

## Plaice (*Pleuronectes platessa*) in Division 7.e (western English Channel)

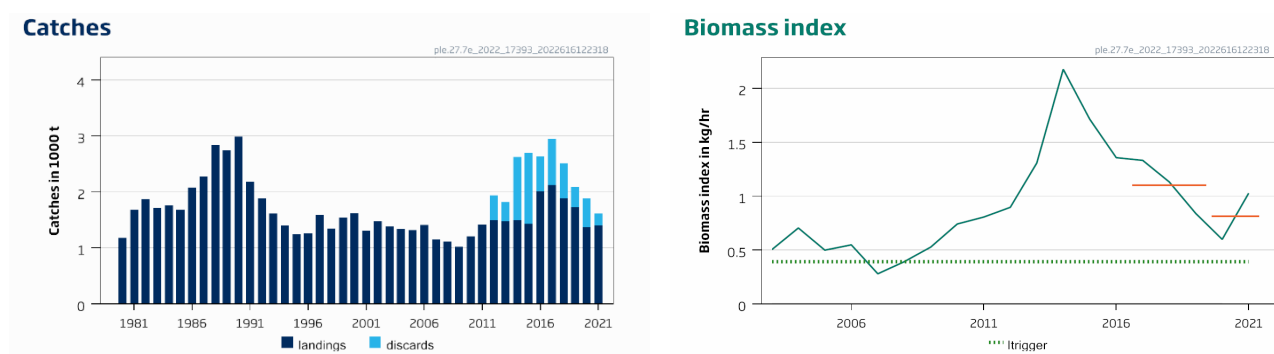
### ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, catches should be no more than 1219 tonnes in each of the years 2023 and 2024.

ICES notes the existence of a precautionary management plan, developed and adopted by some of the relevant management authorities for this stock.

### Stock development over time

The fishing pressure proxy on the stock is above  $F_{MSY\ proxy}$  (Figure 2), and the stock-size index is above  $MSY\ B_{trigger}$  ( $I_{trigger}$ ).



**Figure 1** Plaice in Division 7.e. Summary of the stock assessment. ICES landings and discards (estimates available since 2012) and stock biomass index from the UK-FSP survey. The horizontal orange lines indicate the average of the biomass index for 2017 to 2019 and for 2020 to 2021.

### Catch scenarios

ICES framework for category 3 stocks was applied (rfb rule, method 2.1; ICES, 2022a). A survey biomass index was used as an indicator of stock development. The advice is based on the recent advised catches, multiplied by the ratio of the mean of the last two index values (index A) and the mean of the three preceding values (index B), a ratio of observed mean length in the catch relative to the target mean length, a biomass safeguard, and a precautionary multiplier. The stability clause was considered and applied to limit the reduction in catch advice to 30%. The discard rate (average 2012–2021) was 27%.

