p>The assessment of stock status is subject to peer review.</p> <p>Assessment methodology actually in use was reviewed by ICES members during the benchmark of the Icelandic summer-spawning stock (ICES, 2011). SG80 is met.</p> <p>Additionally, the annual assessment is reviewed by ACOM before being delivered to managers. As Iceland is the only country exploiting the stock and the MFRI scientists are responsible to carry out the assessment, the review performed by ICES benchmark can be considered as an external review. SG100 is met.</p>	
References		<p>ICES. 2011. Report of the Benchmark Workshop on Roundfish and Pelagic Stocks (WKBENCH 2011). Page 418. Lisbon, Portugal.</p> <p>ICES. 2017b. Report of the Workshop on Evaluation of the Adopted Harvest Control Rules for Icelandic Summer Spawning Herring, Ling and Tusk (WKICEMSE). Page 196. Copenhagen, Denmark.</p> <p>ICES. 2018d. Report of the North-Western Working Group (NWWG). Page 773. ICES, Copenhagen ICES HQ.</p> <p>ICES. 2019j. Herring (<i>Clupea harengus</i>) in Division 5.a, summer-spawning herring (Iceland grounds). In Report of the ICES Advisory Committee, 2019. Page ICES Advice 2019, her.275a. https://doi.org/10.17895/ices.advice.4736</p>	
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 4 of 4 SIs, SG100 4 of 4 SIs)			100
CONDITION NUMBER (if relevant):			

Principle 2 – Environmental Impact of Fishing – Evaluation Tables

The Primary Species Performance Indicators (PIs) have been assessed for the two UoAs separately. The two UoAs have been assessed together for the secondary species, ETP, Habitats and Ecosystem PIs.

PI 2.1.1 – Primary species outcome. UoA 1 pelagic trawl.

PI 2.1.1		The UoA aims to maintain primary species above the 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			
	Guidepost	<p>Main primary species are likely to be above the PRI</p> <p>OR</p> <p>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.</p>	<p>Main primary species are highly likely to be above the PRI</p> <p>OR</p> <p>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.</p>	<p>There is a high degree of certainty that main primary species are above the PRI and are fluctuating around a level consistent with MSY.</p>
	Met?	<p>Norwegian-Icelandic herring: Yes</p> <p>Mackerel: Yes</p> <p>Blue whiting: Yes</p>	<p>Norwegian-Icelandic herring: Yes</p> <p>Mackerel: Yes</p> <p>Blue whiting: Yes</p>	<p>Norwegian-Icelandic herring: Yes</p> <p>Mackerel: No</p> <p>Blue whiting: No</p>
Justification		<p>Norwegian-Icelandic herring, mackerel, blue whiting: There is a high degree of certainty that main primary species are above the PRI and are fluctuating around a level consistent with MSY.</p> <p>The composition of landings in the Icelandic summer-spawning herring pelagic trawl fishery is presented in the background section of this report in Table 9. In recent years, due to the distribution of the stock in offshore waters (see sections 3.2.1 and 3.2.2) Icelandic summer-spawning herring catches have been made almost entirely by pelagic trawls. Small catches of the stock have been taken by purse seines in some years (for example, approximately 10,000t in 2015, 2,000t in 2016 and 3,000t in 2019). Both fishing methods covered by the UoAs target dense homogeneous aggregations of herring, but this is particularly true of the purse seine fishery as it targets the dense shoals forming in confined areas as in the Breiðafjörður bay in 2006-2012.</p> <p>In the pelagic trawl fishery, the vast majority of the catch is herring, 44% of which is Icelandic summer-spawning herring and 39% Norwegian-Icelandic spring-spawning herring. Most of the remainder of the catch is mackerel (10%) and blue whiting (5%). There are extremely small catches of other species such as greater argentine, golden redfish, saithe and cod – all fractions of a percent. Consequently, the main primary species are Norwegian-Icelandic spring-spawning herring, mackerel and blue whiting.</p> <p>Norwegian-Icelandic spring-spawning herring, <i>Clupea harengus</i></p> <p>ICES provide scientific advice on this stock. In line with the MSC interpretation on using ICES reference points to score the PRI (see Relevant Interpretation 1, in section 7.1), B_{lim} can be treated as the PRI.</p> <p>An explicit probability distribution of stock size is available for this stock (Figure 24). This shows that the spawning stock biomass (SSB) of Norwegian-Icelandic spring-spawning herring is above B_{pa}, including the lower bound of the 95% confidence interval so SG60, SG80 and the first part of SG100 is met.</p>		

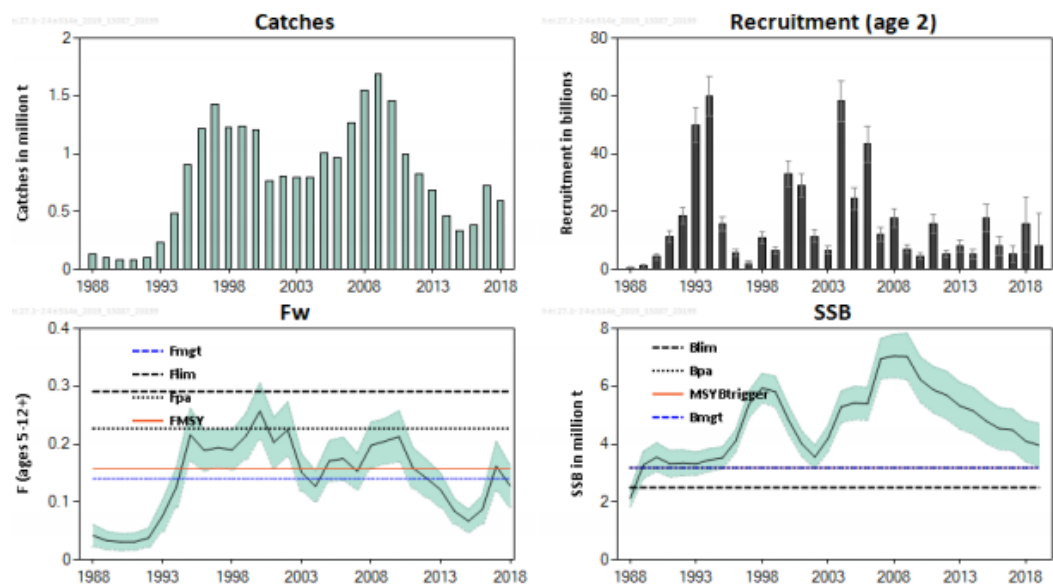


Figure 24. Norwegian-Icelandic spring-spawning herring. Summary of the stock assessment. Confidence intervals (95%) are included in the recruitment, fishing mortality, and spawning-stock biomass plots. F_w is the fishing mortality weighted by the population numbers (source: ICES, 2019i).

The second part of SG100 requires that the stock is fluctuating around a level consistent with MSY. The MSC interpretation states that B_{MSY} is assumed to be achieved through consistent maintenance of fishing mortality (F) at or below F_{MSY} and to demonstrate this,

"F should have been at or below F_{MSY} for at least 1 Generation Time (GT) from a starting point close to B_{pa} or $B_{trigger}$, and 2 generation times from a starting point close to B_{lim} . [...] GT is assumed to be given by the proxy $GT = AM_{50} + 1/M$, where AM_{50} is the age at 50% maturity, and M is natural mortality".

The GT for Norwegian-Icelandic spring-spawning herring is $4 + 1/0.15 = 10.5$ (data from ICES, 2019f). F has been below F_{MSY} in 8 of the last 10 years (only F2010-2011 above F_{MSY}) from a starting point well above MSY $B_{trigger}$. F was around F_{MSY} in 2017 but the lower confidence interval was 0.119, below F_{MSY} . The most recent estimate for 2019 (0.128) is below F_{MSY} .

Since the fishing mortality has been below F_{MSY} for the last 8 years (taking into account the generation time of 10.5 years) with one exception, in 2010-2011, and the interpretation allows for F to be occasionally greater than F_{MSY} , this meets the SG100 requirements. Consequently, **SGs 60, 80 and 100 are met for this stock.**

Mackerel, *Scomber scombrus*

The most recent ICES advice indicates that the SSB is above MSY $B_{trigger}$ (including at its lower confidence limit), and F is above F_{MSY} (ICES 2019b, MFRI 2019f) (see Figure 25). In line with the MSC interpretation referred to above, as this stock is above B_{pa} , including the lower bound of the 95% confidence interval, this meets the requirements of SG60, SG80 and the first part of SG100. However, as the stock has been fluctuating above F_{MSY} throughout most of the time series including in recent years, it cannot be said that there is a high degree of certainty that mackerel is fluctuating around a level consistent with MSY and all the requirements of SG100 are not met. **Consequently, SGs 60 and 80 are met. SG100 is not met.**

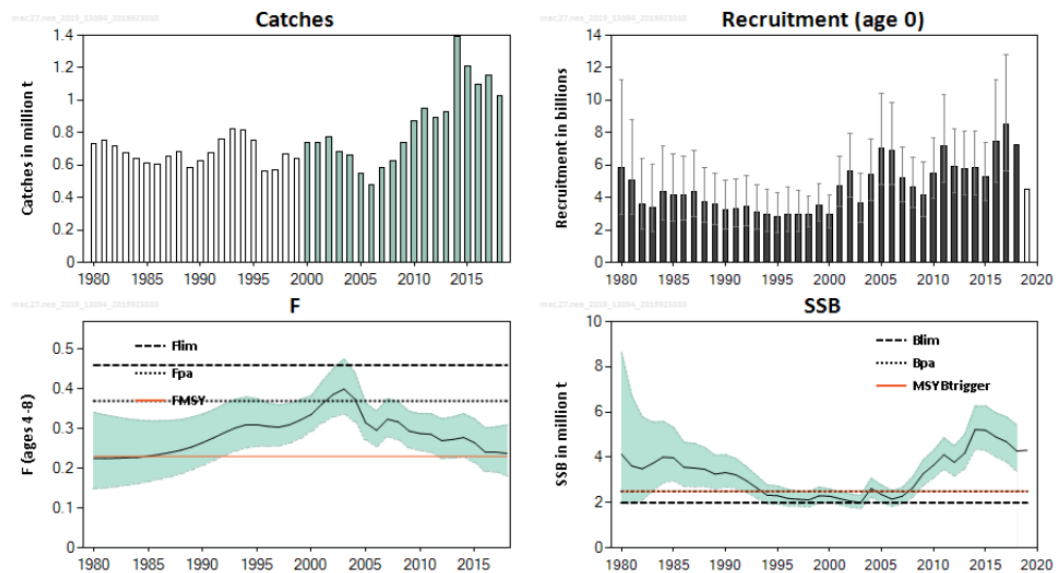


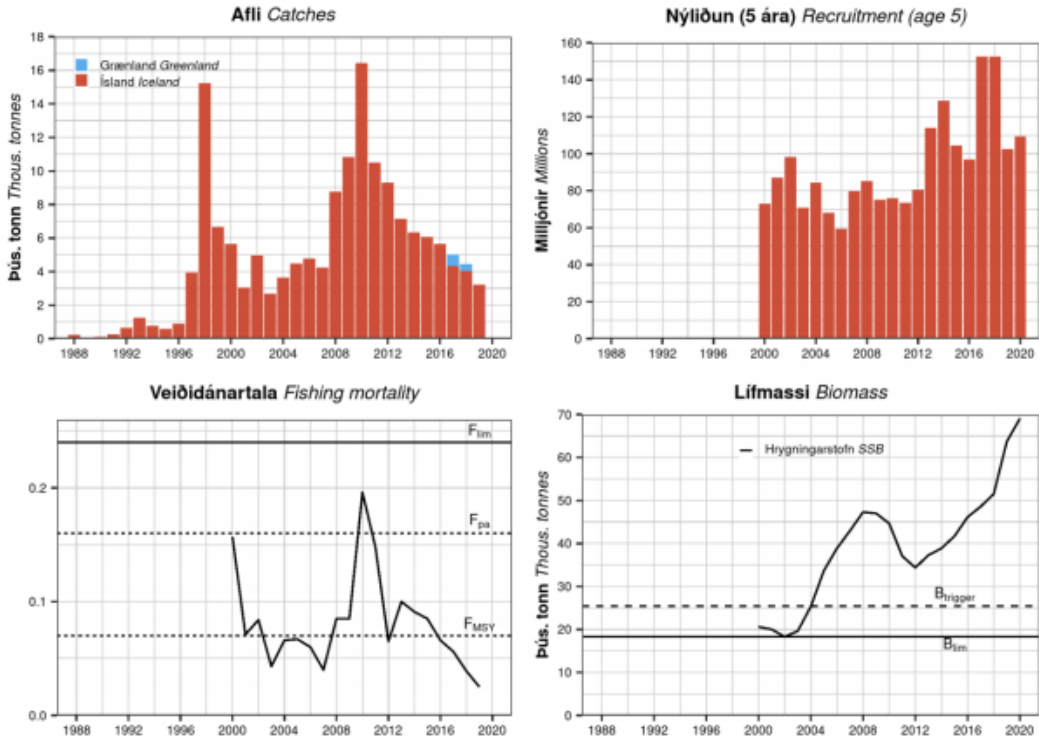
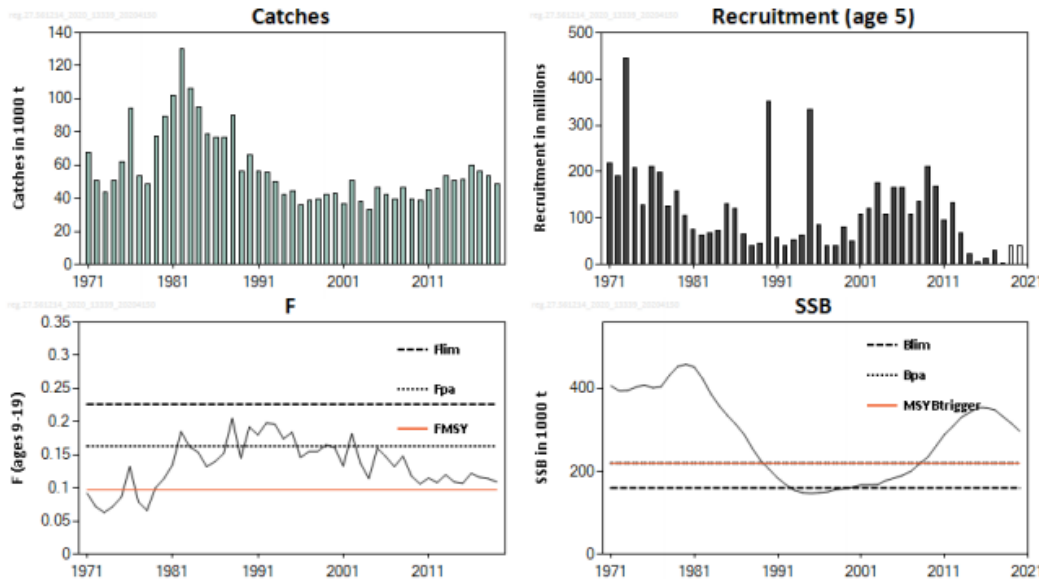
Figure 25. Mackerel in subareas 1–8 and 14, and in Division 9.a. Summary of the stock assessment. The unshaded catches prior to 2000 are the ones that have been down-weighted in the assessment because of the considerable underreporting suspected to have taken place in this period. The recruitment value for 2018 is estimated using the recruitment survey (IBTS) and a model (RCT3), and the recruitment value for 2019 is the geometric mean of the recruitments from 1990 to 2017. Confidence intervals (95%) are included in the recruitment, fishing mortality, and spawning-stock biomass plots (source: ICES, 2019b).

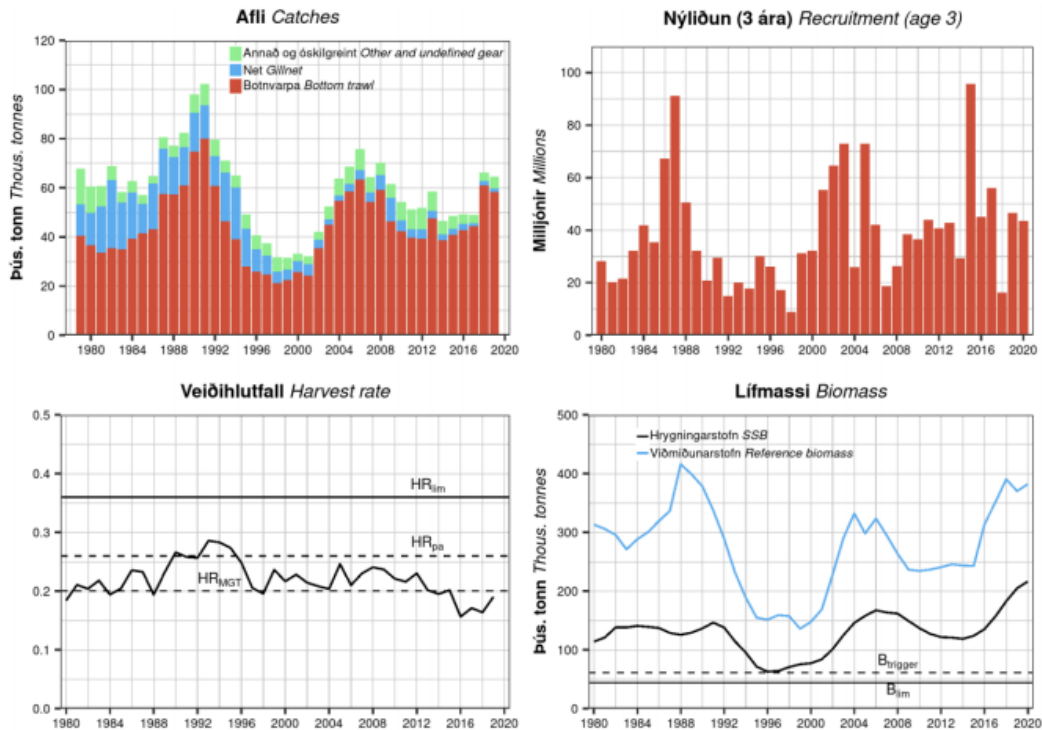
Blue whiting, *Micromesistius poutassou*

The most recent advice indicates that the SSB (including at its lower confidence limit) is well above $MSY_{Btrigger}$, although F is above F_{MSY} (MFRI 2019d)(Figure 26). In line with the MSC interpretation referred to above, as this stock is above Bpa , including the lower bound of the 95% confidence interval, this meets the requirements of SG60, SG80 and the first part of SG100.

As noted previously, the second part of SG100 requires that the stock is fluctuating around a level consistent with MSY . The GT for blue whiting is $3 + 1/0.2 = 8$ (data from ICES, 2019m). F has been above F_{MSY} since 2014 from a starting point well above $MSY_{Btrigger}$. Since the fishing mortality has been above F_{MSY} for the last 5 years (taking into account the generation time of 8 years), this represents more than ‘occasionally greater than F_{MSY} ’, so it cannot be said that there is a high degree of certainty that blue whiting is fluctuating around a level consistent with MSY . Consequently, **SGs 60 and 80 are met. SG100 is not met for this stock.**

PI 2.1.1		The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.	
		<div><div><div><p>Aflí Catches</p></div><div><p>Nýliðun (1 árs) Recruitment (age 1)</p></div><div><p>Veiddánartala Fishing mortality</p></div><div><p>Hrygningarstofn SSB</p></div></div><p>Figure 26. Blue whiting. Total and Icelandic catches, recruitment at age 1, fishing mortality and spawning stock biomass (SSB) (source: MFRI, 2019d).</p></div>	
b	Minor primary species stock status		
Guidepost			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?			Minor species: Yes
Justification	<p>Minor primary species are highly likely to be above the PRI.</p> <p>The “minor” primary species reported to be landed by the UoAs are considered in turn below. In line with MSC interpretation (see Relevant Interpretation 3, in section 7.1) these species have been scored as a group as there are many of them and they all achieve the same score.</p> <p>In accordance with the MSC interpretation on using ICES reference points to score PRI (see Relevant Interpretation 1, in section 7.1), in the absence of an explicit probability distribution of stock size, a stock is considered highly likely to be above its PRI when the stock is estimated above half the distance between B_{lim} and B_{pa}. This has been used where a probability distribution is not available but B_{pa} reference points are available.</p> <p>1. Greater argentine, <i>Argentina silus</i></p> <p>The most recent advice indicates that the SSB is well above $MSY B_{trigger}$ (Figure 27). B_{pa} is equal to $MSY B_{trigger}$ for this stock and since SSB is well above $B_{pa}/B_{trigger}$ it is highly likely that this stock is above its PRI. SG100 is therefore met.</p>		

<p>PI 2.1.1</p>	<p>The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.</p>
	<div data-bbox="387 327 1430 1064">  </div> <p>Figure 27. Greater silver smelt. Catch by area, recruitment, fishing mortality (ages 6 - 14), and spawning stock biomass. B_{pa} is not shown on the figure but is equal to $B_{trigger}$ (source: MFRI, 2020b).</p> <p>2. Golden redfish, <i>Sebastes norvegicus</i></p> <p>The most recent advice indicates that the SSB is well above MSY $B_{trigger}$, although F is above F_{MSY} (Figure 28). B_{pa} is equal to MSY $B_{trigger}$ for this stock and since SSB is well above $B_{pa}/B_{trigger}$ it is highly likely that this stock is above its PRI. SG100 is therefore met.</p> <div data-bbox="387 1352 1430 1928">  </div> <p>Figure 28. Golden redfish in subareas 5, 6, 12, and 14. Summary of the stock assessment. Assumed recruitments are unshaded (source: ICES, 2020a).</p>

PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.
	<p>3. Saithe, <i>Pollachius virens</i></p> <p>The most recent advice indicates that the SSB is well above $MSY B_{trigger}$ (Figure 29). B_{pa} is equal to $MSY B_{trigger}$ for this stock and since SSB is well above $B_{pa}/B_{trigger}$ it is highly likely that this stock is above its PRI. SG100 is therefore met.</p> <div data-bbox="387 454 1433 1182">  </div> <p>Figure 29. Saithe. Catch by gear type, recruitment, harvest rate, reference stock biomass (B_{4+}) and spawning stock biomass (SSB). B_{pa} is not shown on the figure but is equal to $B_{trigger}$ (source: MFRI, 2020d).</p> <p>4. Cod, <i>Gadus morhua</i></p> <p>The most recent advice indicates that the SSB is well above $MSY B_{trigger}$ (Figure 30). B_{pa} is less than $MSY B_{trigger}$ for this stock and since SSB is above $B_{trigger}$ it is highly likely that this stock is above its PRI. SG100 is therefore met.</p>

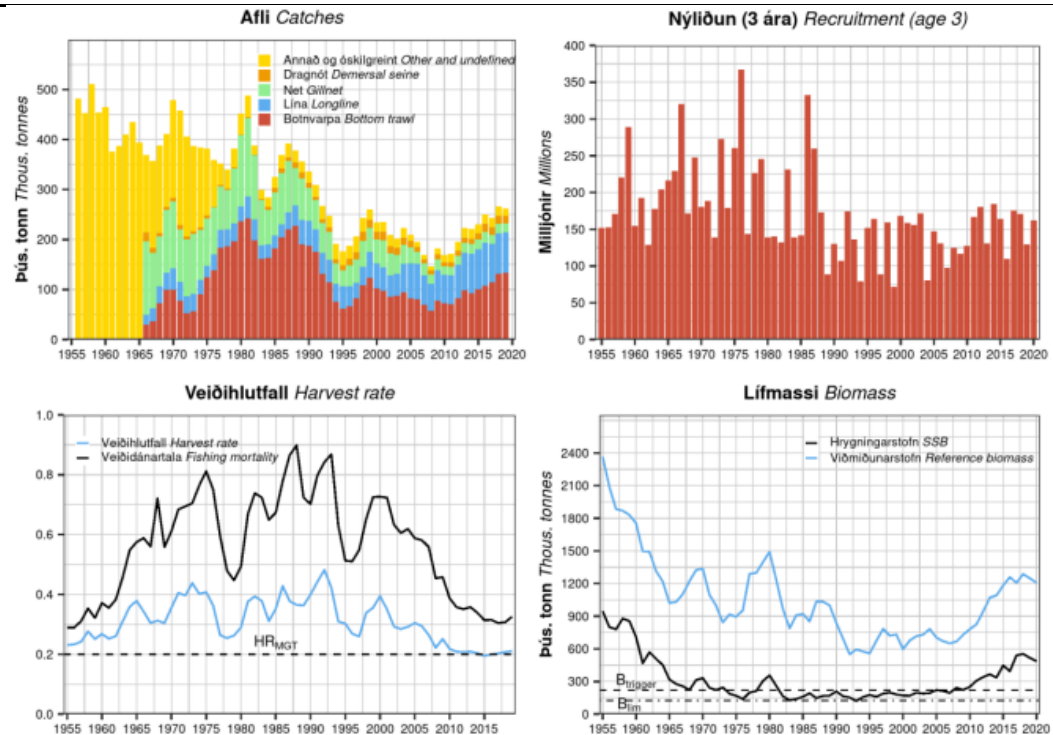
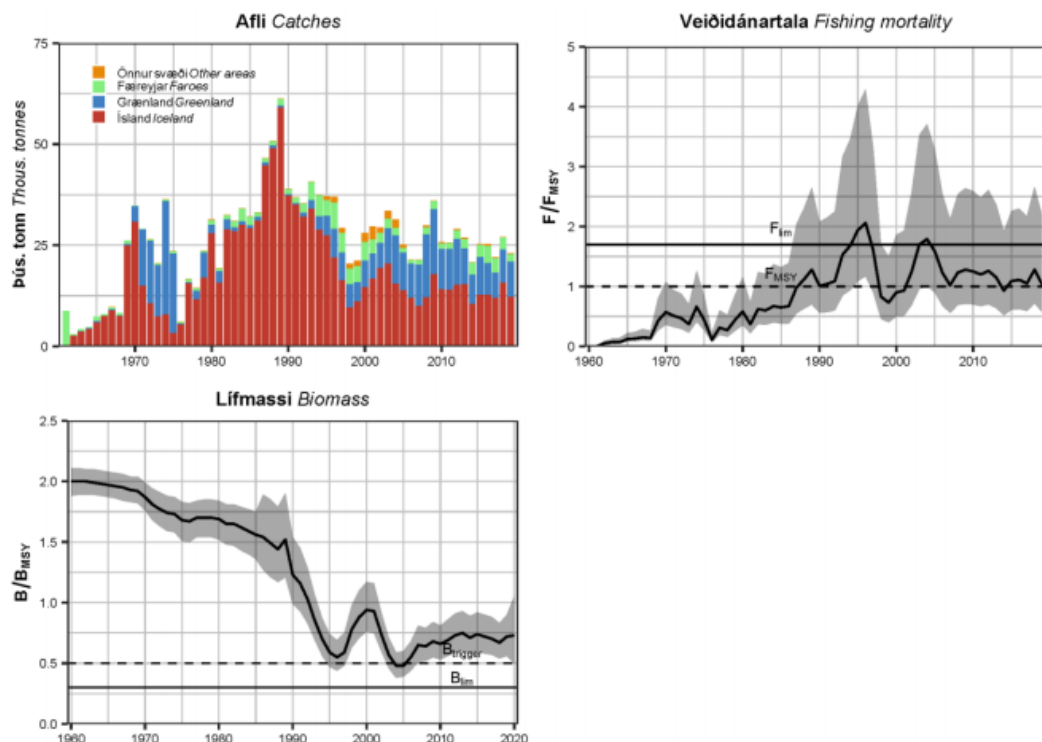


Figure 30. Cod. Catch by gear type, recruitment, fishing mortality and harvest rate, reference stock biomass (B_{4+}) and spawning stock biomass (SSB). B_{pa} (160,000t) is not shown on this figure but is less than $B_{trigger}$ (220,000t) (Source: MFRI, 2020e).

5. Greenland halibut, *Reinhardtius hippoglossoides*

The most recent advice indicates that the SSB is well above MSY $B_{trigger}$ (Figure 31). B_{pa} is not defined for this stock, but since SSB (including confidence limits) is above $B_{trigger}$ it is considered highly likely that this stock is above its PRI. **SG100 is therefore met.**



PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.
	Figure 31. Greenland halibut catches by area, relative fishing mortality (F/F_{MSY}) and changes in relative biomass (B/B_{MSY}) (source: MFRI, 2020f).
References	<p>ICES, 2020a. Golden redfish (<i>Sebastes norvegicus</i>) in subareas 5, 6, 12, and 14 (Iceland and Faroes grounds, West of Scotland, North of Azores, East of Greenland). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, reg.27.561214. https://doi.org/10.17895/ices.advice.5848</p> <p>ICES, 2019b. ICES Advice on fishing opportunities, catch, and effort. Mackerel (<i>Scomber scombrus</i>) in subareas 1–8 and 14, and in Division 9.a (the Northeast Atlantic and adjacent waters). Published 1 October 2019. http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/mac.27.nea.pdf</p> <p>ICES, 2019f. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports 1:36. Chapter 4. Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, (Northeast Atlantic) (Norwegian Spring Spawning). http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/WGWIDE/06%20WGWIDE%20Report%202019%20-%2004%20NSSH%20(Clupea%20harengus).pdf</p> <p>ICES, 2019i. Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, Norwegian spring-spawning herring (the Northeast Atlantic and the Arctic Ocean). ICES Advice on fishing opportunities, Copenhagen. 1 October 2019. http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/her.27.1-24a514a.pdf</p> <p>ICES, 2019m. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports 1:36. Chapter 2. Blue whiting (<i>Micromesistius poutassou</i>) in subareas 27.1–9, 12, and 14 (Northeast Atlantic). http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/WGWIDE/04%20WGWIDE%20Report%202019%20-%2002%20Blue%20whiting.pdf</p> <p>MFRI, 2020b. State of Marine Stocks and Advice. Gullfax – Greater silver smelt. MFRI, 16 June 2020. https://www.hafogvatn.is/static/extras/images/19-greatersilversmelt1206859.pdf</p> <p>MFRI, 2020d. State of Marine Stocks and Advice. Ufsi – Saithe. MFRI, 16 June 2020. https://www.hafogvatn.is/static/extras/images/03-saithe-11206961.pdf</p> <p>MFRI, 2020e. State of Marine Stocks and Advice. Þorskur – Cod. MFRI, 13 June 2019 https://www.hafogvatn.is/static/extras/images/01-cod1206938.pdf</p> <p>MFRI, 2020f. State of Marine Stocks and Advice. Grálúða - Greenland halibut. MFRI, 16 June 2020 https://www.hafogvatn.is/static/extras/images/22-greenlandhalibut1206851.pdf</p> <p>MFRI, 2019d. State of Marine Stocks and Advice. Kolmunni – Blue whiting. MFRI, 1 October 2019. https://www.hafogvatn.is/static/extras/images/Kolmunni_TAC_20191161058.pdf</p> <p>MFRI, 2019f. State of Marine Stocks and Advice. Makrill – Mackerel. MFRI, 1 October 2019. https://www.hafogvatn.is/static/extras/images/Makrill_TAC_2019_V21161239.pdf</p>
Scoring element 1. Norwegian-Icelandic herring (SG60 1 of 1 SIs, SG80 1 of 1 SIs, SG100 1 of 1 SIs)	100
Scoring element 2. Mackerel (SG60 1 of 1 SIs, SG80 1 of 1 SIs, SG100 0 of 1 SIs)	80
Scoring element 3. Blue whiting (SG60 1 of 1 SIs, SG80 1 of 1 SIs, SG100 0 of 1 SIs)	80

PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.	
Scoring element 4. Minor primary species (SG60 0 of 0 SIs, SG80 0 of 0 SIs, SG100 1 of 1 SIs)		100
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 3 of 3 SEs, SG80 3 of 3 SEs, SG100 2 of 4 SEs; ref. MSC FCR v2.0 Table 4)		90
CONDITION NUMBER (if relevant):		

PI 2.1.2 – Primary species management strategy. UoA 1 pelagic trawl.

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 minimize the mortality of unwanted catch.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guidepost	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 above the point where recruitment would be impaired.	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 point where recruitment would be impaired.	There is a strategy in place for the UoA for managing main and minor primary species.
	Met?	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y Minor species: NA	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y Minor species: NA	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y Minor species: Y
	Justification	<p>All scoring elements: There is a strategy in place for the UoA for managing main and minor primary species</p> <p>The MSC (FCR v2.0, Table SA8) defines “measures”, “partial strategy” and “strategy” as follows:</p> <p><i>“Measures” are actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component under assessment having been designed to manage impacts elsewhere.</i></p> <p><i>A “partial strategy” represents a cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically.</i></p> <p><i>A “strategy” represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.</i></p> <p>As noted in PI2.1.1 above, there are three main primary species in the catch from this fishery, Norwegian-Icelandic spring-spawning herring; mackerel and blue whiting.</p> <p>Norwegian-Icelandic spring-spawning herring The Coastal States have agreed on a long-term management plan (ICES, 2018c; ICES, 2019i; NEAFC, 2019a) that has been evaluated by ICES and the Harvest Control Rules (HCR) found to be precautionary. The TAC is agreed annually following stock assessment and the application of the HCR set out in the long-term management strategy (LTMS) (e.g. NEAFC Recommendation 2: 2020). The HCR is designed to ensure that the objectives of the LTMS are met. Reference points used to measure stock performance have also been evaluated by ICES including through a Management Strategy Evaluation and updated recently (ICES, 2019f). This represents a cohesive and strategic arrangement which has maintained the stock above $MSY_{B_{trigger}}$ (see Figure 24). SG60, SG80 and SG100 are met.</p> <p>Mackerel</p>		

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 minimize the mortality of unwanted catch.			
		<p>The mackerel fishery is prosecuted by vessels from the EU, Faroe Islands, Iceland, Norway and Greenland. There is no LTMS agreed by all parties involved in the fishery (ICES, 2019b, ICES, 2019n). In 2014, three of the Coastal States (EU, Norway and the Faroe Islands) agreed a Management Strategy for 2014 to 2018 which, in November 2018, was extended for two more years until 2020. In the absence of an agreed LTMS, the setting of a TAC for the stock is based upon ICES' MSY approach. Reference points have been recently reviewed and updated (ICES, 2019n). In 2020, for the first time since 2009, the parties involved in the fishery agreed an overall TAC (in line with ICES advice - NEAFC Recommendation 3:2020). These measures represent a cohesive arrangement which has maintained the stock above MSY $B_{trigger}$ (see Figure 25). SG60, SG80 and SG100 are met.</p> <p>Blue whiting The setting of a TAC for the Northeast Atlantic blue whiting fishery is based upon a LTMS agreed between the Coastal States (Anon, 2016) which has been evaluated by ICES and found to meet the requirements of the precautionary principle (ICES, 2016e). The TAC is agreed annually following stock assessment and the application of the HCR set out in the LTMS (e.g. NEAFC Recommendation 1: 2020). The HCR is designed to ensure that the objectives of the LTMS are met. Reference points used to measure stock performance have also been evaluated by ICES including through a Management Strategy Evaluation and updated recently (ICES, 2019m). SG60, SG80 and SG100 are met.</p> <p>Minor species There are 5 minor primary species; greater argentine, golden redfish, saithe, cod and Greenland halibut. With the exception of greater argentine and Greenland halibut, all are subject to management plans which have been evaluated by ICES and found to be consistent with the precautionary and MSY approach (MFRI, 2020c; MFRI, 2020d; MFRI, 2020e). Greater argentine has reference points defined for the stock, is subject to stock assessment under the ICES MSY advice rule and is managed by TAC (MFRI, 2020b). Greenland halibut has been managed through a bi-lateral agreement between Greenland and Iceland since 2014 which has limited overall catches and assured that fishing pressure is around F_{MSY} (ICES, 2019o). All stocks are above MSY $B_{trigger}$ reference points.</p> <p>In addition, a discard ban applies to commercially fisheries in Iceland and fishermen are obliged to record and land all catches of commercial fish to be recorded against quota. Gear regulations and area closures are used to realize objectives concerning bycatch and protection of juveniles. Taken together this represents a cohesive and strategic arrangement for managing minor species. SG100 is met.</p>		
b	Management strategy evaluation			
	Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the 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.
	Met?	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y Minor species: NA	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y Minor species: NA	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y Minor species: N

PI 2.1.2	<p>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 minimize the mortality of unwanted catch.</p>
Justification	<p>Norwegian-Icelandic herring, mackerel, blue whiting: Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.</p> <p>The MSC FCR v2.0 (Table SA8) defines the levels of information required to evaluate whether the management measures, partial strategy/strategy will work as follows:</p> <p><i>“The SG60 level for these PIs requires “plausible argument” based on expert knowledge; The SG80 level requires expert knowledge augmented by some information collected in the area of the UoA and about the specific component(s) and/or UoA; The SG100 level requires all preceding information augmented by relatively complete information on the component, much of which comes from systematic monitoring and/or research.”</i></p> <p>When scoring minor primary species as scoring elements, MSC FCR v2.0, G7.10.7 states that assessment teams, “should assume the SG80 level is met by default such that the scores are simply based on how many of the scoring issues that apply to minor (or all) species/habitats are met at the SG100 level”. Accordingly, minor species are only scored at the SG100 level.</p> <p>The main species are considered individually below, followed by the minor species which are assessed collectively:</p> <p>Norwegian-Icelandic spring-spawning herring</p> <p>The Coastal States have agreed on a long-term management plan (ICES, 2018c) that has been evaluated by ICES using a management strategy evaluation (MSE) approach to thoroughly test the Harvest Control Rules (HCRs) and this testing supports high confidence that the partial strategy will work (keeping the SSB above B_{lim} and F below F_{MGT}) based on information directly about the fishery and stock involved. SGs 60, 80 and 100 are therefore considered to be met for this stock.</p> <p>Mackerel</p> <p>The harvest strategy has worked well in the past as evidenced by the recovery of the stock since the implementation of a management plan in October 2008. In the absence of an agreement on the LTMS by all parties in the fishery, management has been based on the MSY approach since 2016 which is linked to the precautionary approach for biomass but imposes a lower fishing mortality. The stock was re-assessed in an inter-benchmark workshop in 2019 and the assessment methodology and reference points amended. The stock is above $MSY B_{trigger}$ with 95% probability and has been since 2008. Fishing mortality is above F_{MSY} but has been declining since 2003 (see Figure 25). In the light of current stock status in relation to SSB and F there is sufficient evidence that the current MSY harvest strategy is likely to work based on information directly about the fishery. SG60 is met. The improvements made as part of the inter-benchmark provide high confidence that the partial strategy will work, based on information directly about the fishery SG80 and SG100 are also met.</p> <p>Blue whiting</p> <p>The Coastal States have agreed on a long-term management plan (Anon. 2016) that has been evaluated by ICES using a management strategy evaluation (MSE) approach to thoroughly test the Harvest Control Rules (HCRs). Reference points used to measure stock performance have also been evaluated by ICES including through a Management Strategy Evaluation and updated recently (ICES, 2019m). This testing supports high confidence that the partial strategy will work based on information directly about the fishery, the stock is above $MSY B_{trigger}$ with 95% probability and has been since the late 1990s (see Figure 26). Fishing mortality is above F_{MSY} but has been declining since 2015. SGs 60, 80 and 100 are met.</p>

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 minimize the mortality of unwanted catch.	
		Minor species With regard to the minor primary species, as noted in the scoring comments for SIa above, the level of testing and confidence associated with the management arrangements for different species is quite variable: some stocks are subject to a detailed stock assessment and have been subject to a full management strategy evaluation by ICES (for instance in the case of golden redfish, saithe and cod); for the other species (greater argentine and Greenland halibut) the stock assessment is based on biomass indices and there is no evidence of testing of the management strategy (other than from the empirical evidence that it is working). On the basis that the management strategy/partial strategy has not been tested for all of the minor non-target species, SG100 is not met.	
c	Management strategy implementation		
	Guidepost		There is some evidence that the measures/partial strategy is being implemented successfully.
	Met?		Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y Minor species: NA
			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).
	Justification	Norwegian-Icelandic herring, mackerel, blue whiting: There is some evidence that the measures/partial strategy is being implemented successfully. When scoring minor primary species as scoring elements, MSC FCR v2.0, G7.10.7 states that assessment teams, “should assume the SG80 level is met by default such that the scores are simply based on how many of the scoring issues that apply to minor (or all) species/habitats are met at the SG100 level”. Accordingly, minor species are only scored at the SG100 level. The main species are considered individually below, followed by the minor species which are assessed collectively: Norwegian-Icelandic spring-spawning herring As noted in SIa, the Coastal States have agreed the long-term management plan for Norwegian-Icelandic spring-spawning herring, and it has been evaluated by ICES and the HCR found to be precautionary. A global TAC is set annually by the Coastal States and recorded in NEAFC recommendations and is generally in line with ICES advice. This strategy has maintained the SSB above the MSY B _{trigger} level (see Figure 24). There is some evidence that the measures/partial strategy is being implemented successfully. SG80 is met. However, there is presently no agreement between the Coastal States on the TAC allocations between them which has resulted in the setting of unilateral TACs and resulted in the maximum catch limit set by ICES and long-term management plan being regularly exceeded. Consequently, clear evidence does not exist that the strategy is being implemented successfully. SG100 is not met. Mackerel As noted in SIb, in the absence of agreement on the LTMS by all parties in the fishery, management has been based on the MSY approach since 2016 which is linked to the precautionary approach for biomass but imposes a lower fishing mortality. The stock is above MSY B _{trigger} with 95%	

