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Global Standard for Responsible Supply of Marine Ingredients

Fishery Assessment Methodology and Template Report V2.0

IFFO RS Fishery Assessment Peer Review

Fishery Under Assessment	**Gulf of Bothnia Herring *Clupea harengus* Subdivision 30 (Bothnian Sea); Subdivision 31 (Bothnian Bay)**
Date	**September 2019**
Assessor	**Jim Daly**

Application details and summary of the assessment outcome				
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Certification Body Details				
Name of Certification Body:		**SAI GLOBAL LTD**		
Assessor Name	**Peer Reviewer**	**Assessment Days**	**Initial/Surveillance/ Re-approval**	**Whole fish/ By-product**
Jim Daly	Vito Romito	3	Surveillance 2	Whole fish
Assessment Period	2018			

Scope Details	
Management Authority (Country/State)	EU; Denmark, Sweden, Finland
Main Species	Atlantic Herring *Clupea harengus*
Fishery Location	Gulf of Bothnia (Subdivisions 30, 31)
Gear Type	Pelagic trawl
Outcome of Assessment	
Overall Outcome	PASS
Clauses Failed	NONE
Peer Review Evaluation	APPROVE
Recommendation	PASS

Assessment Determination

Atlantic herring (*Clupea harengus*) is widely distributed in the Northwest and Northeast Atlantic. Within the Northeast Atlantic, they are distributed from the northern Bay of Biscay to Greenland, and east into the Barents Sea. Many local populations with differing growth rates share similar habitats and may mix during certain times of the year.

There has been little indication that the Bothnian herring stock mixes with other stocks in the Baltic. In a recent ICES benchmark assessment (2017) the Bay of Bothnia (Subdivision 31) and Bothnian Sea (Subdivision 30) stocks were combined into one unit the Gulf of Bothnia herring stock (Figure 1). The scientific evaluation by ICES showed that those two stocks are similar. ICES re-estimated MSY fishing mortality ranges as well as relevant conservation reference points. These new data were included in the most recent amendment (2018) of the EU's Baltic Sea Multi-Annual Plan (MAP). The stock was last assessed in April 2019 by ICES Baltic Fisheries Assessment Working Group (WGBFAS).

The Gulf of Bothnia fishery is managed within the CFP framework and as such is subject to research, control and enforcement typical of European fisheries. The EU landing obligation in 2015 began to cover both small and large pelagic species in the Baltic. Fleets from Finland and Sweden are currently active in this fishery.

Most herring in the Gulf of Bothnia are taken in a directed fishery. Sprat is the main bycatch species, but only occurs during autumn and early winter; discard rates are considered minimal. As discarding is considered negligible, the EU landing obligation should not influence the future perception of this stock.

Spawning-stock biomass (SSB) of Gulf of Bothnia herring has decreased in the last five years and has been above MSY Btrigger since 1987 (ICES 2018). Fishing mortality (F) was below FMSY until 2012 but above since 2013. Recruitment shows an overall increasing trend over time.

Sprat in the Baltic (Subdivisions 22-32) undergoes annual stock assessments by ICES. The spawning-stock biomass (SSB) is currently well above MSY Btrigger (ICES 2018). The recent increase in SSB is attributable to the strong year class of 2014. The 2015- and 2016-year classes are estimated to be slightly below average, while the 2017-year class is estimated to be above average. Fishing mortality (F) has declined in recent years to just above FMSY. The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point or proxy.

Information on the impacts of herring removals on the ecosystem appears to be limited, although the MAP notes that there are some indications that biological interactions between cod, herring and sprat in the Baltic may indicate that higher fishing pressures than currently advised may be sustainable (although the EU also note that STECF have advised more research to be conducted).

Current impacts of the Finnish fishery on Protected, Endangered and Threatened (PET) species are not known. At present, the effects of the fishery in the Bothnian Sea ecosystem are not understood. The Baltic ringed seal subspecies *Phoca hispida botnica* is the only mammal considered to be endangered in the Bothnian Sea. The Baltic population is thought to be increasing at 5% a year, Bothnian Bay is its main habitat, with a population estimated at 5,020 individuals.

There are reports of seal bycatch in set nets in the Baltic but no estimates for this fishery, only 0.2% of catches are taken with gillnets. Some ringed-seal hunting is permitted in both Sweden and Finland. Mitigation

experiments of seal-induced damages on fishing gears aim to diminish the interaction of grey seals with trapped fishes. Results of these studies shall be included in future assessments, as they become available.

Member States are obliged to conform to EU Regulation 1004/2017 by submitting data on observer programmes where fisheries are known to interact with ETP species. Information has been provided by ICES to the EU on the effects of fishing gears on bird populations in the Baltic. The obligation for all stakeholders to record fishing gear interactions with ETP species is monitored by EFCA and National Fisheries Control authorities during inspections at sea and in port. Interactions with ETP species are recorded.

Covering 4.4% of the Gulf of Bothnia, four Baltic Sea Protected Areas (BSPAs) are defined within the Bothnian Sea, three along Finland's coastline and one on Sweden's. The aim of BSPAs is to contribute to the protection of the entire functional ecosystem and not just isolated species or habitats. Some overlap occurs with areas designated as EU Natura 2000 sites, which have more complete legal protection but a narrower scope in terms of habitats and species protected. Pelagic trawling is generally considered to have virtually no impact on the benthic environment, although some interactions have been reported.

ICES now provide a great deal of integrated advice at ecosystem level, in support of the shift towards a more holistic approach to managing Europe's seas. Little is currently known at the regional scale about the sensitivity of different Baltic Sea organisms and communities to fishery-induced impacts. A qualitative approach to address this was elaborated by ICES in 2016. A mechanistic, quantitative assessment procedure based on biological principles is now under development and should be reported on in future assessments

The ICES Working Group on Bycatch of Protected Species (WGBYC) met in Iceland (May 2018). Highlights from the 2018 meeting included a review of ongoing bycatch mitigation research projects and a review of the compiled inventory of various sampling programmes providing information on bycatch of protected species.

An MSC certification process for Baltic Sea herring and sprat fishery including the Gulf of Bothnia (pelagic trawl and purse seine) has begun. In July 2019 the CAB announced an additional consultation period, providing stakeholders the opportunity to submit any new information that they may have in relation to this fishery.

Bothnian herring has not yet been assessed for the IUCN Red List and is not on the current list of CITES endangered species (websites accessed 05.09.19).

Bothnian herring is approved by the assessment team to produce fishmeal and fish oil under the IFFO-RS v 2.0 whole fish standard

Peer Review Comments

The Gulf of Bothnia Herring fishery is managed as part of the EU CFP framework and under a Multi Annual Plan with MSY exploitation objectives. In 2018, ICES assessed that fishing pressure on the stock is above FMSY and Fpa, and below Flim; while spawning stock size is above MSY Btrigger, Bpa, and Blim.

In addition, the effects of the fishery on bycatch and habitats appear to be limited, based on available data. The ecosystem dynamics of this fishery are intrinsically linked with cod and sprat and managers are currently addressing this further. Significant ringed seal predation on this stock is also noted.

The Peer Reviewer agrees that Gulf of Bothnia herring should be approved by the assessment team to produce fishmeal and fish oil under the IFFO-RS v 2.0 whole fish standard.
Notes for On-site Auditor
Verify catch composition of raw materials during the audit.

Note: This table should be completed for whole fish assessments only.

General Clause	Outcome (Pass/Fail)
M1 - Management Framework	PASS
M2 - Surveillance, Control and Enforcement	PASS
F1 - Impacts on ETP Species	PASS
F2 - Impacts on Habitats	PASS
F3 - Ecosystem Impacts	PASS

Species-Specific Results (Source ICES WGBFAS 2016 **R31**)

Category	Species	% landings	Outcome (Pass/Fail)	
Category A	Herring (*Clupea harengus*)	95	A1	PASS
			A2	PASS
			A3	PASS
			A4	PASS
Category B				
Category C	Sprat (*Sprattus sprattus*)	5	PASS	
Category D				

[List all Category A and B species. List approximate total %age of landings which are Category C and D species; these do not need to be individually named here]

HOW TO COMPLETE THIS ASSESSMENT REPORT

This assessment template uses a modular approach to assessing fisheries against the IFFO RS standard.

Whole Fish

The process for completing the template for a **whole fish** assessment is as follows:

1. ALL ASSESSMENTS: Complete the Species Characterisation table, to determine which categories of species are present in the fishery.
2. ALL ASSESSMENTS: Complete clauses M1, M2, M3: Management.
3. IF THERE ARE CATEGORY A SPECIES IN THE FISHERY: Complete clauses A1, A2, A3, A4 for **each** Category A species.
4. IF THERE ARE CATEGORY B SPECIES IN THE FISHERY: Complete the Section B risk assessment for **each** Category B species.
5. IF THERE ARE CATEGORY C SPECIES IN THE FISHERY: Complete clause C1 for **each** Category C species.
6. IF THERE ARE CATEGORY D SPECIES IN THE FISHERY: Complete Section D.
7. ALL ASSESSMENTS: Complete clauses F1, F2, F3: Further Impacts.

A fishery must score a pass in **all applicable clauses** before approval may be recommended. To achieve a pass in a clause, the fishery/species must meet **all** the minimum requirements.

By-products

The process for completing the template for **by-product raw material** is as follows:

1. ALL ASSESSMENTS: Complete the Species Characterisation table with the names of the by-product species and stocks under assessment. The '% landings' column can be left empty; all by-products are considered as Category C and D.

2. IF THERE ARE CATEGORY C BYPRODUCTS UNDER ASSESSMENT: Complete clause C1 for **each** Category C by-product.
3. IF THERE ARE CATEGORY D BYPRODUCTS UNDER ASSESSMENT: Complete Section D.
4. ALL OTHER SECTIONS CAN BE DELETED. Clauses M1 - M3, F1 - F3, and Sections A and B do not need to be completed for a by-product assessment.

