

ECOREGION **Baltic Sea**
STOCK **Flounder in Subdivisions 22 and 23 (Belts and Sound)**

Advice for 2015

This is the first time ICES gives advice for this stock. Previously, the ICES advice concerned the flounder in Subdivisions 22–32.

ICES advises on the basis of the data-limited approach, but cannot quantify the resulting catches. The implied landings should be no more than 1745 tonnes.

Stock status

Fishing pressure		
	2011–2013	
MSY (F_{MSY})	?	Unknown
Precautionary approach (F_{pa}, F_{lim})	?	Unknown
Qualitative evaluation	↘	Decreasing
Stock size		
	2009–2013	
MSY ($B_{trigger}$)	?	Unknown
Precautionary approach (B_{pa}, B_{lim})	?	Unknown
Qualitative evaluation	↗	Increasing

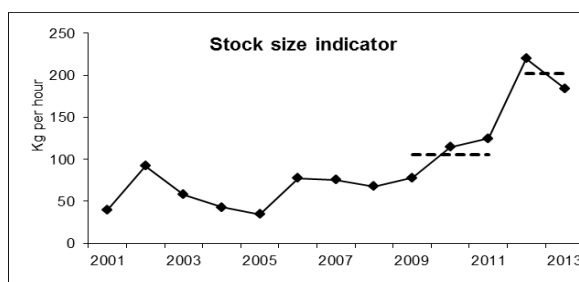
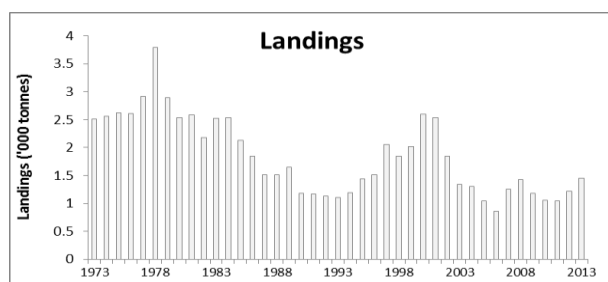


Figure 8.3.5.1 Flounder in Subdivisions 22 and 23 (Belts and Sound). Official landings in Subdivisions 22 and 23, in tonnes (left panel). 1st and 4th quarters combined biomass index ($\text{kg} \times \text{hour}^{-1}$; weighted average per depth stratum area), of fish equal to or larger than 20 cm, from the Baltic International Trawl Survey (BITS-Q1+Q4) in Subdivisions 22–23 (right panel; from ICES DATRAS database).

The stock size indicator from surveys has increased steadily since 2005, about fourfold. The average stock size indicator (biomass index) in the last two years (2012–2013) is 91% higher than the biomass indices in the three previous years (2009–2011).

Management plans

No specific management objectives are known to ICES.

Biology

Flounder (*Platichthys flesus*) is the most widely distributed among all flatfish species in the Baltic Sea. Based on information on the biology of and fishery on flounder, ICES concluded that the flounder in Subdivisions 22 (the Belts) and 23 (the Sound), which were previously assumed to be part of the Baltic Sea stock, should now be considered a separate stock unit. Both areas are connected in the westernmost part of Subdivision 24, which belongs to a different management area.

Based on egg buoyancy, there are two spawning groups of flounder in the Baltic: demersal-spawning flounder that spawn in the shallow water (eggs are demersal and develop on the sea bottom), and pelagic-spawning flounder that

spawn in the open sea (eggs are pelagic and develop in the water column). Flounder in Subdivisions 22 and 23 have pelagic eggs.

The fisheries

ICES Subdivision 22 is the main fishing area for this stock with Denmark and Germany (50% and 49%, respectively) being the main fishing countries. Subdivision 23 is only of minor importance (around 10% of the total landings of the stock).

Flounder are caught mostly by trawlers and gillnetters. Active gears provide most of the landings in Subdivision 22 (ca. 70%). In Subdivision 23, passive gears provide around 85% of total flounder landings (for the Swedish fleet 98–100%) in this area. Flounder is caught as a bycatch species in fisheries targeting cod (i.e. mostly trawlers) and in a mixed flatfish fishery (i.e. mostly gillnetters).

Catch distribution Total catches (2013) are unknown, official landings 1454 t (mainly trawl gear). Discards are known to take place and are considered to be large, but could not be quantified.

Quality considerations

Discards are highly variable between quarters and fleets. Information on discards is limited and indicates that discarding is large, but the data are insufficient to estimate a discard proportion that could be applied to give catch advice.

The advice is based on a combined biomass index from two surveys, used as an indicator of stock size. The uncertainty associated with the index values is not available. The methods applied to derive quantitative advice for data-limited stocks are expected to evolve as they are further developed and validated. The harvest control rules are expected to stabilize stock size, but they may not be suitable if the stock size is low and/or overfished.

