

Flounder (*Platichthys flesus*) in subdivisions 24 and 25 (west of Bornholm and southwestern central Baltic)

ICES stock advice

ICES advises that when the precautionary approach is applied, catches in each of the years 2018 and 2019 should be no more than 41 628 tonnes. If discard rates do not change from the average of the last three years (2014–2016), this implies landings of no more than 29 556 tonnes.

Stock development over time

The stock size indicator from surveys has been increasing over the time-series.

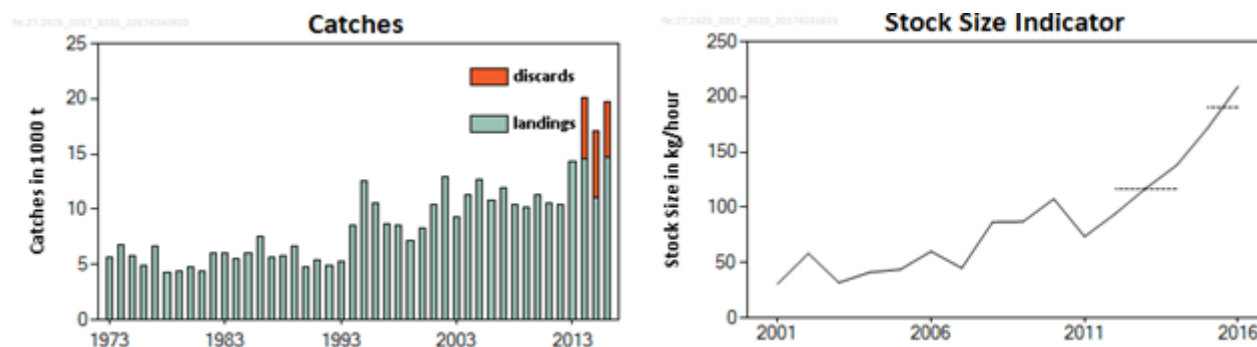


Figure 1 Flounder in subdivisions 24 and 25. Summary of the stock assessment. Left panel: Catches (ICES estimates) in subdivisions (SDs) 24–25. Discard data have only been included since 2014. Right panel: Combined biomass index (kg per hour) of flounder equal to or larger than 20 cm, from the Baltic International Trawl Survey (BITS–Q1 and Q4). The dashed lines indicate the average biomass index of the respective year range.

Stock and exploitation status

Table 1 Flounder in subdivisions 24 and 25. State of the stock and fishery relative to reference points. The status evaluation is based on reference point proxies (ICES, 2017).

		Fishing pressure			Stock size				
		2014	2015	2016	2014	2015	2016		
Maximum sustainable yield	F_{MSY} proxy	✓	✓	✓	$MSY B_{trigger}$ proxy	?	?	?	Undefined
Precautionary approach	F_{pa} , F_{lim}	✓	✓	✓	B_{pa} , B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	-	-	-	SSB_{MGT}	-	-	-	Not applicable
Qualitative evaluation	-	-	-	-	-	↗	↗	↗	Increasing

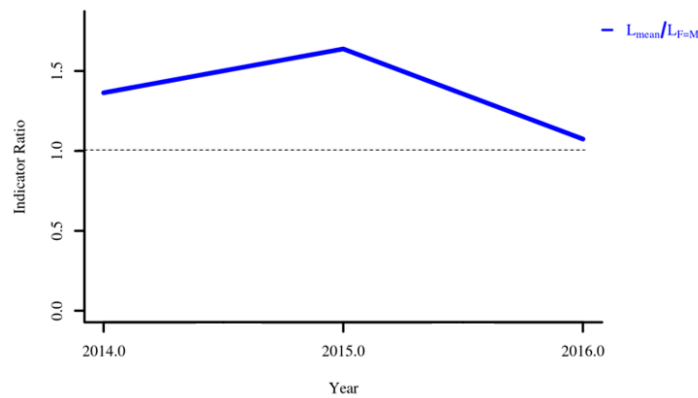


Figure 2 Flounder in subdivisions 24 and 25. Index ratio $L_{\text{mean}}/L_{F=MSY}$ from the length-based indicator (LBI; ICES, 2015) method used for the evaluation of the exploitation status. The exploitation status is below the F_{MSY} proxy when the index ratio value is higher than 1.

Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012). The Baltic International Trawl Survey (BITS–Q1 and Q4) in SDs 24–25 was used as the index of stock development. The advice is based on a comparison of the two latest index values (index A) with the three preceding values (index B), multiplied by the recent advised catch.

The index is estimated to have increased by more than 20% and thus the uncertainty cap was applied to calculate the catch advice. Fishing mortality is below proxies of the MSY reference points (as indicated by a length-based analysis). The stock size relative to reference points is unknown. The precautionary buffer was not applied because the index ratio has increased by more than 50% over a period of five years. Discarding is known to take place and the discard rate has been estimated for the last three years (2014–2016).

