

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

ICES stock advice

ICES advises that when the precautionary approach is applied, catches of the Division 7.e plaice stock in 2017 should be no more than 2714 tonnes. If this stock is not under the EU landing obligation in 2017 and discard rates do not change from the recent average (2014–2015), this implies landings of the Division 7.e plaice stock of no more than 1391 tonnes.

Assuming the same proportion of the Division 7.e plaice stock is taken in Division 7.d as during 2006–2015, this will correspond to catches of plaice in Division 7.e of no more than 2454 tonnes. If this stock is not under the EU landing obligation and discard rates do not change from the average (2014–2015), this implies landings of plaice in Division 7.e of no more than 1258 tonnes.

Stock development over time

The assessment is indicative of trends. Fishing mortality (F) has declined substantially since 2007. The spawning-stock biomass (SSB) has increased since 2008 and is currently at the time-series maximum. Recruitment has been above average since 2010.

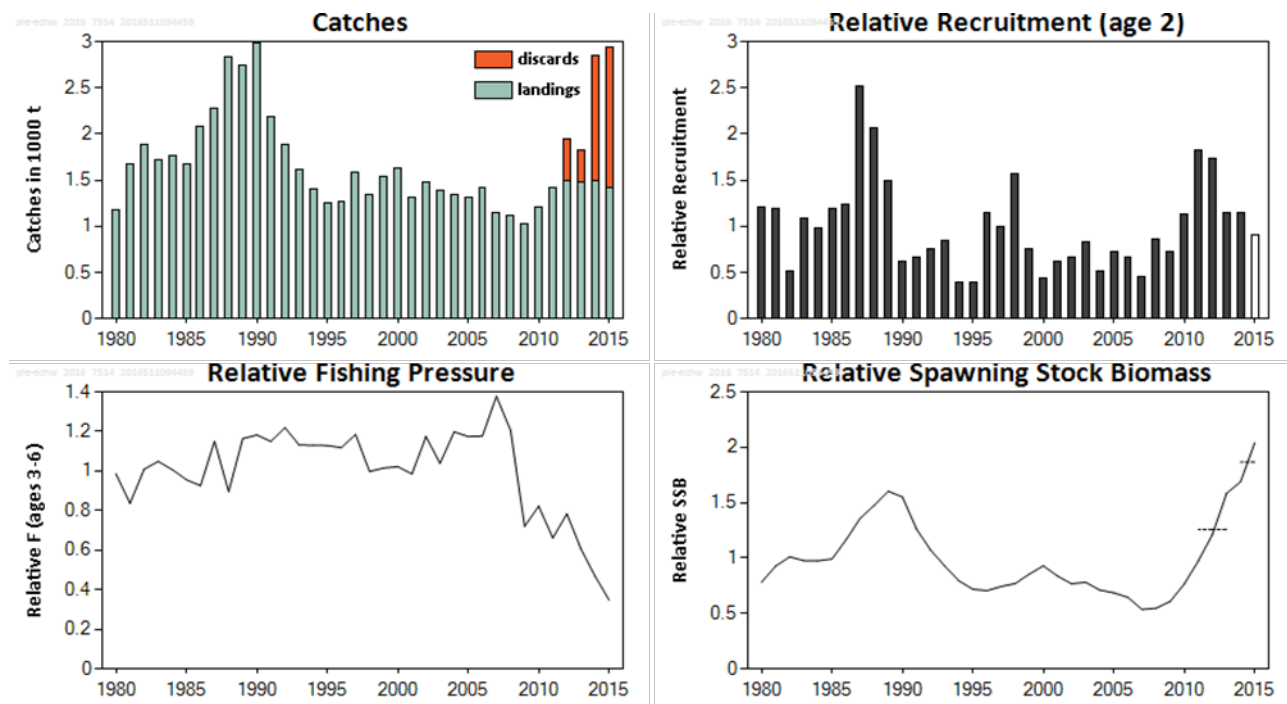


Figure 5.3.51.1 Plaice in Division 7.e. Summary of stock assessment. Recruitment, fishing pressure, and SSB are relative in relation to the average of the time-series. The dashed lines in the relative SSB plot indicate the average values of the respective years. Predicted recruitment values are not shaded. Discard data are only available for 2012–2015 and are not included in the assessment.

Stock and exploitation status

Table 5.3.51.1 Plaice in Division 7.e. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size				
		2013	2014	2015		2013	2014	2015		
Maximum sustainable yield	F_{MSY} proxy	✓	✓	✓	Below proxy	$B_{trigger}$ proxy	✓	✓	✓	Above proxy
Precautionary approach	F_{pa} , F_{lim}	✓	✓	✓	Below possible candidate reference points	B_{pa} , B_{lim}	✓	✓	✓	Above possible candidate reference points
Management plan	F_{MGT}	-	-	-	Not applicable	SSB_{MGT}	-	-	-	Not applicable
Qualitative evaluation	-	↘	↘	↘	Decreasing	-	↗	↗	↗	Increasing

Note: State of the stock evaluation is based on reference point proxies (ICES, 2016a) and relative change in fishing pressure and stock size.

Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012). The SSB trends from the assessment are 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. There has been a continuous decline in fishing mortality in recent years (75% decline since 2007) and fishing mortality is below the proxy reference point. Therefore, no additional precautionary buffer was applied. The average reported discard rate of the last two years is 49%.

Table 5.3.51.2 Plaice in Division 7.e. For stocks in ICES data categories 3–6, one catch option is provided.

Division 7.e plaice stock		
Index A (2014, 2015)		1.87
Index B (2011, 2012, 2013)		1.26
Index ratio (A/B)		1.48
Uncertainty cap	Applied	1.2
Recent advised catch for 2016 (for stock)		2262 t
Discard rate (2014–2015)		0.49
Precautionary buffer	Not applied	-
Catch advice (for stock)*		2714 t
Landings corresponding to the catch advice (for stock)		1391 t
Plaice in Division 7.e		
Proportion of Division 7.e stock catches taken in Division 7.d (2006–2015)		0.10
Catch of plaice in Division 7.e corresponding to the advice for the stock		2454 t
Landings of plaice in Division 7.e corresponding to the advice for the stock		1258 t

* [Recent advised catch] × [uncertainty cap].

Basis of the advice

Table 5.3.51.3 Plaice in Division 7.e. The basis of the advice.

Advice basis	Precautionary approach
Management plan	There is no management plan for plaice in this area.

Quality of the assessment

The most recent inter-benchmark process (ICES, 2015) concluded that this assessment should be treated as a category 3 trends-based assessment, owing to strong retrospective patterns. Discard data are only estimated from 2012 onwards and increased notably in 2014 and 2015. Reported discards averaged 49% in 2014–2015. Discards are not included in this assessment. The decision to exclude discards in the assessment is based on the uncertainty in the available discards data and the shortness of the time-series.

There is uncertainty about the landing statistics of the Division 7.e plaice stock because of migration between this area and the eastern English Channel (Division 7.d) during the spawning period. The assessment partially corrects for this by incorporating an added element of Division 7.d landings and age information to account for migration. The assessment results depend on the assumption on the mixing rate, which is estimated from the existing tagging survey (ICES, 2010). Stock structure and mixing rate during the spawning period need to be investigated; new data are needed to determine if the current mixing rate estimates are still valid given the general increase of plaice stocks.

The assessment relies heavily on the age composition data derived from UK (E+W) sample data and would benefit from the addition of age composition data from France and Belgium as these fisheries have accounted for approximately 25% of the landings in the recent years.

Issues relevant for the advice

The stock assessment is for the Division 7.e plaice stock and ICES provides catch advice for that stock, whereas the management is for the combined Divisions 7.e and 7.d. The total allowable catch (TAC) for the management area for 2016 has been doubled compared to 2015, which might lead to overexploitation of the Division 7.e plaice stock.

This year, MSY proxies have been estimated (ICES, 2016a). The stock status and exploitation indicators suggest that the stock is in good condition relative to the proxy reference points.

The discard rate in Division 7.e has increased substantially in recent years and averaged 49% in 2014–2015. The discard rate is now higher than for the more easterly plaice stocks (North Sea and eastern English Channel), but not as high as for the more westerly stocks (Bristol Channel, Celtic Sea, and Irish Sea). Discarding should be monitored closely and information from additional fleets is desirable.

Reference points

Table 5.3.51.4 Plaice in Division 7.e. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger\ proxy}^*$	1910 t	$0.5 \times B_{MSY}$ (estimated by SPiCT from model parameters, using data from 1980–2014)**	(ICES, 2016a)
	$F_{MSY\ proxy}^*$	0.56	F_{MSY} (estimated by SPiCT from model parameters, using data from 1980–2014)	(ICES, 2016a)
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		

*The current assessment is indicative of trends only and therefore results cannot be compared directly to the F_{MSY} proxy reference point estimates.

** Version 2: Technical basis corrected

Basis of the assessment

Table 5.3.51.5 Plaice in Division 7.e. The basis of the assessment.

ICES stock data category	3 (ICES, 2016b)
Assessment type	Age-based analytical assessment (XSA), considered indicative of trends only (ICES, 2016c).
Input data	Commercial catches (international landings, ages and length frequencies from catch sampling); two survey indices (UK-FSP and Q1SWBeam). Maturity and natural mortality are constant for all years and derived from historical survey data (maturity) and the plaice stock in Division 7.a.
Discards and bycatch	Used to provide advice, but not included in the assessment. Discard information is available from 2012 onwards.
Indicators	SPiCT model (ICES, 2016d)
Other information	Inter-benchmark in 2015 (IBPWCF1at2; ICES, 2015)
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE)

Information from stakeholders

There is no available information.

