



**SCIENTIFIC, TECHNICAL AND ECONOMIC
COMMITTEE FOR FISHERIES (STECF)**

-

Opinion by written procedure

**Review of scientific advice for 2012
part I**

-

**Advice on stocks in the Baltic Sea
(STECF-OWP-11-05)**

JUNE 2011

Edited by Eskild Kirkegaard & Hendrik Doerner

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**OPINION OF THE SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR
FISHERIES BY WRITTEN PROCEDURE**

Review of scientific advice for 2012 – Advice on stocks in the Baltic Sea

JUNE 2011

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1. TERMS OF REFERENCE

The STECF is requested to review, comment, modify and complete, as far as needed, released scientific advice for the following Baltic Sea stocks in 2011 – 2012. It has been agreed between the DG MARE and the STECF that the opinion of the STECF plenary on scientific advice to be reviewed for Baltic Sea stocks will be delivered through a written procedure and should have to be provided to the Commission by mid June, 2011.

STECF is requested, in particular, to pinpoint possible inconsistencies, if any, between the assessment and the ICES (ACOM) advice.

In addition, when examining available scientific advice and when commenting them, possibly reviewing them or when writing some recommendations, STECF will have to take care of the Communication from the Commission COM(2011) on a consultation on fishing opportunities for 2012

(http://ec.europa.eu/fisheries/partners/consultations/fishing_opportunities/consultation_document_en.pdf).

Baltic Sea stocks:

- Cod in subdivisions 22-24
- Cod in subdivisions 25-32
- Herring in ICES division IIIa & subdivisions 22-24
- Herring in subdivisions 25-29 (excluding Gulf of Riga) & 32
- Herring in the Gulf of Riga
- Herring in subdivision 30 (Bothnian Sea)
- Herring in subdivision 31 (Bothnian Bay)
- Sprat in subdivisions 22-32
- Flounder
- Plaice
- Dab
- Turbot in subdivisions 22-32
- Brill in subdivisions 22-32
- Salmon in subdivisions 22-31 (Main basin & Gulf of Riga)
- Salmon in subdivision 32 (Gulf of Finland)
- Sea trout

2. INTRODUCTION

This report represents the STECF review of advice for stocks of interest to the European Community in the Baltic Sea.

In undertaking the review, STECF has consulted the most recent reports on stock assessments and advice from ICES and has attempted to summarise them in a common format.

2.1. Format of the STECF Review of advice

In addition to summarising the ICES advice and in accordance with the Commission's request to STECF, this report also provides the TAC proposals for 2012 that result from the direct application

of the rules laid down in Chapter 6 of the Communication from the Commission concerning a consultation on Fishing Opportunities COM(2011) 298-final.

STECF has been instructed by the Commission to apply the following interpretation of the rules:

Category 1 stocks – Stocks for which harvest control rules (HCRs) have been agreed among all contracting parties sharing the exploitation of a fish stock (e.g. EU and Norway) or adopted by the EU in the context of Multi-Annual Management Plans. The HCRs have to be applied when calculating the catch options which will be included in the scientific advice, taking obviously into account results of the stock assessment;

Category 2 stocks – Stocks for which no HCRs have been agreed and data are sufficient to carry out an analytical assessment of the fish stock. The MSY-HCR designed by ICES has to be applied when calculating the catch option.

Category 3 stocks – Stocks for which no HCRs have been agreed and data are insufficient to carry out an analytical assessment. A reduction of 25 % should be applied in the TAC.

Section 4.1 of COM(2011) 298-final states “When scientific advice on overfishing is unavailable, a reduction of 25% in the TAC and/or in the fishing effort levels should be proposed, unless scientific advice indicates that a bigger reduction is necessary because of short-term risks to the stock”.

STECF interprets Section 4.1 of COM(2011) 298-final to imply that for those Category 3 stocks for which no TAC is set a 25% reduction in fishing effort should be proposed.

STECF wishes to stress that unless it is explicitly stated in the STECF comments, the TAC and fishing effort proposals arising from direct application of the rules in COM(2011) 298-final should not be interpreted as STECF recommendations for fishing opportunities for 2012.

3. STECF REVIEW OF ICES ADVICE ON RESOURCES IN THE BALTIC SEA

3.1. Brill (*Scophthalmus rhombus*) in the Baltic Sea (Subdivisions 22-32)

FISHERIES: The brill fishery is carried out mainly by Denmark in Subdivision 22. Total reported landings have fluctuated between 1 and 160 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

REFERENCE POINTS: There are no reference points proposed for brill in the Baltic.

STOCK STATUS: CPUE in the 1st quarter Baltic International Trawl Survey (BITS-Q1) has increased substantially since 2002 indicating an increasing abundance.

MANAGEMENT AGREEMENT: No management objectives have been defined for this stock.

RECENT MANAGEMENT ADVICE: Based on precautionary considerations ICES advises that catches should not be increased.

STECF COMMENTS: STECF notes that the BITS-Q1 data indicates a substantial increase in the stock suggesting that the catches at the level observed in recent years are sustainable. STECF therefore agrees with ICES and advises that catches of brill in the Baltic Sea in 2012 should not be increased.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 3. As no TAC is set for brill in the Baltic Sea, STECF interprets the rule to imply that in 2012, a 25% reduction in fishing effort on brill in the Baltic Sea should be proposed.

The rationale for this interpretation is contained in Section 4.1 of COM(2011) 298-final which states “When scientific advice on overfishing is unavailable, a reduction of 25% in the TAC and/or in the fishing effort levels should be proposed, unless scientific advice indicates that a bigger reduction is necessary because of short-term risks to the stock”.

3.2. Cod (*Gadus morhua*) in the Baltic Sea (Subdivisions 22-24)

FISHERIES: Cod in the Western Baltic (Subdivisions 22-24) is exploited predominantly by Denmark and Germany, with smaller catches taken by Sweden and Poland. The fishery is conducted by trawl (62% of the landings) and gillnets (38%). Landings have in recent years been between 14,000 and 24,000 t with the lowest value of the time series in 2010.

ICES has estimated discards in 2010 to 10 % of the total catch in weight. The majority of the discards are undersized cod.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial as well as survey data using the SAM assessment model.

REFERENCE POINTS:

	<i>Type</i>	<i>Value</i>	<i>Technical basis</i>
MSY	MSY $B_{trigger}$	23 000 t	B_{pa} (23 000 t)
Approach	F_{MSY}	0.25	F_{max} (WGBFAS 2011)
Precautionary Approach	B_{lim}	not defined	
	B_{pa}	23 000 t	MBAL
	F_{lim}	not defined	
Management Plan	F_{pa}	not defined	
	SSB _{MGT}	not defined	
	F_{MGT}	0.60	EU management plan based on stochastic simulations

MANAGEMENT AGREEMENT: The EC agreed on a management plan for cod in the Baltic Sea in September 2007. For Western Baltic cod the aim is to reach a fishing mortality rate at levels no lower than 0.6. This should be reached by fixing the TAC consistent with an annual reduction in F by 10% and by annually reducing the total number of days a vessel can fish in the area by 10 % until the target F of 0.6 has been reached. The plan sets a maximum change of 15% of the TAC between consecutive years, unless the fishing mortality is estimated to be higher than 1.

