

Plaice (*Pleuronectes platessa*) in Division 7.d (eastern English Channel)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, catches in 2024 should be no more than 2 367 tonnes.

The use of a combined TAC for plaice in divisions 7.d and 7.e prevents effective control of single stock exploitation rates and could lead to the overexploitation of either stock. ICES advises that management should be implemented at the stock area level.

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

ICES advice on conservation aspects

ICES has not identified any conservation aspects.

Stock development over time

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

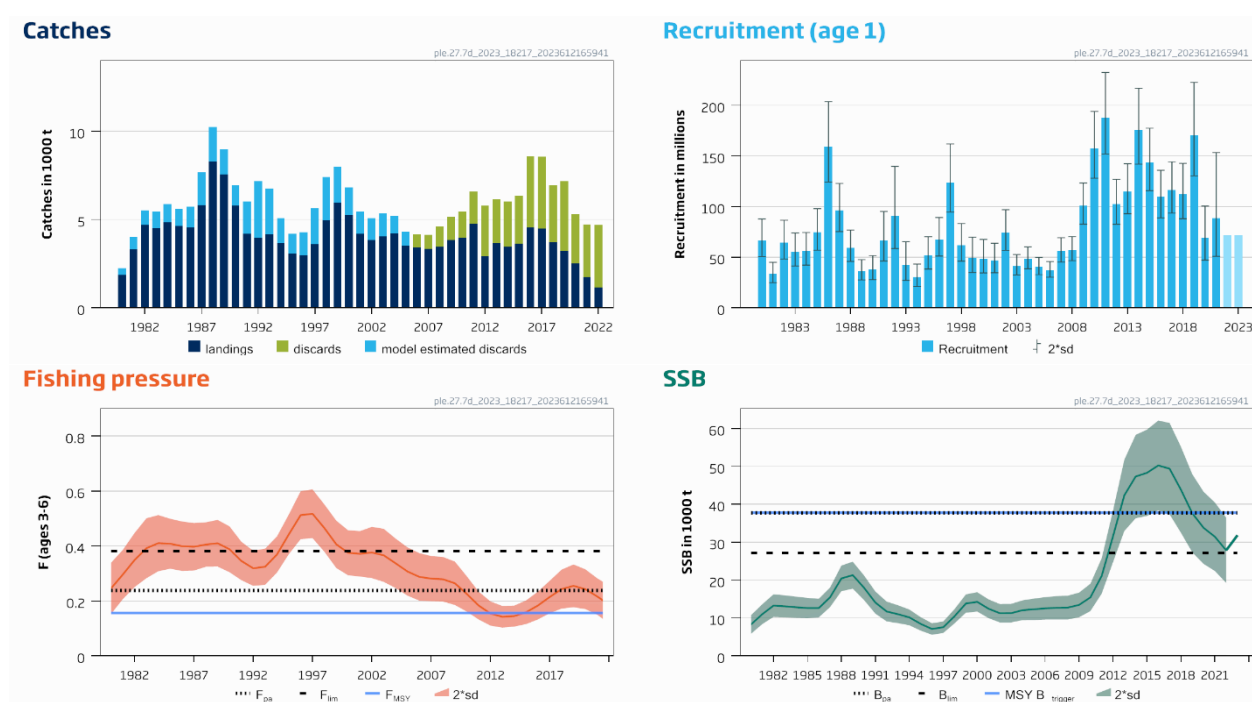


Figure 1 Plaice in Division 7.d. Summary of the stock assessment. The assumed recruitment value for 2022 and 2023 is shaded in a lighter colour. Discard data are only available since 2006; values prior to that are model estimates. Discards include BMS (below minimum size) landings.

Conservation status

ICES is not aware of any information on stock/species-specific conservation status.

Catch scenarios

Table 1 Plaice in Division 7.d. Values in the forecast and for the interim year for Division 7.d plaice stock only.

Variable	Value	Notes
F _{ages 3–6} (2023)	0.187	Average exploitation pattern (2020–2022), scaled to F _{ages 3–6} 2022
SSB (2024)	28864	Short-term forecast (STF); in tonnes
R _{age 1} (2022–2024)	71768	Geometric mean 1980–2021; in thousands
Total catch (2023)	3714	STF; in tonnes
Projected landings (2023)	1594	STF; assuming average landings ratio (2020–2022); in tonnes
Projected discards (2023)	2120	STF; assuming average discards ratio (2020–2022); in tonnes

Table 2 Plaice in Division 7.d. Annual catch scenarios. Weights are in tonnes.