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 minimize the mortality of unwanted catch.			
		<p>probability and has been since 2008. Fishing mortality is above F_{MSY} but has been declining since 2003. Given the status of SSB and fishing mortality there is some evidence that the partial strategy is being implemented successfully. SG80 is met.</p> <p>However, there is presently no agreement between the Coastal States on the TAC allocations between them which has resulted in the setting of unilateral TACs and resulted in the maximum catch limit set by ICES being regularly exceeded. Consequently, clear evidence does not exist that the strategy is being implemented successfully. SG100 is not met.</p> <p>Blue whiting The Coastal States have agreed the long-term management plan for blue whiting, and it has been evaluated by ICES and the HCR found to be precautionary. A global TAC is set annually by the Coastal States in line with ICES advice (recorded in NEAFC recommendations). This strategy has maintained the SSB above the $MSY B_{trigger}$ level (see Figure 26). There is some evidence that the measures/partial strategy is being implemented successfully. SG80 is met.</p> <p>However, there is presently no agreement between the Coastal States on the TAC allocations between them which has resulted in the setting of unilateral TACs and resulted in the maximum catch limit set by ICES and long-term management plan being regularly exceeded. Consequently, clear evidence does not exist that the strategy is being implemented successfully. SG100 is not met.</p> <p>Minor species With regard to the minor primary species, as noted in the scoring comments for SIa above, the management arrangements for different species are variable. Consequently, on the basis that the management strategy / partial strategy has not been implemented for all of the minor non-target species, SG100 is not met.</p>		
d	Shark finning			
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	No main or minor primary species are sharks. This SI is therefore not relevant.		
e	Review of alternative measures			
	Guidepost	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.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	SA3.1.6 of MSC FCR v2.0 defines 'unwanted catch' as the part of the catch that a fisher did not intend to catch but could not avoid and did not want or chose not to use. Unwanted catch may also be known as non-target, 'bycatch' or 'discards' and include species it is prohibited to catch or part of the catch that is thrown away or slipped and may not survive after release (MSC FCR v2.0, GSA 3.1.6). In cases where there is a negligible unwanted catch of a species, the FCR allows discretion as to whether the SI should be scored provided the decision is made in accordance with a precautionary approach (GSA 3.5.3). A threshold for 'negligible' is not defined but the FCR notes that the team may consider the significance of the catch in relation to things like the proportion of the unwanted catch as part of the total catch or as part of the total amount of unwanted catch,		

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 minimize the mortality of unwanted catch.
	<p>as well as the regularity of the catch occurring when deciding whether it is negligible. It further notes that if there is no unwanted catch of primary species, or no primary species at all, then this SI is not scored.</p> <p>There is little evidence of any unwanted catch of any primary species in this UoA. The fishery targets dense schools of over-wintering herring so non-target catches are low and there are measures in place to minimise them. For example, Regulation no. 770, 8 September 2006, prohibits the use of pelagic trawls within the 12 nautical mile fishing zone to limit the bycatch of juveniles of other species.</p> <p>But, in any case, discarding is prohibited by Icelandic law (Article 2 of the Act Concerning the Treatment of Commercial Marine Fish, No. 57/1996). All fish caught must be recorded in vessel logbooks, landed and are counted against the catch quota for the vessel concerned. This law applies to commercially important species (and so covers the primary species identified in this UoA) and protected species including Atlantic halibut (<i>Hippoglossus hippoglossus</i>) and porbeagle (<i>Lamna nasus</i>), basking shark (<i>Cetorhinus maximus</i>) and spurdog (<i>Squalus acanthias</i>) unless they are captured alive in which case they must be released (Regulations 470/2012 and 456/2017).</p> <p>There are a range of flexibility mechanisms in place designed to facilitate compliance and reduce the likelihood of discarding. This includes the ability to transfer quota between years and between species (except cod), so for example, subject to certain limits you can trade quota to cover landings in excess of your quota or count the landings against next year's quota. Vessels may also decide not to count part of the vessels catch against its quota. This catch, known as 'VS catch' is limited to 0.5% of the vessel's pelagic catch per fishing year (5% for other marine catches) and must be kept separate from the rest of the catch and weighed and recorded separately; the bulk of the proceedings from it's sale (80%) go to the Fisheries Commission Project Fund or 'VS Fund' (established by Act No. 37/1992), the remainder going to the vessel (Article 11, Act No. 116/2006) (Fiskistofa, 2019). There are checks of fishing activity on vessels at sea by the Directorate's Inspectors and the Icelandic Coast Guard and also at landing.</p> <p>Despite the discard prohibition, penalties and flexibility built into the system some discarding may still occur, likely mainly in the form of high grading. This is considered to be at low levels and can be detected by comparing landings and size compositions between vessels fishing in the same area. A program has been running since 2001 to do this, it mainly focusses on cod and haddock, but various other species have been sampled. The measurements are taken on board commercial vessels by trained inspectors. Should the composition of the catch (species, size) or its quality differ from other vessels fishing in the vicinity, the Fisheries Directorate has powers to place the vessel under closer surveillance by placing an inspector on board for one day or fishing trip. The vessel must pay the Directorate's costs (e.g. inspector wages) if this occurs more than once in a fishing year (Article 13 of Act No. 57/1996). Results of this joint monitoring programme between the Directorate and MFRI are published periodically by the MFRI and referred to in the Directorate's Annual Reports (Fiskistofa 2016, 2017; Sigurðsson et al. 2016). A further tool introduced in spring 2019 is the publication on the Directorate's website of catch composition with and without an inspector on board which can also indicate whether discarding is occurring. The Coast Guard are investigating other ways to enhance the detection of discarding drawing on experience elsewhere (Norway) and other technologies including aerial surveillance.</p> <p>Given that discarding of primary species is prohibited and there are a range of measures in place to encourage compliance with the law and detect where it is not being adhered to, and acknowledging that some discarding may still occur but is considered to be at low levels, the Assessment team, taking a precautionary approach, consider that any mortality of unwanted catch is negligible and consequently it is not necessary to score this SI.</p>

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 minimize the mortality of unwanted catch.
References	<p>Anon. 2016. Agreed record of conclusions of fisheries consultations between the European Union, the Faroe Islands, Iceland and Norway on the management of blue whiting in the north-east Atlantic in 2017. 6 pp. https://d3b1dqw2kzxi.cloudfront.net/media/8742/agreed-record-blue-whiting-2017.pdf</p> <p>Fiskistofa, 2019. Fiskistofa website "Flexibility in the catchment system" http://www.fiskistofa.is/fiskveidistjorn/stjornfiskveida/#Sveigjanleiki_iaflamarskerfinu</p> <p>Fiskistofa, 2017. Fiskistofa Annual Report, 2017. Maritime Surveillance section, Pg. 18. http://www.fiskistofa.is/media/arsskyrslur/Arsskyrsla_2017.pdf</p> <p>Fiskistofa, 2016. Fiskistofa Annual Report, 2016. Maritime Surveillance section, Pg. 14. http://www.fiskistofa.is/media/arsskyrslur/arsskyrsla_2016.pdf</p> <p>ICES, 2019a. ICES Advice on fishing opportunities, catch, and effort. Blue whiting (<i>Micromesistius poutassou</i>) in subareas 1–9, 12, and 14 (Northeast Atlantic and adjacent waters). Published 1 October 2019. http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/whb.27.1-91214.pdf</p> <p>ICES, 2019b. ICES Advice on fishing opportunities, catch, and effort. Mackerel (<i>Scomber scombrus</i>) in subareas 1–8 and 14, and in Division 9.a (the Northeast Atlantic and adjacent waters). Published 1 October 2019. http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/mac.27.nea.pdf</p> <p>ICES, 2019f. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports 136. Chapter 4. Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, (Northeast Atlantic) (Norwegian Spring Spawning). http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/WGWIDE/06%20WGWIDE%20Report%202019%20-%2004%20NSSH%20(Clupea%20harengus).pdf</p> <p>ICES, 2019i. Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, Norwegian spring-spawning herring (the Northeast Atlantic and the Arctic Ocean). ICES Advice on fishing opportunities, Copenhagen. 1 October 2019. http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/her.27.1-24a514a.pdf</p> <p>ICES, 2019m. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports 136. Chapter 2. Blue whiting (<i>Micromesistius poutassou</i>) in subareas 27.1-9, 12 and 14 (Northeast Atlantic). http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/WGWIDE/04%20WGWIDE%20Report%202019%20-%2002%20Blue%20whiting.pdf</p> <p>ICES, 2019n. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports 136. Chapter 8. Northeast Atlantic mackerel. https://www.hafogvatn.is/static/extras/images/Makr%C3%ADll%20t%C3%A6knisk%C3%BDrsla%2020191161061.pdf</p> <p>ICES, 2019o. North Western Working Group (NWWG). ICES Scientific Reports. 1:14. 638 pp. Chapter 17. Greenland Halibut in Subareas 5, 6, 12, and 14.</p>

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 minimize the mortality of unwanted catch.
	<p>http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/NWWG/19%20NWWG%20Report%202019_Sec%2017_Greenland%20Halibut%20in%20Subareas%205.6.12.14.pdf</p> <p>ICES, 2018c. Report of the Workshop on a long-term management strategy for Norwegian Spring-spawning herring (WKNSSHMSE), 26-27 August 2018, Torshavn, Faroe Islands. ICES CM 2018/ACOM:53. 108 pp. http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2018/WKNSSHMSE/WKNSSHMSE%20Report%202018.pdf</p> <p>ICES. 2016e. Report of the Workshop on Blue Whiting Long Term Management Strategy Evaluation (WKBWMS), 30 August 2016, ICES HQ, Copenhagen, Denmark. ICES CM 2016/ACOM:53. 104 pp</p> <p>MFRI, 2020b. State of Marine Stocks and Advice. Gullfax – Greater silver smelt. MFRI, 16 June 2020. https://www.hafogvatn.is/static/extras/images/19-greatersilversmelt1206859.pdf</p> <p>MFRI, 2020c. State of Marine Stocks and Advice. Gullkarfi – Golden redfish. MFRI, 16 June 2020 https://www.hafogvatn.is/static/extras/images/05-goldenredfish-11206959.pdf</p> <p>MFRI, 2020d. State of Marine Stocks and Advice. Ufsi – Saithe. MFRI, 16 June 2020. https://www.hafogvatn.is/static/extras/images/03-saithe-11206961.pdf</p> <p>MFRI, 2020e. State of Marine Stocks and Advice. Þorskur – Cod. MFRI, 13 June 2019 https://www.hafogvatn.is/static/extras/images/01-cod1206938.pdf</p> <p>NEAFC Recommendation 1: 2020. Recommendation on Conservation and Management Measures for blue whiting in the NEAFC Regulatory Area for 2020 https://www.neafc.org/system/files/Recommendation-01_Blue-Whiting_0.pdf</p> <p>NEAFC Recommendation 2: 2020. Recommendation on Conservation and Management Measures for Norwegian Spring Spawning (Atlanto-Scandian) Herring in the NEAFC Regulatory Area for 2020 https://www.neafc.org/system/files/Recommendation-02_Herring.pdf</p> <p>NEAFC Recommendation 3: 2020. Recommendation on Conservation and Management Measures for Mackerel in the NEAFC Regulatory Area for 2020. https://www.neafc.org/system/files/Recommendation-03_Mackerel.pdf</p> <p>Sigurðsson, G. M. <i>et al.</i>, 2016. Mælingar á brottkasti þorsks og ýsu 2014-2015. Discards of cod and haddock in demersal Icelandic fisheries 2014-2015. Marine and Freshwater Research in Iceland. MFRI, November 2016. https://www.hafogvatn.is/static/research/files/hafogvatn2016_003.pdf</p>
Scoring element 1. Norwegian-Icelandic herring (SG602 of 2 SIs, SG803 of 3 SIs, SG1002 of 3 SIs)	95
Scoring element 2. Mackerel (SG602 of 2 SIs, SG803 of 3 SIs, SG1002 of 3 SIs)	95
Scoring element 3. Blue whiting (SG602 of 2 SIs, SG803 of 3 SIs, SG1002 of 3 SIs)	95
Scoring element 4. Minor primary species (SG600 of 0 SIs, SG800 of 0 SIs, SG1001 of 3 SIs)	85
OVERALL PERFORMANCE INDICATOR SCORE: (SG603 of 3 SEs, SG803 of 3 SEs, SG1000 of 4 SEs; ref. MSC FCR v2.0 Table 4. Overall score made in line with G7.10.7)	90
CONDITION NUMBER (if relevant):	

PI 2.1.3 – Primary species information. UoA 1 pelagic trawl.

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			
	Guidepost	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.
	Met?	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y
	Justification	All main 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. The stock of the main primary species Norwegian-Icelandic spring-spawning herring, mackerel and blue whiting, are monitored through a catch sampling programme and fishery independent surveys. The data from these programmes allow for a quantitative stock assessment to be performed where stock status is evaluated against reference points. 95% confidence intervals have been defined for the spawning stock biomass estimate and fishing mortality (see Figure 24, Figure 25 and Figure 26). Projections are in place which can be used to quantify risk associated with various harvest strategies (ICES, 2018c; ICES 2016e). Consequently, quantitative information is available, and it is considered adequate to assess with a high degree of certainty, the impact of the UoA on main primary species with respect to status. SGs 60, 80 and 100 are met.		
b	Information adequacy for assessment of impact on minor primary species			
	Guidepost			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			Minor species: Y
	Justification	Minor species: Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status. There is a discard prohibition and all catches of commercial species – which includes primary species – must be reported in vessel logbooks and weighed at landing and entered onto the Directorate of Fisheries database (GAFL). Consequently, comprehensive information exists on removals of primary species by the UoA. This catch information informs the annual stock survey and assessment undertaken by the MFRI and ICES which provides information on the stock status of the minor primary species in relation to reference points and is used to set TACs. A number of the minor species, namely golden redfish, saithe and cod, are subject to management plans which have been evaluated by ICES and found to be consistent with the precautionary and MSY approach (see information presented in PI 2.1.2, SI(a)).		

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			
	Consequently, some information is adequate to estimate the impact of the UoA on minor primary species with respect to status. SG100 is met.			
c	Information adequacy for management strategy			
	Guidepost	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.
	Met?	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y	Norwegian-Icelandic herring: Y Mackerel: Y Blue whiting: Y Minor species: Y
	Justification	<p>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.</p> <p>As noted in the previous SIs, comprehensive information is available on catch and landings, stock survey and assessment for the main and minor primary species in this UoA which is used to inform stock assessments. These assessments identify the performance of the stock in relation to reference points and are used to inform the setting of TACs under management plans for Norwegian-Icelandic spring-spawning herring and blue whiting and also the minor primary species golden redfish, saithe and cod.</p> <p>The monitoring, control and surveillance system, involving at inspections at sea, on the dockside and of weighing and processing activities, provides information on compliance with the recording and reporting requirements. The recent Icelandic National Audit Office report (NAO, 2018) on the Icelandic enforcement system identified a number of areas of weakness in this system, highlighting that more quantitative data are needed to substantiate conclusions that discards are low and that there are few irregularities in connection with re-weighing of catches after de-icing (affects the demersal species and therefore the minor species only) but overall, the Assessment Team consider the available evidence still indicates that discards are low and re-weighing irregularities not significant (considered in more detail in PI3.2.3).</p> <p>Annual survey provides information on current biomass and enables measurement of stock status against reference points.</p> <p>This information supports a management strategy for each species and is capable of evaluating with a high degree of certainty whether this is meeting its objectives. SGs 60, 80 and 100 are therefore met.</p>		
References		<p>ICES, 2018c. Report of the Workshop on a long-term management strategy for Norwegian Spring-spawning herring (WKNSSHMSE), 26-27 August 2018, Torshavn, Faroe Islands. ICES CM 2018/ACOM:53. 108 pp. http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2018/WKNSSHMSE/WKNSSHMSE%20Report%202018.pdf</p> <p>ICES. 2016e. Report of the Workshop on Blue Whiting Long Term Management Strategy Evaluation (WKBWMS), 30 August 2016, ICES HQ, Copenhagen, Denmark. ICES CM 2016/ACOM:53. 104 pp</p> <p>NAO, 2018. https://rikisendurskodun.is/wp-content/uploads/2019/01/Eftirlit-Fiskistofu-Stjornsysluuttek.pdf</p>		

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 element 1. Norwegian-Icelandic herring (SG60 2 of 2 SIs, SG80 2 of 2 SIs, SG100 2 of 2 SIs)		100
Scoring element 2. Mackerel (SG60 2 of 2 SIs, SG80 2 of 2 SIs, SG100 2 of 2 SIs)		100
Scoring element 3. Blue whiting (SG60 2 of 2 SIs, SG80 2 of 2 SIs, SG100 2 of 2 SIs)		100
Scoring element 4. Minor primary species (SG60 0 of 0 SIs, SG80 0 of 0 SIs, SG100 2 of 2 SIs)		100
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 3 of 3 SEs, SG80 3 of 3 SEs, SG100 4 of 4 SEs; ref. MSC FCR v2.0 Table 4)		100
CONDITION NUMBER (if relevant):		

PI 2.1.1 – Primary species outcome. UoA 2 purse seine.

PI 2.1.1		The UoA aims to maintain primary species above the 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			
	Guidepost	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.
	Met?	NA	NA	NA
	Justification	The composition of landings in the Icelandic summer-spawning herring pelagic trawl fishery is presented in the background section of this report in Table 10. In recent years, due to the distribution of the stock in offshore waters (see sections 3.2.1 and 3.2.2) Icelandic summer-spawning herring catches have been made almost entirely by pelagic trawls. Small catches of the stock have been taken by purse seines in some years (for example, approximately 10,000t in 2015, 2,000t in 2016 and 3,000t in 2019). Both fishing methods covered by the UoAs target dense homogeneous aggregations of herring, but this is particularly true of the purse seine fishery as it targets the dense shoals forming in confined areas as in the Breiðafjörður bay in 2006-2012. In the purse seine fishery, 99% of the catch is Icelandic summer-spawning herring. There are extremely small catches of other stocks namely Norwegian-Icelandic spring-spawning herring, blue whiting and golden redfish – all fractions of a percent of total catches. Consequently, there are no main primary species in this UoA. As there are no main primary species, in accordance with the MSC interpretation published in February 2017 (“P2 species outcome PIs – scoring when no main or no minor (or both) (FCR v2.0 – Annex SA PI 2.1.1, 2.2.1”, see interpretation 2 in section 7.1), SlA is not applicable to this fishery.		
	Minor primary species stock status			
b	Guidepost			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?			Minor species: Yes
	Justification	Minor primary species are highly likely to be above the PRI. The “minor” primary species reported to be landed by the UoAs are considered in turn below. In line with MSC interpretation (see Relevant Interpretation 3, in section 7.1) these species have been scored as a group as there are a few of them and they all achieve the same score.		

PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.
	<p>In accordance with the MSC interpretation on using ICES reference points to score PRI (see Relevant Interpretation 1, in section 7.1), in the absence of an explicit probability distribution of stock size, a stock is considered highly likely to be above its PRI when the stock is estimated above half the distance between B_{lim} and B_{pa}. This has been used for golden redfish where a probability distribution is not available but B_{pa} reference points are available.</p> <p>Norwegian-Icelandic spring-spawning herring, <i>Clupea harengus</i> ICES provide scientific advice on this stock. In line with the MSC interpretation on using ICES reference points to score the PRI (see Relevant Interpretation 1, in section 7.1), B_{lim} can be treated as the PRI.</p> <p>An explicit probability distribution of stock size is available for this stock (Figure 24). This shows that the spawning stock biomass (SSB) of Norwegian-Icelandic spring-spawning herring is above B_{pa}, including the lower bound of the 95% confidence interval so SG100 is met.</p> <p>Blue whiting, <i>Micromesistius poutassou</i> The most recent advice indicates that the SSB (including at its lower confidence limit) is well above $MSY B_{trigger}$, although F is above F_{MSY} (MFRI 2019d) (Figure 26). In line with the MSC interpretation referred to above, as this stock is above B_{pa}, including the lower bound of the 95% confidence interval, SG100 is met.</p> <p>Golden redfish, <i>Sebastes norvegicus</i> The most recent advice indicates that the SSB is well above $MSY B_{trigger}$, although F is above F_{MSY} (Figure 28). B_{pa} is equal to $MSY B_{trigger}$ for this stock and since SSB is well above $B_{pa}/B_{trigger}$ it is highly likely that this stock is above its PRI. SG100 is met.</p>
References	<p>ICES, 2020a. Golden redfish (<i>Sebastes norvegicus</i>) in subareas 5, 6, 12, and 14 (Iceland and Faroes grounds, West of Scotland, North of Azores, East of Greenland). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, reg.27.561214. https://doi.org/10.17895/ices.advice.5848</p> <p>ICES, 2019i. Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, Norwegian spring-spawning herring (the Northeast Atlantic and the Arctic Ocean). ICES Advice on fishing opportunities, Copenhagen. 1 October 2019. http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/her.27.1-24a514a.pdf</p> <p>MFRI, 2019d. State of Marine Stocks and Advice. Kolmunni – Blue whiting. MFRI, 1 October 2019. https://www.hafogvatn.is/static/extras/images/Kolmunni_TAC_20191161058.pdf</p>
Scoring element 1. Minor primary species (SG600 0 of 0 SIs, SG800 0 of 0 SIs, SG100 1 of 1 SIs)	
OVERALL PERFORMANCE INDICATOR SCORE: (SG600 0 of 0 SEs, SG800 0 of 0 SEs, SG100 1 of 1 SEs; ref. MSC FCR v2.0 Table 4)	
CONDITION NUMBER (if relevant):	

PI 2.1.2 – Primary species management strategy. UoA 2 purse seine.

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 minimize the mortality of unwanted catch.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guidepost	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 above the point where recruitment would be impaired.	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 point where recruitment would be impaired.	There is a strategy in place for the UoA for managing main and minor primary species.
	Met?	Main species: NA Minor species: NA	Main species: NA Minor species: NA	Main species: Y Minor species: Y
	Justification	Main and minor species: There is a strategy in place for the UoA for managing main and minor primary species As noted in the scoring of PI 2.1.1 above, there are no “main” primary species in the catch from this fishery. The qualifier “if necessary” therefore applies, and the SG60 and SG80 requirements are therefore met . Minor primary species are only considered at SG100 for this SI, which requires evidence of a strategy in place for managing main and minor primary species. The MSC (FCR v2.0, Table SA8) defines “measures”, “partial strategy” and “strategy” as follows: <i>“Measures” are actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component under assessment having been designed to manage impacts elsewhere.</i> <i>A “partial strategy” represents a cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically.</i> <i>A “strategy” represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.</i> There are three minor primary species in the catch from this fishery; Norwegian-Icelandic spring-spawning herring, blue whiting and golden redfish. All are subject to management plans which have been evaluated by ICES and found to be consistent with the precautionary and MSY approach (ICES, 2020a; ICES, 2019f; ICES, 2019i; ICES, 2019m; MFRI, 2019d). All stocks are above MSY $B_{trigger}$ reference points. In addition, a discard ban applies to commercially fisheries in Iceland and fishermen are obliged to record and land all catches of commercial fish to be recorded against quota. Gear regulations and area closures are used to realize objectives concerning bycatch and protection of juveniles. Taken together this represents a cohesive and strategic arrangement for managing minor species. SG100 is met.		
b	Management strategy evaluation			

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 minimize the mortality of unwanted catch.		
	Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the 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.
	Met?	Main species: NA Minor species: NA	Main species: NA Minor species: NA	Main species: Y Minor species: Y
	Justification	Main and minor primary species: Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved. The MSC has provided an interpretation to guide the application of this SI which states that the “if necessary” clause included in SIa above should also apply to SIb and SIc ("Use of 'if necessary' in P2 management PIs (FCR v2.0 - Annex SAPI 2.1.2, 2.2.2, 2.4.2, 2.5.2)". For interpretation in full see relevant interpretation 4 in section 7.1). In accordance with this MSC interpretation, a management strategy evaluation is not necessary at SGs 60 and 80 in the absence of any main primary species in the catch. The SG60 and 80 requirements are therefore not applicable for this UoA. The “if necessary” clause does not apply at SG100 which must be scored. The MSC FCR v2.0 (Table SA8) defines the levels of information required to evaluate whether the management measures, partial strategy/strategy will work as follows: <i>“The SG60 level for these PIs requires “plausible argument” based on expert knowledge; The SG80 level requires expert knowledge augmented by some information collected in the area of the UoA and about the specific component(s) and/or UoA; The SG100 level requires all preceding information augmented by relatively complete information on the component, much of which comes from systematic monitoring and/or research.”</i> Management plans exist for each of the three minor primary species and all are subject to detailed stock assessment. The plans have been subject to a full management strategy evaluation by ICES and found to be precautionary. The stocks of all three species are above $MSY_{B_{trigger}}$. Fishing effort is above F_{MSY} for blue whiting and golden redfish but showing a declining trend (see Figure 24, Figure 26 and Figure 28). This testing supports high confidence that the partial strategy will work based on information directly about the fishery. SG100 is met.		
	c	Management strategy implementation		
	Guidepost		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).
	Met?		Main species: NA Minor species: NA	Main species: N Minor species: N
	Justification	The MSC has provided an interpretation to guide the application of this SI which states that the “if necessary” clause included in SIa above should also apply to SIb and SIc (see Relevant Interpretation 4 in section 7.1). In accordance with this MSC interpretation, a management strategy is not necessary in the absence of any main primary species in the catch. The SG80 requirements are therefore met.		

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 minimize the mortality of unwanted catch.		
		The minor species have been assessed collectively. LTMS have been agreed for each stock which have been evaluated by ICES and the HCR found to be precautionary. However, in the case of Norwegian-Icelandic spring-spawning herring and blue whiting, there is presently no agreement between the Coastal States participating in the fisheries on the TAC allocations between them which has resulted in the setting of unilateral TACs and resulted in the maximum catch limit set by ICES and the long-term management plans being regularly exceeded. Consequently, clear evidence does not exist that the strategy is being implemented successfully. SG100 is not met.		
d	Shark finning			
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	No main or minor primary species are sharks. This SI is therefore not relevant.		
e	Review of alternative measures			
	Guidepost	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.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	SA3.1.6 of MSC FCR v2.0 defines ‘unwanted catch’ as the part of the catch that a fisher did not intend to catch but could not avoid and did not want or chose not to use. Unwanted catch may also be known as non-target’, ‘bycatch’ or ‘discards’ and include species it is prohibited to catch or part of the catch that is thrown away or slipped and may not survive after release (MSC FCR v2.0, GSA 3.1.6). In cases where there is a negligible unwanted catch of a species, the FCR allows discretion as to whether the SI should be scored provided the decision is made in accordance with a precautionary approach (GSA 3.5.3). A threshold for ‘negligible’ is not defined but the FCR notes that the team may consider the significance of the catch in relation to things like the proportion of the unwanted catch as part of the total catch or as part of the total amount of unwanted catch, as well as the regularity of the catch occurring when deciding whether it is negligible. It further notes that if there is no unwanted catch of primary species, or no primary species at all, then this SI is not scored. There is little evidence of any unwanted catch of any primary species in this UoA. The fishery targets dense schools of over-wintering herring so non-target catches are low and there are measures in place to minimise them. For example, Regulation no. 770, 8 September 2006, prohibits the use of pelagic trawls within the 12 nautical mile fishing zone to limit the bycatch of juveniles of other species. But, in any case, discarding is prohibited by Icelandic law (Article 2 of the Act Concerning the Treatment of Commercial Marine Fish, No. 57/1996). All fish caught must be recorded in vessel logbooks, landed and are counted against the catch quota for the vessel concerned. This law applies to commercially important species (and so covers the primary species identified in this UoA) and protected species including Atlantic halibut (<i>Hippoglossus hippoglossus</i>) and porbeagle (<i>Lamna nasus</i>), basking shark (<i>Cetorhinus maximus</i>) and spurdog (<i>Squalus acanthias</i>) unless they are captured alive in which case they must be released (Regulations 470/2012 and 456/2017).		

PI 2.1.2	<p>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 minimize the mortality of unwanted catch.</p>
	<p>There are a range of flexibility mechanisms in place designed to facilitate compliance and reduce the likelihood of discarding. This includes the ability to transfer quota between years and between species (except cod), so for example, subject to certain limits you can trade quota to cover landings in excess of your quota or count the landings against next year's quota. Vessels may also decide not to count part of the vessels catch against its quota. This catch, known as 'VS catch' is limited to 0.5% of the vessel's pelagic catch per fishing year (5% for other marine catches) and must be kept separate from the rest of the catch and weighed and recorded separately; the bulk of the proceedings from it's sale (80%) go to the Fisheries Commission Project Fund or 'VS Fund' (established by Act No. 37/1992), the remainder going to the vessel (Article 11, Act No. 116/2006) (Fiskistofa, 2019). There are checks of fishing activity on vessels at sea by the Directorate's Inspectors and the Icelandic Coast Guard and also at landing.</p> <p>Despite the discard prohibition, penalties and flexibility built into the system some discarding may still occur, likely mainly in the form of high grading. This is considered to be at low levels and can be detected by comparing landings and size compositions between vessels fishing in the same area. A program has been running since 2001 to do this, it mainly focusses on cod and haddock, but various other species have been sampled. The measurements are taken on board commercial vessels by trained inspectors. Should the composition of the catch (species, size) or its quality differ from other vessels fishing in the vicinity, the Fisheries Directorate has powers to place the vessel under closer surveillance by placing an inspector on board for one day or fishing trip. The vessel must pay the Directorate's costs (e.g. inspector wages) if this occurs more than once in a fishing year (Article 13 of Act No. 57/1996). Results of this joint monitoring programme between the Directorate and MFRI are published periodically by the MFRI and referred to in the Directorate's Annual Reports (Fiskistofa 2016, 2017; Sigurðsson et al. 2016). A further tool introduced in spring 2019 is the publication on the Directorate's website of catch composition with and without an inspector on board which can also indicate whether discarding is occurring. The Coast Guard are investigating other ways to enhance the detection of discarding drawing on experience elsewhere (Norway) and other technologies including aerial surveillance.</p> <p>Given that discarding of primary species is prohibited and there are a range of measures in place to encourage compliance with the law and detect where it is not being adhered to, and acknowledging that some discarding may still occur but is considered to be at low levels, the Assessment team, taking a precautionary approach, consider that any mortality of unwanted catch is negligible and consequently it is not necessary to score this SI.</p>
References	<p>Fiskistofa, 2019. Fiskistofa website "Flexibility in the catchment system" http://www.fiskistofa.is/fiskveidistjorn/stjornfiskveida/#Sveigjanleiki_iaflamarkskerfinu</p> <p>Fiskistofa, 2017. Fiskistofa Annual Report, 2017. Maritime Surveillance section, Pg. 18. http://www.fiskistofa.is/media/arsskyrslur/Arsskyrsla_2017.pdf</p> <p>Fiskistofa, 2016. Fiskistofa Annual Report, 2016. Maritime Surveillance section, Pg. 14. http://www.fiskistofa.is/media/arsskyrslur/arsskyrsla_2016.pdf</p> <p>ICES, 2020a. Golden redfish (<i>Sebastes norvegicus</i>) in subareas 5, 6, 12, and 14 (Iceland and Faroes grounds, West of Scotland, North of Azores, East of Greenland). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, reg.27.561214. https://doi.org/10.17895/ices.advice.5848</p> <p>ICES, 2019a. ICES Advice on fishing opportunities, catch, and effort. Blue whiting (<i>Micromesistius poutassou</i>) in subareas 1–9, 12, and 14 (Northeast Atlantic and adjacent waters). Published 1 October 2019.</p>

PI 2.1.2	<p>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 minimize the mortality of unwanted catch.</p>
	<p>http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/whb.27.1-91214.pdf</p> <p>ICES, 2019f. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports 136. Chapter 4. Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, (Northeast Atlantic) (Norwegian Spring Spawning). http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/WGWIDE/06%20WGWIDE%20Report%202019%20-%2004%20NSSH%20(Clupea%20harengus).pdf</p> <p>ICES, 2019i. Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, Norwegian spring-spawning herring (the Northeast Atlantic and the Arctic Ocean). ICES Advice on fishing opportunities, Copenhagen. 1 October 2019. http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/her.27.1-24a514a.pdf</p> <p>ICES, 2019m. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports 136. Chapter 2. Blue whiting (<i>Micromesistius poutassou</i>) in subareas 27.1-9, 12 and 14 (Northeast Atlantic). http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/WGWIDE/04%20WGWIDE%20Report%202019%20-%2002%20Blue%20whiting.pdf</p> <p>ICES, 2018c. Report of the Workshop on a long-term management strategy for Norwegian Spring-spawning herring (WKNSSHMSE), 26-27 August 2018, Torshavn, Faroe Islands. ICES CM 2018/ACOM:53. 108 pp. http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2018/WKNSSHMSE/WKNSSHMSE%20Report%202018.pdf</p> <p>ICES. 2016e. Report of the Workshop on Blue Whiting Long Term Management Strategy Evaluation (WKBWMS), 30 August 2016, ICES HQ, Copenhagen, Denmark. ICES CM 2016/ACOM:53. 104 pp</p> <p>MFRI, 2020c. State of Marine Stocks and Advice. Gullkarfi – Golden redfish. MFRI, 16 June 2020 https://www.hafogvatn.is/static/extras/images/05-goldenredfish-11206959.pdf</p> <p>MFRI, 2019d. State of Marine Stocks and Advice. Kolmunni – Blue whiting. MFRI, 1 October 2019. https://www.hafogvatn.is/static/extras/images/Kolmunni_TAC_20191161058.pdf</p> <p>NEAFC Recommendation 1: 2020. Recommendation on Conservation and Management Measures for blue whiting in the NEAFC Regulatory Area for 2020 https://www.neafc.org/system/files/Recommendation-01_Blue-Whiting_0.pdf</p> <p>NEAFC Recommendation 2: 2020. Recommendation on Conservation and Management Measures for Norwegian Spring Spawning (Atlanto-Scandian) Herring in the NEAFC Regulatory Area for 2020 https://www.neafc.org/system/files/Recommendation-02_Herring.pdf</p> <p>Sigurðsson, G. M. <i>et al.</i>, 2016. Mælingar á brottkasti þorsks og ýsu 2014-2015. Discards of cod and haddock in demersal Icelandic fisheries 2014-2015. Marine and Freshwater Research in Iceland. MFRI, November 2016. https://www.hafogvatn.is/static/research/files/hafogvatn2016_003.pdf</p>
Scoring element 1. Main primary species (SG600 of 0 SIs, SG800 of 0 SIs, SG1002 of 3 SIs)	95
Scoring element 2. Minor primary species (SG600 of 0 SIs, SG800 of 0 SIs, SG1002 of 3 SIs)	95

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 minimize the mortality of unwanted catch.
OVERALL PERFORMANCE INDICATOR SCORE: (SG600 of 0 SEs, SG800 of 0 SEs, SG1000 of 2 SEs; ref. MSC FCR v2.0 Table 4. Overall score made in line with G7.10.7)	
90	
CONDITION NUMBER (if relevant):	

PI 2.1.3 – Primary species information. UoA2 purse seine.

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			
	Guidepost	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.
	Met?	Main primary species: Y	Main primary species: Y	Main primary species: Y
	Justification	Main 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. There is a discard prohibition and all catches of commercial species – which includes primary species – must be reported in vessel logbooks and weighed at landing and entered onto the Directorate of Fisheries database (GAFL). Further information on catch comes from a catch sampling programme and fishery independent surveys. Consequently, comprehensive quantitative information exists on removals of primary species by the UoA which is considered adequate to assess with a high degree of certainty, the impact of the UoA on main primary species with respect to status. SGs 60, 80 and 100 are met.		
b	Information adequacy for assessment of impact on minor primary species			
	Guidepost			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			Minor species: Y
	Justification	Minor species: Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status. As noted in SIa, there is a discard prohibition and all catches of commercial species – which includes minor primary species – must be reported in vessel logbooks and weighed at landing and entered onto the Directorate of Fisheries database (GAFL). Further information on catch comes from a catch sampling programme and fishery independent surveys. Consequently, comprehensive information exists on removals of primary species by the UoA. This catch information informs the annual stock survey and assessment undertaken by the MFRI and ICES which provides information on the stock status of the minor primary species in relation to reference points and is used to set TACs. All the minor species, namely Norwegian-Icelandic spring-spawning herring, blue whiting and golden redfish, are subject to management plans which have been evaluated by ICES and found to be consistent with the precautionary and MSY approach (see information presented in PI 2.1.2, SI(a)). Consequently, some information is adequate to estimate the impact of the UoA on minor primary species with respect to status. SG100 is met.		

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		
c	Information adequacy for management strategy			
	Guidepost	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.
	Met?	Main species: Y Minor species: NA	Main species: Y Minor species: NA	Main species: Y Minor species: Y
	Justification	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. As noted in the previous SIs, comprehensive information is available on catch and landings, stock survey and assessment for the primary species in this UoA which is used to inform stock assessments for the minor species identified in this UoA. These assessments identify the performance of the stock in relation to reference points and are used to inform the setting of TACs under management plans for Norwegian-Icelandic spring-spawning herring, blue whiting and golden redfish. The monitoring, control and surveillance system, involving at inspections at sea, on the dockside and of weighing and processing activities, provides information on compliance with the recording and reporting requirements. The recent Icelandic National Audit Office report (NAO, 2018) on the Icelandic enforcement system identified a number of areas of weakness in this system, highlighting that more quantitative data are needed to substantiate conclusions that discards are low and that there are few irregularities in connection with re-weighing of catches after de-icing (affects the demersal species and therefore golden redfish only) but overall, the Assessment Team consider the available evidence still indicates that discards are low and re-weighing irregularities not significant (considered in more detail in PI3.2.3). Annual survey provides information on current biomass and enables measurement of stock status against reference points. This information supports a management strategy for each species and is capable of evaluating with a high degree of certainty whether this is meeting its objectives. SGs 60, 80 and 100 are therefore met.		
References		<p>MFRI, 2020c. State of Marine Stocks and Advice. Gullkarfi – Golden redfish. MFRI, 16 June 2020 https://www.hafogvatn.is/static/extras/images/05-goldenredfish-11206959.pdf</p> <p>ICES, 2018c. Report of the Workshop on a long-term management strategy for Norwegian Spring-spawning herring (WKNSSHMSE), 26-27 August 2018, Torshavn, Faroe Islands. ICES CM 2018/ACOM: 53. 108 pp. http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2018/WKNSSHMSE/WKNSSHMSE%20Report%202018.pdf</p> <p>ICES. 2016e. Report of the Workshop on Blue Whiting Long Term Management Strategy Evaluation (WKBWMS), 30 August 2016, ICES HQ, Copenhagen, Denmark. ICES CM 2016/ACOM:53. 104 pp</p> <p>NAO, 2018. https://rikisendurskodun.is/wp-content/uploads/2019/01/Eftirlit-Fiskistofu-Stjornsysluuttek.pdf</p>		
Scoring element 1. Main primary species (SG60 2 of 2 SIs, SG80 2 of 2 SIs, SG100 2 of 2 SIs)				100

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 element 2. Minor primary species (SG60 0 of 0 SIs, SG80 0 of 0 SIs, SG100 2 of 2 SIs)		100
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 1 of 1 SEs, SG80 1 of 1 SEs, SG100 2 of 2 SEs; ref. MSC FCR v2.0 Table 4)		100
CONDITION NUMBER (if relevant):		

PI 2.2.1 – Secondary species outcome. UoAs 1 and 2.

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
a	Main secondary species stock status			
	Guidepost	Main Secondary species are likely to be within 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 also 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 within biologically based limits.
	Met?	NA	NA	Y
	Justification	The only secondary species that occurs in the Icelandic summer-spawning herring catches is in UoA 1 pelagic trawl, where extremely small quantities of deep-sea redfish <i>Sebastes mentella</i> were caught (average annual landings of 428kg over the period 2015-2019 inclusive, see Table 9). However, as catches are negligible (0.0004% of total catches) this stock is not considered as a secondary species for the purposes of this assessment. Since there are no main or minor secondary species in either UoA, in accordance with the MSC FCR v2.0 § SA3.2.1, as the UoA has no impact on this component, it receives a default 100 score.		
	Minor secondary species stock status			
b	Guidepost			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
	Met?			Y
	Justification	There are no main or minor secondary species therefore in accordance with the MSC FCR v2.0 § SA3.2.1, as the UoA has no impact on this component, it receives a default 100 score.		
References				
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 0 of 0 SIs, SG80 0 of 0 SIs, SG100 2 of 2 SI)				100
CONDITION NUMBER (if relevant):				

PI 2.2.2 – Secondary species management strategy. UoAs 1 and 2.

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			
	Guidepost	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 within 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 within 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.
	Met?	NA	NA	N
	Justification	<p>There are no main species therefore in accordance with the MSC interpretation published in February 2017 (“P2 species outcome PIs – scoring when no main or no minor (or both) (FCR v2.0 – Annex SA PI 2.1.1, 2.2.1”, see interpretation 2 in section 7.1), Sla is not applicable at SG60 and SG80 levels.</p> <p>The MSC (FCR v2.0, Table SA8) defines “measures”, “partial strategy” and “strategy” as follows:</p> <p><i>“Measures” are actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component under assessment having been designed to manage impacts elsewhere.</i></p> <p><i>A “partial strategy” represents a cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically.</i></p> <p><i>A “strategy” represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.</i></p> <p>Secondary species benefit from measures to protect more commercially important stocks subject to stock assessment and comprehensive management. These include for example, gear regulations and area closures used to realize objectives concerning bycatch and protection of juveniles of more commercially important species. Some secondary species, such as deep-sea redfish, are managed under the Icelandic ITQ system (and so are subject to quota) but without direct management (MFRI, 2020h). Taken together these represent a partial strategy but do not represent a strategy in terms of the requirements of SG100. SG100 is not met.</p>		
b	Management strategy evaluation			
	Guidepost	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.

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.		
	Met?	NA	NA	N
	Justification	<p>The MSC has provided an interpretation to guide the application of this SI which states that the “if necessary” clause included in SIa above should also apply to SIb and SIc ("Use of 'if necessary' in P2 management PIs (FCR v2.0 - Annex SA PI 2.1.2, 2.2.2, 2.4.2, 2.5.2)"). For interpretation in full see relevant interpretation 4 in section 7.1). In accordance with this MSC interpretation, a management strategy evaluation is not necessary in the absence of any main secondary species in the catch. The SG60 and 80 requirements are therefore not applicable for this fishery.</p> <p>SG100 does not have the “if necessary” qualifier. A partial strategy, representing a cohesive arrangement with one or measures, is likely to exist for some secondary species (such as deep-sea redfish) but no evidence of anything more than practical testing in support of the management arrangements. In the absence of some consideration of alternative scenarios and their outcomes, SG 100 is not met.</p>		
c	Management strategy implementation			
	Guidepost		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).
	Met?		NA	N
	Justification	<p>The MSC has provided an interpretation to guide the application of this SI which states that the “if necessary” clause included in SIa above should also apply to SIb and SIc ("Use of 'if necessary' in P2 management PIs (FCR v2.0 - Annex SA PI 2.1.2, 2.2.2, 2.4.2, 2.5.2)"). For interpretation in full see relevant interpretation 4 in section 7.1).</p> <p>In accordance with this MSC interpretation, evidence of management strategy implementation is not necessary in the absence of any main secondary species in the catch. The SG80 requirements are therefore not applicable for this fishery.</p> <p>SG100 does not have the “if necessary” qualifier. There isn’t evidence that a partial strategy/strategy is being implemented successfully for minor secondary species. SG100 is not met.</p>		
d	Shark finning			
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	No main or minor secondary species are sharks. This SI is therefore not relevant.		
e	Review of alternative measures to minimise mortality of unwanted catch			
	Justification	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.
	Met?	Not relevant	Not relevant	Not relevant
	Guidepost	Since there are no main secondary species SG60 and SG80 do not apply.		