In addition to the rules for setting the TAC and fishing effort the plan includes a number of control provisions and only two types of trawls (since January 2010: BACOMA with 120 mm square mesh panel and T90 with 120 mm mesh) are allowed in the cod trawl fishery. High-grading is prohibited in all Baltic fisheries since January 2010.

STOCK STATUS:

F (Fishing Mortality)			
	2008	2009	2010
MSY (F_{MSY})	✘	✘	✘ Above target
Precautionary approach (F_{pa} - F_{lim})	?	?	? Undefined
Management plan (F_{MGT})	✘	✘	✓ Below target
SSB (Spawning Stock Biomass)			
	2009	2010	2011
MSY ($B_{trigger}$)	✓	✓	✓ Above trigger
Precautionary approach (B_{pa} - B_{lim})	✓	✓	✓ Full reproductive capacity
Management plan (SSB_{MGT})	?	?	? Undefined

SSB has been fluctuating just above B_{pa} in recent years. F (ages 3–6) has decreased since the late 1990s and is estimated to have been below the F target in 2010. The three latest year classes have been close to the average of the last 10 years, but lower than the long-term average.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of the EU management plan (EC 1098/2007) that the TAC for 2012 should be set at 21,300 t.

MSY approach: Following the ICES MSY framework implies fishing mortality being reduced to 0.25, resulting in landings of 10,200 t in 2012. This is expected to lead to an SSB of 45,000 t in 2013. Following the transition scheme towards the ICES MSY framework implies fishing mortality being reduced to 0.44, resulting in landings of 16,600 t in 2012. This is expected to lead to an SSB of 39,800 t in 2013.

Management plan approach: Following the agreed EU management plan implies fishing at an F management plan of 0.6, which will lead to a TAC of 21,300 t in 2012. No further reduction in days at sea is required.

PA approach: As there is no F_{pa} defined for this stock, the catch corresponding to the PA approach cannot be calculated. B_{pa} is 23,000 t and all options in the outlook will result in a SSB above B_{pa} in 2013.

STECF COMMENTS: STECF agrees with ICES advice and notes that in accordance with the multi-annual management plan landings in 2012 should be 21,300 t.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 1. The rules for category 1 prescribe that for 2012, a TAC for cod in the Baltic Sea (Subdivisions 22-24) of 21,300t should be proposed.

3.3. Cod (*Gadus morhua*) in the Baltic Sea (Subdivisions 25-32)

FISHERIES: Cod in the Eastern Baltic (Subdivisions 25-32) is exploited predominantly by Poland, Sweden, and Denmark, the remaining catches taken by Latvia, Lithuania, Russia, Germany, Finland, and Estonia. Cod is taken primarily by trawlers and gillnetters.

The reported landings for the years 1992–1995 are known to be incorrect due to incomplete reporting and these landings have therefore been estimated. In this period, unreported and misreported catches were between about 7% and 38% of reported landings.

Estimates are available for underreporting since 2000 from a range of industry and enforcement sources. These indicate that catches in 2000 to 2007 have been around 32 - 45% higher than the reported figures. Since 2008 unreported landings have been reduced to less than 7 % of reported

landings. There is no indication of unreported landings in 2010. Landings have fluctuated between 42,000 t and 392,000 t over the whole time series, starting in 1965. In 2010 the landings amounted to 50,277 t. (77% by trawlers and 23% by gillnetters).

Discards are estimated to be 6.6 % of the total catch in weight in 2009. There are in some fisheries indications of high-grading currently not included in the discard estimates.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY Approach	MSY $B_{trigger}$		Undefined, under development
	F_{MSY}	0.30	based on stochastic simulations and close to F_{max}
Precautionary Approach	B_{lim}	undefined	
	B_{pa}	undefined	
	F_{lim}	0.96	F_{med} (estimated in 1998)
	F_{pa}	0.60	5th percentile of F_{med}
Management Plan	SSB_{MGT}	undefined	
	F_{MGT}	0.30	EU management plan based on stochastic simulations

MANAGEMENT AGREEMENT: The EC agreed on a management plan for cod in the Baltic Sea in September 2007. For Eastern Baltic cod the aim is to reach a fishing mortality rate no lower than 0.3. This should be reached by fixing the TAC consistent with an annual reduction in F by 10% and by annually reducing the total number of days a vessel can fish in the area by 10 % until the target F of 0.3 has been reached. The plan sets a maximum change of 15% of the TAC between consecutive years, unless the fishing mortality is estimated to be higher than 1.

In addition to the rules for setting the TAC and fishing effort the plan includes a number of control provisions and only two types of trawls (since March 2010: BACOMA with 120 mm square mesh panel and T90 with 120 mm mesh) are allowed in the cod trawl fishery. High-grading is prohibited in all Baltic fisheries since January 2010.

STOCK STATUS:

F (Fishing Mortality)				
	2008	2009	2010	
MSY (F_{MSY})	✓	✓	✓	Appropriate
Precautionary approach (F_{pa}, F_{lim})	✓	✓	✓	Harvested sustainably
Management plan (F_{MGT})	✓	✓	✓	Below target
SSB (Spawning Stock Biomass)				
	2009	2010	2011	
MSY ($B_{trigger}$)	?	?	?	Undefined
Precautionary approach (B_{pa}, B_{lim})	?	?	?	Undefined
Qualitative evaluation	→	↗	✓	Above poss. reference points

ICES considers the present SSB to be above any candidate precautionary biomass reference points. The SSB has increased rapidly in recent years and is estimated to be at 309,000 t at the start of 2011. F in 2008–2010 was estimated to be the lowest in the series. The abundance of the 2006, 2007, and 2008 year classes (at age 2) is above the average of the last 15 years.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of the EU management plan (EC 1098/2007) that the TAC for 2012 should be set at 74200 t.

Management plan: Following the agreed EU Management plan implies fishing at an F of 0.3. This results in a TAC increase of more than 40% as compared with TAC in 2011. Therefore the 15% TAC constraint applies, resulting in a TAC of 74,200 t (TAC EU+Russia) in 2012. This is expected to lead to a fishing mortality of 0.24 and to an increase in SSB to 406,000 t in 2013. No further reduction in days at sea is required.

MSY approach: As no MSY $B_{trigger}$ has been identified for this stock, the ICES MSY framework has been applied with F_{MSY} without consideration of SSB in relation to MSY $B_{trigger}$.