Scientific basis

Stock data category	3.2.0. (ICES, 2014a)
Assessment type	Survey trends.
Input data	Commercial landings and survey data from Baltic bottom trawl survey (BITS-Q1 and Q4).
Discards and bycatch	Discards are large but not considered in the advice.
Indicators	Commercial effort (STECF, 2013; ICES, 2014b).
Other information	This stock was benchmarked in 2014 (WKBALFLAT; ICES, 2014c).
Working group report	Baltic Fisheries Assessment Working Group (WGBFAS)

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Reference points

No reference points are defined for this stock.

Outlook for 2015

No reliable forecast can be presented for this stock, because the assessment is only indicative of trends.

ICES approach to data-limited stocks

For data-limited stocks for which a biomass index is available, ICES uses as harvest control rule an index-adjusted *status quo* catch. The advice is based on a comparison of the two most recent index values with the three preceding values, combined with recent catch or landings data. Knowledge about the exploitation status also influences the advised catch.

For this stock the biomass is estimated to have increased by more than 20% between the periods 2009–2011 (average of the three years) and 2012–2013 (average of the two years). This implies an increase of catches of at most 20% in relation to last year's (2013) catches, corresponding to landings of no more than 1745 t in 2015.

Additionally, even though the exploitation status is unknown, the effort in the main fisheries has decreased (STECF, 2013; Figure 8.3.5.2). Furthermore, the biomass index has increased fourfold since 2005 (Figure 8.3.5.1); therefore, no additional precautionary reduction is needed.

Discards are considered to be large but could not be quantified; therefore catches cannot be calculated.

Additional considerations

Landings are mainly from bycatch in the cod fishery and in a mixed flatfish fishery. Flounder is not regulated by a TAC.

Data and methods

The stock is evaluated by using biomass index and fishing effort provided for Subdivisions 22 and 23.

Comparison with previous assessment and advice

This is the first time ICES gives advice for this stock. Previous ICES advice has concerned flounder in Subdivisions 22–32.

The assessment last year for the Subdivisions 22–32 was based on a combined index of abundance (number \times hour⁻¹) from the BITS–Q1 and Q4 surveys conducted in Subdivisions 22–28. The present assessment for this stock is based on a combined index of biomass (kg \times hour⁻¹) from the BITS–Q1 and Q4 surveys conducted in Subdivisions 22–23.

Last year's advice for flounder in Subdivisions 22–32 was based on ICES approach to data-limited stocks. The advice this year for the flounder stock in Subdivisions 22 and 23 is on the same basis: the ICES approach to data-limited stocks.

Sources

- ICES. 2014a. Advice basis. *In* Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 1, Section 1.2.
 ICES. 2014b. Report of the Baltic Fisheries Assessment Working Group (WGBFAS), 3–10 April 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:10.
 ICES. 2014c. Report of the Benchmark Workshop on Baltic Flatfish Stocks (WKBALFLAT), 27–31 January 2014, Copenhagen, Denmark. ICES CM 2014/ACOM:39.
 STECF. 2013. Scientific, Technical and Economic Committee for Fisheries (STECF) – Evaluation of Fishing Effort Regimes in European Waters – Part 2 (STECF-13-21). Publications Office of the European Union, Luxembourg, EUR 26327 EN, JRC86088. 863 pp.