**Table 1** Plaice in Division 7.e. The basis for the catch scenarios. \*

Division 7.e plaice stock	
Previous catch advice $A_y$ (advised catch for 2022)	1742 tonnes
Stock biomass trend	
Index A (2020, 2021)	0.81 kg hr <sup>-1</sup> m beam <sup>-1</sup>
Index B (2017, 2018, 2019)	1.10 kg hr <sup>-1</sup> m beam <sup>-1</sup>
r: stock biomass trend (index ratio A/B)	0.74
Fishing pressure proxy	
Mean catch length ( $L_{\text{mean}} = L_{2021}$ )	32.3 cm
MSY proxy length ( $L_{F=M}$ )	34.4 cm
f: Fishing pressure proxy relative to MSY proxy ( $L_{2021}/L_{F=M}$ )	0.94
Biomass safeguard	
Last index value ( $I_{2021}$ )	1.03 kg hr <sup>-1</sup> m beam <sup>-1</sup>
Index trigger value ( $I_{\text{trigger}} = I_{\text{loss}} \times 1.4$ )	0.39 kg hr <sup>-1</sup> m beam <sup>-1</sup>
b: Index relative to trigger value, $\min\{I_{2021}/I_{\text{trigger}}, 1\}$	1
Precautionary multiplier to maintain biomass above $B_{\text{lim}}$ with 95% probability	
m: multiplier (generic multiplier based on life history)	0.95
RFB calculation**	1146 tonnes
Stability clause (+20%/-30% compared to $A_y$ , only applied if $b = 1$ )	Applied 0.70
Discard rate	27%
Catch advice for 2023 and 2024 ( $A_y \times \text{stability clause}$ )	1219 tonnes
Projected landings corresponding to advice***	894 tonnes
% advice change <sup>^</sup>	-30%
Plaice in Division 7.e	
Proportion of Division 7.e stock landings caught in Division 7.e (2003–2021)	0.91
Catch of plaice in Division 7.e corresponding to the advice for the stock	1104 tonnes
Projected landings of plaice in Division 7.e corresponding to the advice for the stock***	809 tonnes

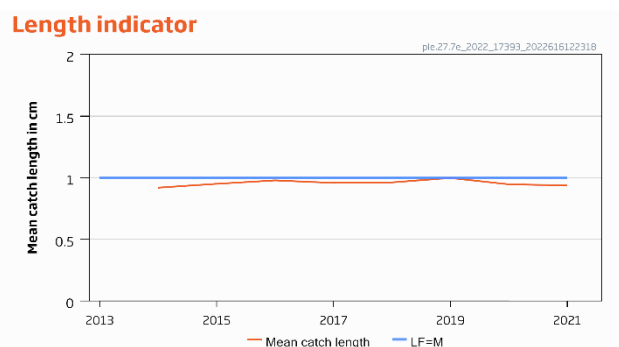
\* The figures in the table are rounded. Calculations were done with unrounded inputs, and computed values may not match exactly when calculated using the rounded figures in the table.

\*\*  $A_{y+1} = A_y \times r \times f \times b \times m$ , limited by stability clause if applicable.

\*\*\* [Advised catch for 2023]  $\times$  [1 – discard rate].

<sup>^</sup> Advice value for 2023 relative to the advice value for 2022 (1742 tonnes).

The current advice has decreased by 30% compared to last year’s advice because of a change in the advice method and a declining trend in the recent stock biomass.



**Figure 2** Plaice in Division 7.e. Length indicator (mean length of fish in the catch and MSY proxy reference length  $L_{F=M}$ ). The exploitation status is below  $F_{\text{MSY proxy}}$  when the indicator ratio value is higher than 1 (shown by a blue line).

## Basis of the advice

**Table 2** Plaice in Division 7.e. The basis of the advice.

Advice basis	MSY approach
Management plan	ICES is aware of the multiannual management plan (MAP) which has been adopted by the EU for this stock (EU, 2019) and which ICES considers to be precautionary. There is no agreed shared management plan with UK for this stock, and ICES provides advice according to ICES MSY approach.

## Quality of the assessment

The method for providing advice has changed in 2022 following new ICES guidelines (ICES, 2022a), and advice is now based on the empirical rfb rule (Fischer *et al.*, 2021).

The FSP-UK survey is used as an index of stock biomass because this survey covers the main habitat of plaice in the western English Channel and provides standardized biomass estimates. The length data used in the rfb rule covers the total internationally raised catch.

## Issues relevant for the advice

The stock assessment is for the Division 7.e plaice stock, and ICES provides catch advice for this stock. A single TAC covers both divisions 7.d and 7.e; management should ensure that fishing opportunities are in line with the stock status for each of the stocks in the combined management area in order to ensure that both stocks are exploited sustainably.

Previously, advice for this stock was given following ICES precautionary approach; the new method gives advice following ICES MSY approach.

The assessment includes a correction to the catch, adding 15% of the catch in Division 7d to 7e catches, to account for the migration of a portion of the mature population from Division 7.e to Division 7.d.”