By-product approval is awarded on a species-by-species basis. Each by-product species scoring a pass under the appropriate section may be approved against the IFFO RS Standard.

SPECIES CATEGORISATION

The following table should be completed as fully as the available information permits. Any species representing more than 0.1% of the annual catch should be listed, along with an estimate of the proportion of the catch each species represents. The species should then be divided into Type 1 and Type 2 as follows:

- **Type 1 Species** can be considered the 'target' or 'main' species in the fishery. They make up the bulk of annual landings and are subjected to a detailed assessment.
- **Type 2 Species** can be considered the 'bycatch' or 'minor' species in the fishery. They make up a small proportion of the annual landings and are subjected to relatively high-level assessment.

Type 1 Species must represent 95% of the total annual catch. Type 2 Species may represent a maximum of 5% of the annual catch (see Appendix B).

Species which make up less than 0.1% of landings do not need to be listed (NOTE: ETP species are considered separately). The table should be extended if more space is needed. Discarded species should be included when known.

The 'stock' column should be used to differentiate when there are multiple biological or management stocks of one species captured by the fishery. The 'management' column should be used to indicate whether there is an adequate management regime specifically aimed at the individual species/stock. In some cases, it will be immediately clear whether there is a species-specific management regime in place (for example, if there is an annual TAC). In less clear circumstances, the rule of thumb should be that if the species meets the minimum requirements of clauses A1-A4, an adequate species-specific management regime is in place.

NOTE: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in the CITES appendices, it **cannot** be approved for use as an IFFO RS raw material. This applied to whole fish as well as by-products.

TYPE 1 SPECIES (Representing 95% of the catch or more)
Category A: Species-specific management regime in place.
Category B: No species-specific management regime in place.

TYPE 2 SPECIES (Representing 5% OF THE CATCH OR LESS)
Category C: Species-specific management regime in place.
Category D: No species-specific management regime in place.

Common name	Latin name	Stock	% of landings	Management	Category

Herring	*Clupea harengus*	Gulf of Bothnia	95	EU	A
Sprat	*Sprattus*	Baltic Sea, including Gulf of Bothnia	5	EU	C

MANAGEMENT

The two clauses in this section relate to the general management regime applied to the fishery under assessment. A fishery must meet all the minimum requirements in every clause before it can be recommended for approval.

M1	Management Framework – Minimum Requirements		
	M1.1	There is an organisation responsible for managing the fishery	PASS
	M1.2	There is an organisation responsible for collecting data and assessing the fishery	PASS
	M1.3	Fishery management organisations are publically committed to sustainability	PASS
	M1.4	Fishery management organisations are legally empowered to take management actions	PASS
	M1.5	There is a consultation process through which fishery stakeholders are engaged in decision-making	PASS
	M1.6	The decision-making process is transparent, with processes and results publically available	PASS
		Clause outcome:	**PASS**

Evidence

M1.1:

Denmark, Finland and Sweden are Member States of the European Union, and therefore in Community waters implement the Common Fisheries Policy (CFP). In force since 1983, the CFP aims to reconcile resource conservation with the preservation of income and jobs in coastal zones that offer few alternatives in terms of production or employment. It therefore covers not just resources but also markets and structures. Regarding resource management, the CFP regulations comprise:

- A traditional management tool based on TACs and quotas;
- Technical measures relating to gear or catch;
- Effort-related management based on vessel engine power and the number of days at sea.

The CFP also provides for the introduction of measures to rebuild, over a period of several years, stocks threatened in terms of sustainable harvesting, and for recourse to effort-related management rules to supplement TACs and quotas.

The CFP is periodically reviewed and reformed. The last reform came into effect in January 2014 and introduced multi-annual plans which contain goals and tools for fish stock management and the roadmap to achieving objectives in a sustainable and inclusive way.

Baltic Sea Multi-Annual Plan (BSAP 2016):

Regulation (EU) 2016/1139 established a multiannual plan for the stocks of cod, herring and sprat in the Baltic Sea and the fisheries exploiting those stocks. The plan defines ranges of fishing mortality levels based on which Council will define annual catch limits. In cases where a spawning stock would be at too low a level, safeguard measures are taken, and the level of fishing mortality reduced. The Commission is also empowered to adopt delegated acts for fisheries technical measures based on recommendations elaborated jointly at regional level by Member States concerned.

Figure 1 Map of the Baltic Sea with Subdivisions 30,31 (Bothnian Sea & Bay) **R1**

Baltic Sea Multi-Annual Plan (2018 Update):
The most recent amendment (EU 2018/976) regarded fishing mortality ranges and safeguard levels for Bothnian herring. Scientific evaluation of the Bothnian Sea & Bay herring stocks conducted in 2017 by ICES showed that these two stocks are similar. ICES combined the two stocks into one, changed the boundaries of its geographic distribution area and re-estimated MSY fishing mortality ranges, as well as relevant conservation reference points. These updates were incorporated into the amended Multi-Annual Plan (MAP) in 2018.

Denmark:
The responsible authority for monitoring and enforcing EU and national conservation policies is the Danish Agrifish Agency, which is a part of the Ministry of Food, Agriculture and Fisheries, under the 1999 Fisheries Act. The Agency carries out inspection at sea and landings, as well as verification of EU marketing standards.

The Ministry also works for Danish fisheries and aquaculture through:

- Regulation and inspections of the fishing industry
- Support for research in fisheries and aquaculture production
- Support for the development of fisheries, the fish industry, fishery harbours and aquaculture
- Fish management and fishing license arrangements for recreational fisheries

The Danish National Institute of Aquatic Resources (DTU Aqua) at the Technical University of Denmark conducts research and provides advice on fisheries research to all stakeholders.

Finland:
As Finland is a member of the European Union, the CFP and its legislation are directly applicable. Commercial fishing at sea is controlled by the Southwest Finland Centre for Economic Development, Transport and the Environment (ELY Centre), the Provincial Government of Åland and the Finnish Border Guard. The ELY Centre and the Provincial Government of Åland also control landings and first-hand trade of fish.

The Finnish Border Guard operates the Fisheries Monitoring Centre (FMC). Control measures and inspections concern fishing vessels and their fishing activities at sea, the landings of catches and activities of first-hand buyers of fish. Traceability of fishery and aquaculture products and consumer information concerning the products are controlled by the Finnish Food Safety Authority Evira and municipal food authorities.

Sweden:
As Sweden is a member of the European Union, the Common Fishery Policy (CFP) and its legislation are directly applicable. The general principles governing the national fishery policy are established in a Parliamentary Act. This act also authorises Government to issue legal acts to supplement the CFP and to regulate fisheries not covered by the CFP. The Government has forwarded this authorisation to the National Board of Fisheries together with general principles and guidelines.

The central administration of fisheries policy is divided between the Ministry of Agriculture and National Board of Fisheries (NBF). The Ministry draws up the framework of the fishery policy and represents Sweden at international negotiations. The NBF is the executive branch of the administration and responsible for the implementation of fisheries policy and for giving technical advice to the government. At the regional level 21 county administrative boards include fisheries experts. The Swedish Agency for Marine and Water Management (SwAM) is a government agency overseeing marine and water-related issues.

A large part of the fisheries research and development is carried out by the NBF at its three institutes of marine, coastal and freshwater research. Research is also undertaken at universities and other public institutions. The Coast Guard carries out fisheries control and surveillance at sea and in harbours in cooperation with the NBF.

Baltic Sea Advisory Council (BSAC):
The Baltic Sea Advisory Council (BSAC) was set up in March 2006. Following CFP reform, a new regulation was adopted in which the role and function of Advisory Councils has been included. The main aim of the BSAC is to prepare and provide advice on management of Baltic Sea fisheries to achieve a successful running of the EU's CFP. The BSAC consists of organisations representing fisheries and other interest groups affected by the CFP (e.g. environmental, organisations, and sports and recreational fisheries organisations).

HELCOM:
HELCOM (Baltic Marine Environment Protection Commission - Helsinki Commission) is the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, known as the Helsinki Convention. Contracting Parties are Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden.

HELCOM was established to protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental cooperation.

There are organisations responsible for managing the fishery **R2-R9**

M1.2:
The primary provider of scientific information and advice at the national level within Denmark is the National Institute of Aquatic Resources at the Technical University of Denmark (DTU Aqua). DTU Aqua's stated mission is to conduct research, provide advice, educate at university level and contribute to innovation in sustainable exploitation and management of aquatic resources. DTU Aqua directly advises the Danish Ministry of Food, Agriculture and Fisheries and other public authorities.

International science:
Science-based fishery management advice at the international level is provided by the International Council for the Exploration of the Sea (ICES). ICES is a network of more than 1,600 scientists from 200 institutes (including DTU Aqua), linked by an intergovernmental agreement (the ICES Convention) to add value to national research efforts. Scientists working through ICES gather information about the marine ecosystem. Besides filling gaps in existing knowledge, this information is developed into unbiased, non-political fishery management advice.

The EU's Scientific, Technical and Economic Committee for Fisheries (STECF) provides information and consultation to the European Commission to develop CFP policy, where appropriate, on matters pertaining to the conservation and management of living marine resources, including biological, economic, environmental, social and technical considerations. On biological issues STECF depends on advice from ICES for areas including the Baltic.

ICES provide annual stock assessment and management advice in relation to Bothnian herring via its Baltic Fisheries Assessment Working Group (WGBFAS). ICES Stock Annex Reports for the Region provide a great deal of integrated advice at ecosystem level, in support of ICES shift towards a more holistic approach to managing Europe's seas.

Baltic Sea Advisory Council:
Also relevant to the management of herring and sprat in the Baltic Sea is the Baltic Sea Advisory Council (BSAC). As previously stated the main objective of the BSAC is to provide advice on the management of Baltic fisheries, through its membership of representatives of the fishing industry and other non-governmental groups affected by the CFP, including NGOs, consumers and others.

