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## MSC SUSTAINABLE FISHERIES CERTIFICATION

### Samherji Norwegian & Icelandic herring trawl and seine Fishery



#### Public Comment Draft Report

January, 2014

Prepared For:

**Samherji hf.**

Prepared By:

**Food Certification International Ltd**



## Public Comment Draft Report

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## Glossary

ACOM	ICES Advisory Committee
B <sub>pa</sub>	Precautionary reference point for spawning stock biomass
B <sub>lim</sub>	Limit biomass reference point, below which recruitment is expected to be impaired.
BIOICE	Benthic Invertebrates of Icelandic Waters
CoC	Code of Conduct
CFP	Common Fisheries Policy
CR	Council Regulation
DoF	Directorate of Fisheries
EC	European Commission
EEZ	Exclusive Economic Zone
ETP	Endangered, threatened and protected species
EU	European Union
F	Fishing Mortality
FFSÍ	Federation of Captains and Mates (Farmanna- og fiskimannasamband Íslands)
F <sub>lim</sub>	Limit reference point for fishing mortality that is expected to drive the stock to the biomass limit
F <sub>pa</sub>	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
ITQ	Individual Transferable Quota
IUU	Illegal, Unregulated and Unreported fish catches.
IWC	International Whaling Commission
LÍÚ	Landssamband íslenskra útvegsmanna ( Federation of Icelandic Fishing Vessel Owners)
LS	Landssamband smábátæigenda (Federation of Owners of Small Fishing Vessels)
MII	Ministry of Industries and Innovation
MRI	Marine Research Institute

MCS	Monitoring, Control and Surveillance
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NAMMCO	North Atlantic Marine Mammal Commission
NEAFC	North East Atlantic Fisheries Commission
NEA	North East Atlantic
NFT-ADAPT	NOAA Fisheries Toolbox ADAPTive Framework
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
PI	MSC Performance Indicator
PCDR	Public Comment Draft Report
RFMO	Regional Fisheries Management Organisation
SGBYC	ICES Study Group on Bycatch of Protected Species
SONAR	Sound navigation and ranging
SSB	Spawning Stock Biomass
SURF	Supportive Role to Fishery ecosystems
TAC	Total Allowable Catch
TASACS	Toolbox for Age-structured Stock Assessment using Catch and Survey data
TISVPA	Triple Instantaneous separable virtual population analysis
UNCLOS	United Nations Convention on the Law of the Sea
VMS	Vessel Monitoring System
VPA	Virtual Population Analysis
WGMME	ICES Working Group on Marine Mammal Ecology
WGRED	ICES Working Group for Regional Ecosystem Description
VM	Icelandic Union of Marine Engineers and Metal Technicians (Félag vélstjóra og málmtæknumanna)

## 1. Executive Summary

- » This report provides details of the MSC assessment process for the Samherji Norwegian & Icelandic herring trawl and seine fishery for Samherji hf.. The assessment process began in May, 2012 and was concluded (to be determined at a later date).
- » A comprehensive programme of stakeholder consultations were carried out as part of this assessment, complemented by a full and thorough review of relevant literature and data sources.
- » A rigorous assessment of the wide ranging MSC Principles and Criteria was undertaken by the assessment team and a detailed and fully referenced scoring rationale is provided in the assessment tree provided in **Appendix 1.1** of this report.
- » The **Target Eligibility Date** for this assessment is 28 August, 2013
- » The assessment team for this fishery assessment comprised of Nick Pfeiffer who acted as team leader and primary Principle 2 specialist; Sonia Maroño who was primarily responsible for evaluation of Principle 1 and Ásgeir Danielsson who was primarily responsible for evaluation of Principle 3. Paul Macintyre was responsible for traceability / chain of custody considerations.

### Client strengths

- » The herring stocks that form the basis of the evaluation are both well managed. The Norwegian spring spawning herring has a precautionary long-term management plan in place that implements appropriate reference points to manage the exploitation rate in the fishery in the context of management objectives. The Icelandic summer spawning herring fishery is managed using a number of tools in a less formal arrangement, however this has been shown to be effective at limiting fishing mortality and a more formal harvest control rule is under development.
- » The conclusions in relation to stock status for both stocks are drawn from a sound information base that is used to carry out robust and regular stock assessments.
- » Pelagic fisheries for herring do not make contact with the seabed – thus reducing any likelihood of negative impact on seabed habitats.
- » All but one of the vessels included in this assessment land catches to shore for processing. In this context they do not have any on board sorting equipment so high-grading and discarding is not possible – unless the haul is ‘slipped’ (i.e. the cod end untied before the fish are pumped aboard). The report describes a rationale why slippage in both fisheries is thought to be negligible – a conclusion supported by expert consultation, including evidence from observer coverage.
- » Under Icelandic fishing rules, the one processing vessel included in the assessment is required to carry a scientific observer at all times while operating in this fishery.
- » In the past there has been a reasonable level of observer coverage for the pelagic fleet operating in Iceland and these have sought to quantify the level of interaction with endangered, threatened or protected species. This has shown a negligible level of impact, therefore the fishery is considered to present a low risk to ETP species.
- » The fisheries management process and infrastructure are appropriate to the fishery and are able to govern the level of fisheries exploitation in an informed and transparent manner, employing clearly defined decision-making process, which take account of the precautionary principle.
- » There is an appropriate level of enforcement and control in this fishery, and a high level of confidence on the part of the authorities in the degree of compliance of the fleet with the fisheries regulations.



- » Iceland operates a highly transparent catch reporting system that is subject to verification by the Fisheries Directorate. All catches for all vessels are individually reported and catch data for all trips is publicly available on the Fiskistiofa (Fisheries Directorate) website.
- » The fishery management is supported by a well-resourced and strong scientific capacity, which helps to enable management to make informed decisions.
- » The client group is a highly vertically integrated fishing enterprise that is involved in catching, processing and sales of pelagic catches. The Samherji organization processes fish for both human consumption and also produces fishmeal from byproduct and unmarketable catches. This is likely to reduce incentives for discarding of catches at sea.

#### **Client weaknesses**

- » Overall, relatively few weaknesses have been identified in the fishery assessment and scores are generally reasonably high. For Icelandic summer spawning herring, weaknesses relate to Principle 1 where the certification has been made with a condition applied in relation to the development and implementation of formal harvest control mechanisms within the life of the certification period.
- » The trawl fisheries presently catch significant quantities of northeast Atlantic mackerel as retained catch. The international agreement that has overseen the management of the stock in recent years is no longer effective in controlling exploitation of the stock in the context of scientific advice and there is no effective international agreement in place. This has caused the fishery to have a condition applied in relation to the management of retained mackerel catches.
- » Under Principle 2, the fishery scored adequately under all performance indicators, however scores would have been higher had it been demonstrated to the assessment that the fishery engaged in voluntary reporting in relation to slippage and encounters with endangered, threatened and protected species (even though this may be an exceptionally rare occurrence).

#### **Determination**

On completion of the assessment and scoring process, the assessment team concluded that the Samherji pelagic trawl fishery for Norwegian Icelandic spring spawning herring and the Samherji purse seine and pelagic trawl fisheries for Icelandic summer spawning herring should be certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries.

#### **Rationale**

- » There are a number of areas which reflect positively on the fishery:
  - › Both stocks considered in the assessment have recovered from earlier periods of low biomass, while the Norwegian Icelandic spring spawning herring stock has been declining in recent years, the stock remains above precautionary levels
  - › The fishery is operated by a small number of modern technologically advanced vessels that use electronics to aid in shoal location and tracking
  - › There is very little interaction with other ecosystem components
  - › The fishery is spatially and temporally constrained and is therefore easier to manage

- › There is a management framework in place that covers the operation of the fleet under assessment in the Norwegian Icelandic spring spawning herring fishery which has proven to be effective in the past
- › The fishery for Icelandic summer spawning herring is limited to Icelandic vessels and there is no shared management of the stock
- › There is a record of high compliance with fishing rules by the assessed fleet and catches have remained within advice in recent years

### Conditions & Recommendations

- » However, a number of criteria which contribute to the overall assessment score scored less than the unconditional pass mark, and therefore trigger a binding condition to be placed on the fishery, which must be addressed in a specified timeframe (within the 5 year lifespan of the certificate). Full explanation of these conditions is provided in **Section 1.3** of the report, but in brief, the areas covered by these conditions are:
  - › For Icelandic summer spawning herring: PI 1.2.2 – Effective harvest control rule in place
  - › For pelagic trawl Units of Certification for both Icelandic summer spawning herring and Norwegian Icelandic spring spawning herring: PI 2.1.2 – management of retained non-target species (northeast Atlantic mackerel)
- » In addition, the assessment team made a number of recommendations. As these are not the result of a failure to meet the unconditional pass mark, they are non-binding; however in the opinion of the assessment team, they would make a positive contribution to ongoing efforts to ensure the long term sustainability of the fishery. Details of these recommendations are provided in **Section 6.3.1** of this report.

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

FCI Ltd confirm that this fishery is within scope.

## 2. Authorship and Peer Reviewers

### 2.1 Assessment Team

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

**Assessment team leader:** Nick Pfeiffer

Primarily responsible for assessment under Principle 2

Nick Pfeiffer is a fisheries and marine environmental specialist with a diverse experience and in-depth knowledge of marine fisheries. Nick's experience as a fishery scientist spans 15 years and includes the development of fisheries technical conservation measures for commercial fisheries as well as the evaluation of the impacts of a variety of fishing methods on marine ecosystems. Nick is based in the west of Ireland where he is a founding director of the environmental and ecological services company MERC Consultants. As a marine ecologist and aquatic resource specialist with a particular interest in interactions between nature and both aquaculture and capture fisheries Nick provides a range of aquatic environmental and ecological services mainly in support of aquatic nature conservation, fisheries and aquaculture and marine renewable energy. Nick heads up aquaculture and capture fisheries related aspects of MERC's work while also contributing to other projects such as aquatic habitat mapping, benthic faunal studies and survey work in connection with appropriate assessments for fisheries and aquaculture in Natura 2000 sites.

Nick's academic background includes undergraduate studies in aquaculture and marine science at the University of Plymouth, while he also conducted postgraduate research in fisheries at the University of Georgia and at University College Galway. He was employed as a fisheries scientist with the Irish government from 1992 to 1995. Between 1995 and 1997 Nick was manager of the Marine Fisheries Environment Unit at University College Galway.

**Expert team member:** Sonia Sánchez Marañón

Primarily responsible for assessment under Principle 1

Sonia Sánchez is a fisheries modeller at AZTI-Tecnalia, Marine and Food research institute, with experience on assessment and management of small pelagic. She holds a degree in Mathematics from the University of the Basque Country and an Inter-university Master in mathematical modelling, statistics and computation.

She is member of the ICES Working Group on Widely Distributed Stocks (WGWIDE) from 2008 onwards and of the SCSA Working Group on stock assessment of small pelagic species in 2009. She has been involved in several research projects on assessment, biology, stock dynamics and management of the stocks targeted by the inshore fleet of the Basque Country since 2007 and other small pelagic in the Mediterranean Sea.

She is currently working on the development of Operating Models and implementation of management strategy evaluation tools, in order to analyse management measures currently in force and its impact on the Basque fisheries.

Since 2009, Sonia is working in the eco-certification of fisheries products and the study of the MSC certification standards. She has been responsible for the review of several MSC pre-evaluations and leads the analysis of the possibilities of certification of main interest fisheries of Basque Country inshore fleet. Participating in the definition of improvement measures for the Basque Country fleets targeting tuna stocks, in order to get MSC certification.

**Expert team member:** Ásgeir Daníelsson

Primarily responsible for assessment under Principle 3

Dr Danielsson received Fil. Kand. Degree from University of Uppsala, Sweden, in 1974. He received M.Sc. in Economics from London School of Economics in 1981 and Ph.D. in Economics from Manchester University in 1985.

He worked at the National Economic Institute 1987-2002. This institute was the main provider of economic analysis and forecasts for the government and for the public in Iceland. From 1989 he worked on fisheries and fish processing, collecting and analyzing prices, costs and firms' accounts

and making forecasts on profitability and economic conditions. Dr Danielsson participated in the working group (chaired by Brynjólfur Bjarnason) on catch rules that published reports in 1993 and 1994 and suggested the catch rule for cod that was adopted by the Icelandic government in 1995. As an economist at the National Economic Institute he worked on analysis of the Icelandic quota management system for the committee on the natural resources (Auðlindanefnd, chaired by Jóhannes Nordal) that finalized its report in 2000 and also for the committee for reviewing the quota system (Endurskoðunarnefnd, chaired by Friðrik Már Baldursson) that finalized its report in 2001. Dr Danielsson also participated in the working group on catch rules that finalized its report to the Minister of Fisheries in 2004 and he was commissioned to lead the committee's work on the analysis of outcome of the catch rule that was adopted in 1995. The recommendations of this group led to the modifications of the catch rule for cod that were made by the Minister of Fisheries in 2007.

Since 2003 he has been working in the Central Bank of Iceland on macroeconomic issues, forecasts and analyzing monetary matters. The last three years he has been the head of forecasting and research at the bank.

Dr Danielsson worked as Principle 3 expert in a MSC assessment team on cod, haddock and wolfish in Icelandic waters during 2010-2011. The assessment was done for the sales organization Sæmark Seafood Ltd., Iceland.

**Expert advisor:** Paul Macintyre

MSC Chain of Custody and Traceability specialist / Lead Auditor

15 years management experience within the aquaculture and fish processing sectors. 20 years' experience auditing ISO, HACCP, BRC, GlobalGAP, organic and conventional farming operations within the aquaculture production and fish processing sectors and including MSC Chain of Custody since 2005. ISO 9001 Lead Auditor (QMI 1991); Registered Organic Inspector (DEFRA); Diploma in Advanced Food Hygiene (Queen Margaret University Edinburgh); BRC v5 Food Manufacturing Auditor BRC (London and Manchester); GlobalGAP IFA Trainer (GlobalGAP Cologne) ; RYA Yachtmaster Offshore (RYA Southport) ; Diploma Photography (Photography Institute)

### 2.1.1 Peer Reviewers

Peer reviewers used for this report were Stephen Lockwood and Hreidar Valtýsson. A summary CV for each is available in the **Assessment downloads** section of the fishery's entry on the MSC website.

Justification to be added by FCI here as to why these particular peer reviewers were appointed - to be framed in terms of their specific areas of expertise relevant to this particular fishery and why they will be in a position to provide expert reviews to ensure the scores and rationales given by the assessment team have taken account of all the available information and can be scientifically justified.

### 2.1.2 RBF Training

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

While the use of the RBF was indicated as a possibility for evaluating some P2 Outcome performance indicators, in the circumstances use of the RBF was not found to be necessary.

### 3. Description of the Fishery

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

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

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

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

The fishery assessed for MSC certification is defined as:

##### UoC 1

<b>Species:</b>	Atlantic herring ( <i>Clupea harengus</i> )
<b>Stock:</b>	Herring in the Northeast Atlantic (Norwegian spring-spawning stock)
<b>Geographical area:</b>	Iceland EEZ, ICES Subarea IIa, Va and Vb1b and North East Atlantic FAO Area 27
<b>Harvest method:</b>	Mid-water trawl mesh size 40mm
<b>Client Group:</b>	Samherji hf and Sildarvinnsalan hf vessels targeting the Northeast Atlantic herring stock in ICES Subarea IIa, Va and Vb1b using mid-water trawl
<b>Other Eligible Fishers:</b>	Icelandic registered vessels that are not currently members of Samherji hf and Sildarvinnsalan hf targeting the Northeast Atlantic Norwegian spring-spawning herring stock within the Iceland EEZ, ICES subareas IIa, Va and Vb1b using mid-water trawl

##### UoC 2

<b>Species:</b>	Atlantic herring ( <i>Clupea harengus</i> )
<b>Stock:</b>	Herring in the Northeast Atlantic (Icelandic summer-spawning stock)
<b>Geographical area:</b>	ICES Subarea Va within Iceland EEZ
<b>Harvest method:</b>	Mid-water trawl mesh size 40mm
<b>Client Group:</b>	Samherji hf and Sildarvinnsalan hf vessels targeting the Icelandic summer-spawning stock in ICES Subarea Va within Iceland EEZ using mid-water trawl
<b>Other Eligible Fishers:</b>	Icelandic registered vessels that are not currently members of Samherji hf and Sildarvinnsalan hf targeting the Icelandic summer-spawning stock within the Iceland EEZ, ICES subareas IIa, Va and Vb1b using mid-water trawl

##### UoC 3

<b>Species:</b>	Atlantic herring ( <i>Clupea harengus</i> )
<b>Stock:</b>	Herring in the Northeast Atlantic (Icelandic summer-spawning stock)
<b>Geographical area:</b>	ICES Subarea Va within Iceland EEZ
<b>Harvest method:</b>	Purse seine with mesh size 31mm
<b>Client Group:</b>	Samherji hf and Sildarvinnsalan hf vessels targeting the Icelandic summer-spawning stock in ICES Subarea Va within Iceland EEZ using purse seine
<b>Other Eligible Fishers:</b>	Icelandic registered vessels that are not currently members of Samherji hf and Sildarvinnsalan hf targeting the Icelandic summer-spawning stock within the in ICES Subarea Va within Iceland EEZ using purse seine

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

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

### **3.1.1 Scope of Assessment in Relation to Enhanced Fisheries**

No stock or habitat enhancement activities take place in the fishery.

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

Herring are native to the north Atlantic and the fishery is not an introduced species based fishery.

## 3.2 Overview of the fishery

### 3.2.1 Samherji hf.

#### Fishery Ownership

The Client entering into Full Assessment is Samherji hf. Two stocks of herring in the Northeast Atlantic are included in the assessment:

- » Norwegian Spring spawning herring
- » Icelandic summer spawning herring

Samherji was founded in 1983 and has grown to be a leading Icelandic seafood company headquartered in Akureyri, Iceland. Outside of Iceland, Samherji has further commercial seafood interests in Germany, Poland, U.K., the Faroe Islands, Africa, Canada, France and Spain.

Samherji is a vertically integrated seafood company, controlling a significant volume of fishing quota, operating a powerful fleet of fishing vessels; freezer and fresh fish trawlers, as well as multi-purpose vessels, white fish factories and fish farming enterprises. Samherji also runs extensive sales and marketing operations which are coordinated from the company's head office.

The Client Group being assessed includes vessels belonging to Samherji hf and Sildarvinnslan hf (a part owned subsidiary of Samherji hf) which target Northeast Atlantic Norwegian spring-spawning herring stock in ICES Subareas IIa, Va and Vb1b using mid-water trawl, as well as Icelandic summer spawning herring in ICES Subarea Va using both mid-water trawls and purse seine gears.

As one of Iceland's largest seafood companies, Sildarvinnslan hf has been in operation for over four decades and has extensive experience in fisheries and fish processing. It is the country's largest catcher and processor of pelagic species and largest producer of fishmeal and oil. Sildarvinnslan is based in Neskaupstadur, in Iceland's East Fjords, but operates from 5 locations around Iceland, as well as in the US and Greenland.

Sildarvinnslan operates an ultra-modern production plant for processing whitefish, pelagic species and salted herring. At the same time, the company operates three well-equipped fishmeal and oil factories, and a fleet consisting of a freezing trawler, ice trawler and two pelagic vessels, in addition to which its partners operate one pelagic vessel. Sildarvinnslan owns specialised port facilities close to its headquarters in Neskaupstadur, including catch landing and processing facilities as well as freezing and chilling stores and a high-production ice factory.

The assessment includes a total of 6 large pelagic fishing vessels. Most of these land their catches to onshore processing facilities and fish are stored in on-board Refrigerated Seawater (RSW) tanks prior to off-loading. The assessment also includes 1 processing vessel that catches and processes fish at sea. All herring catches included in the assessment are used for human consumption, with trimmings being used for fishmeal production.

The combined entitlement of both companies to Norwegian Spring spawning herring amounts to 24.95% of the Icelandic quota. This is stable and represents the greatest concentration of quota entitlement for the stock in Iceland. There is little or no prospect of upwards movement in entitlement, however there is pressure to reduce the share from other interests in Iceland.

The combined quota entitlement for the Icelandic summer spawning herring is 28.84%. This is also stable although the system in operation in Iceland allows for trading of quota between companies.

#### History of the Fishery

Two stocks of herring in the Northeast Atlantic are included in the assessment:

- » Norwegian Spring spawning herring (also referred to as Norwegian-Icelandic summer spawning herring)
- » Icelandic summer spawning herring

Information in relation to the history of the Icelandic herring fisheries is available at [www.fisheries.is](http://www.fisheries.is) and <http://www.hafro.is>.



Historically, Icelandic herring catches were less than 30 thousand tonnes until after W.W.I when they gradually increased over time to in excess of 200 thousand tonnes. Catches were mostly made from fisheries confined to local Icelandic stocks. After WWII, catches declined again but increased rapidly during the 1960's to more than 600 thousand tonnes. Most of the large growth in catch was based on the Norwegian Spring spawning stock.

With improvements in technology in the post war period, catches of the largest stock, the Norwegian Spring spawning herring increased rapidly after 1950 and reached a peak of almost 2 million tonnes in 1966. However the stock then collapsed almost entirely and catches were reduced to near zero by 1969. Many other herring stocks in the North Atlantic were decimated around this time.

A combination of rapid technology improvements (principally the advent of the Puretic power block for use in purse seine fishing) , together with fleet development, worsening oceanographic conditions and catches of 200 to 500 thousand tonnes annually of juvenile herring in Norwegian waters are widely believed to be the main reasons for the collapse of the fishery. The collapse was an enormous setback for many coastal economies in the northeast Atlantic, including Iceland, which was particularly hard hit because of the great importance of the herring fisheries for their economy.

After the collapse, a near moratorium was soon established on the herring fisheries. Until 1984 catches of the Norwegian Spring spawning stock remained less than 20 thousand tonnes annually. From 1986 to 1992 catches slowly grew to around 100 thousand tonnes annually. From the mid 1990's onwards, strong year classes have been recruited to the fishery and the stock has rebuilt fast and total catches increased to a maximum of 1.5million tonnes in 1997. Since then however, total catches have been in the range of 750 thousand to 1.3 million tonnes and there has been effective international agreement for the management of the stock. With the growth in the stock, much of the catch of Norwegian spring spawning herring is now taken in waters close to or within the Icelandic EEZ, on account of the fact that the expansion of the stock has now pushed out into western waters to where the stock undertakes migration. Icelandic vessels once again began catching this herring in 1994 and the annual catches since then have been between 100 and 200 thousand tonnes.

The current fishery for the Norwegian spring spawning stock is controlled by the setting of a TAC, which is then divided between nations involved according to annual agreements. The division of the TAC between countries has been based on distribution of the stock, historical catches, contribution to scientific research and the nation's dependency on fisheries. The aim of the management is to keep the fishing mortality rate at or below 0.125. Each country decides how its quota is split between vessels and when the fishery is conducted. The countries can take a certain percentage of their catch in each other's EEZ according to bilateral agreements.

Most of the herring catches within Icelandic waters since the collapse of many herring stocks in 1967 have been taken out of the Icelandic summer spawning herring stock. Historically, this stock has always been much smaller than the Norwegian Spring spawning stock and does not undertake migrations outside the Icelandic EEZ. This stock also collapsed in 1967, but was faster to recover than the Norwegian Spring spawning stock. The size of the Icelandic stock is now close to record high levels, and it sustains catches of around 100 thousand tonnes or more annually. The stock has recently been hard hit by Ichthyophonus parasitic infections which caused large mortality of herring in recent years. However as of 2013 the stock appears to be recovering from this infection and the instances of infected fish in research and commercial catches are reducing.

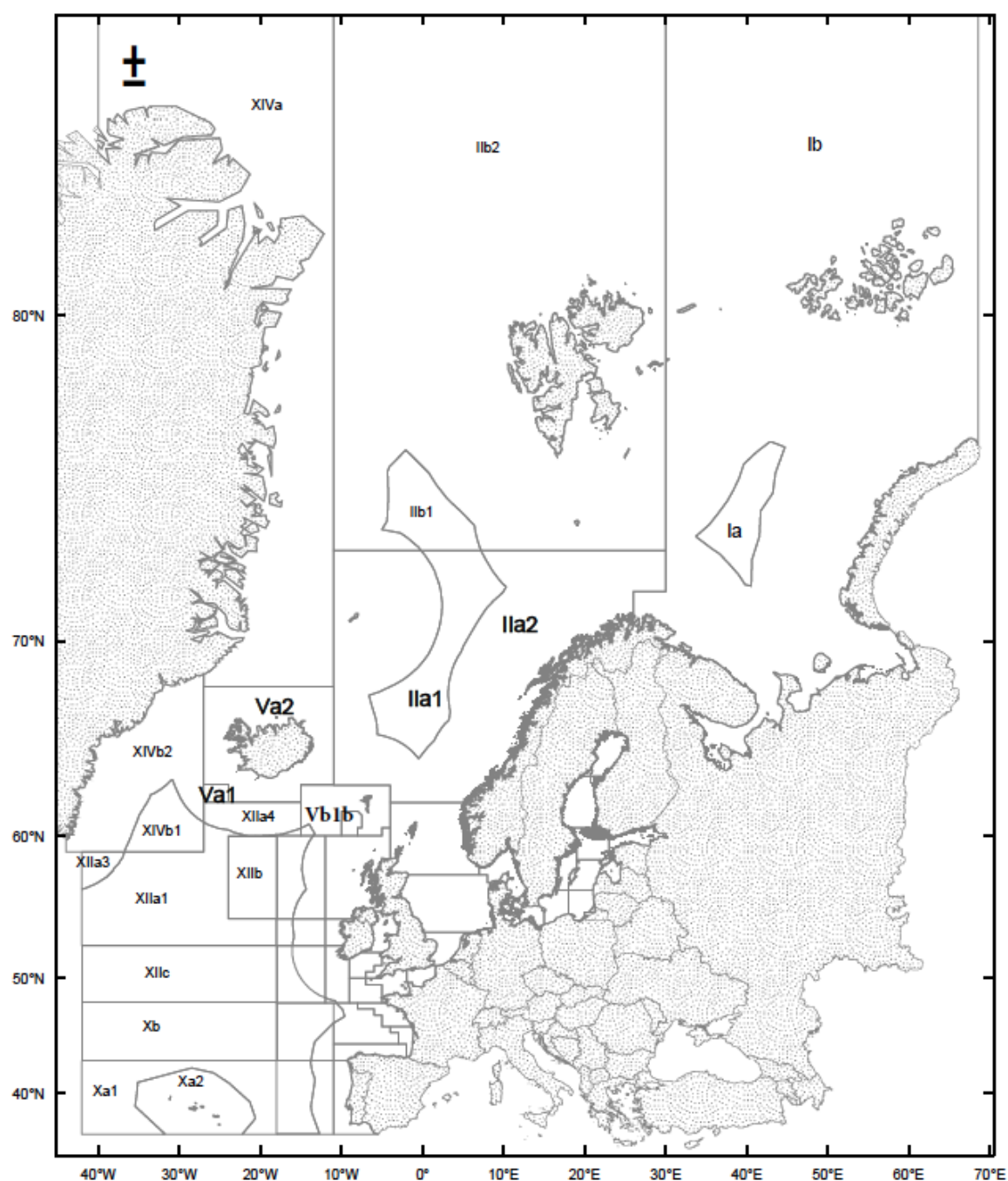
### **Area Under Evaluation**

The Norwegian-Icelandic spring spawning herring fishery takes place in ICES Subareas IIa (1&2), Va (1&2) and Vb1b. All are within the North East Atlantic FAO Area 27.

The Icelandic summer spawning herring fishery takes place entirely within the Icelandic EEZ and within this, all catches are made relatively close to the Icelandic coast and within ICES subarea Va.

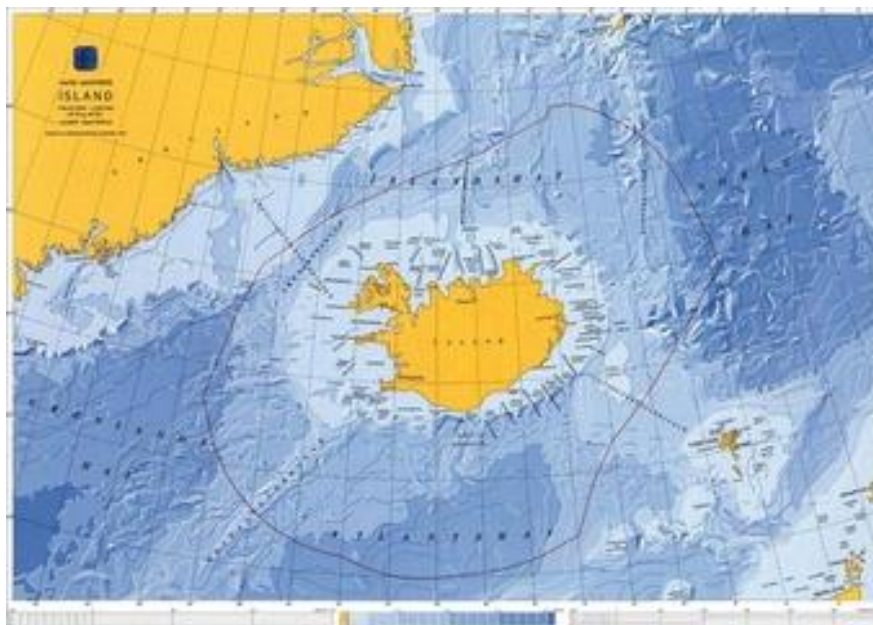


Figure 3.2.1 ICES subareas NE Atlantic



Source: ICES

**Figure 3.2.2 Icelandic EEZ**



Source: Produced by Icelandic Coast Guard and reproduced from <http://www.fisheries.is/iceland/>

### 3.2.2 Species and Fishing Practice

#### Species type/s

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 (*Clupea harengus*) 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.

*Clupea harengus* 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 Norwegian Icelandic stock are spring spawners, while the Icelandic stock are summer spawners (ICES, 2012b).

The Norwegian-Icelandic spring spawning herring stock spawns along the coast of central Norway. Generally the larvae then drift to nursing areas along the coast of northern Norway, Russia and in the Barents Sea, where the juveniles stay until they are sexually mature at the age of 4 to 6. When mature, the herring undertake large scale feeding migrations to the waters north and east of Iceland. During winter the stock condenses into large schools in the waters east of Iceland and during the spring it moves back to the Norwegian spawning grounds. This pattern does however vary according to changing oceanographic conditions, stock size and stock composition.

The Icelandic summer spawning herring is different from the Norwegian-Icelandic spring spawning stock as this stock is a coastal stock and does not leave Icelandic waters. It also differs in that it spawns in July.

Currently the two stocks included in this assessment have quite separate distribution patterns and 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.

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: Herring Assessment Working Group (stock Annex) (ICES 2012b)
- » ICES Fishmap: <http://www.ices.dk>
- » FAO Species Factsheet: <http://www.fao.org/fishery/species/2886/en>

## Management History

Fisheries for Norwegian Icelandic spring spawning herring take place in the EEZ's of Iceland, the Faroe Islands and Norway, the EU fisheries zone as well as in international waters. Managing and conserving the fish stock is therefore a shared responsibility requiring close international cooperation between all relevant nations in the region.

In the early years of the fisheries and up until the 1990's, management was not well coordinated amongst fishing nations with an interest in the stock and there was little or no agreement on TACs. Fisheries on the high seas or in international waters were largely unregulated. After the major collapse in the stock, renewed efforts were put in place internationally in order to manage highly migratory and straddling stocks. Much of these efforts were underpinned by the requirements for establishing RFMO's as laid down in the United Nations Convention on the Law of the Sea. The fishery for Norwegian Icelandic spring spawning herring is today managed through international arrangements that are in place since 1999 and that provide Iceland, as a coastal state, with an agreed share of the TAC. The allocation of shares between the relevant coastal states is based on factors including fishing history, the extent to which the stock occur and can be fished commercially in national waters, the level of dependency on fisheries, as well as contribution to scientific research on the stock.

Bilateral agreements between the coastal states provide access for the coastal state vessels to fish in each other's zones. Zonal and seasonal flexibility ensure an optimal and responsible utilisation of resources, in both biological and economic terms.

Fishing for Norwegian Icelandic spring spawning herring in international waters is regulated through measures adopted by the North East Atlantic Fisheries Commission (NEAFC), based on the management arrangements agreed between the coastal States.

At international level, the long-term management objectives for the Norwegian Icelandic spring spawning herring stock are agreed by the EU, Faroe Islands, Iceland, Norway and Russia (Agreement of 1999, updated by agreement in 2006).

The long-term management objectives agreed upon by the coastal states are:

- » *Every effort shall be made to maintain a level of Spawning Stock Biomass (SSB) greater than the critical level (Blim) of 2 500 000 t.*
- » *Fishing shall be restricted on the basis of a TAC consistent with a fishing mortality rate of less than 0.125 for appropriate age groups as defined by ICES, unless future scientific advice requires modification of this fishing mortality rate.*
- » *Should the SSB fall below a reference point of 5 000 000 t (Bpa), the fishing mortality rate, shall be adapted in the light of scientific estimates of the conditions to ensure a safe and rapid recovery of the SSB to a level in excess of 5 000 000 t. The basis for such an adaptation should be at least a linear reduction in the fishing mortality rate from 0.125 at Bpa (5 000 000 t) to 0.05 at Blim (2 500 000 t).*

Jakobsen and Stefansson (1999) provide a comprehensive description of the management of the Icelandic summer spawning herring since the inception of the fishery. Year-round fishing for this stock first commenced in the early 1960s and this new development resulted in a rapidly increasing rate of exploitation and a corresponding decline in stock biomass. The decline coincided with poor recruitment that could also have been influenced by deteriorating environmental conditions during the late 1960s (Jakobsson and Stefansson, 1998). At the end of 1971, a moratorium on fishing the stock was agreed and the fishery was closed. By that stage however it is estimated that the spawning stock biomass was only some 12 000 t, all of which overwintered in two schools to south-east of Iceland. In summer 1971, this very small spawning stock is believed to have produced a relatively strong year class and this was to become the basis of the subsequent recovery of the stock. During the moratorium on fishing, a new policy for future harvesting of the stock was formulated.

During an ad hoc meeting to provide advice on the biological bases for fisheries management, ICES (1977) stressed the need to consider exploitation pattern and seasonal restrictions when formulating management policy. The report also recommended fishing at a low level of  $F$ , and fishing at  $F_{0.1}$  was much preferred to fishing at  $F_{max}$ , especially for schooling species that had been shown to be vulnerable to high rates of exploitation. Subsequently, as the Icelandic summer-spawning herring stock increased and its fishery developed during the late 1970s, a policy was adopted that the target fishing mortality rate should be  $F_{0.1}$ . (Jakobsen and Stefansson, 1999).

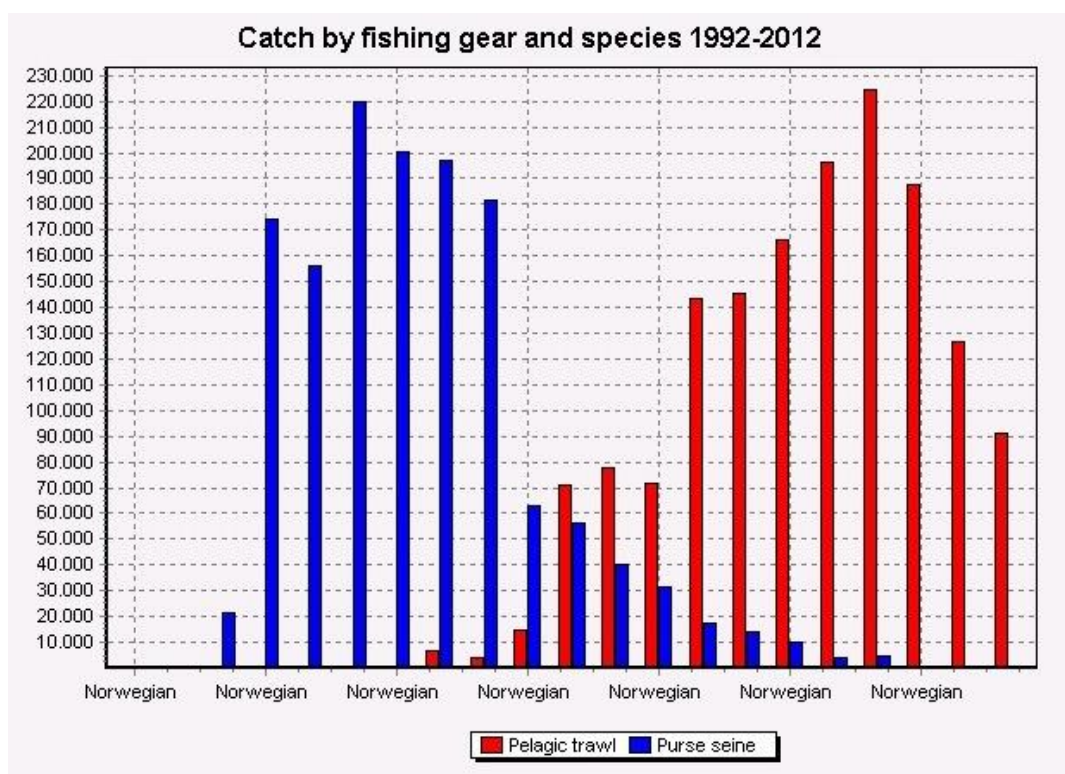
Today, there is no formal management plan in place for the Icelandic summer spawning herring stock and for more than 30 years the policy has been to manage the fishery at  $F = F_{0.1}$  ( $= 0.22$ ). This target is considered to be consistent with MSY approach (ICES, 2013a)

### **Fishing Practices**

In recent years, catches of Norwegian-Icelandic spring spawning herring have been procured only using pelagic trawls and there is no purse seine fishery for this stock in operation by the fleet under assessment, although a purse seine fishery did exist for this stock in the past until the mid-2000's (see Figure 3.2.3). Vessels are believed to have switched over due to a change in behavior of the herring (whereby they no longer formed dense schools suitable for targeting with purse seine gear) that resulted in reduced effectiveness of purse seining.



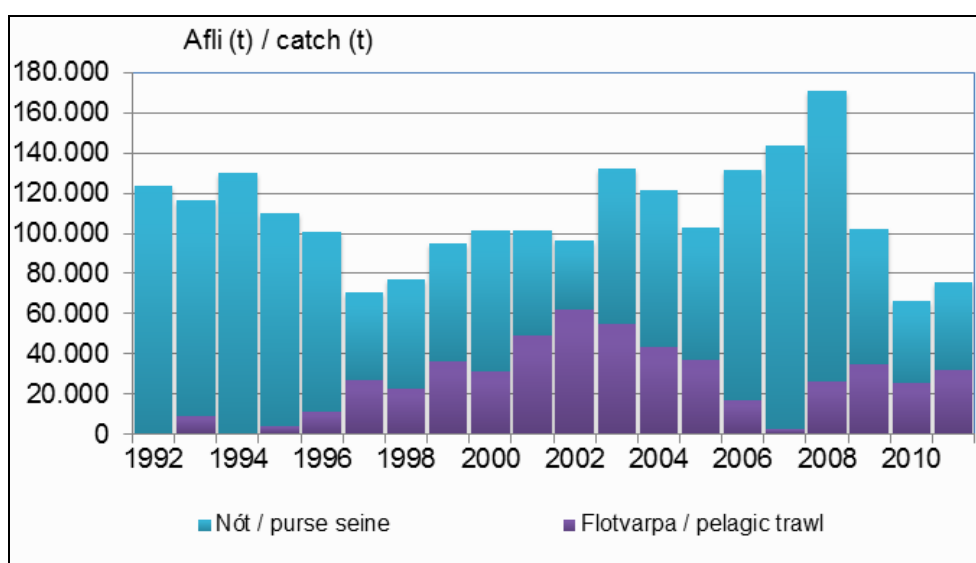
Figure 3.2.3 Catches of Norwegian-Icelandic spring spawning herring by gear type for Icelandic vessels ('000s t)



Source: Reproduced from Statistics Iceland website

In the past, purse seining was the main method by which catches of Icelandic summer spawning herring were made by the certified fleet and the method remains popular amongst smaller Icelandic vessels. However in recent years this method of fishing has declined in use (see Figure 3.2.4) by the fleet under assessment for similar reasons related to its declining use for catching catches of Norwegian-Icelandic spring spawning herring in addition to the fact that the relatively small entitlements can be rapidly taken outside of the fjords where fishing with pelagic trawl is permitted. The vast majority of catches of Icelandic summer spawning herring by the fleet under assessment are now procured using pelagic trawls. Some catches were made during 2011 by the Vilhelm Þorsteinsson using purse seine and the method of fishing is the basis of a separate Unit of Certification in the overall assessment of fisheries for this stock that are included under the assessment.

**Figure 3.2.4 Catches of Icelandic summer spawning herring by gear type for Icelandic vessels**



Source: Produced by Statistics Iceland and reproduced from [www.fisheries.is](http://www.fisheries.is)

Pelagic trawls are towed at the appropriate level in the water column to intercept target shoals, with gear depth being controlled by altering towing speed and/or warp length. The horizontal opening is maintained by mid-water pelagic trawl doors whilst the vertical opening is normally maintained using a chain weighted groundline and floatation attached to the headline. The trawl used by the Icelandic pelagic fleet is designed and rigged to fish in midwater, including in the surface water and is therefore not designed to come in contact with the seabed, and any inadvertent contact is extremely rare – and would risk causing expensive damage to the net. The large net (considerably larger than a demersal trawl net) consists of a cone shaped body, ending in a codend with lateral wings extending forward from the opening. Large mesh in the wingends of the forward moving trawl herd the fish before tapering to finer meshes in the square, belly and eventually the cod end. Larger mesh fitted to the front of the net is intended to facilitate the escape of small fish and also pelagic invertebrates such as jellyfish, which have the potential to be impacted by pelagic fisheries.

Purse seine fishing is a specialised operation that involves encircling dense schools of herring with a seine net. Herring are often fished at night time when they may form denser schools close to the surface of the water and within range of the purse seine gear which is restricted to fishing the very upper layers of the water column. Once encircled, the two ends of the gear are held aboard the vessel while the purse wire that is attached to the bottom of the net is winched tight, thereby closing the bottom of the net and forming a purse within which the catch is now held. Using a power block, the net is then slowly brought aboard in order to reduce the submerged volume of the seine and better concentrate the fish for the purpose of pumping them aboard the vessel. In order to be effective, purse seining requires that fish form dense aggregations on or close to the surface of the water.

Of the six vessels included in the assessment, five are large (<50m) modern high seas pelagic fishing vessels. These vessels are technologically advanced with on-going investment in state of the art technology and modern electronic equipment such as sonar, net and catch monitors, which have greatly improved the precision of this method of fishing. Although some vessels retain the flexibility to use purse seine nets to fish for pelagic species, this gear type has not been used to a significant degree in recent years by any of the fleet whilst engaged in fishing for Norwegian-Icelandic spring spawning herring and the vessels obtain all of their pelagic catch using pelagic trawls fished in single vessel operations, whereby pelagic trawl doors are used to keep the mouth of the net open rather than each end of the net being towed in unison by two separate vessels. Fish handling is highly automated and fish is pumped onboard from nets directly into large tanks containing refrigerated seawater (RSW). These vessels land catches directly to processing factories in Iceland, the Faeroe Islands and Norway.

The sixth vessel is a large (80m) factory trawler that engages in both pelagic trawling (single vessel) as well as purse seine fishing to a much lesser extent. Catch handling is highly automated and catches are processed onboard and are frozen and landed directly into Iceland from where they are shipped onwards to markets. Typically this vessel will remain at sea for up to 30 days, only coming ashore to offload product, resupply and undergo maintenance.

Two vessels (Vilhelm Þorsteinsson, Kristina) belong to the client company Samherji hf, while the vessels Börkur, Beitir, Birtingur and Bjarni Ólafsson are owned by Sildarvinnslan hf. Both companies are members of the Icelandic Fishing Vessel Owners Association and are active in promoting management of Icelandic fishing resource interests. In this context, they provide a representative to attend the negotiations at coastal states annual meeting.

Table 3.2.1: List of member vessels

Name	Vessel Reg. No.
Vilhelm Þorsteinsson EA-11	2410
Kristina EA-410	2662
Börkur NK-122	2827
Beitir NK-123	2730
Birtingur NK-124	1293
Bjarni Ólafsson AK-70	2287

Source: Client Group

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

#### MSC Fisheries Department

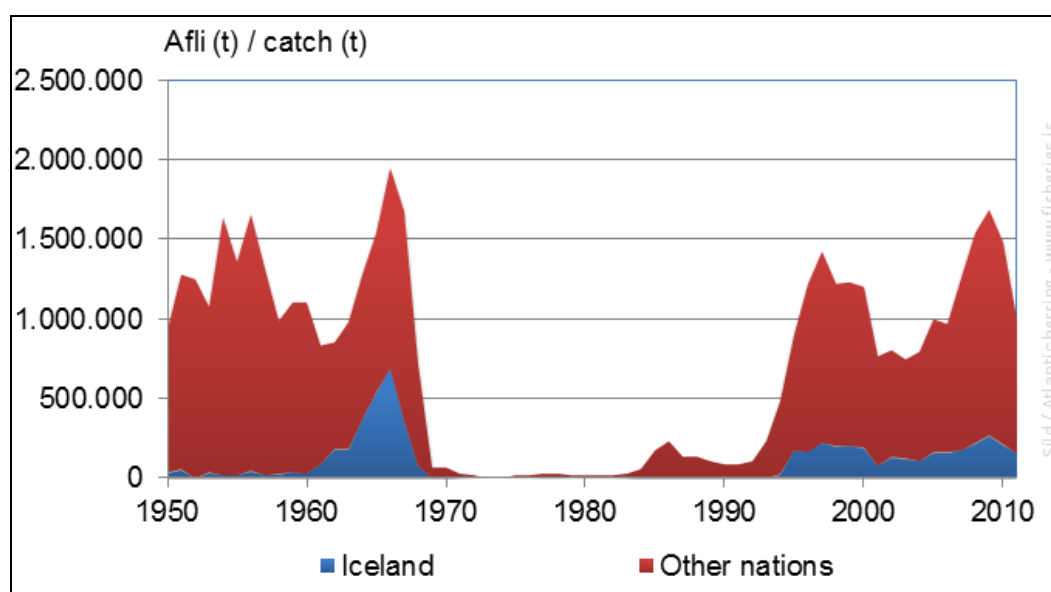
Contact Email: [fisheries@foodcertint.com](mailto:fisheries@foodcertint.com)

Contact Tel: +44(0)1463 223 039 (FCI main number)

#### Historical Fishing Levels

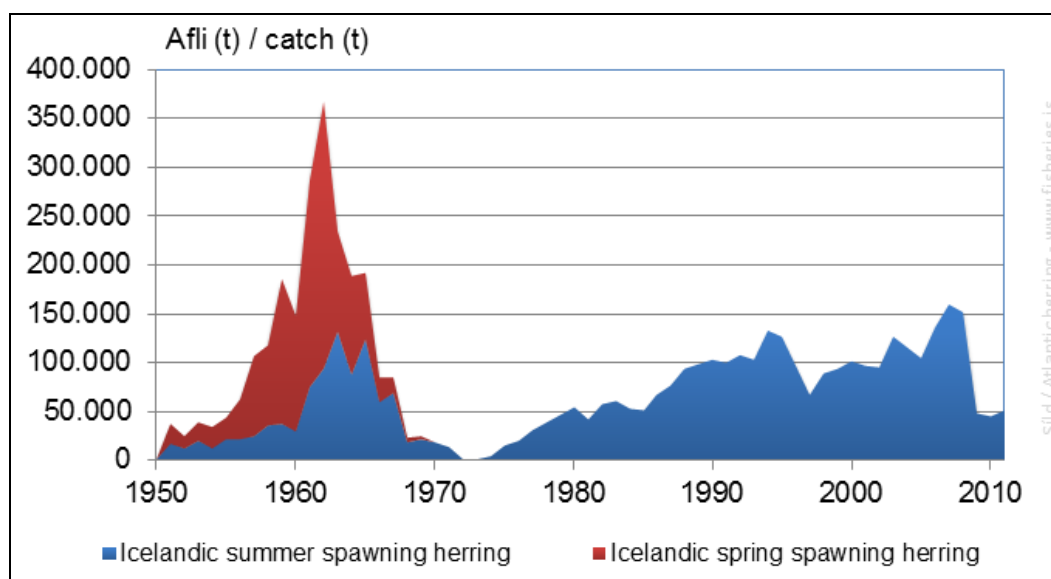
Data for Icelandic and total catches for both herring stocks are presented in Figure 3.2.5 (Norwegian Icelandic summer spawners) and Figure 3.2.6 (Icelandic summer spawners). Note that there is no fishery for Icelandic spring spawning herring any longer (catches indicated in red in Figure 3.6) and the stock is not included within the scope of this assessment.

Figure 3.2.5 Catches of Norwegian Icelandic spring spawning herring 1950-2011



Source: Reproduced from [www.fisheries.is](http://www.fisheries.is). Source data ICES and Marine Research Institute.

**Figure 3.2.6 Catches of Icelandic summer spawning herring 1950-2011**



Source: Reproduced from [www.fisheries.is](http://www.fisheries.is). Source data Marine Research Institute.

Historically, Icelandic herring catches were less than 30 thousand tonnes until after W.W.II when they gradually increased over time to in excess of 200 thousand tonnes. Catches were mostly made from fisheries confined to local Icelandic stocks. After WWII, catches declined again but increased rapidly during the 1960's to more than 600 thousand tonnes. Most of the large growth in catch was based on the Norwegian Spring spawning stock.

With improvements in technology in the post war period, catches of the largest stock, the Norwegian Spring spawning herring increased rapidly after 1950 and reached a peak of almost 2 million tonnes in 1966. However the stock then collapsed almost entirely and catches were reduced to near zero by 1969. Many other herring stocks in the North Atlantic were decimated around this time.

A combination of rapid technology improvements (principally the advent of the Puretic power block for use in purse seine fishing), together with fleet development, worsening oceanographic conditions and catches of 200 to 500 thousand tonnes annually of juvenile herring in Norwegian waters are widely believed to be the main reasons for the collapse of the fishery. The collapse was an enormous setback for many coastal economies in the northeast Atlantic, including Iceland, which was particularly hard hit because of the great importance of the herring fisheries for their economy.

After the collapse, a near moratorium was soon established on the herring fisheries. Until 1984 catches of the Norwegian Spring spawning stock remained less than 20 thousand tonnes annually. From 1986 to 1992 catches slowly grew to around 100 thousand tonnes annually. From the mid 1990's onwards, strong year classes have been recruited to the fishery and the stock has rebuilt fast and total catches increased to a maximum of 1.5million tonnes in 1997. Since then however, total catches have been in the range of 750 thousand to 1.3 million tonnes and there has been effective international agreement for the management of the stock. With the growth in the stock, much of the catch of Norwegian spring spawning herring is now taken in waters close to or within the Icelandic EEZ, on account of the fact that the expansion of the stock has now pushed out into western waters to where the stock undertakes migration. Icelandic vessels once again began catching this herring in 1994 and the annual catches since then have been between 100 and 200 thousand tonnes.

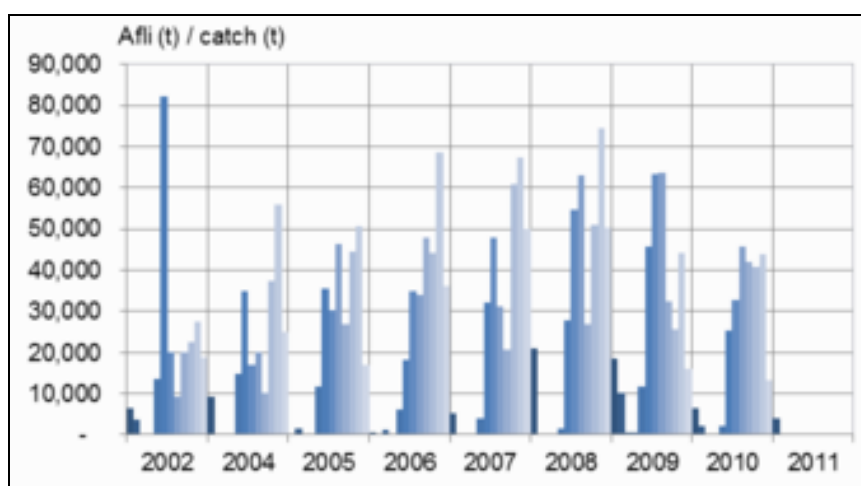
Most of the herring catches within Icelandic waters since the collapse of many herring stocks in 1967 have been taken out of the Icelandic summer spawning herring stock. Historically, this stock has always been much smaller than the Norwegian Spring spawning stock and does not undertake migrations outside the Icelandic EEZ. This stock also collapsed in 1967, but was faster to recover than the Norwegian Spring spawning stock. The size of the Icelandic stock is now close to record high levels, and it sustains catches of around 100 thousand tonnes or more annually.