Following the ICES MSY framework implies fishing at an F of 0.30, resulting in landings of 90,000 t in 2012. This is expected to lead to an SSB of 385,000 t in 2013.

There is no transition needed as F 2010 is below F_{MSY} .

PA approach: The fishing mortality of $F_{pa} = 0.6$ corresponds to landings of 165,700 t in 2012. This is expected to reduce SSB to 290,000 t in 2013.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2012.

STECF notes that there is no indication of unreported landings in 2010.

STECF notes that the TAC advice provided by ICES for 2012 assumes a TAC constraint in 2011.

STECF notes that the TAC of 74,200t for 2012 set in accordance with the multi-annual management plan will, because of the constraint on annual variation in TAC, results in a fishing mortality of 0.24 which is well below the target F of 0.3.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 1. The rules for category 1 prescribe that for 2012, a TAC for cod in the Baltic Sea (Subdivisions 22-24) of 21,300t should be proposed.

STECF notes that the objective of the multi-annual management plan to reduce the fishing mortality to level associated with high long-term yield (F close to 0.3) has been fulfilled and fishing mortality is estimated to be well below the target.

According to article 8(5) of the multi-annual management plan (Council Regulation (EC) No 1098/2007) the fishing effort in 2012 shall be equal to the fishing effort in 2011 multiplied by the target fishing mortality and divided by the fishing mortality in 2011 ($Effort(2012) = Effort(2011) \times 0.3 / F(2011)$). With F (2011) equal to 0.23 the management plan stipulates an increase effort in 2012 by 30% compared to 2011.

3.4. Dab (*Limanda limanda*) in the Baltic Sea (Subdivisions 22-32)

FISHERIES: The total landings of dab have been fluctuating between 1,000 t and 1,900 t. since 2003. Landings in 2010 were 1041 t. The lowest observed since 2003. The highest landings are observed in Subdivision 22. The main dab landings are reported by Denmark (Subdivision 22 and 24) and Germany (mainly in Subdivision 22).

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

REFERENCE POINTS: There are no reference points proposed for dab in the Baltic.

STOCK STATUS: The stock status is unknown. CPUE in the 1st quarter Baltic International Trawl Survey (BITS-Q1) has increased by a factor 5 to 10 since 2001 indicating a increasing abundance. The exploitation is likely to be low due to an overall decreasing trend in fishing effort for demersal trawlers in the western Baltic.

MANAGEMENT OBJECTIVES: No management objectives have been defined for this stock.

RECENT MANAGEMENT ADVICE: Based on the precautionary considerations ICES advises that catches should not increase.

STECF COMMENTS: STECF notes that the BITS-Q1 data indicates a substantial increase in the stock suggesting that the catches at the level observed in recent years are sustainable and agrees with ICES' advice that catches should not increase. STECF also considers that as the stock has been increasing over the past decade while landings have fluctuated between 1,000 t and 1,900 t, it would be appropriate to use the average reported landings over the recent years as a basis for the reference level.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 3. As no TAC is set for dab in the Baltic Sea, STECF interprets the rule to imply that in 2012, a 25% reduction in fishing effort on dab in the Baltic Sea (subdivisions 22-32) should be proposed.

The rationale for this interpretation is contained in Section 4.1 of COM(2011) 298-final which states "When scientific advice on overfishing is unavailable, a reduction of 25% in the TAC and/or in the fishing effort levels should be proposed, unless scientific advice indicates that a bigger reduction is necessary because of short-term risks to the stock".

3.5. Flounder (*Platichthys flesus*) – IIIbcd (EU zone), Baltic Sea

FISHERIES: All countries surrounding the Baltic Sea report landings of flounder. It is taken as by-catch in fisheries for cod and to a minor extent, in a directed fishery. Since 1973 total recorded landings have fluctuated between 10-20 thousand t. In 2010 the reported landings were 16,582 t, of which 11,693 t is reported from subdivisions 24 and 25. Discards of flounder in the demersal trawl fishery targeting cod is very high (five to ten times the amount landed) and variable.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No reference points have been proposed for the flounder stocks in the Baltic.

STOCK STATUS: The stock has been stable in recent years. Exploitation is considered to be low or moderate.

RECENT MANAGEMENT ADVICE: Based on precautionary considerations ICES advises that catches should be reduced.

STECF COMMENTS: STECF notes that based on a catch curve analysis, exploitation appears to be low or moderate. The stock trend appears to be stable but noisy and ICES advises that based on precautionary considerations catches should be reduced.

STECF agrees that on precautionary considerations, the ICES advice to reduce catches in 2012 seems appropriate but appears to be based solely on there being no overall trend in BITS-Q1 catch rates over the period 2001 to 2011 and does not take account of the fact that exploitation appears to be low or moderate with no detectable decline in the stock over that period.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 3. As no TAC is set for flounder in the Baltic Sea, STECF interprets the rule to imply that in 2012, a 25% reduction in fishing effort on flounder in the Baltic Sea should be proposed.

The rationale for this interpretation is contained in Section 4.1 of COM(2011) 298-final which states “When scientific advice on overfishing is unavailable, a reduction of 25% in the TAC and/or in the fishing effort levels should be proposed, unless scientific advice indicates that a bigger reduction is necessary because of short-term risks to the stock”.

3.6. Herring (*Clupea harengus*) in Divisions IIIbcd, Baltic Sea

The present ICES stock assessment units of Baltic herring and the corresponding management units are shown in the text table below:

Herring Stock Assessment Units	Management Areas
Herring in division IIIa and subdivisions 22-24	Subdivisions 22 – 24 Division IIIa
Subdivisions 25 – 29 (excluding Gulf of Riga) and 32	Subdivisions 25,26,27,29, 32 and 28.2
Gulf of Riga Herring (subdivision 28.1)	Subdivision 28.1 (Gulf of Riga)
Herring in subdivision 30	Subdivisions 30-31
Herring in Subdivision 31	Subdivisions 30-31

3.6.1. Herring (*clupea harengus*) in Division IIIa and Subdivision 22 – 24.

FISHERIES: Herring of this 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 and by-catches in the small mesh trawl fisheries for sprat, Norway pout and sandeel, while Sub-divisions 22–24 have directed trawl, gillnet and trap net fisheries. The catches of herring taken in the Skagerrak and the Kattegat consist of mixture 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. The proportion of the total catch of the spring spawner stock taken in the western Baltic has varied between 42 and 63% since 2005.

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 (target herring fishery) and one for fisheries using nets with a mesh size smaller than 32 mm (by-catch fishery). 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.

EU and Norway have agreed that 50% of the quotas for the target herring fishery in Division IIIa in 2011 can be fished in the North Sea.

Landings in 2010 by area, fishery and stock are shown in the table below (WBSS: Western Baltic spring spawners; NSAS: North Sea autumn spawners).

