



**SCIENTIFIC, TECHNICAL AND ECONOMIC
COMMITTEE FOR FISHERIES (STECF)
OPINION BY WRITTEN PROCEDURE**

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REVIEW OF SCIENTIFIC ADVICE FOR 2011

PART 1: ADVICE ON STOCKS IN THE BALTIC SEA

(SGRST- 10-01)

ADDENDUM and CORRIGENDUM

ADDENDUM AND CORRIGENDUM ISSUED ON 21 JULY 2010

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SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES

REVIEW OF ADVICE FOR 2011

ADVICE ON STOCKS IN THE BALTIC SEA, JUNE 2010

ADDENDUM

The text below should be inserted in the corresponding sections in Part 1 of the STECF REVIEW OF SCIENTIFIC ADVICE FOR 2011 - ADVICE ON STOCKS IN THE BALTIC SEA (SGRST- 10-01). Office for Official Publications of the European Union, Luxembourg, EUR 24423 EN, JRC 59081). The addendum is required because the ICES advice was released after the STECF-SGRST 10-01 WG meeting held in Lyngby, Denmark from 7-11 June 2010.

3.6.1 *Herring (Clupea harengus) in the Skagerrak, the Kattegat and in the Western Baltic Sea (Sub-div. 22-24).*

FISHERIES: Herring of this the stock of spring spawners are taken in the North-eastern part of the North Sea, Division IIIa and Sub-divisions 22–24. Division IIIa has directed fisheries by trawlers and purse seiners, while Sub-divisions 22–24 have directed trawl, gillnet and trap net fisheries. The herring taken in the Skagerrak and the Kattegat including by-catches taken in Division IIIa in the small mesh trawl fisheries for sprat, Norway pout and sandeel are mainly consists of autumn-spawners from the North Sea stock and spring spawners from the area and from the western Baltic. After a period of high landings in the early 1980s the combined landings of all fleets have decreased to below the long-term average. In recent years approximately 50% of the catches from this the spring spawner stock are taken in the western Baltic.

Two TACs are set for Division IIIa. One covering the catches taken in fisheries using nets with a mesh size equal to or larger than 32 mm and one for fisheries using nets with a mesh size smaller than 32 mm. The TACs comprises both the autumn- and spring-spawning stocks in the area The TAC for the North Sea is based on the advice for the autumn spawners and does not take into account the likely catches of spring spawners.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The mixing in Divisions IIIa and IVa of the autumn spawners from the North Sea with this spring spawning stock complicates assessment as well as management of both these stocks. The analytical assessment of the spring spawners in IIIa and western Baltic is based on catch data, two acoustic indices and a larvae survey index.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY approach	MSY B_{trigger}	110 000 t	Provisional value, based on management plan development and the lowest observed SSB in the 2008 assessment
	F_{MSY}	0.25	Management plan evaluations (WKHMP report ICES 2008/ACOM:27)
Precautionary approach	B_{lim}	-	Not defined
	B_{pa}	-	Not defined
	F_{lim}	-	Not defined
	F_{pa}	-	Not defined

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	2009
MSY (F_{MSY})	–	–	–
Precautionary approach (F_{pa}, F_{lim})	?	?	?

SSB (Spawning Stock Biomass)			
	2008	2009	2010
MSY ($B_{trigger}$)	+	+	–
Precautionary approach (B_{pa}, B_{lim})	?	?	?

Since 2006 (when SSB was 182 000 t), SSB has continuously declined and reached a record-low of 76 000 t in 2010. Recruitment has markedly declined, and all recent year classes except the 2009 year class are at record low levels. Fishing mortality has been increasing since 2005 and F in 2009 was among the highest in the time series (and more than twice the F_{MSY} proxy of 0.25). Clearly, the stock is now outside of safe biological limits, and there is concern that the stock is now in a state where there is a high probability of continued recruitment failure.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Catches in 2011
Transition to an MSY approach with caution at low stock size	Less than 39 500 t Additional conservation measure: catches of WBSS herring in the North Sea should not be allowed to increase
Cautiously avoid impaired recruitment (Precautionary Approach)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 0.17 (31% lower than F_{MSY} because SSB_{2011} is 31% below $B_{trigger}$), resulting in landings of 26,500 t in 2011. This is expected to lead to an SSB of 113,700 t in 2012.

The transition scheme towards the ICES MSY framework implies a basic fishing mortality at the level between the current $F_{(2010)}$ and the target F_{MSY} ; $0.8 * F_{(2010)} + 0.2 * F_{MSY} = 0.42$. Because in this case SSB_{2011} is 31% below MSY $B_{trigger}$ this value is reduced by the same extent to 0.27, resulting in catches of less than 39,500 t in 2011, which will give an SSB of 103,500 t in 2012.

The advice emanating from the MSY transition approach would normally be adequate to rectify this situation. However, in this case there are mixed stock concerns and therefore an additional conservation measure is required. To conserve mature adults, catches of WBSS herring in the North Sea should not be allowed to increase.

Policy paper

In the light of the EU policy paper on fisheries management (17 May 2010, [COM\(2010\) 241](#)) this stock is classified under category 3 because although the state of the stock cannot be evaluated in the absence of precautionary reference points the stock is at record low SSB in 2010 and being fished considerably above F_{MSY} . The policy paper in this instance implies a 30% reduction of $F_{(2010)}$ since the resulting TAC change is

lower than 30%. This leads to $F_{(2010)} * 0.7 = 0.30$ which results in catches of 43,600 t in 2011 and an SSB of 100,400 t in 2012.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in Division IIIa and Sub-divisions 22 to 24 falls under Category 3. Accordingly STECF notes that the rules for the above category imply a catch limit in 2011 of 43,600 t.