Basis	Division 7.d plaice stock									All plaice in Division 7.d [#]				
	Total catch (2024) [^]	Projected landings (2024)	Projected discards* (2024)	F _{total} (ages 3–6) (2024)	F _{projected} landings (ages 3–6) (2024)	F _{projected} discards (ages 3–6) (2024)	SSB (2025)	% SSB change **	% advice change [§]	Total catch (2024)	Projected landings (2024)	Projected discards* (2024)	% change in projected catches ^{^^}	% advice change ^{###}
ICES advice basis														
MSY approach: F _{MSY} × SSB (2024) /MSY B _{trigger}	2367	1058	1309	0.119	0.029	0.090	29 594	2.5	–50	2826	1263	1562	–62	–50
Other scenarios														
F = F _{MSY lower} × SSB (2024)/ MSY B _{trigger}	1737	777	960	0.086	0.021	0.065	30 449	5.5	–63	2074	927	1146	–72	–63
F _{MSY lower}	2249	1005	1243	0.113	0.028	0.085	297 54	3.1	–53	2684	1200	1484	–64	–53
F _{MSY}	3052	1364	1688	0.156	0.038	0.118	28 668	–0.68	–36	3643	1628	2015	–52	–36
F = 0	0	0	0	0	0	0	32 828	13.7	–100	0	0	0	–100	–100
F _{pa}	4510	2014	2496	0.238	0.058	0.180	26 714	–7.5	–4.8	5383	2403	2980	–28	–5.1
F _{lim}	6836	3047	3789	0.381	0.093	0.29	23 644	–18.1	44	8160	3637	4523	8.5	44
SSB (2025) = B _{lim}	4185	1869	2316	0.22	0.054	0.166	27 147	–5.9	–11.7	4996	2231	2765	–34	–11.9
SSB (2025) = B _{pa} = MSY B _{trigger} ^{###}														
F = F ₂₀₂₃	3611	1613	1998	0.187	0.046	0.141	27 917	–3.3	–24	4310	1925	2384	–43	–24

* Including BMS landings, assuming recent discard rate.

** SSB 2025 relative to SSB 2024.

§ Total catch of plaice stock in 2024 relative to the advice value 2023 (4738 tonnes).

^ Differences between total catch and the sum of projected landings and discards result from rounding.

^^ Total catch of plaice in Division 7d in 2024 relative to the ICES estimates of catches in 2022 (7520 tonnes).

All plaice in Division 7.d, including plaice originating from the North Sea and the western English Channel. Of the plaice caught in Division 7.d, 12.49% are assumed to originate from the North Sea and 3.75% from the western English Channel (average ratio calculated over the years 2003–2022). Both of these predicted catches are added to the predicted values for the ple.27.7d stock and applied to total catch, projected landings, and projected discards. Following ICES advice basis, catches in Division 7.d will comprise 2367 tonnes coming from the ple.27.7d stock, plus 352 tonnes coming from the ple.27.420 stock and 106 tonnes from the ple.27.7e stock.

Total catch of plaice in division 7d in 2024 relative to the advice value 2023 (5671 tonnes).

B_{pa} and $MSY B_{trigger}$ cannot be achieved in 2025, even with zero catches.

The advice change (–50% for the Division 7.d plaice stock) is the result of a large decrease in the recruitment assumption and a downward revision in SSB in recent years, leading to a reduction in the target F below F_{MSY} .

Basis of the advice

Table 3 Plaice in Division 7.d. The basis of the advice.

Advice basis	MSY approach.
Management plan	ICES is aware of the multiannual management plan (MAP) that has been adopted by the EU for this stock (EU, 2019) and that 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. Catch scenarios consistent with the MAP F_{MSY} ranges are provided.

Quality of the assessment

There is uncertainty about catches of the Division 7.d plaice stock because of migrations between Division 7.d and the North Sea and the western English Channel during the spawning period. The current assessment results depend on the proportion of first quarter removals estimated from a historical tagging survey (ICES, 2010).

During 2022, the FR-GFS survey did not have access to the waters within six nautical miles of the UK coast; therefore, all stations within this area were not sampled. This area is an important habitat for plaice. The effect of this issue has been investigated and, although one year of missing stations did not have a substantial impact on the current assessment outputs, it may become a problem if the issue persists in the future.