There are organization (s) responsible for collecting data and assessing the fishery
R4-R5, R9, R11

M1.3:
The CFP is the primary instrument for sustainable fisheries management. As such it looks to address impacts of fishing on target stocks as well as impacts on other ecosystem components. Implementing an ecosystem approach to fisheries management has been set as one of the objectives of the CFP:

"…to ensure that negative impacts of fishing activities on the marine ecosystem are minimized and that aquaculture and fisheries activities avoid degradation of the marine environment." (Article 2.3 CFP Reform).

The CFP contributes to the protection of the marine environment, to the sustainable management of all commercially exploited species, and to the achievement of good environmental status by 2020, as set out in Regulation (EU) No 1380/2013.

Objectives of the CFP are, *inter alia*, to ensure that fishing and aquaculture are environmentally sustainable in the long term and to apply the precautionary approach to fisheries management.

The Baltic Sea Multiannual Plan (MAP) references and endorses several regulations addressing the issue of sustainability:

- The United Nations Convention on the Law of the Sea provides for conservation obligations, including the maintaining or restoring of populations of harvested species at levels which can produce the maximum sustainable yield (MSY).

- At the World Summit on Sustainable Development at Johannesburg in 2002, the Union and its Member States committed themselves to act against the continued decline of many fish stocks. It is necessary to adapt exploitation rates of cod, herring and sprat in the Baltic Sea to ensure that the exploitation of those stocks restores and maintains them above levels that can produce MSY.

Denmark, Finland and Sweden are Member States of the European Union, and therefore in Community waters implement the CFP.

As part of DTU Aqua's mission statement they conduct research, provide advice and contribute to innovation in sustainable exploitation and management of aquatic resources.

Fishery management organisations are publicly committed to sustainability.
R2, R5, R8-R9

M1.4:
Through Regionalisation a balanced representation of local stakeholders knows best how to apply EU rules in their respective areas. The main aim of the BSAC is to prepare and provide advice on the management of Baltic Sea fisheries to achieve a successful running of the EU's CFP.

Total allowable catches (TACs) are set for most commercial fish stocks, by the EU for member states following consultation with Council and Parliament. The EU prepares regulations, based on scientific advice from advisory bodies such as ICES and STECF. TAC's are then set annually by the European Council. Some multi-annual plans (MAP's) contain rules for the setting of TACs which are then shared between EU countries in the form of national quotas. For each stock a different allocation percentage per EU country is applied for the sharing out of the quotas. This fixed percentage is known as the relative stability key.

EU countries must use transparent and objective criteria when they distribute the national quota among their fishermen. They are responsible for ensuring that the quotas are not overfished. When all the available quota of a species is fished, by national law the EU country must close the fishery.

The Danish basic regulation on fisheries mentions several considerations in the allocation of fishing opportunities and addresses the balance between available resources and fishing capacity.
R2, R6. R9, R11, R 27

M1.5:
Advice provided by ICES includes stock assessments and deeper analyses on which the European Commission bases both annual recommendations for setting TACs and quotas, and more long-term proposals on how fisheries in European waters can be managed sustainably.

Increasingly ICES also provides a great deal of integrated advice at ecosystem level, in support of the shift towards a more holistic approach to managing Europe's seas. The BSAC also provides advice on the management of Baltic fisheries and consists of organisations representing fisheries and other interest groups affected by the CFP (e.g. environmental, organisations, and sports and recreational fisheries organisations).

In 2016 the BSAC recommended setting catch levels for Baltic stocks including Bothnian herring. Recommendations are set after consideration of biological advice from ICES and were presented to the Joint Working Group of the Baltic Sea Advisory Council in June 2015.

There is a consultation process through which fishery stakeholders are engaged in decision-making **R4, R9, R17**

M1.6:
ICES provide annual stock assessment and management advice in relation to the Bothnian herring fishery via its Baltic Fisheries Assessment Working Group (WGBFAS). Results are published annually on the ICES website. Herring quotas for the EU fleet in the assessment area are available annually on DG Mare's website or through the EU's Eurolex server.

The decision-making process is transparent, with processes and results publicly available.
R4, R14, R17-R18

References pp29-30

Standard clauses 1.3.1.1, 1.3.1.2

M2	Surveillance, Control and Enforcement - Minimum Requirements		
	M2.1	There is an organisation responsible for monitoring compliance with fishery laws and regulations	PASS
	M2.2	There is a framework of sanctions which are applied when laws and regulations are discovered to have been broken	PASS
	M2.3	There is no substantial evidence of widespread non-compliance in the fishery, and no substantial evidence of IUU fishing	PASS
	M2.4	Compliance with laws and regulations is actively monitored, through a regime which may include at-sea and portside inspections, observer programmes, and VMS.	PASS
		Clause outcome:	**PASS**

Evidence

M2.1:

Each Member State maintains an official website on fishery related control and reporting issues which are of benefit to the Commission, other Member States and the masters of fishing vessels in connection with the recovery of cod stocks in the Baltic.

National websites contain *inter alia* information on:

- Description of control services and the resources available;
- National control action programmes;
- List of authorised vessels holding a special permit for fishing for cod in the Baltic Sea;
- Fishing effort limitation schemes;
- Contact details for the submission of logbooks and landing declarations when landing in that Member State
- Lists of designated ports for landing of certain species and addresses for fulfilling notification requirements

Member States must apply effective, proportionate and dissuasive sanctions against natural or legal persons engaged in IUU or other illegal activities.

The Danish Agrifish Agency is the competent authority with responsibility of enforcement of sanctions and penalties with respect to the prosecution of fishery rules in Denmark. In Finland commercial fishing at sea is controlled by the Southwest Finland Centre for Economic Development, Transport and the Environment (ELY Centre), the Provincial Government of Åland and the Finnish Border Guard. The ELY Centre and the Provincial Government of Åland also control landings and first-hand trade of fish. In Sweden the National Board of Fisheries (NBF) is the executive branch of the administration and is one of the bodies responsible for the implementation of fisheries policy and for giving technical advice to government.

The European Fisheries Control Agency (EFCA) mission is to promote the highest common standards for control, inspection and surveillance under the CFP. Its primary role is to organise coordination and cooperation between national control and inspection activities so that the rules of the CFP are respected and applied effectively.

Joint Deployment Plans (JDP's) are established for fisheries/areas considered a priority by the Commission and Member States concerned. They can refer either to European Union waters for which a Specific Control and Inspection Programme (SCIP) has been adopted or to International waters under the competence of a Regional Fisheries Management Organisation (RFMO), where EFCA is requested to coordinate the implementation of the European obligations under an International Control and Inspection Scheme.
In 2019 (Jan-Mar) a JDP was undertaken in EU Waters Subdivisions 22-32 (Baltic Sea including Bothnian Sea) with the participation of inspection services and assets from competent authorities in Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden.

There is an organisation responsible for monitoring compliance with fishery laws and regulations.
R12-R16

M2.2:
To ensure that fishing rules are applied in the same way in all member countries, and to harmonise the way infringements are sanctioned, the EU has established a list of serious infringements of the rules of the common fisheries policy. EU countries must include in their legislation effective, proportionate and dissuasive sanctions, and ensure that the rules are respected. A maximum sanction of at least five times the value of fishery products obtained is provided for regarding the committing of the said infringement.

Since 2012, EU countries have been required to have a point system for serious infringements. Under the scheme, National Authorities are obliged to:

- Assess alleged infringements involving vessels registered under its flag, using standard EU definitions;
- Impose a pre-set number of penalty points on vessels involved in serious infringements (points are recorded in the national registry of fisheries offences);
- Suspend the vessel's license for 2, 4, 8 or 12 months when a pre-set number of points have been accumulated in a 3-year period.

The Danish Agrifish Agency is the competent authority with responsibility of enforcement of sanctions and penalties with respect to the prosecution of fishery rules in Denmark. The Swedish Agency for Marine and Water Management (SwAM) works to ensure compliance with Sweden's established fishing quotas. In Finland control measures and inspections concern fishing vessels and their activities at sea, the landings of catches and the activities of first-hand buyers of fish.

There is an organisation responsible for monitoring compliance with fishery laws and regulations.
R14-R15, R28

M2.3:
Joint Deployment Plans (JDP's) undertaken in 2018 in the Baltic involved competent authorities for fisheries control and protection vessels from Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden. The Report (Jan-Dec 2018) noted that a total of 3,172 inspections ashore were reported by Member States concerned, including 5 transport inspections. Inspection teams detected 50 apparent infringements on 49 fishing vessels.

A total of 37,988t Atlantic herring were controlled during landings inspections. During the reporting period Member States reported 984 inspections at sea with a total of 20 apparent infringements detected on 16 fishing vessels. A total of 3,010t Atlantic herring were controlled during inspections at sea. No infringements were detected during landings inspections.

The % of at sea inspected F/V with apparent infringements was 1.6%; the % of on-land inspected F/V with apparent infringements was 1.5%.

There is no substantial evidence of widespread non-compliance in the fishery, and no substantial evidence of IUU fishing
R13

M2.4:
In practice, CFP control as carried out by the Member States' control authorities can be broken down into three broad areas: conservation, structures, and markets:

- Conservation measures cover issues such as quota management or the implementation of technical measures (e.g. mesh sizes). Inspections are used to ensure that the fishing gear on board vessels meets official norms and that the information entered in log-books.
- Structural policy plays a key role in the search for a balance between the fishing capacity of Member States, the fishing effort deployed, and the available fish resources. Checks are therefore necessary to establish that allocated days-at-sea have not been exceeded.
- Finally, national inspections are not limited to the catching sector, but also include all operations from landing and marketing to storage and transportation. Operators must, always, be in possession of proper documentation detailing the origin, nature, quantity and quality of fish involved in transactions, so that it can be cross-checked with data in log-books and from other sources, such as fish auctions.

As with the application of sanctions, bodies responsible for control and enforcement are set up by individual EU states.