History of the advice, catch, and management

Table 5.3.51.6 Plaice in Division 7.e. History of ICES advice, the agreed TAC, and ICES estimates of landings. All weights are in thousand tonnes.

Year	ICES advice	Predicted catches corresp. to advice 7.e stock *	Predicted landings corresp. to advice 7.e stock *	Predicted catch corresp. to advice 7.e area **	Predicted landings corresp. to advice 7.e area **	Agreed TAC***	Official landings in 7.e	ICES discards estimates in 7.e	ICES landings 7.e plaice stock
1987	Precautionary TAC		6.8			8.3	1.92	-	2.27
1988	Precautionary TAC		6.9			9.96	2.33	-	2.84
1989	No increase in effort; TAC		11.7			11.7	2.25	-	2.74
1990	No increase in F; TAC		10.7			10.7	1.98	-	2.99
1991	50% reduction in F in 7.e		8.8			10.7	1.64	-	2.18
1992	Sq. F gives over mean SSB		2.0			9.6	1.57	-	1.88
1993	Not outside safe biological limits		-			8.5	1.44	-	1.61
1994	Within safe biological limits		-			9.1	1.29	-	1.40
1995	No increase in F		1.4			8.0	1.16	-	1.25
1996	60% reduction in F		0.6			7.5	1.14	-	1.27
1997	60% reduction in F		0.51			7.09	1.37	-	1.58
1998	60% reduction in F		0.5			5.7	1.24	-	1.35
1999	Reduce F below F_{pa}		1.1			7.4	1.15	-	1.54
2000	Reduce F below F_{pa}		< 1.08			6.5	1.29	-	1.63
2001	Reduce F below F_{pa}		< 0.93			6.0	1.11	-	1.31
2002	Reduce F below F_{pa}		< 0.89			6.7	1.25	-	1.47
2003	At least 50% reduction in F		< 0.53			5.97	1.24	-	1.39
2004	A 55% reduction in F		< 0.660			6.06	1.14	-	1.34
2005	A 64% reduction in F		< 0.580			5.15	1.13	-	1.32
2006	Substantial reduction in catch		-			5.15	1.24	-	1.41
2007	Substantial reduction in catch		-			5.05	0.97	-	1.15
2008	Substantial reduction in catch		-			5.05	0.89	-	1.11
2009	Same advice as last year		-			4.65	0.98	-	1.02
2010	Substantial reduction in catch		-			4.27	1.11	-	1.21
2011	See scenarios		-			4.67	1.33	-	1.42
2012	MSY Framework (F_{MSY})		< 1.44			5.06	1.37	0.380	1.49
2013	MSY Framework (F_{MSY})		-		< 2.10	6.40	1.36	0.291	1.47
2014	MSY transition		-		< 1.397	5.32	1.33	1.226	1.488
2015	MSY Framework (F_{MSY})	< 1.885	< 1.546		< 1.318	6.223	1.246	1.408	1.424
2016	Precautionary approach (increase recent advised catch by no more than 20%)	≤ 2.262	≤ 1.697	≤ 1.944	≤ 1.458	12.446			
2017	Precautionary approach (increase recent advised catch by no more than 20%)	≤ 2.714	≤ 1.391	≤ 2.454	≤ 1.258				

* For the Division 7.e plaice stock.

** For plaice caught in Division 7.e.

*** Combined TAC for divisions 7.d and 7.e.

History of catch and landings

Table 5.3.51.7 Plaice in Division 7.e. Catch distribution of plaice caught in Division 7.e by fleet in 2015 as estimated by ICES.

Catch (2015)	Landings				Discards			
	Beam trawl	Otter trawl	Fixed nets	Other gear	Beam trawl	Otter trawl	Fixed nets	Other gear
2654 tonnes	54.8%	39.5%	2.4%	3.3%	54.4%	40.4%	0.0%	5.1%
	1246 tonnes				1408 tonnes			

Table 5.3.51.8 Plaice in Division 7.e. History of commercial catch and landings; both the official and ICES estimated values are presented for each country participating in the fishery. Weights are in tonnes.

