Plaice (*Pleuronectes platessa*) in subdivisions 24–32 (Baltic Sea, excluding the Sound and Belt Seas)

ICES advice on fishing opportunities

Plese note: This advice was updated in May 2023 (ICES, 2023)

ICES advises that when the MSY approach is applied, catches in 2023 should be no more than 4633 tonnes.

Stock development over time

Fishing pressure on the stock is below F_{MSY} and spawning-stock size is above MSY $B_{trigger}$ and B_{lim}.
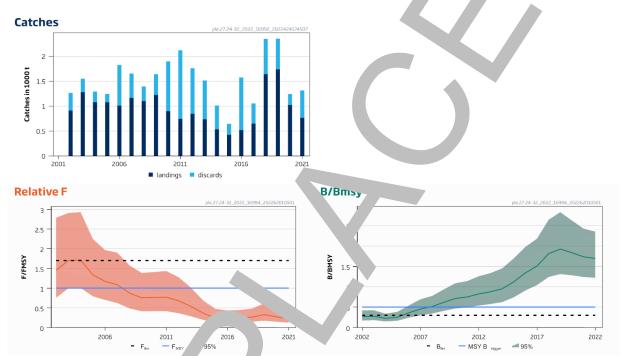

Figure 1[*] Plaice in subdivisions 24–32. Summary of the stock assessment. Landings include BMS.

Catch scenarios

Table 1 Plaice in subdivisions 24–32. Values in the forecast and the interim year.

Variable	Value	Notes
F_{2022}/F_{MSY}	.23	*Status quo* F: F_{sq} (equal to F_{2021})
B_{2023}/B_{MSY}	1.73	Fishing at F_{sq}
Catch (2022)	325	Fishing at F_{sq}; in tonnes
Projected landing (2022)	772	Marketable landings assuming 2021 discard rate; in tonnes
Projected discards (2022)	3	Based on 2021 discard rate; in tonnes

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[*] Version 2: reference point lines in the F plot were updated.

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ICES advice, as adopted by its advisory committee (ACOM), is developed upon request
by ICES requesters (European Union, Iceland, NASCO, NEAFC, Norway, and United Kingdom).

Table 2   Plaice in subdivisions 24–32. Annual catch scenarios. All weights are in tonnes.

Basis	Total catch (2023)	Projected landings (2023)*	Projected liscards (2023)**	F_{2023}/F_{MSY}	B_{2024}/B_{MSY}	% biomass change^	% advice change^^
ICES advice basis							
MSY approach (35th percentile of predicted catch distribution under $F = F_{MSY}$)	4 633	2 698	1 935	0.84		−10	+13
Other scenarios							
F_{MSY}	5 447	3 172	2 275	1.00	1.47	3	+38
F_{2022}	1 347	785	563	0.23	1.75	4	−34
$F = 0$	0	0	0	0		+9	−100

* Marketable landings assuming 2021 discard rate.
** Including below minimum size (BMS) landings (EU stocks), assuming 2021 discard rate.
^ Biomass 2024 relative to biomass 2023.
^^ Advice value for 2023 relative to the advice value for 2022 (3 956 tonnes).

This increase in the advice is due to a change in the basis of the advice from precautionary approach to MSY approach based on a category 2 assessment.

Basis of the advice

Table 3   Plaice in subdivisions 24–32. The basis of the advice.

Advice basis	MSY approach
Management plan	The EU multiannual plan for the Baltic Sea (EU, 2016) only applies to bycatches of this stock taken when fishing for the target stocks described in the plan

Quality of the assessment

This stock assessment was reviewed in 2022 (ICES, 2022a) and as a result, the stock was changed from category 3 to category 2 (ICES, 2022b). The assessment is now based on a stochastic surplus production model that includes revised assumptions and model priors. The trends in fishing mortality and biomass are consistent with previous assessments for this stock. Reference points were also revised and it is now possible to provide catch advice based on a short-term forecast.

Issues relevant for the advice

Advice for the stock has changed from being based on a precautionary approach to an MSY approach.

Landings have decreased by almost 70% compared to the two previous years. This is likely due to low fishing opportunites for cod in the eastern Baltic where plaice is caught as bycatch.

The fishery in subdivisions (SDs) 24–32 has changed from being a directed cod fishery to becoming a targeted flatfish fishery.

Plaice in the Baltic Sea (ple.27.21–23 and ple.27.24–32) are both experiencing extraordinarily high recruitment pulses from the 2019 and 2020 year classes, identified from both surveys and commercial catches. These year classes will not be fully included in the assessment model until 2023. High catches of below minimum size (BMS) plaice are to be expected if the demersal fisheries do not change.