Area where WBSS are being caught	Fleet	Fishery	WBSS 2010 catch	NSAS 2010 catch
Division IIIa	C	Directed herring fisheries with purse-seiners and trawlers.	22 975 t	11 978 t
	D	Bycatches of herring caught in the small-mesh fisheries.	549 t	1 781 t
SD 22–24	F	All herring fisheries in Subdivisions 22–24.	17 917 t	-
Division IVa East	A	Directed herring fisheries with purse-seiners and trawlers.	772 t	-

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	Based on management plan development and the lowest observed SSB in the 2008 assessment
	F_{MSY}	0.25	Management plan evaluations (ICES, 2008)
Precautionary approach	B_{lim}	-	Not defined
	B_{pa}	-	Not defined
	F_{lim}	-	Not defined
	F_{pa}	-	Not defined

STOCK STATUS:

F (Fishing Mortality)			
	2008	2009	2010
MSY (F_{MSY})	✘	✘	✘ above target
Precautionary approach (F_{pa}, F_{lim})	?	?	Undefined
SSB (Spawning Stock Biomass)			
	2009	2010	2011
MSY ($B_{trigger}$)	✘	✘	✘ below trigger
Precautionary approach (B_{pa}, B_{lim})	?	?	Undefined

Catches have declined since the early 1990s and SSB has been decreasing in recent years and reached the lowest in the time-series in 2010. Fishing mortality has been increasing since 2005, but dropped to 0.30 in 2010 (still higher than the target F_{MSY} of 0.25). The most recent recruitment is estimated to be near the long-term average.

The stock is below the MSY $B_{trigger}$ in 2011, but with the present management measures, the SSB is expected to be above the MSY- $B_{trigger}$ in 2012. However, ICES notes that the present flexibility in taking a proportion of the Division IIIa TAC in the North Sea introduces significant uncertainties in the forecasts.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of the MSY framework that catches of Western Baltic spring spawning herring in 2012 should be no more than 42,700 t.

MSY approach: Following the ICES MSY framework implies a fishing mortality F_{MSY} of 0.25. There is no need to reduce the target F as SSB_{2012} is estimated to be above MSY $B_{trigger}$. This results in catches of Western Baltic spring spawners of no more than 42,700 t in 2012 from the whole distribution area. This is expected to lead to an SSB of above 137,000 t in 2013.

Precautionary approach: No PA reference points have been set for this stock. It is therefore not possible to give advice based on these.

Additional considerations: The advice forecast is based on the assumption that the 2012 TAC for Division IIIa will be caught in the area without transfer options. To protect mature adults, catches of Western Baltic herring in the North Sea should not be allowed to increase.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2012.

STECF notes that the above advised catch limits includes a predicted catch of Western Baltic/ IIIa spring spawners of 800 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 41,900 t.

Applying the advised TAC for Western Baltic spring spawners, assuming a fifty-fifty allocation between Division IIIa and the Western Baltic of the quota (excluding the predicted catch in the North Sea) and taking into account catches by fishery of North Sea autumn spawners in Division IIIa STECF advises the following TAC's for herring in Division IIIa and Subdivisions 22- 24 for 2012:

TAC unit	TAC 2012	Predicted catch by stock	
		WBSS	NSAS
Division IIIa target herring fishery	26,400 t	19,600 t	6,800 t
Division IIIa by-catch fishery	3,400 t	1,400 t	2,000 t
Subdivisions 22 to 24	20,900 t	20,900 t	0 t

STECF underlines that predicted catch by stock is based on the assumption that TAC's for Division IIIa are taken in the area and that no transfers of quotas to the North Sea will take place.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 2. The TAC's provided in the table above are those that should be proposed according to the rule for this category.

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 91,592 t in 2005. Since then landings have gradually increased to 136,706 t in 2010.

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:

	Type	Value	Technical basis
MSY Approach	MSY $B_{trigger}$	not defined	Under development
	F_{MSY}	0.16	Based on stochastic simulations and long-term deterministic simulations (ICES, 2011)
Precautionary Approach	B_{lim}	not defined	
	B_{pa}	not defined	
	F_{lim}	not defined	
	F_{pa}	0.19*	F_{med} (assessment 2000)

STOCK STATUS:

F (Fishing Mortality)				
	2008	2009	2010	
MSY (F_{MSY})	✘	✘	✘	Above target
Precautionary approach (F_{pa}, F_{lim})	✘	✘	✘	Harvested unsustainably
SSB (Spawning Stock Biomass)				
	2009	2010	2011	
MSY ($B_{trigger}$)	?	?	?	Undefined
Precautionary approach (B_{pa}, B_{lim})	?	?	?	Undefined
Qualitative evaluation	→	→	→	Stable but low biomass

SSB in 2010 (535,000 t) was 60% of the long-term (1974–2010) average. Fishing mortality has been above F_{pa} and F_{MSY} since the beginning of the 1980s. The last stronger year classes for this stock were the 2002 and 2007 year-classes. The 2007 year-class is, however, below long-term average.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of the transition to the MSY approach that catches in 2012 should be no more than 92,000 t.

MSY approach: As no MSY $B_{trigger}$ has been identified for this stock, the ICES MSY framework has been applied with F_{MSY} without consideration of SSB in relation to MSY $B_{trigger}$. ICES Advice 2011, Book 8 23

Following the ICES MSY framework implies fishing at $F = 0.16$, corresponding to catches of less than 79,000 t in 2012. This is expected to lead to an SSB of 548,000 t in 2013.

Following the ICES transition to the MSY framework implies a fishing mortality of 0.25, which is higher than F_{pa} . Therefore, F_{pa} is used as the basis for advice, resulting in catches of less than 92,000 t in 2012. This is expected to lead to an SSB of 532,000 t in 2013.

Precautionary Approach: The fishing mortality in 2012 should be no more than F_{pa} , corresponding to catches of less than 92,000 t in 2012. This is expected to lead to an SSB of 532,000 t in 2013.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2012.

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 the table below.

Taking into account the above mentioned issues STECF has revised the advised catch options provided by ICES and advises on the basis of the transition to the MSY approach that the TAC in 2012 should be no more than 86,800 t.

MSY approach: 86,800 t

Precautionary approach: 86,800 t.

Table. Setting of herring TACs by management area in Sub-divisions 25-27, 28.2, 29&32.

Stock	Stock advice	Average 3 year catch taken outside management	Average 3 year catch of another stock taken in the management area	Management area advice

		area		
Sd 25-27, 28.2, 29&32	92,000 t	5,400 t	200 t	86,800 t

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 2. The rules for category 2 prescribe that for 2012, a TAC for herring in Subdivisions 25-29 (excluding the Gulf of Riga) of 86,800 t should be proposed.