### **Other Resource Attributes and Constraints**

Herring catches display marked seasonality that is related to the main fishing seasons for each stock. The Norwegian Icelandic spring spawning herring fishery takes place mainly in the period from mid-July through to November, while the directed fishery for Icelandic summer spawning herring peaks in October. As previously outlined however, significant amounts of Icelandic summer spawning herring may also be taken in the Norwegian Icelandic spring spawning herring fishery. Figure 3.2.7 demonstrates the seasonal pattern of herring catches in Iceland between 2002-2008. Two clear peaks in catches can be seen – corresponding to the main fishing season for each of the two stocks considered in the present assessment.

**Figure 3.2.7 Seasonal pattern of herring catches in Iceland 2002-2010 Catches of Icelandic summer spawning herring 1950-2011**



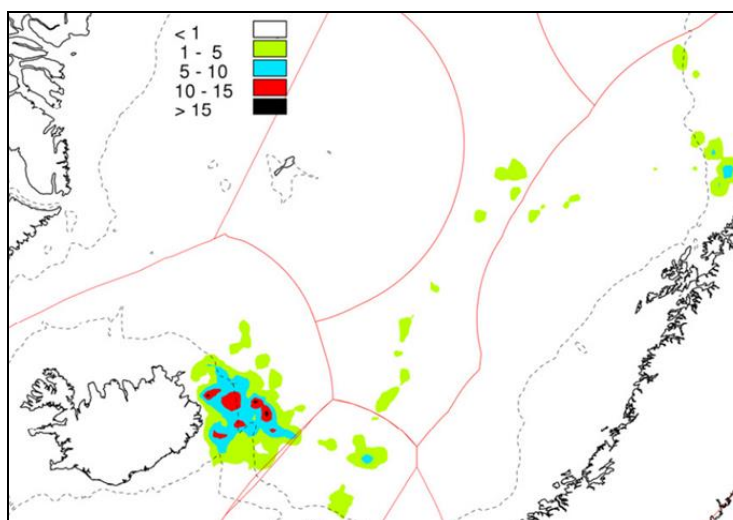
Source: Reproduced from [www.fisheries.is](http://www.fisheries.is). Source data Statistics Iceland.

The great majority of the Icelandic catch for Norwegian Icelandic spring spawning herring is made during fishing activity that is directed at Norwegian Icelandic spring spawning herring and which does not capture any other herring stock. In the past, much of the fishing effort that has been directed at this stock has taken place close to the limit of the Icelandic EEZ, around Jan Mayan and (in previous years) within the Norwegian EEZ (see Figure 3.2.8a). However, for a number of possible reasons, recent catches of Norwegian Icelandic spring spawning herring have been made within the Icelandic EEZ, close to the east coast of Iceland (see Figure 3.2.8b), where resulting catches have shown increased mixing with both Icelandic summer spawning herring and northeast Atlantic mackerel. For herring, this situation means that for some hauls, Icelandic summer spawning herring can make up between 2% and 22% of the total herring catch.

Increased use of pelagic trawling for pursuing catches, westwards movement or expansion of the Norwegian Icelandic spring spawning herring stock and the ongoing recovery of the Icelandic summer spawning herring stock are all likely factors that contribute to the presence of increasing amounts of summer spawning herring in the catches of the Norwegian Icelandic spring spawning herring fishery.

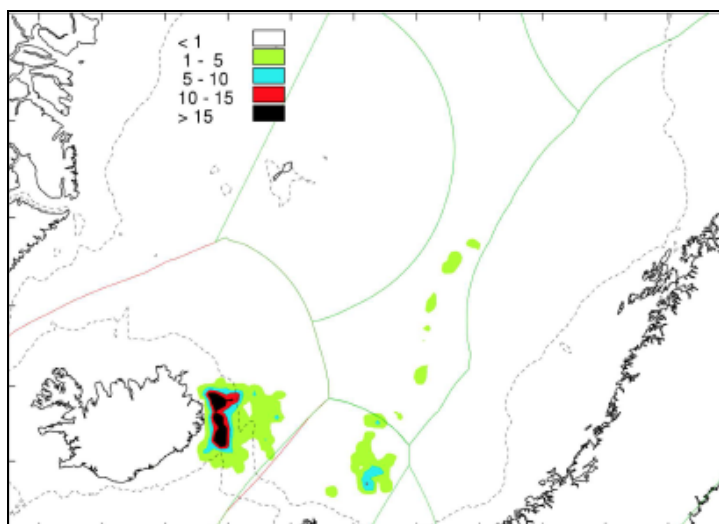
The well-documented recovery of the northeast Atlantic mackerel stock may also have led to its increased presence within the EEZ's of western nations such as Iceland. This, together with increasing amounts of trawling effort (indicated by a decline in purse seine catches) may provide some explanation as to why mackerel is reported as being increasingly present in Norwegian Icelandic spring spawning herring catches. Catch data provided to the assessment indicates that extensive mixing of herring and mackerel stocks on the fishing grounds must be taking place as both are taken in significant volumes during the same hauls. Catch reports to the Icelandic fisheries authority also indicates likely mixing of herring and mackerel. The assessment team witnessed the discharge of a pelagic catch to an Icelandic pelagic processing facility during the site visit by a vessel that is included in the assessment and which was returning from a fishing trip. While the bulk of the catch appeared to comprise herring, there was clearly a significant amount of mackerel present in the catch also.

**Figure 3.2.8a Spatial distribution of Norwegian Icelandic spring spawning herring catches in the 2010/2011 fishing season (t/nm2). (All gear combined, dark areas indicate highest catches).**



Source: [http://www.hafro.is/Astand/2012/all\\_english.pdf](http://www.hafro.is/Astand/2012/all_english.pdf)

**Figure 3.2.8b. Spatial distribution of Norwegian Icelandic spring spawning herring catches in the 2012 fishing season (t/nm2). (All gear combined, dark areas indicate highest catches).**



Source: [http://www.hafro.is/Astand/2012/all\\_english.pdf](http://www.hafro.is/Astand/2012/all_english.pdf)

From a catching and processing point of view, it is possible to separate out mackerel during processing, however it is not possible to physically separate out fish from the two herring stocks in mixed catches. Nevertheless, it is possible to estimate the proportion of Icelandic summer spawning herring present in catches through onboard sub sampling. In this regard and to facilitate catch-reporting requirements, the Icelandic Ministry requires that fishing fleets:

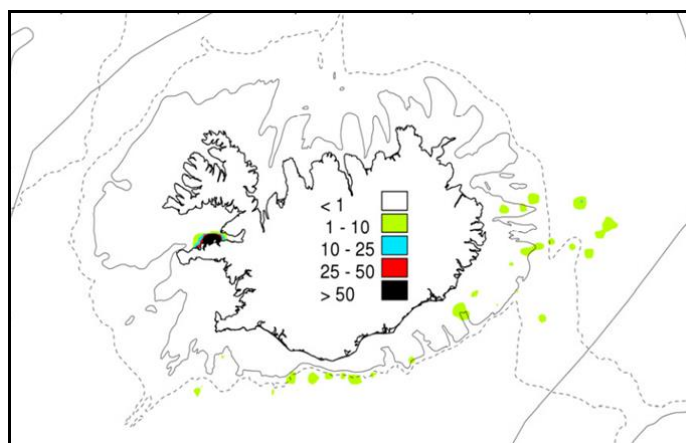
- » Sub sample 50kg of the herring catch for each haul and physically separate out fish based on reproductive stage in order to estimate proportion of the total haul that is made up of each of the two herring stocks by determining a raising auxiliary which can then be applied to the total haul
- » Report total catches (kg) by stock in electronic logbooks on an individual haul basis using the raising auxiliary to determine catch of each stock component
- » Retain and freeze onboard a sample for later analysis the Marine Research Institute in support of herring stock assessment

The above protocols are acceptable to the DoF for catch reporting and reported landings are also subject to random verification by DoF Inspectors who may periodically request samples on landing for the purpose of checking reproductive condition.

By contrast, the great majority of the catch of Icelandic summer spawning herring is made in directed fisheries that take place much closer to the Icelandic coast and as such do not display significant mixing with Norwegian Icelandic spring spawning herring or mackerel (see Figure 3.2.9).

Summer spawning herring fishing normally begins after mid-October in Breiðafjörður and stops in November. Most of the catch comes from Grundarfjörður but significant volumes also come from Kiðeyjarsund in Breiðafjörður. Most of the summer spawning herring that is caught outside of Breiðafjörður is taken as bycatch in the summer fisheries for Norwegian-Icelandic herring and mackerel.

**Figure 3.2.9. Spatial distribution of Icelandic summer spawning herring catches in the 2010/2011 fishing season (t/nm<sup>2</sup>). (All gear combined, dark areas indicate highest catches).**



Source: [http://www.hafro.is/Astand/2012/all\\_english.pdf](http://www.hafro.is/Astand/2012/all_english.pdf)

### 3.2.3 Administrative Framework

#### User Rights (Legal and Customary Framework)

The Norwegian Icelandic spring spawning herring is a shared stock that migrates between EEZs of several coastal states: Norway, Russia, Iceland, Faeroe Islands and the EU. There is a management system in place for the stock. At the international level Iceland and the other coastal states are parties to the 1982 Law of the Sea Convention, the fisheries-related provisions which states that fisheries are to be managed sustainably, that they should be optimally used, and that states shall cooperate on the management of shared stocks. The FAO Code of Conduct for Responsible Fisheries, which includes the application of a precautionary approach, is not explicitly part of Icelandic laws on fisheries management but it is now part of the European Economic Area (EEA) agreement which Iceland is a party to.

There are also bilateral agreements between the coastal states with respect to fishing within each other's EEZs. Iceland has made such agreements with Norway, Faroe Islands and Russia.

Iceland, together with the coastal states exploiting the Norwegian Icelandic spring spawning herring, is a contracting party to the North East Atlantic Fisheries Commission (NEAFC). During meetings of the coastal states agreements were reached on the total catch of Norwegian Icelandic spring spawning herring for 2007-2012 and its division between the states. These agreements were made for only one year each time. Unfortunately the states were unable to reach agreement on the division of the total catch in 2013 between the states. Faroe Islands have declared that they plan to catch 105,000 tonnes instead of the 32,000 tonnes allocated to them out of a TAC of 619,000 tonnes for 2013. The other coastal states have agreed to their shares for 2013.

Commercial fishing in Iceland is subject to a management system that is obliged by law to aim for the "sustainable utilization (of the stock) which ensures in the long run maximum benefits for the Icelandic nation." There is no illegal, unreported and unregulated (IUU) fishing of Norwegian spring spawning

herring or Icelandic summer spawning herring. All landings of fish from vessels that engage in IUU fishing are forbidden, as is the servicing of such vessels. There are no controversial or unilateral exemptions to international agreements in operation in these fisheries by the client group or the Icelandic nation.

Fisheries in Iceland are subject to comprehensive regulatory framework. The management system is demonstrably compliant with national legislation, and has a clear legal basis. Secondary legislation providing for actual regulations and enforcement provisions has been built on overarching fisheries laws. Many aspects of these laws have been tested in court cases.

The access rights of different fishers are clearly codified in the legislation. As with all other legislation in Iceland, the legislation on fisheries management has been developed through a legally based, democratic process where various stakeholder groups are consulted and where they also have ample possibilities to argue for their points of view and their interests. Between debates on draft legislations in parliament, parliamentary committees conduct extensive hearings of experts and stakeholders views.

### **Legal / Administrative Status**

The fisheries for both stocks are legally legitimate and take place within the context, restrictions and limitations of Icelandic legislation and relevant international fishery management agreements.

### **Involvement of Other Entities**

Entities sharing an interest in the Norwegian Icelandic spring spawning herring fishery from a management perspective include the governments of EU nations and all other coastal states including Norway, Russia and the Faeroe Islands. The North East Atlantic Fisheries Commission also have an interest in the management of the fisheries for the stock that take place within international waters.

### 3.3 Principle One: Norwegian Icelandic spring spawning herring stock - 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 Norwegian Icelandic spring spawning herring stock - not just the fishery undergoing certification. However, the fishery under certification would be expected to meet all management requirements, such as providing appropriate data and complying with controls, therefore demonstrably not adding to problems even if the problems will not cause the certification to fail. In the following section the key factors, which are relevant to Principle 1, are outlined. The primary sources of information on this section are:

- » ACOM, 2012. Widely distributed and migratory stocks. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). Advice for 2013. ICES Advice, Book 9: 9.4.5. Advice September 2012. <http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/her-noss.pdf>
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- » ICES, 2008. Report of the Working Group on Widely Distributed Stocks (WGWISE). ICES Headquarters, Copenhagen, 2 - 11 September 2008. ICES CM 2008/ACOM: 13.
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- » NEAFC, 2012. Convention on Future Multilateral Cooperation in Northeast Atlantic Fisheries, open for signature in London on 18 November 1980 and entered into force on 17 March 1982. Amendments to the 1982 Convention have been adopted in 2004 and 2006 by NEAFC Commission. Contracting parties have agreed to use the “new” Convention on a provisional basis pending ratification. In: North East Atlantic Fisheries Commission [online]. London.

Updated February 2007. [Cited 28 November 2012]. [http://neafc.org/system/files/london-declaration\\_and\\_new\\_convention.pdf](http://neafc.org/system/files/london-declaration_and_new_convention.pdf)

- » Røttingen, I., 2000. A review of the process leading to the establishment of limit and precautionary reference points for the stock of Norwegian-spring spawning herring. ICES CM 200/X: 08.
- » Røttingen, I., 2003. The agreed recovery plan in the management of Norwegian spring-spawning herring. ICES CM 2003/U: 01.
- » WGNAPES, 2010. Report of the Working Group on Northeast Atlantic Pelagic Ecosystem Surveys (WGNAPES). Hamburg, Germany, 17-20 August 2010. ICES CM 2010/SSGESST: 20.
- » WKHERMAT, 2010. Report of the Workshop on estimation of maturity ogive in Norwegian spring spawning herring (WKHERMAT). Bergen, Norway, 1-3 March 2010. ICES CM 2010/ACOM: 51.

### 3.3.1 Stock status and reference points

Herring stock is declining. The estimate of the spawning stock biomass is still above  $B_{pa}$  in 2012 (Fig. 3.3.1 and 3.3.2) and fishing mortality in 2011 is estimated below  $F_{pa}$  and  $F_{msy}$ .

The perception of the stock and its exploitation has changed, due to a downward revision of the last assessment. Previous assessments have shown a retrospective pattern that overestimates SSB and underestimates  $F$ . The results from the assessment are strongly influenced by the estimates from the International Ecosystem Survey in the Nordic Seas in 2010 and 2012.

The assessment indicates that the annual fishing mortality (weighted by stock numbers for ages 5-14) in recent years has fluctuated between 0.1 and 0.16 and it is estimated in 2011 at 0.1344. The SSB is estimated at 6.1 million tons in 2012. From 2005 onwards, all year classes have been small (lower than the historic mean).

**Table 3.3.1 Stock status and reference points (unchanged since 2010) for herring stock (ACOM, 2012)**

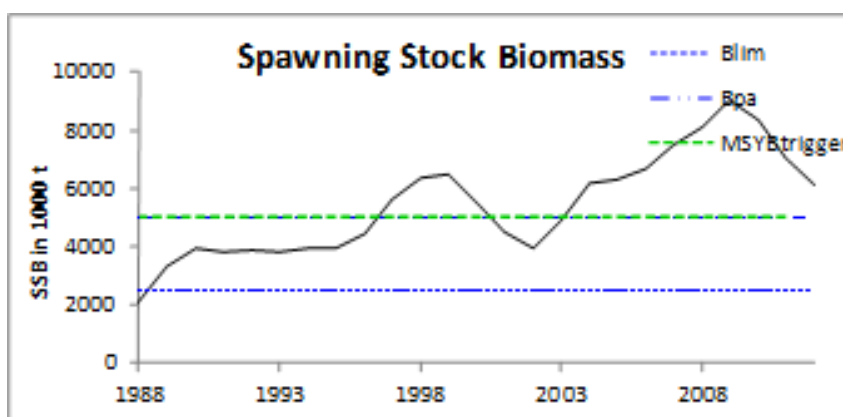
	Reference point	Value	Technical basis
Status	SSB <sub>2012</sub>	6.1 million t	
	F <sub>2011</sub>	0.31	
Management plan	SSB <sub>MP</sub>	5.0 million t	Medium-term simulations conducted in 2001.
	F <sub>MP</sub>	0.125	Medium-term simulations conducted in 2001.
MSY Approach	MSY B <sub>trigger</sub>	5.0 million t	$B_{pa}$
	F <sub>MSY</sub>	0.15	Stochastic equilibrium analysis using a Beverton–Holt stock–recruitment relationship with data from 1950 to 2009.
Precautionary Approach	B <sub>lim</sub>	2.5 million t	MBAL <sup>1</sup> (accepted in 1998).
	B <sub>pa</sub>	5.0 million t	$B_{lim} * exp(0.4 * 1.645)$ .
	F <sub>lim</sub>	Not defined.	-
	F <sub>pa</sub>	0.15	Based on medium-term simulations (ICES study group 1998).

Source: ACOM, 2012.

<sup>1</sup> Minimum Biologically Acceptable Level (point beyond which ‘overfishing’ is said to occur)

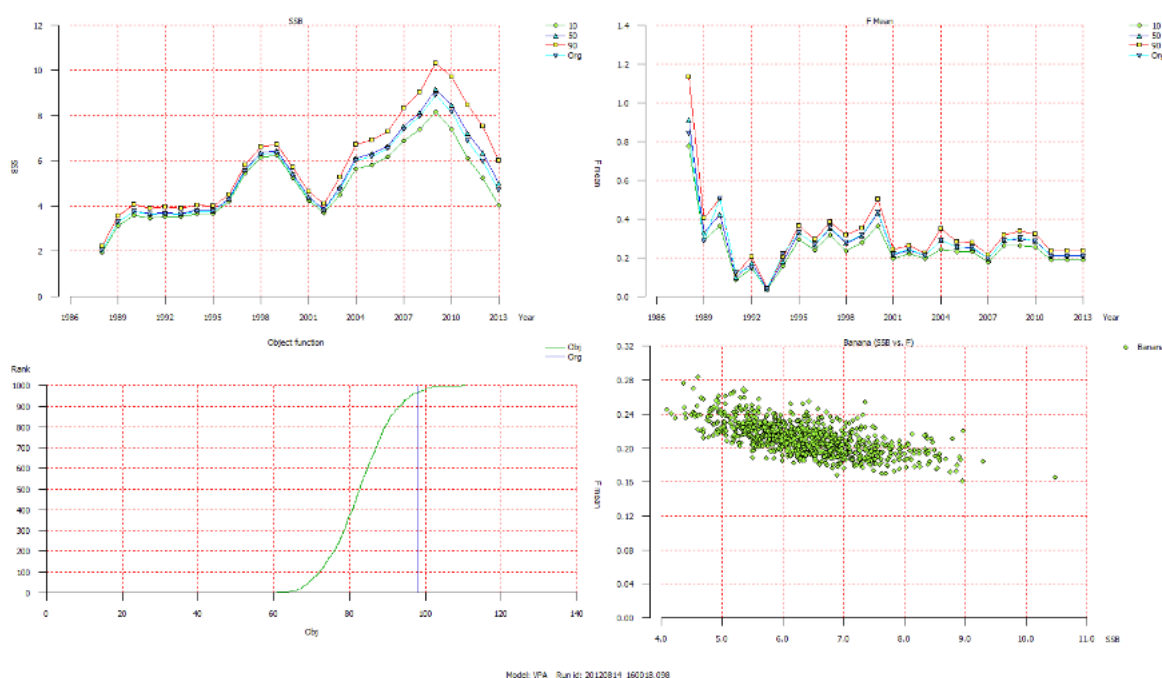


Figure 3.3.1 Stock status time series relative to reference points.



Source: ACOM, 2012

Figure 3.3.2 Norwegian spring-spawning herring. Percentiles for spawning stock biomass (top left), unweighted mean F 5-10 (top right), SSQ (bottom left) and “Banana”-plot (bottom right) from bootstrap results for final assessment..



Source: ACOM, 2012

The reference points (Table 3.3.1) have been defined and revised on several occasions over the years (Røttingen, 2000). The biomass limit reference point ( $B_{lim}$ ) is the point below which the recruitment is considered to be impaired. The adopted value (2.5 million tons) is based on the stock-recruitment relationship, taking into account the recruitment and spawning stock biomass estimated in the assessment. The precautionary biomass ( $B_{pa}$ ) is the level where there is “unacceptable probability that the stock is actually below  $B_{lim}$  when it is measured at  $B_{pa}$ ” (ICES, 2000) and the adopted value (2.5 million tons) is regarded as safe (Røttingen, 2000). Actually  $B_{pa}$  is used as a trigger point in the harvest control rule. The target reference point is related to fishing mortality. Target fishing mortality (0.125) is lower than  $F_{pa}$  (0.15, which is assumed as a proxy for  $F_{MSY}$ ).



Despite the reference points cannot be estimated precisely, they have been defined in accordance with the knowledge of the fishery and seem to be precautionary. The depletion of the stock and its posterior recovery provides contrast information in order to estimate reference points and stock status.

The influence of climatic drivers on productivity and recruitment makes difficult to estimate precisely reference points. Herring are important food resource for higher trophic level predators, but its trophic level has not been taken into consideration for the estimation of the reference points.

### 3.3.2 Harvest strategy

The Norwegian spring spawning herring exploitation gradually increased in the twentieth century (from around 1 million tons in 1951 to almost 2 million tons in 1966). However, the stock was overexploited and was depleted in the 1970s. From being a stock that was distributed over large areas in the North Atlantic, the stock was reduced to a small stock in Norwegian coastal waters.

First assessments were conducted for the stock and 2.5 million t was chosen as a rebuilding level both by ICES and the Norwegian management authorities in the beginning 1980s. A fishery closure was initially agreed. Finally, it was decided to maintain the fishery at a low level (fishing mortality of maximum 0.05) until recovery achieved ( $SSB > 2.5$  million t). It took over 20 years to lift the stock to the target level.

Currently, the objective for the stock is to ensure the long-term conservation and optimum utilisation of the resource, providing sustainable economic, environmental and social benefits (FAO, 2010-2012). ICES yearly provides advice to support implementation of marine policies. This advice is based on the output of the annual assessment and simulation testing of the performance of different exploitation alternatives regarding the stated objectives. Policy decisions (TACs setting and/or adoption of other technical measures) on the Norwegian Icelandic spring spawning herring are taken by the Coastal States yearly bearing in mind the advice given by ICES for the stock. The stock is jointly managed by the European Union, Faroe Islands, Iceland, Norway and Russia. All decisions on management measures affecting the stock are adopted by the North East Atlantic Fisheries Commission (NEAFC) at its annual meeting, in accordance with articles 5 and 6 of the *Convention on the Future Multilateral Cooperation in North-East Atlantic Fisheries* (NEAFC, 2012).

EU, Faroe Islands, Iceland, Norway, and Russia agreed in 1996 to implement a long-term management plan for Norwegian spring-spawning herring (rule: fishing mortality limited to 0.15, with an additional catch ceiling of 1.5 million t). The management plan was part of the international agreement on total quota setting and sharing of the quota during the years 1997–2002. In the years 2003–2006 there was also no agreement between the Coastal States regarding the allocation of the quota. In this period quotas were set unilaterally and in some countries quota were raised during the year. Since 2007 the Coastal States have agreed to set a TAC in accordance with the Management Plan (see section 3.3.3). The agreed shares of the Parties in the last years are showed in Table 3.3.2.

**Table 3.3.2 Herring in the Northeast Atlantic (Norwegian spring-spawning herring). TAC and quota share by country (weights in thousand tons).**

	TAC	EU	Faroe	Iceland	Norway	Russia
<b>2007</b>	1,280,000	83,328	66,048	185,728	780,800	164,096
<b>2008</b>	1,518,060	98,882	78,329	220,262	925,980	194,607
<b>2009</b>	1,643,000	106,959	84,779	238,399	1,002,230	210,633
<b>2010</b>	1,483,004	96,547	76,523	215,183	904,630	190,121
<b>2011</b>	988,000	64,319	50,981	143,359	602,680	126,661
<b>2012</b>	833,000	54,228	42,983	120,868	508,130	106,791
		6.51%	5.16%	14.51%	61.00%	12.82%

Source: NEAFC

Each Party may transfer unutilised quantities of up to 10% of the quota allocated to the Party for 2012 to the quota allocated to that Party for 2013. Such transfer shall be an addition to the quota allocated to that Party for 2013. Also each Party may authorise fishing by its vessels of up to 10% beyond the quota allocated. All quantities fished beyond the allocated quota for 2012 shall be deducted from the

Party's allocation for 2013. Further arrangements, including arrangements for access and other conditions for fishing in the respective zones of fisheries jurisdiction of the Parties, are regulated by bilateral arrangements.

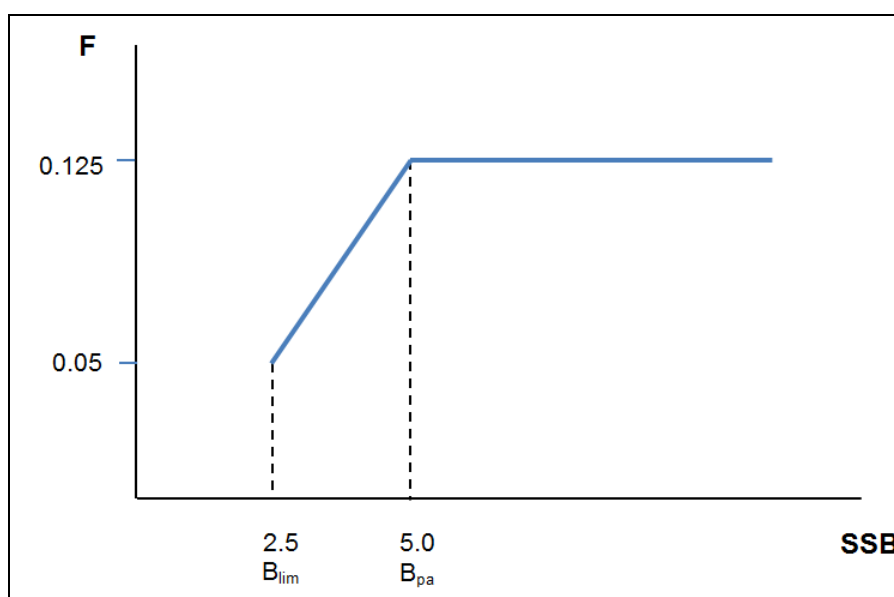
### 3.3.3 Harvest control rule

The HCR was proposed after a study and review of appropriate harvest strategies for medium and long-term management of Norwegian spring spawning herring (Anon, 1999). The management plan agreed in 1999 for the Norwegian Icelandic spring spawning herring gives effect to the following elements of the HCR (ACOM, 2012; Figure 3.3.3):

1. Every effort shall be made to maintain a level of Spawning Stock Biomass (SSB) greater than the critical level ( $B_{lim}$ ) of 2 500 000 t.
2. For 2012 and subsequent years, the Parties agreed to restrict their fishing on the basis of a TAC consistent with a fishing mortality rate of less than 0.125 for appropriate age groups as defined by ICES, unless future scientific advice requires modification of this fishing mortality rate.
3. Should the SSB fall below a reference point of 5 000 000 t ( $B_{pa}$ ), the fishing mortality rate, referred under Paragraph 2, shall be adapted in the light of scientific estimates of the conditions then prevailing to ensure a safe and rapid recovery of the SSB to a level in excess of 5 000 000 t. The basis for such adaptation should be at least a linear reduction in the fishing mortality rate from 0.125 at  $B_{pa}$  (5 000 000 t) to 0.05 at  $B_{lim}$  (2 500 000 t).
4. The Parties shall, as appropriate, review and revise these management measures and strategies on the basis of any new advice provided by ICES.

In 2007, ICES reviewed the international management plan and concluded that it is in accordance with the precautionary approach.

Figure 3.3.3 Schema of the harvest control rule in the Norwegian Icelandic spring spawning herring management plan



Source: ICES

The harvest control rule has been tested through medium term simulations using @RISK (Excel add-on program) for expressing the undelaying uncertainties. Those simulations included uncertainty on

spawning stock-recruitment relationship, in initial stock abundance and annual assessment (Bogstad *et al.*, 2000).

In 2012, NEAFC requested ICES to evaluate possible alternatives to the long term management arrangement for Norwegian spring spawning herring stock. However, the results will not be available until 2013.

### 3.3.4 Information and monitoring

The herring fishery is operated by an international fleet consisting on purse seiners, trawlers and pelagic freezers and taken as by-catch by vessels targeting other pelagic species. In recent years the Faroes have reported on problems with mackerel caught as by-catch in the directed herring fishery north of the Faroes. This issue is dealt with in more detail under Section 3.5.1.

Assessment is carried out using the Virtual Population Analysis model in the TASACS toolbox. Input data consist of: several fishery indices (catch at age data) and fishery independent abundance indices (survey indices from eight 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:

- » Catch data: Total catch in tons by quarter of the year and ICES area are reported by WGWIDE members.
- » Discards: The ICES WGWIDE noted that an unaccounted mortality caused by fishing operations and underreporting probably exists, but it has not been possible to assess it. However, due to the large catches of the recent years, the additional mortality has been considered negligible and therefore no extra amount of catches has considered since 1994. In previous years, with much smaller quotas, an estimated amount of fish was added to the catches. Regarding discards, although discarding may occur on this stock, it is considered to be very low and a minor problem to the assessment, as confirmed by recent estimates from sampling programs carried out by some EU countries under the Data Collection Regulation (DCR) framework.
- » Age, length, weight and maturity composition: Ages, lengths and weights are regularly sampled from Denmark, Faroe Islands, Germany, Iceland, Ireland, The Netherlands, Norway, Russia and Scotland. Sampled catches accounted 95% of the total catches. Sampling information is used to decompose the total catch into catch at age.
- » Maturity at age: Maturity ogives adopted are derived from back calculation of scales for the historical period (1957-2007) in the assessment (WKHERMAT, 2010)
- » Natural mortality: Presently used natural mortality values were adopted in the last benchmark assessment.  $M=0.15$  for ages 3 and older, based on an estimation from tagging information (ICES, 2008) and  $M=0.2$  for ages 0-2, based on comparison of acoustic estimates with VPA estimates (ICES, 1992).
- » Abundance indices: Scientific survey indices from eight surveys are used in the assessment. Indices are estimated from: 1 larval survey, 3 recruit surveys, 1 survey covering the adult stock and other 3 surveys which have not been continued in last years. Additionally, there is an International Ecosystem Survey in the Nordic Sea, which has not yet been used directly in the assessment, because time-series with adequate coverage of herring starts in 2009.

Recent changes in the herring migration have led to an increased proportion of the population feeding in Faroese and Icelandic waters in early summer, followed by a northern and north-eastern feeding migration and distribution in late summer (WGNAPES, 2010). An increased spatial overlap between herring and mackerel has been evident in the surveys since 2009 (e.g. the International ecosystem survey in the Nordic Seas (IESNS) survey; WGNAPES, 2010) and catch composition of the commercial fishery. The marked spatial overlap between herring and mackerel in major areas of the Nordic Seas, suggest feeding competition between the two species in July-August (Langøy *et al.*, 2012).

### 3.3.5 Stock assessment

In 2008, the assessment for Norwegian spring spawning herring was a benchmark assessment and alternative models were explored. Explored models consist on separable and non-separable VPA models, with different approaches of modelling selectivity. Finally, non-separable VPA was selected due to a slightly better performance of this assessment (regarding the fitting to the survey data, a lesser retrospective pattern and less uncertainty from the bootstrap outcome).

Assessment is based on catch at age data and 8 survey abundance indices (detailed in Table 3.3.3). Underreported catches estimates have been included until 1994, but discards are assumed to be zero. The model used is the VPA population model implemented in the TASACS software. That was the assessment method chosen due to better fit of the survey information to the catch data.

**Table 3.3.3 Surveys used for calibrating the herring assessment as tuning indices in 2012 (ICES, 2012).**

Type	Name	Year range	Age range	Details
Tuning fleet 1	Norwegian acoustic survey on spawning grounds in February/March	1995-2005	5-15+	Not used after 2005, because survey carried out earlier than herring reached spawning grounds and possibly arriving from other routes not covered by the survey
Tuning fleet 2	Norwegian acoustic survey in Nov/Dec	1992-2001	4-14+	Survey not used for the period following new wintering pattern of the stock
Tuning fleet 3	Norwegian acoustic survey in January	1991-1999	5-15+	
Tuning fleet 4	International Ecosystem survey in the Nordic Seas	1991-last data year	1-2	Supplies the recruitment for ages 1-2 in the assessment
Tuning fleet 5	International Ecosystem survey in the Nordic Seas	1991-last data year	4-15+	
Tuning fleet 6	Joined Russian-Norwegian ecosystem autumn survey in the Barents Sea	2000-last data year	1-2	
Tuning fleet 7	Joined Russian-Norwegian ecosystem autumn survey in the Barents Sea	2000-last data year	0	Supplies the recruitment for ages 1-2 in the assessment
Tuning fleet 8	Norwegian herring larvae survey	1981-last data year		Total number of herring larvae as representative for the size of the spawning stock

Source: Assessment team

The main uncertainties in the assessment derive from the inconsistencies in the surveys. The annual drop in the estimated biomass from the International Ecosystem Survey in the Nordic Seas (ICES, 2012) is higher than the actual landings and assumed natural mortality in the assessment can explain. However, that fast decline in biomass is confirmed by another survey (the International Ecosystem Survey in the Norwegian Sea), which supports continuing the use the survey. Stated inconsistency is reflected in a retrospective trend in fishing mortality and SSB. The possible explanations for the increasing downward trend in the survey estimate are: 1) the increase of natural mortality on the older fish due to a reduction in food availability in the feeding area, while the assessment assumes constant natural mortality; 2) a catchability change in the survey, while the model assumes constant catchability over all years; 3) not full coverage of herring distribution area; 4) there has been significant unreported catches. Work is undergoing testing the first two hypotheses.

Alternative to the TASACS model, in 2012 WGWIDE carried out an exploratory assessment with a variant of the VPA approach (TISVPA model). Both assessments seem consistent. Moreover, the assessment appeared to be more sensitive to the choice of data used than to the choice of model.

### 3.3.6 Ecosystem considerations

The Norwegian spring spawning herring is a very important species in the ecosystems which it inhabits. It preys on *Calanus finmarchicus* and is itself an important prey for other species such as cod, saithe and other demersal species, in addition to sea birds and whales. Large numbers of killer whales follow the herring during its migration (source: [http://www.fisheries.no/ecosystems-and-stocks/marine\\_stocks/fish\\_stocks/norwegian\\_spring\\_spawning\\_herring/](http://www.fisheries.no/ecosystems-and-stocks/marine_stocks/fish_stocks/norwegian_spring_spawning_herring/)).

Herring is listed as potential key low trophic level species (see Box CB1 of the MSC Certification Requirements Annex v1.3) unless evidence is available otherwise. However, analysis on connectivity and wasp-waisted-ness in the ecosystem suggest that it is not a key low trophic species under the definitions in the MSC requirements and guidance (MSC Certification Requirements Guidance V1.3; Essington and Pláganyi 2013), as it does not met two of the three sub-criteria (CB2.3.13).

- » Predator dependency on the stock:
  - A recent study by Essington and Pláganyi (2013) assess the connectance and proportion of consumer biomass of several stocks under the MSC program or in assessment identified as default key LTL species based on taxonomy. The degree of connectance estimated for the Norwegian Icelandic spring spawning herring is 0.0005. Therefore, the predator dependency is not considered to be significant. The study does not provide on estimates for the herring proportion consumer biomass.
- » Energy transfer:
  - Estimated herring consumer biomass is 5% (see Table 3.3.4). Therefore, taking into account the energy transfer criteria, Norwegian Icelandic spring spawning herring could be regarded as a key LTL stock in the ecosystem (suggested by model-based results).
- » Wasp-waisted-ness:
  - The catches of the Norwegian Icelandic spring spawning herring are smaller than those of all the species at the same trophic level (Table 3.3.5), then the ecosystem can be regarded as not wasp-waisted.

**Table 3.3.4 SSB values (in thousand tons) for some of the consumers in the Norwegian Sea ecosystem and estimated consumer biomass ratio (calculated as the biomass of the candidate key LTL stock, divided by the biomass of all consumers in the ecosystem) for the Norwegian Icelandic spring spawning herring.**

<i>Biomass component</i>	<i>biomass (kT)</i>	<i>Index used</i>
Atlanto-scandinavian herring (Norwegian spring spawning)	5,696	Mean SSB 1990-2011
Barents Sea Capelin	301	Mean SSB 1990-2011
Blue whiting	3,815	Mean SSB 1990-2011
Icelandic capelin	470	Mean SSB 1990-2011
Icelandic summer spawning herring	438	Mean SSB 1990-2011
Marine mammals - whales (minke, fin)	3,240	IWC estimates 1996-2001
Northeast Arctic cod	682	Mean SSB 1990-2011
Northeast Arctic haddock	188	Mean SSB 1990-2011
Northeast Atlantic mackerel	2,316	Mean SSB 1990-2011
West of Scotland herring	97,260	Mean SSB 1990-2011
Western horse mackerel	2,097	Mean SSB 1990-2011
<b>Total consumer biomass</b>	<b>116,501</b>	
<b>Consumer Biomass Ratio</b>	<b>0.0489</b>	

Source: Assessment team

**Table 3.3.5 Catches (in thousand tons) for some of the stocks at the same trophic level as Norwegian Icelandic spring spawning herring.**

<i>Biomass component</i>	<i>Mean catches 2000-2011</i>
Atlanto-scandinavian herring (Norwegian spring spawning)	1,107
Icelandic summer spawning herring	102
Northeast Atlantic mackerel	693
Western horse mackerel	211
Blue whiting	1,464
Icelandic capelin	577
Barents sea capelin	245
Greater silver smelt in the Northeast Atlantic	39
<b>Catches of the other species (excluding AS herring)</b>	<b>3,332</b>
<b>Catches of Atlanto-scandinavian herring</b>	<b>1,107</b>

Source: Assessment team



### 3.4 Principle One: Icelandic summer spawning herring stock - 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 Icelandic summer spawning herring stock - not just the fishery undergoing certification. However, the fishery under certification would be expected to meet all management requirements, such as providing appropriate data and complying with controls, therefore demonstrably not adding to problems even if the problems will not cause the certification to fail.

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

- » ACOM, 2012. Iceland and East Greenland. Herring in Division Va (Icelandic summer-spawning herring). Advice for 2012/2013. ICES Advice, Book 2: 2.4.13. Advice June 2012.
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- » Óskarsson, G.J. 2008. Variation in body condition, fat content and growth rate of Icelandic summer-spawning herring (*Clupea harengus* L.). Journal of Fish Biology 72: 2655–2676.
- » Óskarsson, G. J., and Pálsson, J. 2011. The *Ichthyophonus hoferi* outbreak in the Icelandic summer-spawning herring stock during the autumns 2008 to 2010. ICES Benchmark Workshop on Roundfish and Pelagic Stocks, WKBENCH, 24-31 January 2011, Lisbon, Portugal. Working document Her-Vasu No. 2: 232-250.
- » Óskarsson, G. J., and Pálsson, J. 2013. Development and nature of massive and long-lasting *Ichthyophonus hoferi* outbreak in Icelandic summer-spawning herring. 26 April - 3 May 2013. ICES North Western Working Group, Working Document No. 2. 17 pp.



### 3.4.1 Stock status and reference points

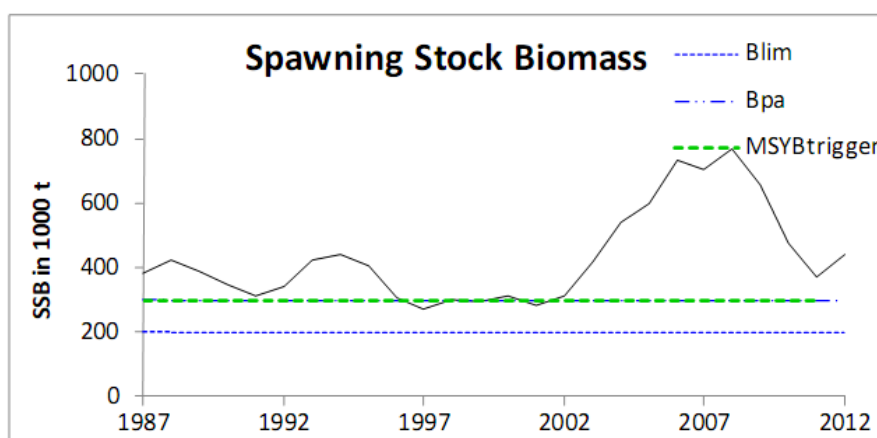
Herring spawning stock biomass had been declining, probably due to the *Ichthyophonus* infection in recent years. However, the decline seems to have ceased and currently the estimate of the spawning stock biomass is above reference points in 2012 and (Fig. 3.4.1) and fishing mortality in 2011 is estimated below  $F_{MSY}$ . Strong year classes, without signs of infection, are entering the fishable stock.

Table 3.4.1 Stock status and reference points for herring stock.

	Reference point	Value	Technical basis
Status	SSB <sub>2012</sub>	377,000 t	
	F <sub>2011/2012</sub>	0.17	
MSY	MSY B <sub>trigger</sub>	300,000 t	B <sub>pa</sub>
Approach	F <sub>MSY</sub>	0.22	HCS model for simulated harvest rules
Precautionary Approach	B <sub>lim</sub>	200,000 t	SSB with a high probability of impaired recruitment
	B <sub>pa</sub>	300,000 t	$B_{lim} * e^{1.645\sigma}$ , where $\sigma=0.25$
	F <sub>lim</sub>	Not defined	-
	F <sub>pa</sub>	0.22	F <sub>pa</sub> = F <sub>0.1</sub> (based on weighted average) and used as target

(Unchanged since 2011) Source: ACOM, 2012

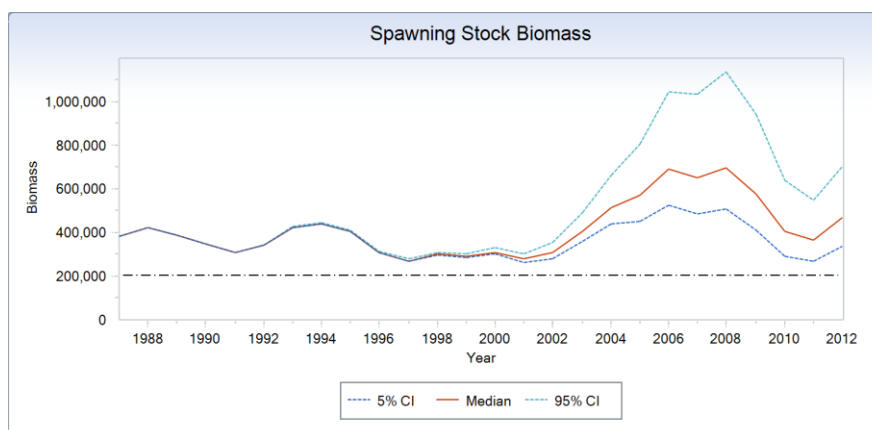
Figure 3.4.1 Stock status time series relative to reference points (ACOM, 2012).



Source: ICES, 2013

The software used to perform the assessment, NFT-ADAPT, does not give bootstrap results for the SSB in 2012. However, MRI scientists from MRI performed a bootstrap of total biomass for 2012 (Fig. 3.4.2).

**Figure 3.4.2 Stock status time series relative to reference points.**



Source: ACOM, 2012

The reference points (Table 3.4.1) have been defined and revised on several occasions over the years. Target fishing mortality (0.22) is equal to  $F_{pa}=F_{0.1}$ , which is the management strategy applied since the reopening of the fishery after its collapse in the 1960's and has been successful in the past, despite biased assessments.

Although MSY reference points have not still been set, exploratory work confirms that the actual target ( $F_{pa}$ ) could be a valid candidate for  $F_{msy}$ . (ICES, 2012).

In 2003, the ICES Study Group on Precautionary Reference Points for Advice on Fishery Management (ICES, 2003) revised the previously defined  $B_{lim}$  value (200 000t). The segmented regression was recalculated using full time series of data (since 1947). They got a change point of 300 000t (currently used  $B_{pa}$  value) and concluded not to change the value, due to the low fishing mortality defined for the stock. However, as fishing mortality in the past was high the working group members point out to closely inspect the precautionary reference points in order to avoid such situation again.

### 3.4.2 Harvest strategy

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 consequence, a fishing ban was enforced from 1972 to 1975. Since then, catches have gradually increased to over 100 000 t.

In the 1980s, fishery season took place during the last three months of the year. Afterwards, the period has been increased gradually and nowadays it takes place from September/October until the end of April. In the 2000s the number of vessels has decreased from around 30 to 15 in 2010, these vessels are purse seiners and pelagic trawlers and their mean size has increased. In the last years most of the catches are concentrated in a small area off the west coast. Since 2008 the catches from pelagic trawlers has decreased to less than 5% of the total catches. However, in 2010/2011-2012/2013 this relative importance has increased due to the bycatch of the stock in the fisheries targeting Norwegian Icelandic spring spawning herring and mackerel.

Currently, there is no formal management plan defined for Icelandic summer spawning herring. Nevertheless, for more than 20 years, the target has been fishing at  $F=F_{0.1}=0.22$ , which is considered consistent with MSY approach (ACOM, 2012). ICES yearly provides advice on the stock, in June. However, in 2011, because of uncertainty about the stock size due to the *Ichthyophonus* infection of the stock during the preceding summer, no recommendation of TAC was given prior to the acoustic survey in October. The advice is based on the output of the annual assessment and the forecasting of the following year's biomass based on alternative fishing mortalities. 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 ( $\leq 27$  cm): area closures are enforced if the proportion of juveniles exceeds 25% in number

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
3. Minimum mesh size (stretched) is 63 mm.
4. TACs apply from 1st September to 1st May in the following year.

Additionally, for the fishing season 2011/2012, a regulation was enforced that prohibited fishery 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. If similar conditions are observed in the fishing season 2012/2013 such a regulation would contribute to the protection of small fish (<27 cm). Furthermore, because of higher infection rates in the Breiðafjörður area, the fishery would target a greater proportion of fish already subjected to infection mortality.

Since 1985, TAC set have been more or less in line with advice given by Marine Research Institute, with some small discrepancies (ACFM, 2012).

### 3.4.3 Harvest control rule

Currently, there is no formal management plan defined for Icelandic summer spawning herring. Nevertheless, for more than 20 years, the target has been fishing at  $F=F_{0.1}=0.22$ , which is considered consistent with MSY approach (ACOM, 2012).

### 3.4.4 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 (Her-Va and Norwegian 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.

Assessment is carried out using the NFT-ADAPT software (VPA/ADAPT version 3.0.3 NOAA Fisheries Toolbox; <http://nft.nefsc.noaa.gov/VPA.html>). Input data consist of: several fishery indices (catch at age data) and fishery independent abundance indices (survey indices from eight 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: 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:

- » Landings: Icelandic Directorate of Fishery 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).
- » Discards: Illegal in Icelandic waters and considered to be insignificant in the fishery of Icelandic summer-spawning herring, with few exceptions in the past 35 years during 1990-1995 (ICES, 2008).
- » Age, length, weight composition: Ages, lengths and weights are sampled over the whole fishing area. Sampling information is used to decompose the total catch into catch at age. Weight at age only represents fishing period (September to January).
- » 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) that assessed level of  $M$  ranged between 0.1 and 0.15. For years 2008-2011, because of the Ichthyophonus infection, Minfection has been added to the fixed natural mortality of the stock (Óskarsson and Pálsson, 2011).
- » Maturity at age: Since 2006, maturity ogive adopted is constant and based on analyses of catch and survey data. But, as in recent years spatial distribution of the stock is different reliable estimates of age at maturity independent of the stock distribution are needed.

- » 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 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.
- » 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.

### 3.4.5 Stock assessment

The NFT-ADAPT assessment tool has been used for assessment since 2005. In 2011, there was a benchmark assessment for Icelandic spring spawning herring (ICES, 2011) and three alternative models were explored. Explored models consist on Virtual Population Analysis (ADAPT-VPA) and statistical catch-at-age (Coleraine and TSA) models. Finally, NFT-ADAPT (i.e. age-based analytical assessment) was considered appropriate as the principal assessment tool.

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.

The main uncertainties in the assessment derive from the mortality caused by the *Ichthyophonus* infection in the last years. However, the assumption of these mortalities (i.e. that all infected fish die) has allowed improving the quality of the assessment. Additional source of uncertainty comes from the estimates of the 2008 and 2009 year classes.

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 in the same way as done for the infection previously (ICES, 2013).

### 3.4.6 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.). An older research made by MRI on stomach contents of herring in a relatively restricted area SW off 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 food resource for various animals in Icelandic waters, including mink 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, 2012).

Herring is listed as potential key low trophic level species (see Box CB1 of the MSC Certification Requirements Annex v1.3) unless evidence is available otherwise. However, analysis on energy transfer and wasp-waisted-ness in the ecosystem suggest that it is not a key low trophic species under the definitions in the MSC requirements and guidance (MSC Certification Requirements Guidance V1.3; Essington and Pláganyi 2013), as it does not met two of the three sub-criteria (CB2.3.13).

- » Predator dependency on the stock:

There is not enough information available in order to estimate a connectivity index (proportional connectance or SURF) of the stock. There is only very limited information available that is specific to the role of this stock in Icelandic coastal waters. Specifically, there is no credible quantitative model for the ecosystem that details the predator/prey relationship (proportional connectance) for the stock in question. Furthermore, there is no ecosystem specific understanding of the food web connections in the whole ecosystem based on a comprehensive species list that identifies links for major prey and predators - particularly dependent predators of the stock in question, as is explicitly required by the CR.

» Energy transfer:

Consumer biomass ratio estimated for the stock (Table 3.4.2) demonstrates that less than 3% of the energy between lower and higher trophic levels passes through this stock.

» Wasp-waistedness:

The catches of all the species at the same trophic level as Icelandic herring (Table 3.4.3) are smaller than those for that stock, then the ecosystem can be regarded as not wasp-waisted.

**Table 3.4.2 SSB values (in thousand tons) for some of the consumers in the Icelandic waters ecosystem and estimated consumer biomass ratio (calculated as the biomass of the candidate key LTL stock, divided by the biomass of all consumers in the ecosystem) for the Icelandic summer spawning herring.**

<i>Biomass component</i>	<i>biomass (kT)</i>	<i>Index used</i>
Atlanto scandinavian herring (Norwegian spring spawning)	8,700	Mean total biomass 1988-2012
Beaked redfish	27	Mean catch 1978-2011
Capelin	427	Mean SSB 1978-2011
Demersal species (wolfish, lumpsucker, monkfish)	50	Recent years combined species indicative catch
Golden redfish	250	Mean SSB 1980-2010
Icelandic cod	300	Mean SSB 1955-2012
Icelandic haddock	105	Mean SSB 1980-2011
<b>Icelandic summer spawning herring</b>	<b>430</b>	<b>Mean SSB 1987-2011</b>
Marine mammals - seals (Grey seal; Harbor seal)	3	assessment team estimate using MRI data
Marine mammals - whales (fin, humpback, blue, sei, sperm)	1,300	assessment team estimate using MRI data
Northeast Atlantic mackerel	2,285	Mean SSB 1980-2012
Other codfish (whiting, Ling, blue ling)	100	Recent years combined species indicative catch
Other demersal flatfishes (egrim, plaice, dab, flounder)	50	Recent years combined species indicative catch
Saithe	120	Mean SSB 1980-2012
<b>Total consumer biomass</b>	<b>14,147</b>	
<b>Consumer Biomass Ratio</b>	<b>0.0304</b>	

Source: Assessment team

**Table 3.4.3 Catches (in thousand tons) for some of the stocks at the same trophic level as Icelandic summer spawning herring.**

<i>Biomass component</i>	<i>Mean catches 2000-2011</i>
Atlanto scandinavian herring (Norwegian spring spawning)	1,107
Capelin	577
<b>Icelandic summer spawning herring</b>	<b>102</b>
Northeast Atlantic mackerel	693
<b>Catches of other species (excluding Icelandic herring)</b>	<b>2,377</b>
<b>Catches of Icelandic summer spawning herring</b>	<b>693</b>

Source: Assessment team

### 3.5 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.

#### 3.5.1 Retained catch

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.

For the Norwegian Icelandic spring spawning herring, the fishery mainly targets herring on established feeding grounds in the Norwegian Sea, around Jan Mayen and to the east of Iceland. Whilst feeding, herring tend not to be as densely aggregated as spawning aggregations that mainly occur closer to the Norwegian coast in the spring and which are easily captured using purse seine nets. The use of pelagic trawls by the Icelandic fleet is therefore a more effective means of procuring catches of feeding herring in the Norwegian Sea than is fishing by purse seine.

Much of the assessed fleets fishing effort on the Norwegian Icelandic spring spawning herring takes place on feeding grounds that the stock shares with a number of other species or stocks, including Icelandic summer spawning herring and (increasingly) northeast Atlantic mackerel. A consequence of this is that catches in the pelagic trawl fishery are becoming increasingly mixed. Catches in the directed fishery for Norwegian Icelandic spring spawning herring can nowadays typically comprise between 2% and 22% Icelandic summer spawning herring. Similarly, reported catches indicate up to 50% of mackerel as retained catch for some hauls, although for most of the time the proportion of mackerel present in the catch is significantly less than this.