The management areas for plaice in the Baltic Sea (i.e. subdivisions [SDs] 21 and 22–32) are different from the stock areas (i.e. SDs 21–23 and 24–32). As for the plaice stock in SDs 21–23 (ICES, 2022c), this section provides an option for calculating TACs by management area, based on the catch distribution observed in 2021. The catch ratio between SDs 21 and 22–23 in 2021 was used to calculate a split of the advised catches for the stock in SDs 21–23 for 2023. The advised catch for the stock in SDs 24–32 was added to the calculated catch for SDs 22–23; in this way plaice catches by management area were obtained that would be consistent with ICES advice for the two stocks.

Table 4   Plaice in subdivisions 24–32. Catch and landings overview and calculation of catches by management area for plaice in subdivisions 21–23 and 24−32.

Basis		Catch 2021	Landings 20 21	ICES stock advice 2023 (catch)	
Stock area-based	SDs 21–23	3 053	2 126	11 914	
	SDs 24–32	1 317	767	4 633	
Total advised catch, 2023 (SDs 21–32)				16 547	
Management area-based	SD 21	828	2??		
	SDs 22–23	2 225	1??2		
	SDs 22–32†	3 542	2 6??		
		Calculation			Result
Share of SD 21 of the total catch in SDs 21–23 in 2021		= 828/3 053			0.271
		(catch in 2021 SD 21/catch in 2021 SDs 21–23)			
Catch in 2023 for SD 21		= 11 914*0.271			3 232
		(ICES stock advice 2023 (catch) for SDs 21–23 share)			
Catch in 2023 for SDs 22–32		= 16 547 – 3 232			13 315
		(total advised catch in 2023 SDs 21–32 minus catch SD 21)			
		(landings 2021 SD 21/landings in 2021 SDs 21–23)			

Reference points

Table 5   Plaice in subdivisions 24–32. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY B_trigger	0.5 *	0.??× K. B_MSY is estimated directly from the surplus production model and changes when the assessment is updated.	ICES (2022a)
	F_MSY	1*	r/2. Relative value. F_MSY is estimated directly from the surplus production model and changes when the assessment is updated.	ICES (2022a)
Precautionary approach	B_lim	0.3*	0.15 × K. Relative value.	ICES (2022a)
	B_pa	Not defined		
	F_lim	1.7?	Relative value (the F that drives the stock to B_lim)	ICES (2022a)
	F_pa	Not defined		
Management plan	SSB_mgt	Not defined		
	F_mgt	Not defined		

* Fishing mortality is presented only in relation to F_MSY and total stock biomass is presented only in relation to B_MSY. K is the carrying capacity and r is the intrinsic biomass growth rate. These values are directly estimated from the stock assessment and change when the assessment is updated

Basis of the assessment

Table 6   Plaice in subdivisions 24–32. Basis of the assessment and advice.

ICES stock data category	2 (ICES, 2022d)
Assessment type	Surplus Production model in Continuous Time that uses catches in the model and in the forecast (SPiCT; ICES, 2022a)
Input data	Commercial catches; two survey biomass indices (BITS-Q1 [G2916] and BITS-Q4 [G8863])
Discards and bycatch	Discard estimates from the main fleets are included in the assessment from 2002 onwards; however, the estimations of the first years (2002–2005) are considered uncertain
Indicators	None
Other information	This stock was last benchmarked in 2015 (ICES, 2015). The stock changed from category 3 to category 2 in 2022 (ICES, 2022a. 2022b).
Working group	Baltic Fisheries Assessment Working Group (WGBFAS)

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† Version 3: label of SDs corrected.

History of the advice, catch, and management

Table 7   Plaice in subdivisions 24–32. ICES advice, TACs and ICES catch estimates. All weights are in tonnes.

Year	ICES advice	Landings corresp. to advice*	Catch corresponding to advice	Agreed TAC**	Landings (ICES estimates)	Catches (ICES estimates)
2000	No advice	-		-	30	
2001	No advice	-		-	7	
2002	No advice	-			915	1 270
2003	No advice	-			1 281	1 550
2004	No advice	-		-	1 081	1 300
2005	No advice	-		-	1 08	1 250
2006	No advice	-		-		1 830
2007	No advice	-		-	1 67	1 660
2008	No advice	-			1 102	1 400
2009	No advice	-			1 226	1 640
2010	No advice	-		-	903	1 900
2011	No advice	-			748	2 130
2012	No increase in catches	-		2 889	848	1 770
2013	No more than 20% catch increase	≤ 900		3 9	738	1 520
2014	No more than 20% landings increase	≤ 1 000		3 409	534	1 020
2015	No more than 20% wanted catches increase	≤ 886		3 409	427	650
2016	Precautionary approach		2 156	4 034	521	1 580
2017	Precautionary approach		≤ 2 7	7 862	650	1 058
2018	Precautionary approach		104	7 076	1 644	2 355
2019	Precautionary approach		≤ 3 725	10 122	1 741	2 359
2020	Precautionary approach		≤ 2 826	6 894	1 024	1 247
2021	Precautionary approach		≤ 3 297	7 240	767	1 317
2022	Precautionary approach		≤ 3 956	9 050		
2023	MSY approach		≤ 4 633			