The basis for the advice (rfb rule) has a biennial advice interval and so advice is provided for 2 years (ICES 2022).

## Reference points

**Table 3** Plaice in Division 7.e. Reference points, relative values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	0.39	Biomass index trigger value ( $I_{trigger}$ ), defined as $I_{trigger} = I_{loss} \times 1.4$ , where $I_{loss}$ is the lowest observed historical biomass index value from 2007. In kg per hour per metre beam of the survey gear.	ICES (2022a, 2022b)
	$F_{MSY proxy}$	1	$L_{mean}/L_{F=M}$ ; Mean catch length divided by MSY proxy reference length ( $L_{F=M} = 34.4$ cm).	ICES (2022a, 2022b)
Precautionary approach	$B_{lim}$	Not defined		
	$B_{pa}$	Not defined		
	$F_{lim}$	Not defined		
	$F_{pa}$	Not defined		
Management plan	$SSB_{mgt}$	Not applicable		
	$F_{mgt}$	Not applicable		

## Basis of the assessment

**Table 4** Plaice in Division 7.e. Basis of the assessment and advice.

ICES stock data category	3 ( <a href="#">ICES, 2022c</a> )
Assessment type	Survey biomass trend applying the <i>rfb</i> rule for advice (ICES, 2022b).
Input data	Commercial catch (international landings and discards, length frequencies from catch sampling); one survey index: UK-FSP (B4381)
Discards and bycatch	Discards estimates are raised to total international commercial catches. Discard information is available since 2012.
Indicators	Survey index (UK-Q1SWBeam [B2732])
Other information	Inter-benchmark in 2015 (IBPWCFlat2; ICES, 2015)
Working group	Working Group for the Celtic Seas Ecoregion ( <a href="#">WGCSE</a> )

## History of the advice, catch, and management

**Table 5** Plaice in Division 7.e. History of ICES advice, the agreed TAC, official landings, and ICES estimates of landings and discards. Weights are in tonnes.

Year	ICES advice	Catch corresponding to advice 7.e stock	Landings corresponding to advice 7.e stock	Catch corresponding to advice 7.e area	Landings corresponding to advice 7.e area	Agreed TAC 7.d + 7.e	Official landings in 7.e	ICES discards in 7.e stock **	ICES landings in 7.e stock ***
1987	Precautionary TAC		6800			8300	1920	-	2272
1988	Precautionary TAC		6900			9960	2330	-	2835
1989	No increase in effort; TAC		11700			11700	2250	-	2742
1990	No increase in F; TAC		10700			10700	1980	-	285
1991	50% reduction in F in Division 7.e		8800			10700	1640	-	2183
1992	<i>Status quo</i> F ( $F_{sq}$ ) gives over mean SSB		2000			9600	1570	-	1882
1993	Not outside safe biological limits		-			8500	1440	-	1614
1994	Within safe biological limits		-			9100	1290	-	1404
1995	No increase in F		1400			8000	1160	-	1247
1996	60% reduction in F		600			7530	1140	-	1266
1997	60% reduction in F		510			7090	1370	-	1583
1998	60% reduction in F		500			5700	1240	-	1346
1999	Reduce F below $F_{pa}$		1100			7400	1150	-	1543
2000	Reduce F below $F_{pa}$		< 1080			6500	1290	-	1626
2001	Reduce F below $F_{pa}$		< 930			6000	1110	-	1310
2002	Reduce F below $F_{pa}$		< 890			6690	1250	-	1472
2003	At least 50% reduction in F		< 530			5970	1240	-	1387
2004	A 55% reduction in F		< 660			6060	1140	-	1337
2005	A 64% reduction in F		< 580			5151	1130	-	1319
2006	Substantial reduction in catch		-			5151	1239	-	1411
2007	Substantial reduction in catch		-			5050	966	-	1146
2008	Substantial reduction in catch		-			5050	893	-	1112
2009	Same advice as last year		-			4646	977	-	1024
2010	Substantial reduction in catch		-			4274	1123	-	1207
2011	See scenarios		-			4665	1354	-	1417
2012	MSY framework ( $F_{MSY}$ )		< 1440			5062	1364	380	1492
2013	MSY framework ( $F_{MSY}$ )		-		< 2100	6400	1360	291	1472