Tables 3.5.1, 3.5.2a. and 3.5.2b. present catch data for the Sildarvinnslan hf fleet for 2010-2012 along with landings data for two typical trips made in the third quarter of 2012. The total range of species captured in all pelagic fisheries that the fleet operates in is presented in Table 3.5.1. All catches made in the period were taken by pelagic trawl and there were no landings of herring from purse seine gears in the period.

**Table 3.5.1 Pelagic catch summary (t) for Sildarvinnslan hf vessels 2010-2012 (all catches by pelagic trawl)**

Species t/fishing year	2010	%	2011	%	2012	%
Icelandic summer spawning	466	0.86%	2,975	6.12%	1,084	3.52
NI spring spawning	34,010	62.75%	26,495	54.49%	13,866	45.02
Blue Whiting	3,143	5.80%	1,294	2.66%	576	1.87
Mackerel	16,571	30.57%	17,854	36.72%	15,261	49.55
Lumpfish	11	0.02%	6	0.01%	12	0.04
<b>Total</b>	<b>54,200</b>	<b>100</b>	<b>48,624</b>	<b>100</b>	<b>30,799</b>	<b>100.00</b>

Source: Sildarvinnslan hf

**Table 3.5.2a. and b. Summaries of landed catch for two sample fishing trips by a Sildarvinnslan hf vessel while targeting Norwegian Icelandic spring spawning herring (all catches by pelagic trawl)**

3.5.2a.

Sildarvinnslan hf		
<b>Vessel</b>	<b>Beitir NK-123</b>	
Registration no.	2730	
Landing date	12/08/2012	
Port	Neskaupstaður	
Total landing	502,813	
Days, port to port	3	
Kg./day	167,604	
<b>Species</b>	<b>Kg.</b>	<b>%</b>
Cod	21	0.0%
Icelandic summer spawning herring	57,296	11.4%
Blue whiting	82,881	16.5%
Mackerel	117,569	23.4%
Lumpfish	786	0.2%
Norwegian Icelandic spring spawning herring	244,260	48.6%
<b>Total catch</b>	<b>502,813</b>	<b>100.0%</b>

Source: [www.fiskistofa.is](http://www.fiskistofa.is)

3.5.2b.

Sildarvinnslan hf		
<b>Vessel</b>	<b>Beitir NK-123</b>	
Registration no.	2730	
Landing date	31/08/2012	
Port	Neskaupstaður	
Total landing	194,484	
Days, port to port	2	
Kg./day	97242	
<b>Species</b>	<b>Kg.</b>	<b>%</b>
Cod	7	0.0%
Icelandic summer spawning herring	11,804	6.1%
Blue whiting	12,620	6.5%
Mackerel	131,389	67.6%
Lumpfish	26	0.0%
Norwegian Icelandic spring spawning herring	38,638	19.9%
<b>Total catch</b>	<b>194,484</b>	<b>100.0%</b>

Source: [www.fiskistofa.is](http://www.fiskistofa.is)



Tables 3.5.4 and 3.5.5 present catch data for the Samherji hf fleet for 2009/10-2011/2012 fishing seasons along with landings data for three typical trips made in the third and fourth quarters of 2011. The total range of pelagic species captured in all pelagic fisheries that the fleet operates in are represented in Table 3.5.3, while 3.5.4 presents catch data (by finished product) for three typical fishing trips for the processing vessel, during which Norwegian Icelandic herring was the target stock.

**Table 3.5.3 Pelagic catch summary (t) for Samherji hf vessels 2010-2012 (all catches by pelagic trawl)**

Species catch (t)/Fishing year	2009/2010	%	2010/2011	%	2011/2012	%
Capelin	10,173	16.25	30,130	42.88	48,994	60.31
Blue Whiting	11,951	19.09	867	1.23	6,229	7.67
Mackerel	14,175	22.64	18,585	26.45	17,730	21.83
Icelandic Herring	463	0.74	1,778	2.53	5,373	6.61
NI spring spawning herring*	25,850	41.29	18,912	26.91	2,910	3.58
<b>Total (t)</b>	<b>62,612</b>	<b>100.00</b>	<b>70,272</b>	<b>100</b>	<b>81,236.00</b>	<b>100</b>

Source: Samherji hf

**Table 3.5.4 Summaries of landed catch for three sample fishing trips by a Samherji hf vessel while targeting Norwegian Icelandic spring spawning herring (all catches by pelagic trawl)**

Discharge date	Fishing zone	Product	Stock	Kg.	%
09/09/2011	Icel. Zone	Frozen, deheaded	Mackerel	285,826	29.15
	Icel. Zone	Iced, trimmings	Mackerel	100,621	10.26
	Icel. Zone	Iced, hole	Mackerel	14,374	1.47
	Icel. Zone	Frozen, skinless with bones	Icelandic summer spawning herring	13,004	1.33
	Icel. Zone	Iced, meal and oil	Icelandic summer spawning herring	924	0.09
	Icel. Zone	Iced, meal and oil	Blue whiting	8,385	0.86
	outs. Icel.	Frozen, skinless with bones	NI herring	250,319	25.53
	outs. Icel.	Iced, trimmings	NI herring	288,600	29.44
	outs. Icel.	Iced, meal and oil	NI herring	18,327	1.87
			<b>Total</b>	<b>980,380</b>	<b>100.00</b>
28/10/2011	Norw. zone	Frozen, skinless with bones	NI herring	619,652	48.68
	Norw. zone	Iced, trimmings	NI herring	634,790	49.87

Discharge date	Fishing zone	Product	Stock	Kg.	%
	Norw. zone	Iced, meal and oil	NI herring	18,406	1.45
			<b>Total</b>	<b>1,272,848</b>	<b>100.00</b>
04/11/2011	Faroe zone	Frozen, skinless with bones	NI herring	123,417	9.86
	Faroe zone	Frozen, skinless with bones	NI herring	492,510	39.35
	Faroe zone	Iced, trimmings	NI herring	620,826	49.60
	Faroe zone	Iced, meal and oil	NI herring	15,018	1.20
			<b>Total</b>	<b>1,251,771</b>	<b>100.00</b>

Source: [www.fiskistofa.is](http://www.fiskistofa.is)

There are no retained catches of species or stocks that are considered depleted or have poor stock status or which are vulnerable. Catches cannot generally be sorted or graded onboard except for onboard the factory processor. The client fleet has advised that hi-grading does not occur and that all catches are landed. This has been verified during discussion with the DoF.

Mackerel is subject to a long-term management plan and the stock is known to be above limit and precautionary reference points. While mackerel has been certified under MSC, the certification is suspended at present due to on-going catches in excess of the agreed TAC by the Faroe Islands and Iceland.

Catches of capelin are made in a directed fishery and are not captured in significant volumes in the herring fisheries. Blue whiting is above limit and precautionary reference points as of 2013 and the stock is considered to have full reproductive capacity and is being harvested sustainably.

Each herring stock is also considered as retained species depending on the Unit of Certification being considered. Both stocks are within precautionary biomass levels. There has been some deterioration of the management of Norwegian Icelandic herring at international level (Coastal States) although this is not expected to impact on the assessment of the fishery until such time as the deterioration impacts on the sustainability of the fishery, as may be demonstrated through a change in stock status.

Lumpfish may occasionally be taken at a low level as unintended catch in the pelagic trawl fishery and may be retained and landed. An Icelandic directed lumpfish fishery is presently undergoing MSC assessment and a condition of certification is likely to require the introduction of a harvest control rule that incorporates both limit and target biological reference points.

By contrast, the purse seine fishery for Icelandic summer spawning herring is exceptionally homogenous in terms of catch and there are no retained catches of any other species or stock. Data for landings of herring for 2009-2011 are presented in Table 3.5.5 by catching method.

Verification of landing for the vessel Vilhelm Thorsteinsson (2410) on [www.fiskistofa.is](http://www.fiskistofa.is) confirms that no other stocks were captured during Icelandic summer spawning herring fishing with purse seine. Figure 3.5.1 presents a sample display for a landing event for the vessel landing Icelandic summer spawning herring in 2011.

**Table 3.5.5 Landings of herring by UoC vessels for 2009-2011 by catching method.**

	2009		2010		2011	
Catch (t) by stock/gear type 2009-2011	Pelagic trawl	Purse seine	Pelagic trawl	Purse seine	Pelagic trawl	Purse seine
Norwegian Icelandic herring	34,213	0	25,865	0	16,999	0
Icelandic summer spawning	742	4,343	1,657	0	1,350	4,168

Source: Samherji hf

**Figure 3.5.1 Copy of individual landing report for the Vilhelm Thorsteinsson 2410 (30/11/2011)**


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**Fisheries Management**  
 Quotas and catches  
 Published material  
 Directorate of Fisheries

Home » Quotas and catches » Individual vessels » Vilhelm Þorsteinsson EA-11 (2410)  
 Fishing year 01. September 2011 to 31. August 2012

---

**Individual landing**  
 Port name : Neskaupstaður  
 Date landed : 30.11.2011  
 Fishing gear : Sildarnót  
 Catch :

Species	Live weight	Gutted
Herring	1.539	
<b>Total landed :</b>	<b>1.539.000</b>	

All figures are stated in kgs.

When fish is exported without being previously weighed by officials, the landing date is registered as the date when the transport container was loaded. If a vessel sails with its own catch to a foreign fish auction market the date is registered as the day the vessel seized its fishing.

All information presented on the website is based on available data and is subject to correction.

Source: [www.fiskistofa.is](http://www.fiskistofa.is)

### 3.5.2 Bycatch

There is no bycatch in the Icelandic herring pelagic trawl or purse seine fisheries. All catches are retained and landed. There are no mechanisms or installations on board vessels which would facilitate size or species grading (other than onboard the processing vessel) and the bulk nature of the fishery means that all catches are handled using automated pumping techniques. As such, the time that would be needed in order to grade catches and discard unwanted fish would slow down the process of taking fish on-board, resulting in damage and significant loss of quality. Catches are pumped directly into RSW tanks and there is no further handling of catches until they are landed in port.

As is often the case for bulk pelagic trawl and purse seine fisheries, there is continuing risk in relation to the possibility of slippage of catches, whereby entire catches may be discarded at sea either because they are of the wrong species or species mix, or where the catch contains a large proportion of unmarketable catch or fish infected with the *Ichthyophonous* parasite. However, there are few economic incentives for slipping fish in this fishery.

The client company is a highly integrated operation that includes human consumption processing plants as well as fishmeal plants. Unwanted catches still have economic value and can be landed for fishmeal production, although such landings will still be counted against quota and catches achieve a lower value if landed for meal.

While it is thought that slippage most likely does occur, it remains illegal under Icelandic fisheries law and indications are that it is a very infrequent event and is more likely to result from technical problems with machinery and on-board equipment than for any other reason. Vessels occasionally make very large catches, however in general vessels will have sufficient capacity to hold 500 or more tonnes of fish. In the event of catches above capacity being made vessels will co-ordinate with other fishing boats in order to have excess catch landed by them.

There are few incentives for slipping herring – catches can be graded at factory and there is no price advantage for larger herring unlike in some other pelagic fisheries including mackerel.

The client fleet does not record slippage events, claiming that they are of such rarity nowadays that it is insignificant in terms of its impacts. Both the DoF as well as scientists at the MRI consider slippage an exceptionally rare event in these fisheries, although they do acknowledge that it must occasionally happen.

Occasional mortality of seabirds is likely in the fishery, as many birds will feed in and around the fishing gear once it is on the surface. Capture of seabirds occurs through enmeshing of diving birds and it is considered unintended/unwanted bycatch. All available studies, observer reports and information point to this being a minor problem and instances of seabird mortality are very low in both pelagic trawl and purse seine UoC's.

Overall, the management response to the bycatch issue in the herring fishery is considered appropriate to the species involved and the scale of the issue. There is sufficient on-going data collection to identify increased risks of bycatch in the fishery and current Icelandic fishery management arrangements facilitate identification of increased risks as well as the introduction of new measures in response to changing circumstances.

### 3.5.3 Endangered, threatened and protected species

There are no species which are protected under Icelandic national legislation and which may be impacted through the actions or operation of the fisheries under assessment. Iceland has ratified a number of conventions on species protection and management, such as Convention on Biological Diversity, OSPAR Convention and CITES Convention.

Both pelagic trawling and purse seining have the potential to capture a range of marine mammals including seals, dolphins, porpoises and whales. Although the harbour seal (*Phoca vitulina*) and the grey seal (*Halichoerus grypus*) are the only species to pup around Iceland, 4 others visit the island on a regular basis. Those species are harp seal (*Phoca groenlandica*), bearded seal (*Erignathus barbatus*), hooded seal (*Cystophora cristata*) and ringed seal (*Phoca hispida*) (Sigurjonsson and Hauksson, 1994; Hauksson, 1993, 2004).

Walrus have also been found around Iceland but they are very rare. No species of seal are protected under national legislation or under binding international agreement such as CITES appendix I.

At least 12 species of cetaceans occur regularly in Icelandic waters, and additional 10 species have been recorded more sporadically.

- » Sei whale *Balaenoptera borealis*
- » Blue whale *Balaenoptera musculus*
- » Fin whale *Balaenoptera physalus*
- » Bowhead whale *Balaenoptera mysticetus*
- » Minke whale *Balaenoptera acutorostrata*
- » Humpback whale *Megaptera novaengliae*

are all listed as protected under Appendix I of CITES and are known from Icelandic waters.

In the continental shelf area, the minke whale (*Balaenoptera acutorostrata*) probably has the largest biomass. Based on the 2001 sightings survey, 67 000 minke whales were estimated in the Central North Atlantic stock region, with 44 000 animals in Icelandic coastal waters (NAMMCO 2004, Borchers et al. 2003).

Other toothed whales that are present in the marine areas in which the fisheries take place include common porpoise, bottlenose dolphin, killer whale, grey dolphin, Atlantic white sided dolphin and

longfin pilot whale. None of these are protected in Icelandic waters or in the waters of the Faroe Islands, around Jan Mayen or Norway.

While there is little direct evidence of the level of interaction between the fisheries and marine mammals, there is a sufficient knowledge base within published science and marine research institutions to understand that the threat to protected species from direct mortality through interactions with pelagic fisheries is unlikely to have effects that can be determined at population level of any affected species. The greater threat is believed to come from indirect sources including principally competition for target stocks/species. In this latter context, the fact that all of the stocks that are subject to this certification are within precautionary biomass limits and are being harvested sustainably, there are no grounds for believing that indirect impacts of the fishery on marine mammals are likely to be unacceptable.

Potential bird bycatch has been considered under bycatch species. Occasional captures of other species such as sharks (e.g. Greenland shark) are possible and remain undocumented, but are generally accepted to occur at very low levels with impacts at population level being very unlikely for any species occasionally captured. This understanding has been underpinned by stakeholder and expert opinion provided to the assessment team during the evaluation process.

### 3.5.4 Habitat interactions

A broad range of sedimentary and hard seabed substrates are found in the Norwegian Sea areas of the Icelandic, Norwegian and Faroese EEZ's where the vast majority of the fishing effort of the client fishery for herring takes place. Several indicative maps are available that indicate the nature, distribution and extent of sensitive seabed habitats.

There is reasonable information to indicate the type of sensitive seabed habitats that are present within Icelandic waters and many areas where the client fleet fishes for herring. Some areas of the most vulnerable habitats (cold water coral reefs) in Icelandic waters have been closed to fishing for some time. Iceland has engaged in a programme to map much of the waters of its EEZ and knowledge on the location and extent of sensitive habitats is improving, however there remains incomplete knowledge on the location of all sensitive habitats. Since 2000, the Marine Research Institute maintains a programme mapping the seabed habitats and fishing grounds using multibeam echosounding in co-operation with other domestic organisations, such as Reykjavík Energy and the Science Institute of the University of Iceland; together, they contribute towards the [BIOICE](#) habitat mapping and IceAGE ([Icelandic marine animals: Genetics and Ecology](#)) projects. The main objectives of BIOICE are to increase understanding of the biodiversity and the distribution patterns of individual species that are thriving on the sea floor, in Icelandic waters (see Gudmundsson, 2000, and [Conservation of Arctic Flora and Fauna](#)). This is being achieved by collecting comprehensive information on what species of benthic invertebrates are thriving in Icelandic waters, the physical environment and by promoting international research on species ecology, taxonomy, systematics, and biogeography. Ultimately it is hoped to compile a comprehensive picture of the entire continental shelf. The Marine Research Institute is also investigating the effects of fishing gear on the seabed and there is a growing focus on habitat studies in keeping with the increased emphasis of the ecosystem approach to marine research. IceAGE aims to combine classical taxonomic methods with modern aspects of biodiversity research, in particular phylo-geography (population genetics and DNA barcoding) and ecological modelling in the climatically sensitive region around Iceland. The sampling area is characterised by several local peculiarities like submarine ridges (geographical barriers) and influence of different water masses of different origin. This allows the analysis of factors influencing the distribution and migration of species as well as investigation of the background of biogeographic zonation. These projects will contribute directly to current and future understanding of the Icelandic marine ecosystem and while the fishery under assessment does not have significant direct interactions with seabed habitats, all research that contributes to and improves understanding of ecosystem components is considered relevant in terms of evaluating potential indirect impacts of fisheries.

General knowledge and understanding in relation to herring fisheries and more specifically in relation to the gear used in this fishery and the rules pertaining to fishing in Iceland has led the team to conclude that significant seabed habitat impacts are highly unlikely in these fisheries. This is mainly because vessels target shoals of herring in mid water using fishing gear that is not designed to



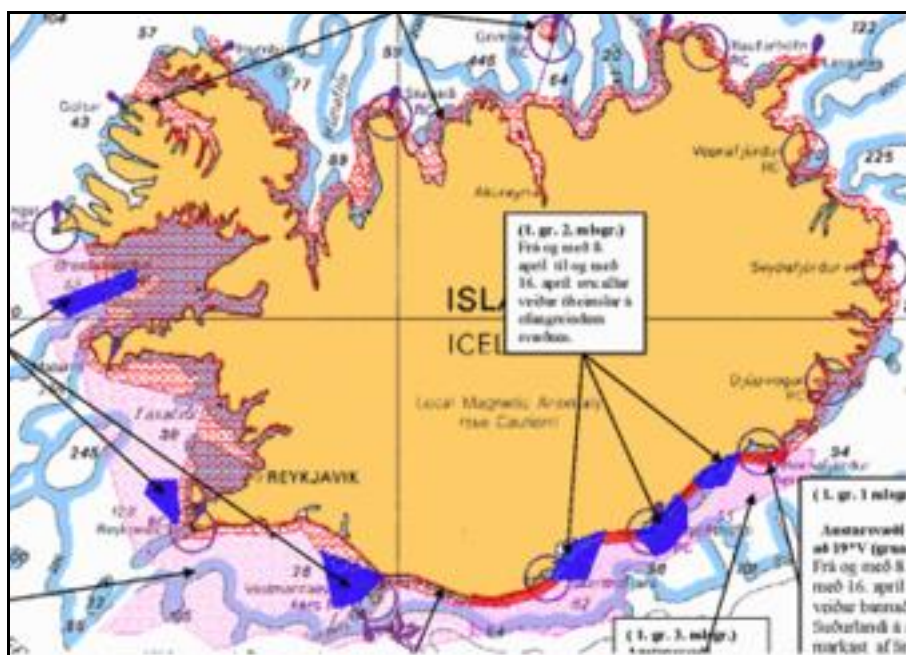
withstand interactions with the seabed. In this context, an important provision of Icelandic legislation is the prohibition on fishing using pelagic trawls within 12 nm of the coast.

There is also a system of area closures in operation in Iceland. A quick system of real time area closures has been in operation since 1976 with the objective of protecting juvenile fish. Fishing is prohibited for at least two weeks in areas where the number of small fish in the catches has been observed by inspectors to exceed certain percentage (25% or more of <55 cm cod and saithe, 25% or more of <45 cm haddock and 20% or more of <33 cm redfish). If, in a given area, there are several consecutive quick closures the Minister of Fisheries can issue regulations that close the area for a longer period, forcing the fleet to operate in other areas. Inspectors from the Directorate of Fisheries supervise these closures in collaboration with the Marine Re-search Institute. In 2010, 113 such closures took place.

In addition to allocating quotas on each species, there are permanent area closure measures in place to protect fish stocks. Based on knowledge on the biology of various stocks, many areas have been closed temporarily or permanently aiming at protecting juveniles. Figures 3.5.3a and 3.5.3b. show a map of area closure legislation that was in force in 2006. Some of the indicated closures are temporary, but others have been closed to fishing for decades.

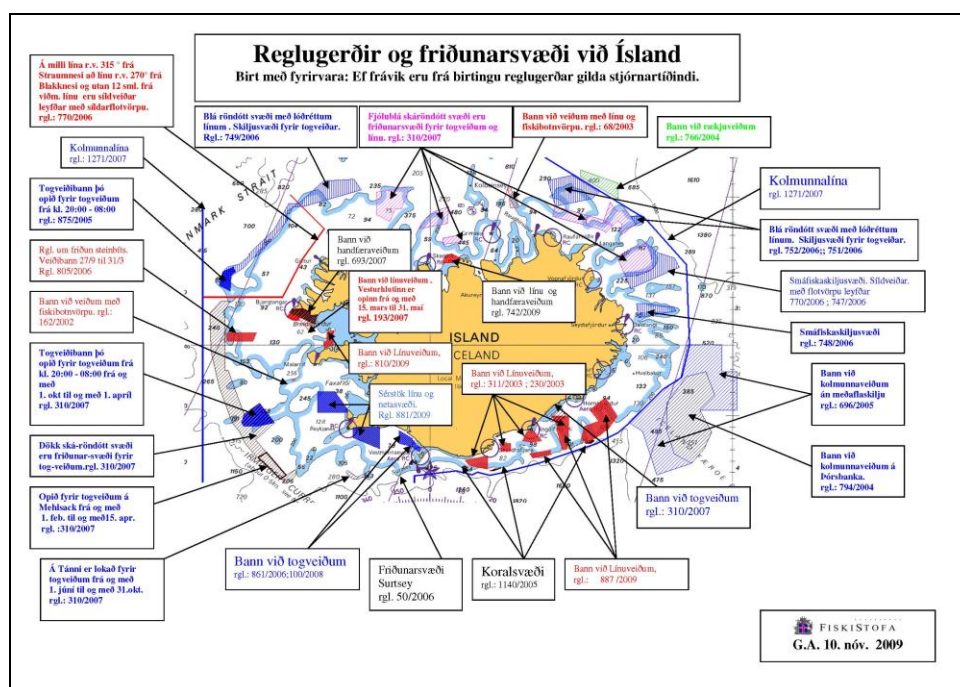
The major spawning grounds of cod, plaice and wolffish are closed under temporary closures during the main spawning period of these species. The general objectives of these measures, which were in part initiated by the fishermen, are to reduce fishing during the spawning activity of these species. (see Figure 3.5.2).

**Figure 3.5.2. Seasonal closures on spawning area closures around Iceland.**



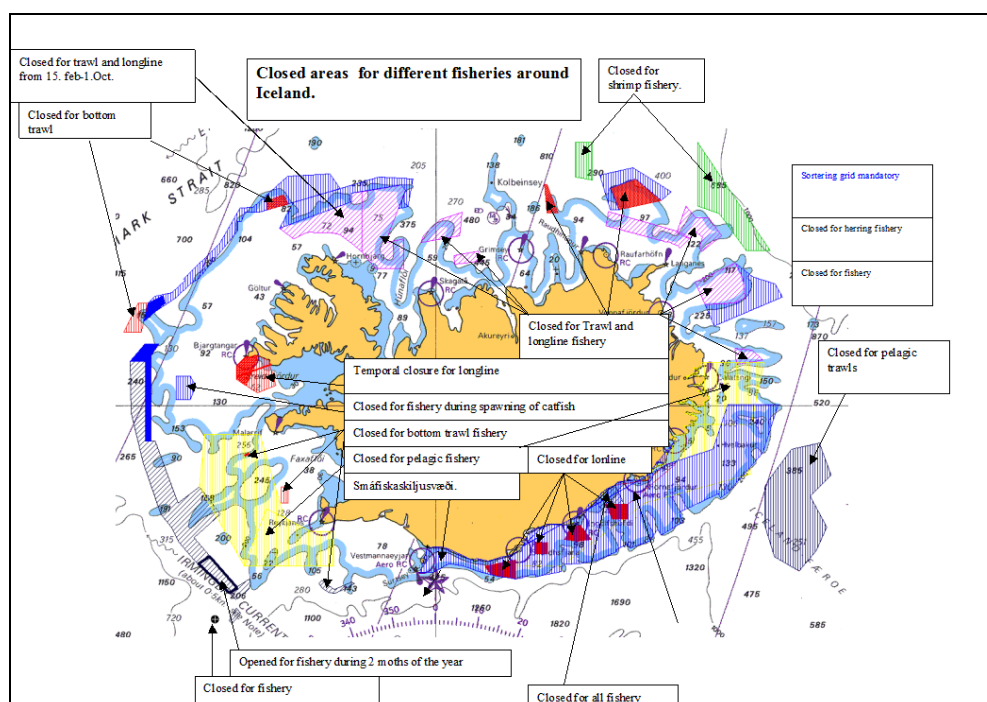
Source: Reproduced from [www.fiskstiofa.is](http://www.fiskstiofa.is)

Figures 3.5.3a sample map with information on temporary area closures around Iceland (in Icelandic).



Source: Reproduced from [www.fiskistiofa.is](http://www.fiskistiofa.is). An English translation of this Figure is available in [ISF Cod Assessment](#)

Figures 3.5.3b map with information on temporary area closures around Iceland for 2006.



Source: NWWG, 2012

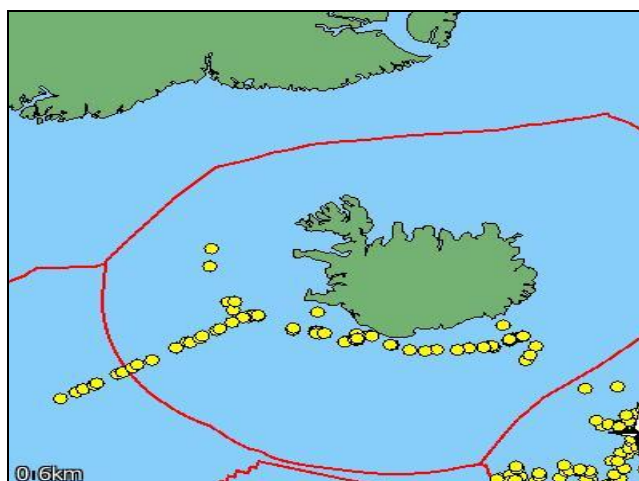
There is good information in relation to the spatial and seasonal operation of the fishery. Figures 3.2.8 and 3.2.9 indicate the general distribution of herring catches by Icelandic vessels for 2011/2012 using VMS and electronic logbook data. There is also an improving understanding in



relation to the location of the main sensitive seabed habitat types in the Norwegian Sea and Icelandic coastal waters. Publicly available data (E.g. OSPAR) indicates the locations of known sensitive seabed communities in the Norwegian Sea and adjacent waters e.g. [OSPAR marine biodiversity data and maps](#).

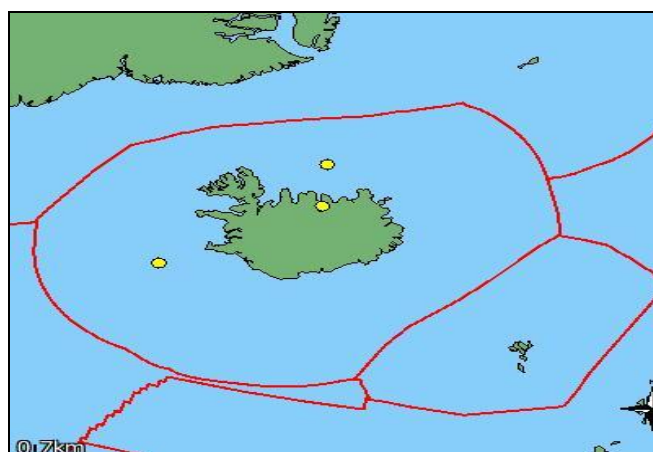
There is considerable interest in the underwater habitats and species of the submarine canyons and shelf edge as well as the continental shelf and slope area of the Icelandic EEZ. A number of unusual habitats and seabed communities have been discovered in recent years and research is ongoing. In particular, interest in the deep cold-water corals of the North Atlantic - including those within Icelandic waters - has been growing steadily since they were first discovered in the 1970's. In recent years, there has been much more focused effort by MRI in mapping cold-water coral habitats in Icelandic waters, along with investigations into their biology using remotely operated vehicles fitted with video and acoustic sensing equipment. This work is ongoing at the same time that many other nations that share a coast with the north Atlantic are exploring the distribution and extent of cold-water corals in their respective economic zones. Figure 3.5.4 presents recent information on the distribution of *Lophelia pertusa* reefs in Icelandic waters. Many large areas of cold-water coral have been located on the Reykjanes Ridge and on the shelf break to the southwest, south and southeast Iceland (Steingrímsson and Einarsson 2004).

**Figure 3.5.4 *Lophelia pertusa* cold water coral reef locations**



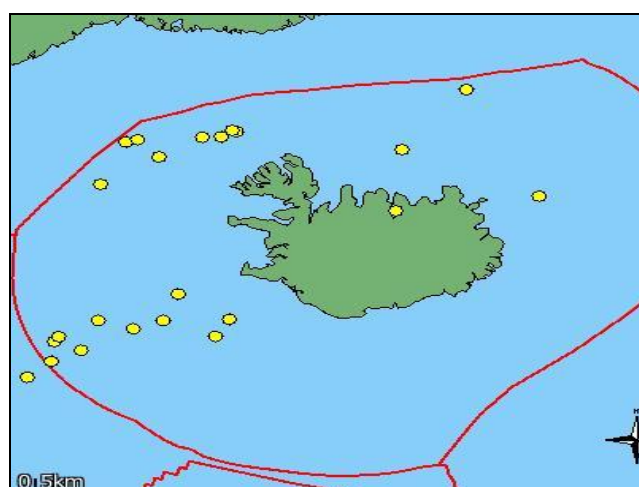
Source: OSPAR

**Figure 3.5.5 Oceanic ridges and hydrothermal vents**



Source: OSPAR

**Figure 3.5.6 Deep sea sponge aggregations**



Source: OSPAR

In addition to those shown, it is likely that many other unknown cold-water coral areas exist, some of which may already have been impacted by demersal fishing activity. Evidence of damage to coral reefs caused by fishing has been uncovered during many deepsea video surveys of reefs conducted by MRI. Currently in Iceland 5 areas with relatively undisturbed cold-water corals have received full protection and several other areas are under consideration for further protection.

The database of the BIOICE programme provides information on the spatial distribution of benthic organisms within the Icelandic territorial waters based on samples collected from 579 locations, including horny corals (*Gorgonacea*) and seapens (*Pennatulacea*), which are considered to be sensitive to fishing. Gorgonian corals occur all around Iceland but these are relatively uncommon on the shelf (< 500 m depth) but can be found in relatively high numbers in deep waters (> 500 m) off south, west and north coasts of Iceland, given the right environmental conditions. Similar distribution patterns were observed in the distribution of pennatulaceans, these being common in deeper waters, especially off South Iceland (Guijarro et al. 2007). (Source: ICES NWWG, 2012). [Ólafsdóttir \(2009\)](#) (in Icelandic with English summary) describes species diversity and fauna associated with deep water corals in Icelandic waters. Further information in relation to cold water coral mapping is available through ICES reports (e.g. WGECCO, 2002)

Other seabed communities of specific conservation interest that have been recorded in Icelandic waters include ridges with hydrothermal vents that are believed to support deep-sea communities (Figure 3.5.5) and deep sea sponge aggregations (Figure 3.5.6).

All vessels carry Vessel Monitoring System equipment, meaning that data is collected on an on-going basis in relation to the spatial and temporal operation of the fleet while engaged in both the Norwegian Icelandic spring spawning herring and Icelandic summer spawning herring fisheries. The scope of on-going data collection in relation to the operation of the fishery is considered sufficient to allow for regular monitoring and detection of changes in risk to seabed types from fishing gear interaction in both the purse seine and pelagic trawl fisheries.

### 3.5.5 Ecosystem interactions

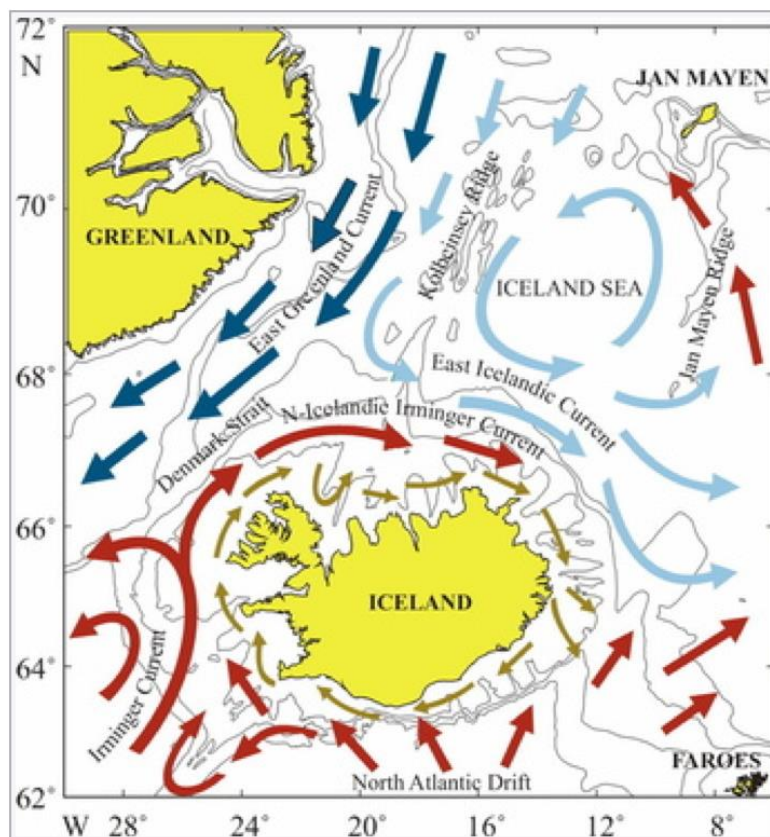
#### Physical and oceanographic features of the ecosystem

The following paragraphs are taken from NWWG, 2012.

“Iceland is located just south of the Arctic Circle at the junction of the submarine mid-Atlantic and the Greenland-Scotland Ridges. Seabed substrate characteristics are in many instances correlated with water depth. Bedrock, boulders and reef seabed types are more common in coastal and shallower waters than in deep waters. In deeper waters, hard bottom is often confined to well defined features such as ridges, vertical cliffs and isolated seamounts. Soft sediments are most prevalent outside of these areas and typically dominate in the troughs and deeper waters beyond the continental slope. The continental shelf around Iceland is narrowest off the south coast. A number of significant, deeper submarine canyons extend into the shelf area and are pronounced features of the Icelandic shelf area at various locations of the shelf.

In hydrographic terms, the Polar Front that separates the cold and southward flowing waters of polar origin from the northward flowing waters of Atlantic origin lies to the west and north of Iceland. To the south and east of Iceland the North Atlantic Current flows towards the Norwegian Sea. The Irminger Current is a branch of the North Atlantic Current and flows northwards over and along the Reykjanes Ridge and along the western shelf break. In the Denmark Strait it divides into a branch that flows northeastward and eastward to the waters north off Iceland, as the North Icelandic Irminger Current, and another branch that flows south-westward along the East Greenland Current. In the Iceland Sea north off Iceland, a branch originating from the cold East Greenland Current flows over the Kolbeinsey Ridge and continues to the southeast along the northeastern shelf break as the East Icelandic Current, which is part of a cyclonic gyre in the Iceland Sea (see Figure 3.5.7).

Figure 3.5.7. The ocean currents around Iceland and in the western Norwegian Sea



Source: Produced by The Marine Research Institute and reproduced from [www.fisheries.is](http://www.fisheries.is)

The Icelandic Shelf is known to be a relatively productive ecosystem. Productivity is higher in the southwestern sea areas than in the northeastern and higher latitude shelf areas than in the oceanic regions (Gudmundsson 1998). In terms of abundance, copepods dominate the mesozooplankton within Icelandic waters with *Calanus finmarchicus* being the most abundant species, often comprising between 60-80% of net-caught zooplankton in the uppermost 50 m (Astthorsson and Vilhjalmsen 2002, Astthorsson et al. 2007).

The structure of benthic communities in Icelandic waters is likely to be influenced by a large number of factors. Amongst these, water mass characteristics will have profound effects on species composition and spatial distribution patterns at the largest spatial scales (e.g. >50 km) whereas substrate characteristics (e.g. sediment type and rugosity) and topography will have profound effects on smaller scales (e.g. meters to kilometers), (e.g. Weissappel and Svavarsson 1998).

Shrimp biomass in Icelandic waters, both in inshore and offshore waters, has been declining in recent years. Consequently, overall fishing effort that impacted on shrimp has been reduced and it is now banned in most inshore areas. The causes for the decline in the inshore shrimp biomass is in part considered to be environmentally driven, both due to increasing water temperature north of Iceland and due to increasing biomass of younger cod, haddock and whiting that prey on juvenile shrimp" (NWWG, 2012).

About 25 species of stocks of fish and marine invertebrates are exploited commercially on a regular basis in Icelandic waters. Icelandic waters are comparatively rich in species and contain around 30 commercially exploited stocks of fish and marine invertebrates. The most important commercial species are cod, haddock, saithe, redfish, Greenland halibut and various other flatfish, wolffish, tusk (*Brosme brosme*), ling (*Molva molva*), herring, capelin and blue whiting. Most fish species spawn in the warm Atlantic water off the south and southwest coasts.

Capelin is important in the diet of cod as well as a number of other fish stocks, marine mammals and seabirds. Unlike other commercial stocks, adult capelin undertakes extensive feeding migrations north into the cold waters of the Denmark Strait and Iceland Sea during summer. Capelin abundance has been oscillating on roughly a decadal period since the 1970s, producing a yield of up to 1,600 Kt at the most recent peak. Abundance of demersal species have been generally trending downward since the 1950s with total catches dropping from over 800 Kt to less than 500 Kt in the early 2000s

The seabird community in Icelandic waters is composed of relatively few but mostly abundant species, accounting for roughly  $\frac{1}{4}$  of total number and biomass of seabirds within the whole ICES area (ICES 2002). Auks and petrels are the most important groups, comprising almost  $\frac{3}{5}$  and  $\frac{1}{4}$  of the total abundance and biomass in the area, respectively. The estimated annual food consumption is on the order of 1.5 million tonnes. Source: ICES NWWG 2012.

Skjoldal et. al. (2004) provides a comprehensive account of most aspects of the Norwegian Sea ecosystem, stretching as far as, and including the waters of Iceland's northern and eastern coasts. The Icelandic large marine ecosystem is less well served with research, however some useful summary material is available online and there have been a number of more focused studies into productivity, resources and sustainability and oceanography in the Icelandic waters large marine ecosystem e.g. Gudmundsson, (1989); Astthorsson and Vilhjalmsen (2002).

Norwegian Icelandic spring spawning herring is one of the main predators on zooplankton in the Norwegian Sea. It is also one of the main prey species and a host of other predators including fish, marine mammals and seabirds are also major predators of herring in the marine region. In this context as a key consumer of zooplankton and as a key prey species it is certain that herring is a key component of the ecosystem with many trophic connections featuring either Norwegian Icelandic spring spawning herring and/or Icelandic summer spawning herring. However, the assessment has determined that neither herring stock considered in this assessment is a key low trophic species (as per CB2.3.13), such that there are several other abundant high biomass stocks in the region at a similar trophic level and through which large volumes of energy can flow and which demonstrate a similar degree of connectance and food web linkages. Capelin, Atlantic mackerel and blue whiting are all large stocks within the region and are of a similar trophic level and function as important prey species for many other organisms.

The main impacts of the herring fishery are likely to be in relation to the potential depletion of food resources for many dependent consumers. Both stocks have however recovered from previous overfishing and are now harvested sustainably. Therefore the ecological role of the stock in terms of providing ecosystems services is most likely protected for the main part.

The Marine Research Institute maintains extensive research programmes on, *inter alia*, multispecies interaction, fishery – ecosystem interactions and oceanography. Programmes are ongoing and much of this is either published through ICES or through other media. Considerable information on relation to the ecosystem can be accessed through the [MRI website](#).



## 3.6 Principle Three: Management System Background

Principle 3 of the Marine Stewardship Council standard states that:

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

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

### 3.6.1 Management of the Norwegian Icelandic spring spawning herring

During the 20th century until the collapse of the Norwegian Icelandic spring spawning herring stock in the late 1960s this stock was very important for the Icelandic economy. In the best years herring products contributed almost half of all foreign export earnings and most of these were from the Norwegian Icelandic spring spawning herring. After the collapse of the stock in late 1960s all Norwegian Icelandic spring spawning herring disappeared from Icelandic waters. When the stock had recovered in the 1990s Icelandic vessels first fished for herring in international waters. Since then some parts of the stock enters the Icelandic EEZ but it has not come as close to Icelandic shores as it did earlier.

This stock spawns in Norwegian waters but migrates through waters controlled by Russia, Iceland, Faroe Islands and the EU. These countries cooperate on research on the stock within ICES as well as through other channels and they meet within NEAFC to discuss management of the stock. Disagreements on the TAC and its distributions have been common but the excess catches that have resulted have been moderate. On the whole it can be said that the stock has been well managed. Since 2007 the coastal states have agreed on the TAC and the distribution of it where Norway gets 61.00%, Russian Federation gets 12.82%, Iceland 14.51%, Faroe Islands 5.16% and EU gets 6.51%. The Faroese authorities have decided not to sign the agreement for the fishing in 2013 and declared that they plan to catch 17% of the TAC for Norwegian Icelandic spring spawning herring in 2013 which 619 thousand tonnes.<sup>2</sup> The Faroese will then catch 73 thousand tonnes in excess of their allocation of 5.16%.

The agreement allows that if the catch is less than the allocated quota the difference, up to 10% of the quota will be added to the quota for the next year. It also allows in excess of the quotas up to 10% of the quota. This excess catch will be subtracted from next year's quota.

### 3.6.2 Management of the Norwegian Icelandic spring spawning herring

The economic importance of the Icelandic Summer Spawning herring stock was second to the Norwegian Icelandic herring stock, but combined these stocks were extremely important for the Icelandic economy during the first part of the 20th century and until late 1960s when both collapsed almost at the same time. In the best years herring products contributed almost half of the Iceland's foreign export earnings.

After the collapse of the stock in late 1960s and early 1970s a moratorium was introduced in 1972. 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.

### 3.6.3 Icelandic fishery management system

#### Administrative arrangements and boundaries

Three public institutions are at the heart of Icelandic fisheries management: the Marine Research Institute (MRI), the Directorate of Fisheries (DoF) and the Ministry of Industry and Innovation (MII, formerly the Ministry of Fisheries and Agriculture). The Coast Guard also has a role in monitoring fishing activities, gears, fishing locations and discarding. Many areas in the waters around Iceland are

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<sup>2</sup> Fiskimálaráðið, Faroese Ministry of Fisheries, <http://www.fisk.fo/Default.aspx?ID=2396&M=News&PID=6411&NewsID=5065>

closed for fishing, mostly because they contain large quantities of juvenile fish, but also for ecological reasons (e.g. to prevent the destruction of corals). Some areas are closed permanently for some fishing while other area closures are temporary. All discarding of catches is explicitly banned by Icelandic law.

The monitoring and policing of Icelandic fishing is further enhanced and strengthened by the traceability measures required for exports, since over 90% of the catch ends up being exported in some form.

MRI 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. MRI presents its advice at the end of May/beginning of June each year. MRI's stock assessments and advice are reviewed each year by ICES.

Besides estimating the overall size of stocks, MRI conducts extensive research on the spawning of the stocks and estimates the size of the year classes before they enter the catch. There is extensive research on the environmental conditions and ecological relationships.

The data collection and the research work done by MRI is the basis for the scientific advice on resource management that ICES provides each year to the MII in Iceland. MRI's scientists participate in ICES's working groups that convene each year. ICES also provides international peer-review of the scientific work used in stock assessments. Additional scientific inputs on stock assessment and marine ecosystems are provided by universities and other research institutions.

The MRI plays an important role in communicating the 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 MRI 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 tax on low value catch and from some fines for illegal fishing collected by the Directorate of Fisheries. The estimated funding of MRI in 2011 amounts to 2,112 millions ISK (13.7 million EUR). Of that sum 60% is estimated to come from the state budget.<sup>3</sup> The number of employees is 170.

MII is responsible for the management of living marine resources in Icelandic waters. 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 processing.<sup>4</sup> This committee discusses all proposed legislation on these matters and can decide to discuss any aspect of the industry's behaviour or any concern that some people may have. It can require that information on the relevant matters be supplied by the MII or the public institutions serving the fishing industry.

There is legislation (upplýsingalög, Freedom of Information Act) in Iceland requiring 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.

Before taking decisions the minister consults extensively with stakeholders organisations including the Federation of Icelandic Fishing Vessel Owners (Landssamband íslenskra útvegsmanna, LÍÚ), 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 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.

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<sup>3</sup> Additional 115 million ISK (0.74 m EUR) is allocated for international co-operation and research within international institutions like North Atlantic Marine Mammal Commission (NAMMCO), International Council for the Exploration of the Sea (ICES), Northwest Atlantic Fisheries Organization (NAFO), North-East Atlantic Fisheries Commission (NEAFC), International Commission for the Conservation of the Atlantic Tunas (ICCAT) and International Whaling Commission (IWC).

<sup>4</sup> In 2009 its remit was extended to agriculture and its name was changed to the Althing's Fisheries and Agriculture Committee.



The Directorate of Fisheries (DoF) has many important roles in fisheries management in Iceland. The DoF licences fishing vessels, fish processing plants and authorises 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 both information on catches (including logbook information) from the vessels at sea and information on catches from the authorised 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 caught.<sup>5</sup> All trade in quotas and quota shares has to be reported to the DoF.

The DoF monitors fish processing as well as fishing. All sellers of fish must report the name of purchaser to whom they sold fish and the quantity of fish they sold to them. Similarly all purchasers of fish must report the name of the supplier and the quantity they purchased. 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 in the end exported in some form.

There is no illegal, unreported and unregulated (IUU) fishing in Icelandic waters. All landing of fish from vessels that engage in IUU fishing and the servicing of such vessels is forbidden in Iceland.

In summary, 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 MRI 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 well functioning enforcement system.

## Law and regulation

The Ministry of Industry and Innovation (MII) is responsible for the management of fisheries in Iceland and 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 and setting the annual TACs for Icelandic stocks.

The Icelandic Fisheries Management Act (no. 116/2006) states (Art. 1) that the authorities should "contribute to the protection of (exploitable stock in Icelandic waters) and their economic exploitation and thereby ensure secure employment and settlement in the country."<sup>6</sup> The Act on the utilisation of exploitable marine stocks (no. 57/1996) states (Art. 1) that its aim is to contribute to "sustainable utilisation which ensures maximum benefits to the Icelandic nation in the long-run."<sup>7</sup> These Acts make no references to the precautionary principle. The principle is embedded in some of the international conventions to which Iceland is a signatory (e.g. the OSPAR convention and the United Nations Agreement on the implementation of the provisions of the United Nations convention on the Law of the Sea, 10 December 1982, which relates to the conservation and management of straddling fish stocks and highly migratory fish stocks (in force as of 11 December 2001). The precautionary principle is also mentioned in the preface of the European Economic Area (EEA) agreement and is now firmly embedded in EEA law and regulations.<sup>8</sup>

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<sup>5</sup> See DOF's website [www.fiskistofa.is](http://www.fiskistofa.is). Some of the information on this website is also available in English.

<sup>6</sup> No. 116/2006, accessible (in Icelandic) at <http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf>. An English translation is accessible at <http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/>.

<sup>7</sup> No. 57, June 3 1996, accessible (in Icelandic) at <http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf>.

<sup>8</sup> See discussion on the precautionary principle in the proposal for law on main principles of environmental law (Frumvarp til laga um meginreglur umhverfissréttar, þskj. 842 – 566. mál, put forward during the 133. Session of the Althing 2006-2007, <http://www.althingi.is/altext/133/s/0842.html> ). This proposal was not passed.

## Technical measures

For a number of years several short or long term technical measures have been implemented. Sorting grids for bottom trawls are mandatory in certain areas. A rapid-closure system has been in force since 1976, aimed at protecting juvenile fish. Fishing is prohibited, for at least two weeks, in areas where the number of small cod (<55 cm) exceeds 25 % of the catch. A preliminary evaluation of the effectiveness of the system indicates that the relatively small areas closed for a short time do not significantly contribute to the protection of juveniles. On the other hand, several consecutive quick closures often lead to closures of larger areas for a longer time and force the fleet to operate in other areas. The effect of these longer closures has not been evaluated.

Since 1995, spawning areas have been closed for 2–3 weeks during the spawning period for all fisheries. The intent of this measure was to protect spawning fish. In 2005, the maximum allowed mesh size in gillnets was decreased to 8 inches in order to protect the largest spawning fish.

The mesh size in the cod-end in the trawling fishery was increased from 120 mm to 155 mm in 1977. Since 1998 the minimum cod-end mesh size allowed has been 135 mm, provided that a so-called “Polish cover” is not used. Numerous areas are closed temporarily or permanently to all fisheries or specific gears. The aim of these closures is to protect juveniles and habitats. The effects of these measures have not been evaluated.

Regulation No. 376 from 1992 stipulates that vessels using Danish seine must release the catch if it contains mostly small herring, length below 27 cm. This is more relevant for the Icelandic summerspawning herring which spawns in Icelandic waters but in the case of the Norwegian Icelandic spring spawning herring the juveniles stay close to the Norwegian coast.

## Fishing rights and licensing

The Fisheries Management Act of 1990 established the present system of Individual Transferable Quotas (ITQ) for the Icelandic fisheries. The Act stipulates that each year fish quotas shall be allocated to eligible fishing vessels according to their quota shares. The Act does not define a terminal date for the system. In that sense the shares can be considered permanent. On the other hand the shares do not form a property right and can be altered or abolished without compensation by the Icelandic legislative assembly, the Althingi. The quota shares can be traded and so can the annual quota allocation. There are some restrictions on this trade, e.g. each vessel must catch at least half of its quota allocation each fishing year and there are specified upper limits for the quota holdings of any one company.

Law No. 38 from 1998<sup>9</sup> regulated the inclusion of the fishing of Norwegian Icelandic spring spawning herring into the Icelandic quota system. Most of the quotas (90%) should be allocated according to the catch record of Icelandic vessels catching Norwegian Icelandic spring spawning herring during 1995-1997.

This legislation on fishing rights has been tested in courts on many occasions. Two court cases in 1998 and 2000 settled basic disagreements on the foundations of the present system. On December 3 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 was unconstitutional as it treated those that had originally got licencing of 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. The amendment opened up the possibility that anyone, who applies for the licencing of a fishing vessel which conforms to a particular standard, can obtain a fishing licence. However, a fishing licence 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 licence for Coastal fishing. In the case of Norwegian Icelandic spring spawning herring all fishing rights are in the form of catch quotas.

The limitations of ‘the right to catch’ set by the Fisheries Management Act were tested in court on the 6th of April 2000 when the High Court ruled that limitations of fish catch is constitutional.<sup>10</sup>

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<sup>9</sup> Accessible (in Icelandic) at <http://www.althingi.is/lagas/nuna/1998038.html>.

<sup>10</sup> This ruling is available in Icelandic at <http://www.haestirettur.is/domar?nr=767>.

The right of different fishers to access the resource are clearly codified in the legislation. 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.

Gradually the right of different fishers to access the resource have become more homogenous and the total catch has become more predictable. The introduction of Coastal fishing in 2009 introduced some heterogeneity into the system, but so far the catch allocated to Coastal fishing is small, i.e. 6,000 tonnes in total, and 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.

### **Monitoring, control and surveillance**

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. It collects and publishes numerical data and other information on fisheries. The DoF issues fishing permits to vessels and licences scales for weighing landings. It keeps records of quota shares and quotas, including all transfers of quotas and quota shares between vessels, and checks that vessels do not fish in excess of their quotas.

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 fishing activities of foreign vessels near the Icelandic fisheries zone.

The DoF collects data on fishing and fish catches landed by the Icelandic fleet and monitors compliance with rules on the weighting 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 licences 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. Formal accreditation of inspection bodies is required.