Table 2 Flounder in subdivisions 24 and 25. The basis for the catch options.*

Index A (2015-2016)	191 kg h ⁻¹	
Index B (2012, 2013, 2014)	117 kg h ⁻¹	
Index ratio (A/B)	1.63	
Uncertainty cap	Applied	1.2
Advised catch for 2017	34 690 tonnes	
Discard rate (2014, 2015, 2016)	0.29	
Precautionary buffer	Not applied	-
Catch advice**	41 628 tonnes	
Landings corresponding to the catch advice***	29 556 tonnes	

* The figures in the table are rounded. Calculations were done with unrounded inputs and computed values may not match exactly when calculated using the rounded figures in the table.

** (advice for 2017) × (uncertainty cap).

*** (catch advice) × (1 – discard ratio).

Basis of the advice

Table 3 Flounder in subdivisions 24 and 25. The basis of the advice.

Advice basis	Precautionary approach
Management plan	Bycatch of this species is taken into account in the EU Multiannual Plan for the Baltic Sea (EU, 2016).

Quality of the assessment

The discard ratio in both subdivisions varies between countries, gear types, and quarters. Discarding practices are controlled by factors such as market price and cod catches. After an increase in the quality of discard data, ICES has provided catch advice on this stock since 2014. The mean of the past three years' discard rates was used in this year's advice.

The length based indicator method (WKLIFE V; ICES, 2015), based on catch and survey data, was used to assess the stock status in terms of fishing pressure.

Issues relevant for the advice

Catches are mainly taken as bycatch. This stock is currently not regulated by a TAC.

Reference points

Table 4 Flounder in subdivisions 24 and 25. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger_proxy}$	Not defined		
	F_{MSY_proxy}	21 cm	Length-based indicator (LBI); expected mean length of catch (above the length at first catch) when $F = M$.	ICES (2017)
Precautionary approach	B_{lim}	Not defined		
	B_{pa}	Not defined		
	F_{lim}	Not defined		
	F_{pa}	Not defined		
Management plan	SSB_{mgt}	Not defined		
	F_{mgt}	Not defined		

Basis of the assessment

Table 5 Flounder in subdivisions 24 and 25. Basis of assessment and advice.

ICES stock data category	3 (ICES, 2016).
Assessment type	Survey trends (ICES, 2017).
Input data	Commercial catches and survey data from the Baltic International Trawl Survey (BITS-Q1 and Q4).
Discards and bycatch	Discard numbers are used in the advice.
Indicators	Commercial effort, length-based indicators (ICES, 2017).
Other information	This stock was benchmarked in 2014 (WKBALFLAT; ICES, 2014).
Working group	Baltic Fisheries Assessment Working Group (WGBFAS)

Information from stakeholders

There is no available information.

History of the advice, catch, and management

Table 6 Flounder in subdivisions 24 and 25. ICES advice and official landings. All weights are in tonnes.

Year	ICES advice *	Predicted landings corresp. to advice *	Agreed TAC	Landings (ICES estimates) SDs 22–32	Landings (ICES estimates) SDs 24–25	Catches (ICES estimates) SDs 24–25
2000	No advice	-	-	14500	8288	
2001	No advice	-	-	17600	10464	
2002	No advice	-	-	19400	12982	
2003	No advice	-	-	15200	9360	
2004	No advice	-	-	18200	11370	
2005	No advice	-	-	20100	12696	
2006	No advice	-	-	17200	10852	
2007	No advice	-	-	19300	11891	
2008	No advice	-	-	16800	10411	
2009	No advice	-	-	15100	10227	
2010	No advice	-	-	16200	11348	
2011	No advice	-	-	15200	10610	
2012	No advice	-	-	15800	10430	
2013	Catches should be reduced by 5%	< 15100	-	21100	14318	
2014	Landings should be reduced by 15%	< 13500	-	20600	14612	20154
2015	Landings should not increase more than 20%	< 17182	-	16800	11090	17055
2016	Precautionary approach (≤ 20% increase)	≤ 28908	-	20200	14637	19780
2017	Precautionary approach (≤ 20% increase)	≤ 34690**	-			
2018	Precautionary approach (≤ 20% increase relative to advised catch for 2017)	≤ 41628**	-			
2019	Precautionary approach (≤ 20% increase relative to advised catch for 2017)	≤ 41628**				

* Advice prior to 2015 was for flounder in subdivisions 22–32.

** Catch advice.

History of the catch and landings

Table 7 Flounder in subdivisions 24 and 25. Catch distribution by fleet in 2016 as estimated by ICES.

Catch (2016)	Landings		Discards
	Active gears 80%	Passive gears 20%	
19 779 tonnes	14 637 tonnes		5 143 tonnes

Table 8 Flounder in subdivisions 24 and 25. History of commercial catch and landings; both the official and ICES estimated values are presented by area for each country participating in the fishery. All weights are in tonnes.