3.6.3. Herring (*Clupea harengus*) in the Gulf of Riga.

FISHERIES: Herring catches in the Gulf of Riga include both Gulf herring and open-sea herring, which enter the Gulf of Riga from April to June for spawning. Landings have fluctuated between 30,000 and 40,000 t since 2000. The herring in the Gulf of Riga is fished by Estonia and Latvia. The structure of the fishery has remained unchanged in recent decades. Approximately 70% of the catches are taken by the trawl fishery and 30% by a trap net fishery on the spawning grounds. ICES estimates landings in 2010 to 34,948 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY Approach	MSY $B_{trigger}$	60 000 t	WKMAMPEL (ICES, 2009)
	F_{MSY}	0.35	WKMAMPEL (ICES, 2009) based on stochastic simulations
Precautionary Approach	B_{lim}	not defined	
	B_{pa}	not defined	
	F_{lim}	not defined	
	F_{pa}	0.4	From medium-term projections

STOCK STATUS:

F (Fishing Mortality)				
	2008	2009	2010	
MSY (F_{MSY})	✘	✘	✘	Above target
Precautionary approach (F_{pa}, F_{lim})	✔	✘	✘	Harvested unsustainably
SSB (Spawning Stock Biomass)				
	2009	2010	2011	
MSY ($B_{trigger}$)	✔	✔	✔	Above trigger
Precautionary approach (B_{pa}, B_{lim})	?	?	?	Undefined

The estimated SSB in 2011 is 26% above the MSY $B_{trigger}$ biomass of 60,000 t. Following high recruitment, SSB increased in the late-1980s and is currently estimated to be above the long-term average. The year classes of 2005, 2007, and 2009 are strong, while the 2006 and 2008 year classes are poor.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of the transition to the MSY approach that catches in 2012 should be no more than 25,500 t.

MSY approach: Following the ICES MSY framework implies fishing at $F = 0.35$, which corresponds to catches of less than 22,700 t in 2012. This is expected to lead to an SSB of 71,800 t in 2013.

Following the transition scheme towards the ICES MSY framework implies that the fishing mortality is reduced to $F_{2010} * 0.6 + F_{MSY} * 0.4 = 0.40$, resulting in catches of less than 25,500 t in 2012. This is expected to lead to an SSB of 68,600 t in 2013.

Precautionary approach: The fishing mortality in 2012 should be no more than F_{pa} , corresponding to catches of less than 25,500 t in 2012. This is expected to keep SSB above the long-term average.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2012.

STECF notes that the advice provided by ICES is referring to the stock and not to management area. Therefore in the Gulf of Riga herring TAC the average catches of open sea herring in the Gulf of Riga should be included and the average catches of Gulf of Riga herring taken outside the Gulf of Riga should be excluded. Respective calculations are given in the table below.

Taking into account the above mentioned issues STECF advises the following TACs:

Transition to the MSY approach: 30,700 t

MSY approach ($F = 0.35$): 27,900 t

Precautionary approach: 30,700 t.

Table. Setting of herring TACs by management area in Sub-division 28.1.

Stock	Stock advice	Average 35 year catch taken outside management area	Average 3 year catch of another stock taken in the management area	Management area advice
Sd 28.1	25,500 t	200 t	5,400	30,700 t

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 2. The rules for category 2 prescribe that for 2012, a TAC for herring in the Gulf of Riga (Subdivision 28.1) of 30,700 t should be proposed.

3.6.4. Herring (*Clupea harengus*) in Subdivision 30, Bothnian Sea

FISHERIES: Finland and Sweden carry out herring fishery in this area. On average 95% of the total catch is taken by trawl fishery. Landings were relative stable around 20 to 30,000 t until 1992, after which they increased to between 50 and 60,000 t. A further increase in landings has taken place since 2006. In 2010 the landings were 71,726 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY Approach	MSY $B_{trigger}$	200 000 t	10% lower fractile of B_{MSY}
	F_{MSY}	0.19	F giving the highest yield based on YPR analysis in combination with the hockey-stick S-R relationship
Precautionary Approach	B_{lim}	290 000 t	Segmented regression approach
	B_{pa}	not defined*	
	F_{lim}	0.30	F_{loss} (in 2000)
	F_{pa}	0.21	F_{med} (in 2000)

STOCK STATUS:

F (Fishing Mortality)			
	2008	2009	2010
MSY (F_{MSY})	✓	✓	✓ Appropriate
Precautionary approach (F_{pa}, F_{lim})	✓	✓	✓ Harvested sustainably
SSB (Spawning Stock Biomass)			
	2009	2010	2011
MSY ($B_{trigger}$)	✓	✓	✓ Above trigger
Precautionary approach (B_{pa}, B_{lim})	✓	✓	✓ Full reproductive capacity

The spawning stock biomass tripled during the late 1980s, remained high since and increased further in 2010. The fishing mortality has been below F_{pa} since the beginning of the time-series (1973) and has not reached F_{MSY} since 2000. Recruitment seems to be stable over the last 20 years with the exception of three very abundant year-classes in 2002, 2006, and 2008.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of the MSY framework that the catch in 2012 should be no more than 104,000 t.

MSY approach: Following the ICES MSY framework implies a fishing mortality of 0.19, resulting in catches of no more than 104,000 t in 2012. This is expected to lead to an SSB of 475,000 t in 2013.

No transition scheme applies as fishing mortality is below F_{MSY} .

Precautionary approach: According to the precautionary approach, the fishing mortality in 2012 should be no more than F_{pa} , corresponding to catches of no more than 114,000 t in 2012. This is expected to maintain SSB at a high level in 2013.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2012.

STECF notes that the TAC for herring in the Bothnian Bay covers Subdivisions 30 and 31 and should be set in accordance with the combined advice given for the two herring stocks in the area. STECF advises that the catch of herring in subdivision 31 should be kept at the level observed in recent years corresponding to 2,600 t (see section 3.6.4 Herring in Subdivision 31).

Based on the above considerations STECF advises the following TACs for subdivisions 30 and 31:

MSY approach: 106,600 t

Precautionary approach: 116,600 t.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 2. The rules for category 2 prescribe that for 2012, a TAC for herring in subdivisions 30 of 106,000 t should be proposed.

3.6.5. Herring (*Clupea harengus*) in Subdivision. 31,

FISHERIES: Trawl fisheries account for the main part of the total catches. Normally the trawl fishing season begins in late April and ends before the spawning season in late May to July. It resumes in August/September and continues, until the ice cover appears, usually in early November. Landings in 2010 were 2,075 t., the lowest since 1971.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No reference points are agreed for the stock.

STOCK STATUS:

F (Fishing Mortality)		
	2008- 2010	
MSY (F_{MSY})	?	Unknown
Precautionary approach (F_{pa}, F_{lim})	?	Unknown
Qualitative evaluation	✓	Low to moderate

SSB (Spawning Stock Biomass)		
	2009-2011	
MSY ($B_{trigger}$)	?	Unknown
Precautionary approach (B_{pa}, B_{lim})	?	Unknown
Qualitative evaluation	→	Stable stock abundance

Cpue from trapnet fisheries shows fluctuations without a clear trend, suggesting stable stock abundance. Exploitation has been decreasing steadily since the 1980s and is now considered to be low.