In Denmark since 2009, the EU has operated a scheme with realtime closures in the Northsea and Skagerrak in areas with presence of juvenile cod, haddock, whiting and saithe. Information from the Danish Fishing Agency (in English) regarding national implementation of EU legislation is currently under development on their website and not available during the time of drafting of this report. In Sweden Rregulations and the control of commercial fishing lies with SwAM. In Finland commercial fishing at sea is controlled by the Southwest Finland Centre for Economic Development, Transport and the Environment (ELY Centre), the Provincial Government of Åland and the Finnish Border Guard.

Compliance with laws and regulations is actively monitored, through a regime which may include at-sea and portside inspections, observer programmes, and VMS.
R14-R16, R28

References pp29-30

Standard clause 1.3.1.3

CATEGORY A SPECIES

The four clauses in this section apply to Category A species. Clauses A1 - A4 should be completed for **each** Category A species. If there are no Category A species in the fishery under assessment, this section can be deleted. A Category A species must meet the minimum requirements of all four clauses before it can be recommended for approval. If the species fails any of these clauses it should be re-assessed as a Category B species.

Species Name		**Herring (*Clupea harengus*)**	
A1	**Data Collection - Minimum Requirements**		
	A1.1	Landings data are collected such that the fishery-wide removals of this species are known.	YES
	A1.2	Sufficient additional information is collected to enable an indication of stock status to be estimated.	YES
		Clause outcome:	**PASS**

Evidence

A1.1:

Herring in the Gulf of Bothnia are assessed by ICES as one stock; including two subdivisions: SD 30 and 31 (**Figure 2**):

Discards are considered low; by-catch of sprat and juvenile cod is unknown. Fishery-dependent and independent data are collected for the stock. In general, the level of research appears to be sufficient for the informed management of the stock.

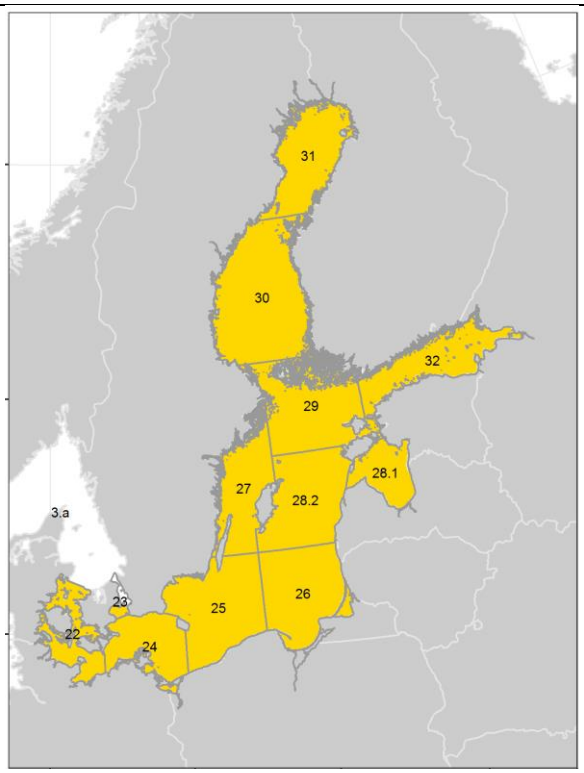


Figure 2 Geographical area covered by ICES advice (in yellow) **R18**

Total reported catches by country which also include the fraction of the Central Baltic Herring that is caught in the Gulf of Riga (SD 28.1 Figure 2) are provided in the latest WGBFAS Report (2018), Catches in 2018 amounted to 244 365 t, 21% higher than 2017. The largest part of the catches in 2018 was taken by Sweden (27%), followed by Poland (20%) and by Finland (19%). In the last few years most, catches were taken in Subdivisions 26, 28.2 and 29. In 2018 the distribution of catches was as follows: 21% in SD 29, 26% in SD 26 and 18% in SD 28.2.

Only Sweden and Finland reported logbook registered discard of 34 t (0.01% of total catch) in 2018. No discards have been reported before 2016. Discarding at sea is regarded to be negligible.

It is hard to make an accurate estimate on the proportion of herring and sprat in catches from industrial trawl fisheries with small-meshed trawls. In area 24-26 misreporting of herring exists and is accounted for by Denmark and Poland. Some catches are hard to sample because they are landed in foreign ports (source WGBFAS 2018). Data on commercial effort and CPUE are not used in assessments. Most countries provide age composition of their major catches (caught in their waters by quarter and subdivision). Herring in the Baltic was last benchmarked in 2013.
Landings data are collected such that the fishery-wide removals of this species are known
R18, R24

A1.2:
Revised stock abundance estimates from the Baltic International Acoustic Survey (BIAS) were available for 1991–2011. The BIAS tuning fleet index for Central Baltic herring recruitment in Subdivisions 25–27, 28.2 and 29 has now been area corrected and a correction of the rectangle assignments performed. Due to these changes, the herring recruitment indices increased quite substantially in some years (e.g. 1991 and 2002).

In summary two acoustic time-series were selected for the final stock assessment of Central Baltic herring: BIAS tuning fleet index for Central Baltic herring in Subdivisions 25–27, 28.2 and 29 (1991-2011, and the BIAS tuning fleet index for Central Baltic herring recruitment (age 0) in Subdivisions 25–27, 28.2 and 29 (1991-2011. For the calculation of these data series all data from the ICES Subdivision 29 were included. Index values for the years 1993, 1995, and 1997 were excluded from both time-series. Sufficient additional information is collected to enable an indication of stock status to be estimated **R18, R24**
References pp29-30
Standard clause 1.3.2.1.1

A2	Stock Assessment - Minimum Requirements		
	A2.1	A stock assessment is conducted at least once every 3 years (or every 5 years if there is substantial supporting information that this is sufficient for the long-term sustainable management of the stock) and considers all fishery removals and the biological characteristics of the species.	YES
	A2.2	The assessment provides an estimate of the status of the biological stock relative to a reference point or proxy.	YES
	A2.3	The assessment provides an indication of the volume of fishery removals which is appropriate for the current stock status.	YES
	A2.4	The assessment is subject to internal or external peer review.	YES
	A2.5	The assessment is made publicly available.	YES
		Clause outcome:	**PASS**

Evidence

A2.1:

Discard data have not generally been available for inclusion in stock assessments, although efforts are underway to remedy this in future. Discards are estimated to be negligible in most countries, as undersized and lower quality fish can be used for fishmeal production. The most recent ICES advice on the stock has not included discards or bycatch in their assessment. It is expected that misreporting of catches occurs, as estimates of species composition of clupeid catches are imprecise in some mixed pelagic fisheries. This is considered when assessing sprat stocks.

Input data for the latest annual stock assessment (April 2019 WGBFAS) were derived from commercial catches; two tuning fleets: one acoustic survey, 2007‑2017 (BIAS), and one commercial survey 1990‑2006 (trap net). Annual maturity data from Finnish commercial trawl catches before spawning was also used; natural mortalities were calculated (0.15 for all ages).

Recruitment estimates shown for the final year are uncertain. This is due to the high degree of variation in the acoustic survey. Stock levels estimated by the model are sensitive to small changes in the acoustic survey index.

A stock assessment is conducted at least once every 3 years.

R24

A2.2:

Spawning-stock biomass (SSB) has decreased in the last five years and has been above MSY Btrigger since 1987. Fishing mortality (F) was below FMSY until 2012, but above since 2013. Recruitment shows an overall increasing trend over time:

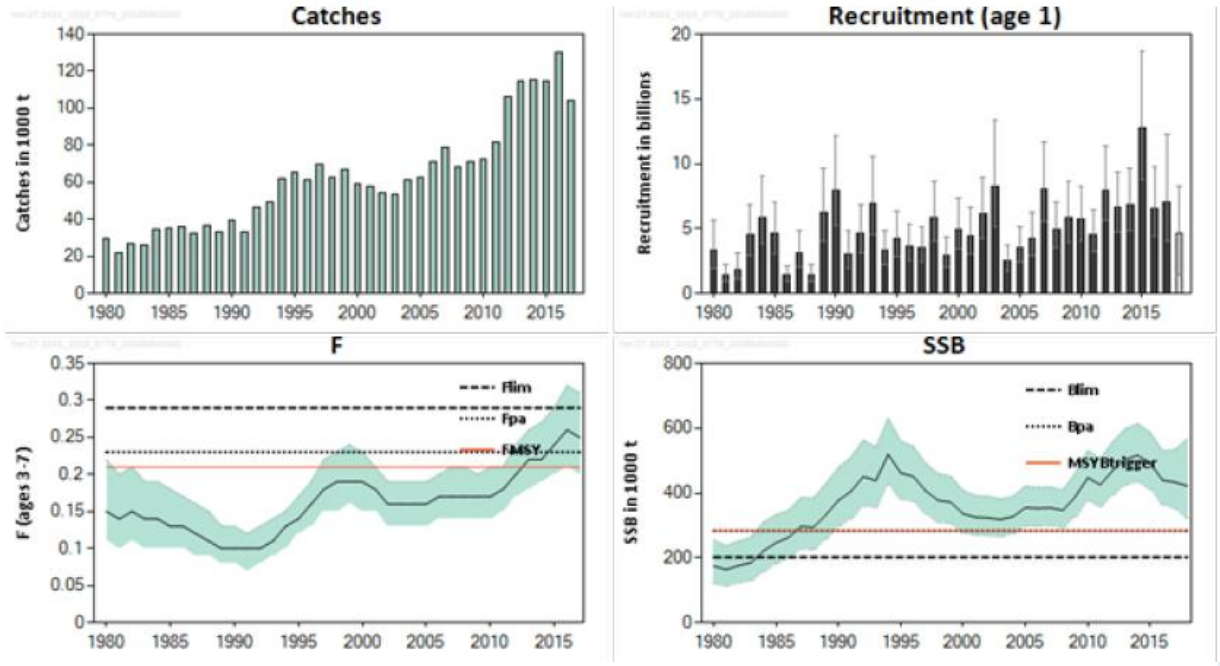


Figure 3: Herring in Subdivisions 30 and 31 (Gulf of Bothnia). Summary of the stock assessment. Recruitment and SSB in 2018 are predicted. Recruitment, F, and SSB have confidence intervals (95%) in the plot. Predicted recruitment values are unshaded. **R24**

ICES assess that fishing pressure on the stock is above FMSY and Fpa, and below Flim; and spawning stock size is above MSY Btrigger, Bpa, and Blim:

Table 1: Herring in Subdivisions 30 and 31 (Gulf of Bothnia).
State of the stock and fishery relative to reference **R24**

	Fishing pressure					Stock size				
		2015	2016	2017			2016	2017	2018	
Maximum sustainable yield	F_{MSY}	✗	✗	✗	Above	MSY $B_{trigger}$	✓	✓	✓	Above trigger
Precautionary approach	F_{pa}, F_{lim}	○	○	○	Increased risk	B_{pa}, B_{lim}	✓	✓	✓	Full reproductive capacity
Management plan	F_{MGT}	-	-	-	Not applicable	SSB_{MGT}	-	-	-	Not applicable

The two stocks were merged into one stock during a benchmark (WKBALT; ICES, 2017). Reference points for the merged stock therefore differ from the ones in the original Baltic MAP relevant to the two stocks when they were divided.