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.
		<p>The discard prohibition referred to in the rationale for PI2.1.2 SI(e) applies to commercially valuable and vulnerable species but does not necessarily apply to all secondary species caught, for example unwanted catch with no or limited commercial value. The Ministry of Industries and Innovation, Department of Fisheries and Aquaculture has established a taskforce aimed at improving data collection and reviewing possible management measures to minimise by-catch of non-commercial species although this is currently focussed on the marine mammal and seabird bycatch in the highest risk gillnet fisheries so doesn't currently consider these unwanted catches.</p> <p>However, there is no catch of secondary species in this fishery. MSC FCR v2.0, GSA3.5.3 states that where there is a negligible unwanted catch of a species, the FCR allows discretion as to whether the SI should be scored provided the decision is made in accordance with a precautionary approach. A threshold for 'negligible' is not defined but the FCR notes that the team may consider the significance of the catch in relation to things like the proportion of the unwanted catch as part of the total catch or as part of the total amount of unwanted catch, as well as the regularity of the catch occurring when deciding whether it is negligible.</p> <p>On the basis that catches of secondary species are absent, this SI is not scored.</p>
References		MFRI, 2020h. MFRI Assessment Reports 2020. ICELANDIC SLOPE BEAKED REDFISH <i>Sebastes mentella</i> . https://www.hafogvatn.is/static/extras/images/61-demersalsmentella_tr1206849.pdf
OVERALL PERFORMANCE INDICATOR SCORE: (SG600 0 of 0 SIs, SG800 0 of 0s, SG1000 0 of 3 SIs)		80
CONDITION NUMBER (if relevant):		

PI 2.2.3 – Secondary species information. UoAs 1 and 2.

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			
	Guidepost	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.
	Met?	Y	Y	N
	Justification	Some quantitative information is available and adequate to assess the impact of the UoA on main secondary species with respect to status. There is a discard prohibition and all catches of commercial species – which will include some secondary species (such as deep-sea redfish) – must be reported in vessel logbooks and weighed at landing and entered onto the Directorate of Fisheries database (GAFL). Further information on catch comes from a catch sampling programme and fishery independent surveys. This information is not available for all secondary species not considered commercially important. However, as noted previously, both fishing methods covered by the UoAs target dense homogeneous aggregations of herring and so catches of non-target species are low (very low indeed for purse seine fisheries). These data are therefore adequate to assess the impact of the UoA on main secondary species in that there are no main secondary species in the catch. However, it is not sufficient to assess with a high degree of certainty. SGs 60 and 80 are met. SG100 is not met.		
b	Information adequacy for assessment of impacts on minor secondary species			
	Guidepost			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	Met?			Y
	Justification	Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status. There is a discard prohibition and all catches of commercial species – which will include some secondary species (such as deep-sea redfish) – must be reported in vessel logbooks and weighed at landing and entered onto the Directorate of Fisheries database (GAFL). Further information on catch comes from a catch sampling programme and fishery independent surveys. This information is not available for all secondary species not considered commercially important. However, as noted previously, both fishing methods covered by the UoAs target dense homogeneous aggregations of herring and so catches of non-target species are low (very low indeed for purse seine fisheries).		

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.		
		These data are therefore adequate to estimate the impact of the UoA on minor secondary species in that there are no minor secondary species in the catch. SG100 is met.		
c	Information adequacy for management strategy			
	Guidepost	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 .
	Met?	Y	Y	N
	Justification	The Directorate of Fisheries' landing data over the period 2015 - 2019 provide quantitative data about the non-target species landed from the fishery (see section 3.4.2 of this report). As noted in the previous SIs this is adequate to determine that no main or minor secondary species are caught by the UoAs and that the catch of any non-target species is very low indeed. Information is available on the status of some secondary species in Icelandic waters (such as deep-sea redfish) but not all. In the absence of adequate information to support a strategy for all secondary species, SG100 is not met.		
References				
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 2 of 2 SIs, 100 1 of 3 SIs)				85
CONDITION NUMBER (if relevant):				

PI 2.3.1 – ETP species outcome. UoAs 1 and 2.

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			
	Guidepost	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.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	<p>The definition of Endangered Threatened & Protected (ETP) species in the MSC Standard is set out in section 3.4.1 of this report. The Icelandic summer-spawning herring fishery occurs only in the Icelandic EEZ (see Figure 3) so Icelandic national ETP legislation needs to be considered.</p> <p>Evidence is available on the direct interactions between non-target species and Icelandic pelagic fisheries from the Directorate of Fisheries landings data, MFRI observer data and also reports of interactions reported by fishing vessels in their catch logs. This information is set out in section 3.4 of this report. An analysis of this information with respect to the MSC criteria for identifying ETP species is set out in section 3.4.4. In summary: -</p> <p>1. National ETP legislation – none of the species reported to have been caught in the fishery (Table 9 and Table 10) is protected under the relevant national ETP legislation for Iceland.</p> <p>2. CITES Appendix I – none of the species that are reported to have been caught in the fishery (Table 9 and Table 10) are listed in CITES Appendix I. It is noted that killer whales (<i>Orcinus orca</i>) are listed in ICES Appendix II, and also that Iceland has made a reservation to these listings (CITES 2019a). With regard to killer whales, during the site visit fishers reported that they are generally not seen during trawling for herring. They are frequently observed during the purse seine fishery but fishermen report that interactions with the gear are rare. Adult killer whales are generally able to make their own way out of the net but could cause significant damage if they are caught and need to be cut free. If it looks likely that a killer whale will be caught the gear is released to prevent damage to it.</p> <p>3. Binding Agreements under the Convention on Migratory Species – Iceland is not a party to CMS but is a party to the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) which is a CMS instrument (CMS 2019). AEWA covers 255 species of birds that are ecologically dependent on wetlands for at least part of their annual cycle (including many species of divers, grebes, cormorants, waders, gulls, terns, auks and even the South African penguin). There is no evidence of any interaction with any of the species listed in AEWA.</p> <p>4. IUCN Red list species – there is one species classified by the IUCN as vulnerable, endangered or critically endangered that are listed in the landings data in the fisheries catching Icelandic summer-spawning herring (Table 9 and Table 10). Golden redfish is classed as vulnerable and small quantities are caught in both UoAs. However, this species is not ‘out of scope’ (amphibians, reptiles, birds and mammals) as specified in FCR v2.0, SA3.1.5.3 and as such cannot be classified as ETP under this section of the requirements.</p> <p>This Scoring Issue only applies to species for which national and or international limits for protection or rebuilding are in place, either through national legislation or binding international agreements (see FCR v2.0 at SA3.10.1). As there are no ETP species for which limits have been set this Scoring Issue is not relevant and has not been scored.</p>		
b	Direct effects			

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		
	Guidepost	Known direct effects of the UoA are likely to not hinder recovery of ETP species.	Known 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.
	Met?	Y	Y	N
	Justification	Known direct effects of the UoA are highly likely to not hinder recovery of ETP species. Evidence is available on the direct interactions between non-target species and Icelandic pelagic fisheries from the Directorate of Fisheries landings data, MFRI observer data and also reports of interactions reported by fishing vessels in their catch logs. This information is set out in section 3.4 of this report. An analysis of this information with respect to the MSC criteria for identifying ETP species is set out in section 3.4.4 and summarised in Sla above. The available evidence indicates that there are negligible direct interactions between the Icelandic summer-spawning herring fishery and any ETP species. The information available indicates that the Icelandic summer-spawning herring UoAs do not have direct effects on ETP species in the area and are thus both likely to not hinder the recovery of ETP species (meeting SG60); and also, highly likely to not hinder recovery (meeting SG80). However, as noted in section 3.4.4, given the uncertainty around the recording and reliability of catch data for non-commercial species (although it is noted this mainly relates to the lumpsucker gillnet fishery) it cannot be said that there is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species. SG100 is not met.		
c	Indirect effects			
	Guidepost		Indirect effects have been considered 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 fishery on ETP species.
	Met?		Y	N
	Justification	Indirect effects have been considered and are thought to be highly likely to not create unacceptable impacts. Indirect effects on ETP species from the Icelandic herring fishery could arise from either the loss of fishing gear (and subsequent entanglement of ETP species); or through the depletion of the herring stocks to the extent that food availability was reduced for species which feed on herring. Lost gear is considered more of an issue for gillnet fisheries compared to other fisheries and is not thought to occur in fisheries using purse seines and trawls. Gear is expensive, and fishers are careful to avoid losing it. Several initiatives and regulations are in place to avoid the loss of fishing gear and subsequent ghost fishing of lost and abandoned gear. Lost gear must be reported to the coastguard and it is illegal to dump old gear at sea. Recycling schemes are in place to encourage fishers to bring old gear ashore. Where the Fisheries directorate finds and recovers lost or abandoned gear the Directorate recovers the cost of recovery from the gears' owner. In the 2015 lumpfish season the Directorate contracted two vessels to go out and specifically look for and recover lost gear. The Coastguard also reports any buoys it feels might represent lost or abandoned fishing gear to the Directorate. All regulations relating to fishing gear may be found in the various Articles of Fisheries Management 2018 Laws and Regulations. The consequences of herring removal from the ecosystem can be inferred from existing information such as the food web (see Figure 8) and as detailed in section 3.3.7 this indicates that		

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
	<p>herring removals from the ecosystem are highly likely not to have unacceptable impacts due to the presence of a large number of high biomass stocks that fulfill a similar role in the ecosystem, for example mackerel, horse mackerel, capelin, Norway pout, sandeels, blue whiting and argentinians, for example.</p> <p>One study in Norway has found that the herring fishery may have beneficial effects on Orcas, which are often observed feeding in the vicinity of fishing vessels as they haul their gear and are thought to feed on the small quantities of herring that escape from fishing gear as the catch is pumped aboard (Similä, 2005).</p> <p>The available evidence is that the fishery does not create unacceptable indirect impacts on ETP species. SG80 is therefore met.</p> <p>The SG 100 requirements are not considered to be met; this would require some additional information (such as studies of trophic interactions with ETP species) that have not been presented at this assessment.</p>
References	<p>Articles of Fisheries Management 2018 http://vefbirting.oddj.is/raduneyti/fiskveidar2018/108/</p> <p>CITES, 2019a. Iceland CITES. https://www.cites.org/eng/cms/index.php/component/cp/country/IS</p> <p>CMS, 2019. Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) CMS. https://www.cms.int/en/legalinstrument/aewa</p> <p>Similä, T. 2005. Interactions between herring fishery and killer whales in northern Norway. Page 4. ICES, Copenhagen. http://www.ices.dk/sites/pub/CM%20Documents/2005/R/R0305.pdf.</p>
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 1 of 1 SIs, SG80 2 of 2 SIs, SG100 0 of 2 SIs)	
CONDITION NUMBER (if relevant):	
80	

PI 2.3.2 – ETP species management strategy. UoAs 1 and 2.

PI 2.3.2		The UoA has in place precautionary management strategies designed to: <ul style="list-style-type: none">• 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)			
Guidepost	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.	
Met?	Y	Y	N	
Justification	<p>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.</p> <p>According to MSC FCR v2.0; SA3.11.2, Assessment Teams must evaluate either SIa (this SI) or SIb (below) on the ETP species management strategy:</p> <ul style="list-style-type: none">▪ Where there are requirements for protection and rebuilding provided through national ETP legislation or international agreements, the team shall score SIa (this SI).▪ Where there are no requirements for protection and rebuilding provided through national ETP legislation or international agreements, the team shall score SIb. <p>In the case of the UoA under assessment here, there are requirements for protection and rebuilding provided through national ETP legislation or international agreements (for further information see § 3.4.4 Endangered, Threatened and Protected Species); therefore, in this instance SIa, rather than SIb, has been scored.</p> <p>In the context of this performance indicator (Source: MSC FCR v2.0; Table SA8):</p> <ul style="list-style-type: none">- <i>"Measures" are actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component under assessment having been designed to manage impacts elsewhere.</i>- <i>A "strategy" represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.</i>- <i>A "comprehensive strategy" is a complete and tested strategy made up of linked monitoring, analyses, and management measures and responses.</i> <p>As noted in background § 3.4.4, no ETP species have been identified as caught in the Icelandic summer-spawning herring fisheries. Nonetheless, a strategy exists for managing the UoAs impact on ETP species. This includes a requirement on fishers to record catches of non-commercial by-catch including marine mammals and seabirds. Monitoring is also undertaken by inspectors on vessels. ETP species are provided legal protection. Vulnerable fish species such as Atlantic halibut <i>Hippoglossus hippoglossus</i>, porbeagle <i>Lamna nasus</i>, basking shark <i>cetorhinus maximus</i> and spurdog <i>Squalus acanthias</i> are protected under Regulations No. 470, 2012 and No. 456, 2017.</p>			

PI 2.3.2	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>		
	<p>These must be recorded in logbooks and landed under the VS catch provisions set out in Act No. 37 1992; unless they are captured alive in which case they must be released. These must be recorded in logbooks and landed under the VS catch provisions set out in Act No. 37 1992. Consequently, 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. SG60 and SG80 are met.</p> <p>As it cannot be considered that there is a comprehensive strategy in place for ETP made up of linked monitoring, analyses, and management measures and responses SG100 is not met.</p>		
b	Management strategy in place (alternative)		
	Guidepost	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.
	Met?	Not relevant	Not relevant
	Justification This scoring issue has not been scored as there are requirements for protection or rebuilding provided through national ETP legislation or international agreements as described in Scoring Issue a.		
c	Management strategy evaluation		
	Guidepost	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved.
	Met?	Y	N
	<p>Justification 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.</p> <p>The information available from the Directorate of Fisheries, MFRI and from the client fleet indicates that there is negligible interaction between the Icelandic summer-spawning herring fishery and ETP species.</p> <p>Recording of non-commercial by-catch has not been collected systematically until recently. As of February 2014, stricter rules were implemented regarding recording marine mammal by-catch in vessel logbooks (catch of marine mammals and seabirds including the number and species of the animal in question must be reported) (Regulation No.126, 2014) and supervision of inspectors.</p> <p>The information available is directly from the fishery and shows that the measures in place are consistently achieving a low level of adverse interaction with ETP species. The inherent nature of the fishery and the ETP species in the area provides a plausible argument (based on comparisons with similar fisheries in the UoAs) that the management measures in place will work, meeting the SG60 requirements. The evidence from the fishery (Table 9 and Table 10) provides an objective basis for confidence that the measures in place will work, also meeting the SG80 requirements.</p>		

PI 2.3.2		The UoA has in place precautionary management strategies designed to: <ul style="list-style-type: none">• 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.		
		In the absence of quantitative analysis of ETP species it cannot be said that SG100 is met.		
d	Management strategy implementation			
	Guidepost	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).	
	Met?	Y	N	
	Justification	There is some evidence that the measures/strategy is being implemented successfully. There is evidence from monitoring of the fishery (by MFRI observers, of landings by the Directorate of Fisheries and through the client fleet through catch logbooks) that there are negligible interactions with ETP species; a consequence of formal controls on the type of fishing gear that can be used and the fishing practices of the ISF fleet. The SG80 requirements are therefore met for this fishery. However, given issues noted around the lack of systematic recording of non-commercial by-catch until recently it cannot be said that there is clear evidence that the strategy/comprehensive strategy is being implemented successfully. SG100 is not met.		
e	Review of alternative measures to minimize mortality of ETP species			
	Guidepost	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.
	Met?	Y	Y	N
	Justification	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. MFRI keep the level of interactions with ETP species under review (through regular reporting to ICES and NAMMCO bycatch working groups) and information indicates that direct impacts are negligible. There is evidence from the MFRI reports to these organisations that for other Icelandic fisheries the effectiveness of mitigation measures designed to minimise mortality is assessed and that alternative measures to minimise impacts are considered (for instance, concerning the use of acoustic deterrent devices on gillnets). It is clear from this information that there is no need for mitigation measures to be considered for the Icelandic summer-spawning herring UoAs. Evidence from other Icelandic fisheries shows that MFRI take action to review the effectiveness of mitigation measures and alternatives where this is necessary, meeting the SG60 requirements . These reviews are carried out regularly as part of the reporting requirements established by ICES and NAMMCO, which meets the SG80 requirements . The team could not find evidence that this is undertaken biennially so SG100 is not met .		
References		Act 37/1992 on a Special Fee for Illegal Marine Catch.		

PI 2.3.2	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none">• meet national and international requirements;• ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>	
	<p>https://www.althingi.is/lagas/149a/1992037.html</p> <p>CITES, 2019a. Iceland CITES. https://www.cites.org/eng/cms/index.php/component/cp/country/IS.</p> <p>CMS, 2019. Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) CMS. https://www.cms.int/en/legalinstrument/aewa.</p> <p>Regulation 456/2017: https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/0456-2017</p> <p>Regulation No. 126/2014. https://www.reglugerd.is/reglugerdir/eftir-raduneytum/sjavarutvegsraduneyti/nr/18967</p> <p>Regulation 470/2012: https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/18302</p>	
OVERALL PERFORMANCE INDICATOR SCORE: (SG603 of 3 SIs, SG80 4 of 4 SIs, SG1000 of 4 SIs)		80
CONDITION NUMBER (if relevant):		

PI 2.3.3 – ETP species information. UoAs 1 and 2.

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: <ul style="list-style-type: none">• 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			
	Guidepost	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.
	Met?	Y	Y	N
	Justification	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. Different sources of information (MFRI observer reports, the Directorate of Fisheries landings database, and logbook records from the client fleet) all indicate that there is a negligible impact on ETP species in the UoA areas from either métier used in the Icelandic summer-spawning herring fisheries. The status of ETP species in the area is kept under review by scientists from Iceland and from other nations (for instance in their cooperation in ICES and NAMMCO working groups). These quantitative data provide information about population trends and are adequate to determine whether any of the ETP species in the UoA area is under threat. The information available is both qualitative (meeting SG60) and quantitative, meeting the SG80 requirements . As noted in section 3.4.4 given the uncertainty around the recording and reliability of catch data for non-commercial species (although it is noted this mainly relates to the lumpsucker gillnet fishery) it cannot be said that 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. SG100 is not met.		
b	Information adequacy for management strategy			
	Guidepost	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

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: <ul style="list-style-type: none"> • 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. 		
				whether a strategy is achieving its objectives.
	Met?	Y	Y	N
	Justification	<p>Information is adequate to measure trends and support a strategy to manage impacts on ETP species.</p> <p>The information available from MFRI observers, the Directorate of Fisheries database and the fleet logbooks is adequate to determine that there are no interactions between ETP species and the Icelandic summer-spawning herring fleet. In particular, the Directorate's landings database has proven to be capable of detecting a single interaction with an ETP species (a porbeagle shark caught in the mackerel fishery in 2016).</p> <p>There is thus evidence that the information available is both adequate to support measures (meeting the SG60 requirements) and is capable of measuring trends and supporting a management strategy (meeting the SG80 requirements).</p> <p>Given the uncertainty around the recording and reliability of catch data for non-commercial species (although it is noted this mainly relates to the lumpsucker gillnet fishery) it cannot be said that 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. SG 100 is not met.</p>		
References				
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 2 of 2 SIs, SG100 0 of 2 SIs)				80
CONDITION NUMBER (if relevant):				

PI 2.4.1 – Habitats outcome. UoAs 1 and 2.

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
a	Commonly encountered habitat status			
	Guidepost	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.
	Met?	Y	Y	Y
	Justification	<p>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.</p> <p>The context for determining fishery performance against this SI is complex and is outlined below with reference to the MSC Standard.</p> <p>The MSC FCR v2.0, SA3.13.3.1, define a “commonly encountered habitat” as: - “A commonly encountered habitat shall be defined as a habitat that regularly comes into contact with a gear used by the UoA, considering the spatial (geographical) overlap of fishing effort with the habitat’s range within the management area(s) covered by the governance body(s) relevant to the UoA.”</p> <p>Further to this, “serious or irreversible harm” to a commonly encountered habitat is defined as: - “...reductions in habitat structure and function (as defined in Table SA8) such that the habitat would be unable to recover at least 80% of its structure and function within 5-20 years if fishing on the habitat were to cease entirely.” FCR v2.0 at SA 3.14</p> <p>The definition referred to in Table SA8 states that: - “Serious or irreversible harm to “structure or function” means changes caused by the UoA that fundamentally alter the capacity of the habitat or ecosystem to maintain its structure and function.”</p> <p>For the habitat component, this is the reduction in habitat structure, biological diversity, abundance and function such that the habitat would be unable to recover to at least 80% of its unimpacted structure, biological diversity and function within 5-20 years, if fishing were to cease entirely.” FCR v2.0, Table 8</p> <p>Fishing for herring in the UoAs is conducted using pelagic trawls and purse seine nets, which are designed to operate in the water column without contacting the seabed. Therefore, for the purpose of this assessment the epipelagic habitat is considered to be the only commonly encountered habitat.</p> <p>The main influence on the pelagic ecosystem around Iceland is the oscillation of oceanic currents in the Atlantic Ocean. These oscillations have been well studied and are driven by physical climatic processes. These affect the abundance and distribution of fish assemblages in the north Atlantic.</p> <p>The functions provided by pelagic habitats are determined by their physico-chemical characteristics (such as sea water temperature, nutrient and oxygen concentrations). These characteristics determine both the abundance of food for herring and other fish species; and also determine the extent of pelagic habitat which is suitable for herring (i.e. the extent of the water column with an amenable water temperature and oxygen concentration).</p>		

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.		
		<p>Studies of the impacts of purse seine nets and pelagic trawls elsewhere in the world indicate that these fishing methods have no physical impact on pelagic habitats (FAO Fisheries Resources Division 2001, 2018). The key anthropogenic impact on Atlantic oceanographic processes is considered to be climate change.</p> <p>In summary, the only commonly encountered habitat is the epipelagic habitat. There is evidence that this habitat is well studied and understood within the UoA. The key functions provided by this habitat are physico-chemical. There is no evidence (nor any plausible mechanism) for pelagic trawls or purse seines to impact these habitat characteristics to the point where there would be “serious or irreversible harm” as defined by the MSC.</p> <p>There is thus evidence that the UoA is highly unlikely to have any serious or irreversible effect on commonly encountered habitats, meaning that the SG 60, 80 and 100 requirements are met.</p>		
b	VME habitat status			
	Guidepost	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.
	Met?	Y	Y	Y
	Justification	<p>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.</p> <p>The context for determining fishery performance against this SI is complex and is outlined below with reference to the MSC Standard.</p> <p>Vulnerable Marine Ecosystems (VMEs) are defined in the MSC FCR v2.0 as:- “A VME shall be defined as is done in paragraph 42 subparagraphs (i)-(v) of the FAO Guidelines [i.e., that they have uniqueness or rarity, functional significance, fragility, life history traits that make recovery difficult, and/or structural complexity]. This definition shall be applied both inside and outside EEZs and irrespective of depth.” MSC FCR v2.0 SA3.13.3.2 & GSA 3.13.3.2</p> <p>A habitat that meets the “VME” definition above is only to be considered as a VME under this SI if it has been formally defined by a responsible agency (see MSC Interpretations numbers 7 "Designation of vulnerable marine ecosystems" and 8 "Designation of vulnerable marine ecosystems and closed areas" which are reproduced in full in section 7.1)</p> <p>Further to these definitions, “serious or irreversible harm” is defined by the MSC as “...reductions in habitat structure and function below 80% of the unimpacted level.” MSC FCR v2.0 SA3.13.4.1</p> <p>As noted under SIa above, the available evidence is that the herring pelagic trawl and purse seine fishery is conducted in a manner that avoids contact between the fishing gear and the seabed. There is a good understanding of the location and distribution of VME indicator species in the NE Atlantic (see section 3.4.5), and evidence of ongoing survey work to determine the extent and status of these VMEs.</p> <p>The assessment team notes that the Icelandic Government has identified and designated 23 Marine Protected Areas (MPAs) in order to conserve VMEs within its EEZ (Figure 13). These MPAs cover 2,904km² of the Icelandic EEZ (0.36%).</p>		

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.		
		<p>The fishing gear used in the UoA is pelagic and deployed in a way that avoids contact with the seabed and any benthic VMEs in the UoA. In their most recent review of the impact of fisheries on VMEs, ICES considered that benthic VMEs may be impacted by mobile demersal fishing gear rather than pelagic gear.</p> <p>A comparison of the spatial overlap and depth overlap of the pelagic herring fishery using trawls and purse seines and VMEs in the NE Atlantic indicates that there is little or no overlap with the VMEs spatially, and that the VMEs are located on the seabed whilst the fishery takes place in the water column. This means that any impact on VMEs is both unlikely (meeting SG60) and highly unlikely to occur (meeting SG80).</p> <p>The evidence from VMS data showing fishing areas (Figure 3) can be compared with maps of the location of VMEs and MPAs (section 3.4.5) which provides further confidence that the UoAs are highly unlikely to cause serious or irreversible harm to these VMEs (<i>sensu</i> SA3.14.1) and the SG 100 requirements are therefore met.</p>		
c	Minor habitat status			
	Guidepost			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.
	Met?			Y
	Justification	<p>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.</p> <p>Minor habitats are defined by the MSC as those which are neither “commonly encountered habitats” or VMEs (SA3.13.3).</p> <p>Taking into account the information presented in SIa and SIb above, the only “minor” habitats within the UoA would be benthic habitats, excluding those that have been identified as VMEs.</p> <p>The pelagic trawls and purse seines used in the herring fishery are designed to operate in the water column and avoid contact with benthic habitats. The SG 100 requirements are therefore considered to be met.</p>		
References		<p>FAO Fisheries Resources Division. 2001. Fishing Gear types. Purse seines. Technology Fact Sheets. http://www.fao.org/fishery/geartype/249/en.</p> <p>FAO Fisheries Resources Division. 2018. Fishing Gear Types - Midwater Trawls. Technology Fact Sheets. http://www.fao.org/fishery/geartype/400/en.</p>		
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 2 of 2 SIs, SG100 3 of 3 SIs)				100
CONDITION NUMBER (if relevant):				

PI 2.4.2 – Habitats management strategy. UoAs 1 and 2.

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			
	Guidepost	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	Y	Y	Y
	Justification	<p>There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.</p> <p>The terms “measures”, “partial strategy” and “strategy” used in this SI are defined in the MSC FCR v2.0, Table SA8, as follows:</p> <ul style="list-style-type: none"> • “Measures” are actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component under assessment having been designed to manage impacts elsewhere. • A “partial strategy” represents a cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically. • A “strategy” represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts. <p>The MSC has further determined that “measures” at the SG 60 level for a UoA that encounters VMEs shall include as a minimum: -</p> <ol style="list-style-type: none"> Requirements to comply with management measures to protect VMEs (e.g., designation of closed areas); Implementation by the UoA of precautionary measures to avoid encounters with VMEs, based on commonly accepted move-on rules. (MSC FCR v2.0 at SA3.14.2.3) <p>The MSC has provided interpretation on this requirement, stating that move-on rules are not required where there are no interactions with VMEs (see MSC interpretation no. 10, “Move-on rules at SG60 for PI2.4.2a” in section 7.1).</p> <p>The information available about the nature of the epipelagic habitat and pelagic trawls and purse seine nets indicates that there is no evidence of an impact of either métier on the epipelagic habitat, nor any plausible mechanism for an impact.</p> <p>The information available about interactions between pelagic trawls and purse seines with VMEs within the UoAs is that there is very little risk of any interaction at all, since the gear is used in the water column where there are no VMEs.</p> <p>On this basis there is no need for management measures or a partial strategy. The SG60 and 80 requirements are therefore met.</p> <p>The SG100 level of performance requires that there is a strategy (i.e. a cohesive and strategic arrangement which may comprise one or more measures) in place that manages the impact of all MSC UoAs and non-MSC fisheries on habitats. Within the Icelandic EEZ the location of marine</p>		

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.		
		habitats and VME indicator species is known, and MPAs have been designated to protect these features (Figure 12 and Figure 13). This provides evidence that there is a strategy in place for managing impacts of all fishing activities on marine habitats, meeting the SG100 requirements .		
b	Management strategy evaluation			
	Guidepost	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.
	Met?	Y	Y	N
	Justification	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. The MSC has provided an interpretation to guide the application of this SI which states that the “if necessary” clause included in SIa above should also apply to SIb and SIc (see MSC interpretation number 4, "Use of “if necessary” in P2 management PIs" in section 7.1). The information available about the nature of the epipelagic habitat and pelagic trawls and purse seine nets indicates that there is no evidence of an impact of the fishery on this habitat, nor any plausible mechanism for an impact. The information available about interactions between pelagic purse seines and VMEs within the UoAs is that there is very little risk of any interaction at all, since the gear is used in the water column where there are no VMEs. On this basis there is no need for management measures or a partial strategy. The SG60 and 80 requirements are therefore met. Whilst it is clear that there is a strategy in place for managing the impacts of fisheries on marine habitats within the Icelandic EEZ there is no evidence of any “testing” of this strategy for the UoAs or the epipelagic habitat in which it takes place. SG 100 is therefore not considered to be met at present.		
c	Management strategy implementation			
	Guidepost		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).
	Met?		Y	Y
	Justification	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). There is some quantitative evidence that the measures/partial strategy is being implemented successfully. The MSC has provided an interpretation to guide the application of this SI which states that the “if necessary” clause included in SIa above should also apply to SIb and SIc (see MSC interpretation number 4, "Use of “if necessary” in P2 management PIs" in section 7.1).		

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.		
		<p>The information available about the operation and impacts of both pelagic purse seine nets and pelagic trawls indicates that there is no evidence of an impact of the fishery on the “commonly encountered” epipelagic habitat, nor any plausible mechanism for an impact.</p> <p>The information available about interactions between pelagic purse seines and trawls with VMEs within the UoA is that there is very little risk of any interaction at all, since the fishing gear for both métiers is used in the water column where there are no VMEs.</p> <p>On this basis there is no need for management measures or a partial strategy. SG80 is met.</p> <p>There is clear quantitative evidence that a strategy for protecting marine habitats is being implemented within the Icelandic EEZ for example, through monitoring and enforcement of fishing activity by the Icelandic Coast Guard in Icelandic waters. SG100 is met.</p>		
d	Compliance with management requirements and other MSC UoAs’/non-MSC fisheries’ measures to protect VMEs			
	Guidepost	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.
	Met?	Y	Y	Y
	Justification	<p>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.</p> <p>The UoAs being considered here overlap with a number of other MSC UoAs (see section 4.1 of this report). None of these UoAs have established their own VME protection measures, nor has any evidence been presented of non-MSC fisheries having established VME protection measures within the UoA. The only VME protection measures in place within the UoA are those established by the Icelandic government (see section 3.4.5).</p> <p>The information available about the nature of the epipelagic habitat and pelagic fishing métiers indicates that there is no evidence of an impact of the fishery on this habitat, nor any plausible mechanism for an impact. This qualitative evidence meets the SG60 requirements for this SI.</p> <p>The information available about interactions between pelagic fishing métiers and VMEs within the UoAs is that there is very little risk of any interaction at all, since the gear is used in the water column where there are no VMEs; all of the VMEs that have been identified in the UoA waters are benthic. This quantitative evidence demonstrates compliance with VME protection measures, meeting the SG80 requirements.</p> <p>There is clear quantitative evidence that where measures in place to protect VMEs are in place they are complied with - through the comprehensive monitoring, control and surveillance system implemented in the Icelandic EEZ by the Icelandic Coast Guard (ICG). For example, of 16 infringements detected by the ICG in 2018, none related to the pelagic fleet (see section 3.5.4 for more information). SG100 is met.</p>		
References				
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 4 of 4 SIs, SG80 4 of 4 SIs, SG100 3 of 4 SIs)				95
CONDITION NUMBER (if relevant):				

PI 2.4.3 – Habitats information. UoAs 1 and 2.

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			
	Guidepost	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.
	Met?	Y	Y	Y
	Justification	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats. As noted in PI 2.4.1, the Icelandic herring fleet uses pelagic trawls and purse seines. The fishing gear makes no contact with benthic habitats. The “main” habitat that the fishery interacts with is the epipelagic habitat. The character of the epipelagic habitat in the northern Atlantic and around the coast of Iceland has been studied and described in detail. The key features of this habitat are shown in section 3.4.5 of this report. The habitat is considered to be vulnerable to oscillations of ocean currents which can affect the extent and location of the sea area that is amenable for herring, and hence the abundance and location of fish (Gaard <i>et al.</i> 2002, Astthorsson <i>et al.</i> 2007, Carscadden <i>et al.</i> 2013, Drinkwater <i>et al.</i> 2013, ICES 2018j, 2018n). This information meets the SG60 and SG80 requirements for this SI. SG 100 requires that the distribution of “all” habitats is known over their range, with particular attention to vulnerable habitats. This includes benthic habitats and VMEs. This information is also available (see section 3.4.5 of this report), so SG100 is met.		
b	Information adequacy for assessment of impacts			
	Guidepost	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear. 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.	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 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	The physical impacts of the gear on all habitats have been quantified fully.

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.		
			attributes of the main habitats.	
	Met?	Y	Y	N
	Justification	<p>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 and on the timing and location of use of the fishing gear.</p> <p>As noted in PI 2.4.1, the Icelandic herring fleet uses pelagic trawls and purse seines. The fishing gear makes no contact with benthic habitats. There is no evidence (nor any plausible mechanism) for pelagic purse seines to adversely impact this habitat.</p> <p>Vessels are tracked using VMS, which enables the spatial extent of interaction and the timing and location of use of the fishing gear to be monitored both within and beyond the Icelandic EEZ (see Figure 3).</p> <p>The understanding of the nature of the interaction of the fishing métiers with the epipelagic habitat, coupled with monitoring of the UoA fleet by VMS is adequate to meet the SG60 and 80 requirements.</p> <p>SG100 refers to the need for the physical impacts of the gear on all habitats to have been quantified fully. There is no indication that this is the case, so the SG100 requirements are not met.</p>		
c	Monitoring			
	Guidepost		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in habitat distributions over time are measured.
	Met?		Y	N
	Justification	<p>Adequate information continues to be collected to detect any increase in risk to the main habitats.</p> <p>An increase in risk to habitats could result from changes in the type of fishing gear used, or in the spatial extent of the fishery. Both of these aspects of the fishery are monitored: the former by fishery inspectors; the latter by VMS monitoring of the spatial extent of fishing activity. The MFRI also have an on-going long-term mapping project, albeit opportunistic in nature, to describe habitat types and ecosystems of the sea-floor around Iceland, including VME's. Further, MFRI has participated in the Norwegian Institute of Marine Research-led NovasArc project, together with the Faroe Marine Research Institute. The three-year project running from 2016-2018 aims to map the distribution of VMEs in Arctic and Sub-Arctic waters including those around Iceland. It also aims to map the distribution of commercial fisheries and other human activities and identify possible conflict areas. The most recent meeting was in Tórshavn, Faroes on November 20-24, 2017. The key task for the workshop was to develop and test the analysis chain for the VME/impact analysis including:</p> <ul style="list-style-type: none">• Making a habitat suitability model for one or two VMEs based on observations of occurrence and available abiotic setting e.g. temperature, substratum, current, topography.• Produce a VME distribution map for the larger study area based on the habitat suitability model and environmental settings.• Produce fishing pressure map based on trawling data for the larger area.• Making impact estimates based on GIS analysis of overlap between the VME distribution and fishing intensity. <p>This meets the SG80 requirements.</p>		

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.
	There is evidence that the distributions of habitats are being measured by Coastal States throughout the NE Atlantic but it is not evident that information about changes in habitat distributions over time are being measured throughout the UoA area. SG100 is therefore not considered to be met.
References	<p>Astthorsson, O. S., A. Gislason, and S. Jonsson. 2007. Climate variability and the Icelandic marine ecosystem. Deep Sea Research Part II: Topical Studies in Oceanography 54:2456–2477. https://linkinghub.elsevier.com/retrieve/pii/S0967064507001956.</p> <p>Carscadden, J. E., H. Gjøsæter, and H. Vilhjálmsson. 2013. A comparison of recent changes in distribution of capelin (<i>Mallotus villosus</i>) in the Barents Sea, around Iceland and in the Northwest Atlantic. Progress in Oceanography 114:64–83. http://www.sciencedirect.com/science/article/pii/S0079661113000475.</p> <p>Gaard, E., B. Hansen, B. Olsen, and J. Reinert. 2002. 8 Ecological features and recent trends in the physical environment, plankton, fish stocks, and seabirds in the Faroe shelf ecosystem. Pages 245–265 in K. Sherman and H. R. Skjoldal, editors. Large Marine Ecosystems. Elsevier. http://www.sciencedirect.com/science/article/pii/S157004610280060X</p> <p>NovasArc project. http://novasarc.hafogvatn.is/</p> <p>Drinkwater, K., E. Colbourne, H. Loeng, S. Sundby, and T. Kristiansen. 2013. Comparison of the atmospheric forcing and oceanographic responses between the Labrador Sea and the Norwegian and Barents seas. Progress in Oceanography 114:11–25. http://www.sciencedirect.com/science/article/pii/S0079661113000323.</p> <p>ICES 2018j. Icelandic Waters ecoregion: Ecosystem overview:19. http://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=35098.</p> <p>ICES, 2018n. Norwegian Sea ecoregion: Ecosystem overview:17. http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/NorwegianSea_EcosystemOverview.pdf.</p>
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 3 of 3 SIs, SG100 1 of 3 SIs)	
CONDITION NUMBER (if relevant):	
	85

PI 2.5.1 – Ecosystem outcome. UoAs 1 and 2.

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			
	Guidepost	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.
	Met?	Y	Y	N
	Justification	<p>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.</p> <p>“Serious or irreversible harm” to structure or function in relation to this PI is defined by the MSC as:- <i>“changes caused by the UoA that fundamentally alter the capacity of the habitat or ecosystem to maintain its structure and function.... For the ecosystem component, this is the reduction of key features most crucial to maintaining the integrity of its structure and functions and ensuring that ecosystem resilience and productivity is not adversely impacted. This includes, but is not limited to, permanent changes in the biological diversity of the ecological community and the ecosystem’s capacity to deliver ecosystem services.”</i> FCR v2.0, Table SA8</p> <p>The “key elements” of the ecosystem are defined by the MSC as:- <i>“the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the UoA; they are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity”.</i> FCR v2.0 at SA3.16.3</p> <p>The Icelandic summer-spawning herring fishery is conducted entirely within the Icelandic EEZ. The key elements of the ecosystem have been identified, they are:</p> <ol style="list-style-type: none"> Physical oceanographic processes The physical oceanographic processes that maintain the ecosystem are the oceanic currents from the Atlantic and Arctic which mix with Icelandic coastal waters in the UoAs and establish a highly productive ecosystem based on high primary production by phytoplankton and a large zooplankton population. <p>Anthropogenic impacts physical oceanographic processes in pelagic ecosystems have been studied. The main impacts are felt through long-term climate change and also eutrophication of coastal waters. There is no evidence that the use of pelagic fishing gear can affect these processes.</p> Trophic interactions The Icelandic summer-spawning herring stock is not considered to be a “key LTL” stock (see section 3.3.7). On the basis of no evidence of an impact of the UoAs on either physical oceanographic processes or trophic interactions it is considered that the risk of this UoA causing serious or irreversible harm to the key elements underlying ecosystem structure and function is both unlikely (meeting the SG60 requirements) and highly unlikely (meeting the SG80 requirements). <p>However, stock biomass is declining and is below MSY $B_{trigger}$ but above MGT $B_{trigger}$ and B_{lim}. Although the stock is not defined as a key LTL in terms of FCR v2.0, SA2.2.9a, it is noteworthy that it met one of the three criteria for classification as a key LTL. The stock does not leave the Icelandic</p> 		

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.	
		EEZ and model-based results suggest that it constitutes 10% of the consumer biomass in the system, therefore exceeding the 5% threshold under the energy transfer criterion. Taking this into account, it is not possible to determine there is evidence demonstrating that the UoAs are highly likely to disrupt the key elements underlying ecosystem structure and function SG100 is not met.
References		Skaret and Pitcher, 2016. An Ecosim model of the Norwegian Sea and Barents Sea validated against time series of abundance. Page 33. Havforskningsinstitute, Bergen, Norway. https://www.hi.no/filarkiv/2016/12/fn_7-2016_norbar_skaretpitcher_final_til_web.pdf/en ICES, 2018j. Icelandic Waters ecoregion: Ecosystem overview:19. http://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=35098
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 1 of 1 SIs, SG80 1 of 1 SIs, SG100 0 of 1 SIs)		80
CONDITION NUMBER (if relevant):		

PI 2.5.2 – Ecosystem management strategy. UoAs 1 and 2.