RECENT MANAGEMENT ADVICE: Based on precautionary considerations ICES advises that catches should not increase.

Precautionary approach: Cpue from trapnet fisheries shows fluctuation without a clear trend, suggesting stable stock abundance. Exploitation has been decreasing steadily since the 1980s and is now considered to be low. Therefore, catches should not increase.

STECF COMMENTS:

STECF notes that since 2004 the catches have gradually decreased and in 2010 were 2,075 t that are the lowest on record. In recent years the fishery has been largely supported by the strong year-classes of 2002 and 2006. These observations could indicate that the stock may be reduced compared to its long-term status, and that the exploitation rate is unknown. On the other hand, the CPUE indices show no trend and the decrease in landings could be due to reduced exploitation connected with decrease of the demand. In such an unclear situation STECF advises that the catch should be kept at or below the average level observed in recent five years corresponding to 2,600 t.

STECFs TAC advice for subdivisions 30 and 31 is given in section 3.6.4.

3.7. Plaice (*Pleuronectes platessa*) in the Baltic Sea (Subdivisions 22-32)

FISHERIES: The highest total landings of plaice were observed at the end of the seventies (8,289 t in 1979) and the lowest in 1989 (403 t). Since 1999 landings have fluctuated between 1,900 and 2,800 t. ICES Subdivisions 22 and 25 are the main fishing areas and. Poland and Denmark are the main fishing countries.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

REFERENCE POINTS: There are no reference points proposed for plaice in the Baltic.

STOCK STATUS: The exploitation rate is unknown. The stock seems to be increasing based on survey cpue.

MANAGEMENT OBJECTIVES: No management objectives have been defined for this stock.

RECENT MANAGEMENT ADVICE: Based on precautionary considerations ICES advises that catches should not increase.

STECF COMMENTS: STECF notes that the survey cpue data indicates a substantial increase in the stock suggesting that the catches at the level observed in recent years are sustainable and agrees with ICES advice that catches should not increase. This corresponds to a TAC in 2012 of no more than 3041 t.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 3. The rules for category 3 prescribe that for 2012, a TAC for plaice in subdivision 31 of 2,281 t should be proposed.

3.8. Salmon (*Salmo salar*) in the Baltic Sea, Div. IIIb,c,d (Main Basin and Gulf of Bothnia, Sub-div. 22-31)

FISHERIES: Reported total landings in the Baltic Sea (including recreational fishery) have declined 85 % since 1990, from 5,636 (1990) to 886 t (2010). The decline has been largest in the offshore fishery where reported landings in 2010 were 360 t or only 10 % of landings reported in 1990. However, since 2008 reported landings of the offshore fishery have been increasing again. Landings from coastal fisheries were 380 t in 2010, which is 29 % of the catches in 1990. River catches have shown no clear trend with reported landings in 2010 of 110 t. 49 % of the EC quota for 2010 was landed.

Unreported catches and discards are estimated to be 692 t, which is over 40% of the total catches.

The decreased catches are largely explained by quota and national restrictions, reduced post-smolt survival, increased seal damage to catches and gear and declining effort mainly in the offshore fishery caused by a drift net ban since Jan 2008 but also by poor market prices and market restrictions related to high dioxin contents. The nominal catch in the offshore fishery was 76,000 fish in 2010.

There has been an increase in the proportion of wild salmon in catches, relative to reared salmon, which reflects the increased wild smolt production

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: To evaluate the state of the stock ICES uses the smolt production relative to the 50% and 75% level of the potential smolt production capacity (PSPC) on a river-by-river basis. ICES uses 75 % of the potential smolt production capacity as criteria for the population recovery to the MSY level.

MANAGEMENT AGREEMENTS: In 1997 IBSFC adopted the Salmon Action Plan (SAP) running 1997–2010 where the long-term objectives were:

1. To prevent the extinction of wild populations, further decrease of naturally produced smolts should not be allowed.
2. The production of wild salmon should gradually increase to attain by 2010 for each salmon river a natural production of wild Baltic salmon of at least 50% of the best estimate potential and within safe genetic limits, in order to achieve a better balance between wild and reared salmon.
3. Wild salmon populations shall be re-established in potential salmon rivers.
4. The level of fishing should be maintained as high as possible. Only restrictions necessary to achieve the first three objectives should be implemented.

5. Reared smolts and earlier salmon life stage releases shall be closely monitored.

A new long-term management plan for Baltic Salmon is under development. However, at present there is no formal management plan for salmon in this area.

STOCK STATUS: In order to better support the management of wild salmon stocks, ICES has established five assessment units for the Baltic Main Basin and the Gulf of Bothnia.

Assessment unit	Name	Salmon rivers included
1	Northeastern Bothnian Bay stocks	On the Finnish-Swedish coast from Perhonjoki northward to the river Råneälven, including River Tornionjoki
2	Western Bothnian Bay stocks	On the Swedish coast between Lögdeälven and Luleälven
3	Bothnian Sea stocks	On the Swedish coast from Dalälven northward to Gideälven and on the Finnish coast from Paimionjoki northwards to Kyrönjoki
4	Western Main Basin stocks	Rivers on the Swedish coast in Divisions 25–29
5	Eastern Main Basin stocks	Estonian, Latvian, Lithuanian, and Polish rivers

From the 27 rivers assessed by ICES, 8 are likely or very likely to reach the 50% target in 2011. 13 rivers are unlikely to reach that target. One of the rivers is likely to reach the 75 % target in 2011. The target is more likely to be met in productive rivers especially in the Northern Baltic Sea area while the status of less productive wild stocks in other areas remains poor. Potential smolt production capacity estimates for individual rivers were updated in this years assessment.

The overall estimated smolt production has been increasing and will continue to stay high in the near future. The total wild smolt production has increased about tenfold in assessment units 1–2 since the Salmon Action Plan was adopted in 1997. In assessment unit 3 the smolt production has been on the same level, and in assessment unit 4 a slightly decreasing trend in smolt production has been observed during the period. Wild smolt production of all assessment units combined is now estimated to be 65-70% of the potential total smolt production. Smolt production is still low in rivers where salmon were extirpated and are now being reintroduced.

The total exploitation rate of salmon decreased considerably from the beginning of the 1990s to 2006, and harvest rate in the offshore fishery in particular showed a clear downgoing trend during that period. However, since 2006 the total exploitation rate has slightly increased, and the exploitation in the longline fishery has increased substantially since 2008. The current offshore harvest rate by longlines only is now approaching the combined harvest rate for longlines and driftnets in the mid-2000s.

The post-smolt survival is a key factor influencing the abundance and development of salmon stocks. It has declined during the last 15 years and remained very low since 2005.