The resulting FMSY value is 0.21. Corresponding FMSY ranges were calculated and resulted in FMSY lower = 0.15 and FMSY upper = 0.21. For this stock, there is a 5% probability that SSB < Blim in the long term when

FMSY is used in combination with the ICES advice rule (i.e. where F is adjusted by the factor SSB/MSY Btrigger when SSB is below MSY Btrigger). Therefore, FMSY upper coincides with FMSY. These new reference points were included in the most recent amendment (2018) of the Baltic Sea Multi-Annual Plan (MAP).

The assessment provides an estimate of the status of the biological stock relative to a reference point or proxy.
R7-R8, **R24**

A2.3:
Under the EU landing obligation, which entered into force in 2015, up to 9% interspecies quota transfers are allowed for stocks considered to be within safe biological limits. Quota transfers were not considered in the latest ICES catch advice for this stock. To achieve FMSY exploitation, any transfer under this regulation should be accounted for in setting the TAC.

ICES advise that when the MSY approach is applied, catches in 2019 should be no more than 88,703 tonnes. Catches higher than those corresponding to FMSY can only be taken under the conditions specified in the MAP, whilst the entire range is considered precautionary when applying the ICES advice rule.

MAP conditions are:

- Based on scientific advice or evidence, it is necessary for the achievement of objectives laid down in the MAP in mixed fisheries
- It is necessary to avoid harm to a stock caused by intra- or inter-species stock dynamics
- To limit year-to-year variations in fishing opportunities.

Finland and Sweden share an allocated quota of 88,703t for the 2019 fishing season in the Gulf of Bothnia.

The stock assessment provides an indication of the volume of fishery removals appropriate for the current stock status.
R7-R8, R24

A2.4:
Expert groups such as the Baltic Fisheries Assessment Working Group (WGBFAS) provide scientific advice and summaries of information on the herring fishery. The latest report was published in 2018. Working Groups conduct analyses that underpin ICES advice. Working Groups are guided by steering groups; all terms of reference are reviewed and signed off by science and advisory committees.

Fisheries overviews summarize fishing activities at ICES ecoregions, including which countries are catching what species, various fishing methods being used, and how stocks are managed. The most recent Baltic Sea ecosystems overview was published in Nov 2018.

Also relevant to the management of herring and sprat in the Baltic Sea is the Baltic Sea Advisory Council (BSAC). As previously stated the main objective of the BSAC is to provide advice on the management of Baltic fisheries, through its membership of representatives of the fishing industry and other non-governmental groups affected by the CFP, including NGOs, consumers and others.

Stock Assessments are subject to internal or external peer review.
R9, R17-R18,

A2.5:
ICES operate a transparent assessment framework (TAF); an online open resource of annual ICES stock assessments. All data input and output are fully traceable and versioned. The open framework enables anyone to easily find, reference, download, and run the assessment from any stage in the process leading to published ICES advice for a given stock.

Assessments are made publicly available on the ICES website.
R19

References pp29-30

Standard clause 1.3.2.2, 1.3.2.1.2, 1.3.2.1.4

A3	Harvest Strategy - Minimum Requirements		
	A3.1	There is a mechanism in place by which total fishing mortality of this species is restricted.	PASS
	A3.2	Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment. Where a specific quantity of removals is recommended, the actual removals may exceed this by up to 10% ONLY if the stock status is above the limit reference point or proxy.	PASS
	A3.3	Commercial fishery removals are prohibited when the stock has been estimated to be below the limit reference point or proxy (small quotas for research or non-target catch of the species in other fisheries are permissible).	PASS
		Clause outcome:	**PASS**

Evidence

A 3.1-A3.3:

Member States having a direct management interest in the stock are Denmark, Sweden and Finland. Management and control measures (such as the setting of TAC's for Member States are outlined in the EU MAP 2016 and 2018 amendment).

The CFP includes provisions to limit, and historically reduce, total fishing capacity through a combination of subsidizing fishery exits and restricting new entries. The entry-exit regime, which applies to most of EU Member State vessels, is one of the main pillars of the European-wide fishing capacity management system. As a rule, the capacity of EU fleets cannot increase with respect to its levels on 1 January 2003 for those EU 15 Member States and on their accession date for Member States which acceded to the Community after 2003.

Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment:

Table 2 Herring in subdivisions 30 and 31. ICES advice, TACs and catches. All weights in tonnes**. R24**

Year	ICES advice for SD 30	ICES advice for SD 31	Catch corresponding to advice	Agreed TAC*	ICES catch
2014	MSY approach (F_{MSY})	Increase catches by no more than 20%	142300	138000	115300
2015	MSY approach (F_{MSY})	Increase catches by no more than 20%	186434	158470	114900
2016	MSY approach (F_{MSY} = 0.15)	Precautionary approach (≤ 20% increase in catch)	103254	103254	128330
2017	MSY approach (F_{MSY} = 0.15)	Precautionary approach	140998	140998	104 358

* TAC for subdivisions 29N, 30 and 31 (IBSFC Management Unit 3), and from 2005 for subdivisions 30 and 31.

As noted in the 2018 advice (R24) both two stocks (subdivisions 30 and 31) were merged into one stock during the 2017 benchmark assessment (R25). Reference points for the merged stock therefore differ from the ones in the Baltic MAP relevant to both stocks when they were divided in herring in SD 30 and herring in SD 31 (EU, 2016). This would account for observed catches in 2016 more than the agreed quota. The final agreed TAC (2016) published by the European Commission's DG MARE for 2016 was 103,254t. This reduction reflected ICES' decision to change the way this stock is assessed. The Commission expects that this change will improve the quality of ICES' assessment of fishing stocks in the coming years.

There is a mechanism in place by which total fishing mortality of this species is restricted. Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment **R3, R14-R15, R24**
References pp29-30
Standard clause 1.3.2.1.3

A4	Stock Status - Minimum Requirements		
	A4.1	The stock is at or above the target reference point, OR IF NOT: The stock is above the limit reference point or proxy and there is evidence that a fall below the limit reference point would result in fishery closure OR IF NOT: The stock is estimated to be below the limit reference point or proxy, but fishery removals are prohibited.	PASS
		Clause outcome:	**PASS**

Evidence

A 4.1:

Spawning-stock biomass (SSB) has decreased in the last five years and has been above MSY Btrigger since 1987. Fishing mortality (F) was below FMSY until 2012*, but above since 2013*. Recruitment shows an overall increasing trend over time:

The stock is at or above the target reference point.

R24

References pp29-30

Standard clause 1.3.2.1.4

CATEGORY C SPECIES

In a whole fish assessment, Category C species are those which make up less than 5% of landings, but which are subject to a species-specific management regime. In most cases this will be because they are a commercial target in a fishery other than the one under assessment. In a by-product assessment, Category C species are those which are subject to a species-specific management regime and are usually targeted species in fisheries for human consumption.

Clause C1 should be completed for **each** Category C species. If there are no Category C species in the fishery under assessment, this section can be deleted. A Category C species does not meet the minimum requirements of clause C1 should be re-assessed as a Category D species.

Species Name	**Sprat** (*Sprattus sprattus*)	
C1	Category C Stock Status - Minimum Requirements	
C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process OR are considered by scientific authorities to be negligible.	PASS
C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	PASS
	Clause outcome:	**PASS**

Evidence

C1.1:

Commercial catch data have been collected for several decades, and total landings estimates are available for every year back to the early 1970s. The most recent benchmark assessment (ICES) for Baltic sprat was carried out in 2013. ICES has provided scientific advice to managers of the stock since 1988, and every year since 1991.

Discard data have not generally been available for inclusion in stock assessments, although efforts are underway to remedy this in future. Discards are estimated to be negligible in most countries, as undersized and lower quality fish can be used for fishmeal production. The most recent ICES advice on the stock has not included discards or bycatch in their assessment.

It is expected that misreporting of catches occurs, as estimates of species composition of clupeid catches are imprecise in some mixed pelagic fisheries. This is considered when assessing sprat stocks.

Fishery removals of the species in the fishery under assessment are included in the stock assessment process.