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			
	Guided post	There are measures in place, if necessary which take into account the potential impacts of the fishery 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.
	Met?	Y	Y	N
	Justification	<p>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.</p> <p>The terms “measures”, “partial strategy” and “strategy” used in this SI are defined in the MSC FCR v 2.0 (see the FCR text reproduced in the rationale for PI 2.4.2 SIa). The definition of the term “key elements” is provided in the rationale for PI 2.5.1.</p> <p>The most likely mechanism for the fishery to impact the ecosystem is through the removal of the target species; through impacts on non-target species and ETP species; and through physical impacts on marine habitats. There are measures in place to address these potential impacts both within the Icelandic EEZ and in the NEAFC area, which are briefly described below.</p> <p>The strategy for managing impacts of the fishery on the target species is described in section 3.3.3 of this report. The history of the fishery shows that commercial fishing for herring has the capacity to deplete this stock; clearly a management strategy is necessary that takes account of available information and restrains impacts on this ecosystem component.</p> <p>For UoAs 1 & 2, there is a management plan in place that is designed to maintain stock status at a level consistent with MSY.</p> <p>The impact of the fishery on non-target species is considered in PIs 2.1.1 and 2.2.1. The available evidence is that the fishery catches relatively few non-target species in small quantities.</p> <p>There is no evidence that the fishery has any adverse impacts on marine habitats. Nevertheless, it is significant that the Icelandic Government has established a network of MPAs which are designed to protect vulnerable marine habitats within the Icelandic EEZ.</p> <p>For the other ecosystem components, the available information indicates that there is no significant adverse impact, and hence no strategy is necessary.</p> <p>There is a management strategy in place for the Icelandic summer-spawning herring stock, which is serving to constrain fishery impacts on the stock, and evidence of a lack of necessity for other ecosystem components (non-target, ETP species and marine habitats) means that the SG 60 and 80 requirements are met.</p> <p>At the SG100 level, the “if necessary” qualifier does not apply. Thus, although there is a harvest strategy and plan in place for the herring stock, and there are management measures in place which limit impacts on non-target fish species, the absence of a clear strategy for other ecosystem components (ETP species & marine habitats) means that the SG 100 requirements are not met.</p>		

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.		
b	Management strategy evaluation			
	Guided post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/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
	Met?	Y	Y	Y
	Justification	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or ecosystem involved. The MSC has provided an interpretation to guide the application of this SI which states that the “if necessary” clause included in SIa above should also apply to SIb and SIc (see relevant interpretation 4, "Use of 'if necessary' in P2 management PIs" in section 7.1). There is no evidence that a management strategy is currently necessary to restrain impacts of the fishery on non-target species, habitats, or ETP species, given the reports which show a very low or nil level of interaction with these species or habitats. The only aspect of the UoAs where management intervention is necessary to restrain fishery impacts is the removal of the target species. The management strategy for Icelandic summer-spawning herring has been tested through MSE by ICES. The management plan adopted by the Icelandic Government following this evaluation is considered to be consistent with the MSY approach. The SG60, SG80 and SG100 requirements are met.		
c	Management strategy implementation			
	Guided 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).
	Met?		Y	Y
	Justification	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). The MSC has provided an interpretation to guide the application of this SI which states that the “if necessary” clause included in SIa above should also apply to SIb and SIc (see relevant interpretation 4, "Use of 'if necessary' in P2 management PIs" in section 7.1). As noted in SIa and SIb above, the available evidence is that the mechanism by which the fishery might impact the ecosystem is through the removal of the target species. The management strategy for Icelandic summer-spawning herring has been evaluated by ICES. The management plan adopted by the Icelandic Government following this evaluation is considered to be consistent with the MSY approach. The annual TAC is set in accordance with this plan, and removals are generally compatible with the TAC. There is thus some evidence that the strategy is being implemented successfully, meeting the SG80 requirements . However, catches in fishing season 2018/2019 exceeded the ICES advice and TAC by 5,497t and the stock is below the level required by MSY B trigger (ICES 2019j). Catches have also exceeded the TAC in 2014/15, 2012/13, 2011/12 and 2010/11 (MFRI, 2019l) so it cannot be clearly said that the strategy is being implemented successfully. SG100 is not presently met.		

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.	
References	<p>ICES, 2018f. Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, Norwegian spring-spawning herring (the Northeast Atlantic and the Arctic Ocean). Page ICES Advice on fishing opportunities, catch, and effort. http://www.ices.dk/sites/pub/Publication Reports/Forms/DispForm.aspx?ID=34896</p> <p>MFRI, 2019I. State of Marine Stocks and Advice. Síld – Herring. MFRI, 13 June 2019. https://www.hafogvatn.is/static/extras/images/Sild_20191141534.pdf</p>	
OVERALL PERFORMANCE INDICATOR SCORE: SG60 2 of 2 SIs, SG80 3 of 3 SIs, SG100 2 of 3 SIs		95
CONDITION NUMBER (if relevant):		

PI 2.5.3 – Ecosystem information. UoAs 1 and 2.

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			
	Guidepost	Information is adequate to identify the key elements of the ecosystem.	Information is adequate to broadly understand the key elements of the ecosystem.	
	Met?	Y	Y	
	Justification	Information is adequate to broadly understand the key elements of the ecosystem. The definition of the term “key elements” is provided in the rationale for PI2.5.1. Applying this definition, the key elements of the ecosystem have been identified: they are the trophic interactions between the herring stock and other species in their ecosystem; and the physical oceanographic processes in the UoA areas. An ecosystem model has been published for the UoAs area which shows that there is a good understanding of the trophic interactions within the UoAs (Ribeiro <i>et al.</i> 2018). The physical oceanographic processes in the UoAs are also understood (see section 3.4.6 of this report and Figure 15). The information available and the level of understanding meets the SG60 and 80 requirements.		
b	Investigation of UoA impacts			
	Guidepost	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.
	Met?	Y	Y	N
	Justification	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail. The main impact of the UoA on ecosystem elements is considered to be the removal of herring biomass: the fishery does not have a significant adverse effect on other species, marine habitats or physical oceanographic processes. The consequence of the removal of herring biomass from the ecosystem can be inferred from the ecosystem model that has been published for the UoAs (Ribeiro <i>et al.</i> 2018). The information available represents a detailed investigation of the key ecosystem impacts and is considered to both exceed the SG60 requirements and meet the SG80 requirements. SG100 is not considered to be met because the interactions between the fishery and the key ecosystem elements have not yet been investigated in detail.		
c	Understanding of component functions			
	Guidepost		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.
	Met?		Y	Y
	Justification	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.		

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.	
		<p>The functions of the components of the ecosystem are known and have been extensively studied and reviewed. A summary of this information is presented in section 3.3.7 of this report. The extent of this knowledge meets the SG80 requirements.</p> <p>The impacts of the UoA on the target species have been identified (see section 3.3 of this report). Impacts on non-target species have been documented and quantified through landings data over several years and are considered to be negligible (see section 3.4.1); likewise impacts on ETP species are considered to be negligible (see section 3.4.4). The fishery is pelagic and does not have any appreciable habitat impacts (see section 3.4.5). The structure of the food web in the UoAs has been identified and modelled, so that there is a good understanding of the functions of the different ecosystem components and their interaction with one another (section 3.4.6). The SG 100 requirements are therefore considered to be met.</p>	
d	Information relevance		
	Guidepost	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.
	Met?	Y	Y
	Justification	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. <p>As noted in the scoring comments for SIc above, information is gathered about target stock removals; the extent and magnitude of interactions with non-target and ETP species; and the spatial location of fishing activity (and hence the risk of impacts on marine habitats). In the case of non-target species, the information is gathered to a level of detail that allows impacts of the UoA on individual elements (species) to be determined. This information is summarised in the relevant sections of this report. The information available meets the SG80 and SG100 requirements for this SI.</p>	
e	Monitoring		
	Guidepost	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.
	Met?	Y	N
	Justification	Adequate data continue to be collected to detect any increase in risk level. <p>For non-target species, there is a statutory requirement for landings data for every fishing trip by Icelandic vessels to be reported and these data are recorded in the Directorate of Fisheries landings database. There is also a statutory requirement for vessels to report interactions with ETP species. The monitoring of these interactions would detect any increase in risk level for non-target and ETP species.</p> <p>There is adequate information available about the extent and nature of marine habitats in Iceland to have enabled the creation of a network of MPAs. The location of fishing vessels is monitored using VMS, which determines where they are fishing relative to these MPAs. This information is used to monitor compliance with these areas and would detect an increase in risk level.</p> <p>The evidence available therefore indicates that evidence is being gathered on fishery interactions with target, non-target, and ETP species, as well as with marine habitats and hence would detect any change in risk to the marine ecosystem. The SG80 requirements are therefore met.</p>	

PI 2.5.3	There is adequate knowledge of the impacts of the UoA on the ecosystem.	
References	Ribeiro <i>et al.</i> , 2018. An overview of the marine food web in Icelandic waters using Ecopath with Ecosim. arXiv:1810.00613 [q-bio]. http://arxiv.org/abs/1810.00613	
OVERALL PERFORMANCE INDICATOR SCORE: (SG60: 2 of 2 SIs, SG80 5 of 5 SIs, SG100 2 of 4 SIs)		90
CONDITION NUMBER (if relevant):		

Principle 3 – Effective Management – Evaluation Tables

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: <ul style="list-style-type: none">Is capable of delivering sustainability in the UoA(s); andObserves the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; andIncorporates an appropriate dispute resolution framework.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Compatibility of laws or standards with effective management			
Guidepost	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.	
Met?	Y	Y	Y	
Justification	<p>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.</p> <p>As noted in Section 3.2 of this document, Icelandic vessels targeting Icelandic summer-spawning herring fish within the Icelandic EEZ. Section 3.5 sets out the management framework for the UoAs including details of the legal system that manages fishing in this area.</p> <p>In Iceland there is an effective national legal system for fisheries management, the key elements of which include an ITQ system for commercial species, with access controlled by permit, a ban on discarding and controls in place to restrict fishing where excessive fishing occurs or it impacts non-target species and sensitive areas. The system incorporates flexibility to encourage compliance.</p> <p>The Ministry of Industries and Innovation (MII) has overall responsibility for the management of fisheries in Iceland, while day to day administration is the remit of the Directorate of Fisheries (DoF), scientific advice is provided by the Marine and Freshwater Research Institute (MFRI) and monitoring control and surveillance functions are provided by DoF supported by the Icelandic Coast Guard (ICG).</p> <p>This legal system governs the actions of all authorities involved in managing the UoAs and provides a formal system for the co-operation of the different government agencies. Consequently, 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. SG100 is met.</p>			
b	Resolution of disputes			
Guidepost	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?	Y	Y	Y	

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: <ul style="list-style-type: none">Is capable of delivering sustainability in the UoA(s); andObserves the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; andIncorporates an appropriate dispute resolution framework.		
	Justification	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. In Iceland this mechanism ultimately involves the courts and is transparent, has been tested and proven to be effective. Any Icelandic citizen or organization can take legal action to the high court in Iceland and ultimately to the Council of Europe. The legislation on fishing rights has been tested in court on a number of occasions, notably in 1998 and 2000 which settled basic disagreements on the foundations of the present fishery management system (see section 3.5.2 of this document). SG100 is met.		
c	Respect for rights			
	Guidepost	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	Y	Y	Y
	Justification	The 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. The rights of different fishers to exploit the resource are clearly codified in the legislation, principally the Fisheries Management Act and the Law on the use of Marine Stocks. As with all other legislation in Iceland, the legislation on fisheries management has been developed through legally based, democratic processes where various stakeholder groups were consulted. Between plenary debates (readings) on draft legislation in the Althing, extensive hearings with experts and stakeholders have been conducted by permanent committees of the assembly. This legislation on fishing rights has been tested in courts on numerous occasions. Two court cases in particular, in 1998 and 2000, settled basic disagreements on the foundations of the present system: <ul style="list-style-type: none">On December 3rd 1998, the High Court in Iceland ruled that the provision in the Fisheries Management Act allowing the authorities to limit the entry of fishing vessels by making access to licenses for new vessels conditional on the scrapping of an existing vessel of equal capacity was unconstitutional as it treated those that had licensed their fishing vessels when the system was established (in 1984) differently from later applicants. The High Court ruled that such unequal treatment of Icelandic citizens could only be accepted as a temporary measure justified by some extraordinary conditions. Subsequently, the Act was amended in accordance with this ruling. The amendment opened up the possibility that anyone who applies for the licensing of a fishing vessel which conforms to a particular standard, can obtain a fishing license. However, a fishing license for a vessel is not a sufficient condition for commercial fishing of a species which is subject to quota restrictions; for such fishing to be legal some quota must also be registered to the vessel and/or – as currently is possible – the vessel may have a license for Coastal fishing.		

PI 3.1.1		<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none">• Is capable of delivering sustainability in the UoA(s); and• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and• Incorporates an appropriate dispute resolution framework.
		<ul style="list-style-type: none">• The limitations of “the right to catch” set by the Fisheries Management Act were tested in courts and on the 6 of April 2000 the High Court ruled that limitations on the right to catch fish in the Icelandic waters in the form of catch quotas is consistent with the Icelandic constitution (Supreme Court of Iceland, Case No. 12/2000). <p>Gradually the rights of different fishers to access the resource have become more homogenous and the total catch has become more predictable. The introduction of Coastal fishing (strandveiðar) in 2009, where small vessels using only hand-line can take part during the summer months, and where there is a common total quota for all vessels in the fishery, introduced some heterogeneity into the system. However, so far, the catch allocated to Coastal fishing is small. It was 6,000 tonnes when it started but has increased and the allocation for the present fishing year, 2018/19, is 10,200 tonnes. Before deciding the total quota for the present fishing year, the estimated catch in Coastal fishing was subtracted from the TACs for the relevant species. All permissions to catch Icelandic summer-spawning herring are allocated in the ITQ-system.</p> <p>SGs 60, 80 and 100 are met.</p>
References		<p>Ellertsdóttir, Bergdís (2018), Statement to the General Assembly on Oceans and the Law of the Sea. https://www.government.is/diplomatic-missions/embassy-article/2018/12/12/Statement-to-the-General-Assembly-on-Oceans-and-the-Law-of-the-Sea-by-Ambassador-Bergdis-Ellertsdottir/</p> <p>Act No. 57/1996 on rules for fishing in the Icelandic EEZ (Lög um umgengni um nytjastofna sjávar) http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf.</p> <p>Fisheries Management Act http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf (in Icelandic) http://extwprlegs1.fao.org/docs/texts/ice3455.doc (in English)</p> <p>Supreme Court of Iceland, Case no. 12/2000. https://www.haestirettur.is/default.aspx?pageid=347c3bb1-8926-11e5-80c6-005056bc6a40&id=ec41e28f-73cc-422e-b1bd-2f903568667c</p>
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 3 of 3 SIs, SG80 3 of 3 SIs, SG100 3 of 3 SIs)		100
CONDITION NUMBER (if relevant):		

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			
	Guidepost	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.
	Met?	Y	Y	Y
	Justification	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. The legal framework for the fisheries management in Iceland defines explicitly the role of organizations and individuals in the management process (see section 3.5.2 for further detail). The Ministry of Industries and Innovation issues regulations that further define these roles. The surveillance and policing of the fishery by the Directorate of Fisheries, supported by the Icelandic Coast Guard, is effective. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction. SGs 60, 80 and 100 are met.		
b	Consultation processes			
	Guidepost	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used .
	Met?	Y	Y	Y
	Justification	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. The management system in Iceland includes a comprehensive consultative process where stakeholders are invited to have their say regarding regulations and the regulatory approach. The organisations of those working in the fishing sector, Fisheries Iceland (Samtök fyrirtækja í sjávarútvegi, SFS), The Federation of Owners of Small Fishing Vessels (Landssamband smábátaeigenda), the Federation of Captains and Mates (Farmanna- og fiskimannasamband Íslands, FFSÍ), the Icelandic Union of Marine Engineers and Metal Technicians (Félag vélstjóra og málmtæknimanna, VM) and the Federation of Seamen (Sjómannasamband Íslands), as well as organisations of those working in fish processing (in Iceland fishing and fish processing are frequently conducted within the same company), organise discussions on various aspects of the fisheries management system. The leaders of those organisations meet for regular consultations with the MII, the Althing's Permanent Committee on Fisheries and Agriculture and with individual		

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	
		<p>members of the Althing. A number of local authorities take a strong interest in matters related to fisheries management and regulations. Icelandic law mandates that hearings are held when new legislation is prepared for fishing management. This process allows the fishing industry and other stakeholders to influence new legislation.</p> <p>There are many examples of the use of stakeholders' inputs, mostly from fishers. The MFRI work closely with fishers, for example in the capelin fishery this year fishers allocated 75 days of vessel time to stock survey with the MFRI (MFRI pers. com.). This collaboration also occurs in the development of Harvest Control Rules (HCR). For capelin two groups were established, one to review the HCR and another to plan winter surveys. A similar group was established to discuss the Icelandic summer-spawning herring HCR and identified simplifications which improved the HCR. At present these groups consist of representatives from the MFRI and the fishing industry. Ultimately the final decision on the HCR recommendation sits with the MFRI but it is clear from the evidence presented in the meeting with the MFRI during the site visit that there is an iterative process with the fishing industry's views actively taken into account and used to inform the process. For example, work is on-going on the capelin HCR as the industry still feels the need to make some changes (MFRI pers. com.)</p> <p>It is therefore possible to conclude that the management system regularly seeks and accepts relevant information, including local knowledge and demonstrates consideration of the information and explains how it is used or not used. SGs 60, 80 and 100 are met.</p>	
c	Participation		
	Guidepost	The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.
	Met?	Y	N
	Justification	<p>The consultation process provides opportunity for all interested and affected parties to be involved.</p> <p>The consultation process provides an opportunity for all interested parties to be involved. In Iceland, the issues are debated in the media and stakeholders can contact members of the Parliament and officials of the ministries, including the ministers. The evidence presented in SIb, including the requirement to hold hearings on new legislation, regular consultations between the fishing industry representatives and government bodies and the use of working groups to develop fishery management measures demonstrates that the authorities provides opportunity for stakeholders to take part in the discussion SG80 is met.</p> <p>However, whilst the consultation process provides opportunity for all interested and affected parties it does not appear to facilitate the effective engagement of eNGOs. For this reason, SG 100 is not met.</p>	
References		Information on Parliament Standing Committees procedures (applies to the Fisheries and Agriculture Committee), available at http://www.althingi.is/pdf/Althingi2010_english.pdf	
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 3 of 3 SIs, SG100 2 of 3 SIs)			95
CONDITION NUMBER (if relevant):			

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			
	Guidepost	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?	Y	Y	Y
	Justification	<p>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.</p> <p>Clear long-term objectives are set out in legislation. These objectives include sustainable management, maximizing benefits to the nation and efficiency (Article 1 of the Fisheries Management Act, 2006). The precautionary approach is not explicitly mentioned in the legislation on fisheries management in Iceland nor has it been introduced in a general form in Icelandic law but it is a requirement in a number of international agreements that Iceland has signed such as the United Nations Fish Stocks Agreement (UN FSA, Article 5), the NEAFC Convention (Article 4) (see also NEAFC, 2018 pg.4) and OSPAR.</p> <p>The Icelandic government has publicly stated that the aim of the management strategy for Icelandic fish stocks is to, “maintain the exploitation rate at the level which is consistent with the Precautionary Approach and that generates maximum sustainable yield (MSY) in the long term” (Government of Iceland, 2018). Harvest Control Rules (HCRs) have been set for individual stocks such as cod, haddock, saithe and Icelandic summer-spawning herring in line with this approach and have been evaluated by ICES and found to be precautionary. SGs 60, 80 and 100 are met.</p>		
References		<p>Government of Iceland, 2018. News. Management Strategy and Harvest Control Rules. May 15 2018. https://www.government.is/news/article/2018/05/15/Haddock/</p> <p>NEAFC Convention 1980 (as amended) https://www.neafc.org/system/files/Text-of-NEAFC-Convention-04.pdf</p> <p>NEAFC, 2018. Contribution from the North East Atlantic Fisheries Commission on the topic of the Science - Policy Interface as a focus of the thirteenth round of Informal Consultations of States Parties to the United Nations Fish Stocks Agreement, May 2018. https://www.un.org/depts/los/convention_agreements/ICSP13/ICSP13_Contributions/NEAFC.pdf</p> <p>Parties to the United Nations Fish Stocks Agreement, May 2018. https://www.un.org/depts/los/convention_agreements/ICSP13/ICSP13_Contributions/NEAFC.pdf</p> <p>OSPAR. Precautionary Principle https://www.ospar.org/about/principles/precautionary-principle</p> <p>UN FSA. The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. https://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm</p>		

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.
	<p>Law No. 57/1996 on rules for fishing in the Icelandic EEZ (Lög um umgengni um nytjastofnasjávar), available in Icelandic at http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf</p> <p>Fisheries Management Act, available in Icelandic at http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf and in English at http://extwprlegs1.fao.org/docs/texts/ice3455.doc</p>
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 1 of 1 SI, SG80 1 of 1 SI, SG100 1 of 1 SI)	
CONDITION NUMBER (if relevant):	
100	

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			
	Guidepost	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?	Y	Y	N
Justification		<p>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.</p> <p>The first article of the Act on Fisheries Management states that "The exploitable marine stocks of the Icelandic fishing banks are the common property of the Icelandic nation. The objective of this Act is to promote their conservation and efficient utilization, thereby ensuring stable employment and settlement throughout Iceland".</p> <p>The objective of the Management Strategy for Icelandic summer-spawning herring is to maintain exploitation at the rate which is consistent with the precautionary approach and that generates maximum sustainable yield (MSY) in the long term (Government of Iceland, 2018). This objective is defined in a measurable way by the reference points against which the stock is assessed on an annual basis.</p> <p>As noted in PI 1.1.2, whilst the stock is currently not fluctuating at a level consistent with MSY, a rebuilding strategy is in place that is considered highly likely to restore the stock within one generation time.</p> <p>The biological reference points used in the setting of the TAC for target and minor primary species are explicit and consistent with the outcomes expressed by MSC's Principle 1 and 2. In relation to Principle 2 specifically, most of the primary species have management plans, although not all, notably the shared stocks of mackerel, which with blue whiting are the most abundant non-target species in the catch. Most of the minor secondary species do not have species-specific management in place. In relation to these species, a key objective of the management system is to eliminate discarding of all commercial species, achieved through the discard prohibition, which incentivises selective fishing of commercially valuable species – but this only applies to commercially valuable fish and therefore not all the minor secondary species.</p> <p>Iceland has ratified a number of conventions on species protection and management, such as the Convention on Biological Diversity, the OSPAR Convention and the CITES Convention. These conventions have established objectives for conserving vulnerable habitats and also endangered, threatened and protected species (although Iceland has submitted reservations against several species listed under CITES so that the provisions do not apply in the Icelandic EEZ - see section 3.4.4). The objectives are attained through various restrictions on gear, catches of prohibited species and area closures to protect vulnerable habitats, fish species and juvenile fish.</p> <p>Therefore, 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. SGs 60 and 80 are met. However, SG100 is not met because the objectives to manage secondary species are not well defined.</p>		

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.
References	<p>Government of Iceland 2018. News. Management Strategy and Harvest Control Rules. May 15, 2018 https://www.government.is/news/article/2018/05/15/Haddock/</p> <p>Law No. 57/1996 on rules for fishing in the Icelandic EEZ (Lög um umgengni um nytjastofnasjávar), available in Icelandic at http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf.</p> <p>Fisheries Management Act, available in Icelandic at http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf and in English at http://extwprlegs1.fao.org/docs/texts/ice3455.doc)</p> <p>Regulation 470/2012 on halibut hunting. https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/18302</p> <p>Regulation 456/2017 on the prohibition of fishing for spurdog, porbeagle and basking sharks. https://www.reglugerd.is/reglugerdir/eftir-raduneytum/atvinnuvega--og-nyskopunarraduneyti/nr/0456-2017</p> <p>Government of Iceland, 2018b. News Statement on Responsible Fisheries in Iceland. May 15, 2018. https://www.government.is/news/article/?newsid=2a7266c6-5850-11e8-9429-005056bc4d74</p>
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 1 of 1 SI, SG80 1 of 1 SI, SG100 0 of 1 SI)	
CONDITION NUMBER (if relevant):	
80	

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			
	Guidepost	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	Y	Y	
	Justification	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. The setting of a TAC for the Icelandic summer-spawning herring fishery is based upon a Management Plan adopted by the Icelandic Government in June 2017 which has been evaluated by ICES and found to meet the requirements of the precautionary principle and in accordance with the ICES MSY approach (ICES, 2019e). The TAC is set annually following stock assessment and the application of the HCR set out in the Management Plan. The HCR is designed to ensure that the objectives of the Management Plan are met. Since 1985, TACs have been set more or less in line with advice given by ICES and MRI/MFRI with some small discrepancies (see section 3.3.3). There is discard ban on almost all fisheries in Iceland and fishermen are obliged to record and land all catches of commercial fish to be recorded against quota. There is discard ban on commercial fisheries in Iceland and fishermen are obliged to record and land all catches of commercial fish to be recorded against quota. Gear regulations and area closures are used to realise objectives concerning bycatch, protection of juveniles and vulnerable species and habitats. SGs 60 and 80 are met.		
b	Responsiveness of decision-making processes			
	Guidepost	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	Y	Y	N
	Justification	The 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. Management plans have been developed in working groups where the industry and unions of the crew have their representatives. For example, one such group was established to discuss the Icelandic summer-spawning herring HCR and industry identified simplifications which improved the HCR (MFRI pers. com. site visit August 2019). Stock assessment methodologies are also reviewed periodically by ICES in benchmarking workshops which are held every 3-5 years. The meeting is open to experts and stakeholders and its output is reviewed by external experts throughout the process and published as a stock annex		

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.		
		<p>(ICES, 2019g). The Icelandic summer-spawning stock annex was created in January 2011 and last updated in April 2019.</p> <p>Where issues are identified, there is evidence that decision-making responds adaptively and in a timely way. For example, following the identification of <i>Ichthyophonus</i> infection and mortality in the stock in 2008, estimates of increased mortality were included in the stock assessment. Initially this was based on the assumption of 100% mortality of infected fish. This approach was stopped after 2013, following conclusive evidence that the infection was less lethal than initially thought but reinstated in 2017 following an intense new infection outbreak. The Harvest Control Rule has been designed to take into account additional mortality associated with infection outbreaks – a relatively low harvest rate so that it remains precautionary even during periods of <i>Ichthyophonus</i> disease (ICES, 2019).</p> <p>There is evidence that decision-making processes respond to serious issues which have been identified in relevant research SGs 60 and 80 are met, but it is not clear that it has responded to all issues (for example the management strategy for secondary species – see PI 3.2.1c). SG100 is not met.</p>		
c	Use of precautionary approach			
	Guidepost		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		Y	
	Justification	Decision-making processes use the precautionary approach and are based on best available information. <p>The Icelandic Government has publicly committed to using the precautionary approach and the best available scientific information in managing Icelandic fish stocks (Government of Iceland, 2018a, 2018b). The management strategy for Icelandic fish stocks, in general, is to maintain the exploitation rate at the level which is consistent with the Precautionary Approach and that generates maximum sustainable yield (MSY) in the long term.</p> <p>The Management Plan for Icelandic summer-spawning herring, adopted by Iceland in June 2017, has been evaluated by ICES and found to be precautionary. ICES advice is consistent with the precautionary approach and it is also based on the best available information about the stock.</p> SG80 is met.		
d	Accountability and transparency of management system and decision-making process			
	Guidepost	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?	Y	Y	Y

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
e	Justification	<p>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.</p> <p>There is legislation (upplýsingalög, Freedom of Information Act) in Iceland requiring ministers and public institutions to reveal existing information or reasons for certain decisions being taken. Members of the Althing can obtain detailed information from the Ministry and public institutions by putting questions to the appropriate minister in the Althing. Both the public and fishers have access to such information through the political process and local parliamentarians.</p> <p>The MFRI plays an important role in communicating the scientific advice to the fishing industry. This communication takes place through its website, for example, there is comprehensive and up to date stock assessment information on each of the commercial species for which advice is given and reporting on pelagic ecosystem survey etc. It also occurs in newspapers and meetings with the industry, for example, the working groups to review fishery management plans with representatives from the fishing industry and MFRI (see PI3.1.2 SIb), and in public meetings. The Directorate of Fisheries also produces an Annual Report, published on their website, which provides comprehensive information across the scope of fisheries management including monitoring, control and surveillance activity and measures taken to address any findings. For example, following the identification of irregularities in the weighing of catches after de-icing the additional surveillance measures put in place. The Directorate's website also includes up to date fisheries data in terms of the TAC available, quota uptake and catches, updated in almost real-time as well as information on other management issues such as regular reporting on the monitoring of weighing after de-icing.</p> <p>The Assessment Team considers that, consistent with the requirements of MSC FCR v2.0 SA4.8.7, this information is comprehensive and available openly, publicly and regularly to all stakeholders sufficient to meet the requirements of SG100. SGs 60, 80 and 100 are met.</p>		
	Approach to disputes			
	Guidepost	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	Y	Y	N
Justification	<p>The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.</p> <p>There are a number of examples where authorities have attempted to comply in a timely fashion with binding judicial decisions arising from legal challenges (see PI3.1.1 SIc). The most noteworthy and important is when the High Court in Iceland ruled in December 1998 that the provision in the Fisheries Management Act allowing the authorities to limit the entry of fishing vessels was unconstitutional as it treated those that had originally licensed their fishing vessels (in 1984) differently from later applicants. The High Court ruled that such unequal treatment of Icelandic citizens could only be accepted as a temporary measure justified by some extraordinary conditions. Subsequently, the Act was amended in accordance with this ruling.</p>			

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.
	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges and SG80 is met. There does not seem to be evidence that the management system acts proactively to avoid legal disputes. SGs 60 and 80 are met. SG100 is not met.
References	<p>Directorate of Fisheries website. News item on surveillance of the re-weighing of catches after de-icing. http://www.fiskistofa.is/umfiskistofu/frettir/ishlutfall-i-juli-og-agust-1</p> <p>Directorate of Fisheries. Annual report. http://www.fiskistofa.is/umfiskistofu/arsskyrsla-2016/</p> <p>ICES 2019g. ICES benchmarks https://www.ices.dk/community/advisory-process/Pages/Benchmarks.aspx</p> <p>ICES, 2019h. Stock Annex: Herring (<i>Clupea harengus</i>) in Division 5.a, summer-spawning herring (Iceland grounds). 26 April, 2019. http://ices.dk/sites/pub/Publication%20Reports/Stock%20Annexes/2019/her.27.5a_SA.pdf</p> <p>Government of Iceland, 2018. News. Management Strategy and Harvest Control Rules. May 15 2018. https://www.government.is/news/article/2018/05/15/Haddock/</p> <p>Government of Iceland, 2018b. News. Statement on Responsible Fisheries in Iceland. May 15, 2018. https://www.government.is/news/article/2018/05/15/Fisheries/</p> <p>MFRI website. News item on summer ecosystem survey. https://www.hafogvatn.is/en/about/news-announcements/category/1/the-annual-international-ecosystem-summer-survey-in-nordic-seas-has-started</p> <p>Supreme court ruling (No. 12/2000). https://www.haestirettur.is/default.aspx?pageid=347c3bb1-8926-11e5-80c6-005056bc6a40&id=ec41e28f-73cc-422e-b1bd-2f903568667c</p>
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 4 of 4, SG80 5 of 5, SG100 1 of 3)	
CONDITION NUMBER (if relevant):	
	85

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			
	Guidepost	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?	Y	Y	N
	Justification	<p>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.</p> <p>As per MSC's interpretation published in May 2019 ("Determining relevant management measures, strategies and/or rules in the scoring of PI 3.2.3 Sla" see relevant interpretation no. 9 in section 7.1), assessment teams should consider "relevant" to refer to those management measures, strategies and/or rules that have been implemented by the fishery-specific management system to achieve outcomes expressed by MSC's Principles 1 and 2.</p> <p>Relevant management measures and strategies related to Principles 1 and 2 include, for example, quota for individual fishers, a discard ban, gear regulations and closure areas.</p> <p>There are checks of fishing activity on vessels at sea by Inspectors of the Directorate of Fisheries and by the Icelandic Coast Guard. Landings are checked by the Directorate's Inspectors. In 2017 and 2018, the Directorate of Fisheries had Inspectors present at 20% of all landings by pelagic vessels and in 2018 Inspectors were onboard 27 of the 690 pelagic vessel trips (4%) (Directorate of Fisheries pers. com. see section 3.5.4). A satellite-based vessel monitoring system (VMS) applies to all vessels so that their fishing activities both within and beyond the Icelandic EEZ can be monitored. Quota controls are tight with a very transparent system that records and publishes catch and landings in almost real-time. The Directorate of Fisheries receives logbook data and data on landings which are weighed by licensed operators on calibrated and closely monitored scales. Data is transmitted electronically to the Directorate and in real-time. Data on each vessel's catch and quota allowance (including all transfers of quota) is posted on the Directorate's website. This information is updated daily. Because most of the catch is exported there are additional ways to ensure correct reporting of catches in particular by checking if the reported input of raw fish is consistent with the volume of production.</p> <p>The main management measure that the Directorate of Fisheries monitors is the quotas of individual fishers, catches and processing. There are cases where individual fishermen have been found to cheat through illegal landings and/or discarding. There is no reliable evidence that these violations exceed a few percentages of the TACs. The Directorate of Fisheries together with the Coast Guard monitors gear regulations and area closures. The extensive monitoring and the low number of violations observed do indicate that these rules are respected. The detail of offences detected, and enforcement action taken are set out in section 3.5.4.</p> <p>In December 2018, the Icelandic National Audit Office (NAO) published a report on certain aspects of the Icelandic enforcement system. The report found no direct evidence of large-scale systemic violations but identified a number of areas of weakness in particular in relation to the surveillance of weighing of catches (both at harbour scales and in-house weighing) and the surveillance of discarding. It highlighted that more quantitative data are needed to substantiate the conclusions that discards are low and that there are few irregularities in connection with re-weighing of</p>		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
		<p>catches after de-icing. A committee has been established to address the findings of the NAO report with a report due later this year to provide recommendations to the Minister on improvements to the enforcement system.</p> <p>The Ministry of Industries and Innovation (MII) and Directorate of Fisheries noted in a surveillance audit meeting with the CAB Vottunarföng Tún that the issues highlighted in the NAO report were issues they were already aware of and had prioritised as an area to enforce and had already initiated action:</p> <ul style="list-style-type: none">• A recent change to the law gives powers to the Directorate to place inspectors at processing plants suspected of irregularities in the re-weighing of catches after de-icing. Inspectors are in place for 6 weeks at the expense of the plant.• Every two months the Directorate publishes information on-line which compares the ice percentages recorded at re-weighing by a weighing licensed holder when an inspector is present with the average percentages recorded over the 2-month period. This transparency encourages better compliance - the data is reported to show a narrowing of the difference in ice percentages over time. This is corroborated by studies by the University of Iceland showing the same trend and indicating that irregularities are small in terms of volume, 1-2 % of landed catches, although potentially large in number since they are caused mainly by small vessels with frequent landings. Tún note that the MII and the Directorate assess that these irregularities have reduced by 50% indicating that their actions are driving improvement.• A further tool, introduced in spring 2019, is the publication on the Directorate's website of vessel catch composition with and without an inspector on board which can give an indication of levels of discarding. <p>Available evidence (e.g. data from scientific cruises held up against information reported by the vessels) still indicates that discards are low and re-weighing irregularities not significant. They note the incentive to cheat is low as there is no overcapacity in the system and there are a range of flexibility mechanisms in place designed to facilitate compliance and reduce the likelihood of overfishing. This includes the ability to transfer quota between years and between species (except cod), so for example, subject to certain limits you can trade quota to cover landings in excess of your quota or count the landings against next year's quota. Also, as noted above, quota controls are tight with a very transparent system that records and publishes catch and landings in almost real-time, landings must be weighed by licensed weighers on calibrated scales and there are checks of fishing activity on vessels at sea and at landing by Inspectors. Overall, the system is considered to be effective, but the authorities work continuously to refine and improve the system as is evidenced by the above actions. On this basis the Assessment Team considers that a monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. SGs 60 and 80 are met.</p> <p>However, the assessment team considers that the outcome of the NAO report prevents the fishery from meeting SG100 as the weaknesses identified do not support evidence of "a consistent ability to enforce management measures, strategies and/or rules. SG100 is not met.</p>		
b	Sanctions			
	Guidepost	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	Y	Y	N

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
	Justification	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.		
		Violations of regulations are subject to sanctions which have been demonstrated to provide an effective deterrence. Misreporting is subject to strict penalties. The relatively few cases of illegal landings, low levels of estimated discarding and the number of violations of gear regulations and area closures demonstrate that the sanctions that are in place and the high probability of being apprehended if engaging in illegal activities form an effective deterrence.		
		Nevertheless, irregularities have been detected as described in the 2018 Icelandic NAO report. In particular, weaknesses were found in the surveillance of discarding and re-weighing of catches after de-icing. The report highlighted that more quantitative data are needed to substantiate the conclusions that discarding is low and that there are few irregularities in connection with re-weighing of catches after de-icing. It is noteworthy that these issues are unlikely to affect the fishery under assessment since pelagic fisheries refrigerate, rather than ice, their catch and discarding is considered negligible. The Ministry of Industries and Innovation and the Directorate of Fisheries were already aware of and had prioritised these areas for further enforcement action as detailed in scoring issue a). Overall, the system is considered to be effective and the authorities work continuously to refine and improve the system as is evidenced by the actions they are taking. Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence. SGs 60 and 80 are met.		
		Since irregularities have been detected in the monitoring, control and surveillance system and more data is considered necessary to confirm discarding is low and that there are few irregularities in re-weighing, the Assessment Team cannot conclude that sanctions demonstrably provide effective deterrence, preventing the fishery from meeting SG100.		
c	Compliance			
	Guidepost	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	Y	Y	N
	Justification	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.		
		As can be seen in the evidence presented in section 3.5.4, there is generally a high degree of compliance with regulations. There is no significant evidence of systematic non-compliance. In cases of non-compliance, a range of penalties can be applied. A minor infringement leads to a warning and a second offence leads to temporary withdrawal of fishing licenses. Serious offences are brought to the courts and can lead to prison sentences. Corrective actions are well established, codified, understood and tested. Amongst the information provided to management by fishers is essential logbook and VMS/AIS data, provided to the Directorate of Fisheries and to the MFRI.		
		This information is checked through weighing of the catch (including bycatch) in the harbour and review of VMS records. Other information in relation to the species mix/catch composition gained through sampling is further evidence of data that is provided to the management system.		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.	
		<p>Therefore, some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery. SG60 and 80 are met.</p> <p>The December 2018 Icelandic National Audit Office identified a number of areas of weakness in particular in relation to the surveillance of weighing of catches (both at harbour scales and in-house weighing) and the surveillance of discarding but found no direct evidence of large-scale systemic violations. The Ministry of Industries and Innovation and the Directorate of Fisheries were already aware of and had prioritised these areas for further enforcement action as detailed in scoring issue a). Further, incentives to cheat are low and the flexibility mechanisms and transparency built into the system encourage compliance. However, given the findings of the INAO report the Assessment team cannot conclude that there is a high degree of confidence that fishers comply with the management system under assessment and so SG 100 is not met.</p>	
d	Systematic non-compliance		
	Guidepost		There is no evidence of systematic non-compliance.
	Met?		Y
	Justification	<p>There is no evidence of systematic non-compliance.</p> <p>The 2018 Icelandic National Audit Office Report identified a number of areas of weakness in the Icelandic enforcement system but no direct evidence of large-scale systemic violations. Available evidence (e.g. data from scientific cruises held up against information reported by the vessels) indicates that discards are low and re-weighing irregularities not significant. The management system in general has a high level of legitimacy among fishers, probably because the need to manage resources through restrictions on fishing access is well understood. The high level of transparency in the system also encourages compliance. Catch and landings are recorded and published on the Directorate of Fisheries website in almost real time. The performance of licensed weighers with and without an Inspector present when re-weighing after de-icing is also published and so too is vessel catch composition with and without an Inspector on board.</p> <p>There is no evidence of systematic non-compliance and SG 80 is met.</p>	
References		<p>Directorate of Fisheries Annual report for the fishing year 2017/2018 (Yfirlit yfir fiskveiðiárið 2017/2018), available at http://www.fiskistofa.is/veidar/aflaupplysingar/yfirlit-sidasta-fiskveidiars/</p> <p>Monitoring of re-weighing of catch after de-icing. Figures for July and August published on Directorate of Fisheries website. http://www.fiskistofa.is/umfiskistofu/frettir/ishlutfall-i-juli-og-agust-1</p> <p>National Audit Office (2018) Surveillance of the Directorate of Fisheries (Ríkisendurskoðun: Eftirlit Fiskistofu), available at https://rikisendurskodun.is/wp-content/uploads/2019/01/Eftirlit-Fiskistofu-Stjornsysluutitekt.pdf</p> <p>Regulation No. 126/2014. https://www.reglugerd.is/reglugerdir/eftir-raduneytum/sjavarutvegsraduneyti/nr/18967</p>	
OVERALL PERFORMANCE INDICATOR SCORE: (SG603 of 3, SG80 4 of 4, SG1000 of 3)			80
CONDITION NUMBER (if relevant):			

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4	<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <p>There is effective and timely review of the fishery-specific management system.</p>		
Scoring Issue	SG 60	SG 80	SG 100
a	Evaluation coverage		
	Guidepost	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.
	Met?	Y	Y
	Justification	<p>There are mechanisms in place to evaluate all parts of the fishery-specific management system.</p> <p>There have been several public reviews of the fisheries management system in Iceland in the last 20 years. A major review was conducted around the year 2000 by a committee elected by the Althing and headed by the then governor of the Central Bank, Jóhannes Nordal. The committee's report was published by the Prime Minister's Office in 2000 (Álitsgerð auðlindanefndar um stjórn auðlinda Íslands, available in Icelandic at https://www.stjornarradid.is/efst-a-baugi/frettir/stok-frett/2000/09/29/Audlindaskyrsla-2000/). In March 1999 the committee published a progress report (Auðlindanefnd-Áfangaskýrsla með fylgiskjöllum, available in Icelandic at https://www.stjornarradid.is/efst-a-baugi/frettir/stok-frett/1999/04/20/Skyrsla-auðlindanefndar-i-mars-1999/). The focus of these reports were the economic and legal sides of Icelandic fisheries. In 2001 another public committee headed by professor Friðrik Már Baldursson delivered its report, Skýrsla endurskoðunarnefndar um endurskoðun laga um stjórn fiskveiða. In 2010 a working group appointed by the then Minister of Fisheries and Agriculture and composed of parliamentarians and stakeholders handed in a major report on fisheries management (Skýrsla starfshóps um endurskoðun á lögum um stjórn fiskveiða http://www.atvinnuvegaraduneyti.is/media/Skyrslur/meginskyrsla_uoppsett_lokaeintak.pdf).</p> <p>There have been a number of public reports on catch rules, the first one handed in its reports in 1993 and 1994 composed of experts from the then MRI and from the National Economic Institute, and the second one handed in its report in 2004. In both cases the recommendations of these committees were adopted, in 1995 and in 2007 respectively. In June 2011 the Ministry of Fisheries and Agriculture published a report on the economic consequences of the introduction of a draft legislation on fisheries management (Greinargerð um hagræn áhrif af frumvarpi til nýrra laga um stjórn fiskveiða samkvæmt þingskjali 1475, see e.g. http://www.matis.is/media/matis/utgafa/37-12-Fiskveidistjornun-til-framtidar--AVS-lokaskyrsla.pdf) published by Mátis ohf, November 2012. Most of these reports have been debated in Althing (the parliament) and in the permanent committee on fisheries issues. There are regular debates on fisheries management issues in Althing and in the permanent committee (see www.althingi.is).</p> <p>Where issues are identified the Ministry establishes working groups to review the issue, identify potential improvements in management and make recommendations to the Minister. For example, there are Committees working at the moment to address the concerns raised over by-catch recording and mitigation, particularly in the gillnet fisheries (the Committee for Consultation on Responsible Management of Living Marine Resources – see section 3.4.4, and also to address the findings of the NAO office report into the Directorate of Fisheries (see below).</p> <p>The MFRI is subject to regular external review by international experts on the methods that the MFRI uses to assess fish stocks and on the advice it gives to government (for example through the ICES benchmarking process (see PI 3.2.2 SIb). The institutions involved in fishery management are subject to regular reviews by the Althing's committees, especially the permanent committee on fisheries issues. As with other public institutions in Iceland these institutions are subjected to scrutiny by the Icelandic National Audit Office (Ríkisendurskoðun), the performance of the Directorate of Fisheries was recently reviewed by the NAO (December 2018) with a particular</p>	

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.		
		focus on monitoring and surveillance of compliance with management measures. The performance of these institutions is also intensively debated in Iceland, especially in the many fishing communities. The overall performance of the management regime as measured by the health of the stock and ecosystem is examined regularly, including annual assessment of stock status and feeding ecology. There are mechanisms in place to evaluate all parts of the fishery-specific management system. SGs 60, 80 and 100 are met.		
b	Internal and/or external review			
	Guidepost	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.
	Met?	Y	Y	Y
	Justification	The fishery-specific management system is subject to regular internal and external review. MSC FCR v2.0, GSA4.10.1 notes that “external review” means external to the fisheries management system and depending on the scale and intensity of the fishery could be by <ul style="list-style-type: none">• Another department within an agency;• Another agency or organisation within the country;• A government audit that is external to the fisheries management agency;• A peer organisation nationally or internationally, and• External expert reviewers. As noted in SIa the Icelandic fisheries-specific management is subject to internal and external reviews. The legal aspects of the fisheries management system have been subject to at least two major reviews over the last 20 years. Institutions involved in management are also subject to periodic review by the Althing Permanent Committee on Fisheries and by the NAO. Where issues are identified there is evidence that Committee’s are established to review the management and provide recommendations to the Minister. Stock assessments are subject to the ICES advisory process which involves expert groups, the outputs of which are peer-reviewed by independent experts. Where stock assessments are benchmarked (as in the case of this stock) the review is carried out within the expert group and then followed by an advice drafting group (https://www.ices.dk/community/advisory-process/Pages/default.aspx). The stock assessment methodology is reviewed by ICES in benchmarking workshops which are held every 3-5 years. The meeting is open to experts and stakeholders and its output is reviewed by external experts throughout the process and published as a stock annex (ICES, 2019g). The Norwegian-Icelandic spring-spawning herring stock was last benchmarked in 2016 (ICES, 2016b). SGs 60, 80 and 100 are met.		
References		Anon. (1999) Reports from the Committee on natural resources (Skýrslur Auðlindanefndar), available at https://www.stjornarradid.is/efst-a-baugi/frettir/stok-frett/1999/04/20/Skyrsla-audlindanefndar-i-mars-1999/ Anon. (2010a) Report of a working group on revision of the law on fisheries management (Skýrsla starfshóps um endurskoðun á lögum um stjórn fiskveiða, available at http://www.atvinnuvegaraduneyti.is/media/Skyrslur/meginskyrsla_oppsett_lokaeintak.pdf		

PI 3.2.4	<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <p>There is effective and timely review of the fishery-specific management system.</p>
	<p>Anon. (2010b) Scheme of Control and enforcement, London, February 2010, https://www.neafc.org/system/files/scheme_2010.pdf</p> <p>ICES, 2019g. ICES benchmarks https://www.ices.dk/community/advisory-process/Pages/Benchmarks.aspx</p> <p>ICES, 2016b. Stock Annex: Herring (<i>Clupea harengus</i>) in subareas 1, 2, and 5, and in divisions 4.a and 14.a (Norwegian Spring Spawning). 4 March 2016. http://ices.dk/sites/pub/Publication%20Reports/Stock%20Annexes/2016/her-noss_SA.pdf</p> <p>Matis (2012) Fisheries management in the future (Fiskveiðstjórnun til framtíðar), available at http://www.matis.is/media/matis/utgafa/37-12-Fiskveidistjornun-til-framtidar--AVS-lokaskýrsla.pdf</p> <p>ICES Benchmarks https://www.ices.dk/community/advisory-process/Pages/Benchmarks.aspx</p> <p>National Audit Office (2018) Surveillance of the Directorate of Fisheries (Ríkisendurskoðun: Eftirlit Fiskistofu). https://rikisendurskodun.is/wp-content/uploads/2019/01/Eftirlit-Fiskistofu-Stjornsysluutitekt.pdf</p>
OVERALL PERFORMANCE INDICATOR SCORE: (SG60 2 of 2 SIs, SG80 2 of 2 SIs, SG100 2 of 2 SIs)	
100	
CONDITION NUMBER (if relevant):	

8.1.2. Appendix 1.2 Risk Based Framework (RBF) Outputs

RBF was not used in this re-assessment.