There has been no UK-BTS survey in the eastern English Channel in 2022. This resulted in high uncertainty for the 2022 recruitment estimate. Due to the high uncertainty, the recruitment value for 2022 was not used in the forecast and was replaced with the assumed recruitment value for 2023.

The current intermediate year assumption for the recruitment is based on a geometric mean for 1980–2021. This is in contrast to last year, where a shorter recruitment period was used in line with a higher recruitment period in the most recent years.

There has been a downwards revision in SSB. The reason for this is unclear.

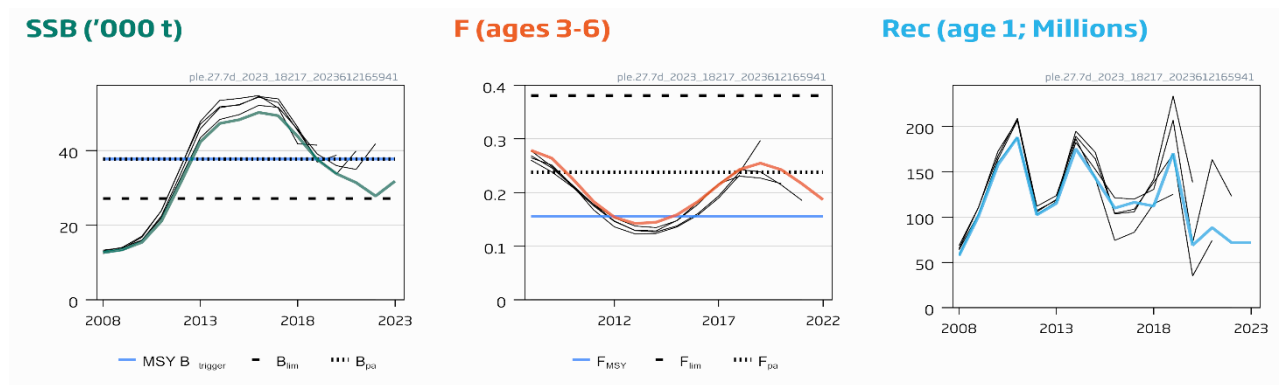


Figure 2 Plaice in Division 7.d. Historical assessment results (final-year recruitment included for each line, corresponding to the forecast recruitment in the interim year). The reference points were revised in 2022, and only assessment results from the last two years should be compared to the reference points indicated.

Issues relevant for the advice

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 to ensure that both stocks are exploited sustainably.

Mature individuals from plaice stock in Division 7.e and stock in Subarea 4 and Subdivision 20 migrate to Division 7.d in the first quarter. Thus, a proportion of catch of these two stocks occurs in Division 7.d. For the ple.27.7e, ple.27.7d, and ple.27.420 stocks, the catch advice is given at stock level but the catch corresponding to each area is provided in the catch scenario table. Of the plaice caught in Division 7.d, 12.49% is assumed to originate from the North Sea and 3.75% from the western English Channel (average ratio calculated over the years 2003–2022); both of these predicted catches are added to the predicted values for the ple.27.7d stock and applied to total catch, projected landings, and projected discards.

Following ICES advice basis, catches in Division 7.d will comprise 2367 tonnes from the ple.27.7d stock, plus 352 tonnes from the ple.27.420 stock and 106 tonnes from the ple.27.7e stock. All catch scenarios for ple.27.7e and ple.27.420 stocks assume that fishing opportunities for ple.27.7d stock in 2024 correspond to the “ICES basis for the advice scenario”; for the ple.27.7d stock, however, this amount depends on the scenario.

Plaice is caught in a mixed fishery targeting sole, with 80 mm mesh size. This leads to a large number of plaice being discarded because this mesh size does not match the minimum conservation reference size (MCRS).