C1.2:
The spawning-stock biomass (SSB) is well above MSY Btrigger. The recent increase in SSB is attributable to the strong year class of 2014. The 2015 and 2016 year classes are estimated slightly below average, while the 2017 year class is estimated to be above average. Fishing mortality (F) has declined in recent years to just above FMSY:

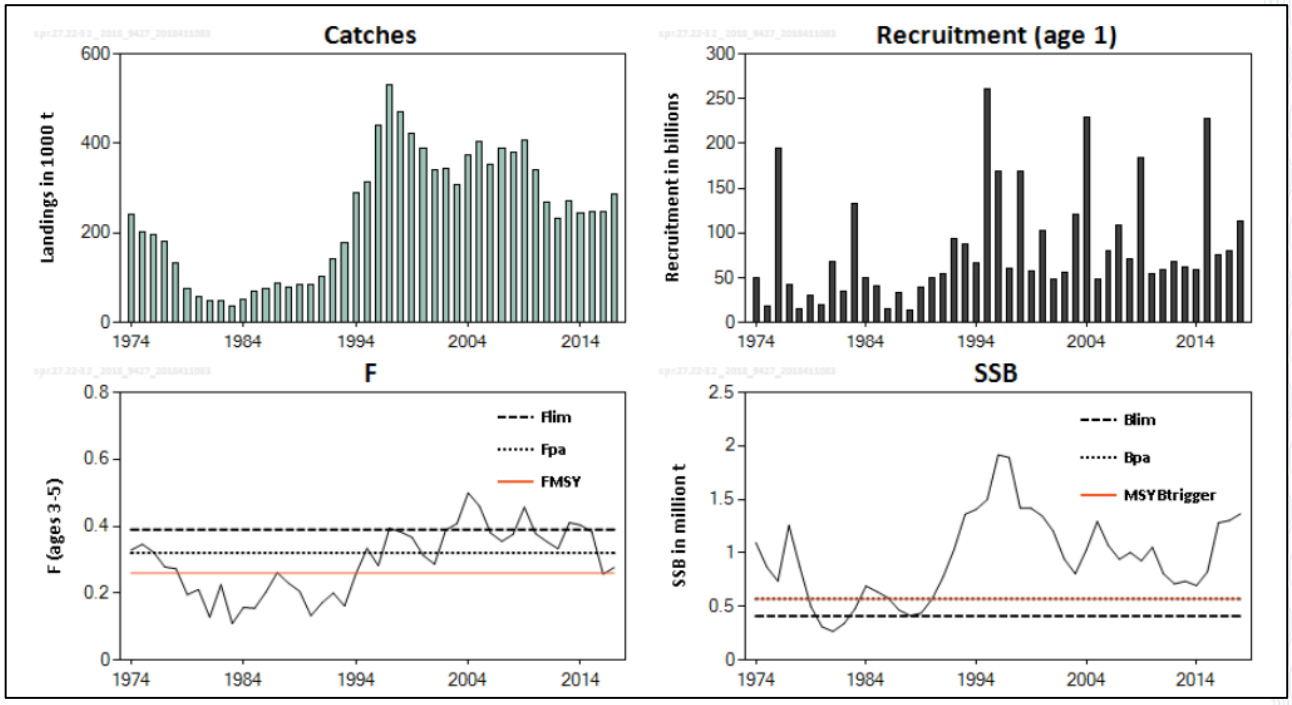
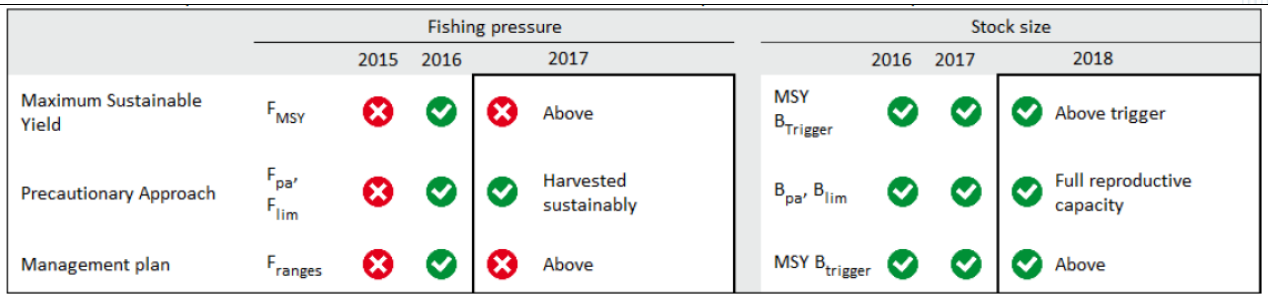


Figure 4: Sprat in subdivisions 22–32.
Summary of the stock assessment. SSB at spawning time in 2018 is predicted **R20**

ICES assess that fishing pressure on the stock is slightly above FMSY and below Fpa and Flim, while spawning stock size is above MSY Btrigger, Bpa, and Blim:

Table 3: Sprat in subdivisions 22–32. State of the stock and fishery relative to reference points **R20**



	Fishing pressure				Stock size			
		2015	2016	2017		2016	2017	2018
Maximum Sustainable Yield	F_{MSY}	✗	✓	✗ Above	MSY $B_{Trigger}$	✓	✓	✓ Above trigger
Precautionary Approach	F_{pa}, F_{lim}	✗	✓	✓ Harvested sustainably	B_{pa}, B_{lim}	✓	✓	✓ Full reproductive capacity
Management plan	F_{ranges}	✗	✓	✗ Above	MSY $B_{trigger}$	✓	✓	✓ Above

FMSY ranges in the EU Baltic Sea multiannual plan (MAP) are consistent with ranges provided by ICES. These were evaluated to result in no more than 5% reduction in long-term yield compared with MSY. ICES advice according to the MAP is based on the provisions of the plan and is considered precautionary.

The ICES advice rule is used, i.e. F adjusted by the factor SSB/MSY Btrigger when SSB below MSY Btrigger. For this stock, the SSB in 2019 is above MSY Btrigger. In this situation, catch scenarios applicable under the MAP correspond to fishing mortalities between F_{lower} and F_{upper}.

According to the MAP, catches corresponding to F higher than FMSY can only be taken under conditions specified in the MAP. It should only be possible to fix fishing opportunities to the upper limit if, on the basis of scientific advice or evidence, it is necessary for the achievement of the objectives laid down in this Regulation in mixed fisheries or necessary to avoid harm to a stock caused by intra- or inter-species stock dynamics, or in order to limit the year-to-year variations in fishing opportunities.

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) **R20**

References pp 29-30

Standard clauses 1.3.2.2

FURTHER IMPACTS

The three clauses in this section relate to impacts the fishery may have in other areas. A fishery must meet the minimum requirements of all three clauses before it can be recommended for approval.

F1	**Impacts on ETP Species - Minimum Requirements**		
	F1.1	Interactions with ETP species are recorded.	PASS
	F1.2	There is no substantial evidence that the fishery has a significant negative effect on ETP species.	PASS
	F1.3	If the fishery is known to interact with ETP species, measures are in place to minimise mortality.	PASS
		Clause outcome:	**PASS**

Evidence:
F1.1

Current impacts of the Finnish fishery on Protected, Endangered and Threatened (PET) species are not known. At present, the effects of the fishery in the Bothnian Sea ecosystem are not understood. The Baltic ringed seal subspecies *Phoca hispida botnica* is the only mammal considered to be endangered in the Bothnian Sea. The Baltic population is thought to be increasing at 5% a year, and Bothnian Bay is its main habitat, with a population estimated at 5,020 individuals.

There are reports of seal bycatch in set nets in the Baltic but no estimates for this fishery, and only 0.2% of catches are taken with gillnets. Some ringed-seal hunting is permitted in both Sweden and Finland.

Twenty-four species of seabirds and sea ducks are also considered endangered in the region, among them several gulls *Larus* spp, terns *Sterna* spp, Steller's eider *Polysticta stelleri* (Vulnerable), Red-breasted Merganser *Mergus serrator* (Least concern) and Black guillemot *Cepphus grylle* (Least concern) (HELCOM, 2009a), and two of which: Velvet scoter *Melanitta fusca* (Endangered) and Common eider *Somateria mollissima* (Least concern) have reported considerable mortality in set nets.

Grey seals prey preferably on age-6 herring, competing directly with the commercial herring fishery; there are concerns about this interaction which influences the age structure of the stock. The impact of grey seal in the Bothnian Sea herring fishery only needs to be assessed if stock composition, grey feeding preferences or stock development changes. Within other species the Cormorant *Phalacrocorax carbo sinensis* and Atlantic salmon *Salmo salar* are herring predators.

Recording of the catch of seabirds and mammals has been undertaken in some Baltic Sea fisheries, usually where there is perceived risk of such bycatch. Seabirds can become entangled in gillnets or hooked on longlines. Seals can be caught in submerged trap nets and harbour porpoises entangled in gillnets. Pelagic trawlers or purse seines are not known to cause any bycatch of birds or mammals in the offshore fishery in the Baltic Sea.

Interactions with ETP species are recorded
R18, R22

F1.2:
HELCOM (Helsinki Commission) report that seals are generally protected, but hunting is permitted in some countries, restricted to populations above a limit reference level and with a positive growth rate.

The Working Group on Bycatch of Protected Species (WGBYC) met in Iceland (May 2018). Highlights from the 2018 meeting included a review of ongoing bycatch mitigation re-search projects, bycatch risk assessments for harbour porpoise and common dolphin and a review of the compiled inventory of various sampling programmes providing information on bycatch of protected species.

In the WGBYC 2018 Report no new mitigation studies for marine mammals were found in the literature. Mitigation experiments of seal-induced damages on fishing gears aim to diminish the interaction of grey seals with trapped fishes. Future assessments should take into account new developments in this area of study.

Member States are obliged to conform to EU Regulation 1004/2017 by submitting data on observer programmes where fisheries are known to interact with ETP species. Information has been provided by ICES to the EU on the effects of fishing gears on bird populations in the Baltic. The obligation for all stakeholders to record fishing gear interactions with ETP species is monitored by EFCA and National Fisheries Control authorities during inspections at sea and in port.

There is no substantial evidence that the fishery has a significant negative effect on ETP species
R21, R26, R29

F1.3
At least four species of marine mammals can be found in the Baltic Sea: Grey seal; Harbour seal; Ringed seal and a small population of Harbour porpoise. HELCOM agreed in 2006 on a Recommendation of the 'Conservation of seals in the Baltic Sea'; a regional agreement on joint management principles, management units for the different seal populations, limit reference levels for the respective management unit, and coordinated monitoring programmes.

Seal status is considered not good in most parts of the Baltic Sea according to HELCOM's integrated assessment. Fishing for herring and/or sprat could be impacting seal and porpoise nutrition, but the magnitude compared with other factors is unknown.