The DoF has the right to demand that inspectors are allowed onboard 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 which 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 licence to fish and possibly to prison sentences. In 2010 the DoF meted out fines to the sum of 18.2 millions ISK (112,000 EUR). In 2009 the fines totaled 13.2 millions ISK (76,000 EUR) and in 2008 the fines totaled 24.6 millions ISK (193,000 EUR).<sup>11</sup>

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

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<sup>11</sup> Directorate of Fisheries' Annual Report 2009 (see [http://www.fiskistofa.is/media/utgefing\\_efni/starfsskyrsla\\_2009.pdf](http://www.fiskistofa.is/media/utgefing_efni/starfsskyrsla_2009.pdf)), p. 31 and the Annual Report 2010 (see [http://www.fiskistofa.is/media/utgefing\\_efni/starfsskyrsla\\_2010.pdf](http://www.fiskistofa.is/media/utgefing_efni/starfsskyrsla_2010.pdf)) p. 27. In 2010 9 offences were sent to the police 2009 (13 in 2009 and 7 in 2008), 9 warnings were issued in 2010 that would lead to withdrawals of licences to fish if repeated (7 in 2009, 3 in 2008), in 2010 there were 9 cases of withdrawals of fishing licences (8 in 2009 and 8 in 2008), in 2010 5 warnings were meted out for licences to weight landings (0 in 2009, 1 in 2008) and in 2010 there was 1 case of withdrawal of such licences (0 in 2009, 1 in 2008). In 2010 there were 2,044 cases where warnings were sent out for catches in excess of quotas but only 19 of those led to withdrawals of fishing licences (in 2009 these numbers were 2,090 and 17 and in 2008 they were 1,706 and 8, respectively). In the rest of those cases the fishers were able to obtain quotas for the excess catch within the time limit of three days after the warning was sent. In 2010 there were 51 cases of withdrawals of fishing licences for negligence in reporting logbook information (13 cases in 2009 and 18 in 2008). (DOF's Annual Report 2010, p. 27 and DOF's annual report 2009, p. 32).

Icelandic Coast Guard monitors fishing activities in Icelandic waters, including surveillance of areas closed for fishing and inspection of mesh sizes and other gear related practises.

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 Directorate of Fisheries. Data collection 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 ground. In 2010 the estimate for cod discards was 659 tonnes, or 0.43 % of landings; the second lowest estimate for annual discards during the period 2001-2010. In 2009, cod discard amounted to 961 tonnes or 0.56% of landings. The estimate for haddock discards in 2010 was 727 tonnes, or 1.17 %; the second lowest proportion recorded during 2001-2010. Mean estimated annual discard of cod over the period 2001-2010 was 1,680 tonnes, or 0.90 % of landings. Mean estimated annual discard of haddock was 1,488 tonnes, or 2.02% of landings. In 2009 the estimated discard of haddock was down to 553 tonnes or 0.69% of landings. Discarding of other species was, according to the same source, considered negligible.<sup>12</sup>

### Consultations and dispute resolution

Disputes can be resolved in the first instance by negotiations within the system. In some cases the Ministry of Industry and Innovation can help to resolve the issue. Further disputes can be resolved through changes in the legislation. These mechanisms are transparent, tested and proven to be effective.

Disputes between actors in the industry can be taken to the courts. The legal system has been well tested in this regard. Ultimately, any Icelandic citizen or organisation can take legal action to the Council of Europe Court.

The management system in Iceland is comprehensive and encompasses the herring fisheries (as well as fishing for other species in Icelandic waters) and those participating in it. Management is considered to be consistent with the cultural context, as well as with the scale and intensity of the fishery.

### Reviews of the management system

There have been several external reviews of the methods that the Marine Research Institute uses in its stock assessments and of its advice. ICES performs such a review annually and there have also been special reviews made by internationally respected experts. There has not been comparable external review of the work of the Directorate of Fisheries or of the Ministry of Industry and Innovation. However, these institutions are subject to regular reviews by the Althingi's committees, especially the permanent committee on fisheries issues. Like other public bodies these institutions are subjected to scrutiny by The Icelandic National Audit Office (Ríkisendurskoðun). The performance of the institutions involved in fisheries management is also intensively debated in Iceland, especially in the many fishing communities.

The MRI staff publishes its research in peer-reviewed scientific journals. The system of fisheries management is under regular review by the Althingi as well as by local authorities, the fisheries sector and the general public.

In 2009 the Icelandic government initiated a thorough review of every aspect of the fisheries management system. This review is still under way. Such reviews always create some uncertainty but also offer possibilities for improvements. Most of those involved in this review are internal to the political process in Iceland and to the fishing industry. The external review processes have been beneficial to the work of the MRI. It seems probable that other parts of the fisheries management system in Iceland would also benefit from more external reviews.

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<sup>12</sup> Pálsson *et al.* (2012), Pálsson, Ólafur K., Höskuldur Björnsson, Hrefna Gísladóttir, Guðmundur Jóhannesson og Þórhallur Ottesen, Mæingar á brottkasti þorsks og ýsu 2001-2010, Hafrannsóknir no. 160, Marine Research Institute, 2012, accessible at <http://www.hafro.is/Bokasafn/Timarit/fjolr.htm>.

## 4. Evaluation Procedure

### 4.1 Harmonised Fishery Assessment

At the time of writing, 5 MSC assessments had already been completed that overlap with this assessment (detailed below) and findings presented in published assessment reports. In addition no other MSC assessments overlapping this fishery are currently underway.

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

#### Completed assessments ([www.msc.org](http://www.msc.org))

- » Danish Pelagic Producers Organisation Norwegian Spring spawning herring
- » Faroese Pelagic Organization (FPO) Norwegian Spring spawning herring (SUSPENDED)
- » Pelagic Freezer-Trawler Association Norwegian Spring spawning herring pelagic trawl
- » Scottish Pelagic Sustainability Group Ltd Norwegian Spring spawning herring
- » Norwegian Spring spawning herring

#### Assessments in progress

- » No other assessments were in progress at the same time as the present assessment.

#### 4.1.1 Harmonisation Details

Harmonisation of the Norwegian Icelandic spring spawning herring fishery assessment was carried out by:

- » Use of complementary assessment trees
- » The sharing of fishery information through direct contact with other CAB's (DNV, FCI)
- » The achievement of consistent conclusions with respect to evaluation, scoring and conditions.

Relevant fishery assessment reports and reports of annual surveillance audits were used to inform the assessment and to aid in overall harmonisation.

#### Harmonisation meeting/s

Harmonisation was carried out by the assessment team during assessment and scoring process through a review of scoring outcomes and justifications for all Principles and performance indicators for existing certifications for the Norwegian Icelandic spring spawning herring. In addition, harmonisation was ensured through direct communications with other fisheries through:

- » Electronic communications concerning levels of mackerel retained in the FPO, DPPO and SPSG certified fisheries.
- » Participation in a number of teleconferences to formulate and co-ordinate an agreed response to the failure to reach agreement with the Faroe Islands at the 2013 meeting of the Coastal States with respect to the setting of quotas for Norwegian Icelandic spring spawning herring. The harmonisation teleconferences were initiated by DNV, facilitated by MSC and took place in February and October 2013.

Two key issues arise in the course of harmonizing the present assessments with other certified fisheries in relation to PI2.1.1. There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species

- » Failure of established management arrangements for NE Atlantic mackerel to ensure that total removals of mackerel are within the scientific advice and that the HCR is demonstrated to be working and effective
- » Evidence of the breakdown of arrangements for managing fisheries for Norwegian Icelandic spring spawning herring and evidence of the failure of established management arrangements to ensure that total removals of Norwegian Icelandic spring spawning herring



will remain within the scientific advice and that the HCR is demonstrated to be working and effective

Since this is the first assessment of the Icelandic summer spawning herring fishery, no overlapping fisheries for that stock were found to occur and no harmonisation was necessary in relation to Principle 1. Principle 2 assessments were harmonised with other certified Northeast Atlantic pelagic trawl and purse seine fisheries for Atlantic herring, while relevant performance indicators for P3 outcomes were harmonised with other certifications for certified Icelandic fisheries.

### Harmonisation discussion Outcomes

Outcomes of the harmonisation process have been captured in the report and justification tables.

A harmonisation meeting was held on the 1st of March 2013 between DNV, FCI, Intertek Moody Marine, and the MSC in order to evaluate how the recent developments in the management of Norwegian Icelandic spring spawning herring could affect compliance of Norwegian Icelandic spring spawning herring fisheries with MSC Principles and Criteria. Principle 3, Criterion A1 scope requirements were also addressed, but no consensus was reached on what constitutes a controversial unilateral exemption to an international agreement. It was therefore agreed that it would be up to DNV to reach the final decision on whether or not the FPO Norwegian Icelandic spring spawning herring fishery still meets the MSC scope requirements.

The fact that Faroese and FPO share of the TAC was not yet known at the time of the surveillance audit and harmonization meeting and the fact that all parties continued to agree with the management plan, made it impossible for the assessment team to judge whether the decision of the Faroese delegation not to sign the Coastal States Agreement for 2013, should be considered as a controversial unilateral exemption to an international agreement. It was therefore concluded that the fishery shall remain certified, but subject to an expedited audit should the new information with 'material' differences to certification status (Ref. CR v1.2 §27.22.17.1) become available before the next surveillance activity.

On the 26th of March 2013, the Faroese Ministry of Fisheries announced the intention of the state to raise its national catch ceiling for Norwegian Icelandic spring spawning herring to 17%. The size of the herring quota set aside by the Faroe Islands (105 200 tonnes) were significantly higher than the share allocated to them by the Coastal states sharing arrangement (31 940 tonnes). This action triggered the need for an expedited audit for this fishery. Subsequent expedited audit culminated in the suspension of the FPO certification on 21<sup>st</sup> June 2013. No other certified fisheries were affected by the suspension in the short term.

A second harmonisation discussion was scheduled between all relevant CAB's for October 29<sup>th</sup> 2013. Two proposals were tabled by DNV with respect to the certified Danish PPO fishery for Norwegian Icelandic spring spawning herring that was undergoing annual surveillance. No particular course of action had been agreed or taken at time of writing, however it is expected that this will follow in due course once Harmonisation discussions have taken place. Once agreed and implemented in the DPPO fishery, all other fisheries will be expected to harmonise. Details of the proposals on the table at time of writing are contained in Appendix 6.

## 4.2 Previous assessments

Summary of previous assessments of the client operation, conclusions reached and past compliance with specified conditions:

- » No previous assessments of the client operation.

**Assessment conclusion:** N/A

**Compliance with conditions:** N/A

## 4.3 Assessment Methodologies

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

### 4.3.1 Assessment Tree

The default assessment tree was used for evaluating all Units of Certification and no amendments or changes were made in respect of any components or performance indicators.

## 4.4 Evaluation Processes and Techniques

### 4.4.1 Site Visits

In September, 2012, 3 members of the assessment team undertook a site visit to Reykjavik, Iceland. This enabled a scheduled programme of consultations to take place with key stakeholders in the fishery – including skippers, scientists, fishery protection officers, fishery managers and technical support staff. Prior notification of this site visit was issued on the MSC website and in Fiskifréttir in order that all relevant stakeholders were aware of the opportunity to meet with the assessment team.

#### Itinerary of field activities

##### Day 1 – Reykjavik, September 10<sup>th</sup> 2012

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

##### Day 2 - Reykjavik, September 11<sup>th</sup> 2012

- » On day 2, the assessment team met with 1 stakeholder to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

##### Day 3 – Reyjavik – September 12<sup>th</sup> 2012

- » On day 3, the assessment team met with 1 stakeholder to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

##### Day 4 - Neskaupstadur – September 13<sup>th</sup> 2012

- » On day 4, the assessment team met with 2 stakeholders to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

##### Day 5 – Reyjavik – September 14<sup>th</sup> 2012

- » On day 5, the assessment team met with 2 stakeholders to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

#### Additional individuals contacted during field activities

In addition to the above, contact was made with the Icelandic Institute for Natural History in an attempt to collect information in relation to protected species and habitats in Iceland.

### 4.4.2 Consultations

#### Stakeholder issues

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

#### Interview Programme

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

Meetings were held as follows:



**Table 4.4.1: Interview Programme**

Mr. Gestur Geirsson	Managing Director	Samherji hf
Ms. Rut Hermannsdottir	Project Manager, MSC	Samherji hf
Mr. Sindri Sigurdsson	Product Manager	Sildarvinnslan hf
Mr. Eyþór Björnsson	Fiskistofustjóri (Director)	Directorate of Fisheries
Mr. Gunnþór Ingvason	General Manager	Sildarvinnslan hf
Dr. Jóhann Sigurjónsson	Director General	Marine Research Institute
Dr. Thorsteinn Sigurdsson	Head of Pelagic assessment	Marine Research Institute
Mr. Kristján Freyr Helgason	Senior Expert, Fisheries Management	Ministry of Industries and Innovation
Anna Kristin Danielsdottir	Director, Food Safety, Environment and Genetics	MATIS – Icelandic food and biotech R&D
Mr Sturla Þórðarsson	Skipper F.V Borkur NK122	Sildarvinnslan hf

Source: FCI assessment team

### Summary of Information Obtained

A range of issues were discussed and evaluated during consultations and wide ranging information was obtained in relation to many aspects of the fishery relevant to the assessment, including:

- » Role of stakeholder in the fishery/s under assessment
- » Quota management
- » Fishing methods and units of certification
- » Compliance levels in the fleet
- » Co-ordinated enforcement with other nations
- » Arrangements for catch reporting
- » Verification of stock origin of herring catches
- » Monitoring of the fishery including VMS, Verification of landings versus processing factory output, observer programmes
- » Transshipment
- » At sea and shore based processing including conversion factors
- » Catch processing and utilization (in the context of human consumption and fishmeal production)
- » Mixing of catches with non-target species including mackerel
- » Operation of the coastal States Agreement and management measures for Norwegian Icelandic spring spawning herring
- » Licensing of vessels
- » Presence of and Interaction with endangered, threatened and protected species
- » Status of target stocks and setting of reference points
- » Involvement of Icelandic researchers with ICES and assessments generally
- » Stock trends
- » Wider environment impacts of the fisheries, including retained species, bycatch and /or slippage, discarding, interactions with ETP species
- » Management of environmental impacts
- » Closed areas and other technical conservation measures
- » General discussions on sustainability on the fishery
- » Industry involvement in decision making and management

The above list is not exhaustive and other relevant topics were explored in varying levels of detail. Detailed notes were kept in relation to stakeholder consultations.

### 4.4.3 Evaluation Techniques

#### Public Consultation

A total of 5 stakeholder individuals and organisations having relevant interest in the assessment were identified and consulted during this assessment. The interest of others not appearing on this list was solicited through the postings on the MSC website, and by advertising in Fiskifréttir. These were felt to be the most appropriate media for making these public announcements as Fiskifréttir has significant readership / uptake in the primary stakeholder locations for this fishery and the processes used on the MSC website for tracking and announcing the various stages of the assessment as it progresses - from Full Announcement through to Certification - form an ideal tool through which to channel stakeholder interest and keep them abreast of the important stages of the assessment as a whole.

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

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

#### Process

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

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

- » **MSC Principle 1** - Resource Sustainability
- » **MSC Principle 2** - Ecosystem Sustainability
- » **MSC Principle 3** - Management Systems

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

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

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

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

- » Decision to use the MSC Default Assessment Tree contained within the MSC Certification Requirements (Annex CB)
- » Description of the justification as to why a particular score has been given to each sub-criterion

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

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

### Scoring outcomes

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

- » The fishery must obtain a score of 80 or more for each of the MSC's three Principles, based on the weighted average score for all Criteria and Sub-criteria under each Principle.
- » The fishery must obtain a score of 60 or more for each Performance Indicator.

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

**Table 4.4.2 Scoring elements**

Component	Scoring elements	Main/not main	Data-deficient or not
1.1.1	Norwegian Icelandic spring spawning herring	Target stock	Not data deficient
1.1.1	Icelandic summer spawning herring	Target stock	Not data deficient
2.1.1	Northeast Atlantic mackerel	Main Retained stock for Norwegian spring spawning herring UoC	Not data deficient
2.1.1	Northeast Atlantic mackerel	Minor Retained stock for Icelandic summer spawning herring UoC's	Not data deficient
2.1.1	Norwegian spring spawning herring	Main retained stock for Icelandic summer spawning herring UoC's	Not data deficient
2.1.1	Icelandic summer spawning herring	Main retained stock for Norwegian spring spawning herring UoC	Not data deficient
2.1.1	Blue whiting	Minor retained stock for all UoC's	Not data deficient
2.4.1	Pelagic marine habitat	N/A	N/A

## 5. Traceability

### 5.1 Eligibility Date

The **Target Eligibility Date** for this fishery will be the 28 August, 2013. The Target Eligibility Date (TED) was originally set as 1<sup>st</sup> July 2102. Due to slower than expected progress of the assessment and taking into account CR 27.6.1.2, the TED was moved to 28 August, 2013. This means that any fish caught by the certified fleet following that date will be eligible to enter the chain of custody as certified product if and when certification is ultimately granted. The rationale for this date is that it meets with the client's wishes, for commercial reasons, for the date to be set at the earliest point at which the Certification Requirements allow.

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

### 5.2 Traceability within the Fishery

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

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

- » Logbook entries that detail species, capture method, date of capture and area of capture as well as estimated catch volumes by species and stock.
- » Mandatory requirements for herring catches to be subsampled at sea in order to facilitate discrimination and recording of catches according to stock origin. Official records of estimates of catch composition (proportions of Norwegian Icelandic spring spawning herring and Icelandic summer spawning herring in mixed catches) made after examination of catch samples by DoF staff.
- » Official landing declarations are made only once the catch volume has been verified on landing. Official landings records are publicly available on the Directorate of Fisheries website [www.fiskistofa.is](http://www.fiskistofa.is). Landings are updated daily and the entire catch and landing history for individual vessels can be verified. Individual landings can be verified and monthly and annual reports can be generated for vessels. This is widely recognised in international fishery circles as best practise in terms of ensuring transparency.
- » Landings of catches must be made at designated ports that have officially calibrated weighing facilities and which are overseen by officially registered weigh masters.
- » Information in relation to quota uptake by individual vessels is publicly available, also through [www.fiskistofa.is](http://www.fiskistofa.is)
- » Spatial information is available in relation to the operation of the fishery through tamper proof VMS that is operational on all vessels. This allows for cross checking of areas of capture with logbook declared catch areas.
- » Formal arrangements to co-ordinate monitoring, control and enforcement by relevant authorities throughout the region, including the Faroe Islands and Norway.

The fishery handles both MSC fish/fish products and non-MSC fish/fish products. These maybe handled in one of a number of processing operations as well as at sea on a factory trawler. Shore based processing units may also obtain raw material from vessels outside of the UoC's included in the present assessment. In addition, as a highly vertically integrated company, the fishery frequently retains ownership of MSC product beyond the point of first landing from the vessel/s that caught it. These are considered additional risk factors and it is considered that a separate evaluation of the systems of traceability in operation across the company's processing operations (at sea and shore based) by a supply chain specialist is warranted in order to establish that the systems of tracking,

tracing, separating and managing processing are adequate to ensure that no mixing of certified and non-certified product can occur.

### 5.2.2 Evaluation of Risk of Vessels Fishing Outside of UoC

The assessment has considered the risk that vessels may fish outside of the UoC's and thereby present non-certified fish as MSC product. There is no elevated risk of vessels claiming to be fishing inside the UoC whilst fishing outside. The herring fisheries are spatially restricted and occur in a defined season according to tight controls – not least quota control. Given that the company have no entitlement to herring from any other stocks than those included in the assessment, it is considered a low risk that herring from any other stock could be landed and presented as MSC certified herring product. The dual certification of both stocks effectively means that all herring catches of the client group are entitled to be landed as MSC provided the fishing method and area of capture remain within the scope of the UoC's.

Norwegian Icelandic spring spawning herring is no longer caught by UoC vessels by any other gear type than pelagic trawling for an extended period of time (>5yrs) and it is considered improbable that vessels would revert to purse seining in the near future. However it is important to point out that vessels are not permitted to fish for herring with pelagic trawls within certain sectors of the Norwegian EEZ and this could prompt some vessels to start fishing for Norwegian Icelandic spring spawning herring with purse seines again at some point in the future. In those circumstances, such catches would not be MSC product. Catches of Icelandic summer spawning herring by pelagic trawl and purse seine are however included in certification.

A change in fishing method used by any certified vessel fishing for herring would however be reported in the logbook and would be verifiable through landings declarations on [www.fiskistiofa.is](http://www.fiskistiofa.is), as would any fishing outside of permitted/UoC areas.

### 5.2.3 Risk of Substitution of Mixing Certified / Non-Certified Catch

There is a low risk of substitution or mixing of certified and non-certified catch prior to discharge of catches onshore. Norwegian spring spawning herring is also caught by Norwegian and Faroese and other Icelandic vessels in particular and maybe landed to onshore processing facilities that are part of the client group of companies. These vessels and their catches are outside of the UoC's. However, landing controls are such that the provenance of landed catches can be assured. The Chain of Custody audit and surveillance process needs to address risks of substitution taking place later in the supply chain.

### 5.2.4 At-Sea Processing

Vessels owned by Samherji hf carry out approximately 90% of the processing of certified herring catches at sea aboard the Vilhelm Þorsteinsson. This vessel catches and processes a range of pelagic species including herring, while at sea. This vessel does not tranship catches from other vessels at sea and transhipped catches are not included in the scope of the assessment.

- » Processed product form typically may comprise:
- » Dressed headed and gutted, tail off
- » Whole round herring
- » Headed and gutted
- » Fillets (flaps, butterfly flaps)
- » Single and single skinless fillets

This vessel is equipped to carry out processing at sea, freezing and packaging. This is permitted within the scope of this certificate and has been considered as part of this assessment. However, only identifiable product in the form of frozen fillets or butterfly flaps headed (head off) and gutted frozen product is covered by the assessment. These are typically presented block frozen, wrapped and sealed in brown paper packaging, clearly labelled (including the vessel name). Unloading and onward transport is typically on pallets, wrapped in transparent film.

By contrast, vessels of Sildarvinnslan hf land 100% of their catch to onshore processing facilities.

Other forms of fish products that may emanate from the certified vessels are not covered by this assessment and are therefore not eligible to carry the MSC logo. These include fishmeal, roe or by catch species.

### **5.2.5 Trans-Shipment**

No transshipment of unprocessed raw product takes place at sea or in port in this fishery. Processed product is transhipped only after processing at onshore facilities, or is landed directly to shore from processing vessels for onward shipping. The certification does not cover transshipment of catches and any catches transhipped at sea are outside the scope of the certificate.

## **5.3 Eligibility to Enter Further Chains of Custody**

Only Norwegian Icelandic spring spawning herring and Icelandic summer spawning herring caught in the manner defined in the Unit of Certification (**Section 3.1**) under restrictions detailed throughout the body of the final Public Certification Report for this fishery shall be eligible to enter the Chain of Custody. Chain of Custody should commence following the first point of landing, at which point the product shall be eligible to carry the MSC logo (under restrictions imposed by the MSC Chain of Custody standard). There are no restrictions on the fully certified product entering further chains of custody. It is likely that the client group requires its own Chain of Custody certificate given the risk factors identified in section 5.2.

### **5.3.1 Eligible points of landing**

The majority of Icelandic herring catches are landed at through 15 ports designated for handling pelagic catches. The client fleet land most of their catch into Neskaupstadur, however some landings do also take place into other ports and occasionally directly into ports the Faroe Islands or Norway. Vessels need to be specifically licensed by the DoF in order to land into such ports.

Although landings are typically into Icelandic ports, vessels covered by this assessment may also land catches from this fishery into registered ports in the Faroe Islands, the EU or Norway. All landings made to foreign ports are subject to similar scrutiny and reporting procedures and there is a well-established and coordinated mechanism to enable port-of-landing authorities to report the landing to the relevant authorities in a timely fashion.

There are no further restrictions defining port of landing, over and above those stated in national fishing regulations (for example vessels must land to designated or approved ports). There is no requirement for vessels to land at ports named in this report.

However, given the high degree of integration of operations of the client group, there are specific risk factors after the point of landing which have been highlighted in section 5.2 and which may influence chain of custody assessments.

### **5.3.2 Parties eligible to use the fishery certificate**

Samherji hf and Sildarvinnslan hf vessels fishing for Norwegian Icelandic spring spawning herring and Icelandic summer spawning herring.

Other eligible fishers are Icelandic registered vessels that are not currently members of Samherji hf and Sildarvinnslan hf targeting the same stocks.

## **5.4 Eligibility of Inseparable or Practically Inseparable (IPI) stock(s) to Enter Further Chains of Custody**

There are no IPI stocks included in the certification and the IPI methodology of the CR (Annex CH) has not been applied. While Icelandic summer spawning herring may be present in catches of Norwegian Icelandic spring spawning herring to varying degrees, subsampling of catches means that estimates of the volume of each stock present in catches and therefore entering into processing can be made. From a traceability perspective, it is possible to trace product by stock origin and mixed herring catches are therefore eligible to enter onward chain of custody.



## 6. Evaluation Results

### 6.1 Principle Level Scores

Table 6.1.1: Final Principle Scores – Norwegian Icelandic spring spawning herring – pelagic trawl

Principle	Score
Principle 1 – Target Species	87.5
Principle 2 - Ecosystem	88.0
Principle 3 – Management System	92.0

Source: FCI assessment team

Table 6.1.2: Final Principle Scores – Icelandic summer spawning herring – pelagic trawl

Principle	Score
Principle 1 – Target Species	90.0
Principle 2 - Ecosystem	87.7
Principle 3 – Management System	92.5

Source: FCI assessment team

Table 6.1.3: Final Principle Scores – Icelandic summer spawning herring – purse seine

Principle	Score
Principle 1 – Target Species	90.0
Principle 2 - Ecosystem	91.0
Principle 3 – Management System	92.5

Source: FCI assessment team

### 6.2 Summary of Scores

Table 6.2.1 Scores by performance indicator for Norwegian Icelandic spring spawning herring assessment

Component	PI No.	Performance Indicator (PI)	Pelagic trawl score
Outcome	1.1.1	Stock status	90
	1.1.2	Reference points	80
	1.1.3	Stock rebuilding	NA
Management	1.2.1	Harvest strategy	95
	1.2.2	Harvest control rules & tools	90
	1.2.3	Information & monitoring	90
	1.2.4	Assessment of stock status	85
Retained species	2.1.1	Outcome	90
	2.1.2	Management	75
	2.1.3	Information	85
Bycatch species	2.2.1	Outcome	100
	2.2.2	Management	90
	2.2.3	Information	85

Component	PI	Performance Indicator (PI)	Pelagic trawl score
ETP species	2.3.1	Outcome	85
	2.3.2	Management	85
	2.3.3	Information	80
Habitats	2.4.1	Outcome	100
	2.4.2	Management	95
	2.4.3	Information	95
Ecosystem	2.5.1	Outcome	85
	2.5.2	Management	85
	2.5.3	Information	85
Governance and policy	3.1.1	Legal & customary framework	85
	3.1.2	Consultation, roles & responsibilities	95
	3.1.3	Long term objectives	100
	3.1.4	Incentives for sustainable fishing	100
Fishery specific management system	3.2.1	Fishery specific objectives	90
	3.2.2	Decision making processes	80
	3.2.3	Compliance & enforcement	95
	3.2.4	Research plan	90
	3.2.5	Management performance evaluation	90

**Table 6.2.2 Scores by performance indicator for Icelandic summer spawning herring assessments (by Unit of Certification)**

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

## 6.3 Summary of Conditions

Table 6.3.1: Summary of Conditions

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/ N/A)
1	Harvest control rule and tools	1.2.2 Icelandic summer spawning herring pelagic trawl UoC	N
2	Harvest control rule and tools	1.2.2 Icelandic summer spawning herring purse seine UoC	N
3	Retained catch management	2.1.2 Norwegian Icelandic spring spawning herring pelagic trawl UoC	N
4	Retained catch management	2.1.2 Icelandic summer spawning herring pelagic trawl UoC	N

Source: FCI assessment team

### 6.3.1 Recommendations

**1. Code of Practice.** The assessment team noted that there is no explicit Code of Practice document that guides fleet fishing operations and which sets out clear strategies that the fishery has implemented or agrees to undertake in order to ensure that environmental impacts are minimized. While many of the issues of potential concern (such as slippage) may not be considered to be widespread or common occurrences in these fisheries, the existence of an operational Code of Practice for the certified fleet is considered consistent with modern best management practice.

It is therefore strongly recommended that a suitable Code of Practice be developed and implemented in the certified fleet as a priority. In particular the code of practice should detail onboard procedures that are to be employed to help minimize events of unwanted catch, interactions with the seabed or other marine habitats, interactions with ETP species, waste management. The Code of Practice should also set out company policy with respect to high grading.

**2. Slippage log.** There is infrequent discarding and slipping of catches in the Norwegian Icelandic spring spawning herring or Icelandic summer spawning fisheries. Any slippage events whether in the mid-water trawl or purse seine fisheries, must however still be regarded as fishing mortality. Suggestions that slippage from purse-seine does not generate mass mortality has not been scientifically proven, indeed the opposite may be true. Even though the practice is regarded as infrequent there is an opportunity for Samherji hf or Sildarvinnsalan hf vessels to provide useful data to the ICES WG in relation to slippage of either stock. The practice of recording slippage should be introduced in the fishery and data generated should be supplied to the MRI so as that this can further reduce uncertainty in the forecasting processes for both stocks. The Slippage log should be introduced as part of an overall Code of Practice on all certified vessels.

## 6.4 Determination, Formal Conclusion and Agreement

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

It is therefore determined that the **Samherji Norwegian & Icelandic herring trawl and seine fishery should be certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries.**

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

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## Appendix 1. Scoring & Rationale

### Appendix 1a – MSC Principles & Criteria

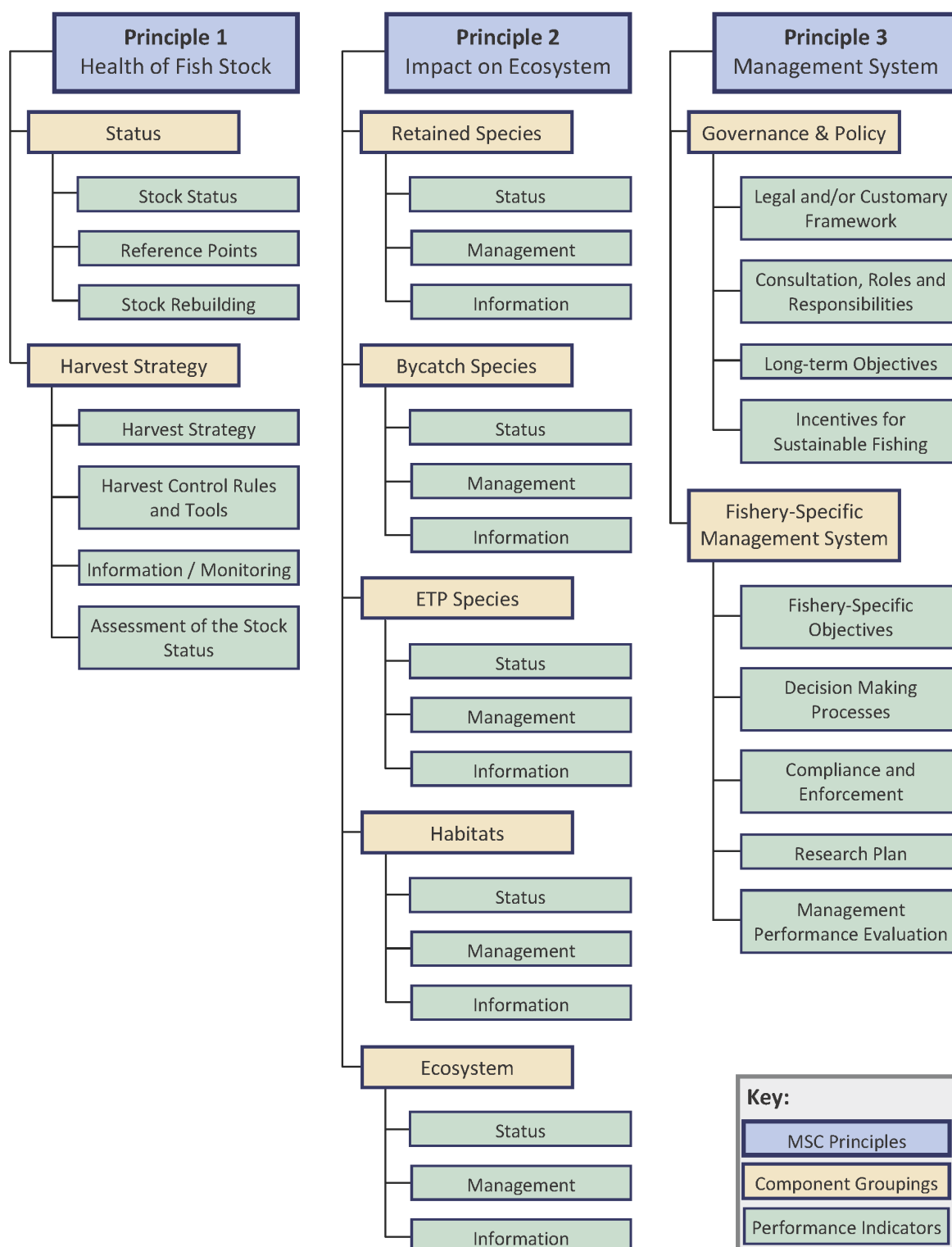


Figure A1 – Graphic of MSC Principles and Criteria

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

## Principle 1

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

### Intent:

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

### Status

- » The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing.
- » Limit and target reference points are appropriate for the stock (or some measure or surrogate with similar intent or outcome).
- » Where the stock is depleted, there is evidence of stock rebuilding and rebuilding strategies are in place with reasonable expectation that they will succeed.

### Harvest strategy / management

- » There is a robust and precautionary harvest strategy in place, which is responsive to the state of the stock and is designed to achieve stock management objectives.
- » There are well defined and effective harvest control rules in place that endeavour to maintain stocks at target levels.
- » Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
- » The stock assessment is appropriate for the stock and for the harvest control rule, takes into account uncertainty, and is evaluating stock status relative to reference points.

## Principle 2

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

### Intent:

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

### Retained species / Bycatch / ETP species

- » Main species are highly likely to be within biologically based limits or if outside the limits there is a full strategy of demonstrably effective management measures.
- » There is a strategy in place for managing these species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.
- » Information is sufficient to quantitatively estimate outcome status and support a full strategy to manage main retained / bycatch and ETP species.

## Habitat & Ecosystem

- » The fishery does not cause serious or irreversible harm to habitat or ecosystem structure and function, considered on a regional or bioregional basis.
- » There is a strategy and measures in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.
- » The nature, distribution and vulnerability of all main habitat types and ecosystem functions in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery and there is reliable information on the spatial extent, timing and location of use of the fishing gear.

## Principle 3

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

### Intent:

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

### Governance and policy

- » The management system exists within an appropriate and effective legal and/or customary framework that is capable of delivering sustainable fisheries and observes the legal & customary rights of people and incorporates an appropriate dispute resolution framework.
- » Functions, roles and responsibilities of organisations and individuals involved in the management process are explicitly defined and well understood. The management system includes consultation processes.
- » The management policy has clear long-term objectives, incorporates the precautionary approach and does not operate with subsidies that contribute to unsustainable fishing.

### Fishery specific management system

- » Short and long term objectives are explicit within the fishery's management system.
- » Decision-making processes respond to relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.
- » A monitoring, control and surveillance system has been implemented. Sanctions to deal with non-compliance exist and there is no evidence of systematic non-compliance.
- » A research plan provides the management system with reliable and timely information and results are disseminated to all interested parties in a timely fashion.

## Appendix 1.1 Performance Indicator Scores and Rationale

### ASSESSMENT TREE – PRINCIPLE 1 NORWEGIAN ICELANDIC SPRING SPAWNING HERRING

Evaluation Table for PI 1.1.1

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	It is likely that the stock is above the point where recruitment would be impaired.	It is highly likely that the stock is above the point where recruitment would be impaired.	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
	Met?	YES	YES	YES
	Justification	ICES classifies the stock as declining but still above $B_{pa}$ (ACOM, 2012). The spawning stock biomass estimated for 2012 is 6,100,000 t, well above the point where recruitment would be impaired ( $B_{lim}$ ).  By examining uncertainty of the assessment by bootstrap, the probability of SSB falling below $B_{lim}$ is far below 5% (see figure 7.7.4.1 in ICES, 2012). This results in a high degree of certainty that the stock is above the point where recruitment would be impaired.		
b	Guidepost		The stock is at or fluctuating around its target reference point.	There is a high degree of certainty that the stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years.
	Met?		YES	NO
	Justification	The stock is estimated to be well above target biomass reference point ( $B_{MP}=5,000,000t$ ) over the last decade. However, due to a downward revision of the assessment the target F has been exceeded in the last years. SSB is well above the established precautionary biomass reference point and therefore although currently SSB is declining we can assure that there is high degree of certainty that the stock has been fluctuating around target reference point.  Regarding the F target reference point, $F_{MP}$ ( $=0.125$ ), a downward revision of current assessment results in an F above $F_{MP}$ and fluctuating around $F_{MSY}$ (taking values between 0.10 and 0.16).		
References		» ACOM, 2012. Widely distributed and migratory stocks. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). Advice for 2013. ICES Advice, Book 9: 9.4.5. Advice September 2012. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf</a>  » ICES, 2012. Report of the Working Group on Widely Distributed Species (WGWISE). Lowestoft, UK, 21 – 27 June 2012. ICES CM 2012/ACOM: 16.		
Stock Status relative to Reference Points				
	Type of reference point	Value of reference point	Current stock status relative to reference point	

<b>PI 1.1.1</b>	<b>The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</b>		
<b>Target reference point</b>	$B_{MP}$  $F_{MP}$ (target F in the management plan)	5,000,000t spawning stock biomass  0.125 year <sup>-1</sup>	6,100,000/ $B_{MP}=1.22$  0.1344/ $F_{MP}=1.0752$
<b>Limit reference point</b>	$B_{lim}$	2,500,000t spawning stock biomass	6,100,000/ $B_{lim}=2.44$
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>NA</b>



Evaluation Table for PI 1.1.2

PI 1.1.2		Limit and target reference points are appropriate for the stock		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated.	
	Met?	YES	YES	
	Justification	<p>Adopted reference points are based on information of the stock since the 1970s. The time series of stock abundance and fishing mortality includes the depletion period and posterior recovery, therefore it supports the election of the limit reference point. Appropriate reference points for fishing mortality and biomass have been established and used since 1998. They are considered by ICES to be consistent with the Precautionary Approach.</p> <ul style="list-style-type: none"> <li>» Bpa is 5,000,000t</li> <li>» Blim is 2,500000t based on historic minimum biologically acceptable level (MBAL)</li> <li>» Fpa is 0.25, based on medium term simulation and linked to an operationally catch ceiling of 1.5 million t (ICES, 1998)</li> <li>» Flim is not considered relevant for this stock in the current situation</li> <li>» A target F of less than 0.125 has been set as an integral part of the management plan</li> </ul>		
b	Guidepost		The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues.
	Met?		YES	NO
	Justification	<p>Taking in to account the history of the fishery, limit reference point is defined well above the minimum abundance levels reached during the depletion period. So it can be seen to be precautionary and is expected to maintain the stock above the level of depletion occurred in the 1970s and 1980s.</p> <p>Limit reference point is expected to maintain the stock above the level of depletion occurred in the 1970s and 1980s. However, the technical basis for the reference points is unclear and estimates are very imprecise.</p> <p>Recent attempts to improve the reference points confirm that they are at the right general level, but have been unable to improve their precision.</p>		

PI 1.1.2		Limit and target reference points are appropriate for the stock		
c	Guidepost		The target reference point is such that the stock is maintained at a level consistent with $B_{MSY}$ or some measure or surrogate with similar intent or outcome.	The target reference point is such that the stock is maintained at a level consistent with $B_{MSY}$ or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.
	Met?		YES	NO
	Justification	<p>The precise technical basis for the target reference point is unclear, but the choice is a low value tested through medium term projections. In the long term and subject to environmental fluctuations, it should maintain the biomass within the target region. The precise relation between the reference points and MSY is not clear, but the current reference points have the same intent.</p> <p>Because the technical basis for the reference points is unclear and estimates are very imprecise, we cannot assure that the target reference point takes into account relevant precautionary issues with a high degree of certainty.</p>		
d	Guidepost		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		NOT RELEVANT	
	Justification	<p>Herring (Clupeidae) is listed as a mandatory key low trophic species (see Box CB1 in CR Annex v1.2) unless evidence is available otherwise (i.e. it does not meet two of the three subcriteria in CB2.3.13a).</p> <p>According to the connectance score (<math>=0.0005</math>) calculated by Essington and Pláganyi (2013), the proportion of the trophic connections in the ecosystem involving this stock are not large (subcriterion i in CB2.3.13a), and therefore predator dependency is not significant.</p> <p>The ecosystem can be regarded as not wasp-waisted, because the Norwegian Icelandic herring are smaller than those of all the species at the same trophic level, as suggested in subcriterion iii in GCB2.3.13a.</p> <p>Norwegian Icelandic herring does not meet two of the three subcriteria in CB2.3.13a, consequently the stock should not be considered as key low trophic level species.</p>		
References		<ul style="list-style-type: none"> <li>» Essington, T., and Pláganyi, É. E. 2013. Model and data adequacy for the Marine Stewardship Council key low trophic level species designation and criteria. MSC Science Series, In Print.</li> <li>» ICES, 1998. Report of the study group on the precautionary approach to fisheries management. February 1998. ICES CM 1998/ACFM: 10. 36pp.</li> <li>» Røttingen, I., 2000. A review of the process leading to the establishment of limit and precautionary reference points for the stock of Norwegian-spring spawning herring. ICES CM 200/X: 08.</li> </ul>		

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

**Evaluation Table for PI 1.1.3**

<b>PI 1.1.3</b>		<b>Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Where stocks are depleted rebuilding strategies, which have a reasonable expectation of success, are in place.		Where stocks are depleted, strategies are demonstrated to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the specified timeframe.
	<b>Met?</b>	(Y/N)		(Y/N)
	<b>Justification</b>			
<b>b</b>	<b>Guidepost</b>	A rebuilding timeframe is specified for the depleted stock that is the shorter of 30 years or 3 times its generation time. For cases where 3 generations is less than 5 years, the rebuilding timeframe is up to 5 years.	A rebuilding timeframe is specified for the depleted stock that is the shorter of 20 years or 2 times its generation time. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.	The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the depleted stock.
	<b>Met?</b>	(Y/N)	(Y/N)	(Y/N)
	<b>Justification</b>			
<b>c</b>	<b>Guidepost</b>	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within a specified timeframe.	There is evidence that they are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within a specified timeframe.	
	<b>Met?</b>	(Y/N)	(Y/N)	

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

**Evaluation Table for PI 1.2.1**

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>	The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the target and limit reference points.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	<p>The harvest strategy has been defined in order to maintain the stock above biomass limit reference point. All the elements of the harvest strategy have been designed specifically for the stock, in order to allow a sustainable management of the stock. Details on the development of the harvest control rule are described by Bogstad (2000) and Røttingen (2003).</p> <p>Target F in the harvest strategy is selected at 0.125, a value below <math>F_{pa}</math>, which implied a risk in the order of 10-20% to fall below <math>B_{lim}</math> in a 10 year period (Røttingen, 2000). Therefore, the harvest strategy is designed to avoid the limit reference point with a high probability.</p>		
<b>b</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	NO



PI 1.2.1		There is a robust and precautionary harvest strategy in place		
	Justification	<p>The management plan has been evaluated by ICES and it is considered precautionary (ACOM, 2012).</p> <p>TAC is implemented and enforced by the parties to the agreement (NEAFC, 2012). The TAC is being set consistent with the harvest control rule since 2007 and enforcement appears good and control is adequate. An annual stock assessment is carried out to provide management advice and output from the assessment is used to set the TAC. Hence, there is clear feedback and control through TAC implementation and enforcement.</p> <p>The reference points defined for the stock and included in the harvest strategy have been estimated taking into account the objectives set for the recovery of the stock in the 80s (Røttingen, 2003; Bogstad <i>et al.</i>, 2000).</p> <p>TAC is set in accordance with the F value selected depending on the stock status; if SSB is above <math>B_{pa}</math> the selected F (0.125) is lower than estimated <math>F_{pa}</math> (0.15), if SSB is at or below <math>B_{lim}</math> the F is set at 0.05 which was the F adopted to recover the stock after the collapse of the stock in the 80s and in-between a linear reduction to F value (from 0.125 to 0.05) is applied.</p> <p>Since its implementation in 1998, the harvest strategy has demonstrated that in practise has been achieving its objectives. The harvest strategy has been partially tested by simulation at ICES level, though more complete testing is still being carried out. It should also be noted that the management plan harvest rule evaluated applied a TAC ceiling that is not enforced and therefore could be systematically exceeded.</p>		
c	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	YES		
	Justification	<p>The fishery is continuously monitored through control of catches and fleet activities, catches sampling and direct surveying of the stock.</p> <p>The stock is assessed annually by ICES WGWIDE (ICES, 2012) in order to provide management advice and allows assessing the performance of the harvest strategy.</p>		
d	Guidepost			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			YES
	Justification	<p>The management plan rule has not been reviewed since it was adopted. Though, the initially agreed plan did not state what explicit measures should be taken in case SSB falling below <math>B_{pa}</math> (Røttingen, 2003) and after a request to ICES to evaluate recovery strategies, in October 2001, the Coastal States agreed to a recovery plan to put in place in case the SSB falls below <math>B_{pa}</math>.</p> <p>Additionally, this year NEAFC (2012) has done a request to ICES in order to test different alternatives to the management plan. Results are expected for 2013.</p>		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
e	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	NOT RELEVANT	NOT RELEVANT	NOT RELEVANT
	Justification			
References		<ul style="list-style-type: none"> <li>» ACOM, 2012. Widely distributed and migratory stocks. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). Advice for 2013. ICES Advice, Book 9: 9.4.5. Advice September 2012. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf</a></li> <li>» Bogstad, B., I. Røttingen, P. Sandberg and S. Tjelmeland, 2000. The use of Medium-Term Forecasts in advice and management decisions for the stock of Norwegian spring spawning herring (<i>Clupea harengus</i> L.). ICES CM 200/V: 01.</li> <li>» ICES, 2012. Report of the Working Group on Widely Distributed Species (WGWISE). Lowestoft, UK, 21 – 27 June 2012. ICES CM 2012/ACOM: 16.</li> <li>» NEAFC, 2012. Convention on Future Multilateral Cooperation in Northeast Atlantic Fisheries, open for signature in London on 18 November 1980 and entered into force on 17 March 1982. Amendments to the 1982 Convention have been adopted in 2004 and 2006 by NEAFC Commission. Contracting parties have agreed to use the “new” Convention on a provisional basis pending ratification. In: North East Atlantic Fisheries Commission [online]. London. Updated February 2007. [Cited 28 November 2012]. <a href="http://neafc.org/system/files/london-declaration_and_new_convention.pdf">http://neafc.org/system/files/london-declaration_and_new_convention.pdf</a></li> <li>» Røttingen, I., 2000. A review of the process leading to the establishment of limit and precautionary reference points for the stock of Norwegian-spring spawning herring. ICES CM 200/X: 08.</li> <li>» Røttingen, I., 2003. The agreed recovery plan in the management of Norwegian spring-spawning herring. ICES CM 2003/U: 01.</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				NA

**Evaluation Table for PI 1.2.2**

<b>PI 1.2.2</b>		<b>There are well defined and effective harvest control rules in place</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	
	<b>Met?</b>	YES	YES	
	<b>Justification</b>	<p>The harvest rules defined in the long term management plan set an F value depending on the stock status. When spawning stock biomass is estimated below precautionary biomass reference point, the management plan states the following adaptation of the fishing mortality: "... at least a linear reduction in the fishing mortality rate from 0.125 at <math>B_{pa}</math> (5,000,000 t) to 0.05 at <math>B_{lim}</math> (2,500,000 t)".</p> <p>The harvest rules are well defined within the management plan definition. They are designed specifically for the stock to meet the objectives based on the reference points.</p>		
<b>b</b>	<b>Guidepost</b>		The selection of the harvest control rules takes into account the main uncertainties.	The design of the harvest control rules takes into account a wide range of uncertainties.
	<b>Met?</b>		YES	NO
	<b>Justification</b>	<p>The design of the harvest control rule takes into account the main uncertainties (Røttingen, 2003).</p> <p>Yearly performed stock assessment takes into account environmental effects and migration which are considered the main sources of uncertainty for this stock. This stock assessment output is the basis for the advice. Yearly performed stock assessment takes into account environmental effects and migration which are considered the main sources of uncertainty for this stock. Bootstrap and retrospective analysis are used to examine the uncertainties. This stock assessment output is the basis for the advice.</p> <p>However, no full management strategy evaluation has been undertaken in order to explicitly take into account the uncertainties in the harvest control rule.</p>		

PI 1.2.2		There are well defined and effective harvest control rules in place		
c	Guidepost	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
	Met?	YES	YES	YES
	Justification	<p>Continuously data monitoring and annual stock assessments show that targets in terms of catches and biomass are being met. The performed simulation testing assumed a TAC ceiling of 1.5 million tons (Bogstad, 2003) and the TAC has exceeded 1.5 million tons (by less than 10%) in 2008 and 2009. However, the long term management plan is being re-evaluated and that is expected to be tested as it is currently applied.</p> <p>Although the harvest control rules have not been tested when SSB is below the limit reference point, experience on the recovery of the stock in the 1980s when same F value was applied supports its effectiveness.</p>		
References		<ul style="list-style-type: none"> <li>» ACOM, 2012. Widely distributed and migratory stocks. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). Advice for 2013. ICES Advice, Book 9: 9.4.5. Advice September 2012. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf</a></li> <li>» Bogstad, B., I. Røttingen, P. Sandberg and S. Tjelmeland, 2000. The use of Medium-Term Forecasts in advice and management decisions for the stock of Norwegian spring spawning herring (<i>Clupea harengus</i> L.). ICES CM 200/V: 01.</li> <li>» ICES, 2012. Report of the Working Group on Widely Distributed Species (WGWIDE). Lowestoft, UK, 21 – 27 June 2012. ICES CM 2012/ACOM: 16.</li> <li>» Røttingen, I., 2003. The agreed recovery plan in the management of Norwegian spring-spawning herring. ICES CM 2003/U: 01.</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 1.2.3

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	YES	YES	NO
	Justification	<p>Information on stock structure, stock productivity and fleet composition is available from different sources (fleet information and scientific surveys).</p> <p>Available data on stock structure, stock productivity, effort directed to the stock, fleet catches and environmental information is sufficient to support the harvest strategy, although not all of it is directly relevant. For example, environmental information is used for interpreting the monitoring data and providing a better indication of uncertainty.</p> <p>Although sufficient information is available to support the harvest strategy. There is a lack of understanding on the trophic interactions (i.e. ecosystem dynamics).</p>		
b	Guidepost	Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	YES	YES	YES
	Justification	<p>A number of surveys are carried out in the Norwegian Sea and Barents sea to estimate the size of the stock, its age composition or the recruitment to the stock.</p> <p>Fishery removals are also reported annually by the Coastal States. Annually, catches are reported to the WGWIDE by the Coastal States (in tons by quarter and ICES area). Although some of the surveys, whose data are still used in the assessment, have been stopped. Many of them are still operative and they are regularly carried out. In 2001, sampled catches accounted for 95% of the total catch.</p> <p>The main problem with the surveys has been the changes in stock location. While this has increased uncertainty in the interpretation of data and rendered some surveys ineffective, the abundance surveys remain comprehensive enough to monitor stock abundance accurately. The lack of information on discarding is not regarded as a problem, because it is considered to be negligible (less than 2%).</p>		

PI 1.2.3		Relevant information is collected to support the harvest strategy		
c	Guidepost		There is good information on all other fishery removals from the stock.	
	Met?		YES	
	Justification	Discarding (slippage) and misreporting are thought to occur, but are unrecorded. ICES WGWIDE members believe this unrecorded mortality is negligible. Interviews with stakeholders confirm that general belief.		
References		<ul style="list-style-type: none"> <li>» ACOM, 2012. Widely distributed and migratory stocks. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). Advice for 2013. ICES Advice, Book 9: 9.4.5. Advice September 2012. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf</a></li> <li>» ICES, 2012. Report of the Working Group on Widely Distributed Species (WGWIDE). Lowestoft, UK, 21 – 27 June 2012. ICES CM 2012/ACOM: 16.</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA



**Evaluation Table for PI 1.2.4**

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>		The assessment is appropriate for the stock and for the harvest control rule.	The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.
	<b>Met?</b>		YES	YES
	<b>Justification</b>	<p>The assessment evaluates stock status relative to reference points. Assessment provides with the historical performance of the stock and its exploitation patterns (by age class). Therefore we are able to estimate spawning stock biomass and average fishing mortality, information required by the harvest control rule.</p> <p>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.</p>		
<b>b</b>	<b>Guidepost</b>	The assessment estimates stock status relative to reference points.		
	<b>Met?</b>	YES		
	<b>Justification</b>	<p>The assessment evaluates stock status relative to reference points. Assessment provides with 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 (ACFM, 2012).</p>		
<b>c</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	NO

PI 1.2.4		There is an adequate assessment of the stock status		
	Justification	<p>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. Those uncertainties are reviewed and their effects in the assessment outcome are tested.</p> <p>In spite of the fact that the stock status is not evaluated in a probabilistic way, the uncertainty of the assessment is analysed applying a bootstrap method to estimate uncertainty in spawning stock abundance and fishing mortality.</p> <p>Bootstrap accounts for the error in the estimated parameters but does not include observation error. Retrospective analysis is performed to assess model error (SSB overestimation and F underestimation), but by the moment the hypothesis on the possible source of observed bias are to be tested. Stock status is not evaluated in a probabilistic way. Uncertainty of the assessment is analysed by bootstrap.</p>		
d	Guidepost			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			NO
	Justification	<p>Some alternative hypotheses and assessment approaches have been explored using a variety of software. The models are different flavours of the same basic VPA approach, but a model specific to this population has not been developed and not all alternative hypotheses and assessment approaches have been rigorously explored.</p> <p>There is no stock recruitment relationship established primarily due to problems with the method being applied to estimate the S/R function. Without a stock-recruitment relationship at least as a hypothesis, it will be difficult to develop the assessment method further.</p>		
e	Guidepost		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?		YES	NO
	Justification	<p>Assessment methodology actually in use was internally reviewed by ICES during the benchmark of the Norwegian spring spawning stock (ICES, 2008). Additionally, yearly performed assessment is internally reviewed by ACOM and STECF before been delivered to managers.</p> <p>Although assessment is internally peer reviewed within ICES by the Advisory Committee (ACOM) as part of the management process, externally review has not occurred and the assessment method has not been published in a peer reviewed journal.</p>		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				NA

## ASSESSMENT TREE – PRINCIPLE 1 ICELANDIC SUMMER SPAWNING HERRING

Evaluation Table for PI 1.1.1 for pelagic trawl and purse seine Units of Certification

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	It is likely that the stock is above the point where recruitment would be impaired.	It is highly likely that the stock is above the point where recruitment would be impaired.	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
	Met?	YES	YES	YES
	Justification	The spawning stock biomass estimated for 2012 is 377,000 tons, above the precautionary biomass limit ( $B_{pa}$ ). Although WGWIDE members did not evaluate the uncertainty of the assessment, MRI scientists examined the uncertainty of the assessment by bootstrapping. Such work confirms that there is a high degree of certainty that the stock is above the point where recruitment would be impaired.		
b	Guidepost		The stock is at or fluctuating around its target reference point.	There is a high degree of certainty that the stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years.
	Met?		YES	YES
	Justification	ICES classifies the stock as having had a declining (likely linked to the <i>Ichthyophonus</i> infection in recent years, which seems to have stopped), but still above $B_{pa}$ (ACOM, 2012). Moreover, now the infection is going down and the abundance is starting to increase thanks to incoming year classes at or above average size.  The stock has been above limit biomass reference point ( $B_{lim}=200,000t$ ) since 1987. Furthermore, $F$ has been fluctuating around the target ( $F_{MSY}=0.22$ ) in the last ten years. What is more, in the last 10 years the stock has been above $B_{pa}$ , fishing mortality at or below $F_{MSY}$ and estimated recruitment above the mean historical recruitment in most of those years.		
References		ACOM, 2012. Iceland and East Greenland. Herring in Division Va (Icelandic summer-spawning herring). Advice for 2012/2013. ICES Advice, Book 2: 2.4.13. Advice June 2012. <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/her-vasu.pdf">http://www.ices.dk/sites/pub/Publication Reports/Advice/2013/2013/her-vasu.pdf</a>  ICES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.		
Stock Status relative to Reference Points				
	Type of reference point	Value of reference point	Current stock status relative to reference point	

<b>PI 1.1.1</b>	<b>The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</b>		
<b>Target reference point</b>	$F_{msy}=F_{0.1}$	0.22 year <sup>-1</sup>	0.17/ $F_{msy}=0.77$
<b>Limit reference point</b>	$B_{lim}$	200,000t spawning stock biomass	377,000/ $B_{lim}=2.22$
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>NA</b>

**Evaluation Table for PI 1.1.2**

PI 1.1.2		Limit and target reference points are appropriate for the stock		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated.	
	<b>Met?</b>	YES	YES	
	<b>Justification</b>	Adopted reference points are based on historical information of the stock. Experience has demonstrated that exploitation rate at or above $F_{0.1}$ has been successful. The time series of stock abundance and fishing mortality includes the depletion period and posterior recovery, therefore it supports the election of the limit reference point.		
<b>b</b>	<b>Guidepost</b>		The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues.
	<b>Met?</b>		YES	YES
	<b>Justification</b>	Taking into account the full time series of abundance and recruitment data (since 1947), the limit reference point is defined below the estimated change point for the fitted segmented regression curve. Therefore, the limit reference point is set above the level at which there is an appreciable risk of impairing the reproductive capacity (ICES, 2003).		
<b>c</b>	<b>Guidepost</b>		The target reference point is such that the stock is maintained at a level consistent with $B_{MSY}$ or some measure or surrogate with similar intent or outcome.	The target reference point is such that the stock is maintained at a level consistent with $B_{MSY}$ or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.
	<b>Met?</b>		YES	NO
	<b>Justification</b>	MSY based reference points have not been defined for the stock. However exploratory work (with HCS program, v10.3; Skagen, 2010) presented at NWWG (ICES, 2011) determined that currently used precautionary reference points were consistent with MSY. Furthermore, the currently used $F_{0.1}=0.22$ could be a valid candidate for $F_{MSY}$ .  No additional demonstrable precaution has been applied in setting the target reference point.		