8.1.3. Appendix 1.3 Conditions

As noted in sections 1.5 and 4.2 of this report, one condition identified in the first certification cycle remains open at re-assessment. The condition relates to PI 1.1.1 Stock status and requires that the stock is fluctuating around its target reference point. It was raised by the previous CAB, Lloyd's Register, at the third surveillance of the first cycle, in 2017 and is presented in the table below. Progress against the condition was judged to be on target at the fourth surveillance published in 2019.

When setting the condition in 2017, Lloyd's Register noted ICES' evaluation of the stock indicated that recovery was dependant on recruitment to the spawning stock biomass and that this could take until 2022. This meant the requirements of SG80 may not be met within the first certification cycle. They further noted that this is due to the biology of the stock rather than any delay in the implementation of management measures and as such, this constituted 'exceptional circumstances' in line with MSC FCR v2.0 §7.11.1.3. As per that requirement, Lloyd's Register set out the significant and measurable improvements that must be achieved, and the score that must be achieved by the end of the certification period; and also, what constitutes a successful overall outcome over a longer, specified time period. Taking into account the ICES advice, they specified that the condition must be met by 2022.

At re-assessment, milestones have been set for this condition for the second certification cycle as shown in the table below.

With regard to the milestones, on the 27 March 2020, the MSC issued an updated Covid-19 derogation allowing a six-month certificate extension for all fisheries. Accordingly, the MSC has required CABs to extend the deadlines for all associated processes, including assessments, conditions, action plans and milestones by six months. The updated derogation has been released as an Interpretation, and can be seen at the link below (and copied in full in section 7.1 of this report as relevant interpretation 11):

<https://mscportal.force.com/interpret/s/article/Covid-19-pandemic-derogation-March-2020>

As stated in the Guidance for MSC Fisheries CABs relating to the Covid-19 Derogation, issued on 17 April 2020, the derogation applies to recently drafted conditions and milestones, i.e. for fisheries currently in an assessment at the time the derogation was published. Accordingly, this has been taken into account in the condition below.

The table below also shows the review of progress against the condition made at re-assessment.

Condition 1. Icelandic summer-spawning herring (UoAs 1 and 2). This condition applies to the stock as a whole and so affects both the purse-seine and pelagic trawl fisheries. The original condition set by Lloyd's Register in 2017 is shown. **Additions inserted by the current CAB, SAI Global, are shown in blue text.**

Performance Indicator	PI 1.1.1 – Stock Status
Score	60 70
SG80 Guideposts	<p>Sl a. It is highly likely that the stock is above the PRI</p> <p>Sl b. The stock is at or fluctuating around a level consistent with MSY.</p>
Rationale	<p>Sl a. In absence of an explicit probability distribution of stock size, CABs should normally assess this situation as met when the stock is estimated above 1/2 of the distance between B_{lim} and B_{pa} (Annex SA PI 1.1.1). The stock estimate SSB2019 (212,481t) is below B_{pa} (273,000), but just above (6%) B_{lim} (200,000t) (ICES 2019b). According to Annex SA PI 1.1.1 it is not highly likely (80% probability) that the stock is above the point where recruitment would be impaired.</p> <p>Sl b. The SSB fell close to the MSY $B_{trigger}$ level of 273,000t in 2016 (284, 332t) and has now fallen below the trigger level in 2017. It is predicted to increase slightly in 2018, based on the proposed HCR, to 247,570t but is predicted in the ICES advice to remain below the trigger</p>

	level in 2018. The stock cannot therefore be considered to be currently fluctuating around its target reference point (SG80).
Condition	<p>Evidence should be provided that 1) it is highly likely that the stock is above the PRI and 2) the stock is fluctuating around its target reference point.</p> <p>The assessment team note that recovery of the stock has been evaluated by ICES and it could take until 2022. The present period of certification will end in May 2019. It is possible that the SG80 requirements will not be met during this period of time. This is a consequence of the biology of the stock, rather than any delay in the implementation of management measures.</p> <p>As such, this constitutes “exceptional circumstances”, sensu FCR at §7.11.1.3. In “exceptional circumstances”, the CAB shall spell out the significant and measurable improvements that must be achieved, and the score that must be achieved by the end of the certification period; and also, what constitutes a successful overall outcome over a longer, specified time period (FCR at §7.11.1.3(ii)).</p>
Milestones	<p>The original milestones set by Lloyd’s Register are as follows:</p> <p>Evidence of progress with this condition will be provided in ICES advice on the status of the Icelandic summer-spawning herring stock.</p> <p>The 2017 advice indicated that the stock was below the target reference point and will remain so during 2020. ICES has predicted the likely trajectory for stock recovery under the harvest control rules in place, which indicates that the stock is likely to recover to a level above the target reference point by 2022.</p> <p>Years 4-5 of current period of certification – ICES stock status assessments should show evidence that the stock is responding to the harvest control rules in place for the fishery. Resulting score (if stock status remains >PRI and <TRP:70)</p> <p>By 2022 – ICES stock status assessments should show evidence that the stock is now at or fluctuating around the target reference point. Resulting score (if stock status is >TRP: 80)</p> <p>These milestones have been clarified below and additional milestones, consistent with those already set, added for this certification cycle:</p> <p>Year 1 (2018): ICES stock status assessments should show evidence that the stock is responding to the harvest control rules in place for the fishery. Resulting score if stock status remains >PRI and <TRP:70.</p> <p>Year 2 (2019): ICES stock status assessments should show evidence that the stock is responding to the harvest control rules in place for the fishery. Resulting score if stock status remains >PRI and <TRP:70.</p> <p>Year 3 (2020 + 6 months*): ICES stock status assessments should show evidence that the stock is responding to the harvest control rules in place for the fishery. Resulting score if 80a and 80b are still not met: 60.</p> <p>Year 4 (2021 + 6 months*): ICES stock status assessments should show evidence that the stock is responding to the harvest control rules in place for the fishery. Resulting score if 80a and 80b are still not met: 60.</p>

	<p>Year 5 (2022 + 6 months*): ICES advice shall show evidence that it is highly likely that the stock is above the PRI and that the stock is at or fluctuating around a level consistent with MSY. Resulting score is ≥ 80.</p>
Client action plan	<p>This condition does not require any specific action by the client. It will be satisfied if ICES continue to be provided with sufficient data about the Icelandic Summer Spawning Herring stock status to allow management advice to be issued on an annual basis.</p> <p>It would be prudent for the client to seek a formal commitment from the relevant Icelandic institutions to confirm that these bodies will continue to provide information to ICES to enable annual stock assessments to be conducted and annual management advice to be produced.</p> <p>Action plan and responsible parties</p> <ol style="list-style-type: none"> 1. ISF will support all activities of the MII in the implementation of the HCRs. 2. ISF will support all activities of MFRI in monitoring the response of the stock to the implementation of the HCRs. 3. ISF will continue to work with the MFRI and MII to ensure all data are collected to support the monitoring to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe; and management responds to the issue in a timely and adaptive manner. <p>Milestones</p> <p>At ISF we will continue to follow up on milestones and conditions by meeting regularly with MFRI and MII. At the meetings we discuss each of the conditions and receive feedback on where the authorities are, in terms of strategies, actions and activities. The MII and MFRI have set an HCR for the stock and MII has been actively managing the fisheries based on scientific information. This scientific information will provide indications to how the stock is responding to the management principles and environmental factors. In Iceland, all fishery management decisions are data driven to ensure responsible fisheries for sustainable development of fish stocks and fishing activities.</p> <p>Year Three (2020 + 6 months)*: ISF will follow up with MFRI and MII on how the stock is responding to the management.</p> <p>Year Four (2021 + 6 months)*: ISF continues to follow up on the issue with relevant authorities.</p> <p>Year Five (2022 + 6 months)*: ISF presents evidence to confirm that the issue has been consistently followed up with. MFRI should, at that time, have empirical evidence showing the stock status, if it has reached above PRI or has started fluctuating around a level consistent with MSY.</p>
Consultation on condition	<p>The client has consulted with the Icelandic Marine and Freshwater Research Institute (MFRI, Hafrannsóknastofnun), who have provided written confirmation that they will continue to provide information to ICES to enable annual stock assessments to be conducted and management advice to be produced.</p> <p>SAI Global consulted with the Ministry of Industries and Innovation (MII) and the MFRI as the bodies who are respectively i) ultimately responsible for management of the fishery and ii) responsible for assessing the status of the stock. Taking into account the responses of both the Ministry and MFRI (see Figure 32 and Figure 33 below) we are satisfied that the condition is both achievable by the client and realistic in the time period specified.</p>

Progress: Year 0	Third surveillance audit of first surveillance cycle, started 2017. This condition is new at this surveillance audit. Evidence of progress will be reported at future surveillance audit.
Progress: Year 1	Fourth surveillance audit of first surveillance cycle, started 2018. The most recent stock assessment is summarised in section 3.5.2 of this report. This shows that fishing mortality (F) has been reduced to the level required by the management plan and scientific advice on stock status (see Figure 3). There is not, as yet, any evidence of a recovery in stock biomass. This is attributed to the ongoing poor recruitment to the stock,
Progress: Year 2 & 3	<p>Assessed at Re-assessment, 2018-2020.</p> <p>With regard to Sla, in the absence of an explicit probability distribution of stock size, CABs should normally assess this situation as met when the stock is estimated above 1/2 of the distance between B_{lim} and B_{pa} (Annex SA PI 1.1.1). The stock estimate SSB_{2019} (212,481t) is below B_{pa} (273,000), but just above (6%) B_{lim} (200,000t) (ICES 2019b). According to Annex SA PI 1.1.1 it is not highly likely (80% probability) that the stock is above the point where recruitment would be impaired, SG80 is not met.</p> <p>With regard to S1b, the stock estimate SSB_{2019} (212,481t) is much lower than B_{pa} (273,000), and just above (6%) B_{lim} (200,000t) (ICES 2019j). Because of above and according to Annex SA PI 1.1.1 where $MSY B_{trigger}$ is considered the lower bound of spawning-stock biomass fluctuation around B_{MSY}, the assessment team conclude that stock is not fluctuating around a level consistent with MSY. SG80 is still not met.</p> <p>The information provided by the MFRI (Figure 32) indicates that there has been a large year class form in the stock. The November 2019 research survey provided an abundance index for this year class at age 2 and indicated that this was the third highest index at age 2 in the time series going back to 1973. This year class will start to recruit to the SSB and have positive impacts on the stock in 2020 although its main influence will be in 2021 when 85% of the year class will be mature and SSB is expected to increase sharply in that year. As noted by the Ministry, a recovery plan is built into the HCR which has been evaluated by ICES and found to be precautionary. The HCR is being implemented by the Icelandic Government until at least the 2022/2023 fishing year unless advised otherwise by the MFRI and ICES.</p>
Conclusion	The stock remains at a level below the target reference point (TRP) and above the point at which recruitment would be impaired (PRI). Fishing mortality (F) has been declining but has increased slightly to just above HR_{MGT} although it remains below F_{MSY} . The information from the MFRI indicates that a large year class has formed in the stock which will start to have positive impacts on the SSB in 2020 and its main influence will be in 2021. A HCR incorporating a recovery plan that has been evaluated by ICES as precautionary is being implemented by the Icelandic Government to control fishing effort and enable stock recovery. Progress is therefore considered to be on target .

*subject to a 6-month extension in accordance with Covid-19 pandemic derogation 27 March 2020.

From: Conor Donnelly
Sent: 25 March 2020 15:06
To: Guðmundur J. Óskarsson <guðmundur.j.oskarsson@hafogvatn.is>
Subject: RE: MSC037 ISF Norwegian & Icelandic herring. Condition on ISSH

Hi Guðmundur,

That's great and very useful information which provides confidence around the condition being realistic and achievable.

Thanks again for getting back to me so quickly – it is much appreciated.

Best regards

Conor

Conor Donnelly
Fishery Assessor
SAI Global
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M: +353 (0) 86 023 3565

From: Guðmundur J. Óskarsson <guðmundur.j.oskarsson@hafogvatn.is>
Sent: 25 March 2020 06:07
To: Conor Donnelly <Conor.Donnelly@saiglobal.com>
Subject: RE: MSC037 ISF Norwegian & Icelandic herring. Condition on ISSH

Dear Conor

First, thank you for simplifying this to me.

The MSC evaluation of ISSH is based on the most recent assessment and advice, released in June 2019. As such, I have no comments on your approach and conclusions. However, I think it is important to note that a large year class has been formed in the stock. The juvenile index (age 1) in the 2018 survey indicated that the 2017 year class might be well above average size and the fourth highest in the time series since 1987 (ICES 2019, NWWG report). A research survey in November 2019 south of Iceland provided then an abundance index at age 2 for this year class, which resulted in the third highest index for this age groups in the time series going back to 1973. This large year class will start to enter the SSB in 2020 at age 3 to a small degree (maturity ogive fixed at 20% for age 3) and is therefore expected to have positive effect on the SSB from 2020 and on. In 2021, 85% of the year class will be mature (according to the fixed maturity ogive applied) so SSB will likely increase sharply in that year. Moreover, the harvest control rule is based on reference biomass of age 4, which means that the 2017 year class will first influence the harvest rate in 2021. In summary, the apparent large 2017 year class will start to have positive impacts on the SSB in 2020, while the main influence on the SSB and harvest rate will be in 2021. I'm not sure how your evaluation tackles these kind of information, but I hope they do as these are the most recent scientific information available. Please let me know if you require more info on this.

Sincerely,
Guðmundur Óskarsson

Figure 32. Response from MFRI



Conor Donnelly
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A91 WNH1

ÁTVINNUVEGA-OG
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Reykjavík 17. apríl 2020
Tilv.: ANR20030416/11.02.11

Efni: FS: MSC037 ISF Norwegian & Icelandic herring. Consultation on a condition

Dear Conor,

I refer to your letter on March 27 where you seek a view of the Ministry whether the condition set out in your assessment for Icelandic summer spawning herring is achievable by the client (ISF) and realistic within the time period specified.

It is the view of the Ministry that the conditions set out in PI 1.1.1 are achievable by the clients. In accordance with the general aims of the management strategy for the Icelandic summer-spawning herring, the HCR was formally adopted by Icelandic authorities in June 2017 for the consecutive period of 5 fishing years, starting from the 2017/18 fishing year. A recovery plan is built into the HCR and the rule has been evaluated by ICES where ICES concluded the HCR to be in accordance with precautionary approach. Icelandic authorities will follow this rule at least until the fishing year 2022/23 unless Marine and Freshwater Research Institute and ICES advice authorities otherwise. The Ministry will base its decisions on harvesting the stock after 2022/23 fishing season on a harvest control rule that are based on best available scientific advice from ICES and MFRI. At this stage, the Ministry can not confirm that the rule will be the same as the current one, but we can confirm that decisions on outtake from the stock will be based on best available science.

On behalf of the Minister of Fisheries and Agriculture



Jóhann Guðmundsson

Figure 33. Response from the Ministry

8.2. Appendix 2. Peer Review Reports

Details of the peer reviewers are presented in section 2.2. In line with MSC FCR v2.0, § 7.14.11, below are the general comments and specific comments on Performance Indicator scoring by Peer Reviewers A and B undertaken as part of the peer review stage:

- Table 31 Peer Reviewer A general comments
- Table 32 Peer Reviewer A PI comments
- Table 33 Peer Reviewer B general comments
- Table 34 Peer Reviewer B PI comments

The Assessment Team has responded to the Peer Reviewer comments in the tables below and changed the scoring and report and set a condition as required.

No further comments were received by the Peer Reviewers following the Public Comment Draft Report stage.

Table 31. Peer Reviewer A General Comments and CAB response.

Question	Yes/No	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)
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	No	<p>There are some clear issues in the scoring of P1 status. Also the team in P1 did not consider the species as LTL, providing evidences that should be better clarified (e.g. why SURF index is considered only for the adults, it should be for both elements) and did not consider the connectivity of the stock in accordance with table G2 of the MSC standards.</p> <p>Regarding P2 I do not understand the reason why both purse seine and pelagic trawl are assessed together. In many case in the background P2 section it seems clear that non target species catches and interaction on ETP species can be different (e.g.: Fishermen report that killer whale are generally not seen during trawling for herring.</p> <p>They are frequently observed during the purse seine fishery but fishermen report that interactions with the gear are rare.). I think that more evidenced should be provided to better justify the scoring of both gear together or I think they should be separated and a different scoring should be given in term of Primary/Secondary/ETP species and probably habitat. Finally it is not clear to me why species as <i>Argentina silus</i>, <i>Sebastes mentella</i> and <i>Merlangius merlangus</i> are considered as secondary. For such species advices and TAC are available.</p>	<p>P1: the Assessment Team do not consider the ISSH stock as a key LTL species since the stock does not meet two of three criteria for key LTL species SA 2.2.9.</p> <p>The assessment was performed under MSC standard v 2.0 2014 where SA.2.2.9 give: "Teams shall treat a stock under assessment against Principle 1 as a key LTL stock if:</p> <ol style="list-style-type: none"> It is one of the species types listed in Box SA1 and in its adult life cycle phase the stock holds a key role in the ecosystem, such that it meets at least two of the following sub-criteria i, ii and iii." That's why criteria was only evaluated for Adult life stage and Adult herring related functional groups in the food-web model presented in report. The Assessment Team corrected and clarified stock status in reference to the connectivity of the stock in accordance with table G2 of the MSC standards, based on stock definition given at ICES 2017 Stock Annex, indicating a case A "Single population" according to Table G2 (MSC 2014). Relevant definition and paragraph was added in to the report for section 3.3.1. <p>Regarding the comments on P2, purse seine and pelagic trawl are both mid-water gears, used to target densely aggregated, homogeneous shoals of the target species. Impacts on ETP, habitat and ecosystem components are sufficiently similar to enable assessment and scoring together. However, assessment of impacts of the UoAs on primary species are now considered separately. The catch data used in the assessment has been updated so that there are now no secondary species and the impacts of the UoAs on this P2 component are considered together. Some further explanatory text has been added to describe the gears and how they are used in the fishery in sections 3.2.1 and 3.2.2 of the report. With regard to ETP, killer whale are not an ETP species in Iceland and as noted their interactions with gear are rare.</p> <p>At the time of writing of the peer review draft, the fish species referred to by the peer reviewer were all secondary species because the stocks in Iceland have no analytical or empirical stock assessment or reference points in place. However, following the update to the catch data used in the assessment no secondary species are now identified for either UoA. Following the update, small catches of <i>Argentina</i></p>

Question	Yes/No	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)
			<i>silus</i> are still made by UoA 1 but, following release of the latest advice this stock, it now has reference points and is assessed as a primary species.
Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses]	Yes	Conditions not present	Following Peer Review a condition has now been added.
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 (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.	No response required
Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	Yes	Is not an enhanced fisheries	No response required
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary)	N/A	The background section is in general adequate and I think that the MSC process is well described and well structured. I also think that the inclusion of the MSC interpretations is an added value to the report. In background material for P1 is missing the MSE outputs carried out in the framework of ICES. P2 information on purse seine is completely missing. I do not think that the primary and secondary species are the same in pelagic trawl and purse seine. Differently the P3 section is complete and well described.	Further detail of the MSE evaluation are now provided in section 3.3.6. Regarding the P2 comments, some further explanatory text has been added to describe the gears, including purse seine, and how they are used in the fishery in sections 3.2.1 and 3.2.2 of the report. Following update to the catch data used in the assessment primary species are now considered separately for each UoA. No secondary species were identified for each UoA so the impact of the UoAs on this P2 component has been considered together.

Table 32. Peer Reviewer API Comments and CAB response.

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
1.1.1	Yes	No (material score reduction expected to <80)	NA	In 1.1.1a it is clear that the stock should not score 80 but 60. The value of SSB is lower than the mean point between Blim and BPA. In interpretation 1 it is clearly stated: <i>To meet the 80 (in 1.1.1a) scoring guidepost In absence of an explicit probability distribution of stock size, CABs should normally assess this situation as met when the stock is estimated above 1/2 of the distance between Blim and Bpa.</i> The team should provide evidence that the probability distribution of SSB value in 2018 is skewed toward higher values or score 60.	P1.1.1a has been rescored according to reviewer comments and a condition is raised. The stock estimate SSB2019 (212,481t) is below Bpa (273,000), but just above (6%) Blim (200,000t) (ICES 2019b). According to Annex SA PI 1.1.1 its not likely (80% probability) that the stock is above the point where recruitment would be impaired. SG80 is not met.	Accepted (material score reduction to <80)
1.1.1	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	In 1.1.1b the scoring of 80 is justified taking into account the trend of fishing mortality. I do not agree to use such rationale when biomass reference points are available. According to Interpretation 1 to score 80 the biomass should be at 2xBPA, while it is really close to Blim. The fact that the F was low for a certain period and the biomass decreased for natural reasons (<i>Ichthyophonus</i> infection) is not a proper evidence to conclude that the biomass is at BMSY level. Moreover, according to GSA2.2.4 of MSC standards the use of fishing mortality is allowed as a means of scoring PI 1.1.1 when biomass information is not available, which is not the case for the present assessment. Therefore, 80 should not be met and 1.1.2 should be triggered.	P1.1.1a has been re-scored according to reviewer comments and a condition has been raised.	Accepted (material score reduction to <80)
1.1.2			NA	Not triggered	PI1.1.2 has been scored	Accepted (no score change)
1.2.1	Yes	No (material score reduction)	NA	In 1.2.1a a score of 80 is not justified because the trigger reference point (MGT Btrigger) is clearly lower than BMSY (it is actually at Blim level). Therefore, although the HS is responsive of the state of the stock the all the elements (in	Despite of HCR are set with MGT Btrigger below BMSY (which for that stock is not defined) there is clear evidence that HCR are working to achieve MSY level as requested in PI 1.1.1.SG 80 because ICES evaluation of HCR requested	Not accepted (no score change)

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
		expected to <80)		particular HCRs) are not working to achieve MSY level as requested in PI 1.1.1 SG 80. A score of 60 would be more appropriate here.	by Iceland confirmed that the applied HCR are precautionary and according to MSY rule. As given by ICES, MGT plan is based on MSY framework and MSY reference points (ICES 2017) using ICES MSY framework as given by ICES using Fmsy in long term lead to the stock will reach the Bmsy assuming constant stock productivity. ICES MSY rule give explanation (ICES 2016) - Fishing mortality is the only variable that can be directly controlled by fisheries management. Fisheries management cannot directly control the stock size, it can only influence it through the fishing mortality. Stock size is also subject to natural variability that on a year-to-year basis can overwhelm the influence of fishing. A management strategy that harvests variable yields in response to the natural variability in stock size will on average give yields closer to the long-term MSY what will lead to Bmsy.	
1.2.1	Yes	No (non-material score reduction expected)	NA	in 1.2.1b, taking into account the impact of the Ichthyophonus infection on the stock, I would not conclude that the HS performance has been fully evaluated. The assessment approach is a single species model and does not take into account the ecological role of the stock, therefore a score of 80 is more appropriate here.	Despite of above, to score SG100 harvest strategy need a broader evaluation, taking into account unexpected situation that may happen in the future as i.e impact of environment, ecosystem changes or stock migrations. Current MSE based on single species model do not take into account those factors. SG100 is not met.	Accepted (non-material score reduction)
1.2.1	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	in 1.2.1f the rationale is not focusing on the target stock and it does not take into account the UoA-related mortality due to slippage that can occur in purse seine. It is stated that this practice is generally prohibited by law in Iceland although it is permissible from purse seines if the catch has a high proportion of juveniles. There is clear evidence that herrings after the slippage are going to be seriously damaged and would not survive (see Tenningen, M., Vold, a. & Olsen, R.E., 2012. The response of herring to high crowding densities in purse-seines: survival and stress	The regular review in terms of SA3.5.3.2 exist, however it is not said explicitly that review take place every two years as required to score SG100. That's why SG100 is not met	Accepted (non-material score reduction)

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
				reaction. ICES Journal of Marine Science. Available at: http://icesjms.oxfordjournals.org/cgi/doi/10.1093/icesjms/fss114). Therefore I think the rationale should be reformulated and probably it should score 80, because it is not clear that a revision is carried out every two years.		
1.2.2	Yes	No (material score reduction expected to <80)	NA	Similarly to 1.2.1a also in 1.2.2a the HCRs are not going to score 80. It is clearly stated that when SSBY is equal to or above MGT Btrigger: $TAC_{Y/Y+1} = HR_{MGT} * B_{ref,Y}$. Taking into account that MGT Btrigger is equal to Blim (so PRI) I do not see how the HCRs can keep the stock at BMSY level.	Despite of HCR are set with MGT Btrigger below BMSY (which for that stock is not defined) there is an clear evidence that HCR are working to achieve MSY level as requested in PI 1.1.1.SG 80 because ICES evaluation of HCR requested by Iceland confirmed that applied HCR are precautionary and according to MSY rule. As given by ICES MGT plan is based on MSY framework and MSY reference points (ICES 2017) Using ICES MSY framework as given by ICES using Fmsy in long term lead to the stock will reach the Bmsy assuming constant stock productivity. ICES MSY rule give explanation (ICES 2016) - Fishing mortality is the only variable that can be directly controlled by fisheries management. Fisheries management cannot directly control the stock size, it can only influence it through the fishing mortality. Stock size is also subject to natural variability that on a year-to-year basis can overwhelm the influence of fishing. A management strategy that harvests variable yields in response to the natural variability in stock size will on average give yields closer to the long-term MSY what will lead to Bmsy	Not accepted (no score change)
1.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	An important point lacking in 1.2.2b but more in general to the whole P1 section is the reference to table G2 of the MSC standards 2.0. It is stated: "Icelandic summer-spawning herring has quite a separate distribution pattern to the other herring stock in the area, Norwegian-Icelandic spring-spawning herring, so they do not mix extensively in Icelandic coastal waters, although there is evidence of	The explanation and reference to Table G2 of the MSC standards 2.0 has been added into the report. Stock definition by ICES, based on biological data in data on one stock component. Catch data separation from other distinguish stock NSSH is successfully implemented and used for stock assessment data.	Not accepted (no score change)

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
				increased levels of mixing in recent years, with greater numbers of summer-spawning herring turning up in catches of Norwegian-Icelandic spring-spawning herring. In the past the two stocks shared similar feeding grounds in early summer, north or east of Iceland. This may to some degree explain recent changes in distribution related to increase in biomass.". I think that the team should reconsider the level of connectivity of the present stock, provide evidence that the stock structure is A,B,C or D and, in accordance with table G2 and Information and uncertainties related to stock structure need to be scored in PIs 1.2.2, 1.2.3 and 1.2.4.		
1.2.2	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	In 1.2.2c, a score of 100 would require evidences clearly showing that the tools in use are effective in achieving the exploitation levels required under the HCRs. In 2018/19 fishing year the catches were higher than the TAC. Therefore a scoring of 80 is more appropriate here.	In fishing season 2018/2019 the catches were higher than TAC, but as stated in section 3.5.2, flexibility is built into the management system so that, "A vessel can exceed its allocation for each demersal species, herring, deepwater shrimp and Nephrops in a fishing season by up to, but not exceeding, 5%; the excess is then deducted from that vessel's allocation for that species in the following fishing season. Additionally, a decision may be taken to postpone fishing up to 15% of a vessel's quota for each demersal species, herring, deepwater shrimp and Nephrops in a fishing season and transfer the balance to the following season." Then evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.	Not accepted (no score change)
1.2.3	No (no score change expected)	Yes	NA	In 1.2.3a the justification should be better formulated providing evidences and references of the available data. Also the stock structure uncertainty should be taken into account.	Details and proper reference added to evidence	Accepted (no score change)

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
1.2.4	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	In 1.2.4c the team should take into account the lack of consideration of the stock structure. Therefore such important uncertainty is not considered in the assessment. Moreover the team should provide the probabilistic evaluation carried out by ICES in the background material. Also a better explanation of the assessment method (VPA-ADAPT) should be provided to clarify that the method takes into account error in input data.	Because of definition and information of the stock given by ICES stock structure and larval transport, migration pattern and distribution are taken into account for assessment (ICES 2017 Stock Annex). More details on VPA-ADAPT and MSE were added to the report.	Accepted (no score change)
2.1.1	No (no score change expected)	Yes	NA	In 2.1.1b the team should report the status of the stocks against a reference points representing the PRI, figures as Mackerel (Figure 19) should be provided for all the stocks. Information on management of each species are included which are not useful here.	Some text has been added to clarify the reference points used in relation to the PRI and figures have been added for all the stocks.	Accepted (no score change)
2.1.2	Yes	Yes	NA	I agree with scoring and rationale. However I do not see the reason to talk about EPT species in 2.1.2e.	<p>The peer reviewer's scoring indicates that no change to our scoring is required but has provided a comment. As no change to scoring is required we have not added a CAB response code but we have responded to the peer reviewer comment below. This is true for many of the rows below.</p> <p>The species the peer reviewer refers to are mentioned, together with the primary species, in a sentence which describes the protection provided by a piece of law. This puts this law fully into context and we consider is useful information for the reader.</p>	Not accepted (no score change)
2.1.3	Yes	Yes	NA	I agree with scoring and rationale. In 2.1.3c not only annual survey provides information on current biomass but also stock assessment. I suggest to revise this sentence.	Stock assessment is mentioned a number of times in 2.1.3c	Not accepted (no score change)
2.2.1	Yes	Yes	NA	I agree with scoring and rationale. However, the list of species should be revised.	As noted above, the catch data for this fishery has been updated and there are now no secondary species caught by either UoA.	Not accepted

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
						(no score change)
2.2.2	Yes	Yes	NA	I agree with scoring and rationale.	No response required.	Accepted (no score change)
2.2.3	Yes	Yes	NA	I agree with scoring and rationale. However, 2.2.3c probably needs to be revised taking into account the correct list of species.	As noted above, the catch data for this fishery has been updated and there are now no secondary species caught by either UoA.	Not accepted (no score change)
2.3.1	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)
2.3.2	Yes	Yes	NA	I agree with scoring and rationale. However, in 2.3.2e there is a reference about gill net that should not be reported here.	The reference to gill nets is to provide an example of where the management system reviews measures to minimise the mortality of ETP species (given that impacts for the UoAs are negligible). We considered it useful context for the reader.	Not accepted (no score change)
2.3.3	Yes	Yes	NA	I agree with scoring and rationale. However the rationale in 2.3.3b is practically the same of 2.3.3a. I suggest to modify because b) refers to the information adequacy for management strategy rather than the evaluation of UoA impacts.	We disagree with peer reviewer. The rationale refers to the information used to inform the strategy (which will naturally be similar to that presented to assess impacts on the UoA). However, it specifically addresses the SGs relating to how that information supports measures and strategies, compared to SIA which looks at the type and quality of data used to assess impacts of the UoAs on ETP.	Not accepted (no score change)
2.4.1	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)
2.4.2	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)

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
2.4.3	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)
2.5.1	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)
2.5.2	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)
2.5.3	Yes	Yes	NA	I agree with scoring and rationale. However, in 2.5.3e the conclusion is valid only for pelagic trawl.	It is not clear from the peer reviewers comment why the conclusion is only valid for pelagic trawl.	Not accepted (no score change)
3.1.1	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)
3.1.2	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	In 3.1.2c there is no reference to the NGOs and in other assessments from Iceland it seems clear that NGOs are not encouraged to be involved in the consultation process. Therefore a scoring of 80 would be more appropriate.	The lack of encouragement of NGOs to be involved in the process has been acknowledged in the rationale and the scoring reduced to 80.	Accepted (non-material score reduction)
3.1.3	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)
3.2.1	Yes	No (material score reduction expected to <80)	NA	In 3.2.1.a the management outcomes as designed now are not going to be consistent with MSC P1 due to the fact that the HS is not keeping the stock at MSY level but at PRI level. See P1 for more details.	The rationale for this PI has been reviewed and amended in light of the revisions to P1 scoring made in light of your comments. Whilst the stock is currently not fluctuating at a level consistent with MSY, a rebuilding strategy is in place that is considered highly likely to restore the stock within one generation time. We consider this is sufficient to meet the scoring of SG100 for this particular issue. However, we have reduced the scoring of this PI to SG80 to reflect	Not accepted (no score change)

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
					comments made by the other Peer Reviewer about secondary species management strategy.	
3.2.2	Yes	No (scoring implications unknown)	NA	In 3.2.2b the reason why SG100 is not met should be presented.	Additional text added to rationale to clarify why SG100 is not met.	Accepted (no score change)
3.2.3	Yes	Yes	NA	I agree with scoring and rationale. I suggest to make reference also to AIS system in 3.2.3c.	Text has been added to reference use of AIS.	Accepted (no score change)
3.2.4	Yes	Yes	NA	I agree with scoring and rationale.	No response required	Accepted (no score change)

Table 33. Peer Reviewer B General Comments and CAB response.

Question	Yes/No	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)
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	The Assessment team provide clear support justifying their scoring. There are a few cases where the main report could be improved through additional details - most of these details provided in the actual scoring tables but would enhance the report significantly.	The Team note the reviewer's comments and have sought to provide additional clarification in the scoring tables where issues have been raised by the reviewer in the PI comments tab.
Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses]	Yes	None of the PI individually received scored less than the unconditional passing mark thus no conditions were necessary.	Following Peer Review a condition has now been added.
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]	Yes	Note: Include this row for assessments completed against FCR v1.3 and v2.0, but not for FCP v2.1 (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.	No response required
Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?		Not applicable to this assessment	No response required
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the	N/A	Overall the report itself was comprehensive and provided good support for scores. However in several sections (e.g., stock assessment and discussion of models and MSE a bit more detail would enhance the overall report and provide additional confidence on the status of the stock and also uncertainties in the assessment) and add further confidence to scores.	The Team note the reviewer's comments with thanks. Text has been updated to address comments raised. More details about MSE and evaluation of HCR by ICES have been included in the report.

Question	Yes/No	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)
background information if necessary)		<p>Assessor Polonio's CV needs to be edited for duplicate/redundant material.</p> <p>The pagination of the List of figures and List of Tables made it difficult to follow headings as the text was not aligned properly in either.</p> <p>Page 16: is the TAC same/equal for each UoC- trawl/seine? General comment on figures- many are of poor quality/grainy.</p> <p>Figure 2 is referenced in the document before figure 1- poor style. Also, typo in the figure 2 legend "EEZ (Figure 2 Error! Reference source not found.). " There are numerous occasions where this occurs.</p> <p>Page 17, section 3.2.1- fishery overview-need reference supporting that the stock - summer-spawning does not migrate outside the EEZ of Iceland- they use word 'significantly' but no support given. Need reference or better yet a values for statement that 'Practically all of the catch is exported'.</p> <p>Page 21, section 3.3.1 - need reference for mixing discussion of spring and summer stocks as relates proportions in catch.</p> <p>Page 22 harvest strategy- they discuss catches from 1960-s through late 70's - a figure would have been helpful.</p> <p>Note- discrepancy between report on M in the assessment model- page 24 indicates extra M added for years 2008-2011 and 2017 but page 25 says additional M added for 2009-2011 and 2017.</p> <p>Duplicate text occurs on page 47 -</p> <p>"Monitoring of the quota system in Iceland is strengthened by the traceability measures required for exports in a country where over 90% of all fish caught is eventually exported in some form.</p>	<p>Virginia Polonio's details have been corrected to remove duplicate text.</p> <p>Some of the table and figure headings are very long which makes the lists appear busy so we have shortened them in the lists.</p> <p>Pg 16. There is one TAC for Icelandic summer spawning herring, which can be taken by either metier. In recent years it has been entirely caught by pelagic trawl.</p> <p>Figure 2. We note the comment about the figure quality. Where possible we have used high resolution snips of figures inserted from elsewhere but in some cases quality is limited by that of the original images.</p> <p>Pg 17, Pg 21. References have been included in the text.</p> <p>Pg. 22. Figure added</p> <p>Natural mortality years have been corrected – thanks</p> <p>Duplicate text on page 47 has been removed.</p> <p>Section 3.5.1.4 (now 3.5.4). The Monitoring, control and enforcement section has been structured like that as the first part describes the bodies involved and the system and processes. The sub-section on monitoring, control and surveillance information then describes all the available information. We did consider organising the section as you suggest but there is a significant amount of this MCS information and we think it is useful to include it in the report. To integrate it earlier would have made a very</p>

Question	Yes/No	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)
		<p>The monitoring and policing of Icelandic fishing is enhanced and strengthened by the traceability measures required for exports, since over 90% of all catches end up being exported in some form."</p> <p>For section 3.5.1.4 Monitoring, control and enforcement this section and the material under Monitoring, control and surveillance could be merged and better presented. In the main paragraph some of information is presented but then the tables/figures are not referenced and then provided until the MCS section. I recommend reviewing and reorganizing section 3.5.1.4.</p> <p>Harmonization page 53- UoC 2 and 3 are referred to but I think they mean UoC 1 and 2.</p> <p>Many places in the report where References are not available- run an error check on "Error! Reference source not found".</p> <p>The report needs a good editing for grammatical/style also.</p>	<p>disjointed and unwieldy description of the system and information available. Hence, we settled for organising the section as shown.</p> <p>Harmonisation pg 53. UoAs have been corrected – thanks</p> <p>Cross-referencing errors have been corrected.</p> <p>The report has been edited again which has hopefully picked up the grammar/style issues!</p>

Table 34. Peer Reviewer B PI Comments and CAB response.