Reference points

Table 4 Plaice in Division 7.d. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	37761	B_{pa} in tonnes	ICES (2022a)
	F_{MSY}	0.156	EqSim analysis based on recruitment period 1980–2020	ICES (2022a)
Precautionary approach	B_{lim}	27174	Break-point of hockey stick stock–recruit relationship, based on recruitment period 1980–2020; in tonnes	ICES (2022a)
	B_{pa}	37761	$B_{lim} \times \exp(1.645 \times \sigma) \approx 1.4 \times B_{lim}$, $\sigma = 0.20$; in tonnes	ICES (2022a)
	F_{lim}	0.381	EqSim analysis based on recruitment period 1980–2020	ICES (2022a)
	F_{pa}	0.238	The F that provides a 95% probability for SSB to be above B_{lim} ($F_{p.05}$ with advice rule [AR])	ICES (2022a)
EU Management plan (MAP)*	MAP MSY $B_{trigger}$	37761	MSY $B_{trigger}$ in tonnes	ICES (2022a)
	MAP B_{lim}	27174	B_{lim} in tonnes	ICES (2022a)
	MAP F_{MSY}	0.156	F_{MSY}	ICES (2022a)
	MAP range F_{lower}	0.113–0.156	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY	ICES (2022a)
	MAP range F_{upper}	0.156–0.224	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY	ICES (2022a)

* EU multiannual plan (MAP) for the Western Waters (EU, 2019).

Basis of the assessment

Table 5 Plaice in Division 7.d. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2023a)
Assessment type	Age-based analytical assessment (AAP; Aarts and Poos, 2009) that uses catches in the model and in the forecast (ICES, 2023b)
Input data	Commercial catch (international landings, with age frequencies from catch sampling covering 65% of the landings) and two survey indices: UK-BTS [B2453] and FR-GFS index [G3425] (calculated with delta GAM). Time invariant natural mortality by age is calculated from Peterson and Wroblewski (1984). Fixed maturity ogive is based on biological sampling.
Discards and bycatch	Discards are included in the assessment, and all major fleets are covered. In 2022, 69% of the landings had associated discard information, with age frequencies from catch sampling covering 53% of the discards. 72% of the discard estimates are based on observations. The model reconstructs discards for years where data are not available (before 2006).
Indicators	None
Other information	Last benchmarked in 2015 (WKPLE; ICES, 2015), Reference points updated in 2022 (WGNSSK; ICES, 2022a). Catches from Division 7.d are reduced by the amount of plaice that originate from the ple.27.420 stock and the ple.27.7e stock. The catches originating from ple.27.420 and ple.27.7e stocks are assumed to be, respectively, 50% and 15% of the mature individuals caught in Division 7.d during the first quarter, derived from tagging data (ICES, 2010).
Working group	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)

History of the advice, catch, and management

Table 6 Plaice in Division 7.d. History of ICES advice, official landings for plaice in Division 7.d, agreed TAC for divisions 7.d and 7.e, and ICES estimates for landings and discards of Division 7.d plaice and for plaice in Division 7.d. Weights are in tonnes.

Year	ICES advice	Landings corresponding to advice			Catch corresponding to advice		Agreed TAC 7.d, e	Official landings of plaice in 7.d*	ICES landings of plaice in 7.d*	ICES landings 7.d plaice	ICES discards of 7.d plaice	ICES discards of plaice in 7.d^^
		7.d plaice	Plaice in 7.d	Plaice in 7.d-e	7.d plaice stock	Plaice in 7.d						
1987	Precautionary TAC for 7.d-e			6800			8300	7867	8366	7006		
1988	Precautionary TAC for 7.d-e			6900			9960	9103	10420	8785		
1989	No increase in effort for 7.d-e			11700			11700	7115	8758	7093		
1990	No increase in F; TAC for 7.d-e			10700			10700	8367	9047	7349		
1991	TAC for 7.d-e			8800			10700	7913	7813	6362		
1992	<i>Status quo</i> F gives mean SSB		7600				9600	6232	6337	5219		
1993	<i>Status quo</i> F within safe biological limits		6400				8500	4771	5331	4479		
1994	No long-term gains in increased F		-				9100	5633	6121	5047		
1995	No increase in F		5600				8000	4569	5130	4196		
1996	No long-term gains in increasing F		6500				7530	4598	5393	4430		
1997	No advice		-				7090	5316	6307	5180		
1998	Reduce F in 1998 by 30% from 1996 value		4300				5700	4830	5762	4831		
1999	Fishing at F_{pa}		6300				7400	5437	6326	5268		
2000	Fishing at F_{pa}		4900				6500	5235	6014	4521		
2001	Fishing at $< F_{pa}$		< 4400				6000	4968	5266	4380		
2002	Fishing at $< F_{pa}$		< 5800				6700	5496	5777	4846		
2003	Fishing at $< F_{pa}$		< 5300				5970	4650	4086	3610		
2004	Fishing at $< F_{pa}^{**}$		< 5400				6060	4312	4750	4206		
2005	Fishing at $< F_{pa}^{**}$		< 4400				5150	3706	3991	3485		
2006	No effort increase**						5151	3525	3646	3225	727	749
2007	Average landings**		< 4000				5050	3845	4001	3381	1220	1252
2008	Average landings**		< 3500				5050	3609	3864	3278	888	936
2009	Average landings (2006–2008)**		< 3500				4646	3522	3560	3124	1473	1528