PI 1.1.2		Limit and target reference points are appropriate for the stock		
d	Guidepost		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		NOT RELEVANT	
	Justification	<p>Herring (Clupeidae) is listed as a mandatory key low trophic species (see Box CB1 CR Annex v1.2) unless evidence is available otherwise.</p> <p>Under CB2.3.13a, the consumer biomass ratio estimated for the stock is 0.03, smaller than 5% (the threshold suggested in GCB2.3.13a), then the volume of energy passing through the Icelandic herring between lower and higher trophic levels is not very large (&lt;5%). Additionally, under CB2.3.13a, the catches of Icelandic herring are smaller than those for all the species at the same trophic level, so the ecosystem can be regarded as not wasp-waisted.</p> <p>Therefore, Icelandic herring should not be considered as key low trophic level species, because it does not meet two of the subcriteria listed in CB2.3.13a.</p>		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA



**Evaluation Table for PI 1.1.3**

<b>PI 1.1.3</b>		<b>Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Where stocks are depleted rebuilding strategies, which have a reasonable expectation of success, are in place.		Where stocks are depleted, strategies are demonstrated to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the specified timeframe.
	<b>Met?</b>	(Y/N)		(Y/N)
	<b>Justification</b>			
<b>b</b>	<b>Guidepost</b>	A rebuilding timeframe is specified for the depleted stock that is the shorter of 30 years or 3 times its generation time. For cases where 3 generations is less than 5 years, the rebuilding timeframe is up to 5 years.	A rebuilding timeframe is specified for the depleted stock that is the shorter of 20 years or 2 times its generation time. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.	The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the depleted stock.
	<b>Met?</b>	(Y/N)	(Y/N)	(Y/N)
	<b>Justification</b>			
<b>c</b>	<b>Guidepost</b>	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within a specified timeframe.	There is evidence that they are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within a specified timeframe.	
	<b>Met?</b>	(Y/N)	(Y/N)	

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

Evaluation Table for PI 1.2.1

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the target and limit reference points.
	Met?	YES	YES	NO
	Justification	<p>Target F (<math>F_{0.1}=0.22</math>) has been used for many years as basis for the advice. However, although managers have followed the scientific advice the average F has been higher than the intended target. Nevertheless the SSB has remained above <math>B_{lim}</math>.</p> <p>Harvest strategy was adopted in order to set the exploitation intensity in the reopening of the fishery. Afterwards, it has been assumed as the target for the management of the species.</p> <p>The harvest strategy is responsive to the state of the stock. However, there is not a formal management strategy adopted. Ad hoc measures had been taken when biomass was approaching limit reference points or when there was uncertainty on the status of the stock.</p>		
b	Guidepost	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	YES	YES	NO
	Justification	<p>Harvest strategy is adequate. For more than 20 years the fishery has been managed at <math>F_{0.1}</math> (<math>=0.22</math>) and yearly performed assessments confirm that the stock abundance is above the precautionary reference point (<math>B_{pa}</math>).</p> <p>Target F is considered in agreement with MSY approach (ICES, 2012).</p> <p>Harvest strategy has not been fully evaluated. It has only been tested for a regime of biomasses at or above <math>B_{pa}</math>, then there is no information on how would it work in case that the biomass falls below <math>B_{pa}</math>.</p> <p>When unfavorable events have occurred (e.g. abundance decrease due to the infection), ad hoc restrictive measures has been taken. However, these fishing mortality reductions are not explicitly included in the harvest strategy.</p>		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
c	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	YES		
	Justification	<p>The fishery is continuously monitored through control of catches and fleet activities, catches sampling and direct surveying of the stock.</p> <p>The stock is assessed annually by ICES NWWG (ICES, 2012) in order to provide management advice and that process allows assessing the performance of the harvest strategy.</p>		
d	Guidepost			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			NO
	Justification	The harvest strategy has not been reviewed since it was adopted.		
e	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	NOT RELEVANT	NOT RELEVANT	NOT RELEVANT
	Justification	NOT RELEVANT		
References		<p>» ACOM, 2012. Iceland and East Greenland. Herring in Division Va (Icelandic summer-spawning herring). Advice for 2012/2013. ICES Advice, Book 2: 2.4.13. Advice June 2012. <a href="http://localhost/EReports:Advice:2013:2013:her-vasu.pdf">file://localhost/EReports:Advice:2013:2013:her-vasu.pdf</a></p> <p>» CES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.</p>		

<b>PI 1.2.1</b>	<b>There is a robust and precautionary harvest strategy in place</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>NA</b>

## Evaluation Table for PI 1.2.2

PI 1.2.2		There are well defined and effective harvest control rules in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	
	Met?	YES	NO	
	Justification	<p>There is no formal management plan adopted for the stock. The implicit rule that has been used since the fishery reopening has been exploiting the stock at <math>F_{0.1}</math>. The management measures adopted for the stock are setting a TAC (which in the last years has been in line with the scientific advice) and adopting some spatial closures as a tool to control the exploitation.</p> <p>Although there is no formal definition on how to reduce the exploitation as limit reference points are approached, experience shows that additional measures have been implemented when necessary.</p> <p>The harvest rules are not explicitly defined. There is no formal management plan for the stock.</p>		
b	Guidepost		The selection of the harvest control rules takes into account the main uncertainties.	The design of the harvest control rules takes into account a wide range of uncertainties.
	Met?		YES	NO
	Justification	The fact that the harvest control rule takes into account the main uncertainties is confirmed by the historical performance of the rule.		
c	Guidepost	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
	Met?	YES	YES	NO



PI 1.2.2		There are well defined and effective harvest control rules in place
	Justification	<p>Continuously data monitoring and annual stock assessments show that targets in terms of catches and biomass are being met.</p> <p>There is historical evidence that the tools used are effective in controlling exploitation. SSB has been increasing in the last decade, except from a sharp decrease 2009-2011 related to the disease, and experienced an increase in the last year after signals of disease ending. Target F is considered precautionary and reactive to stock status.</p>
References		<p>» ACOM, 2012. Widely distributed and migratory stocks. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). Advice for 2012/2013. ICES Advice, Book 9: 9.4.5. Advice September 2012. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-vasu.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-vasu.pdf</a></p>
OVERALL PERFORMANCE INDICATOR SCORE:		75
CONDITION NUMBER (if relevant):		1 (trawl UoC) and 2 (Purse seine UoC)

Evaluation Table for PI 1.2.3

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	YES	YES	YES
	Justification	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 harvest strategy, mainly to perform the assessment and the short term forecast that determines the catch advice.		
b	Guidepost	Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	YES	YES	NO
	Justification	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 <i>Ichthyophonus</i> infection in the stock.  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 are considered to be insignificant in that fishery.  Although sufficient information is available to support the harvest strategy. There is a lack of understanding on the ecosystem dynamics (e.g. trophic interactions).		
c	Guidepost		There is good information on all other fishery removals from the stock.	
	Met?		YES	

PI 1.2.3		Relevant information is collected to support the harvest strategy	
	Justification	The stock is only harvested by Icelandic fleets, whose landings in harbours and logbooks are collected by the Icelandic Directorate of Fisheries.	
References		<ul style="list-style-type: none"> <li>» ACOM, 2012. Iceland and East Greenland. Herring in Division Va (Icelandic summer-spawning herring). Advice for 2012/2013. ICES Advice, Book 2: 2.4.13. Advice June 2012. <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/her-vasu.pdf">http://www.ices.dk/sites/pub/Publication Reports/Advice/2013/2013/her-vasu.pdf</a></li> <li>» ICES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.</li> </ul>	
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			NA

**Evaluation Table for PI 1.2.4**

<b>PI 1.2.4</b>		<b>There is an adequate assessment of the stock status</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>		The assessment is appropriate for the stock and for the harvest control rule.	The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.
	<b>Met?</b>		YES	YES
	<b>Justification</b>	<p>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.</p> <p>Assessment provides with the historical performance of the stock and its exploitation patterns (by age class), information required by the harvest control rule.</p>		
<b>b</b>	<b>Guidepost</b>	The assessment estimates stock status relative to reference points.		
	<b>Met?</b>	YES		
	<b>Justification</b>	<p>The assessment evaluates stock status relative to reference points. Assessment provides with 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 (ACFM, 2012).</p>		
<b>c</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	<p>Stock status is not evaluated in a probabilistic way. Two main sources of uncertainty are identified in the assessment: the mortality due to the Ichthyophonus infection and the size of the recruiting year classes (2007-2009).</p> <p>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 Ichthyophonus infection affecting the stock. Those uncertainties are reviewed and their effects in the assessment outcome are tested.</p>		

PI 1.2.4		There is an adequate assessment of the stock status		
<b>d</b>	<b>Guidepost</b>			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	<b>Met?</b>			YES
	<b>Justification</b>	<p>The assessment takes uncertainty into account. Some alternative hypotheses and assessment approaches (VPA and statistical-catch-at-age approaches) have been explored using a variety of software.</p> <p>Alternative natural mortality values were explored, due to the concerns about the origins of the assumed natural mortality value. Additionally, motivated by the infection affecting the stock extra mortality has been added to the natural mortality.</p> <p>The results of the different assessment models give similar and current perception of the stock size.</p>		
<b>e</b>	<b>Guidepost</b>		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	<b>Met?</b>		YES	YES
	<b>Justification</b>	<p>Assessment methodology actually in use was reviewed by ICES members during the benchmark of the Icelandic summer spawning stock (ICES, 2011). Additionally, yearly performed assessment is reviewed by ACOM before been delivered to managers.</p> <p>As Iceland is the only country exploiting the stock and the MRI scientists are responsible to carry out the assessment, the review performed by ICES and ACOM can be considered as an external review.</p>		
<b>References</b>		<ul style="list-style-type: none"> <li>» ACOM, 2012. Iceland and East Greenland. Herring in Division Va (Icelandic summer-spawning herring). Advice for 2012/2013. ICES Advice, Book 2: 2.4.13. Advice June 2012. <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/her-vasu.pdf">http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/her-vasu.pdf</a></li> <li>» Gudmundsdottir, A. 2011. Icelandic summer-spawning herring; An analysis of the signals in the catch-and survey data and preliminary assessments. ICES Benchmark Workshop on Roundfish and Pelagic Stocks, WKBENCH, 24-31 January 2011, Lisbon, Portugal. Working document Her-Vasu No. 3: 251-280.</li> <li>» ICES, 2011. Report of the Benchmark Workshop on Roundfish and Pelagic Stocks (WKBENCH 2011). 24-31 January 2011, Lisbon, Portugal. ICES CM 2011/ACOM: 38. 268 pp.</li> <li>» ICES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.</li> </ul>		

<b>PI 1.2.4</b>	<b>There is an adequate assessment of the stock status</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>95</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>NA</b>



## ASSESSMENT TREE – PRINCIPLE 2

Evaluation Table for PI 2.1.1 Norwegian Icelandic spring spawning herring pelagic trawl Unit of Certification

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Main retained species are likely to be within biologically based limits (if not, go to scoring issue c below).	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	Justification	<p>The pelagic trawl fishery captures and retains northeast Atlantic mackerel, Icelandic summer spawning herring as well as small but variable quantities of blue whiting (&lt;5% of catch volume). Atlantic mackerel and Icelandic summer spawning herring are considered main retained species, a reflection of the volumes captured in the fishery, while blue whiting is considered to be a minor retained species. Occasional small volumes of demersal species such as saithe and /or Icelandic cod may also be encountered, however catches are below threshold values for main retained species and are also considered too small to be considered as minor, therefore they are regarded as being insignificant. Catches of Icelandic summer spawning herring that are made while vessels are targeting Norwegian Icelandic spring spawning herring can be significant. The Icelandic stock is considered highly likely to be within biologically based limits and SSB has consistently been above Bpa/MSY Btrigger since 2002. The stock is recovering from both infections and sudden mortality events in 2012 in the Kolgrafafjörður overwintering grounds. The SSB had been declining until 2011, likely related to the <i>Ichthyophonus</i> infection, however since then SSB has increased and is above the reference points.</p> <p>In recent years the distribution area of mackerel has expanded to the north and west and now overlaps significantly with the distributional area of Norwegian Icelandic spring spawning herring in summer (Astthorsson et. al., 2012).</p> <p>As a consequence, catches of mackerel and herring are now mixed in these areas. For mackerel, total fishing mortality in 2011 is estimated to be 0.31, above FMSY and Fpa. SSB has increased considerably since 2002 and remains high, above Bpa and MSY Btrigger, but is currently declining. Failure to agree total annual catches within the scientific advice amongst fishing nations has resulted in catches exceeding total advice for the past 4 years. There is a clear downward trend in SSB biomass and mackerel are not considered to be fluctuating around target reference points, hence scoring at SG100 is not appropriate.</p> <p>Blue whiting is considered to be an incidentally captured species and overall volumes captured in the herring fishery are well below the 5% threshold for consideration as main retained species. The stock is not considered especially vulnerable to depletion in non-target fisheries. As a scoring element blue whiting achieves SG80 on account of stock status being above both limit and precautionary reference points. Historical low landings and fishing mortality in 2011, in combination with an increase in recruitment since 2010, have stopped the steep decline in blue whiting SSB since 2004. SSB has increased by one million tonnes from 2011 to 2012 (and is now at 3.8 million tonnes) and is above Bpa at the beginning of 2012 (ICES Advice for Blue whiting, 2012).</p> <p>All elements achieve 80.</p>		

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
b	Guidepost			Target reference points are defined for retained species.
	Met?			(Y/N) Yes
	Justification	<p>Target F reference point has been set for Icelandic summer spawning herring and <math>B_{lim}</math> (200,000t), <math>B_{pa}</math> (3000,000t) and <math>B_{trigger}</math> (3000,000t) have also been identified. For more than 20 years, the practice has been to manage fisheries at <math>F = F_{0.1}</math> (= 0.22) and this target is considered to be consistent with MSY approach. (ICES Advice, 2012 Herring in Subdivision Va).</p> <p>Target biomass (&gt;2.3m tonnes) and Fishing mortality (Frange 0.15-0.2) reference points have been set for mackerel. <math>B_{lim}</math> is set at 1.67mt, the MSY <math>B_{trigger}</math> is set at 2.2mt and <math>B_{pa}</math> I set at 2.3mt (ICES Advice 2012, Northeast Atlantic mackerel). Effective F has been estimated to be 0.3 in 2011 on account of failure to reach international agreement. Despite this, the scoring issue is met at SG100.</p> <p>A management plan for blue whiting was agreed by Norway, the EU, the Faroe Islands, and Iceland in 2008 (anon, 2008). The plan identifies i) a target fishing mortality (<math>F = 0.18</math>) where SSB is above SSBMP (= <math>B_{pa}</math>), ii) a linear reduction to <math>F = 0.05</math> if SSB is between <math>B_{pa}</math> and <math>B_{lim}</math>, and iii) <math>F = 0.05</math> if SSB is below <math>B_{lim}</math>. ICES has evaluated the plan in 2008 and concluded that it is in accordance with the precautionary approach. (ICES Advice 2008 Book 9).</p> <p>All elements achieve 100.</p>		
c	Guidepost	If main retained species are outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.	If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	
	Met?	(Y/N) Yes	(Y/N) Yes	
	Justification	Main retained species are within Biologically Based Limits.		
d	Guidepost	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.		

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
	Met?	(Y/N) Yes		
	Justification	Main retained species are within Biologically Based Limits.		
References		<ul style="list-style-type: none"> <li>» Astthorsson, O. S., Valdimarsson, H., Gudmundsdottir, A., and OÁL skarsson, G. J. Climate-related variations in the occurrence and distribution of mackerel (<i>Scomber scombrus</i>) in Icelandic waters. – ICES Journal of Marine Science, doi:10.1093/icesjms/fss084. ICES Advice, 2012 Herring in Subdivision Va.</li> <li>» Anon. 2008. Report of the Working Group established by the Blue Whiting Coastal States on Blue Whiting Management Strategies, 26–30 May 2008, Charlottenlund Castle, Denmark. 65 pp.</li> <li>» ICES Advice 2012, Northeast Atlantic mackerel. <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2012/2012/mac-nea.pdf">http://www.ices.dk/sites/pub/Publication Reports/Advice/2012/2012/mac-nea.pdf</a></li> <li>» ICES Advice 2012, Norwegian spring spawning herring <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2012/2012/her-noss.pdf">http://www.ices.dk/sites/pub/Publication Reports/Advice/2012/2012/her-noss.pdf</a></li> <li>» ICES Advice 2012 Blue whiting. <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2012/2012/whb-comb.pdf">http://www.ices.dk/sites/pub/Publication Reports/Advice/2012/2012/whb-comb.pdf</a></li> <li>» ICES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.</li> <li>» Landings data, Samherji h/f vessels 2007-2011. Icelandic Fisheries Directorate</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA

**Evaluation Table for PI 2.1.1 Icelandic summer spawning herring pelagic trawl Unit of Certification**

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Main retained species are likely to be within biologically based limits (if not, go to scoring issue c below).	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) No

PI 2.1.1	<b>The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species</b>
	<p>The pelagic trawl fishery for Icelandic summer spawning herring captures and retains northeast Atlantic mackerel, Norwegian spring spawning as well as small volumes of blue whiting. In recent years the distribution area of mackerel has expanded to the north and west and now overlaps the distributional area of Norwegian Icelandic spring spawning herring in summer. As a consequence, mackerel and herring catches are now mixed in these areas.</p> <p>Occasional small volumes of demersal species such as saithe and /or Icelandic cod may also be encountered, however catches are below threshold values for main and minor retained species and are considered insignificant. Atlantic mackerel and Norwegian Icelandic herring are considered main retained species, a reflection of the volumes captured in the fishery. Smaller volumes of blue whiting may also be captured in the fishery.</p> <p>The main fishery for Icelandic summer spawning herring occurs in coastal waters where there is little mixing with herring from the Norwegian spring spawning stock and catches can be quite homogenous. Nevertheless, as some of the catch is made in the targeted Norwegian spring spawning fishery, catches of the latter stock must be considered as main retained species in the Icelandic summer spawning herring assessment. Overall landings (by tonnes and proportion of the total catch) are indicated earlier in the report.</p> <p>For mackerel, total fishing mortality in 2011 is estimated to be 0.31, above FMSY and Fpa. SSB has increased considerably since 2002 and remains high, above Bpa and MSY Btrigger, but is currently declining. Failure to agree total annual catches within the scientific advice amongst fishing nations has resulted in catches exceeding total advice for the past 4 years. There is a clear downward trend in SSB biomass ICES Advice 2012, Northeast Atlantic mackerel. Because of this mackerel are not considered to be fluctuating around target reference points and scoring at SG100 is not appropriate.</p> <p>Significant quantities of Norwegian Icelandic spring spawning herring are retained in the pelagic trawl fishery for Icelandic summer spawning herring certification. Norwegian Icelandic spring spawning herring is certified under the MSC eco-labelling scheme (several fisheries certified as of 2013). The SSB for this stock is declining but was still above Bpa in 2012. The stock is highly likely to be within biologically based limits, but does not meet with scoring issue a. at SG100 which requires that the stock is also fluctuating around target reference points. Following the long-term management plan agreed by the EU, Faroe Islands, Iceland, Norway, and Russia implies a TAC of 619 000 tonnes in 2013. This is expected to lead to an SSB in 2014 of 4.3 million tonnes. Following the precautionary approach implies a fishing mortality in 2013 no higher than Fpa (0.15), corresponding to landings of less than 734 000 tonnes in 2013. This is expected to lead to a decline in SSB in 2014 to 4.2 million tonnes. This is below Btrigger in the management plan. Even without any fishery in 2013 SSB is expected to drop below Btrigger. (ICES Advice 2012 Norwegian Spring spawning herring).</p> <p>Blue whiting is considered to be an incidentally captured species and overall volumes captured in the herring fishery are well below the 5% threshold for consideration as main retained species. The stock is not considered especially vulnerable to depletion in non-target fisheries. As a scoring element it achieves SG80 on account of stock status being above both limit and precautionary reference points. Historical low landings and fishing mortality in 2011, in combination with an increase in recruitment since 2010, have stopped the steep decline in blue whiting SSB since 2004. SSB has increased by one million tonnes from 2011 to 2012 (3.8 million tonnes) and is above Bpa at the beginning of 2012.</p> <p>All elements achieve SG80.</p>

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
<b>b</b>	<b>Guidepost</b>			Target reference points are defined for retained species.
	<b>Met?</b>			(Y/N) Yes
	<b>Justification</b>	<p>Target F (0.125) and biomass reference points (Bpa 5.0mt, Blim 2.5mt) are defined for Norwegian Icelandic spring spawning herring and are captured in a long term management plan for the stock. Catches of Norwegian Icelandic spring spawning herring have been regulated through the agreed management plan since 1999. The management plan is considered to be precautionary. The management plan target fishing mortality of 0.125 is in the range of fishing mortalities that would lead to MSY and implies a low risk of the stock falling below Blim.</p> <p>Both target biomass (&gt;2.3m tonnes) and Fishing mortality (Frange 0.15-0.2) reference points have been set for mackerel. ICES Advice 2012, Northeast Atlantic mackerel. Effective F has been estimated to be 0.3 in 2011 on account of failure to reach international agreement. Despite this, the scoring issue is met at SG100.</p> <p>A management plan for blue whiting was agreed by Norway, the EU, the Faroe Islands, and Iceland in 2008. The plan identifies i) a target fishing mortality (<math>F = 0.18</math>) where SSB is above SSBMP (= Bpa), ii) a linear reduction to <math>F = 0.05</math> if SSB is between Bpa and Blim, and iii) <math>F = 0.05</math> if SSB is below Blim. ICES has evaluated the plan in 2008 and concluded that it is in accordance with the precautionary approach. ICES Advice 2008 Book 9. All elements achieve SG100.</p>		
<b>c</b>	<b>Guidepost</b>	If main retained species are outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.	If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	
	<b>Justification</b>	Main retained species are within Biologically Based Limits.		
<b>d</b>	<b>Guidepost</b>	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.		

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
	Met?	(Y/N) Yes		
	Justification	Main retained species are within Biologically Based Limits.		
References		<ul style="list-style-type: none"> <li>» Astthorsson, O. S., Valdimarsson, H., Gudmundsdottir, A., and OÁL skarsson, G. J. Climate-related variations in the occurrence and distribution of mackerel (<i>Scomber scombrus</i>) in Icelandic waters. – ICES Journal of Marine Science, doi:10.1093/icesjms/fss084. ICES Advice, 2012 Herring in Subdivision Va.</li> <li>» ICES Advice 2012, Northeast Atlantic mackerel. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/mac-nea.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/mac-nea.pdf</a></li> <li>» ICES Advice 2012, Norwegian spring spawning herring <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/her-noss.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/her-noss.pdf</a></li> <li>» ICES Advice 2012 Blue whiting. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/whb-comb.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/whb-comb.pdf</a></li> <li>» ICES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.</li> <li>» Landings data, Samherji h/f vessels 2007-2011. Icelandic Fisheries Directorate</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA



**Evaluation Table for PI 2.1.1 Icelandic summer spawning herring purse seine Unit of Certification**

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>	Main retained species are likely to be within biologically based limits (if not, go to scoring issue c below).	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	<b>Justification</b>	<p>The purse seine fishery is a directed fishery that historically has taken place mainly in coastal waters off the east and west coasts of Iceland. In recent years, the stock has moved to new overwintering grounds in Breidafjörður on the west coast meaning that much of the fishing activity for this stock now takes place on the west coast where there is less overlap with both Norwegian Icelandic spring spawning herring and northeast Atlantic mackerel stocks.</p> <p>The purse seine fishery is recognised for being a clean fishery that targets dense spawning aggregations of herring. As such, there is very little mixing with any other stocks – herring or otherwise and catches made by this UoC are considered to have no main retained species. This is verified by landings data that indicates catches of retained species amounting to just over 5t for 52,000t of retained herring in the purse seine fishery between 2007 and 2011. More than half of this 5t was made up by single haul containing 2.5t of Icelandic cod. Effectively the fishery has no main or minor retained species and retention of any other species is exceptionally rare and is therefore negligible in its impact. Accordingly under CB3.5.3 the fishery meets with SG100.</p>		
<b>b</b>	<b>Guidepost</b>			Target reference points are defined for retained species.
	<b>Met?</b>			(Y/N) Yes
	<b>Justification</b>			
<b>c</b>	<b>Guidepost</b>	If main retained species are outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.	If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
	Met?	(Y/N) Yes	(Y/N) Yes	
	Justification	Retention is exceptionally rare and negligible in its impact. According to CB3.5.3 the fishery meets with SG100.		
d	Guidepost	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.		
	Met?	(Y/N) Yes		
	Justification	Retention is exceptionally rare and negligible in its impact. According to CB3.5.3 the fishery meets with SG10.		
References		<ul style="list-style-type: none"> <li>» Landings data, Samherji h/f vessels 2007-2011. Icelandic Fisheries Directorate</li> <li>» ICES Advice 2012, Northeast Atlantic mackerel. <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2012/2012/mac-ne.pdf">http://www.ices.dk/sites/pub/Publication Reports/Advice/2012/2012/mac-ne.pdf</a></li> <li>» ICES Advice 2012, Norwegian spring spawning herring <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2012/2012/her-noss.pdf">http://www.ices.dk/sites/pub/Publication Reports/Advice/2012/2012/her-noss.pdf</a></li> <li>» ICES Advice 2012 Blue whiting. <a href="http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2012/2012/whb-comb.pdf">http://www.ices.dk/sites/pub/Publication Reports/Advice/2012/2012/whb-comb.pdf</a></li> <li>» ICES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.</li> <li>» Certification Requirements v1.3. March 2013. Marine Stewardship Council</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				100
CONDITION NUMBER (if relevant):				NA

**Evaluation Table for PI 2.1.2 Norwegian Icelandic spring spawning herring pelagic trawl Unit of Certification**

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There are measures in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels that are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing retained species.
	Met?	(Y/N) Yes	(Y/N) No	(Y/N) No

PI 2.1.2	There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species
Justification	<p>The fishery has in place a strategy that is expected to ensure the Icelandic summer spawning herring remains within biologically based limits and to ensure that the stock is not prevented from rebuilding where this becomes necessary.</p> <p>There is no formal management plan for the summer spawning stock, however, for more than 20 years, the practice has been to manage fisheries at <math>F = F_{0.1}</math> (<math>= 0.22</math>) and this target is considered to be consistent with MSY approach (ICES, Herring in subdivision Va, 2012). There is mandatory reporting of all catches of Icelandic summer spawning herring. Under herring fishery rules operators are required to sample catches of herring where there is likely mixing of Norwegian Icelandic spring and Icelandic summer spawning stocks in order to estimate proportions of each present in the total catch. Estimated proportions are then used as raising factors to estimate total catches for each stock on a haul-by-haul basis and these estimates must be reported in e-logbooks. Additionally, vessel operators are required to retain and freeze onboard samples of catches that may be used by the MRI to aid stock assessment, or that may be used to validate onboard estimates of catch composition, enabling adjustment of final landings declarations to improve accuracy. The Icelandic summer spawning herring is managed through annual TAC (all of the quota is shared amongst Icelandic vessels). There are minimum mesh size regulations as well as at sea and landings inspections, Vessel Monitoring System (VMS), closed areas to protect fish <math>&lt;27\text{cm}</math> (e.g. closure of area outside Breiðafjörður 2011/2012 season) and closed seasons (the Icelandic TACs for herring apply from 1 September to 1 May the following year). The strategy for Icelandic summer spawning herring is considered to meet with SG100.</p> <p>However, for mackerel, current management measures are expected to maintain the stock within biologically based limits in the short term (above Blim). There is a management plan in place for the stock and this has been considered to be precautionary. Despite this, since 2009, there has been no international agreement on overall catches (TAC) and total catches have far exceeded advice in subsequent years. This represents a failure to follow the management plan. The absence of a comprehensive agreement between all nations involved in the mackerel fishery remains a critical concern that has led to the suspension of MSC certification for mackerel northeast Atlantic mackerel fisheries. The total estimated mackerel catch in 2012 (930,135 tonnes) used for projections corresponds to a fishing mortality of 0.36, which is well above FMSY and the stipulated range in the management plan for this stock. Maintaining such a catch in 2013 and 2014 is likely to cause a decrease in the stock size in the short term and this will add significant uncertainty to future management and securing sustainable exploitation.</p> <p>The Icelandic fishery for Norwegian spring spawning fishery catches large quantities of mackerel which are taken in mixed shoals with herring. As current mackerel management has failed to follow the management plan, the Icelandic fishery for Norwegian Icelandic spring spawning herring presently only achieves a score of SG60 and cannot be scored at SG80. In the event that the mackerel stock were to fall below Blim it is anticipated that all fisheries that capture mackerel in significant quantities as retained catch will have MSC certifications suspended. This is likely to affect all MSC certified fisheries for Norwegian Icelandic spring spawning herring where there is a significant retained catch of mackerel due to their likely role in preventing or hindering mackerel recovery.</p> <p>Management of blue whiting fisheries is considered precautionary in recent years and the stock has been shown to be rebuilding at a relatively rapid pace. Management is considered to at least meet with a partial strategy, given that a management plan was agreed by the EU, Norway, Faroes and Iceland in 2008. This was considered precautionary and SSB has increased by one million tonnes from 2011 to 2012 (3.8 million tonnes). SSB was believed to be above Bpa at the beginning of 2012.</p> <p>While there is overall effective management of both Icelandic summer spawning herring and blue whiting stocks, the situation with respect to management of mackerel exploitation rates is considered inadequate and may yet lead to suspension of the fishery if mackerel is shown to be below Blim.</p>

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
b	Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	(Y/N) Yes	(Y/N) No	(Y/N) No
	Justification	<p>While there is an objective basis for confidence that management strategies for Icelandic summer spawning herring and blue whiting will work (based on long time series of high stock levels or rebuilding of depleted stocks) there is much less by way of basis for confidence on the management of mackerel stocks. The management plan has not been followed in recent years and estimated fishing mortality far exceeds levels agreed in the management plan. Catches have been far in excess of recommended TAC since 2009.</p> <p>Vessels are obliged to have catch quota for their catches of all species, which are subject to the ITQ system. If vessels don't have sufficient catch quota for their "bycatches" it is required that sufficient catch quota is transferred to them from other vessels. Vessels are not allowed to commence a fishing trip unless they have sufficient catch quota for their probable catches.</p> <p>The scoring issue is considered to have been met at SG80 for two stocks but not for mackerel.</p>		
c	Guidepost		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		(Y/N) No	(Y/N) No
	Justification	Evidence supports the understanding that management of both Icelandic summer spawning herring and blue whiting is being implemented successfully (SG80) but this is not that case for mackerel. The scoring issue is not awarded.		
d	Guidepost			There is some evidence that the strategy is achieving its overall objective.
	Met?			(Y/N) No

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
	Justification	Mackerel SSB is understood to be declining and is likely to fall below Bpa and MSYBtrigger perhaps as early as 2014.		
e	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	(Y/N/Not relevant) Not relevant	(Y/N/Not relevant) Not relevant	(Y/N/Not relevant) Not relevant
	Justification	Scoring issue need not be scored if no retained species are sharks.		
References		<ul style="list-style-type: none"> <li>» ICES Advice 2012, Northeast Atlantic mackerel. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/mac-nea.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/mac-nea.pdf</a></li> <li>» ICES Advice 2012, Norwegian spring spawning herring <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/her-noss.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/her-noss.pdf</a></li> <li>» ICES Advice 2012 Blue whiting. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/whb-comb.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/whb-comb.pdf</a></li> <li>» ICES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				75
CONDITION NUMBER (if relevant):				3

**Evaluation Table for PI 2.1.2 Icelandic summer spawning herring pelagic trawl Unit of Certification**

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>	There are measures in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels that are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing retained species.
	<b>Met?</b>	(Y/N) Yes	(Y/N) No	(Y/N) No



PI 2.1.2	There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species
Justification	<p>While the bulk of pelagic trawl caught Icelandic summer spawning herring catches are made in fisheries that target geographically separate spawning aggregations in coastal waters from late spring onwards, significant volumes are also captured and retained in offshore mixed pelagic fishing that is directed at mixed shoals of Norwegian spring spawning herring, Icelandic summer spawning herring and mackerel.</p> <p>Norwegian Icelandic spring spawning herring is managed under a long-term management plan that was agreed between the EU, Faroes, Iceland and Norway and Russia in 1999. The management plan sets out objectives for maintenance of stocks above a critical level (Blim) (2.5mt) and also sets a target reference biomass of 5.0mt. Under the plan, fishing effort is to be maintained at 0.125 and TACs set accordingly. The plan represents a strategy to manage catches of Norwegian spring spawning herring. The TAC has been set to follow scientific advice in all years subsequent to the introduction of the management plan. National quotas have been agreed amongst fishing countries at the annual Coastal States meeting in every year since the introduction of the management plan, except for in 2012. In 2012, agreement was reached amongst all members according to established entitlements, except for the Faroe Island who did not accept their allocation. Subsequent negotiations did not reach consensus and during spring 2013 Faroes declared its intention to take a greater catch than was proposed by the Coastal States. At time of writing, actual removals by all member nations for the 2013 season are uncertain. In the event that there is an overshoot of the TAC, management arrangements for the stock may need revision. Failure to reach consensus with demonstrated total removals that exceed the scientific advice and TAC for the stock will present a direct threat to the sustainability of the fishery and hence the efficacy of international management arrangements for the stock. A number of fisheries are already certified on the stock and a harmonisation conference was held on 1/3/2013 to consider the changing situation with respect to management. It was agreed to review the situation amongst CAB's after the 2013 fishery and to take appropriate action where it has been seen that the TAC has been exceeded. For now, management of the fishery is considered to meet with at least a partial strategy and therefore scores at SG80.</p> <p>For mackerel, current management measures are expected to maintain the stock within biologically based limits in the short term (above Blim). There is a management plan in place for the stock and this has been considered to be precautionary. Despite this, since 2009, there has been no international agreement on TAC and total catches have far exceeded advice in subsequent years. This represents a failure to follow the management plan. The absence of a comprehensive agreement between all nations involved in the mackerel fishery remains a critical concern that has directly led to the suspension of MSC certification for fisheries based on this stock. The total estimated mackerel catch in 2012 (930 135 tonnes) used for projections corresponds to a fishing mortality of 0.36, which is well above FMSY and the stipulated range in the management plan for this stock. Maintaining such a catch in 2013 and 2014 is likely to cause a decrease in the stock size in the short term and this will add significant uncertainty to future management and securing sustainable exploitation. As current mackerel management has failed to follow the management plan, the pelagic trawl fishery presently only achieves a score of SG60 and cannot be scored at SG80. In the event that the mackerel stocks were to fall below Blim it is anticipated that all fisheries that capture mackerel in significant quantities as retained catch will have MSC certifications suspended. This is likely to affect MSC certified fisheries for Icelandic summer spawning herring where there is a significant retained catch of mackerel due to their likely role in preventing or hindering mackerel recovery. In order not to experience suspension, the present pelagic trawl fishery will need to demonstrate that any catch of mackerel would not prevent or hinder rebuilding of mackerel. Scores SG60</p> <p>Management of blue whiting fisheries is considered precautionary in recent years<sup>123</sup> and the stock has been shown to be rebuilding at a relatively rapid pace. Management is considered to at least meet with a partial strategy, given that a management plan was agreed by the EU, Norway, Faroes and Iceland in 2008. Scores at SG80</p>

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
b	Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	(Y/N) Yes	(Y/N) No	(Y/N) No
	Justification	While there is an objective basis for confidence that management strategies for Norwegian Icelandic spring spawning herring and blue whiting will work (no demonstrated overshoot of TAC as of June 2013 and rebuilding of depleted blue whiting stocks) there is much less by way of basis for confidence on the management of mackerel stocks. The management plan has not been followed in recent years and estimated fishing mortality far exceeds levels agreed in the management plan. Catches have been far in excess of recommended TAC since 2009. The scoring issue is considered to have been met at SG80 for two stocks but not for mackerel.		
c	Guidepost		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		(Y/N) No	(Y/N) No
	Justification	Evidence supports the understanding that management of both Norwegian Icelandic spring spawning herring and blue whiting is being implemented successfully (SG80) but this is not that case for mackerel. The scoring issue is not awarded for all stocks at SG80.		
d	Guidepost			There is some evidence that the strategy is achieving its overall objective.
	Met?			(Y/N) No
	Justification	Mackerel SSB is understood to be declining and is likely to fall below Bpa and MSYBtrigger perhaps as early as 2014. Biomass of Norwegian-Icelandic spring spawning herring is also declining in recent years although it remains above precautionary reference points and is considered to have full reproductive capacity. <a href="#">ICES advice 2012.</a>		
e	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	(Y/N/Not relevant) Not relevant	(Y/N/Not relevant) Not relevant	(Y/N/Not relevant) Not relevant

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
	Justification			
		Scoring issue need not be scored if no retained species are sharks.		
References		<ul style="list-style-type: none"><li>» ICES Advice 2012, Northeast Atlantic mackerel. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/mac-nea.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/mac-nea.pdf</a></li><li>» ICES Advice 2012, Norwegian spring spawning herring <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/her-noss.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/her-noss.pdf</a></li><li>» ICES Advice 2012 Blue whiting. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/whb-comb.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2012/2012/whb-comb.pdf</a></li><li>» ICES, 2012. Report of the North-Western Working Group (NWWG). 26 April – 3 May 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM: 07. 883 pp.</li><li>»</li></ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				70
CONDITION NUMBER (if relevant):				4

**Evaluation Table for PI 2.1.2 Icelandic summer spawning herring purse seine Unit of Certification**

<b>PI 2.1.2</b>		<b>There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	There are measures in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels that are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing retained species.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	<b>Justification</b>	<p>There is a strategy in place for managing retained species. The strategy is based on an understanding of the exceptionally level of catch of retained species and the associated risk that the fishery may present to other stocks. The strategy is based on a range of input controls including licensing and regulation of fishing vessels and fishing operations, use of VMS, temporal and spatial restrictions as well as technical control measures. There is mandatory logbook reporting of all catches, at sea observer programmes onboard processing vessels during which catches are subsampled verified as well as routine verification of landings. There is mandatory advance notification of intent to land pelagic species and pelagic species may only be landed at designated ports or harbours. Vessels are obliged to have catch quota for their catches in all species, which are subject to the ITQ system. If vessels don't have sufficient catch quota for their "bycatches" it is required that sufficient catch quota is transferred to them from other vessels. Vessels are not allowed to commence a fishing trip unless they have sufficient catch quota for their probable catches.</p> <p>Overall the combination of regulations, control and surveillance is comprehensive and is considered adequate for managing retained species.</p>		
<b>b</b>	<b>Guidepost</b>	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	<b>Justification</b>	<p>The purse seine fishery targets dense spawning aggregations of herring and landings data for 2008-2011 confirm exceptionally low levels of retention of other stocks. There is therefore a sound basis for confidence in the strategy and the likelihood that it will deliver expected results. However, the strategy has not been specifically tested (SG100) therefore scoring of this particular issue is at S80.</p>		

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
c	Guidepost		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		(Y/N) Yes	(Y/N) Yes
	Justification	Levels of retained species are known to be low in the fishery and this is confirmed by landings data for 2007-2011 fishing seasons. Landings are verified by mandatory landings inspections within the pelagic sector.		
d	Guidepost			There is some evidence that the strategy is achieving its overall objective.
	Met?			(Y/N) Yes
	Justification	There are no main retained species and catches of other species (mainly saithe and cod) are exceptionally low. Stocks of Icelandic cod and saithe are at or above precautionary levels. There is no risk to any non-target commercial species in this fishery.		
e	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	(Y/N/Not relevant) Not relevant	(Y/N/Not relevant) Not relevant	(Y/N/Not relevant) Not relevant
	Justification	Scoring issue need not be scored if no retained species are sharks.		
References		ICES Advice, 2012 Herring in Subdivision Va.		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA

**Evaluation Table for PI 2.1.3 Pelagic trawl Units of Certification**

<b>PI 2.1.3</b>		<b>Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Qualitative information is available on the amount of main retained species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	<b>Justification</b>	All significant catches of retained species are recorded and reported through the e-log for all UoC vessels. Information is both qualitative (species composition) and quantitative (volume) and relates to main retained species. Because these are bulk fisheries for highly abundant pelagic fisheries, it is not possible to sort catches and report catches of all non-target retained species with 100 % accuracy (SG100).		
<b>b</b>	<b>Guidepost</b>	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
	<b>Met?</b>	(Y/N/Not relevant) Yes	(Y/N/Not relevant) Yes	(Y/N/Not relevant) Yes
	<b>Justification</b>	Information is adequate in relation to main retained species to estimate outcome status with a high degree of certainty. All catches must be landed at designated ports where verification of species and volumes landed is carried out by a port officer on behalf of the Directorate of Fisheries. Hence there is a high degree of certainty in relation to information for main retained species. General understanding of the very low level of interaction with any other species together with evidence provided by the DoF is sufficient to determine that catches of any other species are insignificant and impacts will not be detectable at stock level for any species occasionally captured with a high degree of certainty.		
<b>c</b>	<b>Guidepost</b>	Information is adequate to support measures to manage main retained species.	Information is adequate to support a partial strategy to manage main retained species.	Information is adequate to support a strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species		
	Justification	Qualitative and quantitative information is adequate to support a strategy to manage main retained species. Information is however not adequate to allow for development of a full strategy for all species (not just main) and to evaluate with a high degree of certainty whether it is achieving its objective. In particular, there is only anecdotal evidence to support the understanding that slippage of retained species occurs only at a very low level. While discarding remains illegal, it is still known to occur and some level of slippage is considered almost inevitable, as in many NE Atlantic pelagic fisheries. The fact that the client group is a highly integrated company that also engages in fishmeal production is likely to be a disincentive to slippage, as it can plausibly be argued that it is always possible to land and market catches. Nevertheless, the level of information collected routinely cannot be considered to be adequate for fully evaluating all impacts.		
d	Guidepost		Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
	Met?		(Y/N) Yes	(Y/N) No
	Justification	Reporting of catches by stock is ongoing for all fishing trips and there is an adequate degree of verification of reported landings. Stock status is monitored through regular stock assessments and fishing effort is measured through VMS which allows for analysis of spatial and temporal fishing patterns. Size-frequency of landings is also monitored. The data collected are likely to be adequate in the context of indicating changes in levels of risk.		
References		<ul style="list-style-type: none"> <li>» Samherji hf landings data</li> <li>» Sildarvinnsland hf landings data</li> <li>» ww.fisheries.ie (spatial fishing patterns)</li> <li>» NWWG, 2012. Report of the 2012 Northwestern Working Group</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				85
NA				NA



**Evaluation Table for PI 2.1.3 Purse seine Units of Certification**

<b>PI 2.1.3</b>		<b>Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Qualitative information is available on the amount of main retained species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	<b>Justification</b>	All significant catches of retained species are recorded and reported through the e-log for all UoC vessels. Information is both qualitative (species composition) and quantitative (volume) and relates to main retained species. Because these are bulk fisheries for highly abundant pelagic fisheries, it is not possible to sort catches and report catches of all non-target retained species with 100 % accuracy (SG100).		
<b>b</b>	<b>Guidepost</b>	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
	<b>Met?</b>	(Y/N/Not relevant) Yes	(Y/N/Not relevant) Yes	(Y/N/Not relevant) Yes
	<b>Justification</b>	Information is adequate in relation to retained species to estimate outcome status with a high degree of certainty. All catches must be landed at designated ports where verification of species and volumes landed is carried out by a port officer on behalf of the Directorate of Fisheries. Hence there is a high degree of certainty in relation to information for main retained species. General understanding of the very low level of interaction with any other species together with evidence provided by the DoF and MRI in support of the practically zero retained catch in purse seine herring fishing is sufficient to determine that catches of any other species are exceptional events and impacts will not be detectable at stock level for any species exceptionally captured with a high degree of certainty.		
<b>c</b>	<b>Guidepost</b>	Information is adequate to support measures to manage main retained species.	Information is adequate to support a partial strategy to manage main retained species.	Information is adequate to support a strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	<b>Justification</b>	There is no significant retained catch in the purse seine fishery. Reporting requirements and catch sorting at processing factories mean that retained catches would be obvious and rapidly detected. Hence retained catch management strategy requirements are less than in the trawl fishery and commensurate with the understood and verified levels of risk for the purse seine fishery. There is no retained catch for practical purposes, therefore information is adequate to evaluate with a high degree of certainty whether the strategy is achieving its objective.		

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species		
d	Guidepost		Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
	Met?		(Y/N) Yes	(Y/N) Yes
	Justification	Reporting of catches by stock is ongoing for all fishing trips and there is an adequate degree of verification of reported landings. Stock status is monitored through regular stock assessments and fishing effort is measured through VMS which allows for analysis of spatial and temporal fishing patterns. Size-frequency of landings is also monitored. The data collected are likely to be adequate in the context of indicating changes in levels of risk. Catches are exceptionally clean and levels of risk to retained catches in the purse seine fishery are low.		
References		<ul style="list-style-type: none"> <li>» Samherji hf landings data</li> <li>» Sildarvinnsland hf landings data</li> <li>» ww.fisheries.ie (spatial fishing patterns)</li> <li>» NWWG, 2012. Report of the 2012 Northwestern Working Group</li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				95
NA				NA

**Evaluation Table for PI 2.2.1 Pelagic trawl Units of Certification**

<b>PI 2.2.1</b>		<b>The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Main bycatch species are likely to be within biologically based limits (if not, go to scoring issue b below).	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).	There is a high degree of certainty that bycatch species are within biologically based limits.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	<b>Justification</b>	There are no main bycatch species in the fishery. This is a pelagic trawl fishery that targets large shoals of abundant pelagic species. The fishery is industrial in scale and there is no direct handling of catches by hand. Catch handling is fully automated. All species captured are considered under either Principle 1 or under 2.1 of Principle 2 (Retained catch). Opportunities for removing and discarding of unwanted species is minimal and in most cases (outside of at sea processing vessels) grading, high grading or catch sorting is not possible. For processing at sea, it is normal for vessels to have a DoF observer onboard to verify that high grading or discarding of catches occurs.		
<b>b</b>	<b>Guidepost</b>	If main bycatch species are outside biologically based limits there are mitigation measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding.	If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.	
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	
	<b>Justification</b>	There are no main bycatch species.		
<b>c</b>	<b>Guidepost</b>	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the bycatch species to be outside biologically based limits or hindering recovery.		
	<b>Met?</b>	(Y/N) Yes		

<b>PI 2.2.1</b>		<b>The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups</b>	
	<b>Justification</b>	There are no main bycatch species.	
<b>References</b>			
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>NA</b>

**Evaluation Table for PI 2.2.2 Pelagic trawl Units of Certification**

<b>PI 2.2.2</b>		<b>There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	There are measures in place, if necessary, that are expected to maintain the main bycatch species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main bycatch species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing and minimizing bycatch.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No

PI 2.2.2		There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations		
	Justification	<p>The fishery is directed towards pelagic species. Yields are very homogenous, comprising only one or two species/stocks and there are no significant opportunities to discard parts or components of catches. Slippage of entire catches is considered at Principle 1 level for herring stocks, while slippage of mackerel is not believed to occur amongst the client vessels which may land mackerel for use in fishmeal production if unmarketable for human consumption. Discarding is illegal in Iceland and there is a scheme of both permanent and temporary spatial closures designed to protect stocks of undersize fish as well as spawning ground. Pelagic trawl vessels have sufficient quota or are able to trade quota in order to ensure that they do end up with catches that they cannot legally land. According to section 2 of Act no. 57/1996, concerning the treatment of commercial marine stocks, discard of catches is prohibited. Minor exceptions to this are Non-value catches and heads and other fish waste refuse from working or processing of catches.</p> <p>There are clear specific measures that are designed to discourage discarding in Iceland, including:</p> <ul style="list-style-type: none"> <li>» Undersized fish is only partially withdrawn from catch quotas</li> <li>» Permission to land up to 5% excessive to quotas - monetary value of catch goes into a special development fund, run by the minister</li> <li>» Species conversion (demersal species only)</li> <li>» 5% can be caught in excess of a vessel's catch quota - deducted from next year's quota</li> <li>» 20% of each vessels catch quota can be transferred to the following fishing year</li> <li>» Procedure in relations to suspension of fishing permits in case of excessive catches</li> </ul> <p>Vessels are technologically very advanced and feature state of the art electronics for use in shoal identification. Vessels are operated by highly experienced crews who are professional pelagic fishermen. This is considered important in the context of minimizing events of unwanted catches. There is good and effective communication between vessels, which is likely to be beneficial in the context of information dissemination with respect to unwanted catches. DoF operate an observer programme whereby officers may accompany vessels at sea in order to verify catches. Officers have a responsibility for recommending area temporary area closures and restrictions in the event of significant unmarketable catches being made. The strategy I considered to be commensurate with the risks to potential bycatch species. However the strategy falls short of a full strategy on account of the fact that there is no Code of Practice in operations on the vessels and there is no reporting of instances of slippage.</p>		
b	Guidepost	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) No

<b>PI 2.2.2</b>		<b>There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations</b>		
	<b>Justification</b>	The fishery targets aggregations of pelagic species. There are few opportunities to misidentify shoals considering the advance electronics in place onboard all vessels. The outcome is that instances of unwanted catch are exceptionally rare and even when these occur it is normally possible to land catches for use in meal production and quota sharing/trading arrangements in Iceland facilitate this. There are few opportunities for any vessels to discard catch at sea and at sea processing vessels carry DoF observers onboard at all times. The strategy has however not been specifically tested (SG100).		
<b>c</b>	<b>Guidepost</b>		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	<b>Met?</b>		(Y/N) Yes	(Y/N) Yes
	<b>Justification</b>	Evidence presented to the assessment by stakeholders including the DoF and MRI indicates that vessels seek to avoid unwanted catches and that there are no opportunities to discard species at sea for any vessels (other than to slip catches or parts of catches before they are taken aboard). Both the DoF and MRI are satisfied that there is no significant discarding in the fisheries and this has been verified by observer programmes in the past, although there is little present day observer coverage of most pelagic fleets, however scientists do regularly take part in fishing trips for the purpose of data collection to aid stock assessment.		
<b>d</b>	<b>Guidepost</b>			There is some evidence that the strategy is achieving its overall objective.
	<b>Met?</b>			(Y/N) No
	<b>Justification</b>	Evidence provided by stakeholders (MRI, DoF) to the assessment team indicates that management of bycatch is appropriate and the existing controls on the fishery ensure that there are no significant negative impacts associated with discarding of unwanted catches. This is verified by the continued recovery of the Icelandic summer spawning herring in particular. However there are no specific objectives set with respect to management of bycatch in the pelagic fisheries, therefore there is no clear target for management to be evaluated against.		
<b>References</b>				
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>



**Evaluation Table for PI 2.2.3 Pelagic trawl Units of Certification**

<b>PI 2.2.3</b>		<b>Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Qualitative information is available on the amount of main bycatch species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main bycatch species taken by the fishery.	Accurate and verifiable information is available on the catch of all bycatch species and the consequences for the status of affected populations.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	<b>Justification</b>	While it is understood by management and science that there are no significant bycatch species in the fishery, there is no recording of events of slippage within the fishery. While discarding is illegal slippage is still very likely to occur from time to time. Qualitative information and some quantitative information are available on the amount of main bycatch species taken by the fishery from observer reports for analogous herring fisheries and for from stakeholders (MRI/DoF) and this is adequate to support scoring at SG80.		
<b>b</b>	<b>Guidepost</b>	Information is adequate to broadly understand outcome status with respect to biologically based limits	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty.
	<b>Met?</b>	(Y/N/Not relevant) Yes	(Y/N/Not relevant) Yes	(Y/N/Not relevant) No
	<b>Justification</b>	Information is sufficient with respect to bycatch levels as explained to the assessment team by DoF, MRI the client organization and skippers. This underpins the assessments finding that there are no significant bycatch species. However, due to uncertainty regarding possible slippage events and non-recording/reporting of these it is not possible to score this issue at SG100 as the situation does not support a high degree of certainty with respect to outcome status.		
<b>c</b>	<b>Guidepost</b>	Information is adequate to support measures to manage bycatch.	Information is adequate to support a partial strategy to manage main bycatch species.	Information is adequate to support a strategy to manage bycatch species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	<b>Justification</b>	There are no main bycatch species in the fishery. However adequate information is collected in relation to spatial and temporal fishing patterns from VMS as well as presence of undersize or juvenile year class fish on the fishing grounds from research and observer cruises, and sampling of catches landed to support ongoing evaluation of the effectiveness of the strategy to manage bycatch.		