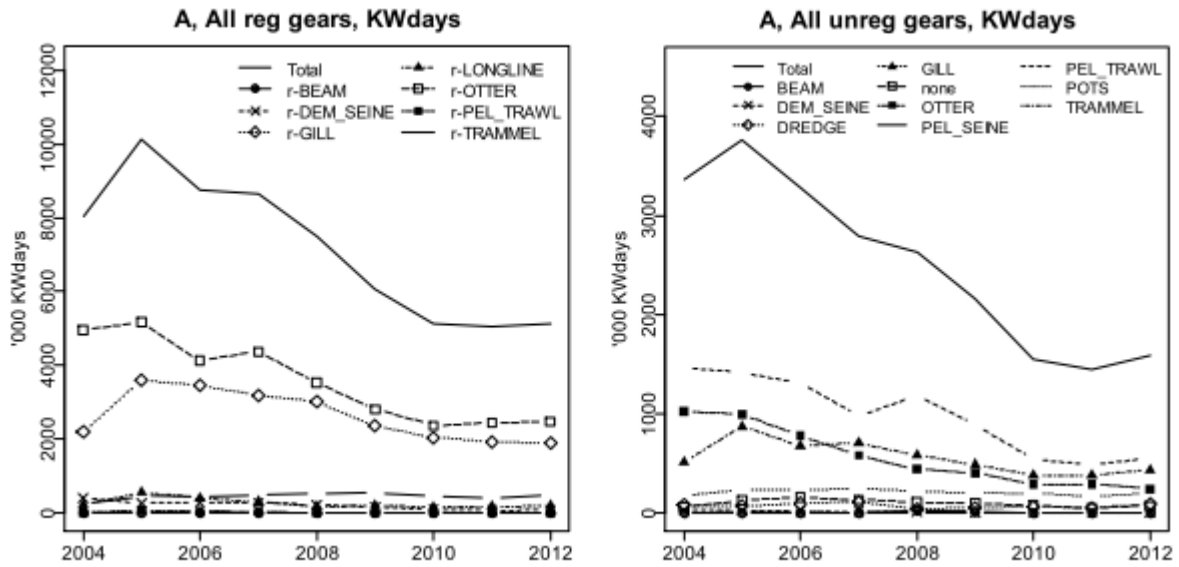


Figure 8.3.5.2 Flounder in Subdivisions 22 and 23 (Belts and Sound). Area A Baltic (Subdivisions 22–24): Trend in nominal effort by gear types 2004–2012 ($\text{kW} \times \text{days-at-sea}^{-1}$). Left panel: Regulated gears. Right panel: Unregulated gears. Note that data from Poland, Latvia, and Lithuania are only available from 2004, and Estonian data from 2005 onwards. Therefore, effort trends are shown from 2004 to 2012. No data were available from Finland (from STECF, 2013).

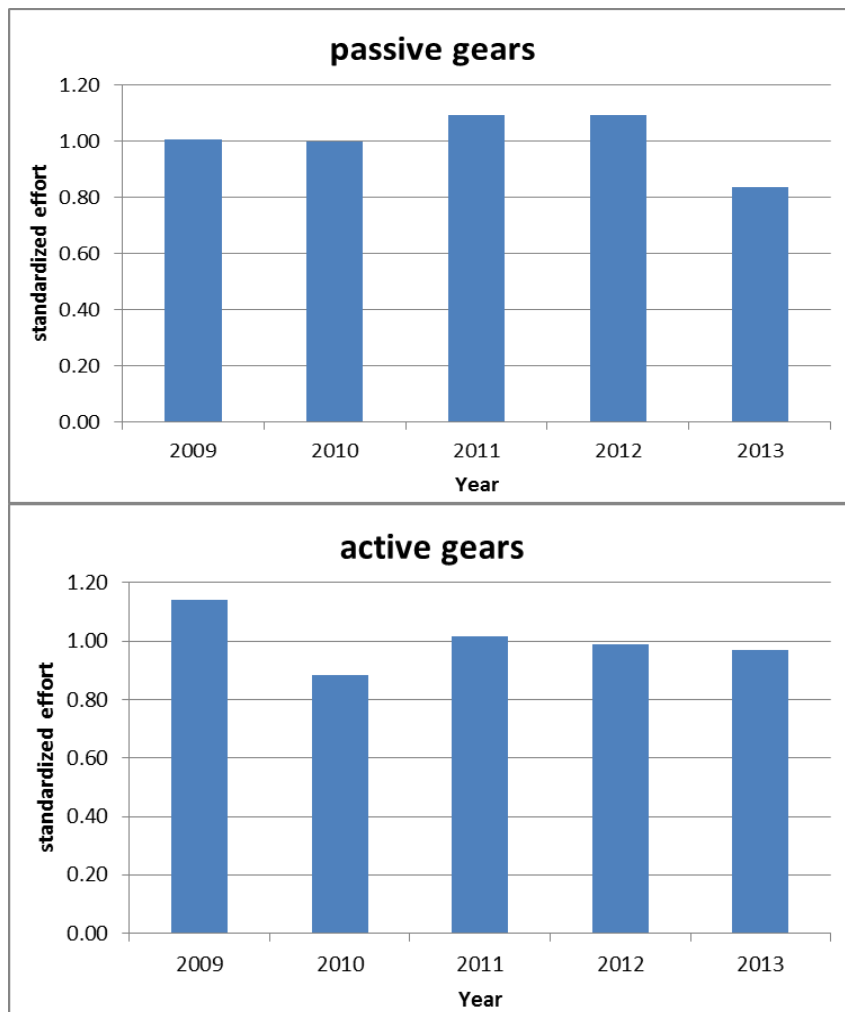


Figure 8.3.5.3 Flounder in Subdivisions 22 and 23 (Belts and Sound). Effort data from 2009–2013 were available to ICES, for passive gears (left panel) and active gears (right panel). The standardized fishing effort is weighted by the mean of cod landings by country and includes only countries with flounder landings (Table 8.3.5.2). Upper panel: passive gears. Lower panel: active gears.