Year	ICES advice	Landings corresponding to advice			Catch corresponding to advice		Agreed TAC 7.d, e	Official landings of plaice in 7.d*	ICES landings of plaice in 7.d*	ICES landings 7.d plaice	ICES discards of 7.d plaice	ICES discards of plaice in 7.d^^
		7.d plaice	Plaice in 7.d	Plaice in 7.d-e	7.d plaice stock	Plaice in 7.d						
2010	Average landings (2007–2009)		< 3500				4274	3892	4411	3910	2412	2511
2011	Average landings (2008–2010)		< 3500				4665	3593	3649	3291	1926	2024
2012	No increase in catches and reduce discards		-				5062	3611	3723	3178	3043	3336
2013	Transition to F_{MSY} proxy for data-limited stocks by 2015 and reduce discards		< 4300				6400	4182	4127	3604	2696	2955
2014	Transition to F_{MSY} proxy for data-limited stocks by 2015 and reduce discards	< 3016	< 3925				5322	4326	4320	3675	3325	3886
2015	ICES DLS approach (F_{MSY} proxy)	< 2811	< 3469				6223	3749	3727	2957	2368	2821
2016	MSY approach	≤ 10855	≤ 12512	≤ 16249	≤ 16923	≤ 19506	12446	4658	4638	3617	3090	3603
2017	MSY approach	≤ 7550	≤ 8764	≤ 11381	≤ 12805	≤ 14864	10022	4581	4613	3689	4075	5065
2018	MSY approach	≤ 7132	≤ 8335	≤ 10909	≤ 10592	≤ 12378	10360	4986	4999	3975	4959	6215
2019	MSY approach				≤ 7864	≤ 9225	10354	3714	3721	2836	6211	7064
2020	Management Plan^				9073 (range 6545–12029)	10687 (range 7710–14170)	9154	2123	2152	1728	1902	2191
2021	Management Plan^				8402 (range 6066–11130)	9959 (range 7190–13192)	11920	1757***	1358	1078	1930	2172
2022	MSY approach				≤ 6365	≤ 7566	9138	1606***	1601	1233	5147	5919
2023	MSY approach				≤ 4738	≤ 5671	6775					
2024	MSY approach				≤ 2367	≤ 2826						

* Plaice in Division 7.d, taking into account fish caught in the first quarter in Division 7.d that come to spawn from Division 7.e and Subarea 4.

** Single-stock boundary and the exploitation of this stock should be conducted in the context of mixed fisheries.

*** Preliminary.

^ EU multiannual plan (MAP) for the Western Waters (EU, 2019).

^^ Including BMS landings.

History of the catch and landings

Table 7 Plaice in Division 7.d. Catch distribution of plaice in Division 7.d by fleet in 2022, as estimated by ICES.

Catch	Landings				Discards*
7520 tonnes	Beam trawl 42%	Otter trawl 36%	Trammel nets 11%	Other gears 11%	5919 tonnes
	1601 tonnes				

* Discards include BMS landings from EU and UK fleets.

Table 8 Plaice in Division 7.d. History of commercial catch and landings; both the official and ICES estimated values are presented by area for each country participating in the fishery. Weights are in tonnes.