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
1.1.1	Yes	Yes	NA	The team provides generally adequate information to support the score. That two (2) different models were applied to the stock assessment provides further support on overall stock condition relative to the Btrigger and Blim. However, the AT should have provided more details in the report on characteristics of the second model (used in the MSE). Also, more information on the difference in the survey index and year class estimates from the catches is needed- particularly as to spatial overlap. Finally, if estimates of confidence intervals around harvest rate (F) exist- these should be provided in the report to further support that stock is fluctuating around MSY(Fmsy) as the information presented in the report is minimal support. The graphic images support that only once in the GT has F rate been above Fmsy however in recent years there is evidence of increasing F.	No response required	Accepted (no score change)
1.1.2	Yes	Yes	NA	This PI not scored as there is no indication/evidence that the stock condition is at a level to require a rebuilding strategy/plan.	No response required	Accepted (no score change)
1.2.1	Yes	Yes	NA	Adequate information was provided supporting a harvest strategy that is being implemented and that is providing adequate control on the stock. The strategy works through a collection of various inputs on science (stock assessment), controls on effort across both the trawl and seine fleets and the strategy has the capacity/flexibility to respond to changes in the system. The strategy is Precautionary and support that the strategy works to achieve the long term management goals (i.e., maintain stock at/near MSY) exists. Important support for the harvest strategy being effective includes the analysis of historic TACs to management goals and resulting changes	No response required	Accepted (no score change)

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
				in the HS as warranted. Additionally the incorporation of uncertainty and bias into assessment provides further credence the HS is working to achieve the goals/objectives.		
1.2.2	Yes	yes	NA	<p>HCRs are in place and well understood as to objectives - the HCRs are designed with objective of maintaining stock in a healthy state (i.e., at a level at/around MSY). Additionally the HCRs have mechanisms in place towards minimizing exploitation if the stock became impaired. The various components are functioning well together towards achieving long term management goals- e.g., various protections have been in place over since ~ 2006 to minimize unwanted exploitation (protection on juveniles, gear restrictions (mesh sizes), seasonal TACS, etc.). The system is however designed for single species thus does not address the stock impact on the ecosystem. The HCRs are reviewed periodically and changes implemented as needed (i.e., through changes in management harvest rates needed to achieve the precautionary MSE strategy). Uncertainties in the system (i.e., assessment/variability in data inputs (e.g., natural mortality) / use of MSE simulation framework) have been incorporated providing more than sufficient support that the HCR is robust to main uncertainties. Monitoring is generally good and provides adequate support that the information inputs that are used to evaluate the HCRs performance are reliable.</p> <p>The inclusion of some details in the actual report (not just in the scoring tables) on the simulations would have been helpful although I do not feel there would have been a scoring impact- just an improvement in how the information was presented and ultimately producing a better report.</p>	Assessment Team included more details about MSE and evaluation of HCR by ICES have been included in the report	Accepted (no score change)

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
1.2.3	Yes	Yes	NA	Adequate information was provided supporting that sufficient inputs are being collected/monitored to address the overall harvest strategy (fundamental design) and the individual components of the HC rules and their effectiveness. There are fundamentally good monitoring systems to collect these inputs and they are routinely monitored for comprehensiveness as to this stock. There are multiple indicators from these monitoring systems that provide more than one indicator from which to evaluate the results/effectiveness of the Harvest strategy. The monitoring seems to be equally effective for both the trawl and seine sectors.	No response required	Accepted (no score change)
1.2.4	Yes	Yes	NA	<p>The AT provided an adequate but minimum level of information on the stock assessment in the report and further details in the actual scoring tables. While the report provided a minimum level of detail- more details as such presented in the scoring tables helped to bolster the confidence in the overall stock assessment. Moving/adding some of this additional material to the report itself is justified as it provides an additional level of support of sound stock assessment. The stock assessment (SA) is sound/has been tested by experts; having a second model provides further credibility in results.</p> <p>The model results allow status determination relative to accepted and well understood management references (Bmsy, Btrigger, etc.) to be made. The entire process is reviewed periodically and subjected to external peer. The SA includes the major uncertainties both in data inputs and model assumptions thus is very proactive to impacts on results from biases/uncertainties.</p>	Alternative model results and results investigation different models and input parameters have been included in the SA section.	Accepted (no score change)

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
				This reviewer would have liked to see more details on differences in model results due to survey indices/catch inputs as these were alluded to but not fully characterized.		
2.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	<p>The AT described well the approach and the source/type (e.g. landings/observer reports, etc..) used to evaluate/quantify current interactions of this fishery (trawl/seine) with other species. There are no main species in the UoA. The AT provided a good synopsis for each of the minor species as to estimated stock level and current harvest rate (relating to level specified in Harvest strategy) for each.</p> <p>While all minor species are believed to be above the proxy used to assess MSY status ($B > B_{trigger}$) many of these minor stocks appear to be experiencing harvest rates above the specified rate set/advised by management ((i.e., $F_{current} > H R_{mang. rate}$). These are halibut, blue whiting, ling, mackerel, cod, and haddock). Time series charts were only provided for mackerel thus it cannot be determined from the information presented how many times the harvest rate has been above F_{msy} for the other species. For mackerel F_{rates} have been higher than F_{msy} since 1985 however SSB seems to be several fold greater than $B_{trigger}$ since 2008.</p> <p>Time series charts or tables of SSB and F rates are needed to quantify whether the other minor species are at a level above where PRI would be impaired. In some cases, the AT states that the stock is 'well above $B_{trigger}$' but does not provide quantitative support. Further, in PI 2.1.2- the AT reports that some of the minor species do not have a formal stock assessment but rather the indicators of stock</p>	Comment noted. The catch data used in the assessment has been updated. Primary species are now assessed separately for UoA 1 and UoA 2 and there are now main primary species identified for UoA 1. Text has been added to clarify the reference points used in relation to the PRI and stock status of the main and minor species with regard to PRI. Figures have been added for all the stocks.	Accepted (no score change)

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
				condition are based on empirical results (e.g. survey results) and again a time series of these values would yield information to better quantify stock condition relative to management goals.		
2.1.2	Yes	Yes	NA	<p>The team provided good overview of whether a management strategy and measures exists for the purposes of "to maintain or to not hinder rebuilding of primary species, and whether the UoA regularly reviews and its measures, as appropriate, to avoid the mortality of unwanted catch". The team was careful to identify if the measures exist for all the minor species or just some fraction (and which if not-e.g. mackerel and whiting, both stocks with $F > HCR_{management}$ F). This was useful in evaluation of where the largest uncertainties lie with regards to quantifying impacts from the UoA on the ecosystem</p> <p>Although, it is clear that there are virtually no probability of interactions with primary species this is not the case for some other, "minor species". It was also clearly stated that science advice is variable between the other minor species and that the management strategies implementation (and also the actual systems vary) is also variable between these species.</p> <p>However, as noted by the AT "In accordance with this MSC interpretation, a management strategy is not necessary in the absence of any main primary species in the catch. The SG60 and SG80 requirements are met." Notwithstanding this provision, the management strategy in place for the UoA (trawl/seine) has additional systems in place to discourage area exclusions, non-targeted species, by-</p>	No response required	Accepted (no score change)

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
				catch, and/or discards and there are adequate monitoring systems to quantify (logbooks/observers). The team covered issues that could contribute to such: high grading but again- sufficient information supports that the level is likely negligible. Very comprehensive and thorough characterization.		
2.1.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	<p>The AT provided information that generally supports that "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"- the material presented addressed the relevant components of monitoring (logbook records/catch data) and regulatory (observer data) to justify the scores.</p> <p>However, in the case of the minor species- time series of SSBs and harvest rates- were not presented from the stock assessments so it is not clear that there is 'adequate' information to evaluate all of the risk posed by the UoA or the effectiveness of the strategy to manage the minor species relative to 2.1.3 SIb or SIc. Quite possibly the time series of SSB, F's for these species would support a score of 100 but it is not clear from the information presented and certainly not with a 'high degree of certainty' or the inclusion of a statement as to 'how many times in the time series was the $F_{rate} > F_{msy}$' or similar such statement.</p>	<p>As noted above, the catch data used in the assessment has been updated so that primary species are now assessed separately for UoA 1 and UoA 2.</p> <p>In response to the Peer Reviewers comments additional information has been provided see response to PI 2.1.1.</p>	Accepted (no score change)
2.2.1	Yes	Yes	NA	The AT provided sufficient information to support that the operations of the UoA are currently working effectively towards maintaining secondary minor species that interact with the UoA above biological based limits. The support includes first principal information (landings, cpue surveys, empirical stock assessment outputs). There are no main secondary species interacting with this UoA.	As noted above, the catch data used in the assessment has been updated and there are now no secondary species identified for either UoA.	Accepted (no score change)

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
2.2.2	Yes	Yes	NA	The AT justified the scoring well, noting there are no main secondary species caught by this UoA. Additionally, the information supplied supports a partial management strategy that is working towards keeping the minor species with biological based limits. There are adequate monitoring systems in place adding a generally high level of confidence in the basic information (i.e., landings by species, discard estimates) and review mechanisms that continually identify and advance improvements in data collections and stock assessments.	As noted above, the catch data used in the assessment has been updated and there are now no secondary species identified for either UoA.	Accepted (no score change)
2.2.3	Yes	Yes	NA	The quality of the information base is good and the data collection process undergoes periodic review and modifications as needed. The collective statistics are adequate to quantify if main species are being caught by the UoA however not sufficient to quantify all risks by the UoA to minor secondary species as stock status has not been determined for all minor secondary species.	As noted above, the catch data used in the assessment has been updated and there are now no secondary species identified for either UoA.	Accepted (no score change)
2.3.1	Yes	Yes	NA	The approach to evaluating 'Evaluation of whether the UoA meets national/international measures for protection of ETP species and impact either direct or indirect' are sound. The AT used landings data, observer records and captain log reports from not only Icelandic herring vessels but the entire Icelandic pelagic fleet and any ETP species. This adds additional confidence in the analysis. Further addressing impacts either from gear loss and/or impact due to ecosystem food web relationships is helpful. Prudent measures are in place to discourage loss of gear at sea and ghost fishing- these measures not only serve to minimize impacts on ecosystem components relating to this UoA but also other fisheries operating in the same areas thus adding to the overall management system additional confidence in the aim of minimizing unwanted catch.	As noted above, the catch data used in the assessment has been updated. There are now 5 years worth of data.	Accepted (no score change)

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
				Having more than 3 years of landings data to evaluate would have added possibly even more confidence to the scores but does provide a sound picture of the 'current' condition.		
2.3.2	Yes	Yes	NA	From the information presented- there is more than sufficient -support that the systems/measures in place are working towards minimizing adverse impacts from the UoA on ETP species. Having more than 3 years of landings data to evaluate interactions overall (as possibly distributional changes in the ETP species/and or herring fleet could exist) would have added more confidence to the scores. The measurese and results are reviewed- however the frequency at which was not strictly discussed; it is expected that the frequency of regular working group meetings is sufficient however.	As noted above, the catch data used in the assessment has been updated. There are now 5 years worth of data.	Accepted (no score change)
2.3.3	Yes	Yes	NA	As noted earlier, the monitoring systems (landings, captain logs and observer samples) are generally providing a good level of confidence in allowing minimum impact of the UoA on ETP species. The systems are under review and have inherent flexibility to allow modifications as become needed. These should be sufficient barring any significant funding issues or breakdown in rapport amongst stakeholders (management/industry).	No response required	Accepted (no score change)
2.4.1	Yes	Yes	NA	Extensive studies documenting the nature/operations of pelagic trawl and seine fisheries off Iceland exist and worldwide. The primary literature (Source: FAO) indicates that these fishing methods have no physical impact on pelagic habitats (FAO Fisheries Resources Division 2001, 2018). The key anthropogenic impact on Atlantic oceanographic processes is considered to be climate change. The main commonly encountered habitat is the epipelagic habitat.	No response required	Accepted (no score change)

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
				<p>Sufficient mapping results provided by the AT supports that the UoA does not have share the same spatial overlap and depth overlap with vulnerable ecosystems (VMEs in the NE Atlantic) and that the VMEs are located on the seabed whilst the fishery takes place in the water column thus providing virtually no support that the Icelandic herring UoA here could impact the habitat in a detrimental way as these habitats (VME's) are not encountered. The support is at a high level of confidence.</p> <p>Similarly, due to the nature of the fishing operations (i.e., designed to work in the pelagic water column) the UoA is not likely not to cause detrimental harm with any of the minor habitats (i.e. not commonly encountered nor VMEs - i.e. benthic habitats, excluding those that have been identified as VMEs. Further, of the interactions/violations of vessels in VME's during 2018 by Icelandic coast guard, none were vessels from the pelagic fleets. Summarizing additional /earlier years of coast guard violations would of course be informative. This recent record indicates the current measures are likely working.</p>		
2.4.2	Yes	Yes	NA	<p>There are adequate strategies in place to ensure the UoA does not pose harm/risk to the habitat. These appear to be working. MPAs have been designated to protect these features. This provides evidence that there is a strategy in place for managing impacts of all fishing activities on marine habitats. There is clear quantitative evidence that a strategy for protecting marine habitats is being implemented within the Icelandic EEZ for example, through monitoring and enforcement of fishing activity by the Icelandic Coast Guard in Icelandic waters.</p>	No response required	Accepted (no score change)

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
2.4.3	Yes	Yes	NA	The fishery operation and areas have been extensively studied. Information is overall superior in quality. The use of VMS data allows interactions between fleet and habitats to be quantified. However, the physical interaction with the gear and the pelagic environments has not been fully addressed and would require extensive and expensive studies long term. Although mapping programs are extensive, further monitoring of both physical with gear and on resulting changes in habitat structure and function over time are needed.	Comments noted. No response required	Accepted (no score change)
2.5.1	Yes	Yes	NA	The AT provided sound reasons that the UoA is not causing serious or irreversible harm to the key elements of ecosystem structure and function on basis of a) operational characteristics of the UoA and further that the Icelandic summer-spawning herring stock is not considered to be a "key LTL" stock. However, there is some uncertainty in quantifying impacts on ecosystem function by the UoA as the stock contributes ~ 10% to consumer biomass in the system. Continued ecosystem studies are needed to refine/update this estimate.	Comments noted. No response required	Accepted (no score change)
2.5.2	Yes	Yes	NA	Good support that measures <u>are in place</u> to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function was provided (e.g., management measure to control harvest and maintain spawning biomass in alignment with management objectives). This strategy has been tested through MSE and appears to be partially successful. Likewise, little to no support for adverse impact on habitat was found. However, although information suggests the measures are working to minimize impacts on other ecosystem components (bycatch of non-target species).	No response required	Accepted (no score change)

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
2.5.3	Yes	Yes	NA	The systems the UoA are operating on are well studied- including the oceanography, habitats and the fishery for the Icelandic herring stock and the biology- this is supported by the comprehensive summaries by the AT of each component. Further, examination of the uncertainties in the stock assessment and the impact on stock biomass will better refine this component. Continued and increased monitoring of non-target species in the landings and observer coverage will also reduce the uncertainty in the level of risk to non-target/ETP species.	Comments noted. Measures have been and are being taken to improve recording of non-target species as detailed in the report in section 3.4.4. No further response required.	Accepted (no score change)
3.1.1	Yes	Yes	NA	AT provided comprehensive description of the management system which includes clear objectives/binding procedures and governance accountabilities. The system is transparent and open to all in terms of disputes and has been tested.	No response required	Accepted (no score change)
3.1.2	Yes	Yes	NA	The report described the consultation process within the management system as to 1) roles and responsibilities which are clearly defined and 2) the mechanisms for consultations carried out via regularly scheduled meetings across a variety of stakeholders. The latter appears to be open / transparent and iterative- stakeholders inputs are incorporated/considered in developing management measures (e.g., harvest control rules); this is proactive and aids in facilitating rapport with science/management/industry.	No response required	Accepted (no score change)
3.1.3	Yes	Yes	NA	Clear long-term objectives are set out in legislation and although 'The precautionary approach' is not explicitly mentioned in the legislation on fisheries management in Iceland nor has it been introduced in a general form in Icelandic law but it is a requirement in a number of international agreements that Iceland has signed.	No response required	Accepted (no score change)

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
3.2.1	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	<p>The report provides high level of confidence that "Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 are explicit within the fishery-specific management system".</p> <p>Although general support was provided to demonstrate short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principle 2", the long - term objectives support for P2 was not at the same level of confidence as for P1. While the UoAs catches of 'secondary species, are admittedly small so that they are classified as 'minor', additional quantitative information is needed to provide a high level of confidence to support the 'partial' score for S1a at SG 100 is not supported. I would score it 'NO' as the long-term objectives have not been measured for all of the minor secondary species thus are not explicit within the management objectives.</p>	In the absence of explicit measurable objectives for secondary species the Assessment Team agrees that the scorings should be reduced to 80.	Accepted (non-material score reduction)
3.2.2	Yes	Yes	NA	<p>There are established procedures in the management system for: the decision-making processes that result in measures and strategies to achieve the objectives of the fishery (e.g., setting of TACS, regulatory practices (discards), etc..). The objectives are clear and specific to the purpose of maintaining the precautionary approach to management of the stock. The process is orderly and transparent and involves an annual meeting (i.e., stock assessment review, convening of working groups to identify and adaptively solve problems). The system also has a defined approach to actual disputes in the fishery however it is felt that not all issues have been handled by the process.</p>	No response required	Accepted (no score change)

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
3.2.3	Yes	Yes	NA	<p>The report provided good background on the various systems for monitoring, control and surveillance. These include measures on: individual fishers, a discard ban, gear regulations and closure areas, TACs. Further control systems exist for inspections at sea. In 2017 and 2018, the Directorate of Fisheries had Inspectors present at 20% of all landings by pelagic vessels and in 2018 Inspectors were onboard 27 of the 690 pelagic vessel trips (4%). Clearly the decline in inspections for 2018 is worrisome.</p> <p>It has been reported that 'There are cases where individual fishermen have been found to cheat through illegal landings and/or discarding. "There is no reliable evidence that these violations exceed a few percentages of the TACs". The Directorate of Fisheries together with the Coast Guard monitors gear regulations and area closures so this collaborative monitoring is proactive. The extensive monitoring and the low number of violations observed do indicate that these rules are respected' giving more confidence that the current system is working successfully. Recently, "A committee has been established to address the surveillance of weighing of catches (both at harbour scales and in-house weighing) and the surveillance of discarding. This points to the flexibility in the system and the aim to further minimize biases and uncertainty in the overall process and adaptively respond to situations as they arise.</p>	No response required	Accepted (no score change)
3.2.4	Yes	Yes	NA	There have been several external reviews and evaluation of the performance of the management system dating as far back as 20 years. The reviews have addressed multiple parts of the fishery management system including: catch (harvest) rule, the legal and economic aspects of Icelandic	No response required	Accepted (no score change)

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
				fisheries, and the annual stock assessments undergo ICES review. Procedures for handling issues identified through these reviews have been developed (e.g., such as example, there are Committees working at the moment to address the concerns raised over by-catch recording and mitigation, particularly in the gillnet fisheries).		

8.3. Appendix 3. Stakeholder submissions

8.3.1. Prior to and during site visit week commencing 8th October 2018.

At this stage the assessment was being undertaken by Lloyd's Register.

Written submissions from stakeholders

No written submissions were received prior to or during the site visit.

Verbal submissions

University of Iceland

Meeting details:-

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Maciej Tomczak
P2 Team Member	Jim Andrews
P3 Team Member	Asgeir

Meeting Location	Tæknigarður, University of Iceland Campus
Date	9 th October 2018
Stakeholder's Name	Affiliation
Gunnar Stefansson	Professor
Erla Sturludóttir	Post-Doctoral Researcher

1. Status

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

Professor Stefansson and Dr Sturludóttir are members of a research group that specializes in ecosystem modelling.

2. Stakeholder Key Issues

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

Principle 1

- The status of Icelandic Summer Spawning Herring with respect to the MSC's "Key LTL" criteria was discussed. It was agreed that the Ecopath model for the ecosystem would be shared with the assessment team to allow evaluation of the stock's status.
- It was noted that the low stock biomass and F at present, as well as the problems with *Ichthyophonus* gave rise to concerns about the uncertainty of the stock assessment.
- It was noted that some vessels land filleted fish, and that there was a possibility that discarding may be an issue for these vessels.

Principle 2

- All of the Principle 2 components (non-target species, ETP species, habitats & ecosystems) were explained by the assessment team. Professor Stefansson and Dr Sturludóttir felt that it was appropriate for them to discuss ecosystem interactions.
 - Icelandic Summer Spawning Herring were considered unlikely to play a “key” role in the ecosystem, though there was some uncertainty about the importance of their relationship with / importance for cetaceans.
 - For Norwegian Spring Spawning Herring it was suggested that the assessment team should contact Daniel Howell and Bjarte Bogstad (Institute of Marine Research, Norway) who has developed an ecosystem model. For EwE model contact Michaela Aschan from Tromsø Univ, Norway.
- Management
 - It was noted that there is legislation in place supported by appropriate penalties which act to constrain fishing activity, but that the management system was not developed or designed for ecosystem management; it is a single-species system.
 - It was suggested that the assessment team should discuss multi-species considerations with MFRI.
- Information
 - It was felt that the key elements of the ecosystem are broadly understood, and that the main impacts of the UoA can be inferred, though detailed investigations have not been carried out.
 - The main functions of the ecosystem components were felt to be known.
 - It was understood that information about impacts of the UoA and monitoring of the fishery and ecosystem components was carried out by MFRI.

Principle 3

- No particular concerns were raised with respect to Principle 3.

3. Actions / Other issues

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

Actions

- Assessment Team to:-
 - Contact Cecile Hansen?, Daniel Howell and Bjarte Bogstad who has developed an ecosystem model. For EwE model contact Michaela Ashuan? From Tromsø Univ.
 - Ask MFRI about:-
 - Level of observer coverage
 - Discard monitoring
 - Monitoring of interactions with ETP species
- Erla Sturludóttir:-
 - Provide copy of ecosystem model to Maciej Tomczak

Hafrannsóknastofnun - Marine and Freshwater Research Institute

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Maciej Tomczak
P2 Team Member	Jim Andrews
P3 Team Member	Asgeir Danielsson

Meeting Location	Skúlagata 4, 121 Reykjavik, Iceland
Date	10 th October 2018
Stakeholders Name	Affiliation
Guðmundur J. Oskarsson	Hafrannsóknastofnun - Marine and Freshwater Research Institute

1. Status

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

The Marine & Freshwater Research Institute provides scientific advice on fish stock status to the Icelandic Government.

2. Stakeholder Key Issues

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

Principle 1: Norwegian Spring Spawning Herring

- ICES advice is due to be published for this stock after the Coastal States agree on the new long term management plan. This is likely to be on or around the 22nd or 23rd of October.
- Stock status
 - Stock biomass is declining but above the MSYBtrigger reference point of 3.184Mt.
 - The decline in stock biomass is largely due to poor recruitment over recent years; the time series of recruitment shows a similar trend to that of Icelandic Summer Spawning herring.
 - F_{MSY} is presently estimated at 0.157.
- Harvest Control Rules
 - ICES have provided advice on the management strategy options proposed by NEAFC.
- New assessment model (XSAM, the same as used for assessing the stock size since 2016 but with a simulation feature) was used by ICES to perform MSE and evaluate HCR was discussed.
- Similar methodology (with a different model) was used for evaluation HCR for Icelandic summer-spawning herring (and NEA mackerel and others)

Principle 1: Icelandic Summer Spawning Herring

- Stock status
 - Current ICES advice indicates that the stock remains below MSYBtrigger (273 000 t) and above Blim (200 000 t).
 - Recruitment has been low since 2005/6 and in most recent years has been at a record low level.

- Poor recruitment does not seem to be linked to the wider spread of mackerel; the body condition of adult herring has remained good, indicating that inter-specific competition does not seem to be an issue.
- Severe *Ichthyophonus* infection in the stock since 2018 has increased natural mortality in the stock, especially during 2009-2011 and 2017-2018.
- Harvest Control Rules
 - A new harvest control rule has been introduced following the ICES evaluation of different HCRs in June 2017.
 - A TAC of 35,186t was advised for 2018-19 and was been adopted by the Icelandic Government in July 2018.
 - The HCR accounts for a possible continuation of the *Ichthyophonus* infection and the mortality caused by it.
 - The HCR is due to be revised every 5 years.
- New assessment model used by ICES to perform MSE and evaluate HCR was discussed.
- Similar methodology was used for evaluation HCR for Norwegian Spring Spawning Herring (and NEA mackerel (same model) and others).
- Information
 - An acoustic survey provides information on the level of recruitment to the stock
 - Herring samples from fishing vessels are used to determine the proportion of ISSH and NSSH in the herring catches from areas where the stocks may overlap.

Principle 2

- Herring is a prey for Orcas around Iceland. The spatial distribution of ISSH was very variable, and it was not thought likely that herring would be an important prey item for seabirds unless the herring are in shallow coastal waters.
- Cod predation on herring increased when *Ichthyophonus* incidence was higher.
- Information about catches and landings of non-target species would best be obtained from Fiskistofa.

Principle 3

- Guðmundur was asked about the cooperation between scientists from the different coastal states, both within and outside ICES. He said that they were aware of the conflict but said that the cooperation was good and he didn't think it biased the outcomes. It was noted that the HCR for AS-herring has been very cautious. The Icelandic Government had made a formal commitment to follow the advice provided by scientists in accordance with the HCRs, which should ensure that TACs are set in line with the HCRs.

3. Actions / Other issues

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

Actions

- Assessment Team to:-
 - Provide a note of the meeting to Guðmundur for comment.
 - Discuss observer trips on fishing vessels with Fiskistofa.

Fiskistofa – Directorate of Fisheries

Meeting details

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Maciej Tomczak
P2 Team Member	Jim Andrews
P3 Team Member	Asgeir Danielsson

Meeting Location	Dalshrauni 1, 220 Hafnarfjörður
Date	10 th October 2018
Stakeholders Name	Affiliation
Þorsteinn Hilmarsson	Director of Division, Fiskistofa
Saevar Gudmundsson	Head of Department, Fiskistofa

1. Status

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

Fiskistofa is the Icelandic Government agency responsible for the implementation of laws and regulations governing the management of fisheries in sea and fresh water, and also collecting and disseminating information about these fisheries.

2. Stakeholder Key Issues

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

After discussing the MSC Principles, the interviewees indicated that they were happy to discuss the management of the fishery (MSC Principle 3).

Principle 3

- Vessel quotas have been issued by the Icelandic Government for herring since the resumption of fishing for Icelandic herring in 1976s. In the beginning the quotas were not transferable (IQs) but when the quota system was introduced in 1984 the quotas were made transferable (ITQs). The allocation of the quotas in 1984 was based on their track record for the 3 previous years. Their share in the total determined their share in the allocations during later years. ("grandfathering")
- Fiskistofa are responsible for monitoring fishing activity and quota uptake. The procedure was explained:-
 - Vessel skippers are required to record catches whilst at sea in e-logbooks. Data are recorded by haul, and all species caught have to be listed.
 - Vessels are required to "hail in" at least 4 hours before landing their catch. There are over 70 harbours in Iceland.
 - Each Icelandic harbour has a certified officer responsible for weighing all landings from vessels; these officers are municipal employees trained by Fiskistofa. Sealed and certified scales are maintained in each harbour.
 - The weight of landings recorded from each vessel are entered by the harbour officials into a database, providing for real-time monitoring of quota uptake.

- E-logbook catch declarations are reconciled to landings data to ensure their accuracy.
- Information on catches and quota uptake is published on the Fiskistofa's website (www.fiskistofa.is).
- The weight of all species landed is recorded at Icelandic harbours. If a vessel lands any non-target species, the landing is deducted from the vessel's quota allocation for that species. If a vessel does not have any quota allocation for that species, it is granted a period of up to 3 working days to obtain a quota allocation from another vessel. During this period the vessel is not permitted to fish. If the vessel does not obtain quota within the time period it may lose its fishing licence.
- All herring are landed in Iceland to factories that process herring for human consumption. Herring offal is processed for fishmeal and oil.
- Two vessels carry out processing at sea. These vessels are required to land both the fillets and the offal. Fiskistofa raise the weight of the fillets to provide an estimate of greenweight and also check this against the weight of offal landed (which is processed for fishmeal).
- Catch composition monitoring
 - When fishing east of 17°W vessels are required to take samples of 50 herring from each haul and determine the number of Icelandic Summer Spawning and Atlanto-Scandian Spring Spawning herring in that sample (by looking at gonad ripeness) and record this information. If the proportions reported by vessels fishing in the same area differ, Fiskistofa will target inspectors to that area.
 - To the east of Iceland, where catches of non-target species are more likely, vessels are required to take a sample of their catch (50 ind.) and analyze its composition by species for scientific purposes.
- Vessels are required to record any interactions with ETP species in their e-logbooks.
- Real time closures may be implemented if more than 30% of the herring catch from a sample of 200 fish is less than 27 cm. The extent of the closed area is agreed with the vessel skipper based on the area fished, and applies to the whole fleet for a period of 1 week. It was noted that a closure has not been necessary for several years.
- Vessel design
 - Vessel designs and operating procedures have to be approved by Fiskistofa to ensure that there is no opportunity to discard fish, and to ensure that fish are handled appropriately aboard the vessel.
- Fiskistofa provide training to vessel crews to ensure that they are aware of the correct procedures for monitoring and managing the catch of all fish.
- Enforcement & Compliance
 - AIS is mandatory on all fishing vessels so that their location is known at all times. An operational AIS transmitter is mandatory. If a vessel stops transmitting an AIS signal it will immediately be the focus of enforcement (and potentially rescue) activity.
 - If catches recorded in e-logbooks do not match landings data the fishing licence for a vessel may be suspended for between 6 weeks – 1 year.
- Assets
 - Fiskistofa have 23 Fishery Officers, 3 of which are specially trained for work aboard freezer trawlers.
 - Harbour weighing offices also have the legal and enforcement powers of a Fishery Officer, allowing them to board and inspect fishing vessels in harbour and take any necessary enforcement action.
 - At-sea inspections are carried out by the Icelandic Coastguard in collaboration with Fiskistofa.
- Fishery inspectors aim to inspect every vessel in the fleet at least once a year.

- Fiskistofa use a risk-based approach to enforcement, and will particularly target any unusual fishing activity.
- The number of inspections is reported in the Fiskistofa Annual Report.
- Levels of compliance are reported to be good. Some enforcement action has been taken recently with respect to weighing of fish at on-shore factories. There is no evidence of systematic non-compliance at sea by the herring fleet.
- Future enforcement
 - Fiskistofa are working closely with the Ministry to improve monitoring of fisheries. Options being examined include the use of CCTV aboard vessels and in harbours to ensure that all catches are recorded, and also changes in procedures for improving catch reconciliation and traceability and enforcement.
 - These changes are still being discussed with stakeholders, and proposals would be presented to Parliament before becoming law.
- Slippage
 - Slippage of fish from nets is illegal.
 - Vessels cooperate to share catches in situations where one vessel may catch more fish than it is capable of landing.
 - No direct observations of slippage have been made by Fiskistofa officers, though it was noted that in the period when ISSH were first inshore there were some observations of dead herring in coastal areas which may have been due to slippage. Fiskistofa responded to concerns about the risk of slippage at this time by requiring vessels to operate in pairs and also requiring them to carry an inspector whilst fishing; the ISSH are now further offshore and shoals are not as dense, so this is no longer an issue of concern.
- Role with stock management by NEAFC
 - Fiskistofa participate in the NEAFC working group of control experts that was established in 2003.
 - In 2018, Fiskistofa staff led discussions at the NEAFC working group concerning consistent approaches to weighing fish, recording and reporting landings data.
 - Fiskistofa also work with colleagues in other countries to ensure that the catch and landings statistics provided to NEAFC prior to meetings are as accurate as possible.
 - The Directorates of Fisheries from the coastal states cooperate in policing the fishing in international waters.
 - They hold conference and exchange information about methods of weighing etc. There is confidence in the accuracy of the catch data from the different countries.
- IUU fishing is not considered to be a problem for either ISSH or NSSH stocks.

3. Actions / Other issues

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

Actions

- Assessment Team to:-
 - Provide a note of the meeting to for comment.
- Fiskistofa to:-
 - Provide a URL for catch data for the assessment team.

Iceland Sustainable Fisheries

Meeting details

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Maciej Tomczak
P2 Team Member	Jim Andrews
P3 Team Member	Asgeir Danielsson

Meeting Location	Fosshotel, Reykjavik (8 th October) & Skype conference call (12 th October)
Date	8 th & 12 th October 2018
Stakeholders Name	Affiliation
Kristinn Hjalmarsson	Project Manager, Iceland Sustainable Fisheries

1. Status

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

Icelandic Sustainable Fisheries (ISF) are the client for the fishery assessment.

2. Stakeholder Key Issues

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

Principle 1

- Icelandic Summer Spawning Herring
 - Stock status is below MSYBtrigger. A new management plan was adopted last year.
 - The Icelandic Government is following the management plan and ICES advice on stock management. KH will provide the assessment team with evidence of this.³⁸
- Norwegian Spring Spawning Herring
 - The stock is above MSYBtrigger.
 - The autonomous quotas allocated by the Coastal States remain above the TAC advised by ICES and the level corresponding with the long term management strategy for this stock, despite ISF and other fisheries lobbying on this issue.
 - The MSC-certified fisheries for this stock are working together to seek to address this issue (see Principle 3).

Principle 2

- No specific issues of concern were raised.
- Non-target species
 - The catch of herring in the fishery was typically very “clean”, comprising mostly of herring. Very few non-target species are caught.
 - “Slippage” of fish does not occur in the trawl fishery. It can occur very rarely in the purse seine fishery, and typically only if a cetacean is within the net; in these cases the fish are slipped before they are densely packed in the net. Only 1 such event has been recorded in the past 5 years. Vessels operate in close proximity to one another, so if an excess catch is made by one vessel another will be on-hand to share the catch and avoid slippage.
- There is a requirement to record interactions with ETP species if they occur; however these are negligible.
- The Icelandic Government and ISF are working together on a “data mining” project to make it easier to analyse catch composition.

Principle 3

- The MSC-certified fisheries for Norwegian Spring Spawning herring are subject to the same condition of certification for PI3.1.1. This condition was triggered by the allocation of autonomous quotas for Norwegian Spring Spawning herring, which resulted in the total quota allocation exceeding both the TAC agreed by the coastal states and the level advised by ICES.
- The certified fisheries met in London on the 9th and 10th October to discuss how to address issues of concern about stock management. The key points agreed at the meeting were:-
 - The client fisheries will seek to harmonise the Client Action Plans across each NEAFC fishery (Norwegian Spring-Spawning Herring, Blue Whiting, and NEA Mackerel).
 - The client fisheries will ask their CABs to harmonise the timescales for the conditions that apply across all 3 fisheries.
- At the national level in Iceland:-
 - A review of existing fisheries legislation has been carried out in order to consolidate and simplify the management regime. This review is available on the Icelandic Government’s website.
 - Work is underway to develop a “code of conduct” that could apply to all Icelandic fisheries. The working group on this project was due to report earlier in the year, and its report is expected imminently.
- Observers are put on board fishing vessels by Fiskstofa to monitor compliance with all regulations and the level of fish bycatch.

3. Actions / Other issues

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

Actions

- Assessment Team to:-
 - Provide a note of meeting for comment.
 - Contact other CABs & the MSC about the harmonisation of timescales for conditions of certification across fisheries.
- ISF:-
 - Provide evidence of Icelandic Government’s implementation of the harvest control rules.³⁹
 - Provide URLs for the Icelandic Government’s review of fisheries legislation and the “code of conduct”.

8.3.2. Prior to and during site visit week commencing 12th August 2019

From this stage forward the assessment was being undertaken by the present CAB, SAI Global

Written submissions from stakeholders

No written submissions were received prior to or during the site visit.

Verbal submissions

Note that the site visit was undertaken jointly with the ISF capelin and ISF mackerel surveillance audits, consequently some of the information discussed relates to those fisheries. In advance of each discussion a presentation was held to introduce the Assessment Team, purpose of the audit and its objectives. Attendees were asked if they were content with observers being present and, in any case, offered the opportunity to raise any matters with the Assessment Team separately if they so wished. They were encouraged to share information but at the same time noted that any information used in the assessment must be available to be shared publicly.

Iceland Sustainable Fisheries

Assessment Team	Names
Lead Assessor	Virginia Polonio
P1 Team Member	Maciej T. Tomczak* #
P2 Team Member	Virginia Polonio
P3 Team Member	Conor Donnelly

*Participating remotely via teleconference following Variation Request granted 6th August 2019 – see section 8.7.4.

#As this was a joint site visit for the ISF mackerel and capelin fisheries, the P1 Team Member for those fisheries, Hans Lassen, was also present in the meetings.

Observer	Sonia Slavinski, MSC
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Meeting date	13 th and 15 th August, 2019
Stakeholders name	Affiliation
Kristinn Hjalmarrson	Icelandic Sustainable Fisheries

Meeting note
<p>Discussions covered the following areas:</p> <ul style="list-style-type: none"> • Capelin stock assessment. Marine mammals taken into account. • Decision making and consultation process. No political involvement, scientific advice produced, HCR applied, resulting figure set as TAC. • National Audit Office Report. Directorate of Fisheries 6 weeks surveillance at weighing stations. Undertaken for 2 licensed scales. • Mackerel. All Coastal States not included in NEAFC meetings. • NEAFC conflict resolution process. Kristján Freyr Helgason interview very good review of dealings between Coastal States. Kristinn translated and gave to Assessment Team. • Habitat protection. Lot of changes to regulation, closed areas. Committee working for 2 years to simplify and merge changes. ISF working with MFRI and industry to log protected habitats (sponges, corals) encountered by fishers. • Shark finning. No specific legislation, covered by landing obligation for protected species

Hafrannsóknastofnun - Marine and Freshwater Research Institute

Assessment Team	Names
Lead Assessor	Virginia Polonio
P1 Team Member	Maciej T. Tomczak* #

P2 Team Member	Virginia Polonio
P3 Team Member	Conor Donnelly

*Participating remotely via teleconference following Variation Request granted 6th August 2019 – see section 8.7.4.

#As this was a joint site visit for the ISF mackerel and capelin fisheries, the P1 Team Member for those fisheries, Hans Lassen, was also present in the meetings.

Observers	Sonia Slavinski, MSC
	Kristinn Hjalmarsson, Icelandic Sustainable Fisheries

Meeting date	13 th August 2019
Stakeholders name	Affiliation
Guðmundur J. Óskarsson	Hafrannsóknastofnun - Marine and Freshwater Research Institute
Birkir Bardarson	
Thorsteinn Sigurdsson	

Meeting note
<p>Discussions covered the following areas:</p> <p>Herring</p> <ul style="list-style-type: none"> Parasite infestation status – estimated to be lower this winter than last year. Good year class 2017, entering fishery in 2021. Closures to protect Icelandic summer-spawning recruits? No - fishing is occurring offshore. Changes to distribution of Norwegian-Icelandic spring-spawning herring? No - summer distribution similar to previous years. Any information on dependence of marine mammals and birds on stocks – no. <p>Capelin</p> <ul style="list-style-type: none"> Collaboration with industry. Greenland involvement in survey. Stock assessment model. Includes predation by cod, haddock, saithe. Marine mammal predation? Undertaken surveys of whales (humpbacks) to get estimate of numbers. Also tracking using satellite tags. Don't consider need to take into account in model as feeding of mammals and seabirds (e.g. puffins – feed on capelin when sandeels low) most intense in summer before the fishery occurs. Fishery closed in summer (from 2020), main fishery occurs in winter. Also final advice set in Jan/Feb – after marine mammal/seabird after main feeding period for these animals. Contact with Birdlife. ISF working with them on lumpfish fishery. Kristinn has information on this project. <p>Habitats</p> <ul style="list-style-type: none"> Committee looking at measures to protect habitats. Entirely relates to bottom fishery. Involved discussions with communities around Iceland, seek consensus on what can be done with tools available. Reported to Minister who has followed up on some of the recommendations. Kristinn has report (in Icelandic). <p>Principle 3</p> <ul style="list-style-type: none"> Good co-operation with industry. Working groups for capelin, one to develop HCR, one to plan winter surveys. Active groups – regular meetings e.g. at least 10 separate meetings when designing surveys. Development of HCRs, help test different scenarios. Capelin HCR group still working on issues before it goes to ICES. Industry still feels some change is required, make proposals to Committee, MFRI then provide scientific advice. Ultimately decision is made on science. Working group model not applied to mackerel and herring since this involves multi-state HCR. <p>MFRI plan</p> <ul style="list-style-type: none"> Developing 5 year plan but work suspended due to budget cuts. Finance Ministry issues 5 year budget plan for all government institutions.

Fiskistofa – Directorate of Fisheries

Assessment Team	Names
Lead Assessor	Virginia Polonio
P1 Team Member	Maciej T. Tomczak* #
P2 Team Member	Virginia Polonio
P3 Team Member	Conor Donnelly

*Participating remotely via teleconference following Variation Request granted 6th August 2019 – see section 8.7.4.

#As this was a joint site visit for the ISF mackerel and capelin fisheries, the P1 Team Member for those fisheries, Hans Lassen, was also present in the meetings.