Year	ICES advice	Catch corresponding to advice 7.e stock	Landings corresponding to advice 7.e stock	Catch corresponding to advice 7.e area	Landings corresponding to advice 7.e area	Agreed TAC 7.d + 7.e	Official landings in 7.e	ICES discards in 7.e stock **	ICES landings in 7.e stock ***
2014	MSY transition		-		< 1397	5322	1340	1006	1490
2015	MSY framework ( $F_{MSY}$ )	< 1885	< 1546		< 1318	6223	1249	1172	1424
2016	Precautionary approach (increase recent advised catch by no more than 20%)	≤ 2262	≤ 1697	≤ 1944	≤ 1458	12446	1780	500	2013
2017	Precautionary approach (increase recent advised catch by no more than 20%)	≤ 2714	≤ 1391	≤ 2454	≤ 1258	10022	1911	593	2128
2018	Precautionary approach (increase recent advised catch by no more than 20%)	≤ 3257	≤ 2239	≤ 2946	≤ 2025	10360	1644	499	1880
2019	Precautionary approach	≤ 3648		≤ 3283		10354	1523	169	1725
2020	Precautionary approach	≤ 2721		≤ 2456		9154	1276*	447	1373
2021	Precautionary approach	≤ 2177		≤ 1961		11920	1327*	117	1403
2022	Precautionary approach	≤ 1742		≤ 1572		9138			
2023	MSY approach	≤ 1219		≤ 1104					
2024	MSY approach	≤ 1219		≤ 1104					

\* Preliminary.

\*\* Excluding migration correction.

\*\*\* Including migration correction.

### History of the catch and landings

**Table 6** Plaice in Division 7.e. Catch distribution of plaice in 7.e by fleet in 2021 as estimated by ICES. The values correspond to the amount taken in Division 7.e and do not include the catch taken in Division 7.d.

Total catch	Landings				Discards			
	Beam trawl	Otter trawl	Fixed nets	Other gear	Beam trawl	Otter trawl	Fixed nets	Other gear
1520 tonnes	71%	22%	4.1%	2.9%	24%	74%	0%	2.9%
	1403 tonnes				117 tonnes			

**Table 7** Plaice in Division 7.e. History of official landings by country and ICES estimates of landings and discards. All weights are in tonnes.