The Baltic is an important overwintering ground for seabirds and sea ducks and nine of nineteen species breeding in the area are decreasing in numbers, while the status of many of the rest is uncertain. Ecosystem changes have impacted on the breeding success of the common guillemot whereas bycatch in fishing gear, particularly set nets, has impacted on the numbers of long-tailed ducks, velvet scoters and others. Pelagic trawlers or purse seines operate offshore and do not cause any bycatch of birds or mammals in the Baltic.

Work has been conducted in coastal fisheries of the Baltic Sea that tested potential solutions to seabird by-catch. Three different net modifications were trailed: small black and white striped panels; green LED lights, and; flashing white LED lights. None of these three modifications resulted in reduced seabird bycatch; contrary to evidence from a similar trial in Peru. Other options, such as preventing seabirds diving near nets using deterrents, or using different types of lights, net materials, or even acoustic methods could be tried.

Further information available on these indicators, monitoring undertaken to date and assessment of ETP species status is available in HELCOM's State of the Baltic Report, updated in 2018 and available at http://stateofthebalticsea.helcom.fi/biodiversity-and-its-status/

If the fishery is known to interact with ETP species, measures are in place to minimise mortality.
R21-R23

References pp29-30

Standard clause 1.3.3.1

F2	Impacts on Habitats - Minimum Requirements		
	F2.1	Potential habitat interactions are considered in the management decision-making process.	PASS
	F2.2	There is no substantial evidence that the fishery has a significant negative impact on physical habitats.	PASS
	F2.3	If the fishery is known to interact with physical habitats, there are measures in place to minimise and mitigate negative impacts.	PASS
		Clause outcome:	**PASS**

Evidence

F2.1-F2.2:

Abrasion of the seabed by mobile bottom-contacting fishing gears has been investigated to describe the extent, magnitude, and effects of fishing on benthic habitats. Mobile bottom-contacting gears are primarily used in the southern areas of the Baltic Sea. This assessment covers the Gulf of Bothnia herring stock where pelagic trawls are the dominant gears used. No effects of pelagic trawl are known or expected to occur in the ecosystem.

Fishing effort data by fishing gear is sparse. Only Denmark and Lithuania uploaded fishing effort data for 2014 into the Inter-Catch database in 2015. No new fishing effort data were provided in 2016 and 2017. Russia provided updated data on fishing effort and CPUE for Subdivision 26 in 1995–2017.

Pelagic trawling is generally considered to have virtually no impact on the benthic environment, although some interactions have been reported. The herring fisheries for industrial purposes generally use pelagic or light bottom trawl and thus habitat impacts are low.

Anthropic activities such as construction and extraction of marine aggregates impact the spawning and nursery areas of herring, mainly situated in coastal areas. With several sources of pollution, levels of dioxins in herring remain high and above stipulated EU values for human consumption but have been decreasing since the 1990s. Potential habitat interactions are considered in the management decision-making process. There is no substantial evidence that the fishery has a significant negative impact on physical habitats.

R21-R22

F2.3:

The EU funded MARELITT Baltic project has been working to reduce the impact of derelict fishing gear (ghost nets) in the Baltic Sea. The project to date has covered many aspects of the problem: mapping, retrieval, recycling and prevention. A handbook called the Baltic Sea Blueprint was presented during a recent conference in Sweden. The handbook is a roadmap on how to approach derelict fishing gear in a sustainable way.

The Natura 2000 network is based on the Birds Directive adopted in 1979 and the Habitats Directive adopted in 1992. These directives provide legal protection to sites. By 2013, 64% of Natura 2000 sites in the Baltic Sea had also been designated as HELCOM Marine Protected Areas (MPAs).

Covering 4.4% of the Gulf of Bothnia, four Baltic Sea Protected Areas (BSPAs) are defined within the Bothnian Sea, three along Finland's coastline and one on Sweden's. The aim of BSPAs is to contribute to the protection of the entire functional ecosystem and not just isolated species or habitats.

If the fishery is known to interact with physical habitats, there are measures in place to minimise and mitigate negative impacts.
R30

References pp 29-30

Standard clause 1.3.3.2

F3	**Ecosystem Impacts - Minimum Requirements**		
	F3.1	The broader ecosystem within which the fishery occurs is considered during the management decision-making process.	PASS
	F3.2	There is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem.	PASS
	F3.3	If one or more of the species identified during species categorisation plays a key role in the marine ecosystem, additional precaution is included in recommendations relating to the total permissible fishery removals.	PASS
		Clause outcome:	**PASS**

Evidence
F3.1:
ICES now provide a great deal of integrated advice at ecosystem level, in support of the shift towards a more holistic approach to managing Europe's seas. Little is known at the regional scale about the sensitivity of different Baltic Sea organisms and communities to fishery-induced impacts. A qualitative approach to address this was elaborated by ICES in 2016. A mechanistic, quantitative assessment procedure based on biological principles is now under development. These studies, when released, will form part of the future management decision-making process.

The ICES WGBFAS stock annex (2018) for herring includes a section examining the ecosystem components of fishery management. This section primarily considers the effects of the ecosystem on fish populations, environmental influences on spawning and recruitment, and the impact of cod predation on natural mortality rates of herring and sprat.

Information on the impacts of herring removals on the ecosystem appears to be limited, although the MAP notes that there are some indications that interactions between cod, herring and sprat may indicate that higher fishing pressures than currently advised may be sustainable in some areas (although ICES also notes that STECF have advised that more research be conducted). The MAP also includes several other commitments to follow the ecosystem approach to fisheries management (EAFM).

The broader ecosystem within which the fishery occurs is considered during the management decision-making process.
R19
F3.2-F3.3:

In the Baltic, multispecies analyses indicate that trade-offs exist between fishing on cod or herring and sprat. Increased fishing pressure on cod may increase the risk of a low cod stock size, thereby reducing cod predation on sprat and herring and allowing greater survival and growth of these two-prey species.

Increased fishing pressure on herring and sprat may have a negative impact on the condition and growth of cod (by reducing the forage available for cod) and result in lower cod yields. The magnitude of the interaction between the species depends on spatial and temporal overlap among the three stocks (Figure 5).

Restrictions on sprat catches taken in the main cod area could be established as part of an ICES proposed spatial management plan (SMP). Redistribution of the fishery to northern areas (subdivisions 27–32) may also reduce the density-dependent effect i.e. increase growth for clupeids (including herring) in the area which includes the Gulf of Bothnia:

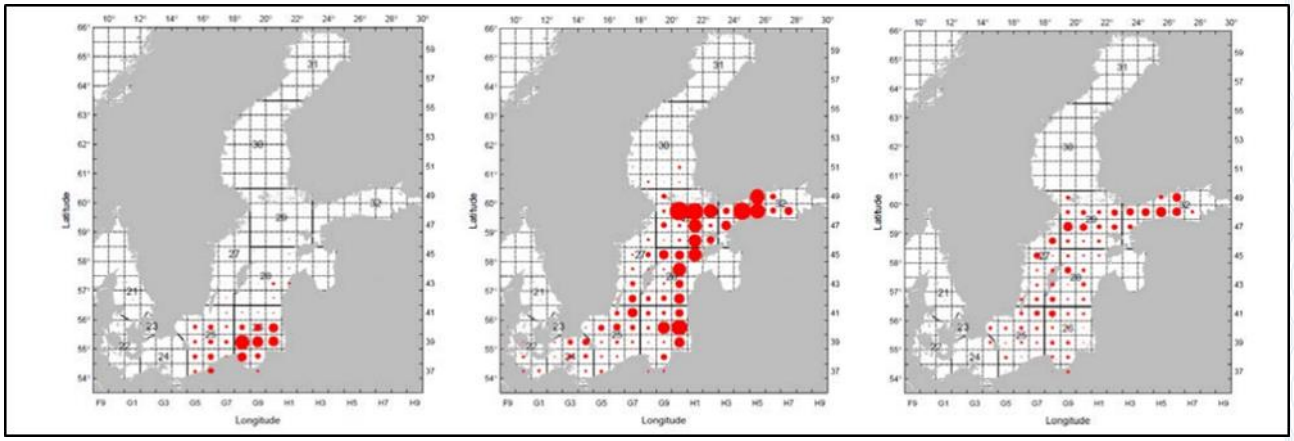


Figure 5 Sprat in subdivisions 22–32. Left panel: Distribution of eastern Baltic Sea cod from the bottom trawl survey (BITS, in number h−1) in the 4th quarter 2017; middle panel: Baltic sprat from the acoustic survey (BIAS, numbers) in the 4th quarter 2017; and right panel: Herring in subdivisions 25–29 and 32, excluding the Gulf of Riga, from the BIAS survey (BIAS, numbers) in the 4th quarter 2017. The cod panel includes fish ≥ 30 cm, while herring and sprat panels include ages between 1 and 8. Figures are based on number of individuals; not on biomass. **R20**

Management of the stock is supported by the collection of fishery-dependent and fishery-independent data, and by more general research on ecosystems and species which affect the stock. ICES has provided scientific advice to managers of the stock since 1988, and every year since 1991. Most of the Baltic Sea fish stocks with reference points are fished at or below FMSY.