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch		
d	Guidepost		Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).	Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.
	Met?		(Y/N) Yes	(Y/N) Yes
	Justification	There is ongoing recording and monitoring of spatial and temporal fishing patterns by the fleet to determine whether there are changes in levels of risk to bycatch. Sampling of catches at sea and on landing for the certified fleet and for other components of the Icelandic fleet are adequate to determine whether there are increased risks of discarding or slippage due to the presence of undersize or unmarketable species in catches.		
References		» DoF pers. Comms » MRI pers. Comms.		
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				NA

**Evaluation Table for PI 2.2.1 Purse seine Unit of Certification**

<b>PI 2.2.1</b>		<b>The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Main bycatch species are likely to be within biologically based limits (if not, go to scoring issue b below).	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).	There is a high degree of certainty that bycatch species are within biologically based limits.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	<b>Justification</b>	There are no main bycatch species in the fishery. This is a pelagic trawl fishery that targets large homogenous shoals of an abundant pelagic species. The fishery is industrial in scale and there is no direct handling of catches by hand. Catch handling is fully automated. No other species or stock is captured. Opportunities for removing and discarding of unwanted species is minimal and in most cases (outside of at sea processing vessels) grading, high grading or catch sorting is not possible. For processing at sea, it is normal for vessels to have a DoF observer onboard to verify that high grading or discarding of catches occurs.		
<b>b</b>	<b>Guidepost</b>	If main bycatch species are outside biologically based limits there are mitigation measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding.	If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.	
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	
	<b>Justification</b>	There are no main bycatch species.		
<b>c</b>	<b>Guidepost</b>	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the bycatch species to be outside biologically based limits or hindering recovery.		
	<b>Met?</b>	(Y/N) Yes		

<b>PI 2.2.1</b>		<b>The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups</b>	
	<b>Justification</b>	There are no main bycatch species.	
<b>References</b>			
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>NA</b>

**Evaluation Table for PI 2.2.2 Purse seine Unit of Certification**

<b>PI 2.2.2</b>		<b>There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	There are measures in place, if necessary, that are expected to maintain the main bycatch species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main bycatch species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing and minimizing bycatch.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes

PI 2.2.2		There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations		
	Justification	<p>The fishery is directed towards densely aggregated shoals of summer spawning herring. Yields are very homogenous, comprising only one species/stocks and there are no significant opportunities to discard parts or components of catches. Slippage of entire catches is considered at Principle 1 level for herring stocks. Discarding is illegal in Iceland and there is a scheme of both permanent and temporary spatial closures designed to protect stocks of undersize fish as well as spawning ground. According to section 2 of Act no. 57/1996, concerning the treatment of commercial marine stocks, discard of catches is prohibited. Minor exceptions to this are Non-value catches and heads and other fish waste refuse from working or processing of catches.</p> <p>There are clear specific measures that are designed to discourage discarding in Iceland, including:</p> <p>Undersized fish is only partially withdrawn from catch quotas</p> <p>Permission to land up to 5% excessive to quotas - monetary value of catch goes into a special development fund, run by the minister</p> <p>Species conversion (demersal species only)</p> <p>5% can be caught in excess of a vessel's catch quota - deducted from next year's quota</p> <p>20% of each vessels catch quota can be transferred to the following fishing year</p> <p>Procedure in relations to suspension of fishing permits in case of excessive catches</p> <p>Vessels are technologically very advanced and feature state of the art electronics for use in shoal identification. Vessels are operated by highly experienced crews who are professional pelagic fishermen. This is considered important in the context of minimizing events of unwanted catches. There is good and effective communication between vessels, which is likely to be beneficial in the context of information dissemination with respect to unwanted catches. DoF operate an observer programme whereby officers may accompany vessels at sea in order to verify catches. Officers have a responsibility for recommending area temporary area closures and restrictions in the event of significant unmarketable catches being made. The strategy I considered to be commensurate with the risks to potential bycatch species. However the strategy falls short of a full strategy on account of the fact that there is no Code of Practice in operations on the vessels and there is no reporting of instances of slippage. Purse seining is considered to be a very selective manner of fishing for pelagic species and as such this method of fishing is considered to be an important part of the strategy to minimize bycatch.</p>		
b	Guidepost	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes

<b>PI 2.2.2</b>		<b>There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations</b>		
	<b>Justification</b>	The fishery targets dense aggregations of herring. There are few opportunities to misidentify shoals considering the advance electronics in place onboard all vessels and given the limited spatial distribution of the fishery (west coast of Iceland near Breidafjörður). The outcome is that instances of unwanted catch are exceptionally rare and even when these occur it is normally possible to land catches for use in meal production and quota sharing/trading arrangements in Iceland facilitate this. There are few opportunities for any vessels to discard catch at sea and at sea processing vessels carry DoF observers onboard at all times.		
<b>c</b>	<b>Guidepost</b>		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	<b>Met?</b>		(Y/N) Yes	(Y/N) Yes
	<b>Justification</b>	Evidence presented to the assessment by stakeholders including the DoF and MRI indicates that vessels seek to avoid unwanted catches and that there are no opportunities to discard species at sea for any vessels (other than to slip catches or parts of catches before they are taken aboard). Both the DoF and MRI are satisfied that there is no significant discarding in the fisheries and this has been verified by observer programmes in the past, although there is little present day observer coverage of most pelagic fleets, however scientists do regularly take part in fishing trips for the purpose of data collection to aid stock assessment.		
<b>d</b>	<b>Guidepost</b>			There is some evidence that the strategy is achieving its overall objective.
	<b>Met?</b>			(Y/N) No
	<b>Justification</b>	Evidence provided by stakeholders (MRI, DoF) to the assessment team indicates that management of bycatch is appropriate and the existing controls on the fishery ensure that there are no significant negative impacts associated with discarding of unwanted catches. This is verified by the continued recovery of the Icelandic summer spawning herring in particular. However there are no specific objectives set with respect to management of bycatch in the pelagic fisheries, therefore there is no clear target for management to be evaluated against.		
<b>References</b>		» <a href="http://www.fisheries.is/management/">www.fisheries.is/management/</a> » <a href="http://www.fiskistiofa.is">www.fiskistiofa.is</a>		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>95</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>



**Evaluation Table for PI 2.2.3 Purse seine Unit of Certification**

<b>PI 2.2.3</b>		<b>Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Qualitative information is available on the amount of main bycatch species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main bycatch species taken by the fishery.	Accurate and verifiable information is available on the catch of all bycatch species and the consequences for the status of affected populations.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	<b>Justification</b>	While it is understood by management and science that there are no significant bycatch species in the fishery, there is no recording of events of slippage within the fishery. While discarding is illegal slippage is still very likely to occur from time to time. Qualitative information and some quantitative information are available on the amount of main bycatch species taken by the fishery from observer reports for analogous herring purse seine fisheries and for from stakeholders (MRI/DoF) and this is adequate to support scoring at SG80.		
<b>b</b>	<b>Guidepost</b>	Information is adequate to broadly understand outcome status with respect to biologically based limits	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty.
	<b>Met?</b>	(Y/N/Not relevant) Yes	(Y/N/Not relevant) Yes	(Y/N/Not relevant) No
	<b>Justification</b>	Information is sufficient with respect to bycatch levels as explained to the assessment team by DoF, MRI the client organization and skippers. This underpins the assessments finding that there are no significant bycatch species and almost zero bycatch in the purse seine fishery. However, due to uncertainty regarding possible slippage events and non-recording/reporting of these it is not possible to score this issue at SG100 as the situation does not support a high degree of certainty with respect to outcome status. It cannot be assumed that there is a high survival of slipped catches that have been caught by purse seine, and there is published evidence to suggest it may not be as high as might be expected.		
<b>c</b>	<b>Guidepost</b>	Information is adequate to support measures to manage bycatch.	Information is adequate to support a partial strategy to manage main bycatch species.	Information is adequate to support a strategy to manage bycatch species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	<b>Justification</b>	There is no bycatch in the purse seine fishery. However adequate information is collected in relation to spatial and temporal fishing patterns from VMS as well as presence of undersize or juvenile year class fish on the fishing grounds from research and observer cruises, and sampling of catches landed to support ongoing evaluation of the effectiveness of the strategy to manage bycatch.		

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch		
d	Guidepost		Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).	Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.
	Met?		(Y/N) Yes	(Y/N) Yes
	Justification	There is ongoing recording and monitoring of spatial and temporal fishing patterns by the fleet to determine whether there are changes in levels of risk to bycatch. Sampling of catches at sea and on landing for the certified fleet and for other components of the Icelandic fleet are adequate to determine whether there are increased risks of discarding or slippage due to the presence of undersize or unmarketable species in catches.		
References		» DoF pers. Comms » MRI pers. Comms.		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 2.3.1 All Units of certification

PI 2.3.1		<b>The fishery meets national and international requirements for the protection of ETP species</b> <b>The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species</b>		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>	Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species.	There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species.
	<b>Met?</b>	(Y/N)Yes	(Y/N)Yes	(Y/N) Yes
	<b>Justification</b>	<p>The relevant legislation and/or binding international agreements that Iceland has signed up to in the context of ETP species are:</p> <p>» Convention on International Trade in Endangered Species.</p> <p>No species that may be impacted by the fishery are protected separately under Icelandic legislation. The range of CITES Appendix I species that may interact with the fishery are listed in section 3. These include both toothed whales, baleen whales as well as some dolphins and porpoises. The basking shark is not listed under CITES appendix 1 and is not protected separately in Iceland.</p> <p>Regulations in place within other EEZ areas where the fishery for Norwegian Icelandic spring spawning fishery takes place are similar and there are no additional protected species over and above those listed under CITES that the fishery might interact with.</p> <p>According to MRI and DoF stakeholders along with client fishery skippers, encounters between the fishery and ETP species are exceptionally rare and this is consistent with the findings of other MSC certified fisheries for herring on the northeast Atlantic. Importantly, this is verified substantially through reporting in many EU countries under EU regulation 812/2004. Thorough ongoing observer programmes in pelagic trawl and set net fisheries in European waters (excl. Iceland) there is a growing body of evidence to support the understanding that pelagic trawl fisheries have few encounters with protected species that result in direct mortality of protected species.</p>		
<b>b</b>	<b>Guidepost</b>	Known direct effects are unlikely to create unacceptable impacts to ETP species.	Direct effects are highly unlikely to create unacceptable impacts to ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the fishery on ETP species.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No

<b>PI 2.3.1</b>		<b>The fishery meets national and international requirements for the protection of ETP species</b>  <b>The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species</b>		
	<b>Justification</b>	<p>There is no significant bycatch of ETP species in the fishery. Accordingly, the fishery is highly unlikely to create unacceptable impacts for any ETP populations. This is corroborated by the MRI, DoF and material published by ICES (SGBYC, WGMME) as well as general understanding of the ETP species footprint of pelagic trawl and purse seine herring fisheries. Occasional interactions may occur but these do not necessarily always lead to mortality of affected individuals, although this is a possible outcome particularly for encounters with trawl gear through drowning. Despite the likely outcome, the overall situation is likely to be within limits of acceptability based on knowledge of the animals involved and the relatively low frequency of interaction. There is only limited data captured directly from Icelandic pelagic herring fisheries however to support scoring of this PI therefore the assessment find that the fishery does not achieve SG100 (high degree of certainty).</p>		
<b>c</b>	<b>Guidepost</b>		Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.
	<b>Met?</b>		(Y/N) Yes	(Y/N) No
	<b>Justification</b>	<p>Indirect effects could emanate from depletion of the target species, which could be a key food source for some species, pollution or through physical disturbance, underwater noise or other technical interactions. Given the species involved – mostly highly mobile and opportunistic feeders that are not reliant exclusively on herring for a food source, it is highly unlikely that the fisheries reduce the herring stocks to a point where it would adversely affect ETP populations.</p> <p>Stefánsson et al (1997) studied the interactions between cetaceans and some fish species (mainly capelin and krill) in Icelandic waters. The results indicate that both minke and humpback whales may have significant direct impact on the status of the capelin stock. The effects of fin whale predation on the capelin stock seems less significant unless such consumption occurs outside the sampled area, which is considered quite possible. The study however does not examine interactions with herring stocks.</p> <p>The target stocks have been subject to an effective and precautionary management regime in recent years. The current stock assessments indicate that the spawning stock biomasses are above precautionary levels. Vessels aim to minimize pollution from fuel and ship generated wastes and all oils and solid wastes are processed or disposed of ashore.</p> <p>There is insufficient data however to support the hypothesis that there are no significant detrimental indirect effects of the fishery on ETP species.</p>		
<b>References</b>		<ul style="list-style-type: none"> <li>» CITES – <a href="http://www.cites.org">www.cites.org</a></li> <li>» WGBYC 2011. Report of the Working Group on bycatch of protected species. ACOM: 24 ICES 2011.</li> <li>» ASCOBANS- <a href="http://www.ascobans.org">www.ascobans.org</a></li> <li>» Berrow, S. et al, 1998. Discarding practices and marine mammal bycatch in the Celtic Sea herring fishery. Proceedings of the Royal Irish Academy of</li> </ul>		

PI 2.3.1	<b>The fishery meets national and international requirements for the protection of ETP species</b>		
	<b>The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species</b>		
	Biology and Environment 1: 1-8.  » Stefánsson, G., Sigurjónsson, J., & Víkingsson, G. A. (1997). On dynamic interactions between some fish resources and cetaceans off Iceland based on a simulation model. J. Northwest Atl. Fish. Sci. 22, 357-370		
OVERALL PERFORMANCE INDICATOR SCORE:			85
CONDITION NUMBER (if relevant):			NA

Evaluation Table for PI 2.3.2 All Units of certification

PI 2.3.2		The fishery has in place precautionary management strategies designed to: <ul style="list-style-type: none"> <li>• Meet national and international requirements;</li> <li>• Ensure the fishery does not pose a risk of serious harm to ETP species;</li> <li>• Ensure the fishery does not hinder recovery of ETP species; and</li> <li>• Minimise mortality of ETP species.</li> </ul>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There are measures in place that minimise mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	Justification	<p>The strategy for managing the impact of the fishery on ETP species is commensurate with the risk that both pelagic trawl and purse seine fisheries are understood to present, considering a range of available information including:</p> <ul style="list-style-type: none"> <li>» Expert opinion from scientific institutions in Iceland</li> <li>» Published literature in relation to NE Atlantic herring fishery interactions</li> <li>» Information from the fishery (skippers)</li> </ul> <p>The strategy comprises a full suite of fisheries legislation and regulations that functions at all levels of the management system, including national policy, Ministry of Fisheries strategy for the fishing industry and objectives of the client group which is to ensure a sustainable fishery that meets with internationally recognized best practice. There is a clear commitment at policy level that attests to Iceland's nation strategy of maintain overall ocean ecosystem health. See <a href="http://www.fisheries.is/management/government-policy/responsible-fisheries/">http://www.fisheries.is/management/government-policy/responsible-fisheries/</a>.</p> <p>The system of regulatory and technical restrictions on the fishery include seasonal and spatial closures, as well as restrictions on gear types and extensive area closures to trawling. In addition Iceland has an active programme of cetacean stock assessment and is committed to carrying out ongoing research into cetacean populations within Icelandic waters.</p> <p>Iceland is a member of NAMMCO - the North Atlantic Marine Mammal Commission, an international body for cooperation on the conservation, management and study of marine mammals in the North Atlantic. Through regional cooperation, the member countries of NAMMCO aim to strengthen and further develop effective conservation and management measures for marine mammals.</p>		

<b>PI 2.3.2</b>		<b>The fishery has in place precautionary management strategies designed to:</b> <ul style="list-style-type: none"> <li>• <b>Meet national and international requirements;</b></li> <li>• <b>Ensure the fishery does not pose a risk of serious harm to ETP species;</b></li> <li>• <b>Ensure the fishery does not hinder recovery of ETP species; and</b></li> <li>• <b>Minimise mortality of ETP species.</b></li> </ul>		
<b>b</b>	<b>Guidepost</b>	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is an objective basis for confidence that the strategy will work, based on information directly about the fishery and/or the species involved.	The strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	<b>Justification</b>	There is an objective basis for confidence that the strategy will work, based on information that indicates there is very little interaction between pelagic fisheries and species that are considered as ETP species in Iceland. Accordingly, the range of measures in place in the fishery are considered an appropriate strategy in conjunction with Iceland's participation in overall cetacean management through NAMMCO and commitment to monitoring status of some key whale populations in Icelandic waters.		
<b>c</b>	<b>Guidepost</b>		There is evidence that the strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	<b>Met?</b>		(Y/N) Yes	(Y/N) No
	<b>Justification</b>	Fishing rules are enforced uniformly and consistently in Iceland. Here are few reported breaches of legislation in general and fleets reported as having an overall high degree of compliance with fishery rules (DoF, pers comm.). Clearer evidence of strategy implementation could however include occasional updating of information through occasional monitoring of interactions or reviews of interactions between fisheries and ETP species.		
<b>d</b>	<b>Guidepost</b>			There is evidence that the strategy is achieving its objective.
	<b>Met?</b>			(Y/N) Yes



PI 2.3.2		<p>The fishery has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"><li>• Meet national and international requirements;</li><li>• Ensure the fishery does not pose a risk of serious harm to ETP species;</li><li>• Ensure the fishery does not hinder recovery of ETP species; and</li><li>• Minimise mortality of ETP species.</li></ul>
	Justification	<p>Populations of many whale and cetacean species are stable or increasing in Icelandic waters <a href="http://www.hafro.is/undir_eng.php?ID=15&amp;REF=2">http://www.hafro.is/undir_eng.php?ID=15&amp;REF=2</a>, even though there are very extensive demersal and pelagic fisheries in most of Iceland's EEZ. There are few reports (mainly anecdotal) of encounters with ETP species and herring fisheries within Iceland fleet. Capture in purse seine gear is possibly, however it is considered unlikely that this will result in mortality in many cases as the method of fishing means that there are opportunities to release animals which are not in immediate danger of drowning.</p>
References		<p><a href="http://www.fisheries.is/main-species/marine-mammals/">http://www.fisheries.is/main-species/marine-mammals/</a></p> <p>Anon, 2008. Report of the meeting of the management committee for cetaceans. North Atlantic Marine Mammal Commission (NAMMCO).</p> <p><a href="http://www.nammco.no/webcronize/images/Nammco/927.pdf">http://www.nammco.no/webcronize/images/Nammco/927.pdf</a></p> <p>Ægisson, S., Ásgeirsson, J., &amp; Hlíðberg, J. (1997). Icelandic whales - past and present. Reykjavik, Iceland: Forlagid, 9</p> <p>Marine Research Institute. Cetacean web pages <a href="http://www.hafro.is/undir_eng.php?ID=15&amp;REF=2">http://www.hafro.is/undir_eng.php?ID=15&amp;REF=2</a> Stefánsson, G., Sigurjónsson, J., &amp; Víkingsson, G. A. (1997). On dynamic interactions between some fish resources and cetaceans off Iceland based on a simulation model. J. Northwest Atl. Fish. Sci. 22, 357-370</p>
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		NA

Evaluation Table for PI 2.3.3 All Units of Certification

PI 2.3.3		Relevant information is collected to support the management of fishery impacts on ETP species, including:		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.	Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.	Information is sufficient to quantitatively estimate outcome status of ETP species with a high degree of certainty.
	Met?	(Y/N) Yes	(Y/N) yes	(Y/N) No
	Justification	There is sufficient information available to allow fishery related mortality to be quantitatively assessed for all affected species. Catch data are routinely reported and while reporting of interactions with ETP is not mandatory, there is sufficient understanding of the species involved (toothed whales and baleen whales), their distribution, population status and susceptibility to bycatch in herring trawl and purse seine gears to make a quantitative estimate of mortality within Icelandic herring fisheries (very rare and exceptional events, effectively insignificant in terms of population level impacts, MRI Pers comms.).		
b	Guidepost	Information is adequate to broadly understand the impact of the fishery on ETP species.	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.	Accurate and verifiable information is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.
	Met?	(Y/N/Not relevant) Yes	(Y/N/Not relevant) Yes	(Y/N/Not relevant) No
	Justification	There is adequate ongoing collection of information in relation to catches of target species, as well as the spatial location, timing and extent of the fishery. Sufficient information has been collected in observer programmes in other fleets within the northeast Atlantic in order to conclude that the present fishery does not present a significant risk to ETP populations and to support an appropriate strategy to manage impacts.  NAMMCO is a forum for the presentation of diverse and useful data from all signatory parties and the reports of the annual meeting provide much useful information that supports the management of ETP species in the North Atlantic.		
c	Guidepost	Information is adequate to support measures to manage the impacts on ETP species.	Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.	Information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) No

<p><b>PI 2.3.3</b></p>	<p><b>Relevant information is collected to support the management of fishery impacts on ETP species, including:</b></p> <ul style="list-style-type: none"> <li>• <b>Information for the development of the management strategy;</b></li> <li>• <b>Information to assess the effectiveness of the management strategy; and</b></li> <li>• <b>Information to determine the outcome status of ETP species.</b></li> </ul>
<p><b>Justification</b></p>	<p>Catch data is collected on an ongoing basis as is information in relation to spatial and temporal aspects of the fisheries. Population status of some ETP species are monitored and periodic abundance estimates are made by MRI and reported through NAMMCO.</p> <p>The MRI has an ongoing marine mammal research programme that includes investigations into</p> <ul style="list-style-type: none"> <li>• “Sightings surveys - the largest MRI research projects conducted in the field of whale research. In order to monitor population size in connection with management abundance is estimated every 5-6 years.</li> <li>• Research on population structure and behaviour by the aid of photo-identification and skin biopsy sampling. At the MRI these techniques have been applied in research on killer whales since 1981 and humpback whales and blue whales since 1990.</li> <li>• Research on harbour porpoises and white-beaked dolphins that have drowned in fishing gear (bycatch). This includes studies on feeding ecology, reproduction, age composition, population genetics and energetics.</li> <li>• Strandings. Monitoring and biological sampling of cetaceans that have stranded or beached on the coast of Iceland.</li> <li>• Feeding ecology and multi-species modeling. Although information is scarce on feeding ecology of most of the species regularly occurring in Icelandic waters, information on biomass and residence time gives indications of total consumption by cetaceans in Icelandic waters, and possible effects on the yield of commercially important fish species.</li> <li>• Tracking the movements of baleen whales by satellite telemetry. In the last few years experiments have been conducted on the use of satellite linked tags to follow the movements and dive pattern of minke, fin and blue whales in Icelandic waters.</li> <li>• Seasonal variation in the distribution of cetaceans in coastal Icelandic waters. In 1999, an agreement was made between the MRI and a few whale watching firms on systematic registration of information on cetaceans seen during whale watching trips.”</li> </ul> <p>Source: <a href="http://www.hafro.is/undir_eng.php?ID=15&amp;REF=2">http://www.hafro.is/undir_eng.php?ID=15&amp;REF=2</a></p> <p>Additional information from parties that are signatory to NAMMCO are also available in the reports of the annual NAMMCO meetings, available on the NAMMCO website. These data and information provide useful information in relation to population status of many species of marine mammals in the north Atlantic and supports the setting of management objectives and measures for ETP species that may interact with the fisheries.</p>
<p><b>References</b></p>	<ul style="list-style-type: none"> <li>» <a href="http://www.nammco.no/Nammco/Mainpage/Publications/ScientificCommitteeReports/">http://www.nammco.no/Nammco/Mainpage/Publications/ScientificCommitteeReports/</a></li> <li>» <a href="http://www.hafro.is/undir_eng.php?ID=15&amp;REF=2">http://www.hafro.is/undir_eng.php?ID=15&amp;REF=2</a></li> </ul>

PI 2.3.3	<p><b>Relevant information is collected to support the management of fishery impacts on ETP species, including:</b></p> <ul style="list-style-type: none"> <li>• Information for the development of the management strategy;</li> <li>• Information to assess the effectiveness of the management strategy; and</li> <li>• Information to determine the outcome status of ETP species.</li> </ul>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>	<b>NA</b>

**Evaluation Table for PI 2.4.1 All Units of Certification**

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
	Met?	(Y/N/Partial) Yes	(Y/N/Partial) Yes	(Y/N/Partial) Yes
	Justification	<p>Pelagic trawl gear and purse seine gears are not designed to withstand impacts with solid objects and are not intended to be fished on or close to the seafloor. Therefore these gear types are fished in pelagic habitats only except for exceptional events where encounters with the seabed may result from unforeseen events. The gear gears do not use any kind of sinking device or weights that may make contact with the seabed.</p> <p>Herring shoals are targeted by the fleet when they form shoals and are located at some point in the water column above the seabed. Herring is a pelagic species which apart from demersal spawning events, spend their entire lifecycle above the seabed where they feed on a variety of copepods and carry out large migrations in pursuit of zooplankton aggregations. Herring are most abundant in areas of open water, where they tend to aggregate in large three dimensional shoals above the seabed. Because they are a shoaling pelagic species, herring are most efficiently caught using mid-water trawls or purse seines, which are used to fish the upper layers of the water column.</p> <p>There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.</p>		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				100
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 2.4.2 All Units of Certification

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of the fishery on habitat types.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	Justification	<p>Herring aggregate in mid-water during feeding and only aggregate close to the seabed when spawning. Fishing operations target the discrete shoals in mid-water, normally well above the seabed. The pelagic trawl fishery seeks to actively avoid contact with the seabed in order not to damage expensive fishing gear that is not designed to withstand seabed contact.</p> <p>Measures that minimise fishing gear/ seabed interaction are in place across the fleet, including:</p> <ul style="list-style-type: none"> <li>» The use of electronics, such as depth sounders, sonar and trawl position monitoring systems. Forward looking scanning sonar on all vessels reveal seabed topography and contours up to 1.5miles ahead of the vessel, allowing sufficient time to change course or raise the net when approaching seabed obstructions are observed. Rapid changes to the position of the net can be made from the bridge using trawl winches or by adjusting vessel speed. All vessels use trawl monitoring sensors attached to the net, and monitors on the bridge display data on the height and spread of the net opening, depth of footrope of the net, and clearance between footrope and seabed.</li> <li>» Real time radio communication between vessels</li> <li>» The most experienced skippers are normally present on the bridge and in control of the fishing operation, meaning that accidental contacts with the seabed are highly unlikely to occur.</li> <li>» Prohibition on fishing with trawls within 12nm of the coast in many areas of Iceland</li> </ul> <p>The most vulnerable areas of seabed (deep sea coral reefs) are closed to fishing activity with bottom impacting mobile gears in much of Iceland's EEZ as well as in other jurisdictions (Norway) of the Norwegian Sea.</p>		
b	Guidepost	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	Met?	(Y/N) Yes	(Y/N) yes	(Y/N) No

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
	Justification	<p>The method of fishing employed is well known and knowledge of the behaviour of herring shoals is also well developed. There is good information on the spatial location and timing of the fishery. Detailed information on the benthos is becoming available through on-going research in Icelandic and Norwegian EEZ's, as well as through BiolCE and OSPAR in relation to seabed habitats I the marine areas where the fisheries operate.</p> <p>Scoring at SG100 is not indicated however as the strategy has not been specifically tested.</p>		
c	Guidepost		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		(Y/N) Yes	(Y/N) Yes
	Justification	The fishing gear used in this fishery is not suitable for situations where the gear would routinely touch the seabed. Norwegian Icelandic spring spawning herring and Icelandic summer spawning herring spawning areas are known, and VMS data confirms that fishing effort is concentrated in open waters away from the coast or from spawning grounds that are protected.		
d	Guidepost			There is some evidence that the strategy is achieving its objective.
	Met?			(Y/N) Yes
	Justification	The fishery does not interact with the seabed. There is no evidence of routine interaction with the seabed. Therefore it is sufficient to award the scoring issue at SG100.		
References		<p>» OSPAR Commission 2010. Quality Status Report 2010. OSPAR Commission, London. 108 + vii pp. At <a href="http://www.ospar.org">www.ospar.org</a></p> <p>» <a href="http://www.iceage-project.org/the-project.html">http://www.iceage-project.org/the-project.html</a></p>		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				NA



Evaluation Table for PI 2.4.3 All Units of Certification

PI 2.4.3		Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There is basic understanding of the types and distribution of main habitats in the area of the fishery.	The nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	Justification	The distribution of habitat types is available from various surveys and studies (OSPAR, IceAGE, BioICE) - and the information is improved upon with on-going research (Ocean 2025). Although seabed mapping for the area in which the fishery operates is incomplete at a scale relevant to the present fishery, this is of little consequence to this assessment, as the fishery occurs in mid-water and does not directly impact on benthic habitats. Mapping of vulnerable seabed habitats, such as <i>Lophelia pertusa</i> reefs, carbonate mounds and burrowing megafauna can be accessed on <a href="http://www.ospar.org">http://www.ospar.org</a> .		
b	Guidepost	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.	The physical impacts of the gear on the habitat types have been quantified fully.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) Yes
	Justification	The fishing gear does not impact or make contact with the seabed. There are no physical impacts. There are no known impacts of the fishing gear on the pelagic habitat; the only possible physical impact of the gear on benthic habitat would be through net entanglement if the gear was to make contact with the seafloor. The nets would snap and break easily, and since nets are expensive, any contact with the seafloor is strenuously avoided. Scoring at SG100 is appropriate.		
c	Guidepost		Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	Changes in habitat distributions over time are measured.
	Met?		(Y/N) Yes	(Y/N) No

<b>PI 2.4.3</b>		<b>Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types</b>
	<b>Justification</b>	Scored at SG80. Changes in habitat distributions for all sensitive habitats in the Norwegian Sea and the Icelandic EEZ are not measured over time at a scale that is relevant to fisheries impact management, however sufficient data continue to be collected to detect any increase in risk to habitat, through ongoing stock status monitoring, catch recording and spatial and temporal operation of the fishery.
<b>References</b>		<p>BIOICE – project summary from Conservation of Arctic Flora and Fauna Conservation of Arctic Flora and Fauna</p> <p>IceAGE - Icelandic marine animals/ Genetics and Ecology</p> <p>BIOICE – information from MarBEF</p> <p><a href="http://www.marbef.org/data/imis.php?module=dataset&amp;dasid=374">http://www.marbef.org/data/imis.php?module=dataset&amp;dasid=374</a></p>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>95</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>NA</b>

**Evaluation Table for PI 2.5.1 All Units of Certification**

PI 2.5.1		The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	(Y/N/Partial) Yes	(Y/N/Partial) Yes	(Y/N/Partial) Partial
	Justification	<p>There is a good evidence base for understanding the status of the ecosystem in the Southern Norwegian Sea and Icelandic marine ecosystem, where the fisheries takes place. This evidence indicates that the fisheries are highly unlikely to disrupt key elements of the ecosystem. There are altogether more than 12 million tonnes of pelagic fish migrating through the area, feeding there through the summer. The high biomass of plankton feeding fish may explain recent decreasing trends for zooplankton biomass.</p> <p>The key interaction with the ecosystem is the removal of the target species, which serves as a prey species for a wide range of fish, birds and marine mammals. The potential effects of this is constantly reviewed by multi-species virtual population analysis (MSVPA) associated with the ICES year of the stomach 1981, 1991 although there is some way to go before any of these studies can be viewed as accurately describing the ecosystem in full. There have been no indications that the current harvest strategies for these stocks or their management plans and recent fishery removals have posed an unacceptable risk or impact to Norwegian Icelandic spring spawning herring or Icelandic summer spawning predator or prey populations.</p>		
References		<ul style="list-style-type: none"> <li>» <a href="http://www.fisheries.is/ecosystem/">http://www.fisheries.is/ecosystem/</a></li> <li>» Astthorsson, O.S., Vilhjalmsón, H. 2002. Icelandic shelf LME: Decadal assessment and resource sustainability. Pp. 219-249 in Sherman, K. and H.R. Skjoldal. Large marine ecosystems of the North Atlantic. Elsevier Press. Amsterdam.</li> <li>» Astthorsson OS, Gislason A, Jonsson S (2007) Climate variability and the Icelandic marine ecosystem. Deep-Sea Res Part II 54:2456–2477</li> <li>» ACOM, 2012. Widely distributed and migratory stocks. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). Advice for 2013. ICES Advice, Book 9: 9.4.5. Advice September 2012. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-noss.pdf</a></li> <li>» ACOM, 2012. Iceland and East Greenland. Herring in Division Va (Icelandic summer-spawning herring). Advice for 2012/2013. ICES Advice, Book 2: 2.4.13. Advice June 2012. <a href="http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-vasu.pdf">http://www.ices.dk/sites/pub/Publication_Reports/Advice/2013/2013/her-vasu.pdf</a></li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				NA



Evaluation Table for PI 2.5.2 All Units of Certification

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There are measures in place, if necessary.	There is a partial strategy in place, if necessary.	There is a strategy that consists of a plan, in place.
	Met?	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	Justification	<p>The development of fisheries management policies and strategies since the early 1990 has increased focus on and consideration of the ecosystem approach to managing exploited populations of living aquatic resources. Multiple users of marine resources have been acknowledged to a greater degree. The recommendations from numerous international agreements, conferences and summits held on the subject reflect the changing approach to resource management (ICES 2008b). A broad range of regulatory measures in place within Iceland and the EEZ's of Norway and the Faroe Islands which aim to limit adverse effects of fishing on the marine ecosystem; these include technical restrictions on the fishery, limited entry, an ITQ system and clear catch limits together with comprehensive and verified reporting mechanisms.</p> <p>It is acknowledged by governance and science that there is a shortage of well-defined P2 objectives principally those that might better capture the role of herring in the ecosystem. However, in practice higher level regulations do contain relevant ecosystem objectives, such as those contained in fisheries regulations. These serve as binding objectives for all relevant fisheries including this one.</p> <p>Other ecosystem risks that may be associated with this fishery, such as bycatch (retained and discards) and habitat impacts, are managed effectively by a range of measures (see under 2.2, 2.3 and 2.4 above). The fishery is subject to effective MCS (monitoring, control and surveillance) to ensure all landings are recorded and there is high compliance in the fishery. In addition, the Marine Research Institute maintains extensive research programmes on, <i>inter alia</i>, multispecies fishery interactions, interactions between fisheries and birds, interactions between fisheries and marine mammals as well as climate and fisheries and oceanography. More information on specific programmes can be accessed through the <a href="http://www.hafro.is">www.hafro.is</a>. Programmes are ongoing and much of this is either published through ICES or through other media. Considerable information on relation to the ecosystem can be accessed through the MRI website.</p>		

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function		
<b>b</b>	<b>Guidepost</b>	The measures take into account potential impacts of the fishery on key elements of the ecosystem.	The partial strategy takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	<p>The strategy, which consists of a plan, contains measures to address all main impacts of the fishery on the ecosystem, and at least some of these measures are in place. The plan and measures are based on well-understood functional relationships between the fishery and the Components and elements of the ecosystem.</p> <p>This plan provides for development of a full strategy that restrains impacts on the ecosystem to ensure the fishery does not cause serious or irreversible harm.</p>
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No
	<b>Justification</b>	The strategy takes into consideration relevant information in the stock assessment including the ecosystem role of Norwegian Icelandic spring spawning and Icelandic summer spawning herring, albeit in an implicit manner rather than explicitly. The range of information on Norwegian Icelandic spring spawning herring is comprehensive. Fleet composition is complete, including vessel characteristics which can be used to estimate capacity. The surveys measure the abundance for the various locations, so that the abundance of the spawning components can be monitored. Catches from the stock components can be separated for reporting and management purposes. Both survey and commercial catches are well sampled for biological data on the stocks. Detailed and ongoing environmental monitoring of the Icelandic EEZ and the Norwegian Sea is carried out. Information includes temperature, salinity as well as primary productivity based on surveys and remote sensing. Managing the fisheries for both stocks according to currently defined objectives using catch limits, a constant F (ISSH) and a clearly defined HCR (NISSH) is expected to restrain impacts of the fishery so as to prevent serious or irreversible harm; thereby maintain outcome status at SG80 or higher.		
<b>c</b>	<b>Guidepost</b>	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	The partial strategy is considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	The measures are considered likely to work based on prior experience, plausible argument or information directly from the fishery/ecosystems involved.
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	(Y/N) No

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function		
	Justification	The principal potential risk or impact of the fishery is depletion of the herring stocks, which are important prey species. The stock biomass for both stocks has been significantly above precautionary and limits reference points for in recent years and this is considered likely to prevent serious or irreversible indirect harm through depletion of key prey species. In addition, the ecosystem is not considered to be wasp-waisted and there are other abundant low trophic level stocks through which energy can be transferred to higher levels, such as capelin, mackerel and blue whiting.		
d	Guidepost		There is some evidence that the measures comprising the partial strategy are being implemented successfully.	There is evidence that the measures are being implemented successfully.
	Met?		(Y/N) Yes	(Y/N) Yes
	Justification	Both stocks of herring are considered to be harvested sustainably and are at or above both limit and precautionary biomass levels. Stakeholder evidence provided to the assessment team confirmed that there is a high compliance with fishing rules and there is no overshoot of quota outside of the rules that provide for small overshoots that must be compensated for by the vessels concerned. All data in relation to verified catches are publicly available and the evidence supports the understanding that the fisheries operate within fishing rules.		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				NA



**Evaluation Table for PI 2.5.3 All Units of Certification**

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>	Information is adequate to identify the key elements of the ecosystem (e.g., trophic structure and function, community composition, productivity pattern and biodiversity).	Information is adequate to broadly understand the key elements of the ecosystem.	
	<b>Met?</b>	(Y/N) Yes	(Y/N) Yes	
	<b>Justification</b>	There is adequate information available that allows for a broad understanding of the key elements marine ecosystem (including phytoplankton, zooplankton fish, seabirds, marine mammals and environmental elements such as ocean temperature, currents, salinity), of Icelandic and northwestern waters of the Greenland and the Faroese Plateau. While the main interactions between the fishery and ecosystem elements are understood they are unlikely to have been investigated in detail in all cases by MRI. Scoring at SG80 is indicated here.		
<b>b</b>	<b>Guidepost</b>	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, and have not been investigated in detail.	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information and some have been investigated in detail.	Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated.
	<b>Met?</b>	(Y/N/Not relevant) Yes	(Y/N/Not relevant) Yes	(Y/N/Not relevant) No
	<b>Justification</b>	The main impacts of the fisheries are understood in the context of abiotic and biotic elements of the ecosystem. The main potential impacts is the depletion of prey species, however information on the impacts of the fisheries in this context indicate that these impact are likely to be well within acceptable limits for both stocks of herring. There is no comprehensive study of food web structure for the Norwegian Sea that demonstrates the relative importance of either stock within the Norwegian Sea and Icelandic waters and detailed investigation of this could support higher scoring for this issue.		
<b>c</b>	<b>Guidepost</b>		The main functions of the Components (i.e., target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known.	The impacts of the fishery on target, Bycatch, Retained and ETP species are identified and the main functions of these Components in the ecosystem are understood.
	<b>Met?</b>		(Y/N) Yes	(Y/N) No

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem		
	Justification	Main functions of Principle 2 components are understood in terms of providing ecosystem goods and services and there is adequate level of knowledge in relation to these to indicate scoring at SG80. However the impacts of the fisheries have not been fully identified and there are significant gaps in knowledge in relation to specific impacts of these fisheries in relation to unrecorded fishing mortality (slippage) and ETP species interactions. Greater levels of evidence in respect of these issues in particular would be necessary to justify scoring any higher (at SG100).		
d	Guidepost		Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.	Sufficient information is available on the impacts of the fishery on the Components and elements to allow the main consequences for the ecosystem to be inferred.
	Met?		(Y/N) Yes	(Y/N) Yes
	Justification	The main consequences for the ecosystem as a result of the fisheries are highly likely to be restricted to consequences arising from removal of a proportion of the herring stocks. Sufficient information is available on the impact of catches of retained species, bycatch species, ETPs as well as interaction with the seabed habitat, in order to allow a qualitative and (in some cases) a quantitative evaluation of the likely consequences for the ecosystem. There is no significant bycatch, retained species are well documented and there is no significant habitat interaction. Ecosystem consequences can therefore be expected to be low.		
e	Guidepost		Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	Information is sufficient to support the development of strategies to manage ecosystem impacts.
	Met?		(Y/N) Yes	(Y/N) Yes
	Justification	Data from the fisheries, as well as in relation to biological and oceanographic elements of the ecosystem continue to be collected on a routine basis by various national institutions amongst nations sharing an interest in the Norwegian Icelandic spring spawning herring and by Iceland's MRI in relation to the ecosystem of Iceland's EEZ and the Icelandic summer spawning herring stock. Data are regularly presented, reviewed and considered in a variety of ICES working groups, as well as within more specific research projects. It is expected that research efforts and data collection undertakings will continue into the future and will be augmented by data from fisheries for both stocks in relation to removals as well as spatial and temporal aspects of the fisheries. It is considered that current quantities and quality of data available and that are collected on an on-going basis are highly likely to be sufficient to allow for detection of an increase in risk to any ecosystem components.		

PI 2.5.3	There is adequate knowledge of the impacts of the fishery on the ecosystem	
References	»	Astthorsson, O.S., Vilhjalmsen, H. 2002. Icelandic shelf LME: Decadal assessment and resource sustainability. Pp. 219-249 in Sherman, K. and H.R. Skjoldal. Large marine ecosystems of the North Atlantic. Elsevier Press. Amsterdam.
	»	Astthorsson OS, Gislason A, Jonsson S (2007) Climate variability and the Icelandic marine ecosystem. Deep-Sea Res Part II 54:2456–2477
	»	ACOM, 2012. Widely distributed and migratory stocks. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). Advice for 2013. ICES Advice, Book 9: 9.4.5. Advice September 2012. <a href="http://www.ices.dk/sites/pub/PublicationReports/Advice/2013/2013/her-noss.pdf">http://www.ices.dk/sites/pub/PublicationReports/Advice/2013/2013/her-noss.pdf</a>
	»	ACOM, 2012. Iceland and East Greenland. Herring in Division Va (Icelandic summer-spawning herring). Advice for 2012/2013. ICES Advice, Book 2: 2.4.13. Advice June 2012. <a href="http://www.ices.dk/sites/pub/PublicationReports/Advice/2013/2013/her-vasu.pdf">http://www.ices.dk/sites/pub/PublicationReports/Advice/2013/2013/her-vasu.pdf</a>
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		NA

## ASSESSMENT TREE – PRINCIPLE 3 NORWEGIAN ICELANDIC SPRING SPAWNING HERRING

Evaluation Table for PI 3.1.1

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"> <li>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</li> <li>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li> <li>Incorporates an appropriate dispute resolution framework.</li> </ul>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There is an effective national legal system and a framework for <u>cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and <u>organised and effective cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and <u>binding procedures governing cooperation with other parties</u> which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	YES	YES	NO

PI 3.1.1	<p><b>The management system exists within an appropriate legal and/or customary framework which ensures that it:</b></p> <ul style="list-style-type: none"> <li>• <b>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</b></li> <li>• <b>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</b></li> <li>• <b>Incorporates an appropriate dispute resolution framework.</b></li> </ul>
Justification	<p>There is an effective national legal system and <u>organised and effective cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.</p> <p>The Norwegian Icelandic spring spawning herring is a shared stock that migrates between EEZs of several coastal states: Norway, Russia, Iceland, Faroe Islands and the EU. There is a management system in place for the stock. At the international level Iceland and the other coastal states are parties to the 1982 Law of the Sea Convention, the fisheries-related provisions which states that fisheries are to be managed sustainably, that they should be optimally used, and that states shall cooperate on the management of shared stocks. The FAO Code of Conduct for Responsible Fisheries, which includes the application of a precautionary approach, is not explicitly part of Icelandic laws on fisheries management but it is now part of the European Economic Area (EEA) agreement which Iceland is a party to.</p> <p>Iceland, together with the coastal states exploiting the Norwegian Icelandic spring spawning herring, is a contracting party to the North East Atlantic Fisheries Commission (NEAFC). During meetings of the coastal states agreements were reached on the total catch of Norwegian Icelandic spring spawning herring for 2007-2012 and its division between the states. These agreements were made for only one year each time. Unfortunately the states were unable to reach agreement on the division of the total catch in 2013 between the states. Faroe Islands have declared that they plan to catch 105,000 tonnes instead of the 32,000 tonnes allocated to them out of a TAC of 619,000 tonnes for 2013. The other coastal states have agreed to their shares for 2013.</p> <p>There exist bilateral agreements between the coastal states on fishing in each other EEZs. Iceland has made such agreements with Norway, Faroe Islands and Russia.</p> <p>Commercial fishing in Iceland is subject to a management system that is obliged by law to aim for the “sustainable utilisation (of the stock) which ensures in the long run maximum benefits for the Icelandic nation.” There is no illegal, unreported and unregulated (IUU) fishing of Norwegian Icelandic spring spawning herring in Icelandic waters. All landings of fish from vessels that engage in IUU fishing is forbidden, as is the servicing of such vessels.</p> <p>There are no controversial exemptions to international agreements.</p> <p>Fisheries in Iceland are subject to comprehensive regulatory framework. The management system is demonstrably compliant with national legislation, and has a clear legal basis. Secondary legislation providing for actual regulations and enforcement provisions has been built on overarching fisheries laws. Many aspects of these laws have been tested in court cases.</p> <p>The legal and access rights of different fishers are clearly codified in the legislation. As with all other legislation in Iceland, the legislation on fisheries management has been developed through a legally based, democratic process where various stakeholder groups are consulted and where they also have ample possibilities to argue for their points of view and their interests. Between debates on draft legislations in Parliament extensive hearings of experts and stakeholders are conducted by parliamentary committees. All Icelandic fishing for Norwegian Icelandic spring spawning herring is based on catch quotas which are allocated to fishing companies.</p>

<b>PI 3.1.1</b>		<p><b>The management system exists within an appropriate legal and/or customary framework which ensures that it:</b></p> <ul style="list-style-type: none"> <li><b>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</b></li> <li><b>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</b></li> <li><b>Incorporates an appropriate dispute resolution framework.</b></li> </ul>		
<b>b</b>	<b>Guidepost</b>	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery.	The management system incorporates or subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	The coastal states involved in the fishing of the Norwegian Icelandic spring spawning herring are all parties to the OSPAR convention and the United Nations Agreement on the implementation of the provisions of the United Nations convention on the Law of the Sea, 10 December 1982, which relates to the conservation and management of straddling fish stocks and highly migratory fish stocks (in force as of 11 December 2001). For the fishing in 2007-2012 the coastal states have reached agreements on the TAC and the sharing of it at annual meetings organized within NEAFC. During some years before 2007 the states didn't reach agreement. This resulted in catches exceeding the TAC but not to the extent that it threatened the stock. During this year the Faroese have decided unilaterally to set their quotas in excess of their share in the TAC. They plan to catch 73,000 tonnes or 12% in excess of the TAC. The other coastal states have declared that they will stick to the agreement.		
<b>d</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	The management system in Iceland is comprehensive and encompasses all fishing in Icelandic waters and those participating in it. Management is considered to be consistent with the cultural context, scale and intensity of the fishery. In most cases the management system tries to avoid legal disputes. It implements fairly rapidly binding judicial decisions arising from legal challenges. This was e.g. the case when the high court ruled in 1998 that the ban on the licensing of a fishing vessel without removal from the fleet of vessels of equal capacity was unconstitutional.		