Year	Belgium	Netherlands	France	UK (E & W) incl. CIs	Others	Official total	Total*	7.e stock caught in 7.d**	ICES estimated landings***	ICES estimated discards^
1976	5	-	323	312	-	640	640	-	640	
1977	3	-	336	363	-	702	702	-	702	
1978	3	-	314	467	-	784	784	-	784	
1979	2	-	458	515	-	975	977	-	977	
1980	23	-	325	609	9	966	1079	99	1178	
1981	27	-	537	953	-	1517	1501	175	1676	
1982	81	-	363	1109	-	1553	1688	190	1878	
1983	20	-	371	1195	-	1586	1495	219	1714	
1984	24	-	278	1144	-	1446	1547	211	1758	
1985	39	-	197	1122	-	1358	1441	236	1677	
1986	26	-	276	1389	-	1691	1810	268	2078	
1987	68	-	435	1419	-	1922	1958	314	2272	
1988	90	-	584	1654	-	2328	2458	377	2835	
1989	89	-	448	1712	-	2249	2358	384	2742	
1990	82	-	n/a	1891	2	1977	2593	392	2985	
1991	57	-	251	1326	-	1634	1848	335	2183	
1992	25	-	419	1110	14	1568	1624	258	1882	
1993	56	-	284	1080	24	1444	1417	197	1614	
1994	10	-	277	998	-	1285	1156	248	1404	
1995	13	-	288	857	-	1158	1031	216	1247	
1996	4	-	279	855	-	1138	1044	222	1266	
1997	6	-	329	1038	1	1374	1323	260	1583	
1998	22	-	327	892	1	1242	1131	215	1346	
1999	12	-	194	947	-	1153	1299	244	1543	
2000	4	-	360	926	< 1	1290	1281	345	1625	
2001	12	-	303	797	-	1112	1106	204	1310	
2002	27	-	242	978	< 1	1247	1257	215	1472	
2003	39	-	216	985	-	1240	1277	110	1387	
2004	46	-	184	912	-	1142	1212	126	1337	
2005	48	-	198	887	-	1133	1203	117	1319	
2006	52	-	223	965	< 1	1239	1313	97	1411	
2007	84	-	202	680	-	966	1003	143	1146	
2008	66	-	148	679	-	893	976	135	1112	
2009	53	2	191	731	-	977	923	101	1024	
2010	51	2	227	843	-	1123	1092	116	1208	
2011	141	3	274	936	-	1354	1334	83	1417	
2012	134	2	224	1004	< 1	1364	1366	126	1492	448
2013	97	1	221	1041	-	1360	1351	121	1472	351
2014	41	-	323	976	-	1340	1341	149	1490	1133
2015	111	1	224	912	1	1249	1246	178	1424	1276
2016	145	< 1	204	1430	-	1780	1777	235	2013	618
2017	151	< 1	153	1605	1	1911	1915	213	2128	821
2018	143	3	118	1377	3	1644	1644	236	1880	633
2019	73	2	97	1351	< 1	1523	1520	204	1725	366
2020^^	73	1	79	1122	-	1276	1275	98	1373	514
2021^^	107	1	90	1129	-	1327	1331	72	1403	211

\* Estimated by the working group.

\*\* Migration correction (15% of the mature population caught in quarter 1 in Division 7.d) added to stock.

\*\*\* Landings estimates, including the migration correction.

^ Discard estimates, including the migration correction.

^^ Preliminary official landings.

**Summary of the assessment**

**Table 8** Plaice in Division 7.e. Assessment summary. Weights are in tonnes.

Year	Biomass index (kg hr <sup>-1</sup> m beam <sup>-1</sup> )	Length indicator	ICES landings*	ICES discards*
1980			1178	
1981			1676	
1982			1878	
1983			1714	
1984			1758	
1985			1677	
1986			2078	
1987			2272	
1988			2835	
1989			2742	
1990			2985	
1991			2183	
1992			1882	
1993			1614	
1994			1404	
1995			1247	
1996			1266	
1997			1583	
1998			1346	
1999			1543	
2000			1626	
2001			1310	
2002			1472	
2003	0.50		1387	
2004	0.71		1337	
2005	0.50		1319	
2006	0.55		1411	
2007	0.28		1146	
2008	0.39		1112	
2009	0.53		1024	
2010	0.74		1207	
2011	0.81		1417	
2012	0.90		1492	448
2013	1.31		1472	351
2014	2.18	0.92	1490	1133
2015	1.71	0.95	1424	1276
2016	1.36	0.98	2013	618
2017	1.33	0.96	2128	821
2018	1.13	0.96	1880	633
2019	0.84	1.00	1725	366
2020	0.60	0.95	1373	514
2021	1.03	0.94	1403	211

\* Including the migration correction.

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*Recommended citation:* ICES. 2022. Plaice (*Pleuronectes platessa*) in Division 7.e (western English Channel). *In* Report of the ICES Advisory Committee, 2022. ICES Advice 2022, ple.27.7e. <https://doi.org/10.17895/ices.advice.19453631>.