RECENT MANAGEMENT ADVICE: On the basis of the MSY approach, ICES advises a TAC of not more than 54 000 salmon for 2012. This reflects a 50% reduction in fishing effort compared to 2010.

Salmon management should be based on the assessments of the status of individual stocks in the rivers. Fisheries on mixed stocks, either in coastal waters or open sea areas, pose particular difficulties for management. These fisheries cannot target only those stocks that are close to or above their targets, but will also exploit weaker stocks. Fisheries in estuaries and rivers are more likely to fulfil this requirement.

Salmon stocks in the rivers Rickleån and Öreälven in the Gulf of Bothnia, Emån in southern Sweden, and in a majority of the rivers in the southeastern Main Basin are especially weak and need longer-term stock rebuilding measures, including fisheries restrictions, habitat restoration, and removal of physical barriers. In order to maximize the potential recovery of these stocks, further decreases in exploitation are required along their feeding and spawning migration routes. The offshore fishery in the Main Basin targets all weak salmon stocks on their feeding migration. The coastal fishery targets weak stocks from northern rivers when the salmon pass the Åland Sea and Gulf of Bothnia on their spawning migration.

STECF COMMENTS: STECF agrees with the ICES advice.

STECF notes that with a TAC of 54,000 salmon as advised by ICES, the predicted total sea catch (reported and unreported commercial catch + recreational catch), would be 124,000 salmon. STECF notes that under this scenario there is an increased probability to reach the 75 % smolt production target.

The overall estimated smolt production will stay high in the near future. However, the status of the less productive wild stocks is poor and for those rivers the probability to reach 75 % of the potential smolt production level by 2016 is low regardless of the effort and TAC levels.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 2. The rules for category 2 prescribe that for 2012, a TAC for salmon in the Baltic Sea, Div. IIIb,c,d (Main Basin and Gulf of Bothnia, Sub-div. 22-31) of 54,000 individuals should be proposed.

3.9. Salmon (*Salmo salar*) in the Baltic Sea, Gulf of Finland (Sub-div. 32)

FISHERIES: The salmon fishery in the Gulf of Finland is mainly based on reared fish. Estonia, Finland and Russia are participating in the salmon fishery. Salmon catches in the area are low, and although commercial effort is low there is substantial (but poorly quantified) effort and catches by recreational fishers. In 1996 the landings amounted to about 80,000 specimens, but in 2010 the nominal landings only amounted to 7 488 specimens or 44 t. Landings of the professional fisheries were 6 724 salmon and those of recreational fisheries were 764 salmon. Discards due to seal damages were 883 salmon. Less than 50 % of the TAC in 2010 was utilised. Salmon from the Gulf of Finland are feeding to a substantial rate in the Main Basin area and are partly harvested there. Also, catches in the Gulf of Finland consist to some extent of salmon originating from Gulf of Bothnia.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: Not established.

STOCK STATUS: The status of wild salmon stocks or the exploitation rate in the Gulf of Finland has not remarkably changed since the previous assessment. There are three remaining native salmon stocks in the Estonian rivers. In two of those, the estimated smolt production has been less than 10 % of the potential in the last three years. In the third river smolt production has increased significantly and has exceeded 50 % of the potential in last two years. Wild smolt production occurs in the rivers supported by smolt releases as well. Post-smolt survival of reared smolts has been low in recent years.

MANAGEMENT AGREEMENTS: In 1997 IBSFC adopted the Salmon Action Plan (SAP) running 1997–2010 where the long-term objectives are:

To prevent the extinction of wild populations, further decrease of naturally produced smolts should not be allowed.

1. The production of wild salmon should gradually increase to attain by 2010 for each salmon river a natural production of wild Baltic salmon of at least 50% of the best estimate potential and within safe genetic limits, in order to achieve a better balance between wild and reared salmon.
2. Wild salmon populations shall be re-established in potential salmon rivers.
3. The level of fishing should be maintained as high as possible. Only restrictions necessary to achieve the first three objectives should be implemented.
4. Reared smolts and earlier salmon life stage releases shall be closely monitored.

A new long-term management plan for Baltic Salmon is under development. However, at present there is no formal management plan for salmon in this area.

RECENT MANAGEMENT ADVICE:

ICES advises that there should be no fishing on Estonian and Russian wild salmon in the Gulf of Finland. To maintain a low potential for by-catch of wild salmon in the coastal salmon fisheries, there should not be any increase in effort from present levels. Additional measures to reduce the potential for catching wild salmon in coastal fisheries close to the wild salmon rivers should be considered; such measures could include relocation of coastal fisheries away from sites likely to be on the migration paths of Gulf of Finland wild salmon, relocating fisheries away from rivers and river mouths supporting wild stocks, and protection of wild salmon (from poaching) when they return to rivers. Also, reduction in exploitation in the fishery in the Main Basin needs to be considered as salmon from Gulf of Finland to a large extent are utilizing the Main Basin on their feeding area.

STECF COMMENTS: STECF agrees with the ICES advice that there should be no catches of wild salmon in the Gulf of Finland and that effort should be kept at present levels.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 3. The rules for category 3 prescribe that for 2012, a TAC for salmon in the Gulf of Finland (Sub-div. 32) of 11,250 individuals should be proposed.

3.10. Sea trout (*Salmo trutta*) in the Baltic Sea (Sub-div. 22-32)

FISHERIES: Most of the sea trout catches are taken as a by-catch in other fisheries. Off-shore migrating sea trout stocks are to a large extent taken as a by-catch in the salmon fishery, whereas those which migrate shorter distances are caught in fisheries targeting whitefish, pikeperch, and perch. Nominal sea trout landings have been decreasing since 2000, from 1452 t in 2000 to 782 t in 2010. Ban on driftnets (from Jan 2008) had a significant effect especially on Polish sea trout catches which were reduced from 525 t in 2007 to 172 t in 2008. However, since then the Polish catches have increased again to 454 t in 2010 due to increase in longline fisheries.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: Not established.

STOCK STATUS: The Baltic Sea contains approximately 1000 sea trout stocks. The status of these populations is very variable; a few populations appear to be in a good state, whereas many populations especially in the Gulf of Bothnia and Gulf of Finland appear to be weak. In 6 of the 9

ICES subdivisions status of the sea trout stocks is below the estimated potential abundance if the river habitat was optimal and the populations stable.

MANAGEMENT AGREEMENTS: There are no management agreements or TAC set for the sea trout. Community and national regulations include inter alia minimum landing size, local and seasonal closures, and minimum mesh sizes for gillnet fishery.