STECF notes that the above advised catch limits includes a predicted catch of Western Baltic/ IIIa spring spawners of 3,900 t in the eastern part of Division IVa. This means that the catch of Western Baltic/IIIa spring spawners in Division IIIa and Western Baltic should be limited to 39,700 t. Pending on how the catch limit is allocated to the two management areas and the fleets involved in the fishery it is likely to result in a reduction in the TACs of more than 30 % (the constraint on reduction in TACs for category 3 stocks). STECF therefore advises that using the rules for category 3 imply the following TAC for herring in Division IIIa and Subdivisions 22 – 24:

Management unit	TAC 2011	Basis
Herring Division IIIa (fleet C)	23699 t	30 % reduction of 2010 TAC
Herring by-catches Division IIIa (fleet D)	5303 t	30 % reduction of 2010 TAC
Herring Subdivisions 22 to 24	15884 t	30 % reduction of 2010 TAC

STECF notes that the catches of herring in Division IIIa consist of a mixture of North Sea autumn spawning and Western Baltic/IIIa spring spawning herring and that the TAC given in the above table is predicted to result in a total catch of WesternBaltic/IIIa spring spawners of 42,600 t in Division IIIa and western Batic and 2,200 t of North Sea autumn spawners in Division IIIa. Adding the predicted catch of 3,900 t of spring spawners in the North Sea gives a total predicted catch of Western Baltic/IIIa spring spawners of 46,500 t. This reflects a fishing mortality in the order of 0.34.

CORRIGENDUM

The text below should replace the corresponding sections in Part 1 of the STECF REVIEW OF SCIENTIFIC ADVICE FOR 2011 - ADVICE ON STOCKS IN THE BALTIC SEA (SGRST- 10-01). Office for Official Publications of the European Union, Luxembourg, EUR 24423 EN, JRC 59081).

3.6.2. Herring (Clupea harengus) in Subdivisions 25-29 (excluding Gulf of Riga) and 32.

FISHERIES: All the countries surrounding the Baltic, exploit the herring in these areas as part of fishery mixed with sprat. Over the last 30 years, landings of herring have decreased from a peak of 369,000 t in 1974 to 91,300 t in 2005. Since then landings have gradually increased to 132,135 t in 2009.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on catch data and on an international acoustic survey. Natural mortality is derived from a multispecies model from 2006 rescaled to the most recent estimates of cod biomass. Recruitment estimates for forecasts are based on the acoustic survey. Catches of Central Baltic spring-spawning herring taken in the Gulf of Riga are included in the assessment.

REFERENCE POINTS: The proposed precautionary reference point for fishing mortality is $F_{pa} = 0.19$. ICES indicates that F_{pa} needs revision but does not propose a revised value. ICES used $F_{MSY} = 0.19$.

There is no biological basis at present for determining biomass reference points.

STOCK STATUS:

SSB (Spawning Stock Biomass)			
	2007	2008	2009
MSY ($B_{trigger}$)	?	?	Undefined
Precautionary approach (B_{pa}, B_{lim})	?	?	Undefined
F (Fishing Mortality)			
	2007	2008	2009
MSY (F_{MSY})	–	–	Overfishing
Precautionary approach (F_{pa}, F_{lim})	○	○	At risk

In the absence of defined biomass reference points the state of the stock cannot be evaluated with regard to these. The SSB decreased steadily between the mid-1970s and 2002, increased again until 2006 after which it has been rather stable. The SSB estimate for 2010 is 502, 000 t., 44 % below the long-term average. Based on the most recent estimates of fishing mortality, the stock is classified at risk to be harvested unsustainably. F has been slightly above F_{pa} in recent years and is now at the level of $F=0.26$.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Catch in 2011
Transition to an MSY approach with caution at low stock size	Less than 95,000
Cautiously avoid impaired recruitment (Precautionary Approach)	Less than 95,000

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 0.19 resulting in landings of 95 kt in 2011. This is expected to lead to an SSB of 535 kt in 2012. No MSYBtrigger is defined for this stock, it is still under development. Following the transition scheme towards the ICES MSY framework implies fishing mortality at 0.24 which is higher than F_{pa} . Therefore F_{pa} is used and this gives landings of 95 kt in 2011. This is expected to lead to an SSB of 535 000 t in 2012.

PA approach

The fishing mortality in 2011 should be no more than F_{pa} corresponding to landings of less than 95 000 t in 2011.

EC Policy paper

In the light of the EU policy paper on fisheries management (COM (2010) 241 FINAL), this stock is classified under the category 3. The resulting TAC would be 119 kt.

STECF COMMENTS:

STECF notes that the advice provided by ICES is referring to the stock and not to management area. Therefore in the herring TAC for the Sub-divisions 25-27, 28.2, 29&32 the average catches of this stock in Sub-division 28.1 should be excluded and the average catches of Gulf of Riga herring

taken outside the Gulf of Riga in Sd 28.2 should be included. Respective calculations are given in Table 1 (Section 3.6.3. Herring (*Clupea harengus*) in the Gulf of Riga).

STECF also notes that the interpretation of the EC Policy Paper and the resulting TAC of 119 kt advised by ICES was wrong. The stock is classified under category 3. Applying the rules for this category the TAC should be set equal to the forecasted catch corresponding to taking the highest yield in the long term (Fmsy).

Taking into account the above mentioned issues STECF has revised the advised catch options provided by ICES:

MSY approach: 91,640 t

Precautionary approach: 91,640 t.

EC Policy Paper: 95,000 t.

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Abstract

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