Year	Belgium	France	UK(E+W)	Others	Official landings in 7.d	BMS landings	Unallocated in 7.d	ICES estimated landings of plaice in 7.d	Quarter 1 removals^	ICES estimated landings for 7.d plaice^	ICES estimated landings for plaice in 7.e	Agreed TAC for 7.d-e*
1976	147	1439	376		1962		1	1963		1963	640	
1977	149	1714	302		2165		81	2246		2246	702	
1978	161	1810	349		2320		156	2476		2476	784	
1979	217	2094	278		2589		28	2617		2617	977	
1980	435	2905	304		3644		-994	2650	427	2223	1178	
1981	815	3431	489		4735		34	4769	760	4009	1676	
1982	738	3504	541	22	4805		60	4865	825	4040	1878	
1983	1013	3119	548		4680		363	5043	950	4093	1714	
1984	947	2844	640		4431		730	5161	912	4249	1758	
1985	1148	3943	866		5957		65	6022	1022	5000	1677	
1986	1158	3288	828		5274		1560	6834	1161	5673	2078	
1987	1807	4768	1292		7867		499	8366	1360	7006	2272	8300
1988	2165	5688	1250		9103		1317	10420	1635	8785	2835	9960
1989	2019	3713	1383		7115		1643	8758	1665	7093	2742	11700
1990	2149	4739	1479		8367		680	9047	1698	7349	2985	10700
1991	2265	4082	1566		7913		-100	7813	1451	6362	2183	10700
1992	1560	3099	1572	1	6232		105	6337	1118	5219	1882	9600
1993	877	2792	1102		4771		560	5331	852	4479	1614	8500
1994	1418	3199	1007	9	5633		488	6121	1074	5047	1404	9100
1995	1157	2598	814		4569		561	5130	934	4196	1247	8000
1996	1112	2630	856		4598		795	5393	963	4430	1266	7530
1997	1161	3077	1078		5316		991	6307	1127	5180	1583	7090
1998	854	3276	700		4830		932	5762	931	4831	1346	5700
1999	1306	3388	743		5437		889	6326	1058	5268	1543	7400
2000	1298	3183	754		5235		779	6014	1494	4521	1625	6500

Year	Belgium	France	UK(E+W)	Others	Official landings in 7.d	BMS landings	Unallocated in 7.d	ICES estimated landings of plaice in 7.d	Quarter 1 removals^	ICES estimated landings for 7.d plaice^	ICES estimated landings for plaice in 7.e	Agreed TAC for 7.d-e*
2001	1346	2962	660		4968		298	5266	886	4380	1310	6000
2002	1204	3450	841	1	5496		281	5777	931	4846	1472	6700
2003	998	2893	756	3	4650		-564	4086	476	3610	1387	5970
2004	954	2766	582	10	4312		438	4750	544	4206	1337	6060
2005	832	2432	421	21	3706		285	3991	506	3485	1319	5150
2006	1024	1935	550	16	3525		121	3646	421	3225	1411	5151
2007	1355	2017	463	10	3845		156	4001	620	3381	1146	5050
2008	1386	1740	471	12	3609		255	3864	586	3278	1112	5050
2009	1002	1892	612	16	3522		38	3560	436	3124	1024	4646
2010	1123	2190	517	62	3892		519	4411	501	3910	1208	4274
2011	1067	1994	472	60	3593		56	3649	358	3291	1417	4665
2012	1045	1962	542	63	3611		-112	3723	544	3178	1492	5062
2013	1295	2159	641	87	4182		55	4127	523	3604	1472	6400
2014	1389	2229	633	76	4326		6	4320	645	3675	1490	5322
2015	1600	1702	392	54	3749		22	3727	770	2957	1424	6223
2016	2247	1557	795	60	4658		20	4638	1020	3617	2013	12446
2017	2189	1487	814	86	4581		-32	4613	924	3689	2128	10022
2018	1876	2171	832	98	4986		-13	4999	1024	3975	1880	10360
2019	1277	1688	628	87	3714	< 1	-7	3721	885	2836	1725	10354
2020	745	984	342	50	2123	< 1	-29	2152	424	1728	1373	9154
2021**	663	769	284	53	1757	< 1	-13	1770	313	1078	1403	11920
2022**	586	630	341	49	1606	0	5	1601	368	1233		9138

* TACs for divisions 7.d and 7.e.

** Preliminary

^ Takes into account the "Quarter 1 removal" of 65% of the first quarter Division 7.d landings of plaice that originate from Division 7.e and Subarea 4.

Summary of the assessment

Table 9 Plaice in Division 7.d. Assessment summary. Recruitment is in thousands, weights in tonnes. High and Low correspond to two standard deviations.