There is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem. If one or more of the species identified during species categorisation plays a key role in the marine ecosystem, additional precaution is included in recommendations relating to the total permissible fishery removals.
R18, R21

References

R1: European Commission DG MARE: Baltic Sea MAP Baltic Sea: Https://ec.europa.eu/fisheries/cfp/control/who_does_what/baltic_sea_authorities_en

R2: EU Common Fisheries Policy overview: http://ec.europa.eu/fisheries/cfp/index_en.htm
R3: EU Common Fisheries Policy reform: http://ec.europa.eu/fisheries/reform/index_en.htm
R4: ICES, "Who we are": http://www.ices.dk/explore-us/who-we-are/Pages/Who-we-are.aspx
R5: DTU Aqua, "Mission, vision and tasks": http://www.aqua.dtu.dk/english/About/Mission_vision
R6: The Danish Agrifish Agency http://agrifish.dk/about-us/
R7 REGULATION (EU) 2016/1139 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 July 2016 establishing a multiannual plan for the stocks of cod, herring and sprat in the Baltic Sea and the fisheries exploiting those stocks, amending Council Regulation (EC) No 2187/2005 and repealing Council Regulation (EC) No 1098/2007 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1139&from=EN
R8: REGULATION (EU) 2018/976 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2018 amending Regulation (EU) 2016/1139 as regards fishing mortality ranges and safeguard levels for certain herring stocks in the Baltic Seahttps://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R0976&qid=1567693044843&from=EN
R9: Baltic Sea Advisory Council, "about": http://www.bsac.dk/ooizzCMS/DA/aboutthebsrac
R10: Commission Delegated Regulation (EU) 2017/1575 of 23 June 2017 amending Delegated Regulation (EU) 2015/242 laying down detailed rules on the functioning of the Advisory Councils under the common fisheries policy https://eur-lex.europa.eu/eli/reg_del/2017/1575/oj
R11: STECF home page: https://stecf.jrc.ec.europa.eu/
R12 European Fisheries Control Agency: About: https://www.efca.europa.eu/en/content/objectives-and-strategy
R13 JDP-BS-2019-01 (the Baltic Sea campaign): https://www.efca.europa.eu/en/content/reports-2019-1
R14 Fisheries control authorities in the Baltic Sea area: 2pp https://ec.europa.eu/fisheries/cfp/control/who_does_what/baltic_sea_authorities/
R15 CFP control and enforcement overview: http://ec.europa.eu/fisheries/cfp/control/index_en.htm
R16 JDP-BS-2018-01 (Baltic Sea): https://www.efca.europa.eu/sites/default/files/atoms/files/2018%20-%20THE%20BALTIC%20SEA%20JOINT%20CAMPAIGN%20-%2012M%20REP%20WEB.pdf
R17 BSAC recommendations for the fishery in the Baltic Sea in 2016, July 2015: http://www.bsac.dk/archive/Dokumenter/Recommendations/2015/BSAC_2015_4BSACRecommendationcsFishery2016FINAL.pdf
R18 ICES 2019 Baltic Fisheries Assessment Working Group (WGBFAS) Herring in the Baltic Sea: http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2019/WGBFAS/1%20WGBFAS%202019.pdf
R19 ICES TAF: https://www.ices.dk/marine-data/assessment-tools/Pages/transparent-assessment-framework.aspx
R20 ICES advice (2018) Sprat (Sprattus sprattus) Subdivisions 25‑29 and 32 (central Baltic Sea, excluding Gulf of Riga)
R21 HELCOM, 2018. State of the Baltic Sea ‑Second HELCOM holistic assessment 2011-2016. http://stateofthebalticsea.helcom.fi/
R22 Fishsource Baltic Sea Herring: https://www.fishsource.org/stock_page/2039

R23 Dagys M et al (2009) Action C1 – Assessing and reducing impact of fishery by-catch on species of community interest. Final report. LIFE Nature project "Marine Protected Areas in the Eastern Baltic Sea" Reference number: LIFE 05 NAT/LV/000100. 48pp
http://www.balticseaportal.net/media/upload/File/Deliverables/Action%20reports/C1_final_report.pdf
R24 ICES Advice 2018 Herring (*Clupea harengus*) in Subdivisions 30 and 31 (Gulf of Bothnia)
http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/her.27.3031.pdf
R25 ICES Stock Annex 2017:
http://www.ices.dk/sites/pub/Publication%20Reports/Stock%20Annexes/2018/her.27.3031_SA.pdf
R26 The Benchmark Workshop on Baltic Stocks (WKBALT) ICES, 2017
http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2017/WKBALT/WKBALT_Report2017.pdf
R27 Denmark Fisheries Act (2004): http://www.fao.org/fishery/shared/faolextrans.jsp?xp_FAOLEX=LEX-FAOC026268&xp_faoLexLang=E&xp_lang=en
R28 Danish Fishery Agency: Control https://fiskeristyrelsen.dk/english/fishery-control-and-enforcement/
R29 ICES REPORT WGBYC 2018: Report from the Working Group on Bycatch of Protected Species (WGBYC)
http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2018/WGBYC/wgbyc_2018.pdf
R30 MARELITT Baltic project https://www.marelittbaltic.eu/
R31 Stock Annex: Herring (Clupea harengus) in Subdivision 31 (Bothnian Bay) 5pp
http://www.ices.dk/sites/pub/Publication%20Reports/Stock%20Annexes/2016/her-31_SA.pdf

Standard clause 1.3.3.3

IFFO RS Fishery Assessment Peer Review Template

This section comprises a summary of the fishery being assessed against version 2 of the IFFO RS Standard. This information should be drawn from the Application Form, which was submitted to the Certification Body.

Fishery under assessment	Gulf of Bothnia Herring *Clupea harengus* Subdivision 30 (Bothnian Sea); Subdivision 31 (Bothnian Bay)
Management authority (Country/State)	EU; Denmark, Sweden, Finland
Main species	Atlantic Herring *Clupea harengus*
Fishery location	Gulf of Bothnia (Subdivisions 30,31)
Gear type(s)	Pelagic trawl

Summary: in this section, provide any additional information about the fishery that the reviewers feel is significant to their decision.

Overall the fishery assessment has been conducted in line with the established procedure and provides adequate evidence for the majority of conclusions. However there are two important areas of note:

1. There does not appear to be any reference provided for the catch composition data, which is central to the Species Categorisation process. Either a reference should be provided, or the factory auditor should confirm catch composition during the site visit, or both.
2. In 2016 the herring TAC was exceeded by around 25%. The report currently provides no explanation of why this occurred, which is necessary to reach a conclusion on approval status.

IFFO RS Fishery Assessment Peer Review

The purpose of the Fishery Assessment Peer Review is to ensure that the contents of the Fishery Assessment Report are accurate, consistent, and supported by the evidence provided by the assessor. The Fishery Assessment Report is conducted by an approved Certification Body Representative with expertise covering the IFFO RS fishery assessment process, and fisheries management in general.

The following elements form the basis of the Fishery Assessment Peer Review evaluation:

A. Review of the full Fishery Assessment study conducted on the fishery raw material to confirm the evaluation against the IFFO RS fishery approval criteria, including the following areas:

- Ensure the fishery under assessment has been accurately characterised using the best available scientific understanding of the biological stock(s) and the catch composition.
- Ensure the species characterisation underpinning the structure of the report is accurate and defensible, including making sure that all relevant species have been included in the assessment.
- Confirm that throughout the report all significant statements and pass/fail ratings are supported by adequate evidence, including references.
- Confirm that the report as a whole has been fully completed according to the process described in the IFFO RS fishery assessment guidance.

Summary of Peer Review Outcomes

This section summarises the outcomes of the peer review process. Peer reviewers should review all of the application documentation with the primary objective of answering the key questions listed in the table below. Reviewers should use their expert knowledge of the IFFO RS fishery assessment process and IFFO RS application process to determine whether the questions should be answered Yes or No. Where the situation is more complicated, reviewers may instead answer "See Notes". Whichever of the three answers is chosen, additional information may be provided in the relevant section of this template.

	YES	NO	See Notes
A – Fishery Assessment			
1. Has the fishery assessment been fully completed, using the recognised IFFO RS fishery assessment methodology and associated guidance?	YES		
2. Does the Species Categorisation section of the report reflect the best current understanding of the catch composition of the fishery?			x
3. Are the scores in the following sections accurate (i.e. do the scores reflect the evidence provided)?			
Section M - Management	YES		
Category A Species			x
Category B Species	n/a		
Category C Species	YES		
Category D Species	n/a		
Section F – Further Impacts	YES		

Detailed Peer Review Responses

Peer reviewers may provide additional explanation as to review outcomes in this section of the report. Reviewers do not need to fill out every section of the detailed responses; if the answer to a Key Question is clear-cut, no additional detail may be necessary. However, where there is complexity, uncertainty, or any other information the Application Committee should be made aware of, the peer reviewer may enter it here.

If any comments are linked to the FAP, reference the section they refer to, to allow the IPAC to find the pertinent information.

Boxes may be extended if more space is required.

1. Is the scoring of the fishery consistent with the IFFO RS standard, and clearly based on the evidence presented in the assessment report?
The scoring is consistent with the IFFO RS Standard and is based on the evidence.

2. Has the fishery assessment been fully completed, using the recognised IFFO RS fishery assessment methodology and associated guidance?
The fishery assessment has been fully completed, notwithstanding the other notes in this peer review report.

3. Does the Species Categorisation section of the report reflect the best current understanding of the catch composition of the fishery?
• The Species Categorisation section of the report does not provide a reference for the catch composition. During the factory assessment the auditor should ensure they confirm the composition of landings at the plant.

3M. Are the scores in "Section M – Management" accurate?
The scores in this section are accurate.

3A. Are the "Category A Species" scores accurate?
• The evidence for clause A2.1 states that stock assessments are conducted at least every three years, but does not provide the date of the most recent assessment nor any previous assessment. It is clear from other sections that stock assessments are conducted but evidence should be provided under this clause. • Table 2 (Section A3) indicates that landings in 2016 were 128,330t, against a TAC of 103,254t. The TAC was therefore exceeded by around 25%. This is not mentioned in the text and no explanation is provided for why this occurred.

3B. Are the "Category B Species" scores accurate?
No Category B species were identified.

3C. Are the "Category C Species" scores accurate?
The scores in this section are accurate.

3D. Are the "Category D Species" scores accurate?
No Category D species were identified.

3F. Are the scores in "Section F – Further Impacts" accurate?
The scores in this section are accurate.

Optional: General comments on the Peer Review Draft Report
• The Peer Review Comments section of the report concludes that Bothnian Herring is approved "under the IFFO-RS v 2.0 by-products standard". However, this is a whole fish assessment report.