Year	Denmark			Estonia			Finland			Germany			Latvia			Lithuania			Poland			Sweden			Total				
	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SDs 24-25				
1973			386									3144												1580			502	5612	
1974			2578									2139													1635			470	6822
1975			1678									1876													1871			400	5825
1976			482									2459													1549			400	4890
1977			389									3808													2071			416	6684
1978			415									2573													996			346	4330
1979			405									2512													1230			315	4462
1980			286									2776													1613			62	4737
1981			548									2596													1151			51	4346
1982			257									3203													2484			55	5999
1983			450									3573													1828			180	6031
1984			306									2720													2471			45	5542
1985			649									3257													2063			40	6009
1986			1558									2848													3030			51	7487
1987			1007									2107													2530			43	5687
1988			990									2986													1728			58	5762
1989			1062									3618													1896			56	6632
1990			1389									1632													1617			120	4758
1991			1497									1814													2008			55	5374
1992			975									1972													1877			129	4953
1993			635									1230													3276			90	5231
1994			1016									4262													3177			38	8493
1995			2110			8						2825													7437			214	12594
1996			2306							1		1322													6069			819	10517
1997			2452			15				1		1982													3877			370	8697
1998			2393			10				2		1729			2										4215			236	8587
1999			1206			8						1825													4015			111	7165

Year	Denmark			Estonia			Finland			Germany			Latvia			Lithuania			Poland			Sweden			Total
	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SD 24	SD 25	SDs 24-25	SDs 24-25
2000	825	923	1748				14	4	18	1809	171	1979							605	3765	4370	49	123	172	8288
2001	1026	1976	3002				9	68	77	1468	299	1766							531	4962	5493	30	95	125	10464
2002	995	1877	2872				5	34	39	1910	154	2064							1288	6577	7865	30	111	141	12982
2003	750	1052	1802				2	7	8	1165	389	1553							758	5087	5845	45	106	152	9360
2004	1114	1753	2866							1307	275	1582	1	6	7				1177	5633	6810	19	86	105	11370
2005	853	1445	2298				1	2	3	881	43	924	2		2				2194	7192	9386	26	58	84	12696
2006	513	1518	2031				2	3	5	973	7	979		11	11				1782	5959	7741	23	61	84	10852
2007	620	623	1243				2	8	10	1455	215	1670	8	7	15		11	11	3016	5840	8856	27	59	86	11891
2008	422	313	736							1601	238	1840		74	74		4	4	2094	5569	7663	29	66	95	10410
2009	325	199	524				41		41	1175	29	1204		155	155		31	31	2378	5802	8180	27	65	92	10227
2010	333	368	701		16	16	13	2	16	953	31	983		31	31		19	19	1833	7665	9498	21	64	85	11348
2011	310	226	536		20	20	3	2	5	1529	147	1676		39	39		15	15	1567	6666	8233	26	60	86	10610
2012	290	250	540		19	19	20	17	36	904	151	1055		8	8		24	24	1331	7325	8657	23	67	90	10430
2013	572	1889	2460		10	10	1	9	10	771	332	1103	4	76	80		54	54	2104	8118	10222	35	344	379	14318
2014	349	1324	1673		83	83		0	0	751	212	963	3	288	291		74	74	1537	9821	11358	22	146	168	14610
2015	169	1614	1783		39	39	1	4	4	635	181	815	2	6	8		7	7	1122	7247	8370	24	40	64	11090
2016	135	84	219	0	0	0	2	0	2	630	246	876	0	81	81	0	9	9	2238	11157	13395	16	41	56	14637

Summary of the assessment

Table 9 Flounder in subdivisions 24 and 25. Assessment summary. Total landings (tonnes) and stock size indicator. The stock size indicator is a combined biomass index of flounder equal to or larger than 20 cm, from the Baltic International Trawl Survey (BITS–Q1 and Q4). The individual indices are weighted averages per depth stratum area and the two indices are combined using the geometric mean. Weights are in tonnes.

Year	Stock size index	Landings	Discards
	kg h ⁻¹	tonnes	tonnes
1973		5612	
1974		6822	
1975		5825	
1976		4890	
1977		6684	
1978		4330	
1979		4462	
1980		4737	
1981		4346	
1982		5999	
1983		6031	
1984		5542	
1985		6009	
1986		7487	
1987		5687	
1988		5762	
1989		6632	
1990		4758	
1991		5374	
1992		4953	
1993		5231	
1994		8493	
1995		12602	
1996		10517	
1997		8697	
1998		8587	
1999		7165	
2000		8288	
2001	31	10464	
2002	58	12982	
2003	32	9360	
2004	41	11370	
2005	44	12696	
2006	60	10852	
2007	45	11891	
2008	87	10411	
2009	87	10227	
2010	108	11348	
2011	74	10610	
2012	94	10430	
2013	117	14318	
2014	138	14612	5542
2015	171	11090	5965
2016	210	14637	5143

Sources and references

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