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"><li>• Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</li><li>• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li><li>• Incorporates an appropriate dispute resolution framework.</li></ul>	
References	<ul style="list-style-type: none"><li>» <b>Anonymous 1996.</b> Act on the utilisation of exploitable marine stocks, no. 57/1996, accessible in the file <a href="http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf">http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf</a></li><li>» <b>Anonymous 2006.</b> Fisheries Management Act no. 116/2006, an English translation is accessible at <a href="http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/">http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/</a>.</li><li>» <b>Anonymous.</b> <a href="http://www.fisheries.is/main-species/pelagic-fishes/atlantic-herring/">http://www.fisheries.is/main-species/pelagic-fishes/atlantic-herring/</a></li></ul>	
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		NA



**Evaluation Table for PI 3.1.2**

<b>PI 3.1.2</b>		<b>The management system has effective consultation processes that are open to interested and affected parties.</b>  <b>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	The legal framework for the fisheries management in Iceland defines explicitly the role of organizations and individuals in the management process. The Ministry of Industry and Innovation (MII, formerly the Ministry of Fisheries and Agriculture) issues regulations that define these roles further. Some of the consultation process is organized by the MII and some comes through stakeholders' initiative. These roles are well understood and respected for all areas of responsibility and interaction.		
<b>b</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	YES

PI 3.1.2		<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>			
	Justification	<p>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, The Federation of Icelandic Fishing Vessel Owners (Landssamband íslenskra útvegsmanna, LÍÚ), 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 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. <b>It is therefore possible to conclude that the management system <u>regularly seeks and accepts</u> relevant information, including local knowledge and <u>explains</u> to some extent <u>how it is used or not used</u>.</b></p>			
c	Guidepost		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.	
	Met?	YES	YES	NO	
	Justification	<p>The consultation process <u>provides an opportunity</u> for all interested parties to affect new regulation and fishing management legislation, but some stakeholders will claim that they do not get much <u>encouragement</u> from the authorities. In some cases this claim is justified.</p>			
References		<p>» Information on Parliament Standing Committees procedures (applies to the Fisheries and Agriculture Committee): <a href="http://www.althingi.is/pdf/Althingi2010_english.pdf">http://www.althingi.is/pdf/Althingi2010_english.pdf</a></p> <p>» Statement by the minister of fisheries 15. April 2009: <a href="http://www.fiskifrettir.is/frett/6857/?q=samr%C3%A1%C3%B0">http://www.fiskifrettir.is/frett/6857/?q=samr%C3%A1%C3%B0</a></p> <p>» Annual consultation meeting on the status of the cod stock (MRI and fisheries stakeholders): <a href="http://www.hafro.is/undir.php?ID=19&amp;REF=3&amp;fID=11886&amp;nanar=1">http://www.hafro.is/undir.php?ID=19&amp;REF=3&amp;fID=11886&amp;nanar=1</a></p>			
OVERALL PERFORMANCE INDICATOR SCORE:					95
CONDITION NUMBER (if relevant):					NA

**Evaluation Table for PI 3.1.3**

<b>PI 3.1.3</b>		<b>The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are implicit within management policy	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	Explicit long term objectives in terms of spawning stock biomass and management reaction if the estimated stock size is below a certain minimum. These objectives and precautionary rules are consistent with MSC Principles and Criteria and the precautionary approach are required in the Agreed Record of conclusions of Fisheries consultations of the coastal states on the management of the Norwegian Icelandic spring spawning herring stock in the North East Atlantic during recent years.		
<b>References</b>				
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>

Evaluation Table for PI 3.1.4

PI 3.1.4		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure they do not contribute to unsustainable fishing practices.
	Met?	YES	YES	YES
	Justification	<p>All major fisheries in Iceland are closed in the sense that no fishing takes place except by fishermen that have specified access rights, mostly catch quotas. In the case of fishing for the Norwegian Icelandic spring spawning herring all fishing rights are allocated as catch quotas. A system of sanctions is designed to deter illegal activities such as fishing in excess of quotas or using harmful gear. The Directorate of Fisheries is responsible for monitoring the fisheries and gets some assistance from the Coast guard in monitoring gear, fishing locations and discarding. It also co-operates closely with Harbour Authorities. Offenders have to pay high fines, suffer withdrawal of their fishing licenses and in serious cases face prison sentences.</p> <p>The system of catch quotas has proven itself to be effective in limiting the fishing to the levels decided by the Ministry of Industry and Innovation. All discarding is explicitly banned and in the major groundfish fisheries where discarding is regularly estimated it is estimated to be limited, despite incentives to discard in a catch quota system where fishing is highly profitable. Subsidies were terminated in 1990 through an agreement between the European Free Trade Area signatories, which was negotiated in preparation for the EEA agreement. Since 2004 there has been a special resource tax or quota tax, levied on Icelandic fisheries amounting to some percentages of the catch value. In laws passed in 2012 the resource tax was increased so that it is estimated to be above 10% of catch value.</p> <p>In the many small fishing villages where most of the fishing takes place it is very difficult to engage in illegal landings or illegal fishing practices without the whole town knowing about it. The Directorate of Fisheries contributes to this mutual supervision of fishing activities by posting on its website (see <a href="http://www.fiskistofa.is/veidar/">http://www.fiskistofa.is/veidar/</a>) the quota position (i.e. the original allocation, changes because of trade in quotas and the actual catch) of each vessel. This information is updated daily.</p> <p>The monitoring of landings of Norwegian Icelandic spring spawning herring in Iceland is assisted by the fact that practically all catches are intended for export and not for domestic consumption. The system of fisheries management is under regular review by the Althingi, local authorities, fishers and the general public.</p>		
References				

<b>PI 3.1.4</b>	<b>The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>NA</b>

Evaluation Table for PI 3.2.1

PI 3.2.1		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
	Met?	YES	YES	PARTIAL
	Justification	There are well-defined and measurable short and long term objectives for the Norwegian Icelandic herring fishery which are consistent with MSC Principles 1 and 2. The objectives are met in the setting of the annual TAC. Even if the biological reference points used in the setting of the TAC are explicit and consistent with the outcomes expressed by MSC's Principle 1 and 2 the weak point in the management system is that the agreement between the coastal states on respecting the decision on the TAC and the division of the catch between them is made annually. The quotas that Samherji's vessel get are out of the Icelandic share agreed within the framework of NEAFC. The Icelandic fisheries management system has shown itself to be effective in ensuring that catches are kept within the predetermined limit.		
References		<ul style="list-style-type: none"> <li>» <b>Anonymous 1996.</b> Act on the utilisation of exploitable marine stocks, no. 57/1996, accessible in the file <a href="http://www.atvinnuvegaraaduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf">http://www.atvinnuvegaraaduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf</a></li> <li>» <b>Anonymous 2006.</b> Fisheries Management Act no. 116/2006, an English translation is accessible at <a href="http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/">http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/</a>.</li> <li>» <b>Anonymous.</b> The section on Atlanto-Scandinavian herring on MII's website (information centre) at <a href="http://www.fisheries.is/main-species/pelagic-fishes/atlantic-herring/">http://www.fisheries.is/main-species/pelagic-fishes/atlantic-herring/</a></li> <li>» <b>Anonymous 2010.</b> Reply of the Minister for Fisheries and Agriculture to a question about catches outside the catch quota system, the Althing 2009-2010, document no. 638 – issue no. 323, accessible in Icelandic at <a href="http://www.althingi.is/-altext/138/s/0638.html">http://www.althingi.is/-altext/138/s/0638.html</a>.</li> <li>» <b>Anonymous 2012.</b> Regulations on the management of fisheries during the 2012/2013 quota year, accessible in the file <a href="http://www.stjornartidindi.is/DocumentActions.aspx?ActionType=Open&amp;documentID=18c25ccf-e993-4c1e-b868-696cb675bf78">http://www.stjornartidindi.is/DocumentActions.aspx?ActionType=Open&amp;documentID=18c25ccf-e993-4c1e-b868-696cb675bf78</a></li> <li>» <b>Anonymous 2012.</b> State of Marine Stocks in Icelandic Waters 2011/2012 – Prospects for the Quota Year 2012/2013, MRI's publication no. 163, accessible on MRI's website at: <a href="http://www.hafro.is/Astand/2012/Astandsskyrsla_hafrannsoknastofnunarinnar_2012_lokaprentun.pdf">http://www.hafro.is/Astand/2012/Astandsskyrsla_hafrannsoknastofnunarinnar_2012_lokaprentun.pdf</a></li> </ul>		

<b>PI 3.2.1</b>	<b>The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>NA</b>



Evaluation Table for PI 3.2.2

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	YES	YES	
	Justification	The setting of the TAC for the Norwegian Icelandic spring spawning herring fishery is explicitly based on the precautionary approach and uses research from Marine Research Institutes in the coastal state that take part in the fishery and on advice from ICES. The decision-making processes are transparent and timely. Meetings reports are published following NEAFC meetings and EU council of Minister meetings. The Icelandic representative in the NEAFC meetings communicates the decisions in the NEAFC meetings to the Icelandic authorities and to the fishing industry.		
b	Guidepost	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	YES	YES	NO
	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. To say that it responds to all such issues in the present situation where there are large environmental changes going on would though be an overstatement.		
c	Guidepost		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		YES	

<b>PI 3.2.2</b>		<b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.</b>		
	<b>Justification</b>	The managers of the stock are obliged to use the precautionary approach and base their decisions on the best available information. The decisions are reviewed by ICES and by the coastal states at their meetings within NEAFC.		
<b>d</b>	<b>Guidepost</b>	Some information on fishery performance and management action is generally available on request to stakeholders.	Information on fishery performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on fishery performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	<p>The MRI plays an important role in communicating the scientific advice to the fishing industry. This communication takes place through the web, newspapers and meetings with people from the industry, including public meetings. MII is responsible for the management of living marine resources in Icelandic waters. 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 processing. This committee discusses all proposed legislation on these matters and can decide to discuss any aspect of the industry's behaviour or any concern that some people may have. It can require that information on the relevant matters be supplied by the MII or the public institutions serving the fishing industry.</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>Before taking decisions the minister consults extensively with stakeholders organisations including the Federation of Icelandic Fishing Vessel Owners (Landssamband íslenskra útvegsmanna, LÍÚ), 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 málmþæknimanna, 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). The consultations are a two way process and few decisions or actions of significance with respect to fisheries are taken in Iceland without public knowledge and /or involvement.</p>		

PI 3.2.2		<b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.</b>		
e	Guidepost	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	YES	YES	NO
	Justification	<p>In Iceland disputes can be resolved in the first instance by negotiations within the system. Some issues can be solved with the help of the Directorate of Fisheries or the Ministry of Industry and Innovation (formerly Ministry of Fisheries and Agriculture). Further disputes can be resolved through the courts. These mechanisms are transparent and tested and proven to be effective. Ultimately, any Icelandic citizen or organisation can take legal action to the high court in Iceland and ultimately to the Council of Europe Court. <b>This system meets the requirement of a <u>transparent mechanism for the resolution of legal disputes and it has been tested and proven to be effective.</u></b> This legislation on fishing rights has been tested in courts on many occasions. Two court cases in 1998 and 2000 settled basic disagreements on the foundations of the present system. On December 3 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 was unconstitutional as it treated those that had originally got licencing of 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. The limitations of 'the right to catch' set by the Fisheries Management Act were tested in court on the 6th of April 2000 when the High Court ruled that limitations of fish catch is constitutional.<sup>13</sup></p> <p>The right of different fishers to access the resource are clearly codified in the legislation. 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.</p> <p>Notwithstanding the need for due process, the management system is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.</p>		
References		» NEAFC's website at <a href="http://www.neafc.org/coastalstatemeetings">http://www.neafc.org/coastalstatemeetings</a> .		

<sup>13</sup> This ruling is available in Icelandic at <http://www.haestirettur.is/domar?nr=767>.

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.			
OVERALL PERFORMANCE INDICATOR SCORE:				80
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 3.2.3

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Monitoring, control and surveillance mechanisms exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	YES	YES	YES
	Justification	<p>For the fishing of Icelandic vessels of Norwegian Icelandic spring spawning herring there exists a <u>comprehensive</u> monitoring, control and surveillance system. This system has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.</p> <p>A comprehensive monitoring, control and surveillance system is in place, with inspections at sea and at landing sites. Also post-landing checks of reported landings against quotas are performed for each vessel. A satellite based vessel monitoring system applies to all vessels.</p> <p>The Directorate of Fisheries receives logbook data and data on landings which are weighed on specially authorized and closely monitored scales. Data is transmitted electronically to the Directorate, 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 control reporting of catches by checking if the reported input of raw fish is consistent with the volume of production.</p>		
b	Guidepost	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	YES	YES	YES
	Justification	<p><b><u>Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.</u></b> Violations of regulations are subject to sanctions which have been demonstrated to provide an effective deterrence against violations. Misreporting is subject to strict penalties.</p>		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
c	Guidepost	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	YES	YES	YES
	Justification	<p><b>There is a <u>high degree of confidence</u> that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.</b></p> <p>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 offenses are brought to the courts and can lead to prison sentences. Corrective actions are well established, codified, understood and tested.</p>		
d	Guidepost		There is no evidence of systematic non-compliance.	
	Met?		YES	
	Justification	<p><b>There is no evidence of systematic non-compliance.</b></p> <p>The level of compliance is relatively high. Data from inspections at sea and those carried out at landings indicate that the number of serious infractions is relatively low. 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.</p> <p>Some Icelandic vessels land some of their catches of Norwegian Icelandic spring spawning herring in foreign harbors. They are only allowed to land in special authorized harbors where their catches are weighted and reported to the Directorate of Fisheries in Iceland.</p> <p>There is no common monitoring of the surveillance and monitoring system in individual states engaged in the fishery. Maybe there should be.</p>		
References		<p>» <b>Anonymous 2012.</b> Directorate of Fisheries annual fishing statistics: Aflahefti Fiskistofu, Fiskveiðiárið 1. September 2011-31. ágúst 2012 (<a href="http://www.fiskistofa.is/media/aflatolur/aflaheftir2011_2012.pdf">http://www.fiskistofa.is/media/aflatolur/aflaheftir2011_2012.pdf</a>)</p>		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				NA

**Evaluation Table for PI 3.2.4**

<b>PI 3.2.4</b>		<b>The fishery has a research plan that addresses the information needs of management</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	The Marine Research Institutes in the coastal states involved in fishing of the Norwegian Icelandic spring spawning herring collect data and contribute to the research on the stock. This research is co-ordinated through ICES and NEAFC and direct contacts between Ministries and research institutes in these countries. This research is coherent and directed at all aspects of the biology of the stock and its interactions with other stocks and with the environment. Information relevant for P1 and P2 is disseminated through the annual ICES council meetings, working group reports and ACOM reports. Information relevant for P3 is discussed at inter-governmental level and at meetings within NEAFC. At present, given the large environmental changes in the Norwegian Icelandic spring spawning herring 'Straditional habitat and inflow of new species, especially mackerel, into parts of this habitat, important questions remain unanswered. The research plans of MRI in Iceland are discussed in the institute's research and progress plan for 2012-2016 published in Anonymous 2011.		
<b>b</b>	<b>Guidepost</b>	Research results are available to interested parties.	Research results are disseminated to all interested parties in a timely fashion.	Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	All relevant research institutions, the marine research institutions in the coastal states, ICES and some universities have established publications where they disseminate the results of their research and announce plans for further research. The stakeholder can easily access this research. Most of it is posted on the web.		
<b>References</b>		» Anonymous 2011, Research and work plan (Rannsókn- og starfsáætlun) 2012-2016, accessible at <a href="http://www.hafro.is/images/upload/langtima12-16.pdf">http://www.hafro.is/images/upload/langtima12-16.pdf</a>		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>



**Evaluation Table for PI 3.2.5**

<b>PI 3.2.5</b>		<b>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives</b> <b>There is effective and timely review of the fishery-specific management system</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>	The fishery has in place mechanisms to evaluate some parts of the management system.	The fishery has in place mechanisms to evaluate key parts of the management system	The fishery has in place mechanisms to evaluate all parts of the management system.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	The assessments of the management system are mainly internal as they are done mostly by the coastal states engaged in the fishing of Norwegian Icelandic herring. Some more external assessment of the management system could be beneficial.		
<b>b</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	There is international cooperation within NEAFC between authorities in the relevant coastal states engaged in monitoring, control and surveillance. In 2010 NEAFC set up a Scheme of Control and Enforcement (see <a href="http://www.neafc.org/page/3001">http://www.neafc.org/page/3001</a> ) to deal with issues related to control and enforcement. This, and the biological assessments conducted by ICES amount to regular evaluations of all parts of the management system.		
<b>References</b>		» Scheme of Control and enforcement, London, February 2010, <a href="http://www.neafc.org/system/files/scheme_2010.pdf">http://www.neafc.org/system/files/scheme_2010.pdf</a>		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>

## ASSESSMENT TREE – PRINCIPLE 3 ICELANDIC SUMMER SPAWNING HERRING

Evaluation Table for PI 3.1.1

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: <ul style="list-style-type: none"> <li>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</li> <li>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li> <li>Incorporates an appropriate dispute resolution framework.</li> </ul>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and <u>organised and effective cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and <u>binding procedures governing cooperation with other parties</u> which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	YES	YES	NO
	Justification	<p>There is an effective national legal system and <u>organised and effective cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.</p> <p>The Icelandic Summer Spawning herring completes its life-cycle within the limits of Iceland's EEZ. All fishing out of this stock is controlled and managed by Icelandic authorities. All fishing of herring is managed through catch quotas that are allocated to Icelandic fishing companies.</p> <p>Commercial fishing in Iceland is subject to a management system that is obliged by law to aim for the "sustainable utilization (of the stock) which ensures in the long run maximum benefits for the Icelandic nation." There is no illegal, unreported and unregulated (IUU) fishing of Icelandic Summer Spawning herring. All landings of fish from vessels that engage in IUU fishing is forbidden, as is the servicing of such vessels.</p> <p>There are no controversial exemptions to international agreements.</p> <p>Fisheries in Iceland are subject to comprehensive regulatory framework. The management system is demonstrably compliant with national legislation, and has a clear legal basis. Secondary legislation providing for actual regulations and enforcement provisions has been built on overarching fisheries laws. Many aspects of these laws have been tested in court cases.</p>		
b	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 fishery.	The management system incorporates or subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective.

PI 3.1.1		<p><b>The management system exists within an appropriate legal and/or customary framework which ensures that it:</b></p> <ul style="list-style-type: none"> <li><b>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</b></li> <li><b>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</b></li> <li><b>Incorporates an appropriate dispute resolution framework.</b></li> </ul>		
	Met?	YES	YES	NO
	Justification	<p>Disputes can be resolved in the first instance by negotiations within the system. Some issues can be solved with the help of the Directorate of Fisheries or the Ministry of Industry and Innovation (formerly Ministry of Fisheries and Agriculture). Further disputes can be resolved through the courts. These mechanisms are transparent and tested and proven to be effective. Ultimately, any Icelandic citizen or organization can take legal action to the high court in Iceland and ultimately to the Council of Europe Court. <b>This system meets the requirement of a <u>transparent mechanism</u> for the resolution of legal disputes and it has been tested and <u>proven to be effective</u>.</b></p>		
d	Guidepost	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	YES	YES	YES
	Justification	<p>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 access rights of different fishers are clearly codified in the legislation. As with all other legislation in Iceland, the legislation on fisheries management has been developed through a legally based, democratic process where various stakeholder groups are consulted and where they also have ample possibilities to argue for their points of view and their interests. Between debates on draft legislations in Parliament extensive hearings of experts and stakeholders are conducted by parliamentary committees. The management system in Iceland is comprehensive and encompasses all fishing in Icelandic waters and those participating in it. Management is considered to be consistent with the cultural context, scale and intensity of the fishery. In most cases the management system tries to avoid legal disputes. It implements fairly rapidly binding judicial decisions arising from legal challenges. This was e.g. the case when the high court ruled in 1998 that the ban on the licensing of a fishing vessel without removal from the fleet of vessels of equal capacity was unconstitutional.</p>		

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"><li>• Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</li><li>• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li><li>• Incorporates an appropriate dispute resolution framework.</li></ul>	
References	<ul style="list-style-type: none"><li>» <b>Anonymous 1996.</b> Act on the utilisation of exploitable marine stocks, no. 57/1996, accessible in the file <a href="http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf">http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf</a></li><li>» <b>Anonymous 2006.</b> Fisheries Management Act no. 116/2006, an English translation is accessible at <a href="http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/">http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/</a>.</li></ul>	
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		NA

Evaluation Table for PI 3.1.2

PI 3.1.2		<p><b>The management system has effective consultation processes that are open to interested and affected parties.</b></p> <p><b>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</b></p>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.
	Met?	YES	YES	YES
	Justification	<p>The legal framework for the fisheries management in Iceland <b>defines explicitly</b> the role of organisations and individuals in the management process. The Ministry of Industry and Innovation (MII, formerly the Ministry of Fisheries and Agriculture) issues regulations that define these roles further. Some of the consultation process is organized by the MII and some comes through stakeholders' initiative. <b>These roles are well understood and respected for all areas of responsibility and interaction.</b></p>		
b	Guidepost	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used.
	Met?	YES	YES	YES

PI 3.1.2		<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>			
	Justification	<p>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 organizations of those working in the fishing sector, The Federation of Icelandic Fishing Vessel Owners (Landssamband íslenskra útvegsmanna, LÍÚ), 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 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. <b>It is therefore possible to conclude that the management system <u>regularly seeks and accepts</u> relevant information, including local knowledge and <u>explains</u> to some extent <u>how it is used or not used</u>.</b></p>			
c	Guidepost		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.	
	Met?		YES	NO	
	Justification	<p>The consultation process <u>provides an opportunity</u> for all interested parties to affect new regulation and fishing management legislation, but some stakeholders will claim that they do not get much <u>encouragement</u> from the authorities. In some cases this claim is justified.</p>			
References		<p>» Information on Parliament Standing Committees procedures (applies to the Fisheries and Agriculture Committee): <a href="http://www.althingi.is/pdf/Althingi2010_english.pdf">http://www.althingi.is/pdf/Althingi2010_english.pdf</a></p> <p>» Statement by the minister of fisheries 15. April 2009: <a href="http://www.fiskifrettir.is/frett/6857/?q=samr%C3%A1%C3%B0">http://www.fiskifrettir.is/frett/6857/?q=samr%C3%A1%C3%B0</a></p> <p>» Annual consultation meeting on the status of the cod stock (MRI and fisheries stakeholders): <a href="http://www.hafro.is/undir.php?ID=19&amp;REF=3&amp;fID=11886&amp;nanar=1">http://www.hafro.is/undir.php?ID=19&amp;REF=3&amp;fID=11886&amp;nanar=1</a></p>			
OVERALL PERFORMANCE INDICATOR SCORE:					95
CONDITION NUMBER (if relevant):					NA

Evaluation Table for PI 3.1.3

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are implicit within management policy	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy.
	Met?	YES	YES	YES
	Justification	<p><b>Clear long-term, overall goals for fisheries management are set out in legislation.</b> These objectives include sustainable management, maximizing benefits to the nation and efficiency.</p> <p>Environmental objectives are in place and observed, e.g. in relation to protection of coral reefs and geographically defined sea-based management plans. Ecological quality objectives are also developed through the OSPAR cooperation, to which Iceland is a contracting party, but fully developed plans to measure environmental performance are not yet in place.</p> <p>There is no IUU fishing for cod in Icelandic waters. Iceland is party to conventions against IUU fishing and supports actions against such fishing.</p> <p>Specific environmental control measures are in place, e.g. concerning prevention of discarding of key commercial species. Discarding is estimated to be very small, at most 2-3% in terms of weight but somewhat larger in terms of number of fish.</p> <p>ICES advice is based on established precautionary and limit reference points. The advice from the MRI on Icelandic Summer Spawning herring has been consistent with the precautionary approach even if there is no direct reference to the precautionary approach in laws or regulations on fisheries management in Iceland. <b>MRI's advice has contained <u>explicit</u> reference to the principles behind the precautionary approach.</b></p>		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				100
CONDITION NUMBER (if relevant):				NA



**Evaluation Table for PI 3.1.4**

<b>PI 3.1.4</b>		<b>The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure they do not contribute to unsustainable fishing practices.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	<p>All major fisheries in Iceland are closed in the sense that no fishing takes place except by fishermen that have specified access rights, mostly catch quotas. In the case of fishing for the Icelandic Summer Spawning herring all fishing rights are allocated as catch quotas. A system of sanctions is designed to deter illegal activities such as fishing in excess of quotas or using harmful gear. The Directorate of Fisheries is responsible for monitoring the fisheries and gets some assistance from the Coast guard in monitoring gear, fishing locations and discarding. It also co-operates closely with Harbour Authorities. Offenders have to pay high fines, suffer withdrawal of their fishing licenses and in serious cases face prison sentences.</p> <p>The system of catch quotas has proven itself to be effective in limiting the fishing to the levels decided by the Ministry of Industry and Innovation. All discarding is explicitly banned and in the major groundfish fisheries where discarding is regularly estimated it is estimated to be limited, despite incentives to discard in a catch quota system where fishing is highly profitable. Subsidies were terminated in 1990 through an agreement between the European Free Trade Area signatories, which was negotiated in preparation for the EEA agreement. Since 2004 there has been a special resource tax or quota tax, levied on Icelandic fisheries amounting to some percentages of the catch value. In laws passed in 2012 the resource tax was increased so that it is estimated to be above 10% of catch value.</p> <p>In the many small fishing villages where most of the fishing takes place it is very difficult to engage in illegal landings or illegal fishing practices without the whole town knowing about it. The Directorate of Fisheries contributes to this mutual supervision of fishing activities by posting on its website (see <a href="http://www.fiskistofa.is/veidar/">http://www.fiskistofa.is/veidar/</a>) the quota position (i.e. the original allocation, changes because of trade in quotas and the actual catch) of each vessel. This information is updated daily.</p> <p>The monitoring of landings of herring in Iceland is assisted by the fact that practically all catches are intended for export and not for domestic consumption. The system of fisheries management is under regular review by the Althingi, local authorities, fishers and the general public.</p>		
<b>References</b>				
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>

Evaluation Table for PI 3.2.1

PI 3.2.1		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
	Met?	YES	YES	PARTIAL
	Justification	<p>There are well-defined and measurable short and long term objectives for the Icelandic Summer Spawning herring fishery which are consistent with MSC Principles 1 and 2. The objectives are met in the setting of the annual TAC. The biological reference points used in the setting of the TAC are explicit and consistent with the outcomes expressed by MSC's Principle 1 and 2.</p> <p>The Icelandic fisheries management system has shown itself to be effective in ensuring that catches are kept within the predetermined limit.</p>		
References		<ul style="list-style-type: none"> <li>» <b>Anonymous 1996.</b> Act on the utilisation of exploitable marine stocks, no. 57/1996, accessible in the file <a href="http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf">http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf</a></li> <li>» <b>Anonymous 2006.</b> Fisheries Management Act no. 116/2006, an English translation is accessible at <a href="http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/">http://www.fisheries.is/management/fisheries-management/the-fisheries-management-act/</a>.</li> <li>» <b>Anonymous 2010.</b> Reply of the Minister for Fisheries and Agriculture to a question about catches outside the catch quota system, the Althingi 2009-2010, document no. 638 – issue no. 323, accessible in Icelandic at <a href="http://www.althingi.is/-altext/138/s/0638.html">http://www.althingi.is/-altext/138/s/0638.html</a>.</li> <li>» <b>Anonymous 2012.</b> Regulations on the management of fisheries during the 2012/2013 quota year, accessible in the file <a href="http://www.stjornartidindi.is/DocumentActions.aspx?ActionType=Open&amp;documentID=18c25ccf-e993-4c1e-b868-696cb675bf78">http://www.stjornartidindi.is/DocumentActions.aspx?ActionType=Open&amp;documentID=18c25ccf-e993-4c1e-b868-696cb675bf78</a></li> <li>» <b>Anonymous 2012.</b> State of Marine Stocks in Icelandic Waters 2011/2012 – Prospects for the Quota Year 2012/2013, MRI's publication no. 163, accessible on MRI's website at <a href="http://www.hafro.is/Astand/2012/Astandsskyrsla_hafrannsoknastofnunarinnar_2012_lokaprentun.pdf">http://www.hafro.is/Astand/2012/Astandsskyrsla_hafrannsoknastofnunarinnar_2012_lokaprentun.pdf</a></li> </ul>		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 3.2.2

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	YES	YES	
	Justification	The setting of the TAC for the Icelandic Summer Spawning herring fishery uses reference points and strategies that have been successful in the past. It is based on research work done by the Marine Research Institute in Iceland and is subjected to review and independent advice by ICES. The decision-making processes are transparent and timely.		
b	Guidepost	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	YES	YES	NO
	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. To say that it responds to all such issues in the present situation where there are large environmental changes going on and the stock has been hit by serious sickness and the mysterious death of significant share of the stock in Kolgrafarfjörður during the winter 2012/2013 would though be an overstatement.		
c	Guidepost		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		YES	

<b>PI 3.2.2</b>		<b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.</b>		
	<b>Justification</b>	The managers of the stock are obliged to consult the Marine Research Institute before deciding the TAC each year. This institute provides the best available information about the state of the stock. The precautionary approach is not formally part of the decision-making process but the objectives set by law and the reference points and management strategy respects the basic principles of the precautionary approach.		
<b>d</b>	<b>Guidepost</b>	Some information on fishery performance and management action is generally available on request to stakeholders.	Information on fishery performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on fishery performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	<p>The MRI plays an important role in communicating the scientific advice to the fishing industry. This communication takes place through the web, newspapers and meetings with people from the industry, including public meetings. MII is responsible for the management of living marine resources in Icelandic waters. 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 processing. This committee discusses all proposed legislation on these matters and can decide to discuss any aspect of the industry's behaviour or any concern that some people may have. It can require that information on the relevant matters be supplied by the MII or the public institutions serving the fishing industry.</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>Before taking decisions the minister consults extensively with stakeholders organisations including the Federation of Icelandic Fishing Vessel Owners (Landssamband íslenskra útvegsmanna, LÍÚ), The Federation of Owners of Small Fishing Vessels (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 málmþæknimanna, 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). The consultations are a two way process and few decisions or actions of significance with respect to fisheries are taken in Iceland without public knowledge and /or involvement.</p>		

<b>PI 3.2.2</b>		<b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.</b>		
<b>e</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges. There are several examples where authorities have attempted to comply in a timely fashion within binding judicial decisions arising from legal challenges. The most noteworthy and important is the case when the Supreme Court in 1998 found special licensing of fishing vessels that were allowed to fish in the Icelandic EEZ to be unconstitutional.		
<b>References</b>				
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>

Evaluation Table for PI 3.2.3

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Monitoring, control and surveillance mechanisms exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	YES	YES	YES
	Justification	<p><b>For the fishing of Icelandic vessels of Icelandic Summer Spawning herring there exists a <u>comprehensive</u> monitoring, control and surveillance system. This system has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.</b></p> <p>A comprehensive monitoring, control and surveillance system is in place, with inspections at sea and at landing sites. Also post-landing checks of reported landings against quotas are performed for each vessel. A satellite based vessel monitoring system applies to all vessels.</p> <p>The Directorate of Fisheries receives logbook data and data on landings which are weighed on specially authorized and closely monitored scales. Data is transmitted electronically to the Directorate, 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 control reporting of catches by checking if the reported input of raw fish is consistent with the volume of production.</p>		
b	Guidepost	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	YES	YES	YES
	Justification	<p><b><u>Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.</u></b> Violations of regulations are subject to sanctions which have been demonstrated to provide an effective deterrence against violations. Misreporting is subject to strict penalties.</p>		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
c	Guidepost	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	YES	YES	YES
	Justification	<p><b>There is a <u>high degree of confidence</u> that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.</b></p> <p>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 offenses are brought to the courts and can lead to prison sentences. Corrective actions are well established, codified, understood and tested.</p>		
d	Guidepost		There is no evidence of systematic non-compliance.	
	Met?		YES	
	Justification	<p><b>There is no evidence of systematic non-compliance.</b> The level of compliance is relatively high. Data from inspections at sea and those carried out at landings indicate that the number of serious infractions is relatively low. 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.</p>		
References		<p>» <b>Anonymous 2012.</b> Directorate of Fisheries annual fishing statistics: Aflahefti Fiskistofu, Fiskveiðiárið 1. September 2011-31. ágúst 2012 (<a href="http://www.fiskistofa.is/media/aflatolur/aflaheftir2011_2012.pdf">http://www.fiskistofa.is/media/aflatolur/aflaheftir2011_2012.pdf</a>)</p>		
OVERALL PERFORMANCE INDICATOR SCORE:				100
CONDITION NUMBER (if relevant):				NA



**Evaluation Table for PI 3.2.4**

<b>PI 3.2.4</b>		<b>The fishery has a research plan that addresses the information needs of management</b>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>a</b>	<b>Guidepost</b>	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	<p>The research on the Icelandic Summer Spawning herring is coherent and directed at all aspects of the biology of the stock and its interactions with other stocks and with the environment. Information relevant for P1 and P2 is disseminated through MRI's reports as well as the annual ICES council meetings, working group reports and ACOM reports.</p> <p>The research plans of MRI in Iceland are discussed in the institute's research and progress plan for 2012-2016 published in Anonymous 2011.</p>		
<b>b</b>	<b>Guidepost</b>	Research results are available to interested parties.	Research results are disseminated to all interested parties in a timely fashion.	Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	MRI has published its research plan for 2012-2016. The institute publishes its results on a regular basis. The stakeholder can easily access this research. Most of it is posted on the web.		
<b>References</b>		» Anonymous 2011, Research and work plan (Rannsókn- og starfsáætlun) 2012-2016, accessible at <a href="http://www.hafro.is/images/upload/langtima12-16.pdf">http://www.hafro.is/images/upload/langtima12-16.pdf</a>		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>

**Evaluation Table for PI 3.2.5**

<b>PI 3.2.5</b>		<b>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives</b> <b>There is effective and timely review of the fishery-specific management system</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	<b>Guidepost</b>	The fishery has in place mechanisms to evaluate some parts of the management system.	The fishery has in place mechanisms to evaluate key parts of the management system	The fishery has in place mechanisms to evaluate all parts of the management system.
	<b>Met?</b>	YES	YES	YES
	<b>Justification</b>	The government that took office in 2009 initiated a thorough review of many aspects of the management system in Iceland. Most of those that were involved in this review are internal to the political process in Iceland and to the fishing industry. The external review processes have been beneficial to the work in the MRI. It seems probable that other parts of the fisheries management system in Iceland would also benefit from more regular external reviews.		
<b>b</b>	<b>Guidepost</b>	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.
	<b>Met?</b>	YES	YES	NO
	<b>Justification</b>	<p>The overall performance of the management regime for the resource is measured annually by assessing the status of stocks. This is a tested procedure that is repeated annually under the purview of ICES, resulting in new stock assessments and scientific advice for the following year.</p> <p>Since 1970 the Marine Research Institute has carried out extensive environmental surveys up to four times per year with relation to oceanography, primary and secondary production.</p> <p>There have been several external reviews made by international experts on the methods that the Marine Research Institute uses to assess fish stocks and on the advice it gives to government. There has not been comparable external review of the work of the Directorate of Fisheries or of the Ministry of Fisheries and Agriculture. However these institutions 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 (Ríkisendurkoðun). The performance of these institutions is also intensively debated in Iceland, especially by the many fishing communities.</p> <p>The MRI experts have published their research in peer reviewed scientific journals. ICES involve external scientists in reviews of its methodologies on a regular basis.</p>		
<b>References</b>				
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>

## Appendix 1.2 Conditions

### Norwegian Icelandic spring spawning herring pelagic trawl UoC

There is 1 condition for this fishery.

#### Condition 3

Performance Indicator	2.1.2 There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species
Score	75
Rationale	<p>The sum of the mackerel catch allocations to all relevant fishing nations should be equal to or less than the agreed TAC, and the TAC should be in line with the harvest control rule.</p> <p>The harvest strategy and fishery decision-making processes will not meet future objectives unless all countries exploiting the shared NEA mackerel stock work together in the implementation of the harvest control rule, and that this be achieved in a timely manner. Total annual removals of NE Atlantic mackerel are in excess of scientific advice and are not subject to effective management as would be demonstrated through the setting of annual TAC's and quotas that are agreed amongst all parties exploiting the stock. The fishery catches large volumes of mackerel during fishing activities that are directed at Norwegian Icelandic spring spawning herring.</p> <p>The stock status is currently above the precautionary level, but if current fishing patterns are continued it is likely to fall below Bpa in the short-term. Only a short window of opportunity exists for an agreement to be reached before the stock is likely to decline. Without on-going strong recruitment, it is likely that the stock will be at significant risk of falling below the precautionary level.</p>
Condition	<p>The condition requires that Samherji continue to participate in efforts to reach agreement with all parties that exploit the stock. This should be done by lobbying the Icelandic authorities. Within the life of the certificate agreed, effective and binding arrangements whereby all parties agree to a TAC for mackerel and a mechanism/protocol for setting quotas need to be restored. Evidence of the management measures being in place will require that total catches by all parties are returned to a level where they are within the TAC and scientific advice as a result of agreed harvest arrangements between all parties (Iceland, Faroe Islands, EU, Russia and Norway).</p> <p>The condition should be closed out within the life time of the certificate. However a further reduction in score for 2.1.2 (presently scored at 60 for mackerel element of 2.2.1) for NE Atlantic mackerel is possible in the event that the mackerel stock is shown to have fallen outside of biologically based limits, where the present fishery continues to feature significant catches of mackerel as a retained species.</p> <p>The condition can only be closed out when the sum of the catch allocations to all relevant fishing nations being equal to or less than the agreed TAC, and the TAC being in line with the harvest control rule.</p>
Milestones	<p>Yr 1 - 75</p> <p>Yr 2 - 75</p> <p>Yr 3 - 75</p> <p>Yr 4 -80</p>
Client action plan	<p>Year 1</p> <p>Engage with the Iceland government to make effort to reach agreement with all parties that exploit the stock.</p> <p>Engage the Ministry of Industry and Innovation and the Marine Research Institute to work towards effective and binding arrangements whereby all parties agree to a TAC for the stock and a mechanism/protocol for setting quotas will be restored.</p> <p>Samherji will participate in effort to reach agreement with all parties that exploit the stock.</p> <p>Year 2</p>

	<p>Continue engagement with the Iceland government to promote the completion of agreement between all parties that are exploiting the stock.</p> <p>Continue engaging the Ministry of Industry and Innovation and the Marine Research Institute to work towards effective and binding arrangements whereby all parties agree to a TAC for the stock and a mechanism/protocol for setting quotas will be restored.</p> <p>Samherji will continue to participate in effort to reach agreement with all parties that exploit the stock.</p> <p>Year 3</p> <p>Continue engagement with the Iceland government to promote the completion of the agreement between all parties.</p> <p>Continue consultation with the Marine Research Institute (MRI) regarding effective and binding arrangements whereby all parties agree to a TAC.</p> <p>Year 4</p> <p>Continue engagement with MII to complete implementation on an agreement between all parties that are exploiting the stock.</p> <p>Continue engagement with MII to complete implementation on an effective and binding arrangements between all parties that are exploiting the stock.</p>
<b>Consultation on condition</b>	<p>On-going consultation between the fishing industry and the Icelandic fisheries department (Ministry of Innovations and Industry) as well as the Marine Research Institute will be necessary as part of fulfilment of this condition. It is noted that the MRI have expressed their intention through ICES to work towards the development and adoption of a harvest control rule for the stock that will be tested according to strictest international standards for precaution and sustainability and preparations in this regard are underway. See Letter copied at 1.2.</p>

## Icelandic summer spawning herring pelagic trawl UoC

There are 2 conditions for this fishery.

### Condition 1

Performance Indicator	1.2.2 There are well defined and effective harvest control rules in place
<b>Score</b>	75
<b>Rationale</b>	The harvest rules are not implicitly defined. There is no formal management plan for the stock.
<b>Condition</b>	<p>Establishment of a harvest control rule responsive to the state of the stock.</p> <p>To meet the requirements of the MSC standard it is necessary that Harvest Control Rules for the exploitation of the Icelandic summer spawning herring stock are in place. These need to be evidence based, responsive to changes in stock condition, with evidence that application of the HCR is likely to be effective in achieving the objectives of the harvest strategy.</p>
<b>Milestones</b>	<p>1st Surveillance Audit: A report reviewing different alternatives to manage the Icelandic herring stock should be presented to the ICES working group where the stock is assessed.</p> <p>Score: 75</p> <p>2nd Surveillance Audit: There should be evidence that the different management</p>

	<p>alternatives have been discussed by the stakeholders to reach on an agreement on the most suitable one.</p> <p>Score: 75</p> <p>3rd Surveillance Audit: Samherji will work to lobby the management plan agreed by the stakeholders to allow it to be approved by the national government.</p> <p>Score: 75</p> <p>4th Surveillance Audit: The new management plan should be in place and should be applied.</p> <p>Score: 80.</p>
<b>Client action plan</b>	<p>Year 1</p> <p>Engage with the Iceland government to promote the implementation and evaluation of harvest control rule(s) as the basis of herring management.</p> <p>Consult with the Marine Research Institute with the objective of evaluating the existing strategy for use during the certification period and beyond</p> <p>Prepare a report (or commission such a report) on the effectiveness of the harvest strategy in meeting conservation and fishery objectives. There should be particular consideration of these or other harvest control rules for use in subsequent certifications.</p> <p>Adopt the strategy as modified through the written evaluation report</p> <p>Year 2</p> <p>Continue engagement with the Iceland government to promote the implementation and evaluation of harvest control rule(s) as the basis of herring management.</p> <p>Consult with the Marine Research Institute with the objective of evaluating the existing strategy for use during the certification period and beyond</p> <p>Consult with the Marine Research Institute with the objective of obtaining a commitment to continue to evaluate and modify of the MRI harvest strategy for Years 1 and 2 of the certification period.</p> <p>Year 3</p> <p>Continue engagement with the Iceland government to promote the completion and adoption of harvest control rule(s) as the basis of herring management.</p> <p>Continue consultation with the Marine Research Institute (MRI) with the objective of evaluating the harvest strategy.</p> <p>Year 4</p> <p>Continue engagement with MII and MRI to complete implementation of well-defined and effective management plan and harvest control rule(s).</p>
<b>Consultation on condition</b>	<p>Consultation with both the Icelandic fisheries department (Ministry of Innovations and Industry) as well as the Marine research Institute will be necessary as part of fulfillment of this condition.</p>

#### Condition 4

<b>Performance Indicator</b>	<b>2.1.2 There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species</b>
<b>Score</b>	75
<b>Rationale</b>	<p>The sum of the mackerel catch allocations to all relevant fishing nations should be equal to or less than the agreed TAC, and the TAC be in line with the harvest control rule.</p> <p>The harvest strategy and fishery decision-making processes will not meet future objectives unless all countries exploiting the shared NEA mackerel stock work together in the implementation of the harvest control rule, and that this be achieved in a timely manner. Total annual removals of NE Atlantic mackerel are in excess of scientific advice and are not subject to effective management as would be demonstrated through the setting of annual TAC's and quotas that are agreed amongst all parties exploiting the stock. The fishery catches large volumes of mackerel during fishing activities that are directed at Norwegian Icelandic spring spawning herring.</p> <p>The stock status is currently above the precautionary level, but if current fishing patterns are continued it is likely to fall below Bpa in the short-term. Only a short window of opportunity exists for an agreement to be reached before the stock is likely to decline.</p>

Performance Indicator	2.1.2 There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species
	Without on-going strong recruitment, it is likely that the stock will be at significant risk of falling below the precautionary level.
Condition	<p>The condition requires that Samherji continue to participate in efforts to reach agreement with all parties that exploit the stock. This should be done by lobbying the Icelandic authorities. Within the life of the certificate agreed, effective and binding arrangements whereby all parties agree to a TAC for mackerel and a mechanism/protocol for setting quotas need to be restored. Evidence of the management measures being in place will require that total catches by all parties are returned to a level where they are within the TAC and scientific advice as a result of agreed harvest arrangements between all parties (Iceland, Faroe Islands, EU, Russia, and Norway).</p> <p>The condition should be closed out within the life time of the certificate. However a further reduction in score for 2.1.2 (presently scored at 60 for mackerel element of 2.2.1) for NE Atlantic mackerel is possible in the event that the mackerel stock is shown to have fallen outside of biologically based limits, where the present fishery continues to feature significant catches of mackerel as a retained species.</p> <p>The condition can only be closed out when the sum of the catch allocations to all relevant fishing nations being equal to or less than the agreed TAC, and the TAC being in line with the harvest control rule.</p>
Milestones	<p>Yr 1 - 75</p> <p>Yr 2 - 75</p> <p>Yr 3 - 75</p> <p>Yr 4 -80</p>
Client action plan	<p>Year 1</p> <p>Engage with the Iceland government to make effort to reach agreement with all parties that exploit the stock.</p> <p>Engage the Ministry of Industry and Innovation and the Marine Research Institute to work towards effective and binding arrangements whereby all parties agree to a TAC for the stock and a mechanism/protocol for setting quotas will be restored.</p> <p>Samherji will participate in effort to reach agreement with all parties that exploit the stock.</p> <p>Year 2</p> <p>Continue engagement with the Iceland government to promote the completion of agreement between all parties that are exploiting the stock.</p> <p>Continue engaging the Ministry of Industry and Innovation and the Marine Research Institute to work towards effective and binding arrangements whereby all parties agree to a TAC for the stock and a mechanism/protocol for setting quotas will be restored.</p> <p>Samherji will continue to participate in effort to reach agreement with all parties that exploit the stock.</p> <p>Year 3</p> <p>Continue engagement with the Iceland government to promote the completion of the agreement between all parties.</p> <p>Continue consultation with the Marine Research Institute (MRI) regarding effective and binding arrangements whereby all parties agree to a TAC.</p> <p>Year 4</p> <p>Continue engagement with MII to complete implementation on an agreement between all parties that are exploiting the stock.</p> <p>Continue engagement with MII to complete implementation on an effective and binding arrangements between all parties that are exploiting the stock.</p>
Consultation on condition	On-going consultation between the fishing industry and the Icelandic fisheries department (Ministry of Innovations and Industry) as well as the Marine Research Institute will be necessary as part of fulfilment of this condition.

## Icelandic summer spawning herring purse seine UoC

There is 1 condition for this fishery.

### Condition 2

Performance Indicator	1.2.2 There are well defined and effective harvest control rules in place
Score	75
Rationale	The harvest rules are not implicitly defined. There is no formal management plan for the stock.
Condition	Establishment of a harvest control rule responsive to the state of the stock. To meet the requirements of the MSC standard it is necessary that Harvest Control Rules for the exploitation of the Icelandic summer spawning herring stock are in place. These need to be evidence based, responsive to changes in stock condition, with evidence that application of the HCR is likely to be effective in achieving the objectives of the harvest strategy.
Milestones	1st Surveillance Audit: A report reviewing different alternatives to manage the Icelandic herring stock should be presented to the ICES working group where the stock is assessed. Score: 75 2nd Surveillance Audit: There should be evidence that the different management alternatives have been discussed by the stakeholders to reach on an agreement on the most suitable one. Score: 75 3rd Surveillance Audit: Samherji will work to lobby the management plan agreed by the stakeholders to allow it to be approved by the national government. Score: 75 4th Surveillance Audit: The new management plan should be in place and should be applied. Score: 80.
Client action plan	Year 1 Engage with the Iceland government to promote the implementation and evaluation of harvest control rule(s) as the basis of herring management. Consult with the Marine Research Institute with the objective of evaluating the existing strategy for use during the certification period and beyond Prepare a report (or commission such a report) on the effectiveness of the harvest strategy in meeting conservation and fishery objectives. There should be particular consideration of these or other harvest control rules for use in subsequent certifications. Adopt the strategy as modified through the written evaluation report Year 2 Continue engagement with the Iceland government to promote the implementation and evaluation of harvest control rule(s) as the basis of herring management. Consult with the Marine Research Institute with the objective of evaluating the existing strategy for use during the certification period and beyond Consult with the Marine Research Institute with the objective of obtaining a commitment to continue to evaluate and modify of the MRI harvest strategy for Years 1 and 2 of the certification period. Year 3 Continue engagement with the Iceland government to promote the completion and adoption of harvest control rule(s) as the basis of herring management. Continue consultation with the Marine Research Institute (MRI) with the objective of evaluating the harvest strategy. Year 4 Well defined and effective management plan and harvest control rules in place.



<p><b>Consultation on Consultation on condition</b></p>	<p>Consultation with both the Icelandic fisheries department (Ministry of Innovations and Industry) as well as the Marine research Institute will be necessary as part of fulfillment of this condition. It is noted that the MRI have expressed their intention through ICES to work towards the development and adoption of a harvest control rule for the stock that will be tested according to strictest international standards for precaution and sustainability and preparations in this regard are underway. See Letter copied at 1.2.</p>
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Samherji hf.  
Rut Hermannsdóttir  
Glerárgötu 30  
600 Akureyri

HAFRANNSÓKNASTOFNUN  
Marine Research Institute

Reykjavík, 29.11.2013  
Tilv. 21.9.1/SIL  
ÓSÁ/sj

**Regarding the harvest of Icelandic Summer Spawning Herring**

The Icelandic Summer Spawning Herring has been harvested by precaution from the start of its recovery in the 1970s and to date with the application of strategy of optimal fishing mortality that secured rebuilding and strong stock. This has been practiced in support of the ICES advisory system.

It is the intention of the Marine Research Institute in cooperation with ICES to work towards the development and adoption of a harvest control rule for this stock that will be tested according to strictest international standards for precaution and sustainability. Preparations to this effect are under way.

On behalf of The Marine Research Institute

  
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## Appendix 2. Peer Reviewer Reports

### Peer Reviewer 1

#### Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes	Certification Body Response
<p><u>Justification:</u></p> <p>Although not perfect the authors have reviewed most of the relevant information regarding the stocks. There are a few gaps mostly regarding the Icelandic stock, but they are probably not very important I admit. I would argue for a higher score in two cases (1.1.2 and 1.2.1) but this would not change the overall score much and in both cases the score was above 80. Importantly the results are similar as by ICES and the Marine Research Institute in Iceland.</p>		<p><i>FCI Response: The team note these PR comments, however scores were arrived at after full discussion amongst the assessment team and it would not be appropriate to change these (1.1.2 and 1.2.1) given all the evidence that has been evaluated. The assessment team has reviewed all the information provided during the assessment. It is accepted that there may be additional information available – the assessment cannot review every single piece of available information, however the key documents, publications and data have been reviewed and considered along with stakeholder input and it is considered highly unlikely that information which would have a material impact on the overall outcome has not been considered during the assessment.</i></p>

<i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i>	No	Certification Body Response
<p><u>Justification:</u></p> <p>Issues regarding citations have to be fixed</p>		<p><i>FCI Response: the comment is noted and discrepancies in relation to a limited number of citations referred to have been rectified.</i></p>

If included:

<i>Do you think the client action plan is sufficient to close the conditions raised?</i>	Yes/No	Certification Body Response
<p><u>Justification:</u></p>		<p><i>FCI Response: no PR comment received.</i></p>

## General Comments on the Assessment Report (optional)

Overall the results of this report are mostly correct in my view, the herring stocks have been managed well for the last decades after mismanagement in the 1960's and 70's. It is therefore of little doubt that if any stocks are going to have a certificate it is these herring stocks. This has been verified by ICES and the Marine Research Institute in Iceland as well.

My review is in three pieces:

- 1) There are comments as notes in the attached draft of the paper (Peer Review Draft Report - Final - IceHer .pdf). These are mostly, but not exclusively, on references or lack of them.
- 2) Below are general comments that do not really belong in any specific group.
- 3) Further below are the tables where I have filled in what I feel appropriate.

The comments are mostly on principles 1 and 2. I read principles 3 throughout but they are written by an author that obviously has a better inside knowledge of the Icelandic fisheries management system than I do. However, I do have better inside knowledge than the authors of principles 1 and 2, so many of my comments reflect that. This is not a critique on the authors in any way, it is not their fault that they are not born Iceland. The view of the outsider does also often reveal things that the insider is blind to. So on the whole it is preferable that a report like that is written by both.

My comments are not many on the scoring as such but rather on the report. Before I go into that I acknowledge that this is not a scientific article for a peer reviewed journal but a synthesis report for limited audience. So given limited time available for most fisheries scientist the content should be emphasized rather than the looks. In this regard I choose not to be strict on things such as the use of graphs and text from other sources. I only emphasize that the sources have to be cited.

The text could also sometimes be enhanced so the flow would be better, also some of the text is used almost exactly the same at different places in the report. But, perhaps this is ok here if similar questions are to be answered for two similar stocks.

*FCI Response: the report follows a template, which is in compliance with MSC reporting requirements. The template is somewhat repetitive in its requirement for the same information to be presented in several sections within the report. The authors do not have control over this.*

A considerable part of the text is cut and paste from [www.fisheries.is](http://www.fisheries.is). It is good that this web site is used for this purpose, but citations to this site are lacking. This might also be the case with text from ICES. I did not have much time to compare that in details (the new ICES web site is a nightmare) but found for example that plenty of text from the NWWG reports had been used directly without reference. The authors should therefore remember to cite sources and importantly if one uses text directly from for example [www.fisheries.is](http://www.fisheries.is) or ICES one should use quotation marks.

*FCI Response: comment noted. Additional references to cited material have been included under Principles 1 and 2. Material sourced from the aforementioned website and NWWG is explicitly acknowledged in the report as having been sourced from or taken from the sources referred to. No material has been used without this being clearly acknowledged. Quotations are inserted where appropriate.*

Note also that it is doubtful if the web site should be cited for the graphs and maps. They are either based on information from Statistics Iceland or from reports from the Marine Research Institute in Iceland as is cited on the web site.

*FCI Response: Websites are cited as the source of figures and graphs that are reproduced, where these are based on data from other organizations this has been acknowledged.*

I did stop a few time and think about in what context the word bycatch is used in the report but acknowledge that there is no universal definition on how the word is used. Perhaps MSC does have its own definition that is used in this report?

*FCI Response: Bycatch in the context of MSC refers to all species that are not retained species (2.1) and which are not considered ETP (2.3). It may include fish, invertebrates, birds, marine mammals etc.*

There are very few references to the annual report by the Marine Resource Institute in Iceland. Importantly they assess the Icelandic summer spawning stock annually in this report. Originally the report was only in Icelandic, which might be a problem for the non-Icelandic reviewers, but it is now

also available in English. There is also an annual report from the institute, in Icelandic only, on the status of the ecosystem. See the web site [www.hafro.is](http://www.hafro.is).

*FCI Response: material is used and referenced as and when supporting information is required to underpin an assessment finding. The information available in the MRI annual stock status report in relation to the ISSH is referred to in a number of instances, but the main reference has been ICES NWWG reports (much of the same material is presented by the MRI through ICES NWWG).*

Food for thought: I find it somewhat disturbing that one of the conditions encourages Samherji to LOBBY the Icelandic authorities on the mackerel. How do you measure that? Is it consistent with other reviews? I did not find it in the report from Norges Sildesalgslag that they should lobby the Norwegian authorities. However, that report was from 2009 when the northward migration of the mackerel had just recently started. But I do not disagree with the rating (75).