Observers	Sonia Slavinski, MSC
	Kristinn Hjalmarsson, Icelandic Sustainable Fisheries

Meeting date	13 th August, 2019
Stakeholders name	Affiliation
Porsteinn Hilmarsson	Fiskistofa – Directorate of Fisheries
Saevar Gudmundsson	

Meeting note
<p>Discussions covered the following areas:</p> <p>Monitoring, control and enforcement.</p> <ul style="list-style-type: none"> Queried ‘fees for illegal catches’. These relate to small boat sector (Coastal fleet) which are still using paper logbooks (larger vessels use e-logbooks which auto-submit). Counted as infringements if logbooks not handed in by certain time, and lose license if logbook not handed in at all. Developing mobile app for smaller vessels (see below). <p>National Audit Office report.</p> <ul style="list-style-type: none"> Committee looking at findings <p>Mobile app for recording catches.</p> <ul style="list-style-type: none"> Regulation to make app for recording catches is imminent (expect this year) <p>Fiskistofa inspections</p> <ul style="list-style-type: none"> 2018, vessel trips. 9 trips totalling 45 days on purse seiners, 21 trips totalling 189 days on mid-water trawls. 2018, landings. Total of 881 landings (mid-water trawl and purse seines combined) of which 171 were checked = 19.4% coverage. <p>Landings</p> <ul style="list-style-type: none"> Harbour authorities, receive pre-notification of landing from vessel Captain. Usually 1 or 2 factories in each harbour. 8-9 total in Iceland handling pelagics. <p>Traceability</p> <ul style="list-style-type: none"> Landings registered. Information on buyer. If processing must give monthly reports on yield factor. Fiskistofa track catch – if unprocessed information comes from exporter. If processed information comes from customs / fish health. Traceability requirements now need to consider US requirements. 98-99% of fish landed in Iceland is exported. <p>Changes in management system</p> <ul style="list-style-type: none"> Mackerel incorporated into ITQ system in spring this year <p>Closures</p> <ul style="list-style-type: none"> Closures increased for mackerel. MFRI and Ministry reviewed closures. Thought mackerel going further west. Area opened to fishery but all fishing was in the South East. Review of closures. Meetings being held around country on closures and measures to protect juvenile fish.

By-catches

- Very seldom get by-catches of birds / marine mammals in mid-water trawls. Known issue of humpbacks in capelin purse seine fishery. Humpbacks not caught - go through / over nets. Fishers record in logbooks – only record interaction where animal caught in nets.

Foreign landings

- No longer have designated ports abroad. Final weighings take place in Iceland. Only land abroad in emergency (e.g. bad weather). Very strict conditions. Need to notify Fiskistofa and Captain must provide lots of information (weighing note, value of catch per kg) and receive license to land without inspectors present. Only allowed where Fiskistofa trusts the landing authorities, otherwise Fiskistofa can send an inspector to check at expense of the vessel.

Re-weighing after de-icing

- Mainly affect demersal fishery. No icing of pelagic fish – these are stored in refrigerated tanks rather than ice. Risk is thought to be mainly around SMEs with vessels with weak quota status.

Communication

- Big programme in progress on contact between government and public. Fiskistofa involve in roll-out of first stage. All communications will be by electronic means.

Ministry of Industries and Innovation

Assessment Team	Names
Lead Assessor	Virginia Polonio
P1 Team Member	Maciej T. Tomczak* #
P2 Team Member	Virginia Polonio
P3 Team Member	Conor Donnelly

*Participating remotely via teleconference following Variation Request granted 6th August 2019 – see section 8.7.4.

#As this was a joint site visit for the ISF mackerel and capelin fisheries, the P1 Team Member for those fisheries, Hans Lassen, was also present in the meetings.

Observers	None
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Meeting date	14 th August, 2019
Stakeholders name	Affiliation
Kristján Freyr Helgason	Ministry of Industries and Innovation

Meeting note
Discussions covered the following areas
Herring
<ul style="list-style-type: none"> • Decision-making. Advice from ICES, apply HCR, agreement between Coastal States, then adopted at next NEAFC meeting. No agreement on sharing, so uni-lateral quota setting. Been like this for some time – new agreement in 2007, applied until 2012. In 2013 Faroes withdrew from agreement and there has been no agreement since. Been trying to strike deal since 2013, scientific report produced but interpreted differently by different Coastal States. Agreement possibly difficult due to different needs of different fleets and different political pressures. Lack of agreement disrupts sequence of Icelandic fisheries – patterns change e.g. have to fish blue whiting off West Coast of Ireland in February – March rather than capelin. • Iceland-Faroes bilateral arrangement. Iceland and Faroes have annual consultations (December – January) covering allocation of quota and access arrangements. Traditionally Minister to Minister with 2 or 3 officials. Arrangement involves mutual access – no swaps. Licenses issued by respective Fisheries Directorates for their vessels. Icelandic vessels operate under Icelandic rules in Faroese waters plus any additional Faroese rules. Similar rules in each jurisdiction e.g. closed areas.

Althing Permanent Agriculture and Fisheries Committee. Formed after election.

Landings in Foreign ports

Mackerel

- No current bilateral arrangements except with Greenland. Greenland can land a certain amount of mackerel in Iceland. Iceland have fished in Greenland waters under a bi-lateral agreement but land in Iceland. Has been an agreement with Faroes in the past.

Capelin

Coastal State management process

- Usually an overall agreement on HCRs and sharing between Coastal States. Then an annual meeting between the Coastal States. Around this meeting bilateral discussions occur.

National Audit Office

- Committee established to review all the findings of the report and make recommendations to the Minister. Report due end of calendar year. In terms of objectives, a formal letter was sent to invite members, setting out terms of reference. Kristján to look into getting hold of terms of reference to send to Assessment Team.

Mackerel

- Comprehensive information provided on management of mackerel by Coastal States including treatment of new Coastal States, disagreements around allocation of quota between Coastal States, the lack of a current agreement between all Coastal States although an agreement was reached between the 3 original Coastal States excluding Iceland and Greenland. Kristján noted that 2013 NEAFC Annual report includes details of discussions on dispute settlement process. No dispute resolution process in NEAFC.

Icelandic Coastguard

Assessment Team	Names
Lead Assessor	Virginia Polonio
P1 Team Member	Maciej T. Tomczak* #
P2 Team Member	Virginia Polonio
P3 Team Member	Conor Donnelly

*Participating remotely via teleconference following Variation Request granted 6th August 2019 – see section 8.7.4.

#As this was a joint site visit for the ISF mackerel and capelin fisheries, the P1 Team Member for those fisheries, Hans Lassen, was also present in the meetings.

Observer	Kristinn Hjalmarsson, Iceland Sustainable Fisheries
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Meeting date	14 th August, 2019
Stakeholders name	Affiliation
Björgólfur H. Ingason	Icelandic Coast Guard
Birgir Björnsson	

Meeting note
Discussions covered the following areas Landings in foreign ports Coast Guard role as Fishery Monitoring Centre (FMC) Port-State Control arrangements under NEAFC. Reference to Chapter 5 of NEAFC Regulations National Audit Office Report IUU fishing <ul style="list-style-type: none"> • A key focus of RFMOs is on IUU. Iceland party to several RFMOs, NEAFC and NAFO most relevant to Icelandic stocks. Both have Schemes and Regulations binding on Contracting Parties. Have IUU lists, detection using VMS.

- Last IUU case was in relation to redfish on edge of EEZ. Vessel involved identified and refused entry to each port and eventually scrapped.

Surveillance

- Björgólfur provided presentation with details of Coast Guard surveillance and enforcement activities to the Assessment Team.
- Capelin. Majority of foreign fleet comes from Norway. 25 vessels active on fishing grounds only allowed outside 12nm. New Regulation for Norwegian vessels each year setting out TAC, numbers of these vessels allowed to fish in Icelandic waters. Separate regulations for other bilateral arrangements e.g. Faroes are allowed 3-5 vessels, Greenland 1 vessel. Bilateral arrangements and Regulations are per stock.
- Vessel reporting process
- Boardings and inspections

8.3.3. Public Comment Draft Report

No stakeholder submissions were received during the consultation on the Public Comment Draft Report.

8.5. Appendix 4. MSC Technical Oversight

The MSC provided technical oversight on 21st August 2020 via its Supply Chain Standards Team. Technical Oversight is provided for action by the Conformity Assessment Body (SAI Global) and ASI (MSC's Accreditation Body) in order to improve consistency with the MSC scheme requirements; MSC does not review all work products submitted by CABs and Technical Oversight does not represent a checking service. The TO comments are presented below (note TO has been re-formatted for presentation purposes only). The assessment team has adjusted the content of the report to reflect all clarifications and suggestions and has responded specifically to each TO below.

Ref	Type	Page	Requirement	Reference	Details	CAB Response
30796	Guidance	p.11 & 73	FCR-7.6.1 v.2.0	7.6.1 The CAB shall nominate a date from which product from a certified fishery is eligible to be sold as MSC certified or bear the MSC ecolabel (the eligibility date). This shall be either: <input checked="" type="checkbox"/> 7.6.1.1 The date of the certification of the fishery; or 7.6.1.2 The publication date of the first Public Comment Draft Report.	As per FCR 7.6.1, the CAB shall nominate the eligibility date either to be the date of the (re)certification or the publication of the PCDR. 13th Nov 2020 is nominated but this date does not match with the PCDR release date nor the expiry of the existing certification (30th Dec 2020). It is also unclear if recertification happens on current certificate expiry. Kindly clarify.	<p>There are two stock components being re-assessed; Icelandic summer-spawning herring and Norwegian-Icelandic spring-spawning herring. The re-assessment process for the two components are following different timelines.</p> <p>The eligibility date nominated in the report is the date of current certificate expiry for the Icelandic summer-spawning herring component which is the 13th November 2020. This certificate expiry date was set following the acceptance of the Variation Request (VR) to further extend the validity of the certificate for this component (25th February 2020 – see VR and response in section 8.7.2 of this report) and the application of the 6-month certificate extension from the MSC Covid-19 derogation.</p> <p>The 30th December 2020 date is for the certificate expiry of the Norwegian-Icelandic spring-spawning herring component.</p> <p>We have provided some further clarification in the report.</p>
30797	Guidance	P.73, 75	FCR_7.12.1.3 v.2.0	7.12.1 The CAB shall determine if the systems of tracking and tracing in the UoA are sufficient to ensure all fish and fish products identified and sold as certified by the UoA originate from the	As per FCR 7.12.1.3 the CAB shall identify any risk areas for integrity of certified product, and how they are managed and mitigated. The report mentions any landings outside Iceland are monitored by the national authorities and the DoF, however it is unclear	<p>It is a requirement of Icelandic law that all catches taken by Icelandic vessels from stocks that occur entirely or partially within Icelandic waters must be landed and weighed in an Icelandic port (Article 5, Act No. 57/1996; Article 1, Regulation 745/2016).</p> <p>Landings abroad may occur in exceptional circumstances (for instance, due to serious engine failure in vessels undertaking processing on board) and requires pre-authorisation from the Fisheries Directorate. These landings must occur only into ports</p>

				appropriate Unit of Certification (UoC). 7.12.1.3 The CAB shall document the risk factors outlined in the “MSC Full Assessment Reporting Template”, identifying any areas of risk for the integrity of certified products and how they are managed and mitigated.	whether the controls and checks in place described in Table 26 applies to landings outside Iceland. Please clarify, and detail the measures to mitigate traceability risks.	authorised by the Directorate otherwise Inspectors are sent to the port to conduct the landing checks at the expense of the fisher. The same rules apply to these landings as occur in Iceland and so the same traceability mechanisms apply as in Iceland. The specifics of this fishery, namely that it occurs in Icelandic coastal waters, mean that it is unlikely that vessels would need to land outside of Iceland. The report has been updated to provide further clarification on this.
30798	Minor	p.74	FCR_7.12.2.1 v.2.0	The CAB shall determine and document the scope of the fishery certificate, including the parties and categories of parties eligible to use the certificate and the point(s) at which chain of custody is needed	As per FCR 7.12.2.1, the parties and categories of parties eligible to use the certificate and the point which CoC is needed shall be documented. Section 5.3 in the report states official licensed fish auctions, cooler/ freezer storages (and subcontractor) may or may not be managed by members of the client group. It is unclear when certified fish is passed through auctions or storage, which auctions/ storage are part of the fishery certificate and not required to have CoC certification. For auctions and storage/ contract	All current members of the client group are listed on the ISF website (see https://www.isf.is/isf-aethildarfyrirtaeligki.html). Consequently, those auctions / storages not listed on this website are not part of the client group and would require CoC certification. The principle mechanism for ensuring traceability back to the UoC is through the system of weighing, registration and labelling of catch (set out in Regulation No. 745/2016; Act No. 57/1996) which ensures all catches are identified and traceable to vessel, catch dates, gear and fishing area. The report has been updated to provide further clarification on this.

					storage within the fishery certificate that have not required CoC, please describe what systems are in place to allow traceability back to the UoC.	
30799	Guidance	p.73	FCR_7.12.1.5.a v.2.0	The CAB shall identify and document: a. The UoC	As per FCR 7.12.1.5.a, the CAB shall identify and document the UoC. Guidance 7.4.7–7.4.9 includes definition of the UoC where vessels should be identified. P.73 Table 26 row 3 of the report says a list of UoC vessels can be found on section 5.3, but the list is not available. Section 3.1.3 (p. 17) did mention the ISF website for eligible vessels, but the URL is broken.	Table 26 has been corrected to remove reference to a list of vessels in section 5.3. All registered Icelandic vessels with valid permits to fish for Icelandic summer spawning herring are included in the UoC. A 'live' up-to-date list of these vessels is publicly available on the Directorate of Fisheries website at http://www.fiskistofa.is/veidar/aflaheimildir/aflahlutdeildalisti/ (search for Icelandic summer spawning herring '30. Síld' and current fishing year to see list of vessels with quota).
30800	Minor	p.74	FCR_7.12.1.5.b v.2.0	Determining the point of intended change of ownership of product	As per FCR 7.12.1.5.b, the CAB shall identify and document the point(s) of intended change of ownership of product please.	The point of intended change of ownership has been clarified in the report: The point of intended change of ownership refers to change in legal ownership of the fish and may occur at the point of landing or further up the chain of ownership in the case of vertically-integrated companies (for example, those which have vessels, storage/or and processing capability within a single entity).

8.6. Appendix 5. Surveillance Frequency

Section 7.23.1 of the MSC FCR v2.0 sets out that during each full assessment, surveillance and re-certification assessment, the team with input from the client, shall determine the level at which subsequent surveillance of the fishery shall be undertaken. Surveillance audits shall take place according to the default surveillance level (Level 6, requiring 4 on-site surveillance audits), unless the team decides on a reduced surveillance programme (see table below for surveillance levels).

The surveillance level for the fishery shall be determined on the basis of the confidence of the CAB in its ability to remotely verify information and progress towards meeting conditions. Where a reduced surveillance level is adopted rationale is required as to how the CAB can verify information remotely.

Table 35. Surveillance levels (Source: Table 5; MSC FCR v2.0)

Surveillance level	Surveillance requirements
Level 6 <i>Default surveillance</i>	4 on-site surveillance audits
Level 5	3 on-site surveillance audits 1 off-site surveillance audit
Level 4	2 on-site surveillance audits 2 off-site surveillance audits
Level 3	1 on-site surveillance audits 3 off-site surveillance audits
Level 2	1 on-site surveillance audits 2 off-site surveillance audits 1 review of information
Level 1 <i>Minimum surveillance</i>	1 on-site surveillance audit 1 off-site surveillance audit 2 reviews of information

To assess fisheries against the verification of information criteria the Assessment Team elected to use Table G13 provided in the FCR v2.0 to determine the likelihood that future surveillance teams will be able to access the required information remotely and that they can confirm veracity of the information. For results of this assessment of the fishery against the verification of information criteria see table below.

Table 36. Assessment of the ISF Norwegian & Icelandic herring trawl and seine fishery (Icelandic summer-spawning herring component) against verification of information criteria.

	Ability to verify remotely is low	Ability to verify remotely is high	SAI Global evaluation
Client and stakeholder input	Electronic forms of communication and other mechanisms to engage with clients and stakeholders (such as video conferencing, phone conferencing, email, phone) are absent, limited or inefficient and ineffective in providing the information required for an audit in the particular circumstances of the fishery.	There are ample opportunities and mechanisms to engage with clients and stakeholders including electronic forms of communication, such as videoconferencing phone conferencing, email, phone. The mechanisms are effective in the particular circumstances of the fishery.	Electronic forms of communication are widely and readily available for most if not all stakeholders but the most effective way of contacting the fishers is likely to be face to face.

			SAI Global's ability to remotely verify information is determined to be Moderate to High.
Fishery reports, government documents, stock assessment reports and/or other relevant reports	Fishery reports and other types of reports required for the surveillance, and to demonstrate fishery performance in relation to any relevant conditions and on-going performance against the MSC's standard are not available publicly and cannot be transmitted electronically. There is no remote access to the information and there are none, or very limited other sources available to triangulate and confirm status of the fishery with respect to the MSC standard	Fishery reports and other documented evidence that can be used to demonstrate progress against conditions and other issue relevant to the MSC Principles and criteria can be easily and transparently checked remotely, due to such information being available publicly, such as being available on a website or having been widely distributed and made publicly available to several stakeholders. The reports can be transmitted electronically and veracity easily confirmed.	Documentation relating to fisheries advice, research and management are available online or can be obtained electronically. SAI Global's ability to remotely verify information is determined to be High.
Information appropriate to determination of Principle 1 and 2 information requirements.	Information from electronic monitoring of position, observer data, logbooks, fisher interviews, dockside monitoring etc. is required for audits but cannot be easily transmitted to a remote auditor in a form that can be easily interpreted.	Where information from electronic monitoring of position, observer data, logbooks, fisher interviews, dockside monitoring etc. is required to verify performance against MSC standard, this information is available to be transmitted electronically to auditors in a form that can be easily interpreted.	Data on landings is available online and can also be transmitted electronically. Any other information that might be required can be transmitted in an electronic form. SAI Global's ability to remotely verify information is determined to be High.
Transparency of the management system	Level of transparency of information by management is low such that information about performance of the fishery is generally not easily and widely available.	There is a high level of transparency in management, such that information on the fishery is widely and publicly available or known to the wider group of stakeholders. Any information provided on the fishery can be easily verified.	Information on the fishery is transparent, widely available online. Information can easily be verified by checking online sources or through direct contact with relevant officials. SAI Global's ability to remotely verify information is determined to be High.
Vessels, gear or other physical aspect of the fishery	There are milestones and conditions that require inspection of vessels or other physical aspects of the fishery during the audit and there are no reliable mechanisms for verifying these aspects of the fishery from a remote location.	There are no milestones that require investigation of physical aspects of the fishery or if there are, there are reliable mechanisms to enable verification of developments with respect to that milestone from a remote location.	There are no milestones that require investigation of physical aspects of the fishery. SAI Global's ability to remotely verify information is determined to be High.

Rationale for a reduction from the default surveillance level (level 6) are presented in Table 37 below.

The surveillance timeline together with rationale for any deviations from carrying out the surveillance audit before or after the anniversary date of certification are presented in Table 38 below. As noted earlier in this report, on the 27th March 2020, the MSC issued an updated Covid-19 derogation allowing a six-month certificate extension for all fisheries (see section 8.1.3). Accordingly, the MSC has required CABs to extend the deadlines for all associated processes, including assessments, conditions, action plans and milestones by six months.

As stated in the Guidance for MSC Fisheries CABs relating to the Covid-19 Derogation, issued on 17th April 2020, the derogation applies to recently drafted conditions and milestones, i.e. for fisheries currently in an assessment at the time the derogation was published. Accordingly, this has been taken into account in the timeline presented in Table 38.

A completed fishery surveillance program is presented in Table 39 below.

Table 37. Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
1	On-site audit	2 auditors on-site	It is thought a site visit for the first surveillance is important. In the second and third years, it is felt off-site audit is sufficient as information such as scientific advice is published and accessible on-line and stakeholders can be readily contacted and are responsive by email and phone. In the fourth-year on-site audit will be undertaken together with re-certification site visit.
2	Off-site audit	2 auditors off-site	
3	Off-site audit	2 auditors off-site	
4	On-site audit	2 auditors on-site	

Table 38. Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1	November 2020*	November 2021*	Scientific advice for Icelandic summer-spawning herring issued in summer. Audit timed to allow consideration of latest scientific advice.
2		November 2022*	
3		November 2023*	
4		November 2024*	

*Takes into account a 6-month extension in accordance with Covid-19 derogation 27 March 2020.

Table 39. Fishery Surveillance Program

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

8.7. Appendix 6. MSC Variation requests

There have been several variation requests related to this re-assessment. These are listed in Table 40 and the variation request and response from MSC follow in full below.

Table 40. List of variation requests made in relation to the re-assessment

Section	Variation Request	Date	Granted?
8.5.1	Request to allow fish or fish products considered as coming from IPI stocks to enter chains of custody, with an exemption to the additional assessment requirements for IPI stocks given in PA4.2	27/03/2020	Y
8.5.2	Request for extension of MSC certificate	13/02/2020	Y
8.5.3	Request for extension of MSC certificate	18/10/2019	Y
8.5.4	Request for additional site visit	29/07/2019	Y
8.5.5	Variation on scoring of stock rebuilding (for re-assessment under FCR v2.0)	02/05/2019	Y
8.5.6	Variation on scoring of stock rebuilding under CR v1.3	21/03/2019	Y
8.5.7	Request for extension to MSC certificate	05/02/2019	Y
8.5.8	Request to carry over harmonised conditions into next certification period	07/12/2018	Y

- 8.7.1. Request to allow fish or fish products considered as coming from IPI stocks to enter chains of custody, with an exemption to the additional assessment requirements for IPI stocks given in PA4.2**

Variation request



Marine Stewardship Council assessments
27 March 2020

2 Marine Stewardship Council variation request

Table 1. Variation request.

1	Date submitted to MSC
	27 March 2020
2	CAB
	SAI Global
3	Fishery name and certificate number or CoC certificate number
	ISF Norwegian & Icelandic herring trawl and seine (Iceland summer spawning herring trawl and seine) MSC-F-31464
4	Lead auditor or program manager
	Géraldine Criquet
5	Request prepared by
	Conor Donnelly
6	Scheme requirement(s) for which variation requested
	FCR v2 §7.4. – If IPI stocks are identified and are below the level of 15% specified in 7.4.13.1.c, the CAB shall submit a variation request to the requirements section 7.4
7	How many times has a variation for this requirement been accepted for the same assessment of the same fishery?
	0 - This is the first time a variation for this requirement has been requested in this re-assessment of this fishery.

Table 2. Variation justification.

1	Proposed variation	
	Request to allow fish or fish products considered as coming from IPI stocks to enter chains of custody, with an exemption to the additional assessment requirements for IPI stocks given in PA4.2.	
2	Additional time requested	
	Original deadline date	N/A
	Modified deadline date requested	N/A
	Length of additional time requested	N/A
3	Justification	
	<p>The Icelandic summer-spawning herring (ISSH) fishery harvests almost exclusively ISSH (<i>Clupea harengus</i>); however, Icelandic spring-spawning herring (ISPH) are also harvested within this fishery.</p> <p>ISPH mix with ISSH in the directed ISSH fishery in the autumn. The level of mixing is measured by sampling, with fish categorised into the two stocks on the basis of their maturity stage. The proportions in the catches have been measured over time with the ISPH representing below 5% and on average 1.4% during 1970-2016 (Óskarsson, 2018). In autumn 2018, the the proportion of ISPH in the combined catches came to 1.3%.</p> <p>These non-target catches are practicably indistinguishable from the target species during normal fishing operations. Additionally, the mechanics of the fishing operations are such that it is not commercially feasible to separate catches without significant modification to harvest and processing methods. Taking this into account and, since the catch of ISPH as a proportion of the total combined catches of ISPH and ISSH is less than 15%, ISPH qualifies as an IPI stock in terms of MSC FCR v2.0, §7.4.13.1.</p> <p>As set out in MSC FCR v2.0, §7.4.14.2, the request to allow an exemption to the additional assessment requirements for IPI stocks given in PA4.2 also requires a detailed and substantiated rationale showing that:</p> <ol style="list-style-type: none">The catch proportion of IPI stocks calculated in 7.4.13.1.c is less than or equal to 2% and the total catch of IPI stock(s) by the UoA does not create a significant impact on the IPI stock(s) as a whole.CABs shall note that significance will be assessed on the basis of the status of the IPI stock, and the risk that the IPI catch poses to the health of the IPI stock. <p>As noted above, the proportion of ISPH in the combined catches of the IPI and target stocks, is less than the ≤2% threshold referred to in i).</p> <p>The total catch of the IPI stock by the UoA is also not considered to create a significant impact on the IPI stock as a whole due to a lack of temporal overlap between the distributions of the two stocks. The autumn/winter fishery directed at ISSH is limited to the period between September and January. Potential spawning aggregations of ISPH formed near the winter fishing grounds prior to and during the spawning in March (Jakobsson et al., 1969) and have therefore not been detected because of a lack of fishing effort during this period (Óskarsson, 2018). Consequently, the stock has been protected from fishing pressure due to a lack of temporal overlap.</p>	

Table 2. Variation justification.	
	<p>Reference: Jakobsson J. , Vilhjálmsson H., Schopka S. A. 1969. On the biology of the Icelandic herring stocks. Rit Fiskideildar, 4: 1–16</p> <p>Óskarsson, G.J 2018. The existence and population connectivity of Icelandic spring-spawning herring over a 50-year collapse period, ICES Journal of Marine Science, 75: 2025–2032, https://doi.org/10.1093/icesjms/fsy120</p>
4	If a fishery assessment, implications for assessment
	Should the request be accepted it shouldn't impact any other requirements and will enable fish and fish product to be considered as coming from the ISPH stok to enter chain of custody with an exemption to the additional assessment requirements for IPI stocks given in PA4.2.
5	If a fishery assessment, mitigation of the implication for assessment
	There is no implication for any other requirements. SAI Global waits for being provided with the response to this VR to proceed with the publication of the PCDR.
6	If a fishery assessment, how many conditions does the fishery have and will their progress be affected (positive or negative)?
	The assessment has one condition relating to stock status of the target species (PI 1.1.1) which will not be affected by this request.
7	What is the status of the current assessment?
	The latest version of the report is the Peer Review Draft Report which was submitted to the Peer Reviewers on 9 January 2020 and we received Peer Reviewer comments on the 6 th February. The Public Comment Draft Report is ready to publish when we receive a response to this variation request.
8	Further comments
	Not applicable.
9	If applicable, additional information added after MSC's request
	Not applicable.

Variation response

Marine Stewardship Council

Geraldine Criquet
SAI Global (SAI)

Sent by email

Date: 09/04/2020

Subject: Request for variation to the MSC Certification Requirement v2.0 FCR - 7.4.14 for ISF Norwegian & Icelandic herring trawl and seine

Dear Geraldine Criquet,

I write with reference to your submission on 27/03/2020 of a request for variation to the MSC Certification Requirement (CR) to allow:

Request to allow fish or fish products considered as coming from IPI stocks to enter chains of custody, with an exemption to the additional assessment requirements for IPI stocks given in PA4.2.

As you are aware, the CR procedures relating to v2.0 FCR - 7.4.14 state:

Allow fish or fish products considered as coming from IPI stocks to enter chains of custody, with an exemption to the additional assessment requirements for IPI stocks given in PA4.2.

- a. The variation request to allow an exemption to requirements for IPI stocks shall include a detailed and substantiated rationale showing that, in addition to 7.4.13.1:
 - i. The catch proportion of IPI stocks calculated in 7.4.13.1.c is less than or equal to 2% and the total catch of IPI stock(s) by the UoA does not create a significant impact on the IPI stock(s) as a whole.
 - ii. CABs shall note that significance will be assessed on basis of the status of the IPI stock, and the risk that the IPI catch poses to the health of the IPI stock

These are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- Icelandic spring-spawning herring (ISPH) qualifies as an IPI stock
- A substantiated rationale has been provided showing:
 - The proportion of ISPH in the combined catches of the IPI and target stocks, is less than the $\leq 2\%$ threshold.
 - The total catch of the IPI stock by the UoA is also not considered to create a significant impact on the IPI stock as a whole due to a lack of temporal overlap between the distributions of the two stocks.

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- The detailed and substantiated rationale for this is included in the Public Comment Draft Report

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council
cc: Assurance Services International

8.7.2. Request for extension of MSC certificate Variation request

2 Marine Stewardship Council variation request

Table 1. Variation request.

1	Date submitted to MSC
	9 th February 2020. Re-submitted on the 13 th February 2020 following MSC's additional information requested.
2	CAB
	SAI Global
3	Fishery name and certificate number or CoC certificate number
	ISF Norwegian & Icelandic herring trawl and seine / MSC-F-30021
4	Lead auditor or program manager
	Géraldine Criquet
5	Request prepared by
	Géraldine Criquet
6	Scheme requirement(s) for which variation requested
	<p>There are two requirements for which variation is requested, as follows:</p> <p>Requirement A MSC GCR v.2.4.1 § 7.5.6 <i>The CAB shall issue fishery certificates with a maximum validity period of 5 years from the issue date.</i></p> <p>Requirement B MSC FCR v.2.0 § 7.3.2 <i>If the period from the full assessment to the receipt of the Final Report by the MSC is more than 18 months, the CAB shall withdraw the fishery from the MSC assessment process.</i></p>
7	How many times has a variation for this requirement been accepted for the same assessment of the same fishery?
	<p>Requirement A 2 times: 18th February 2019 and 18th October 2019</p> <p>Requirement B 0</p>

Table 2. Variation justification.

1	Proposed variations
	<p>Requirement A SAI Global proposes to further extend the validity of the certificate <u>only for UoCs Icelandic summer-spawning herring pelagic trawl and purse seine</u>.</p> <p>Requirement B SAI Global proposes not to withdraw the UoCs Icelandic summer-spawning herring pelagic trawl and purse seine from the MSC assessment.</p>
2	Additional time requested
	Original deadline date 28 th February 2020
	Modified deadline date requested 13 th May 2020
	Length of additional time requested 2 months and 15 days
3	Justification
	<p>The Icelandic summer-spawning herring pelagic trawl and purse seine is a component of the ISF Norwegian & Icelandic herring trawl and seine fishery.</p> <p>This fishery entered re-assessment in September 2018. Substantial delays occurred since the re-assessment announcement due to:</p> <ul style="list-style-type: none"> - Extensive harmonisation activities on Principles 1 and 3 for the Atlanto-Scandian herring component of the fishery. - Several re-scorings of Principle 1 for the Atlanto-Scandian herring component of the fishery. - Additional stakeholder consultation period following the change of assessment team and additional site visit when the certificate was transferred from Lloyds Register to SAI Global on 12th July 2019. - Consideration of new information related to the role of Icelandic summer-spawning herring stock in the ecosystem. <p>Given that the occurrence of further delay is mainly due to harmonisation activities on Principles 1 and 3 for the Atlanto-Scandian herring component of the fishery, SAI Global decided to split the assessment into 2 assessments in order to not penalise and to move forward the Icelandic summer-spawning herring pelagic trawl and purse seine component of the fishery:</p> <ol style="list-style-type: none"> 1. Icelandic summer-spawning herring pelagic trawl and purse seine Icelandic 2. Norwegian spring-spawning herring pelagic trawl <p>The Icelandic summer-spawning herring pelagic trawl and purse seine Peer Review Report was provided to the Peer Review College on 9th January 2020 and Peer Reviewers' comments have been provided to SAI Global on 6th February 2020. SAI Global commits to have the Public Comment Draft Report published by the 28th February 2020 which is the current certificate expiring date. SAI Global's assessment team has not identified any issues that would prevent the fishery from continuing to conform with the MSC Fisheries Standard.</p> <p>If the VR was to be granted, it will allow the re-assessment to be completed while preventing the fishery to be left without a valid certificate which will have impacts for the Chain of Custody.</p>
4	If a fishery assessment, implications for assessment

Table 2. Variation justification.

	<p>Requirement A SAI Global has not identified any risks to the integrity of the MSC Program from granting this VR. SAI Global's assessment team has not identified any issues that would prevent the fishery from continuing to conform with the MSC Fisheries Standard. Peer Reviewers' comments have been provided to SAI Global on 6th February 2020.</p> <p>However, the Final Report & Determination is scheduled to be issued mid-April which will be more than 18 months from the fishery announcement (7th March 2020). As per MSC FCR v.2.0 § 7.3.2 <i>If the period from the full assessment to the receipt of the Final Report by the MSC is more than 18 months, the CAB shall withdraw the fishery from the MSC assessment process.</i></p> <p>Requirement B The Final Report will be issued more than 18 months from the fishery announcement.</p>
5	<p>If a fishery assessment, mitigation of the implication for assessment</p> <p>This VR includes a request to vary against MSC FCR v.2.0 § 7.3.2 for not withdrawing the fishery from the MSC assessment.</p>
6	<p>If a fishery assessment, how many conditions does the fishery have and will their progress be affected (positive or negative)?</p> <p>The assessment team has not raised conditions.</p>
7	<p>What is the status of the current assessment?</p> <p>The fishery is currently under re-assessment. Peer Reviewers' comments have been provided to SAI Global on 6th February 2020. SAI Global commits to have the Public Comment Draft Report published by the 28th February 2020 which is the current certificate expiry date.</p>
8	<p>Further comments</p> <p>N/A</p>
9	<p>Additional information added after MSC's request</p> <p><u>Original certificate expiry date:</u> 28th May 2019</p> <p><u>Date extended via the 18th February 2019 variation:</u> 28th October 2019</p> <p><u>Date extended via the 18th October 2019 variation:</u> 28th February 2020</p>

Variation response



Marine Stewardship Council

Geraldine Criquet
SAI Global (SAI)

Sent by email

Date: 25/02/2020

Subject: Request for variation to the MSC Certification Requirement vn/a GCR 7.5.6 for ISF Norwegian & Icelandic herring trawl and seine

Dear Geraldine Criquet,

I write with reference to your submission on 11/02/2020 of a request for variation to the MSC Certification Requirement (CR) to allow:

- **CR, 7.5.6** - SAI Global proposes to further extend the validity of the certificate only for UoCs Icelandic summer-spawning herring pelagic trawl and purse seine.
- **CR, 7.3.2** - SAI Global proposes not to withdraw the UoAs Icelandic summer-spawning herring pelagic trawl and purse seine from the MSC assessment.

As you are aware, the CR procedures relating to vn/a GCR 7.5.6 state:

The CAB shall issue fishery certificates with a maximum validity period of 5 years from the issue date

These are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- This certificate extension will allow the Icelandic UoCs to remain certified whilst re-assessment completes.
- Whilst there have been multiple extensions to this certificate, they have been caused by the harmonisation issues on atlanto-scandian herring.

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- Stakeholders are informed by the CAB.
- ~~The~~ CAB can confirm that it is not aware at this time of any factor (related to either fishery status, or performance against conditions) that could result in the fishery no longer being in compliance with the MSC Fisheries Standard.
- ~~No~~ further variations will be granted against GCR 7.5.6 for this fishery

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council
cc: Assurance Services International

8.7.3. Request for extension of MSC certificate Variation request

2 Marine Stewardship Council variation request

Table 1. Variation request.

1	Date submitted to MSC
	18 th October 2019
2	CAB
	SAI Global
3	Fishery name and certificate number or CoC certificate number
	ISF Norwegian & Icelandic herring trawl and seine / MSC-F-30021
4	Lead auditor or program manager
	Géraldine Criquet
5	Request prepared by
	Géraldine Criquet
6	Scheme requirement(s) for which variation requested
	MSC GCR v.2.3 7.5.6 <i>The CAB shall issue fishery certificates with a maximum validity period of 5 years from the issue date.</i>
7	How many times has a variation for this requirement been accepted for the same assessment of the same fishery?
	One time - A variation for this requirements has been accepted on 18 th February 2019.

Table 2. Variation justification.																	
1	Proposed variation																
	SAI Global proposes to further extend the validity of the fishery certificate.																
2	Additional time requested																
	Original deadline date	28 th October 2019															
	Modified deadline date requested	28 th February 2020															
	Length of additional time requested	4 months															
3	Justification																
	<p>The fishery certificate has been transferred from Lloyd's Register to SAI Global on 12th July 2019 at the early stage of the re-assessment process.</p> <p>Substantial delays occurred since the re-assessment has been announced back in September 2018 due to extensive harmonisation activities and several re-scoring of Principle 1 to take into account new ICES advice and MSC's clarification on how to score Principle 1 in the case that PI 1.1.1 is scored less than 80 during the certification cycle and there is no rebuilding plan in place for the stock; to the extent that the re-assessment process was at the preliminary Client Draft Report stage when the certificate was transferred to SAI Global in July 2019.</p> <p>The certificate transfer led to additional delay to allow a) additional stakeholder consultation period of 30 days following the change of assessment team and proposed additional site visit; b) an additional site visit that was held mid-August and c) SAI Global's team to review all information and data available and collected to score the fishery.</p> <p>Following the additional site visit and preliminary scoring, further delay occurred due to:</p> <p>1) <u>Scoring and harmonisation for UoA 1 Norwegian spring spawning herring (Atlanto-Scandian herring)</u></p> <p>The assessment team considered the new ICES advice for this herring stock published on October 1st and how it impacts Principle 1 scoring.</p> <p>The fishery currently under re-assessment overlaps with 3 fisheries listed in the Table below. Harmonisation activities regarding Principle 1 scoring continues with a harmonisation meeting scheduled between the 3 CABs the week of October 21st.</p> <table border="1"> <thead> <tr> <th>Fishery</th><th>Status</th><th>CAB</th></tr> </thead> <tbody> <tr> <td>ISF Norwegian & Icelandic herring trawl and seine</td><td>Currently under re-assessment</td><td>SAIG</td></tr> <tr> <td>SPSG, DPPO, PFA, SPFPO & FFO Atlanto-Scandian purse seine and pelagic trawl herring</td><td>Certified - surveillance report posted on 11th April 2019</td><td>CU Pesca</td></tr> <tr> <td>Faroese Pelagic Organisation Atlanto-Scandian herring</td><td>Certified - surveillance audit announced on 9th July 2019</td><td>DNV GL</td></tr> <tr> <td>Norway spring spawning herring</td><td>Re-certified on 25th July 2019</td><td>DNV GL</td></tr> </tbody> </table>		Fishery	Status	CAB	ISF Norwegian & Icelandic herring trawl and seine	Currently under re-assessment	SAIG	SPSG, DPPO, PFA, SPFPO & FFO Atlanto-Scandian purse seine and pelagic trawl herring	Certified - surveillance report posted on 11 th April 2019	CU Pesca	Faroese Pelagic Organisation Atlanto-Scandian herring	Certified - surveillance audit announced on 9 th July 2019	DNV GL	Norway spring spawning herring	Re-certified on 25 th July 2019	DNV GL
Fishery	Status	CAB															
ISF Norwegian & Icelandic herring trawl and seine	Currently under re-assessment	SAIG															
SPSG, DPPO, PFA, SPFPO & FFO Atlanto-Scandian purse seine and pelagic trawl herring	Certified - surveillance report posted on 11 th April 2019	CU Pesca															
Faroese Pelagic Organisation Atlanto-Scandian herring	Certified - surveillance audit announced on 9 th July 2019	DNV GL															
Norway spring spawning herring	Re-certified on 25 th July 2019	DNV GL															

Table 2. Variation justification.

	<p>2) Consideration of new information for UoAs 2 and 3 Icelandic summer spawning herring</p> <p>The assessment team is currently reviewing new information about the role of this herring stock in the ecosystem and whether this will result in this stock being regarded as a key LTL stock.</p> <p>In summary, if the certificate extension were to be granted, it will allow:</p> <ol style="list-style-type: none"> 1) The assessment team to score the fishery using the most recent and up-to-date information and data. 2) Harmonisation activities regarding Principle 1 to be completed. 3) The re-assessment to be completed while preventing the fishery to be left without a valid certificate which will have impacts for the Chain of Custody.
4	<p>If a fishery assessment, implications for assessment</p> <p>SAI Global cannot think of any other requirements which may be affected should this VR be granted. The harmonisation may affect the scoring of Principle 1 however harmonisation outcome cannot be foreseen.</p> <p>Please note that the re-assessment of the Norway spring spawning herring fishery was recently completed and the fishery was re-certified.</p>
5	<p>If a fishery assessment, mitigation of the implication for assessment</p> <p>As stated above, SAI Global cannot think of any other requirements which may be affected should this VR be granted.</p>
6	<p>If a fishery assessment, how many conditions does the fishery have and will their progress be affected (positive or negative)?</p> <p>A VR to carry over condition on 3.1.1 into re-assessment with the intention to harmonise condition timeline across all four certified Atlanto-Scandian herring fisheries was granted on 17th December 2018.</p> <p>In addition, as per the 4th surveillance report posted on April 2019, conditions on PIs 1.2.1 and 1.2.2 for UoA 1 and on PI 1.1.1 for UoAs 2 and 3 remain open.</p> <p>Scoring and harmonisation outcome will determine progress on and status of these conditions.</p>
7	<p>What is the status of the current assessment?</p> <p>The fishery is currently under re-assessment at the Client Draft Report stage. The Client Draft Report will be provided to the client for review once scoring and harmonisation activities will be completed which is expected to be early November.</p>
8	<p>Further comments</p> <p>No further comments</p>
9	<p>If applicable, additional information added after MSC's request</p> <p>N/A</p>

Variation response

Marine Stewardship Council

Geraldine Criquet
SAI Global (SAI)

Sent by email

Date: 25/10/2019

Subject: Request for variation to the MSC Certification Requirement v2.3 GCR-7.5.6 for ISF Norwegian & Icelandic herring trawl and seine

Dear Geraldine Criquet,

I write with reference to your submission on 18/10/2019 of a request for variation to the MSC Certification Requirement (CR) to allow:

An extension of the validity of the fishery certificate by 4 months.