*Prior to 2013 the advice was for subdivisions 2 32.
**For subdivisions 22–32

History of the catch and landings

Table 8   Plaice subdivisions 24–32. Catch distribution by fleet in 2021 as estimated by ICES.

Catch (2021)	Landings/wanted catch		Discards	
1 317 tonnes	Active gears 89%	Passive gears 11 %	Active gears 99 %	Passive gears 1 %
	767 tonnes		550 tonnes	

Table 9 Plaice in subdivisions (SDs) 24–32. History of commercial catch and landings; both the official and ICES estimated values are included. Landings are shown by area for each country participating in the fishery. All weights are in tonnes.

Year	Denmark		Germany, Fed. Rep. (+ Germany, Dem. Rep. before 1990)		Poland		Sweden*				Finland	Discards	BMS landings
	SD 24 (+25)	SD 25–27	SD 24 (+25)**	SD 25	SD 25 (+24)***	SD 26	SD 24	SD 25	SD 26	SD 27–29	SD 24		
1970	494		16				149						
1971	314		2				107						
1972	290		2				78						
1973	203		45		174	30	75						
1974	126		12		114	86	60						
1975	184		68		158	142	45						
1976	178		85		164	76	44						
1977	221		38		265	26	41						
1978	681		1 201		633	290	32						
1979	2 027		1 611		555	224	113						
1980	1 652		308		383	53	1						
1981	937		83		239	27	18						
1982	393		31		43	64	40	6		8			
1983	297		26		64	12	133	20		26			
1984	166		10		106		3	3		5			
1985	771		633		119	49		4		6			
1986	1 019		379		171	59	48			10			
1987	794		158		188		68	10		13			
1988	323		17		9	1	7			10			
1989	149		5		10		4			7			
1990	100		2		6		50			0			
1991	112		9		2	1	5	2		2			
1992	74		4		6		3	1		1			
1993	66		6		4		4						
1994	159				43	4	4	7					
1995	343		91		233	2	13	10	1				
1996	263		77		5		28	23	10	1			
1997	201		56		308		7	8		1			
1998	278		41		101	4	6	17		1			
1999	183				145	1	5	10					
2000	161				408	3	9	12					
2001	173		43		549	3	9	13					
2002	153	159	137		429	3	10	15				353	
2003	326	30	68	25	480	10	16	51		0		271	
2004	167	2	5	13	292	8	6	37				214	
2005	164	1		17	511	11	16	28		0		166	
2006	82		3	1	52	3	17	41				818	
2007	408	49	151				41	61		0		491	
2008	450	339		10	29	0	45	69				294	
2009^	5	59	9	21	42	0	43	79		0		418	
2010	45	6	66	13	93	8	22	61	1	0		998	
2011	291	4		6	37	1	33	36	0	0	1	1 377	
2012	477	148	86	4	62	2	23	43	1	0	3	917	
2013		196	46	1	45	5	29	33	0	0	1	781	
2014	231	118	57	< 1	80	7	21	19	< 1	< 1	< 1	481	
2015	145		44	1	140	5	12	12	0	0	0	220	
2016	187	6	93	2	151	3	15	10	< 1	< 1	0	1 060	
2017	124	68	143	1.4	293	3	6	12	< 1	0	0	408	7

Year	Denmark		Germany, Fed. Rep. (+ Germany, Dem. Rep. before 1990)		Poland		Sweden*				Finland	Discards	BMS landings
	SD 24 (+25)	SD 25–27	SD 24 (+25)**	SD 25	SD 25 (+24)***	SD 26	SD 24	SD 25	SD 26	SD 27–29	SD 24–26		
2018	435	160	353	3	667	1	13	11	0			720	9
2019	611	51	331	0	728	1	13	6	0	< 1		617	17
2020	462	11	232	2	311	3	1	4	0	< 1	0	223	8
2021	272	5	198	2	286	4	<1	<1	0	<1	0	544	6

* For the years 1970–1981 and 1990 the Swedish catches from subdivisions 25–28 are included in subdivision 24.