Year	Recruitment (age 1)			Spawning-stock biomass			Landings	Discards*	Fishing pressure (ages 3–6)		
	Low	R	High	Low	SSB	High			Low	F	High
1980	50606	66623	87744	5771	8249	10727	2223	386	0.151	0.24	0.34
1981	24879	33447	44992	8345	10979	13613	4009	721	0.21	0.30	0.39
1982	48213	64590	86562	10271	13259	16247	4040	825	0.25	0.35	0.45
1983	41308	55291	73953	10172	13083	15994	4093	956	0.28	0.39	0.50
1984	42212	56033	74424	10015	12823	15631	4249	1040	0.31	0.41	0.51
1985	56855	74586	97904	9932	12618	15304	5000	984	0.32	0.41	0.50
1986	124182	159067	203720	10136	12605	15074	5673	1170	0.31	0.40	0.49
1987	75290	96163	122872	12853	15458	18063	7006	1874	0.31	0.40	0.48
1988	45807	59357	76865	17044	20440	23836	8785	1953	0.32	0.41	0.49
1989	27555	36196	47575	17729	21302	24875	7093	1407	0.32	0.41	0.50
1990	27819	37895	51665	14707	17974	21241	7349	1165	0.30	0.39	0.47
1991	46230	66372	95284	11126	14069	17012	6362	1817	0.28	0.35	0.42
1992	58615	90494	139701	9079	11709	14339	5219	3240	0.25	0.32	0.38
1993	27130	42091	65357	8615	10990	13365	4479	2601	0.26	0.32	0.39
1994	21093	30198	43274	8059	10158	12257	5047	1409	0.30	0.37	0.44
1995	38231	51834	70305	6654	8448	10242	4196	1123	0.37	0.44	0.52
1996	51067	67535	89241	5570	7099	8628	4430	1272	0.43	0.51	0.60
1997	94595	123755	161885	6023	7558	9093	5180	2033	0.43	0.52	0.61
1998	46070	61923	83290	8563	10467	12371	4831	2433	0.38	0.47	0.55
1999	34942	49356	69742	11380	13810	16240	5268	2019	0.32	0.41	0.49
2000	34526	48302	67543	11687	14251	16815	4521	1575	0.29	0.38	0.46
2001	34620	46991	63820	9954	12440	14926	4380	1275	0.29	0.37	0.45
2002	56727	74176	96955	8810	11251	13692	4846	1250	0.28	0.38	0.47
2003	32510	41373	52612	8815	11272	13729	3610	1290	0.27	0.37	0.46
2004	38565	48178	60228	9426	12044	14662	4206	968	0.25	0.34	0.43
2005	32782	40424	49829	9453	12286	15119	3485	784	0.22	0.31	0.40
2006	30304	37237	45751	9572	12534	15496	3225	727	0.20	0.29	0.37
2007	45172	55935	69270	9581	12675	15769	3381	1220	0.20	0.28	0.36
2008	46576	57267	70345	9580	12739	15898	3278	888	0.20	0.28	0.36
2009	82614	100864	123261	10185	13446	16707	3124	1473	0.185	0.26	0.34
2010	128033	157656	194067	11795	15427	19059	3910	2412	0.161	0.23	0.29
2011	151958	187992	232499	16403	21102	25801	3291	1926	0.132	0.183	0.23
2012	82529	102377	126893	24685	31553	38421	3178	3043	0.110	0.154	0.198
2013	92956	115029	142361	32926	42367	51808	3604	2696	0.103	0.142	0.182
2014	141954	175415	216802	36299	47320	58341	3675	3325	0.106	0.145	0.183
2015	115758	143377	177503	36904	48308	59712	2957	2368	0.115	0.159	0.20
2016	88830	109884	135879	38381	50254	62125	3617	3090	0.132	0.183	0.23
2017	93573	116232	144278	37309	49390	61471	3689	4075	0.155	0.21	0.27
2018	88057	112080	142666	32466	43844	55222	3975	4959	0.172	0.24	0.31
2019	130392	170424	222727	27306	37648	47990	2836	6211	0.177	0.25	0.33
2020	47109	68812	100487	24257	33796	43335	1728	1901	0.170	0.24	0.32
2021	50897	88351	153344	22388	31442	40496	1078	1930	0.150	0.22	0.28
2022	67669	225522**	751345	19222	27848	36474	1233	5147	0.117	0.187	0.26
2023		71769***			31839						

* Since 2006, discard estimates are raised from observer programmes. Prior to 2006, discards are reconstructed by the model.

** Due to the high uncertainty, the recruitment value for 2022 is not used in the forecast and is replaced by the assumed recruitment value for 2023.

*** In 2023, recruitment is the geometric mean 1980–2021.

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