Year	Landings											Discards ICES estimate discards
	Belgium	Denmark	Netherlands	France	UK (E & W) incl. CI's	Others	Total reported	Unallocated *	Total	7.e stock caught in 7.d**	As used by WG	
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	2	977	-	977	
1980	23	-	-	325	609	9	966	113	1079	99	1178	
1981	27	-	-	537	953	-	1517	-16	1501	175	1676	
1982	81	-	-	363	1109	-	1553	135	1688	190	1878	
1983	20	-	-	371	1195	-	1586	-91	1495	219	1714	
1984	24	-	-	278	1144	-	1446	101	1547	211	1758	
1985	39	-	-	197	1122	-	1358	83	1441	236	1677	
1986	26	-	-	276	1389	-	1691	119	1810	268	2078	
1987	68	-	-	435	1419	-	1922	36	1958	314	2272	
1988	90	-	-	584	1654	-	2328	130	2458	377	2835	
1989	89	-	-	448	1712	-	2249	109	2358	384	2742	
1990	82	2	-	N/A	1891	2	1977	616	2593	392	2985	
1991	57	-	-	251	1326	-	1634	214	1848	335	2183	
1992	25	-	-	419	1110	14	1568	56	1624	258	1882	
1993	56	-	-	284	1080	24	1444	-27	1417	197	1614	
1994	10	-	-	277	998	-	1285	-129	1156	248	1404	
1995	13	-	-	288	857	-	1158	-127	1031	216	1247	
1996	4	-	-	279	855	-	1138	-94	1044	222	1266	
1997	6	-	-	329	1038	1	1374	-51	1323	260	1583	
1998	22	-	-	327	892	1	1242	-111	1131	215	1346	
1999	12	-	-	194	947	-	1153	146	1299	244	1543	
2000	4	-	-	360	926	+	1290	-9	1281	345	1625	
2001	12	-	-	303	797	-	1112	-6	1106	204	1310	
2002	27	-	-	242	978	+	1247	10	1257	215	1472	
2003	39	-	-	216	985	-	1240	37	1277	110	1387	
2004	46	-	-	184	912	-	1142	70	1212	126	1337	
2005	48	-	-	198	887	-	1133	70	1203	117	1319	
2006	52	-	-	223	964	-	1239	74	1313	97	1411	
2007	84	-	-	202	678	-	964	39	1003	143	1146	
2008	66	-	-	148	674	-	888	88	976	135	1112	
2009	53	-	2	191	726	5	977	-54	923	101	1024	

Year	Landings											Discards
	Belgium	Denmark	Netherlands	France	UK (E & W) incl. CI's	Others	Total reported	Unallocated *	Total	7.e stock caught in 7.d**	As used by WG	ICES estimate discards
2010	51	-	2	227	837	2	1119	-27	1092	116	1208	
2011	141	-	3	274	932	6	1356	-22	1334	83	1417	
2012	136	-	-	224	1006	-	1366	0	1366	126	1492	380
2013	99	-	-	215	1037	-	1351	0	1351	121	1472	291
2014	41	-	-	322	978	-	1341	-2	1339	149	1488	1226
2015	111	-	1	224	909	1	1246	-1	1245	178	1423	1408

*Estimated by the Working Group.

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

Summary of the assessment

Table 5.3.51.9 Plaice in Division 7.e. Assessment summary. Weights are in tonnes.

Year	Relative recruitment (age 2)	Relative SSB	Landings	Relative F
1980	1.205	0.781	1178	0.986
1981	1.187	0.928	1676	0.836
1982	0.512	1.011	1878	1.009
1983	1.089	0.977	1714	1.049
1984	0.987	0.975	1758	1.007
1985	1.187	0.992	1677	0.956
1986	1.234	1.165	2078	0.926
1987	2.512	1.358	2272	1.15
1988	2.059	1.476	2835	0.896
1989	1.487	1.603	2742	1.164
1990	0.622	1.552	2985	1.182
1991	0.668	1.263	2183	1.149
1992	0.754	1.072	1882	1.219
1993	0.849	0.929	1614	1.131
1994	0.394	0.796	1404	1.13
1995	0.397	0.719	1247	1.129
1996	1.149	0.706	1266	1.118
1997	1.001	0.744	1583	1.185
1998	1.564	0.770	1346	0.998
1999	0.749	0.855	1543	1.015
2000	0.442	0.930	1626	1.023
2001	0.626	0.838	1310	0.985
2002	0.663	0.769	1472	1.174
2003	0.827	0.782	1387	1.039
2004	0.521	0.712	1337	1.198

Year	Relative recruitment (age 2)	Relative SSB	Landings	Relative F
2005	0.724	0.687	1319	1.174
2006	0.670	0.646	1411	1.177
2007	0.451	0.537	1146	1.377
2008	0.855	0.547	1112	1.206
2009	0.726	0.609	1024	0.72
2010	1.137	0.766	1207	0.822
2011	1.822	0.975	1417	0.662
2012	1.734	1.213	1492	0.784
2013	1.149	1.583	1472	0.606
2014	1.147	1.690	1490	0.469
2015	0.900*	2.041	1424	0.347

*Geometric mean (1980–2014).

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