RECENT MANAGEMENT ADVICE:

New data from 2010 do not change the perception of the stock status. The advice for the fishery in 2012 is therefore the same as the advice given in 2010 for the 2011 fishery:

ICES recommends immediate fishing restrictions to be enforced in the Gulf of Bothnia (ICES Subdivisions 30 and 31) and Gulf of Finland (ICES Subdivision 32), to safeguard the remaining wild sea trout populations in the region. Minimum mesh size for gillnets, and effort limitations should be implemented for the fisheries in the sea and in rivers carrying wild sea trout populations in order to decrease the exploitation rate.

Adequate fishing regulations should be enforced locally in ICES Subdivisions 29–32 to reduce the fishing mortality of sea trout: a minimum legal landing size of 65 cm would allow female fish to spawn at least once. Further, the problem of early catch of immature trout could be considerably reduced by prohibiting the use of mesh sizes below 50 mm (bar length). This would allow local fisheries for other species to be continued and at the same time reduce by-catch of immature trout. A complement would be to increase the protective areas in rivers, river mouths and along the coast. Furthermore, the effectiveness of closed areas could be improved by adjusting closure time and space to minimize catches of sea trout.

In the Main Basin, (ICES Subdivisions 22–29) habitat improvements by restoration are needed and accessibility to spawning and rearing areas should be improved in many rivers. Existing fishing restrictions (for example, closed season, closed areas at river mouths, minimum landing size and minimum mesh sizes) should be maintained in order to protect trout populations.

STECF COMMENTS: STECF agrees with ICES advice.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 3. As no TAC is set for sea trout in the Baltic Sea, STECF interprets the rule to imply that in 2012, a 25% reduction in fishing effort on sea trout in the Baltic Sea should be proposed.

The rationale for this interpretation is contained in Section 4.1 of COM(2011) 298-final which states “When scientific advice on overfishing is unavailable, a reduction of 25% in the TAC and/or in the fishing effort levels should be proposed, unless scientific advice indicates that a bigger reduction is necessary because of short-term risks to the stock”.

3.11. Sprat (*Sprattus sprattus*) in IIIbcd, Baltic Sea (Sub-div. 22-32)

FISHERIES: All countries surrounding the Baltic Sea report landings of sprat. During the 1990s total catches increased considerably, from 86,000 t in the 1990 to 529,000 t in 1997. Since then there has been a decrease and landings have been fluctuating around 375,000 t since 2000. Landings in 2010 were 342,000 t. Trawlers account for most of the catches. Varying amounts of herring are taken as by-catch in the fisheries for sprat.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The age-structured assessment is based long-term catch data and three survey indices.

MANAGEMENT AGREEMENT: The IBSFC long-term management plan for the sprat stock was terminated in 2006, and has not been replaced.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY Approach	MSY $B_{trigger}$	not defined*	
	F_{MSY}	0.35	Stochastic simulations, including S-R relationship and HCR
Precautionary Approach	B_{lim}	not defined*	
	B_{pa}	not defined*	
	F_{lim}	not defined	
	F_{pa}	0.40**	F_{med} estimate in 1998, allowing for variable natural mortality

STOCK STATUS:

F (Fishing Mortality)				
	2008	2009	2010	
MSY (F_{MSY})	✘	✘	✘	Above target
Precautionary approach (F_{pa})	✘	✘	✘	Harvested unsustainably
SSB (Spawning Stock Biomass)				
	2009	2010	2011	
MSY ($B_{trigger}$)	?	?	?	undefined
Precautionary approach (B_{pa}, B_{lim})	?	?	?	undefined
Qualitative evaluation	↙	→	✓	Declining but above possible reference points

SSB has declined from a historic high level in the late 1990s and the SSB in 2010 was estimated around the long-term average. The fishing mortality in 2010 declined to 0.41, which is slightly below the average of high F s of the past ten years. The 2008 year class is estimated to be strong, while the 2009 and 2010 year class are estimated to be slightly below average.

RECENT MANAGEMENT ADVICE: ICES advises on the basis of the transition to the MSY approach that catches in 2012 should be no more than 242,000 t.

MSY approach: As no MSY $B_{trigger}$ has been identified for this stock, the ICES MSY framework has been applied with F_{MSY} without consideration of SSB in relation to MSY $B_{trigger}$.

Following the ICES MSY framework implies reducing fishing mortality to 0.35, resulting in catches of no more than 222,000 t in 2012. This is expected to lead to an SSB of more than 696,000 t in 2013.

To comply with the transition scheme fishing mortality must be reduced to 0.39, resulting in catches of no more than 242,000 t in 2012. This is expected to lead to an SSB of more than 674,000 t in 2013.

Precautionary approach: The fishing mortality in 2012 should be no more than F_{pa} , corresponding to catches of 250,000 t. This is expected to bring SSB to 666,000 t in 2013.

STECF COMMENTS: STECF agrees with the ICES advice.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 2. The rules for category 2 prescribe that for 2012, a TAC for sprat in IIIbcd, Baltic Sea (Sub-div. 22-32) of 242,000 t should be proposed.

3.12. Turbot (*Psetta maxima*) in the Baltic Sea (Subdivisions 22-32)

FISHERIES: Turbot occurs mainly in the southern and western parts of the Baltic Proper. Therefore, most of the landings are reported for ICES Subdivisions 22-26. The total reported landings of turbot increased from 42 t to 1,210 t between 1965 and 1996. From that high level the

landings have shown a decreasing trend. Landings in 2010 were 296 t, the lowest level observed since 1985.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

REFERENCE POINTS: There are no reference points agreed for turbot in the Baltic.

STOCK STATUS: The survey data are very noisy, but there is no indication of a decline in stock size. There are indications that turbot should be treated as several local stocks, but there are not enough data to identify these stocks.

MANAGEMENT OBJECTIVES: No management objectives have been defined for this stock.

RECENT MANAGEMENT ADVICE: Based on the precautionary considerations ICES advises that catches should be reduced.

STECF COMMENTS: STECF notes that ICES considers that the survey cpue data indicates that the stock has not declined since 2000. It is unclear whether the reduction in landings is a consequence of the general reduction in demersal fishing effort, decline in the stock in certain areas or a combination of the two. STECF therefore agrees with ICES that based on precautionary considerations, catches of turbot in the Baltic Sea (Subdivisions 22-32) should be reduced.

STECF notes that with reference to COM(2011) 298-final this stock is classified under category 3. As no TAC is set for turbot in the Baltic Sea, STECF interprets the rule to imply that in 2012, a 25% reduction in fishing effort on Turbot in the Baltic Sea should be proposed.

The rationale for this interpretation is contained in Section 4.1 of COM(2011) 298-final which states “When scientific advice on overfishing is unavailable, a reduction of 25% in the TAC and/or in the fishing effort levels should be proposed, unless scientific advice indicates that a bigger reduction is necessary because of short-term risks to the stock”.

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Abstract

The scientific advice on the stocks and fisheries in the Baltic Sea in 2012, evaluated and endorsed by the Technical and Economic Committee for Fisheries by written procedure in June 2011 on a request by the European Commission.

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