Table 8.3.5.1 Flounder in Subdivisions 22 and 23 (Belt Sea and Sound). ICES advice, management, and official landings.

Year	ICES Advice	Predicted landings corresp. to advice ¹	Agreed TAC ²	Official landings (SDs 22–32)	Official landings (SDs 22–23)
2000	No advice	-	-	15.0	2.60
2001	No advice	-	-	18.1	2.54
2002	No advice	-	-	19.4	1.85
2003	No advice	-	-	15.1	1.34
2004	No advice	-	-	17.4	1.30
2005	No advice	-	-	19.6	1.04
2006	No advice	-	-	16.6	0.87
2007	No advice	-	-	19.3	1.25
2008	No advice	-	-	16.9	1.43
2009	No advice	-	-	15.7	1.18
2010	No advice	-	-	16.6	1.05
2011	No advice	-	-	15.3	1.04
2012	No advice	-	-	15.9	1.22
2013	No advice	-	-	21.1	1.45
2014	No more than 20% landings increase	≤ 1.5	-		
2015	No more than 20% landings increase	≤ 1.745	-		

Weights in thousand tonnes.

¹ Before 2014 the advice was for Subdivisions 22–32.

² For Subdivisions 22–32.

Table 8.3.5.2

Flounder in Subdivisions 22 and 23 (Belt Sea and Sound). Landings by ICES subdivision and country.

Year/SD	Denmark		Germ. Dem. Rep.	Germany FRG	Sweden		Total by subdivision		Total SDs 22–23
	22	23	22	22	22	23	22	23	
1970									
1971									
1972									
1973	1 983		181	349			2 513		2 513
1974	2 097		165	304			2 566		2 566
1975	1 992		163	469			2 624		2 624
1976	2 038		174	392			2 604		2 604
1977	1 974		555	393			2 922		2 922
1978	2 965		348	477			3 790		3 790
1979	2 451		189	259			2 899		2 899
1980	2 185		138	212			2 535		2 535
1981	1 964		271	351			2 586		2 586
1982	1 563	104	263	248			2 074	104	2 178
1983	1 714	115	280	418			2 412	115	2 527
1984	1 733	85	349	371			2 453	85	2 538
1985	1 561	130	236	199			1 996	130	2 126
1986	1 525	65	127	125			1 777	65	1 842
1987	1 208	122	71	114			1 393	122	1 515
1988	1 162	125	92	133			1 387	125	1 512
1989	1 321	83	126	122			1 569	83	1 652
1990	941		52	183			1 176		1 176
1991	925			246			1 171		1 171
1992	713	185		227			940	185	1 125
1993	649	194		235		26	884	220	1 104
1994	882	181		44		84	926	265	1 191
1995	859	231		286		58	1 145	289	1 434
1996	1 041	227		189	2	58	1 232	285	1 517
1997	1 356			655		42	2 011	42	2 053
1998	1 372			411		61	1 783	61	1 844
1999	1 473			510		37	1 983	37	2 020
2000	1 896			660		41	2 556	41	2 597
2001	2 030			458		52	2 488	52	2 540
2002	1 490			317		42	1 807	42	1 849
2003	1 063			241		33	1 304	33	1 337
2004	952			315		31	1 267	31	1 298
2005	725	184		94		38	819	222	1 041
2006	620	182		34		30	654	212	866
2007	585	233		406		26	991	259	1 250
2008	554	199		627		47	1 181	246	1 427
2009	505	113		521		37	1 026	150	1 176
2010	557	91		376		29	933	120	1 053
2011	441	78		497	0.2	28	938	106	1 044
2012	530	98		569		22	1 099	120	1 219
2013 ^a	639	83		713		19	1 352	102	1 454

^a Preliminary.

Table 8.3.5.3

Flounder in Subdivisions 22 and 23 (Belt Sea and Sound). Biomass-index (weighted average per depth stratum area, $\text{kg} \times \text{hour}^{-1}$) of fish equal to or larger than 20 cm in Subdivisions 22–23 from the Baltic International Trawl Survey (BITS) for the 1st quarter, 4th quarter, and combined (data from ICES DATRAS database).

Biomass index (kg hour^{-1})			
Year	First quarter	Fourth quarter	Combined index
2001	54.51	25.17	39.84
2002	61.81	122.32	92.06
2003	64.11	51.94	58.02
2004	57.63	28.69	43.16
2005	61.44	7.43	34.44
2006	80.05	75.19	77.62
2007	82.23	69.13	75.68
2008	67.40	68.14	67.77
2009	45.94	109.99	77.97
2010	118.17	110.80	114.49
2011	144.57	104.80	124.69
2012	189.04	250.57	219.80
2013	241.68	127.21	184.45