** Values correspond to landings from subdivisions 24 and 25 combined until 2001 – and only from Subdivision 24 afterwards.

*** Values represent mainly landings from Subdivision 25 but may also contain some landings from Subdivision 26.

^ From 2009 onwards landings below 0.5 tonnes are given as < 1, landings ≥ 0.5 tonnes are given as 1. Zeros (0) represent true zero landings. Before 2009, a distinction between "true zero landings" and rounded zero landings (< 0.5 tonnes) is not possible.

Summary of the assessment

Table 10   Plaice in subdivisions 24–32. Assessment summary. Weights are in tonnes. High and low refers to 95% confidence intervals.

Year	B/B$_{MSY}$			Landings	Discards	F/F$_{MSY}$		
	Relative SSB	High	Low			Relative F	High	Low
2002	0.266	0.42	0.168	915	358	1.45	2.8	0.75
2003	0.276	0.422	0.181	1 281	271	1.70	2.9	0.99
2004	0.224	0.339	0.149	1 081	214	1.71	2.9	1.00
2005	0.251	0.382	0.165	1 08	166	1.33	2.2	0.79
2006	0.36	0.54	0.24	1 0	818	1.17	1.97	0.70
2007	0.453	0.693	0.297	1 57	491	1.08	1.90	0.62
2008	0.515	0.775	0.342	102	294	0.87	1.57	0.48
2009	0.618	0.936	0.408	1 6	418	0.75	1.38	0.41
2010	0.711	1.086	0.466	9	998	0.76	1.41	0.41
2011	0.749	1.139	0.493	48	1 377	0.77	1.43	0.41
2012	0.823	1.259	28	848	917	0.68	1.28	0.36
2013	0.876	1.335	0.57	738	781	0.54	1.01	0.28
2014	0.95	1	0.622	534	481	0.37	0.69	0.195
2015	1.119	95	0.739	427	220	0.24	0.47	0.119
2016	1.34	.978	0.907	521	1 058	0.23	0.43	0.124
2017	1.508	81	1.042	650	408	0.24	0.44	0.134
2018	1.812	2.6	1.24	1 644	711	0.27	0.48	0.147
2019	1.927	2.831	1.311	1 741	617	0.33	0.62	0.172
2020	1.83	2.625	281	1 024	223	0.27	0.49	0.146
2021	1.7	27	1.239	767	550	0.23	0.43	0.122
2022	95	2.354	1.22					

* Below minimum size (BMS) landings are included since 2017.

Sources and references

ICES. 2015. Report of the Benchmark Workshop on Plaice (WKPLE), 23–27 February 2015, ICES Headquarters, Copenhagen, Denmark. ICES CM 2015/ACOM:53. 200 pp.

ICES. 2022a. Baltic Fisheries Assessment Working Group (WGBFAS). ICES Scientific Reports. 4:44. 659 pp. http://doi.org/10.17895/ices.pub.19793014

ICES. 2022b. ICES technical guidance for harvest control rules and stock assessments for stocks in categories 2 and 3. ICES Technical Guidelines. Report. https://doi.org/10.17895/ices.advice.19801564.v1

ICES. 2022c. Plaice (Pleuronectes platessa) in subdivisions 21–23 (Kattegat, Belt Seas, and the Sound). In Report of the ICES Advisory Committee, 2022. ICES Advice 2022, ple.27.21–23, https://doi.org/10.17895/ices.advice.19453550

ICES. 2022d. Advice on fishing opportunities. In Report of the ICES Advisory Committee, 2022. ICES Advice 2022, section 1.1.1. http://doi.org/10.17895/ices.advice.19928060

ICES. 2023. Plaice (*Pleuronectes platessa*) in subdivisions 24-32 (Baltic Sea, excluding the Sound and Belt Seas). Replacing advice provided in 2022. *In* Report of the ICES Advisory Committee, 2023. ICES Advice 2023, ple.27.24-32, https://doi.org/10.17895/ices.advice.23144228

Stepputtis, D., Santos, J., Mieske, B., Lichtenstein, U., Schütz, A., and Stechert, R. 2020. Abschlussbericht an das Ministerium für Landwirtschaft und Umwelt Mecklenburg-Vorpommern für das Projekt CODEX (CodExcluder) - Netzmodifikation zur Reduktion des Dorschbeifanges: final report (in Germany, English summary). Thünen-Institute of Baltic Sea Fisheries, Rostock. 99 pp

Download the stock assessment data and figures.