As you are aware, the CR procedures relating to v2.3 GCR-7.5.6 state:

The CAB shall issue fishery certificates with a maximum validity period of 5 years from the issue date

These are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- Substantial delays occurred since the re-assessment has been announced back in September 2018 due to extensive harmonisation activities and several re-scorings of Principle 1
- The certificate transfer led to additional delays to allow an additional stakeholder consultation period and site visit, and for SAI Global's team to review all information and data available to score the fishery.
- The assessment team is currently reviewing new information about the role of this herring stock in the ecosystem and whether this will result in this stock being regarded as a key LTL stock.
- New ICES advice was published October 1st and a harmonisation meeting is scheduled between the 3 CABs the week of October 21st.

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- The CAB can confirm that it is not aware at this time of any factor (related to either fishery status, or performance against conditions) that could result in the fishery no longer being in compliance with the MSC Fisheries Standard
- If, during the period of the certificate extension, the CAB is aware of any factor (related to either fishery status, or performance against conditions) that could result in the fishery no longer being in compliance with the MSC Fisheries Standard, the conditions under which this certificate extension is accepted are no longer met and the CAB shall follow GCR 7.4.2 and GCR 7.4.3
- Stakeholders are informed
- Ecet is updated to reflect changes, including providing a certificate covering the period from the end of the current certificate to the date accepted in the variation response

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council
cc: Accreditation Services International

8.7.4. Request for additional site visit Variation request

Table 2. Variation justification.

1	Proposed variation
	SAI Global proposes to conduct an additional site visit with two auditors on site (Virginia Polonio, lead auditor responsible for Traceability and P2; and Conor Donnelly, auditor responsible for Principle 3) and one auditor (Maciej Tomczak, auditor responsible for Principle 1) working off-site by supporting the auditor on-site via conference calls.
2	Additional time requested
	Original deadline date
	N/A
	Modified deadline date requested
	N/A
	Length of additional time requested
	N/A
3	Justification
	<p>The fishery certificate has been transferred from Lloyd's Register to SAI Global on 12th July 2019 at the early stage of the re-assessment process (i.e. after the initial site visit and before the client review of the Client Draft Report).</p> <p>SAI Global's team is different from the initial assessment team with the exception of Maciej Tomczak who was part of Lloyd's Register's assessment as assessor responsible for Principle 1.</p> <p>MSC's interpretation regarding Team members on-site for initial assessment audit in v.2.0 (FCR V.2.0 7.9.1) (please refer to section 3 of this VR) allows some members of the team to participate remotely in the audit via other means in the case that it would not affect the effectiveness and credibility of the audit.</p> <p>Justification for SAI Global's request to conduct an additional site visit with the auditor responsible for Principle 1 participating remotely (via conference calls) is as follows:</p> <ol style="list-style-type: none"> 1) The auditor responsible for Principle 1 was part of the initial assessment team and has participated in the initial site visit. Therefore, he already conducted face-to-face stakeholders interviews to make sure that the team was aware of any concerns or information that stakeholders may have regarding Principle 1; 2) SAI Global used its expert judgement and knowledge of Icelandic fisheries including small pelagic fisheries to determine that the fishery's ability to provide information regarding Principle 1 remotely is high (G.7.23.4 Table G13) <ol style="list-style-type: none"> a) There are ample opportunities and mechanisms to engage with client and stakeholders via conference calls and the mechanism are effective in the particular circumstances of the fishery. Therefore the ability to verify information from client and stakeholders' input remotely is high. b) Fishery reports and other documented evidences relevant for Principle 1 can be easily and transparently checked remotely due to such information being available publicly. Therefore ability to verify information from fishery reports, government documents, stock assessment reports and or other relevant reports remotely is high. c) Information appropriate to determination of Principle 1 requirements is available to be transmitted electronically to auditors in a form that can be easily interpreted. Therefore, ability to verify information appropriate to determination of Principle 1 requirements remotely is high. d) There is a high level of transparency in management such that information on the fishery is widely and publicly available or known to the wider group of stakeholders. Therefore ability to verify information provided on the fishery remotely is high.

Table 2. Variation justification.

4	If a fishery assessment, implications for assessment
	If granted, this VR will allow SAI Global to conduct an additional site visit with the auditor responsible for Principle 1 supporting remotely (via conference calls) the lead auditor responsible for traceability and Principle 2 and the auditor responsible for Principle 3 on-site. This does not affect the effectiveness and credibility of the re-assessment.
5	If a fishery assessment, mitigation of the implication for assessment
	As stated and demonstrated above, SAI Global did not identified any risk that would impact the effectiveness and credibility of the re-assessment.
6	If a fishery assessment, how many conditions does the fishery have and will their progress be affected (positive or negative)?
	SAI Global's assessment team will determine whether conditions should be raised following the team's formal scoring of the fishery.
7	What is the status of the current assessment?
	The fishery is currently under re-assessment. The Client Draft Report is expected to be sent to the client by end of September 2019.
8	Further comments
	N/A
9	If applicable, additional information added after MSC's request
	N/A

3 Relevant MSC Interpretations and clauses

MSC Interpretation

Relevant Interpretation 1	
Title:	Team members on-site for initial assessment audit in v.2.0 (FCR V.2.0 7.9.1)
Date:	Last published date is 30 th August 2018
Weblink:	https://mscportal.force.com/interpret/s/article/Team-members-on-site-for-initial-assessment-audit-in-v2-0-7-9-1-1527262011106
Question:	In the Version 2.0 fishery certification requirements for an initial assessment we are required to select a minimum team of two as per the requirements in 7.5. What remain unclear is whether the whole team is then required to be present in person at the site visit or not? The only reference to this is 7.9.1 "The team shall carry out the site visit as planned". You state in the Guidance G7.9.1 that other site visits can be completed without the full team. So does this mean that the whole team must complete one site visit but if you have more than this can they then be completed by some of the team?
Answer:	<p>It is the MSC's intent that all of the team would attend all of the meetings at the initial assessment site visit (see separate processes for determining who attends surveillance and re-assessment site visits in 7.23.4 and 7.24.8 respectively), but we have received and variation requests in the past for some team members to participate remotely in meetings. We accept or decline these on a case-by-case basis; based on whether having all team members go on site would cause unreasonable cost or inconvenience and whether allowing some members to participate in the audit via other means would affect the effectiveness and credibility of the audit.</p> <p>This latter point is often tied to the ability to verify information remotely –see Guidance G7.23.4 and Table G13 for surveillance audits. For example, if there are ample opportunities and mechanisms for communication with all stakeholders (e.g. videoconferencing, Skype) then the ability for the team members not present to participate and verify information remotely is high. If, however, means to communicate with the clients and stakeholders are absent, limited or inefficient and ineffective in providing information required for the assessment (e.g. carrying out a SICA with a stakeholder group with no means for some team members to participate actively in the discussion), then the ability to verify information is low and the MSC would be unlikely to grant a variation request for team members to participate remotely.</p> <p>In the case where multiple on-site visits are held, the Guidance G7.9.1 indicates that one or more team members could attend these. It would make sense for the expert(s) to attend these that are most relevant for the nature of the discussion (e.g. if on harvest control rules, you'd want to have the P1 expert attend). One example of an accepted variation was the Falkland Island toothfish assessment (Note: carried out on v1.3 so some of the language and references would be different), where getting all three team members to the Falkland Islands would be a significant cost to the client (you can see the actual variation request and the MSC's response under Stage 3 on this webpage). The variation request detailed how the assessment would not be adversely affected by some team members participating remotely, and it was granted with the following condition:</p> <p><i>The CAB's stakeholder notice should make clear that all members of the team are available to meet with stakeholders by virtual or other means, including at mutually convenient physical locations where it is shown that this would be necessary to effectively communicate key issues.</i></p>

Guidance to certification requirements

G7.23.4	Verification of information
Table G13	To assess fisheries against the verification of information criteria, CABs can create a list of information, information resources and aspects of the fishery that need to be reviewed. In each item, CABs can use Table G13 to determine the likelihood that they will be able to access the required information remotely and that they can confirm veracity of the information.

Variation response

Marine Stewardship Council

Geraldine Criquet
SAI Global (SAI)

Sent by email

Date: 06/08/2019

Subject: Request for variation to the MSC Certification Requirement v2.0 FCR-7.9.1 for ISF Norwegian & Icelandic herring trawl and seine

Dear Geraldine Criquet,

I write with reference to your submission on 29/07/2019 of a request for variation to the MSC Certification Requirement (CR) to allow:

An additional site visit with two auditors on site (Virginia Polonio, lead auditor responsible for Traceability and P2; and Conor Donnelly, auditor responsible for Principle 3) and one auditor (Maciej Tomczak, auditor responsible for Principle 1) working off-site by supporting the auditor on-site via conference calls.

As you are aware, the CR procedures relating to v2.0 FCR-7.9.1 state:

7.9.1 The team shall carry out the on-site assessment as planned. The team shall: ■
7.9.1.1 Conduct stakeholder interviews to make sure that the team is aware of any concerns or information that stakeholders may have: a. The team shall allow private interviews with the team for stakeholders who request one; b. The team shall use any information provided in private in conformity with the confidentiality requirements in 4.4; c. If stakeholders do not wish or are not able to be interviewed, the team shall inform them that they may send written information to the team

These are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- It's an additional on-site visit and the P1 assessor has already met all the stakeholders.
- Stakeholder ability to engage remotely is high.
- Relevant new information is easily verified remotely.

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- EAB makes clear that all members of the team are available to meet with stakeholders by virtual or other means, including at mutually convenient physical locations where it is shown that this would be necessary to effectively communicate key issues.

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council
cc: Accreditation Services International

8.7.5. Variation on scoring of stock rebuilding PI (for re-assessment under FCR v2.0) Variation request



MSC Variation Request 20190410

1 Marine Stewardship Council variation request

Table 1 – Variation request

1	Date submitted to MSC
	- Please note the MSC will usually respond within 14 days, but for complex variations, longer may be necessary. The MSC will keep you informed if it will take longer than 14 days.
2	CAB
	Lloyd's Register
3	Fishery name and certificate number or CoC certificate number
	Icelandic & Norwegian Herring trawl and seine
4	Lead auditor or program manager
	Polly Burns
5	Request prepared by
	Polly Burns
6	Scheme requirement(s) for which variation requested
	FCR V2.0 7.11.1.2 The CAB shall draft conditions to follow the narrative or metric form of the PISGs used in the final tree. FCR V2.0 7.11.1.3 The CAB shall draft conditions to result in improved performance to at least the 80 level within a period set by the CAB but no longer than the term of the certification unless: etc... FCR V2.0 SA2.3.1 Teams shall only score this PI (PI 1.1.2) when Stock Status PI 1.1.1 does not achieve an 80 score.
7	How many times has a variation for this requirement been accepted for the same assessment of the same fishery?
	- e.g. Fill in 2 nd if a previous extension request on the 60 days requirement for surveillance reports has been accepted, and this request is for an additional time extension on top of that.
	2nd – previously applied for a variation under the equivalent requirements under FCR V1.3 for the surveillance audit scoring, which was accepted – this current variation request is for the reassessment (scored against FCR 2.0).

Table 1 – Variation justification		
1	Proposed variation	
	<ul style="list-style-type: none"> Please describe how the CAB proposes to vary from the requirement including, where required, any original deadline date, the length of additional time requested and the exact modified deadline date. 	
	<p>When PI 1.1.1 is scored less than 80 during the certification cycle, and there is no rebuilding plan in place for the stock, following SA2.3.2 according to the MSC's interpretation:</p> <ul style="list-style-type: none"> The assessment team may choose to apply CR V2.0 SA2.3.1; The assessment team shall put a condition on PI 1.1.1 to have a rebuilding plan and monitoring in place, this condition timeline shall not be longer than 1 year breaching FCR V2.0 7.11.1.2; The assessment team shall not score PI Stock Rebuilding during the current audit, breaching FCR V2.0 SA2.3.1; Stock Rebuilding PI shall be scored within 1 year, during an expedited audit. The condition raised on PI 1.1.1 shall be closed within 1 years, beyond the current certification period and not reaching SG 80 for PI1.1.1b breaching FCR V2.0 7.11.1.2. 	
2	Additional time requested	
	Original deadline date	N/A
	Modified deadline date requested	N/A
	Length of additional time requested	N/A
3	Justification	
	<ul style="list-style-type: none"> Please explain in detail why the variation is requested and why the change is necessary. This helps the MSC decide whether the variation request should be granted. 	
	<p>During the recent surveillance audit for the ISF Icelandic and Norwegian herring trawl and seine fishery, PI 1.1.1 was rescored at less than 80. In March 2019, the MSC released an interpretation which confirmed how they expected scoring to occur when PI 1.1.1 was rescored at <80, normally triggering the rebuilding PI (PI 1.1.3 FCR1.3/PI 1.1.2 FCR2.0), but the fishery had a year to implement a rebuilding plan as per clause: FCR V1.3: CB2.4.2:</p> <p><i>In cases where stocks were not depleted at the time of assessment, but become depleted during a certification cycle, the CAB shall raise a condition that rebuilding strategies and monitoring are put in place within one year of becoming aware of the depleted status.</i></p> <p>FCR V2.0: SA2.3.2:</p> <p>In cases where stocks score 80 or above on PI 1.1.1 at the time of assessment, but scores are then reduced during a certification cycle, the team shall ensure that rebuilding strategies and monitoring are put in place within one year of becoming aware of the reduced status, (or as early as practicable in stocks that are not assessed on an annual basis).</p> <p>A variation request for V1.3 clauses was accepted given the CR has conflicting requirements to ensure the process could be followed in conformance.</p> <p>This fishery is currently in reassessment against V2.0 of the MSC CR. Given this fishery (and the overlapping Norway Spring Spawning herring fishery) are both due to have PCDRs published as part of the reassessment against FCRV2.0 before the rebuilding PI is scored, the MSC have released an addendum to the interpretation describing the process for this situation.</p> <p>As such, there are a number of clauses we are requesting to vary from:</p>	

	<p>1. The rebuilding PI which must be scored when 1.1.1b <SG80 (FCR V2.0 SA2.3.1) will not be scored for one year and will not be scored in the PCDR for the reassessment.</p> <p>2. The condition associated with SA2.3.2 will be applied to PI 1.1.1 but cannot follow the requirements of FCR V2.0 7.11.1.2 as the condition does not relate to the PISG of PI 1.1.1b.</p> <p>3. FCR V2.0 7.11.1.3 cannot be applied as:</p> <p>a) The condition will require that rebuilding strategies and monitoring are put in place within one year of being aware that the fishery is depleted. This condition will not result in 1.1.1b being ≥SG80 for 1.1.1b in one year;</p> <p>b) The condition will not be closed before the fishery is recertified</p>
4	If a fishery assessment, implications for assessment
	<ul style="list-style-type: none"> - Please include any impacts on the assessment/certificate if the request is accepted referencing any other requirements which may be affected, and the risks these implications could have. - e.g. Timeline delays, stakeholder input
	The fishery will require an expedited audit in January 2020 in order to score rebuilding and check status of condition on PI 1.1.1b.
5	If a fishery assessment, mitigation of the implication for assessment
	Please include information how risks of the implications for the assessment that have been identified under the previous question are proposed to be mitigated by the CAB.
	No mitigation required. An explanation of the process will be included in the PCDR and subsequent reports.
6	If a fishery assessment, how many conditions does the fishery have and will their progress be affected (positive or negative)?
	No implications for current conditions.
7	What is the status of the current assessment?
	<ul style="list-style-type: none"> - Please include the latest version and timing of the report that has been prepared, and an indication when the next report is expected (e.g. the Client and Peer Review Draft Report has been sent to the client and the peer reviewers on 7 June 2018. The Public Comment Draft Report is expected to be ready on 1 September 2018).
	The report has not currently been issued to the client. We expect a PCDR publication in June 201 (see Track a Fishery page for up-to-date timeline).
8	Further comments
	<ul style="list-style-type: none"> - Please include any further relevant information.
	None, thank you.
9	If applicable, additional information added after MSC's request

Variation response



Marine Stewardship Council

Polly Burns
Lloyds Register (Acoura)
6 Redheughs Rigg
Edinburgh
United Kingdom
EH12 9DQ

Sent by email

Date: 08/05/2019

Subject: Request for variation to the MSC Certification Requirement v2.0 FCR-7.11.1.2, FCR-7.11.1.3, FCR-SA2.3.1 for ISF Norwegian & Icelandic herring trawl and seine

Dear Polly Burns,

I write with reference to your submission on 02/05/2019 of a request for variation to the MSC Certification Requirement (CR) to allow:

Implementation of SA2.3.2, with respect to scoring the rebuilding PI at re assessment, according to the MSC's interpretation (titled 'Scoring the rebuilding Performance Indicator during the certification cycle'; available at <https://mscportal.force.com/interpret/s/article/Scoring-the-rebuilding-Performance-Indicator-during-the-certification-cycle>)

As you are aware, the CR procedures relating to v2.0 FCR-7.11.1.2, FCR-7.11.1.3, FCR-SA2.3.1 state:

7.11.1.2 The CAB shall ensure that every PI that receives a score of less than 80 has its own distinct condition associated with it.

7.11.1.3 The CAB shall draft conditions to follow the narrative or metric form of the PISGs used in the final tree.

SA2.3.1 Teams shall only score this PI when Stock Status PI 1.1.1 does not achieve an 80 score

These are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- The request follows the process laid out in the addendum of the interpretation on scoring the rebuilding performance indicator (titled 'Scoring the rebuilding Performance Indicator during the certification cycle'; available at <https://mscportal.force.com/interpret/s/article/Scoring-the-rebuilding-Performance-Indicator-during-the-certification-cycle>)
- The fishery will require an expedited audit in January 2020 in order to score rebuilding and check status of condition on PI 1.1.1b.

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- Stakeholders are informed
- The MSC interpretation and its addendum on clause FCR v2.0 SA2.3.2 (titled 'Scoring the rebuilding Performance Indicator during the certification cycle'; available at <https://mscportal.force.com/interpret/s/article/Scoring-the-rebuilding-Performance-Indicator-during-the-certification-cycle>) shall be followed in its entirety, as appropriate to the circumstances of the fishery

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If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council
cc: Accreditation Services International

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8.7.6. Variation on scoring of stock rebuilding PI (under CR v1.3)

Variation request



MSC Variation Request 20190311

1 Marine Stewardship Council variation request

Table 1 – Variation request

1	Date submitted to MSC
	21 March 2019
2	CAB
	Lloyd's Register
3	Fishery name and certificate number or CoC certificate number
	ISF Norwegian & Icelandic herring trawl and seine (F-ACO-0098)
4	Lead auditor or program manager
	Polly Burns / Jim andrews
5	Request prepared by
	Hugh Jones Géraldine Criquet Polly Burns
6	Scheme requirement(s) for which variation requested
	MSC CR v.1.3 CB2.4.1 - Teams shall only score this PI (rebuilding PI 1.1.3) when Stock Status PI 1.1.1 reveals that a stock is depleted.
7	How many times has a variation for this requirement been accepted for the same assessment of the same fishery?
	0

Table 2 – Variation justification

1	Proposed variation
	<p>When PI 1.1.1 is scored less than 80 during the certification cycle, and there is no rebuilding plan in place for the stock:</p> <ul style="list-style-type: none"> - The assessment team may choose to apply CR v.1.3 CB2.4.2; - The assessment team shall put a condition on PI 1.1.1 to have a rebuilding plan and monitoring in place, this condition timeline shall not be longer than 1 year; - The assessment team shall not score PI Stock Rebuilding during the current audit. - Stock Rebuilding PI shall be scored within 1 year, e.g. at the next surveillance audit. - The condition raised on PI 1.1.1 shall be closed within 1 years, e.g. at the next surveillance audit.
2	Additional time requested
	Original deadline date
	NA
	Modified deadline date requested
	NA
	Length of additional time requested
	NA
3	Justification
	<p>There is direct conflict in the MSC fishery standard in MSC Certification Requirements V1.3 and MSC FCR v.2.0 between clause CB2.4.2 and the clauses listed under Table 1 section 6. In order to apply clause CB2.4.2 those clauses need to be annulled.</p> <p>MSC Certification Requirements V1.3 clause CB2.4.2 states - <i>In cases where stocks were not depleted at the time of assessment, but become depleted during a certification cycle, the CAB shall raise a condition that rebuilding strategies and monitoring are put in place within one year of becoming aware of the depleted status.</i></p> <p>Clause CB2.4.2 is applicable to fisheries stated in Table 1 section 3 as these fisheries were certified without need to score the rebuilding PI 1.1.3. During current surveillance/expedited audit rescoring of PI 1.1.1 resulted in a reduced score for Scoring Issue b, resulting in the need to score the rebuilding PI 1.1.3. However, these fisheries do not have a rebuilding plan in place and therefore Clause CB2.4.2 shall be applied.</p> <p>There are a number of reasons why the scoring approach results in the breach of CR/FCR clauses:</p> <ol style="list-style-type: none"> 1. The rebuilding PI which must be scored when 1.1.1b <SG80 (CB2.4.1) will not be scored for one year. 2. The condition associated with CB2.4.2 will be applied to PI 1.1.1 but cannot follow the requirements of 7.11.1.2 as the condition does not relate to the PISG of PI 1.1.1b. 3. The condition will require that rebuilding strategies and monitoring are put in place within one year of being aware that the fishery is depleted. This condition will not result in 1.1.1b being ≥SG80 for 1.1.1b in one year therefore 7.11.1.3 cannot be applied.
4	If a fishery assessment, implications for assessment
	The implication for the assessment will be the need for scoring of the rebuilding PI within one year, at the next surveillance (or in the case of fisheries undergoing reassessment, an expedited audit will be triggered).
5	If a fishery assessment, mitigation of the implication for assessment

	This is a short term mitigation strategy employed by CABs and agreed by the MSC after it was raised with the MSC in November 2018. The MSC in the medium term will develop a interpretation on the conflicting clauses and will review the clauses for the next fishery standard.
6	If a fishery assessment, how many conditions does the fishery have and will their progress be affected (positive or negative)?
	A resolution to the rebuilding strategy may positively influence the progression of the milestones on each of the existing conditions. Fishery currently has 4 conditions.
7	What is the status of the current assessment?
	4 th surveillance report was published 31 January 2019.
8	Further comments
	None
9	If applicable, additional information added after MSC's request

Variation response



Marine Stewardship Council

Polly Burns
Lloyds Register (Acoura)
6 Redheughs Rigg
Edinburgh
United Kingdom
EH12 9DQ

Sent by email

Date: 01/04/2019

Subject: Request for variation to the MSC Certification Requirement vn/a CR-CB2.4.1, FCR-7.11.1.2, FCR-7.11.1.3 for ISF Norwegian & Icelandic herring trawl and seine

Dear Polly Burns,

I write with reference to your submission on 21/03/2019 of a request for variation to the MSC Certification Requirement (CR) to allow:

Implementation of MSC's interpretation (titled 'Scoring the rebuilding Performance Indicator during the certification cycle') on clause CR v1.3 CB2.4.2 with respect to rescoring the rebuilding performance indicator

As you are aware, the CR procedures relating to vn/a CR-CB2.4.1, FCR-7.11.1.2, FCR-7.11.1.3 state:

MSC CR v1.3 CB2.4.1 - Teams shall only score this PI (PI 1.1.3 Stock rebuilding) when PI 1.1.1 Stock status reveals that a stock is depleted.

MSC FCR v2.0 7.11.1.2 - The CAB should draft conditions to follow the narrative or metric form of the PISGs used in the final tree.

MSC FCR v2.0 7.11.1.3 - The CAB shall draft conditions to result in improved performance to at least the 80 level within a period set by the CAB but no longer than the term of the certification

These are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- Due to a conflict between requirements in the MSC Fisheries Standard, CABs must submit a request to vary from certain requirements when implementing CR v1.3 CB2.4.2
- The MSC has provided an interpretation (titled 'Scoring the rebuilding Performance Indicator during the certification cycle') that aids CABs in submitting the appropriate variation request
- This variation request is in line with the MSC's interpretation

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- Stakeholders are informed
- The MSC interpretation on clause CR v1.3 CB2.4.2 (titled 'Scoring the rebuilding Performance Indicator during the certification cycle') shall be followed in its entirety, as appropriate to the circumstances of the fishery

8.7.7. Request for extension to MSC Certificate Variation request

MSC Variation Request template 20180803



Marine Stewardship Council - Variation Request

Date submitted to MSC	5th February 2019
Name of CAB	Lloyd's Register
Fishery Name	ISF Norwegian & Icelandic herring trawl and seine
Lead Auditor/Programme Manager	Jim Andrews/Polly Burns
Variation prepared by:	Polly Burns
Scheme requirement(s) for which variation requested	GCR V2.3 7.5.6 The CAB shall issue fishery certificates with a maximum validity period of 5 years from the issue date.
Is this variation sought in order to fulfil IPI requirements (FCR 7.4.14)?	No.

1. Proposed variation	
The certificate for the ISF Norwegian & Icelandic herring trawl and seine fishery will be extended from 28 th May 2019 to 28 th October 2019, representing an extension of 5 months.	
2. Rationale/Justification	
<p>This fishery entered reassessment on 7th September 2018. This is later than normal for a reassessment, for which a year is usually needed. However due to uncertainties about the status of both the Norwegian Spring Spawning and Icelandic Summer Spawning herring stocks the fishery assessment process started later than initially planned.</p> <p>Additionally to the original delay, there have been two other factors that have delayed progress with the assessment since the site visit in October 2018:</p> <ol style="list-style-type: none"> 1. Harmonisation with other CABs for closing the 4th surveillance audit – following new ICES advice, there were multiple discussions around the scoring of the fishery which took time and the process was only concluded on 31st January 2019. 2. There was a condition on 3.1.1, harmonised across all Coastal States fisheries. A fishery cannot progress through reassessment with open conditions so a decision on 3.1.1 had to be made first. A variation request was submitted to the MSC to permit the condition to carry over into the next certification period, to harmonise timelines with the other Coastal States fisheries. This variation was accepted meaning we could progress with the reassessment. <p>Therefore, we would like to request an extra 5 months extension to the existing fishery certificate to allow the reassessment to complete and prevent a broken certification period which will have impacts for Chain of Custody.</p>	
3. Implications for assessment (required for fisheries assessment variations only)	
None – if the 9 months between announcement and publication of PCDR exceeds 9 months an additional stakeholder consultation period will be opened.	
4. Have the stakeholders of this fishery assessment been informed of this request? (required for fisheries assessment variations only)	No.
5. Further Comments	
None thank you.	

Variation response



Marine Stewardship Council

Polly Burns
Lloyds Register (Acoura)
6 Redheughs Rigg
Edinburgh
United Kingdom
EH12 9DQ

Sent by email

Date: 18/02/2019

Subject: Request for variation to the MSC Certification Requirement v2.3 GCR-7.5.6 for ISF Norwegian & Icelandic herring trawl and seine

Dear Polly Burns,

I write with reference to your submission on 05/02/2019 of a request for variation to the MSC Certification Requirement (CR) to allow:

An extension of the certificate for the ISF Norwegian & Icelandic herring trawl and seine fishery from 28th May 2019 to 28th October 2019 (5 months).

As you are aware, the CR procedures relating to v2.3 GCR-7.5.6 state:

The CAB shall issue fishery certificates with a maximum validity period of 5 years from the issue date. These are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- The fishery entered into reassessment relatively late, with less than a year until expiry of the certificate, due to uncertainty in the state of herring stocks
- Progress of the reassessment has been hindered by delays in completing the 4th surveillance audit and in securing a variation to carry over a condition into the next certification period

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- The CAB can confirm that it is not aware at this time of any factor (related to either fishery status, or performance against conditions) that could result in the fishery no longer being in compliance with the MSC Fisheries Standard
- Stakeholders are informed
- ECert is updated to reflect changes, including providing a certificate covering the period from the end of the current certificate to the date accepted in the variation response

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council
cc: Accreditation Services International

8.7.8. Request to carry over harmonised conditions into next certification period

Variation request

MSC Variation Request template 20180803



Marine Stewardship Council - Variation Request

Date submitted to MSC	7 th December 2018
Name of CAB	Lloyd's Register (LR) & DNV-GL Business Assurance Norway AS (DNV GL)
Fishery Name/CoC Certificate Number	1. ISF Norwegian & Icelandic herring trawl and seine/ F-ACO-0098 2. Norway spring spawning herring / MSC-F-61388
Lead Auditor/Programme Manager	Polly Burns (LR) & Sandhya Chaudhury (DNV-GL)
Variation prepared by:	Polly Burns (LR) & Sandhya Chaudhury (DNV-GL)
Scheme requirement(s) for which variation requested	FCRv2.0 7.24.2 (and subclauses): When conducting a re-assessment of a certified fishery, the CAB shall (...) evaluate progress against certification conditions. Unless exceptional circumstances apply (7.11.1.3) or paragraph (b) applies, the fishery shall have met all conditions and milestones. (...) In the event that there are unmet conditions, the CAB shall apply 7.23.13.1 and 7.23.13.2 (except 7.23.13.2.b.) in determining the adequacy of progress against those conditions and milestones. If the CAB concludes that the client has made inadequate progress, it shall not grant a new fishery certificate.
Is this variation sought in order to fulfil IPI requirements (FCR 7.4.14)?	No

1. Proposed variation		
The harmonised conditions for PI 3.1.1, PI 1.2.1 and PI 1.2.2 applied to ISF Norwegian & Icelandic herring trawl and seine & Norway spring spawning herring, will have a close out fixed deadline of 2020 in harmonisation with the other 2 fisheries in the table below. This means the ISF Norwegian & Icelandic herring trawl and seine and Norway Spring Spawning herring conditions for PI 3.1.1; PI 1.2.1 and PI 1.2.2 will be carried over into the next certification period (until 2020).		
2. Rationale/Justification		
There are currently four MSC-certified fisheries for Norwegian Spring Spawning / Atlanto-Scandian herring in Northeast Atlantic (FAO Area 27) (see table below). Two of the herring fisheries, ISF Norwegian & Icelandic herring trawl and seine and Norway Spring Spawning herring, are currently undergoing their year 4 surveillance and reassessment processes (highlighted in blue in the table below).		
Fishery	MSC status	Year 4/ Expires
ISF Norwegian & Icelandic herring trawl and seine	Certified with component(s) in assessment	2018/28-May-19
SPSG, DPPO, PFA, SPFPO & KFO Atlanto-Scandian purse seine and pelagic trawl herring	Certified	2020/ 02-Jan-21
Faroe Pelagic Organisation Atlanto-Scandian herring	Certified	2020/14-Jun-21
Norway spring spawning herring	Certified	2018/29-Jul-19
Across all Coastal States fisheries, there is a condition on PI 3.1.1 which was harmonised in 2015 ("The management system exists within an appropriate legal and/or customary framework which ensures that it: Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and		

Incorporates an appropriate dispute resolution framework.'). Although the condition itself is harmonised, the milestones to achieving this condition are not; the outcome timelines (Y4) span from May 2018 to Dec 2020. As a consequence, the condition is due to expire this year for ISF Norwegian & Icelandic herring trawl and seine and Norway Spring Spawning herring, whilst the other fisheries still have two years to close the condition.

The conditions set for these fisheries on PIs 1.2.1 and 1.2.2 are intrinsically linked with the condition for PI 3.1.1. The condition for PI 1.2.2 has a close out timeline of 2020, and the condition for PI 1.2.1 2021 – these timelines are harmonised.

The Coastal States [released an agreement](#) on 6th November 2018 which is part of the strategy from the client groups to meet the condition. There are further steps in the process underway which will only occur after the deadline for the current surveillance and when outcomes on the condition will be reported. The outcomes of the Coastal States' agreements and progress all directly relate to this condition. Should the fisheries entering reassessment be forced to leave the programme as a result of the condition not closing (under 7.24.2.2a) this will result in a scenario where identical fisheries with the same condition remain in the programme and be against the intent of the MSC to have harmonised outcomes.

Lloyd's Register and DNV-GL would therefore like to request an extension to the condition on 3.1.1 for ISF Norwegian Icelandic herring trawl and seine and Norway Spring spawning herring to:

- Allow the full picture relating to progress to be known before reporting on the condition status
- Ensure a harmonised approach to the condition across all fisheries
- Have time to harmonise the milestone wordings for all three conditions across all four fisheries

LR and DNV-GL would also like to harmonise the timelines for the conditions on 3.1.1, 1.2.1 and 1.2.2 so that they are all due to be closed out in the same year. The extra time granted by this variation will give the CABs the time to organise the harmonised wording of the condition texts and corresponding milestones – we're aware they are not currently harmonised and want to do so to ensure the intent of the MSC standard is not discredited. All fisheries listed in the table above will require to have the three conditions closed by 2020; this will be a hard deadline. The CABs will organise a harmonised surveillance audit during 2020 to assess the progress of the condition and ensure the harmonised outcome occurs at the same time.

PI 3.1.1 is scored identically under V1.3 and V2.0 of the MSC standard, so allowing the ISF Norwegian & Icelandic herring trawl and seine and Norway Spring Spawning herring fisheries to progress to reassessment with the condition open and the consequential move to V2.0 will not affect the condition's intent or involve a change between the fisheries that still have open conditions on V1.3.

We also note that under the new Fisheries Certification Process V2.1 there will be a requirement to harmonize condition milestones and we make this request in line with that new requirement.

3. Implications for assessment (required for fisheries assessment variations only)

No other implications for this assessment. A separate variation request has been accepted related to the fourth surveillance report timelines for the two Spring spawning herring fisheries.

4. Have the stakeholders of this fishery assessment been informed of this request? (required for fisheries assessment variations only)

No – stakeholders will be notified on publication of this request and response.

5. Further Comments

None thank you.

Variation response



Marine Stewardship Council

Polly Burns
Lloyds Register (Acoura)
6 Redheughs Rigg
Edinburgh
United Kingdom
EH12 9DQ

Sent by email

Date: 17/12/2018

Subject: Request for variation to the MSC Certification Requirement v2.0 FCR-7.24.2.2 for ISF Norwegian & Icelandic herring trawl and seine

Dear Polly Burns,

I write with reference to your submission on 07/12/2018 of a request for variation to the MSC Certification Requirement (CR) to allow:

Carrying over the condition on PI 3.1.1 into reassessment with the intention to harmonise condition timelines across all four certified Atlanto-Scandian herring fisheries

As you are aware, the CR procedures relating to v2.0 FCR-7.24.2.2 state:

Take into account all surveillance reports, outcomes, and evaluate progress against certification conditions. Unless exceptional circumstances apply (7.11.1.3) or paragraph (b) applies, the fishery shall have met all conditions and milestones

These are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- Certain outcomes required to assess progress on the condition will be only be reported after the deadline for the surveillance report
- There are no Fisheries Standard versioning issues associated with carrying over the condition on PI 3.1.1
- The CABs wish to use the additional time to consider harmonisation of timelines for the three conditions across all overlapping fisheries

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- Notwithstanding the subject matter of this variation, the CAB can confirm that it is not aware at this time of any factor (related to either fishery status, or performance against conditions) that could result in the fishery no longer being in compliance with the MSC Fisheries Standard
- Stakeholders are informed

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council
cc: Accreditation Services International

8.8. Appendix 7 Stakeholder Notification of Changes in the Assessment Team



Marine Stewardship Council fisheries assessments
01 October 2019

SAI Global **ISF Norwegian & Icelandic herring trawl and seine** **Stakeholder Notification of changes in the re-** **assessment team**

To assist with this Re-Assessment, SAI Global wishes to announce changes in the Re-Assessment Team. The proposed Re-Assessment Team comprises members with experience and expertise in the areas of stock assessment, ecosystem interactions and fishery management appropriate for this fishery. The changes are outlined below:

- Dr. Géraldine Criquet is now the Lead Assessor in replacement of Dr. Virginia Polonio who is no longer available for being part of the re-assessment team. Explanation on how Géraldine meets the qualification and competency criteria in Annexe PC Table PC1 and confirmation that she has no conflict of interest in relation to the fishery under re-assessment is provided in Annex 1.
- Conor Donnelly was already part of the re-assessment team announced on 12th July 2019 as assessor responsible for Principle 3. He is now taking over responsibility on Principle 2 and Traceability as well. Explanation on how Conor meets the competency and qualification criteria in Annexe PC Tables PC2 and PC3 and confirmation that he has no conflict of interest in relation to the fishery under re-assessment is provided in Annex 1.

Following the change, the composition of the re-assessment team is:

- Dr. Géraldine Criquet (Lead Assessor)
- Conor Donnelly (Assessor responsible for Principle 2, Principle 3 and Traceability)
- Dr. Maciej Tomczak (Assessor responsible for Principle 1). Explanation on how Maciej meets the competency and qualification criteria in Annexe PC Tables PC2 and PC3 and confirmation that he has no conflict of interest in relation to the fishery under re-assessment is provided in the Stakeholder Notification of change of Conformity Assessment Body posted on 12th July 2019 on the MSC website.

Comments may be sent to:

SAI Global Ireland Client Services

E: ClientServicesie@saiglobal.com

Submitted by: SAI Global Ireland Client Services

Date: 1st October 2019

Annexe 1 – Re-Assessment Team Competencies and Qualifications

Dr. Géraldine Criquet – Lead Assessor

Dr. Géraldine is a member of SAI Global's internal fisheries team.

Géraldine is an MSC approved Fisheries Lead Assessor for SAI Global - experienced fishery scientist in both Finfish and Shellfish fisheries, and ecosystems considerations. Géraldine holds a PhD in Marine Ecology (École Pratique des Hautes Études, France) which focused on coral reef fisheries management, fish biology and ecology and ecosystem impacts. She worked 2 years for the Institut de Recherche pour le Développement (IRD) at Reunion Island for studying fish target species growth and connectivity between fish populations in the Indian Ocean using otolith analysis. She has also been involved during 2 years in stock assessments of small pelagic resources in the Gulf of Biscay as part of a collaborative project with IFREMER. She served as Consultant for FAO on a Mediterranean Fisheries Program (COPEMED) and developed and implemented a monitoring program of catches and fishing effort in the Marine Natural Reserve of Cerbère-Banyuls (France). Géraldine is an experienced full time MSC Lead Assessor with SAI Global, successfully leading MSC certifications and assessment teams and acting as Principle 2 expert for multiple MSC Pre, Full and Surveillance audits in Europe and North America.

Géraldine meets the Fishery Team Leader Qualification and Competency Criteria outlined in FCR v.2.0 Annex PC, Table PC1.

She has:

- A degree in a relevant subject.
- 3 years' fisheries experience.
- Pass MSC's fishery team leader training at least every 3 years.
- Pass MSC's annual fishery team leader training on updates to the fishery requirements within 3 months of the effective date of new requirements and prior to undertaking assessments against new requirements.
- Pass the Lead Auditor ISO 19011 course.
- Have undertaken 2 MSC fishery assessment or surveillance site visits as a team member in the last 5 years.
- Experience in applying different types of interviewing and facilitation techniques.

Géraldine has a PhD in Marine Ecology and Biology. She completed MSC's Fishery Team Leader training both for FCR v.2.0 and FCP v.2.1. She has more than 3 years fisheries experience through involvement in numerous fisheries research projects as outlined in the above biography. Géraldine led numerous MSC assessments in the last 5 years in Europe and North America and has participated in numerous site visits.

Géraldine is fluent in English which is the common language used by the key stakeholders in Iceland.

Géraldine will be in charge of coordinating the Assessment Team's work and be responsible for the completion of the re-assessment in accordance with FCP v.2.0.

Géraldine does not have any conflicts of interest in relation to the fishery under assessment.

Conor Donnelly – Assessor responsible for Principle 2, Principle 3 and Traceability

Conor is a member of SAI Global's internal fisheries team.

Conor is an experienced marine ecologist and environmental manager with a background of over 17 years at the UK statutory nature conservation body, Natural England, where he was Senior Marine Adviser responsible for marine delivery across the East Midlands, Norfolk and Suffolk. He has a BSc. in Environmental Science from King's College, University of London and an MRes. in Marine and Coastal Ecology and Environmental Management from the University of York.

Conor has extensive experience of working with fisheries managers, the fishing sector, local communities and eNGOs, particularly from assessing the environmental impacts of mussel, cockle and shrimp fisheries in The Wash, UK and providing advice on their management. He was Natural England's representative on the Eastern

Inshore Fisheries and Conservation Authority and its predecessor. He also advised and supported the UK's Department for Environment, Food and Rural Affairs (Defra) on fisheries casework in the southern North Sea under the Common Fisheries Policy (CFP) including meetings with other member states. Other experience includes Marine Protected Area designation, conservation advice and condition assessment; conservation legislation and policy; and working with partners and stakeholders to deliver positive environmental outcomes.

Conor meets the Fishery Team Member Qualification and Competency Criteria outlined in Annex PC, Table PC2. In addition, he meets the Principle 2 and Traceability components of the Fishery Team Qualification and Competency Criteria in Annex PC, Table PC3; he has:

- A degree in a relevant subject.
- 5 years' fisheries experience.
- Passed MSC's fishery team member training within the last 3 years.
- Undertaken at least 2 MSC fishery assessment or surveillance site visits in the last 5 years.
- 5 years' or more experience as a practicing fishery manager and/or fishery/policy analyst.
- 5 years more experience in research into, policy analysis for, or management of, fishery impacts on aquatic ecosystems.
- Pass MSC's Traceability training module.
- Current knowledge of the country, language and local fishery context.

He has a BSc. in Environmental Science from King's College, University of London and an MRes in Marine and Coastal Ecology and Environmental Management from the University of York. He has passed the MSC online training FCR v.2.0 and FCP v.2.1 including the Traceability module and the ISO 19011 Lead assessor course. Conor has and extensive experience (10 years) in Marine Ecology, Conservation Legislation (EU and UK), Fisheries Management, Strategic Planning/ Risk Management.

English is his mother tongue and is also the common language used by the key stakeholders in Iceland. Further, Conor has more 2 years' experience in relevant fisheries in the last 15 years and he has been working in Icelandic fisheries in the last two years.

Conor was part of assessment team for: Canada 3LN redfish 2018 surveillance audit, Ireland and Northern Ireland bottom grown mussel 4th surveillance and re-assessment completed in 2018, and Ireland rope grown mussel full assessment completed in 2019.

Conor does not have any conflicts of interest in relation to the fishery under assessment.

8.9. Appendix 8 Objections Process

(REQUIRED FOR THE PCR IN ASSESSMENTS WHERE AN OBJECTION WAS RAISED AND ACCEPTED BY AN INDEPENDENT ADJUDICATOR)

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

(Reference: FCR 7.19.1)