*FCI Response: the assessment team notes this comment. The objective of requiring the client to lobby the government is to encourage the client to be proactive in resolving the present impasse that has led to the breakdown in international agreements. The aim is to demonstrate that the organization is committed to ensuring that the situation is resolved and that overall catches of mackerel are restored to be within the advice. The aim of lobbying is not to ensure that catches of mackerel can continue outside of international agreement indefinitely. The same requirement has been made of MSC certified mackerel fisheries prior to all of them being suspended and is an ongoing requirement even while in suspension.*

I did compare this to the assessment for the Norwegian Spring spawning stock for Norges Sildesalgslag and found it similar, as it should be. I just wonder how many times the reviews on this stock have to be reviewed. This is not a comment on this particular report.

*FCI Response: the assessment team note the comment however they have no role in setting policy for multiple assessments of the same stock/s.*

I do include both the Icelandic summer spawning (purse seine and pelagic trawl) and Norwegian Icelandic spring spawning herring in the tables below but where applicable separate the stocks with the abbreviations below.

ISS = Icelandic summer spawning (all gear)

NISS = Norwegian Icelandic spring spawning

*FCI Response: the full name for each stock has been used in all cases to avoid conflict and/or confusion. The team accepts that this may make for less easy reading but the over-riding aim has been to produce a report that cannot lead to confusion or mis-interpretation (e.g. ISS v. NISS).*

### Performance Indicator Review

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.1.1	Yes (NISS) No (ISS)	Yes	No	There is a annual report by the Marine Research institute in Iceland on the main fishing stocks. This is especially important for the ISS stocks It is now in English as well as Icelandic. However, it mostly agrees with the ICES reports so this will probably not change the score.	<i>FCI Response:</i> The annual report by the Marine Research institute in Iceland has been reered to by the assessment team. However, ICES reports has been used as main reference, because most of the information in that annual report is also in the ICES reports.
1.1.2	Yes	No (both)	No, it is already there	There are always uncertainties in fisheries management and MSY has been proved to be an controversial concept. Therefore it is my opinion that there is to much emphasiz here on reducing the score of NISS because of unceratainty, the relationship with MSY and lack of precise technical basis. It is demanding the impossible. See section 1.2.1. for ISS but in addition ICES 2003 indicates that the low target fishing mortality used renders	<i>FCI Response:</i> FCI response: The scoring is strictly based on the verification of each of the scoring issues listed in each performance indicator. MSC guidance requires that each Principle Indicator Scoring Guidepost has to be fully met (CR 27.10.5).  In the justification text the assessment team describes why do they think the SG100, both for The scoring is strictly based on the verification of each of the scoring issues listed in each performance indicator. MSC guidance requires that each Principle Indicator Scoring Guidepost has to be fully met (CR 27.10.5).  In the justification text the assessment team describes

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				biomass reference points irrelevant. I would score both more than 80	why do they think the SG100, both for scoring issues b and c, is not met. Therefore, the scoring cannot be higher in their opinion.
1.2.1	Yes	Yes (NISS) No (ISS)	No, it is already there	The ISS stock has show remarkable stability and usually growth for a long period since the F0,1 rule has been used (excluding the fishery unrelated infection and low oxygen mortalities). I would like to suggest that this long time series of success would be enough to make this rule totally acceptable, irrelevant of the fact that it has not been formally reviewed. Perhaps this stock merits a higher score than 80 here based on historical success.	<i>FCI Response:</i> As stated for PI 1.1.2, the scoring is strictly based on the verification of each of the scoring issues listed in a performance indicator.  In the case of the Icelandic Summer Spawning herring, the main problem of the harvest strategy is that it has been applied in an effective manner. However, there is not a formal rule defined including a decrease in the F when limit reference point is approached (scoring issue a). Moreover, the rule has not been fully evaluated (scoring issue b), because the rule tested included a TAC ceiling that is not enforced and could be systematically exceeded. Finally, since the implementation of the rule it has not been revised (scoring issue d).
1.2.2	Yes	Yes			<i>FCI Response:</i> no further response required.



Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.2.3	No (both)	NA	No, it is already there	There is information available on the feeding of ISS herring, but it is in Icelandic and rather old. In fact regular zooplankton sampling in Iceland was initiated in 1961 because it is food for herring. Data is also available on what is eating herring as the food of most large marine species in Icelandic waters has been studied. I would therefore argue that there is comprehensive range of information available although it is not currently used. I also wonder if the NSSI should score 100. There is an entire book on the Norwegian Sea ecosystem (Skjoldal et al 2004) with good information on the trohic interactions there.	<i>FCI Response: For Atlanto-Scandian spring spawning herring, the scoring has not been changed, because it is in accordance with the other fisheries assessed for this stock.</i>  <i>However, for the Icelandic Summer spawning herring, the scoring has been revised taking into account the reference of the peer reviewer about old literature in Icelandic, which has not been revised due to the language constraints.</i>
1.2.4	Yes	Yes			<i>FCI Response: no further response required.</i>
2.1.1	Yes	yes			<i>FCI Response: no further response required.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.1.2	yes	yes			<i>FCI Response: no further response required.</i>
2.1.3	Yes	Mostly	No, it is already there	100% accuracy is (almost) never achievable in science and although it is not possible to sort the catch at sea (when it is registered in logbooks) it is possible that it might be done after the catch has been landed (when it is officially weighted) and is processed. I am not 100% certain how the landed catch composition is registered, but it might be possible that the catch is almost 100% sorted by species after landing. I would check the Directorate of fisheries for this.	<i>FCI Response: the assessment team discussed this in much detail with the Directorate and other stakeholders (fishermen, processors) during the site visit. The team also reviewed reporting procedures onboard a vessel and a processing line at a shore based processor. It is not possible to sort bulk catches of herring into different stocks – from a practical perspective there is simply too much fish by volume and fish from either stock do not appear to be visually or morphometrically significantly different to the extent that they can be mechanically sorted. Therefore the system that has been developed and which is implemented with apparent success is for the vessel to sub-sample catches from every haul and estimate the overall catch of each stock for each haul event by calculating a raising auxiliary from the catch/haul subsample data (that can then be applied to the bulk catch to estimate catch of each stock).</i>
2.2.1	Yes	Yes			<i>FCI Response: no further response required.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.2.2	Yes	Yes			<i>FCI Response: no further response required.</i>
2.2.3	Yes	Yes			<i>FCI Response: no further response required.</i>
2.3.1	Yes	Yes			<i>FCI Response: no further response required.</i>
2.3.2	Yes	Yes			<i>FCI Response: no further response required.</i>
2.3.3	Yes	Yes			<i>FCI Response: no further response required.</i>
2.4.1	Yes	Yes			<i>FCI Response: no further response required.</i>
2.4.2	Yes	Yes			<i>FCI Response: no further response required.</i>
2.4.3	Yes	Yes			<i>FCI Response: no further response required.</i>
2.5.1	Yes	Yes			<i>FCI Response: no further response required.</i>
2.5.2	Yes	Yes			<i>FCI Response: no further response required.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.5.3	No (ISS)	Yes	NA	There are several reports on the Icelandic ecosystem and multispecies interactions available that are not cited here. The problem is probably that they are mostly in Icelandic. Most of them are available here <a href="http://www.hafro.is/Bokasafn/Timarit/fjolr.htm">http://www.hafro.is/Bokasafn/Timarit/fjolr.htm</a>	<i>FCI Response:</i> the assessment team understands that there may be additional information available, there almost always is. Scoring has been completed having been provided with the adequate levels of information. The material referred to on the MRI website is extensive and covers many different areas in relation to Icelandic stock assessment, marine environmental and fisheries research. However it is considered that the information used to score the fishery has resulted in a robust finding and it not considered likely that additional information would significantly impact the scores or lead to a change in outcome for the assessment. Most of the reports are in Icelandic and translation of the findings of these has not been possible during the assessment. Despite this, discussions were held with the MRI during the assessment and no significant additional issues or areas of concern became apparent to the assessment team. Significant issues in relation to the Icelandic marine ecosystem and fisheries impacts have been outlined in a broad range of ICES documents referred to in the assessment.
3.1.1	Yes	Yes			<i>FCI Response:</i> no further response required.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
3.1.2	Yes	Yes			<i>FCI Response: no further response required.</i>
3.1.3	Yes	Yes			<i>FCI Response: no further response required.</i>
3.1.4	Yes	Yes			<i>FCI Response: no further response required.</i>
3.2.1	Yes	Yes			<i>FCI Response: no further response required.</i>
3.2.2	Yes	Yes			<i>FCI Response: no further response required.</i>
3.2.3	Yes	Yes			<i>FCI Response: no further response required.</i>
3.2.4	Yes	Yes			<i>FCI Response: no further response required.</i>
3.2.5	Yes	Yes			<i>FCI Response: no further response required.</i>

## Peer Reviewer 2

### Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes/No	Certification Body Response
<p><u>Justification:</u></p> <p>In many places the evidence in support of the assessment and final recommendation is either weak or poorly presented – or both. Nevertheless, the sum of the presentation of information in the report and scoring assessment is adequate to agree with the final conclusions and recommendations apart from caveats attached to the conditions (see below).</p>		<p><i>FCI Response: Justification text is provided by the Peer Reviewer however the required Yes/No response to the question set to the Peer Reviewer has not been provided.</i></p> <p><i>It is not possible to address specific instances in the report that this comment relates to in more detail as no specific sections or text are referred to. It is noted however that the sum of the presentation of information in the report and scoring assessment is adequate to agree with the final conclusions and recommendations. The objective of the report is to support the assessment determination and provide justification for scores. It seems that this has been achieved.</i></p>

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	Yes/No	Certification Body Response
<p><u>Justification:</u></p> <p>The content of Conditions 1 and 3 are fair and appropriate with respect to the problem that they seek to address. The question is, however, has there been a failure in the strategy (P1) or in the governance (P3) of the fishery. Personally, I think that the evidence is positive with respect to the strategy and negative with respect to governance. Consequently, Conditions 1 and 3 (unaltered) should be attached to P3, not P1 – but this must be harmonised with other fisheries on this stock.</p> <p>Conditions 2 and 4 have a significant omission in that no harvest control rule or management plan should be signed off until it has been endorsed by ICES ACOM as being consistent with the precautionary and, or MSY approach to fishery management.</p>		<p><i>FCI Response: Justification text is provided by the Peer Reviewer however the required Yes/No response to the question set to the Peer Reviewer has not been provided.</i></p> <p><i>The personal view of the Peer Reviewer with respect to Conditions 1 and 3 is noted. This view contrasts with the findings of the assessment team after detailed review of extensive information and other certification reports as well as harmonisation with other certified fisheries.</i></p> <p><i>Conditions are required to be set for PI's that score above 60 and below 80. MSC methodology does not permit conditions to be randomly assigned across the Principles or to Performance Indicators that have scored 80 or above. No P3 PI's have scored below 80, therefore no Conditions at P3 are appropriate.</i></p> <p><i>The assessment team cannot set conditions that require a CAP to secure investment of time or money by other entities in order to close out the condition, without first consulting with those entities (CR 27.11.3). In the circumstances, the client has consulted with the national marine scientific agency (MRI) who have confirmed that they are prepared to provide input with respect to developing a HCR. This is considered adequate and appropriate in the circumstances.</i></p> <p><i>Commitment in relation to evaluation/signing off on any HCR proposal cannot reasonably be expected or sought from ICES ACOM or the members of any working groups and to expect this would require the CAP to secure commitment from ICES/NWWG. That could lead to a situation where closing out of the HCR condition is ultimately dependent on input from an organisation over which it has absolutely no control. That said in the normal course of events, a proposed HCR for a stock that is evaluated through a working group (e.g. NWWG) would be subject to evaluation and review by the relevant working group. The condition specifically requires that "a report reviewing different alternatives to manage the Icelandic herring stock</i></p>



	<p><i>should be presented to the ICES working group where the stock is assessed".</i></p> <p><i>Accordingly the Condition requires that alternatives for a HCR be presented to ICES (by the MRI) but stops short of requiring ICES to take any action as per CR 27.11.3.</i></p>
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If included:

<b><i>Do you think the client action plan is sufficient to close the conditions raised?</i></b>	<b><i>Yes/No</i></b>	<b><i>Certification Body Response</i></b>
<p><u><i>Justification:</i></u></p> <p>Yes – subject to the caveat to Conditions 2 and 4 expressed above</p>		<p><i>FCI Response: comment noted. Caveat expressed in relation to conditions 2 and 4 has been acknowledged and a full response to the issue concerning ICES evaluation of any proposed HCR has been given above.</i></p>

### **General Comments on the Assessment Report (optional)**

Overall, the body of the text report is adequate but no more. The principal shortcomings are the relatively superficial descriptions of key information under P1 and P2 exacerbated by the lack of reference citations in the text. This somewhat superficial approach to informing the reader is highlighted by such basic errors as not ensuring that the glossary matches the text, and vice versa, and ensuring that all tables and figures are cited in the appropriate part of the text. It seems that the authors believe it is for the reader to decide when and where figures might illuminate a particular section of text and it is for readers to read through all the references and then decide to which part of the text they may be relevant. This approach is unacceptable, references must be attached to each statement to which they give support, and must be rectified before placing this report in the public domain.

*FCI Response: The assessment team note that the report is considered adequate. Apparent superficial treatment of subject areas is just that and is a consequence of downsizing the assessment reports in order to reduce the overall burden of the reviewing the report body for the general reader. Much greater detail is appropriate to and is provided in the justification tables. All scores awarded are fully justified by scoring issue and the report is completed according to the template provided to the assessment team. The authors believe it is for the authors to decide when and where figures might illuminate a particular section of text. Figures and tables are provided where they are necessary or otherwise appropriate. Figures and Tables are all numbered and are referenced clearly in the text. The location of figures and tables in the report is consistent with the section to which they relate, while the template driven document layout dictates exact positioning of figures and tables. The report has been reviewed in the context of the PR comment regarding citations and glossary errors and inconsistencies have been addressed as appropriate.*

Nowhere is there any meaningful description and discussion of recruitment and year-class strength yet this is fundamental to both the history of the fishery and the prognosis. Without this supporting information one might struggle to understand why the Atlanto-Scandian herring fishery is cited as

being a well-managed fishery even though biomass has been declining year on year for quite some time.

*FCI Response: Reference to the role of strong recruitment in the recovery of the Norwegian Icelandic herring stock is clearly made in Section 3.2.2 under History of the Fisheries. Recruitment is considered elsewhere where necessary under the scoring tables and associated justifications. It is not considered that it is necessary to include a more detailed analysis or discussion of recruitment and year class strength in the body of the report. Clear reference is made to the role of recruitment in recovery and maintenance of the stock in 3.2.2 and associated and sufficient supporting scientific literature is referenced or listed under sources of information in the review of this stock to enable those seeking more scientific detail to access such information. While it is appropriate to refer to key stock characteristics in an assessment report, it is not the function of an assessment report body to present detailed information in relation to all subject areas relevant to the stock.*

#### **Glossary:**

This is a cut-and-paste section from another report that has not been properly edited. It includes, for example, ACFA, PO, NGO, WWF, which do not appear in the report but omits many abbreviations and acronyms that do appear in the report, for example: RFMO, TASACS, TISVPA, NFT-ADAPT, SURF, BIOICE ---.

*FCI Response: The report has been revised and glossary omissions and errors have been addressed as appropriate.*

**Page 11:** “ICES Working Group on Widely Distributed Species (WGWIDE)” ; ‘stocks’ not species.

*FCI Response: amended.*

#### **Spellings**

Licence = noun, verb = license, licensing

Practise = noun, verb = practise, practising.

Wolf-fish, not wolfish.

Complementary, not complimentary (p61).

*FCI Response: amended as appropriate. Wolfish is an FAO and EU recognised spelling.*

#### **Nomenclature**

It is interesting that the authors refer consistently to the Norwegian–Icelandic spring-spawning herring whereas it is more widely known as the Atlanto-Scandian spring-spawning herring, not least in the legends to figures that the authors have copied from fisheries.is (see <http://www.fisheries.is/main-species/pelagic-fishes/atlantic-herring/>). The only documentation where these herring are referred to as Norwegian–Icelandic spring-spawning herring is in the annual stock report published by the Marine Research Institute (see <http://www.hafro.is/Astand/2013/english/21-herring-13.pdf>) yet the authors fail to make any reference to this report. Either this suggests that the authors have not established a comprehensive reference base for this work or they have failed to give credit where credit is due.

*FCI Response: The stock is known in Iceland as Norwegian–Icelandic spring-spawning herring (Norsk-islensk vorgotssíld) and is referred to as such by the majority of persons and entities with whom the assessment team had contact during this assessment, including the client and government agencies such as the MRI and the Fisheries Directorate. It is the same stock that is known by others outside of Iceland as Atlanto-Scandian herring. The authors have indeed referenced the MRI annual stock report in their report. The PR summation that “the authors have not established a comprehensive reference base for this work or they have failed to give credit where credit is due” is based on a false/uninformed assumption that the document referred to is the only place where the term “Norwegian Icelandic herring” is used. It is the default nomenclature in Iceland for the stock under assessment. This assessment is for an Icelandic fishery.*

**§3.1 UoC 1** (if not UoC 3) “Other Eligible Fishers”: surely this should make reference here to all the other nations that fish for Norwegian spring-spawning herring (NSSH) in the NE Atlantic.

*FCI Response.* No it should not. The client dictates whom (if anyone) they are prepared to accept as being eligible to join their certificate.

**History of the Fishery:** this may be a reasonably accurate summary of the fishery but the total absence of references is unacceptable. It must be supported by something, if only web-page reference to fisheries.is or hafro.is.

*FCI Response:* The reviewer suggests that the summary is reasonably accurate, which implies that the summary contains inaccuracies, but no explanation or further detail as to what such inaccuracies relate to is provided. The summary has been reviewed and is considered to be accurate.

Reference to [www.fisheries.is](http://www.fisheries.is) and other websites has been provided as suggested.

**Fig 3.2.2 & subsequent figures:** this figure is certainly copied from the fisheries.is web page but they are not all on the Home page; the specific URL (e.g. <http://www.fisheries.is/iceland/> for Fig 3.2.2) for each figure should be given in full with each figure. A consequence of not giving the full reference was that I could not trace Fig 3.2.3; what is its origin?

*FCI Response:* All figures sourced from other publications/media are clearly acknowledged as such and URL's have been given to home pages. URL for home pages were given as most websites are frequently updated and page specific URL tend to not work after an interval due to website changes. However, the full URL has now been added and will link to the source page for figures is known to work as of time of writing. Figure 3.2.3 has been sourced from Statistics Iceland website.

**§ 3.2.2 Species and Fishing Practise:** As above, this section is devoid of references in support of the text; appropriate references must be given to support key points at the relevant point in the text. The simple list given at the end is not acceptable; it is not for the reader to try and match references with facts but for the author to show the exact linkage.

*FCI Response:* the text is intended to be quite general in nature and presents basic level and widely available information in relation to herring stocks, diet and general biology. It is not necessary that this material or statements of fact be individually referenced, as a cursory Internet search would reveal the same information from multiple sources. However, references have been added to the text to make information easy to verify for all potential readers.

**Page 23:** "As previously outlined however, **significant amounts** of Icelandic summer spawning herring may also be taken in the Norwegian Icelandic spring spawning herring fishery."

But

P 24: "--fishing activity that is directed at Norwegian Icelandic spring spawning herring and which **does not capture any** other herring stock."

Which of these two (unsubstantiated) assertions am I expected to believe? Either there are mixed catches, in which case – what are the figures? – or there are no mixed catches – but how do we know this?

*FCI Response:* The text in this section is intended to be generally descriptive and a greater detail is provided later in the report. Both are clear statements of fact and the text is clear as to what is being said in both cases. This section provides a general description of the fishery and simply aims to acknowledge that directed fishing for Icelandic Norwegian herring results in clean catches with little by way of retained catch of Icelandic summer spawning herring. At the same time it remains true to state that significant quantities of Icelandic summer spawning herring are captured and landed along with Icelandic Norwegian herring (such in non-directed fishing). The statements are supported by catch discharge data provided in section 3.5, which deals more specifically with retained catches.

**3.2.3 Administrative Framework:** as in all previous sections, the absence of supporting references is unhelpful to the reader and should be unacceptable.

*FCI Response:* once again this short section is intended to provide a general and summary description of the administrative framework in place for the fisheries. Greater detail and supporting references are given in Section 3.6 Management system background. To add detailed reference

material and sources at this stage will not add to the report in a significant way and will take from the general descriptive nature of the paragraphs and lead to undesirable repetition.

**3.3 Principle One: Norwegian Icelandic spring spawning herring stock – background:** The provision of a reference list at the head of this section is an unacceptable alternative to ensuring that the text is properly referenced in support of information – and as both an aid and courtesy to the reader.

*FCI Response:* The report follows a template, which is in compliance with MSC reporting requirements. The reference list at the head of the section is part of this template and useful as a summary of main references. Additionally to the reference list, quotations in the text have been included when appropriate.

**Table 3.3.1** This table may well appear on the NEAFC web site but it is prepared by ICES–ACOM, acknowledgement should be to the primary, not a secondary source. In contrast, the comparable Table 3.4.1 is credited to ICES.

*FCI Response:* amended as appropriate.

**Table 3.3.2:** As NEAFC, not ICES is the management body where final TACs are agreed and quotas set, this table should, surely, be credited to NEAFC, not ICES.

*FCI Response:* amended as appropriate.

**3.3.3 Harvest control rule:** no reference given in support of this fundamental text.

*FCI Response:* There is not a reference source document for quoting the agreed management plan. Therefore the ICES advice document, where the management plan is cited, has been used as reference.

**Fig 3.3.2** ICES may be the source of this figure but as ICES publishes thousands of documents each year a specific reference is essential.

*FCI Response:* The figure has been prepared by the assessment team based on the harvest control rule defined in the agreed management plan. Reference has been amended.

### 3.3.4 Information and monitoring

“--Faroes has reported on problems with mackerel caught as by-catch in the directed herring fishery--”: what is the problem; is it significant; how is it resolved?

*FCI Response:* This is just general information on the fishery and changes of the distribution of the stock. That issue is more deeply analysed in Principle 2.

### Page 33:

“--increased spatial overlap between herring and mackerel has been evident in the surveys since 2009 (e.g. WGNAPES, 2010)--”. What surveys?

*FCI Response:* reference to the International ecosystem survey in the Nordic Seas (IESNS) survey which confirms such increased spatial overlap has been included.

“--marked spatial overlap between herring and mackerel in major areas of the Nordic Seas, suggest feeding competition between the two species--”. So what; is it of any significance to stock assessment? If so, explain.

*FCI Response:* That information is important for the assessment and the explanation appears in the following section (3.3.5 Stock assessment), where it is stated that the cause of the observed

increasing downward trend in the survey estimate can be due to the fact that the model assumes constant natural mortality, while the natural mortality of older fish can be higher due to a reduction of food availability in the feeding area.

### 3.3.5 Stock assessment

“--and uncertainty in the bootstrap.” What is the layman on the Clapham omnibus expected to make of this? As presented, it is meaningless jargon.

*FCI Response:* The sentence has been rephrased trying to make clearer its meaning

“--and 8 survey abundance indices--”. Please let us know what these surveys are, only one is named here and the extent to which they provide a reliable reference point in the assessment.

*FCI Response:* An additional table has been added. The table lists the indices used in the assessment and some extra details (name of the survey, year range, ages,...). The numbering of the following tables and their quotations has been renamed adequately.

“--estimated biomass from the International Ecosystem Survey in the Nordic Seas--” – reference required.

*FCI Response:* Reference to ICES WGWIDE report included.

“--biomass is confirmed by another survey (IESSNS),--”. How can this be ‘another survey’ when IESSNS is the International Ecosystem (Summer) Survey in the Nordic Seas?

*FCI Response:* Amended. It referred to the International Ecosystem Survey in the Norwegian Sea (IESNS) instead of IESSNS.

### 3.3.6 Ecosystem considerations

“--transporting energy from plankton into fish assemblages in other areas and in deep waters (NEAFC, 2009).” NEAFC is an administrative body and, therefore, has no credibility as a source of scientific facts. Please provide the primary reference.

*FCI Response:* Not alternative reference found, therefore the sentence has been deleted.

## 3.4 Principle One: Icelandic summer spawning herring stock - background

General comments on references given above continue to apply here.

“Principle 1 covers all fishing activity on the entire Norwegian Icelandic spring spawning herring--”. Copy-and-paste errors!

*FCI Response:* amended as appropriate.

**Figures:** the purpose of a figure is to illustrate or help explain a point made in the text. Neither Figs 3.4.1 or 3.4.2 are mentioned in the text, so what is their relevance? I suspect that there are other figures included for decoration rather than to support specific text. (It certainly applies to Fig 3.3.1.)

*FCI Response:* All the figures and tables presented are quoted in the text (except from possible unintended missings). Both figures 3.4.1 and 3.4.2 are quoted in the text. All the figures are included with the aim to support the text, for example Fig 3.3.1 is included in order to show the historical perspective of the stock evolution and its status relative to reference points (which are summarized in table with their respective technical basis).

### 3.4.6 Ecosystem considerations

“An increased predation of herring by cod has been observed in stomach analyses in the Icelandic groundfish survey--”. Reference required and it would be nice if we were told something about the surveys as they are probably a key source of assessment data.

*FCI Response:* Reference introduced.

### 3.5.1 Retained catch

“Catches in the directed fishery for Norwegian Icelandic spring spawning herring can nowadays typically comprise between 2% and 22% Icelandic summer spawning herring.” This is at odds with what we were told on p23.

*FCI Response:* it is consistent with the earlier comments p23 and p24. 2% is not considered a significant catch and can result from directed fishing for Icelandic Norwegian spring spawning herring, while 22% is considered significant and arises from non-directed pelagic fishery operations (p24).

**Page 46:** “Lumpfish are known to be above limit and precautionary reference points--”. This seems to be at odds with the most recent MRI lumpfish assessment, which records biomass indices equal to the lowest on record for females and at an all-time low for males (<http://www.hafro.is/Astand/2013/english/20-lumpfish-13.pdf>). If the authors have alternative data to support their assertions, they should present it.

*FCI Response:* catch of lumpfish is minimal based on catch data for the herring fishery and the fishery has no significant impact on the stock. Text has been amended accordingly.

**Page 48:** “While there is little direct evidence of the level of interaction between the fisheries and marine mammals,--”. Surely there is considerable information derived from the MRI marine-mammal multispecies modelling work ([http://www.hafro.is/undir\\_eng.php?ID=15&REF=2](http://www.hafro.is/undir_eng.php?ID=15&REF=2))?

*FCI Response:* direct evidence refers to observer data or data collected from within the fisheries under certification. No data were provided by the client and the RI did not have observer data available for the fishery. This is what the term ‘direct’ is referring to.

**Figs 3.5.2 & 3.5.3** are not very helpful in Icelandic. Why not translate them into English as was done for the DNV assessment of Icelandic cod and haddock (or copy and cite the DNV report)?

*FCI Response:* a link to the English translation of Figure 3.5.2 in the ISF cod assessment has been provided.

**Page 50:** “Publicly available data (E.g. OSPAR) indicates the locations of known sensitive seabed communities in the Norwegian Sea and adjacent waters.” Give references.

*FCI Response:* a link to the relevant OSPAR web pages has been included.

**Page 51:** Figure numbering is out of synch. If relying on OSPAR, give the specific reference but as these data originate from Icelandic research, why not give the primary sources? e.g.

Steingrímsson, S.A. and S.T. Einarsson. 2004. Kóralsvæði á Íslandsmiðum: Mat á ástandi og tillaga um aðgerðir til verndar þeim (Coral grounds off Iceland: assessment of their status and proposal for mitigation measurements). Hafrannsóknastofnunin Fjölrit 110, 39 p. (In

Icelandic, English summary).

42 Ólafsdóttir, 2009. LÍFRÍKI Á KALDSJÁVARKÓRALSVÆÐUM VIÐ ÍSLAND Hafrannsóknir nr. 145: 31–35. *Species diversity and*

*associated fauna composition of cold-water corals in Icelandic waters. Marine Research in Iceland* 145: 31–35. (In Icelandic with English

abstract, figure and table legends.) <http://www.hafro.is/images/2009/fjolrit-145.pdf>

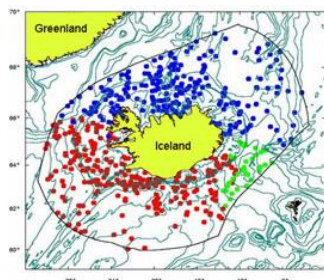
43 WGECCO, 2002. Study Group on Mapping Occurrence of Cold Water Corals. ICES CM 2002/ACE: 05. Ref: E, WGECCO.

<http://www.ices.dk/reports/ace/2002/sgcor02.pdf>

*FCI Response:* figure numbering synched. Steingrímsson, S.A. and S.T. Einarsson (2004) have already been cited in this section in relation to this information. Additional references have been given. More information in relation to Biolce has been included along with some weblinks.



**Page 52:** What is BIOICE; what is its purpose; is it relevant? FYI – the distribution of BIOICE sampling stations.



**FCI Response:** Figure numbering amended. Steingrímsson, S.A. and S.T. Einarsson (2004) have already been cited in this section in relation to this information. Additional references have been given. More information in relation to Biolce has been included along with some weblinks.

### 3.5.5 Ecosystem interactions

The Marine Research Institute maintains extensive, not to say comprehensive, research programmes on, *inter alia*, multispecies interaction, fishery – ecosystem interactions and oceanography. This point is not made here but it is a fundamental part of the scoring process later.

**FCI Response:** appropriate additional text has been added at 3.5.5.

### 3.6 Principle Three: Management System Background

Overall, this section is presented to a higher standard (less superficial) than either P1 or P2 but, as with P1 and P2, this section is poorly referenced. For example, “--information is sent electronically to the DoF at least once every day and published on the Directorate’s website--”. This should be supported by citing the actual URL.

**FCI Comment:** the comment regarding apparent superficial treatment of P1 and P2 is noted. This is explained by the fact that the assessment team complete a template that is designed to inform the reader in general terms about the species and fishery operation while reduce the burden of reviewing the report while still supporting the certification and assessment finding. This is reflected in the apparent light treatment under P1 and P2 in the body of the main report and FCI have been attempting to reduce the length of the report while still meeting with MSC reporting requirements. Greater detail for P1 and P2 is appropriate to support scoring and detailed scoring tables are comprehensively completed for Principles 1 and 2. Greater levels of specific information are provided therein.

**FCI Response: ÁD:** This information was obtained both from the director of DoF and from the client. DoF website in English (<http://en.fiskistofa.is/>) provides information (in Icelandic) on individual vessels. The Icelandic version of the website is <http://fiskistofa.is>.

**Page 57:** “There is no illegal, unreported and unregulated (IUU) fishing in Icelandic waters.”

Who says so, what evidence is there for this; has it been supported by third-party assessment (e.g. Skaret, G. & Pitcher, T. J., 2006. An estimation of compliance of the fisheries of Iceland with Article 7 (Fisheries Management) of the UN Code of Conduct for Responsible Fishing. )

**FCI Response: ÁD:** I picked this phrase up in a MSC assessment report on some fishery in Norway. I thought it meant that there is no pirate (or poaching) fishing in Icelandic waters. I didn’t think it had anything to do with compliance in Icelandic fisheries. Lack of compliance is discussed in the report.



## PRINCIPLE 1 NORWEGIAN ICELANDIC SPRING SPAWNING HERRING

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.1.1	No	Yes – just; the relevant text report is barely adequate.	NA	<p>--biomass estimated for 2012 is 6,100,000 t, well below the point where recruitment would be impaired (Blim).” A silly mistake, the ACOM report shows that biomass is well ABOVE Blim.</p> <p>--Blim is far below 5% (see figure 7.7.4.1 in ICES, 2012).” No, the reader should not be expected to “see ICES, 2012”. If it is relevant to this report, it should be included, and described, as part of the text report.</p> <p>References: What should appear here is an accurate (i.e. not near enough is good enough) reference with the full site-specific URL, not just the generic ICES advice URL.</p> <p>This comment applies throughout the scoring for each fishery.</p>	<p><i>FCI response:</i></p> <p><i>The mistake on the biomass above Blim has been corrected. However, the scoring was correct.</i></p> <p><i>Figure 7.7.4.1 has been included in the report as Figure 3.3.2. And the following figures has been renamed accordingly.</i></p> <p><i>The full site specific URL has been included as requested.</i></p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.1.2	Yes	Yes	NA	Interpretation seems a little harsh; a score higher than 80 would not go amiss, but no higher than 90.	<i>FCI Response: The peer reviewer does not give any argument to reconsider our scores. Therefore, score will be not changed because the score awarded is justified and agreed by the assessment team.</i>
1.1.3	NA	NA	NA	NA	
1.2.1	Yes	Yes	NA	If anything, the strong score here reinforces my view that 1.1.2 is underscored.	<i>FCI Response: Performance Indicator 1.2.1 evaluates the harvest strategy, whereas PI 1.1.2 the appropriateness of the reference points. The harvest strategy gets a score of 95, because is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the target and limit reference points. However, it does not analyse how reference points are estimated or if they are appropriate for the stock.</i>
1.2.2	Yes	Yes	NA	While the text report does not necessarily include all the detail to support the rationale presented here, the argument and score are correct.	<i>FCI Response: the team reviewed the text and have nothing more to add – the reviewer does not refer to what may not be included. The score is correct however it is noted.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.2.3	Yes	No	NA	<p>Both Iceland and Norway have very long track records of collecting comprehensive sets of environmental 1<sup>o</sup> and 2<sup>o</sup> production data that underpin their respective multispecies and ecosystem modelling programmes. To score 'No' under 100 is incorrect. At this stage we are not asked about 'understanding, only if such data are available, which they are.</p> <p>To score a 'Yes' under 100 after scoring a 'No' at (a) is illogical as one is a corollary of the other. Both should be 'Yes' even though our "understanding on the trophic interactions (i.e. ecosystem dynamics)" is stronger in the principles than in the detail.</p> <p>The information on removals is certainly adequate but if there is still slipping and discarding it is not 'good'. Replace this 'Yes' with a 'No' and a score of 90 remains.</p>	<i>FCI Response: The assessment team considered all information available at the scoring meeting and agreed on the score. It is not the function of the PR to propose alternative scores.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.2.4	No	No	NA	<p>What is the relevance of the <i>Ichthyophonus</i> infection to the Atlanto-Scandinavian herring stock; it is a problem affecting Icelandic summer spawners?</p> <p>The assessment of reviews is all to ****. The stock assessment is not limited to ICES. The basic assessment is undertaken by Norway (as part of the Joint Norway-Russia Fishery Commission) and then by WGWIDE, ACOM, EC (ACFA), NEAFC and coastal states' government (not to mention numerous MSC assessments). Thus, it is subject to a wide range of internal <i>and</i> external review.</p>	<p><i>FCI Response: The Ichthyophonus infection seems to not have affected Icelandic summer spawners. However, in the case of the Atlanto-Scandinavian herring stock the Ichthyophonus infection has caused high mortality, therefore the inclusion of such additional mortality in the assessment is advisable.</i></p> <p><i>It is quite difficult sometimes to differ between internal and external peer review. The assessment is performed annually with the collaboration of experts from all the countries involved in the fishery in the annual ICES Working Group on Widely Distributed Stocks (WGWIDE) meeting. Therefore, the assessment team considered there was not external peer review, because the scientific reviews are carried out within ICES framework.</i></p> <p><i>In the case of the Icelandic summer-spawning herring, the assessment team considered it different, because the assessment is carried out by scientists from Marine Research Institute. Afterwards, the assessment is presented in the ICES North-</i></p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					<i>Western Working Group (NWWG). Please note: The peer reviewer comment highlighted by the **** above has been edited and has not been responded to due to its use of offensive terminology.</i>
<b>Norwegian Icelandic spring spawning herring pelagic trawl Unit of Certification</b>					
2.1.1	No	Yes	NA	(b) $F_{MSY}$ is not the only reference point for Icelandic summer spawning herring; Target F reference point has been set for Icelandic summer.  Surely, as with 1.1.1, the biological reference points for the (main) retained species should appear here.  Proper references that readers can identify are required.	<i>FCI Response: text in the justification has been added to indicate that reference points have been identified. Actual reference points are given.  Direct links to ICES advice has now been included.</i>
2.1.2	Yes	Yes	Condition 1 Undoubtedly, a condition is required relating to the failure	This is a very hard-ball interpretation of the criteria and events. There is a strategy in place for, inter alia, mackerel and we know that the strategy works. There has, however,	<i>FCI Response: the assessment team determined what score the fishery achieved according to the scoring issues in the PI. The score agreed indicated that a condition was appropriate and required in relation to</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
			with respect to the mackerel fishery but is it a failure of strategy or management? Reading the draft Condition 1 reinforces my view that it is not the strategy that has failed but the implementation thereof; i.e. a failure of management. Thus, this condition should related to 3.1.1 and not 2.1.2. If this change is made, it is acceptable.	been a breakdown in the management. Certainly, there must be a condition to cover this issue but it is a moot point whether this is the correct place or whether it should appear under P3.	<i>this PI. Accordingly it was not appropriate to rescore the same issue under P3 and apply a second condition in relation to the same issue.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.1.3	No	No	NA	SI 100(a) This is not my understanding of how Icelandic fisheries are managed. If catches cannot be sorted at sea they are sorted in the processing plant and the quantities by species recorded and reported with accurate figures submitted to the appropriate working groups. This should be a Yes.  Overall score is fine.	<i>FCI Response: the assessment team were informed that catches of herring stocks are estimated through sub-sampling, where a catch may contain both Norwegian-Icelandic and Icelandic summer spawning herring. Because they are bulk catches of species that cannot be separated easily based on external appearance, both the catching vessel and processors are unable to definitively sort catches and catch reporting is based on examination by sub-sampling of the unsorted catch. It is not the way other Icelandic fisheries operate but is the only way in which herring can be reported by stock when there are large mixed catches.</i>
2.2.1	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
2.2.2	Yes	Yes	NA	Agreed but why are the details on bycatch and quota management not included in the main text report? They seem to be added here as an afterthought.	<i>FCI Response: the report main text template has been modified to closely meet with MSC requirements and to reduce burden on readers in response to previous and comments from Peer Reviewers of other reports who consistently complain that the reports are too long and detailed. It is also desirable to reduce duplication of</i>



Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					<i>information as much as is possible. Hence the details upon which the certification decision is reliant are for the most part only included in the justification tree and are not duplicated in the main report unless absolutely necessary.</i>
2.2.3	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
2.3.1	Yes	Yes	NA	Agreed but yet again, details are presented here that should have been incorporated in the appropriate sections of the main text report, not added as an afterthought.	<i>FCI Response: FCI Response: the report main text template has been modified to closely meet with MSC requirements and to reduce burden on readers in response to previous and comments from Peer Reviewers of other reports who consistently complain that the reports are too long and detailed. It is also desirable to reduce duplication of information as much as is possible. Hence the details upon which the certification decision is reliant are for the most part only included in the justification tree and are not duplicated in the main report unless absolutely necessary.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.3.2	Yes	No	NA	All though the score is appropriate there are no references even though NAMMCO is mentioned and the Marine Research Insitute has web pages dedicated to marine mammals.	<i>FCI Response: References have now been included in the text and at the end of the PI. NAMMCO is referenced.</i>
2.3.3	Yes	No	NA	In this case, a NAMMCO web page is referenced but there is still no mention or reference (neither here nor in the body of the report) to the monitoring, research and stock assessment undertaken by MRI.	<i>FCI Response: text referring to MRI research has now been included in the justification.</i>
2.4.1	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
2.4.2	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
2.4.3	Yes	No	NA	BIOICE is mentioned but there is still no specific reference to its programmes and nowhere has there been any reference to its extensive findings and contribution to our knowledge of marine habitats in the NE Atlantic.	<i>FCI Response: BIOICE is mentioned in the context that research has been carried out in Iceland into marine habitats and seabed communities. The function of this is not to describe the detailed findings but merely to mention the type of work has been undertaken. Appropriate detail and links to</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					<i>further information for both BIOICE and the IceAGE project are provided in the report body for general interest as well as in the justification tables. The case that the fisheries do not make physical contact with the seabed and therefore have no significant impact on seabed habitats has been described under 2.4.1. Weblinks to IceAGE and BIOICE summary project descriptions are provided.</i>
2.5.1	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
2.5.2	Yes	No	NA	It would be appropriate to mention (in the text report) and give due credit (references here and in the text report) to the (published) work undertaken by MRI on multispecies and ecosystem modelling including fish–fish, fish–bird and fish–mammal.	<i>FCI Response: the text report aims to present a straightforward overview hence detailed references are actively avoided. The interested reader can gain additional information and references through the justification tables. Reference to the fact that there is published work available is included in the justification for 2.5.2.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.5.3	Yes	Yes	NA	Although supporting information is given in the references here, it does not alter the fact that this whole topic was not covered in sufficient detail in the text report.	<i>FCI Response: as per previous responses to the same PR comment, the aim has been to significantly reduce the size and consequent reader burden that is associated with these reports. This is in accordance with the comments that are consistently received from Peer Reviewers of previous reports which the team have authored. Peer Review comments pointing to unnecessary repetition, excessive detail, difficulty in finding information and burdensome reading have all been taken onboard and have been applied in preparing this report. It is not possible to revert to earlier reporting templates in response to the present comments therefore.</i>
<b>NORWEGIAN ICELANDIC SPRING SPAWNING HERRING</b>					
3.1.1	No	No	Condition required: see comments on Condition to 2.1.2 above	<p>"There are no controversial exemptions to international agreements." What tosh!</p> <p>Both SI 80(a) and 100(a) should be 'No' for the same reason – recent</p>	<i>FCI Response: the team maintains that there are no controversial exemptions to international agreements. Iceland is not partie to existing agreements on mackerel, which didn't enter Iceland's EEZ until some five years ago but is now believed to have started spawning in this area. Presently the</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				<p>events with the mackerel fishery (relevant under P2) and potentially with the A-S herring fishery have proven that the international framework is ineffective, not least due to Iceland's unilateral actions. This is fundamental to 'cooperation with other parties'</p> <p>SI 100(d) "The management system has a mechanism to <u>formally commit</u> to the legal rights created explicitly or established by custom--". But with respect to mackerel (relevant under P2), Iceland has formally 'uncommitted' to legal rights etc established under the NEAFC convention.</p>	<p><i>mackerel stock is in fine shape (in spite of recent fishing in excess of advice).</i></p> <p><i>The Norwegian Icelandic herring stock has been declining, probably for reasons that are unrelated to overfishing. At the same time existing agreement on the sharing of the TACs is threatened by unilateral declaration by the Faroe Islands that they will tripple there share of the TAC. This fact and the lack of effective means to enforce international agreements is discussed in the report. It is also noted that there have been periods (e.g. before 2007) where the relevant coastal states have not been in agreement on the sharing of the TACs for the A-S herring stock without leading to such excessive fishing that the sustainability of the stock was threatened. On the contrary, the stock was doing very well. Of course that may be different now.</i></p> <p><i>The team do not think it is correct to say, as the reviewer does, that "Iceland has formally 'uncommitted' to legal rights etc established under the NEAFC convention." Nobody denies now that Iceland is a coastal state entitled to a share of the mackerel TAC.</i></p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					<i>There is a disagreement on the size of Iceland's share, something which is not in the NEAFC conventionThe team does not think it benefits the cause of responsible fishing to take side in the blame game that is presently ongoing between the countries involved in the dispute over the mackerel.</i>
3.1.2	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.1.3	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.1.4	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.2.1	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.2.2	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.2.3	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.2.4	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
3.2.5	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>



### Icelandic summer spawning herring pelagic trawl Unit of Certification

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.1.1	Yes	Yes	NA	The summary of facts here support the score although the detail provided in the body of the text report is sketchy.	<i>FCI Response: the report is kept brief as detailed above.</i>
1.1.2	No	No	NA	ICES ACOM is satisfied that all aspects of this stock management plan, including reference levels (including $F_{MSY}$ ) are consistent with the MSY approach, not least with respect to recruitment. Despite this, and without presenting any substantial evidence or argument either here or, more importantly in the text report, the authors believe that "there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues." Do the authors honestly believe that the sum of their expertise in this matter exceeds that of ACOM? What hubris; they don't even bother with references!	<i>FCI Response: The PR does not provide an appropriate reference in support of the assertion. The body of evidence made available to the assessment team at scoring did not support higher scoring. Do the authors honestly believe that the sum of their expertise in this matter exceeds that of ACOM? Nowhere have the team made such a claim in the report. The comment is not necessary and contributes nothing to the report. It is also outside of protocol for PR commentary. The team welcomes constructive review and criticism – that is the purpose of the PR process. The intent of the team was to score the fishery using the information available to them after a reasonable review of literature. The PR could more constructively have referred to the sources of the information that prompted the implication that information had been overlooked.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				A score of not less than 90 is appropriate.	<i>Nevertheless this PI is resored to 90.</i>
1.1.3	NA	NA	NA		
1.2.1	Yes	Yes	NA	<p>If the "Harvest strategy is adequate" it is difficult to see why (a)100 is a 'No'. Nevertheless, the overall score of 80 is probably justified.</p> <p>The references should include something with respect to the effects of the infection on stock abundance and stability.</p>	<p><i>FCI Response: FCI response: The harvest strategy is adequate, but the problem is that it has not been formally defined and lacks for a strategy that reduced the exploitation intensity when limit reference point is approached.</i></p> <p><i>In the main text for principle 1, in the section on harvest strategy, it is said that: "... in 2011, because of uncertainty about the stock size due to the Ichthyophonus infection of the stock during the preceding summer, no recommendation of TAC was given prior to the acoustic survey in October."</i></p>
1.2.2	No	No	Condition 2 "The harvest rules are not implicitly	(b) What are the main uncertainties affecting this stock and how have they been taken into account. Where has this been discussed. 'Yes' is unsupported. A condition is	<i>FCI Response: FCI response: Information on uncertainties can be found in section 3.4.5. Nevertheless, some text on the uncertainties has been added in the justification of this</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
			defined.” Replace ‘implicitly’ with ‘explicitly’. In essence, this condition meets the necessary requirements in all but one respect. By the time it is implemented and fully operational it must also have been assessed and endorse by ACOM as being consistent with at least the precautionary if not the MSY approach.	wholly appropriate here.	<i>scoring issue.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.2.3	Yes	No	NA	<p>Iceland has a very long track record of collecting comprehensive sets of environmental 1° and 2° production data that underpin the multispecies and ecosystem modelling programmes. To score 'No' under 100 is incorrect, not to say libelous. At this stage we are not asked about 'understanding, only if such data are available, which they are.</p> <p>The 'No' scored here shows greater consistency than the 'Yes' scored for the A-S herring (above) but it is moot point whether it is fully justified.</p> <p>The information on removals is certainly adequate but if there is still slipping and discarding it is not 'good'. The score of 90 seems unjustifiably high relative to the A-S herring score of 80.</p>	<i>FCI Response: FCI response: This PI has been rescored.</i>
1.2.4	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
<b>Icelandic summer spawning herring pelagic trawl Unit of Certification</b>					
2.1.1	Yes	Yes	NA	Agreed Reference details inadequate	<i>FCI Response: additional reference details have been provided.</i>
2.1.2	Yes	No	Condition 3 Exactly the same comments apply as given above for Condition 1.	Page 128 2.1.2(c) is supposed to be dealing with A-S herring as retained species in the ISSH fishery but the text is discussing the ISSH as if it is the retained catch. This is confusing everybody; sort it out. (d) What about the A-S herring; it too is declining?  Overall, is this low score really justified. If one looks at the distribution of the fishery and relative density of catches shown in Figure 3.2.9, one wonders to what extent the mackerel problem really is of significance here.	<i>FCI Response: the justification text has been amended to be clear about which stocks are being referred to. Reference to Norwegian-Icelandic spring spawning herring biomass status has been included.  Re the low score justification, the reality is that Icelandic summer spawning herring may be caught in directed fishing for that stock (with very clean homogenous catches), but it is also very likely to be caught in significant volumes while fishing for Norwegian Icelandic spring spawning herring, although this may vary from year to year. However, every eventuality must be captured in the scoring and the worst case scenario i.e. that Icelandic herring fishing features a large retained catch of Norwegian – Icelandic spring spawning herring, forms the basis of this score.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
<b>Icelandic summer spawning herring purse seine Unit of Certification</b>					
2.1.1	Yes	Yes	NA	Agreed Ref details rqd	<i>FCI Response: additional reference details have been provided.</i>
2.1.2	Yes	Yes	NA	Agreed Ref details rqd	<i>FCI Response: additional reference details have been provided.</i>
2.1.3	No	No	NA	SI 100(a) This is not my understanding of how Icelandic fisheries are managed. If catches cannot be sorted at sea they are sorted in the processing plant and the quantities by species recorded and reported with accurate figures submitted to the appropriate working groups. This should be a Yes.  Overall score is fine	<i>FCI Response: the assessment team were informed that catches of herring stocks are estimated through sub-sampling, where a catch may contain both Norwegian-Icelandic and Icelandic summer spawning herring. Because they are bulk catches of species that cannot be separated easily based on external appearance, both the catching vessel and processors are unable to definitively sort catches and catch reporting is based on examination by sub-sampling of the unsorted catch. It is not the way other Icelandic fisheries operate but is the only way in which herring can be reported by stock when there are large mixed catches.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.2.1	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
2.2.2	Yes	Yes	NA	Agreed but with same comment as for trawl fishery.	<i>FCI Response: the report main text template has been modified to closely meet with MSC requirements and to reduce burden on readers in response to previous and comments from Peer Reviewers of other reports who consistently complain that the reports are too long and detailed. It is also desirable to reduce duplication of information as much as is possible. Hence the details upon which the certification decision is reliant are for the most part only included in the justification tree and are not duplicated in the main report unless absolutely necessary.</i>
2.2.3	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>



Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
<b>ICELANDIC SUMMER SPAWNING HERRING</b>					
3.1.1	No	No	NA	According to the ICES ACOM report, Iceland is the only nation exploiting this stock, which suggests that all the references to international agreements and non-Icelandic bodies are misplaced and irrelevant. It is probable that this score should be more like 95 if not 100.	<i>FCI Response: It is noted in the report (comment to 3.1.1) that "The Icelandic Summer Spawning herring completes its life-cycle within the limits of Iceland's EEZ. All fishing out of this stock is controlled and managed by Icelandic authorities. All fishing of herring is managed through catch quotas that are allocated to Icelandic fishing companies."</i>  <i>Some international agreements and international bodies do not only guide on multilateral management of fish stocks but also on management of stocks that are wholly within the EEZ of one country.</i>
3.1.2	Yes	No	NA	"-- they do not get much encouragement from the authorities. In some cases this claim is justified." This may be true but the issue was not raised or discussed in the main text report. You can't just drop an anecdotal assertion in at this stage and use it as the basis for abating the score.	<i>FCI Response: The main body of the assessment report aims to provide a summary of the main characteristics of the fishery. The assessment team do not think it is relevant to present a detailed description of the debate. There are groups of fishermen (e.g. the Federation of Owners of Small Fishing Vessels (Landssamband smábátaeigenda) and, unfortunately, others as well) that believe that</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					<i>MRI's advice is much too conservative. Some of them maintain that there shouldn't be any management of fishing, at least not for their fishing. These people frequently claim that "nobody listens to us". Their views are well known within Iceland and they have definitely opportunities to express them. Fortunately (in the view of the team) they do not get much encouragement from the authorities. As stated already the reporting template does not require the team to go into greater detail on this but the requirement for this PI specifies "encouragement" and the justification provided clearly serves to address this requirement.</i>
3.1.3	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.1.4	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.2.1	Yes	Yes	NA	A score of 80 seems a bit hard but otherwise agreed	<i>FCI Response: the score was agreed by the team after consideration of all the available evidence provided to the team. The justification supports the final agreed score.</i>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
3.2.2	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.2.3	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.2.4	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>
3.2.5	Yes	Yes	NA	Agreed	<i>FCI Response: no further response required.</i>

Any Other Comments

Comments	Certification Body Response
<p>Condition 4</p> <p>The report provided did not include score sheets for the purse seine fishery P1. Nevertheless, I am prepared to accept that the status of this UoC with respect to P1 would be no worse than for the trawl fishery. Certainly, the lack of a formally agreed and implanted harvest control rule and management plan, as expressed in Condition 4, is an important omission from the management of the fishery and must be filled. The comments with respect to Condition 4 are the same as expressed above for Condition 2.</p>	<p><i>FCI Response: the P1 score sheets for the Icelandic summer spawning herring carries the following heading: Evaluation Table for PI 1.1.1 for pelagic trawl and purse seine Units of Certification".</i></p> <p><i>Comments in respect of the HCR and management plan have been noted and are already captured in the Condition that is applied to the certifications for relevant UoC's.</i></p>

## Appendix 3. Stakeholder submissions

**a.** Written submissions from stakeholders received during consultation opportunities on the announcement of full assessment, proposed assessment team membership, proposed peer reviewers, proposal on the use or modification of the default assessment tree and use of the RBF.

None.

**b.** All written and a detailed summary of verbal submissions received during site visits pertaining to issues of concern material to the outcome of the assessment<sup>3</sup> regarding the specific assessment.

None.

**c.** Explicit responses from the assessment team to submissions described in **a.** and **b.** above.

None.