

Plaice (*Pleuronectes platessa*) in Division 7.a (Irish Sea)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, and assuming that discard rates and fishery selection patterns do not change from the average of the years 2019–2021, total catches in 2023 should be no more than 2039 tonnes.

Stock development over time

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

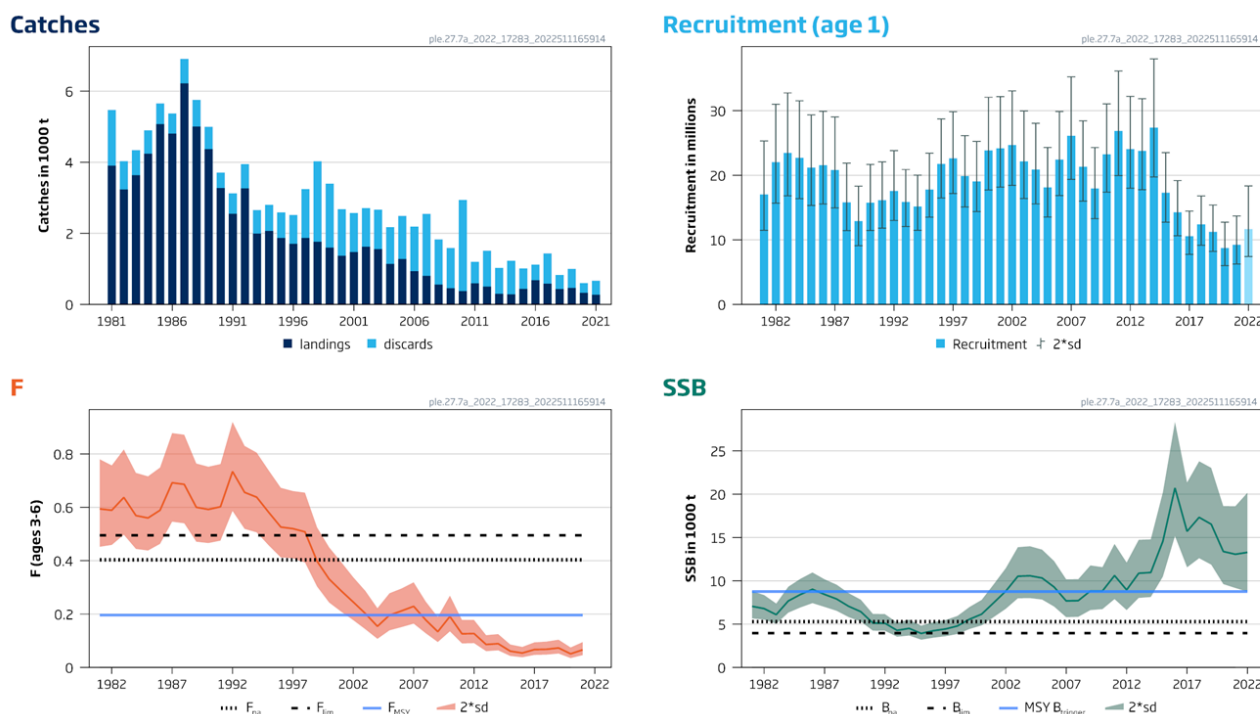


Figure 1 Plaice in Division 7.a. Summary of the stock assessment. The assumed recruitment value for 2022 is shaded in a lighter colour.

Catch scenarios

Table 1 Plaice in Division 7.a. Assumptions made for the interim year and the forecast.

Variable	Value	Notes
F_{2022}	0.064	$F_{sq} = F_{average(2019-2021)}$
SSB_{2023}	13 514	Short-term forecast; in tonnes
$R_{age\ 1}$ (2022 and 2023)	11 245	Median resampled recruitment (2015–2021) as estimated by a stochastic projection; in thousands
Total catch (2022)	680	Short term forecast; in tonnes
Projected landings (2022)	322	Assuming average landings pattern (2019–2021); in tonnes
Projected discards (2022)	357	Assuming average discard pattern (2019–2021); in tonnes
Discard survival rate	40%	Catchpole <i>et al.</i> (2015)
Projected surviving discards (2022)	143	Assuming an average discard pattern (2019–2021) where 40% of the discards survive; in tonnes
Projected dead discards (2022)	214	Assuming an average discard pattern (2019–2021) where 60% of the discards die; in tonnes

Table 2 Plaice in Division 7.a. Annual catch scenarios. All weights are in tonnes.

Basis	Total catch (2023)	Projected landings (2023)	Projected Surviving discards (2023)	Projected dead discards (2023)	Total projected discards* (2023)	F_{total} (2023)	$F_{projected}$ landings (2023)	$F_{projected}$ discards** (2023)	SSB (2024)	% SSB change***	% advice change^
ICES advice basis											
MSY approach: $F = F_{MSY}$	2039	967	429	643	1072	0.196	0.061	0.135	12629	-6.5	-30
Other scenarios											
$F = F_{MSY\ lower}$	1418	672	298	447	745	0.133	0.042	0.091	13169	-2.5	-52
$F = F_{MSY\ upper}$	2945	1397	620	929	1549	0.29	0.091	0.20	11901	-11.9	0.70
$F = F_{pa}$	3903	1851	821	1231	2052	0.40	0.126	0.28	11089	-17.9	33
$F = 0$	0	0	0	0	0	0	0	0	14305	5.9	-100
$F = F_{lim}$	4649	2205	978	1467	2445	0.50	0.155	0.34	10468	-23	59
$SSB_{2024} = B_{lim}$	13047	6187	2744	4116	6860	2.33	0.73	1.60	3958	-71	350
$SSB_{2024} = B_{pa}$	11370	5391	2391	3587	5978	1.75	0.55	1.21	5294	-61	290
$SSB_{2024} = MSY\ B_{trigger}$	6895	3269	1450	2175	3625	0.81	0.25	0.56	8757	-35	140
Rollover advice	2925	1387	615	923	1538	0.29	0.091	0.20	11913	-11.8	0.0
$F = F_{2022}$	696	330	146	220	366	0.064	0.020	0.044	13745	1.70	-76
$SSB_{2024} = SSB_{2023}$	990	469	208	312	520	0.091	0.029	0.063	13514	0	-65

* Dead + surviving projected discards.

** $F_{projected\ discards}$ concerns dead projected discards only.

*** SSB 2024 relative to SSB 2023.

^Advice value for 2023 relative to the revised advice value for 2022 (2925 tonnes).

The advice for 2023 is lower than 2022 because of a downward revision in the stock biomass.

Basis of the advice

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

Advice basis	MSY approach
Management plan	The EU multiannual plan (MAP) for stocks in Western Waters and adjacent waters (EU, 2019) takes into account bycatch of this species. 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 assessment indicates that recruitment and fishing pressure have both been decreasing and that the average age of catches has been increasing. An increasing amount of the stock is contained within the modelled plusgroup (47% in the last five years is age 8+). Consequently, the assessment and forecast have increased uncertainty, and a pattern of retrospective downscaling of SSB is seen in the recent history of the assessment

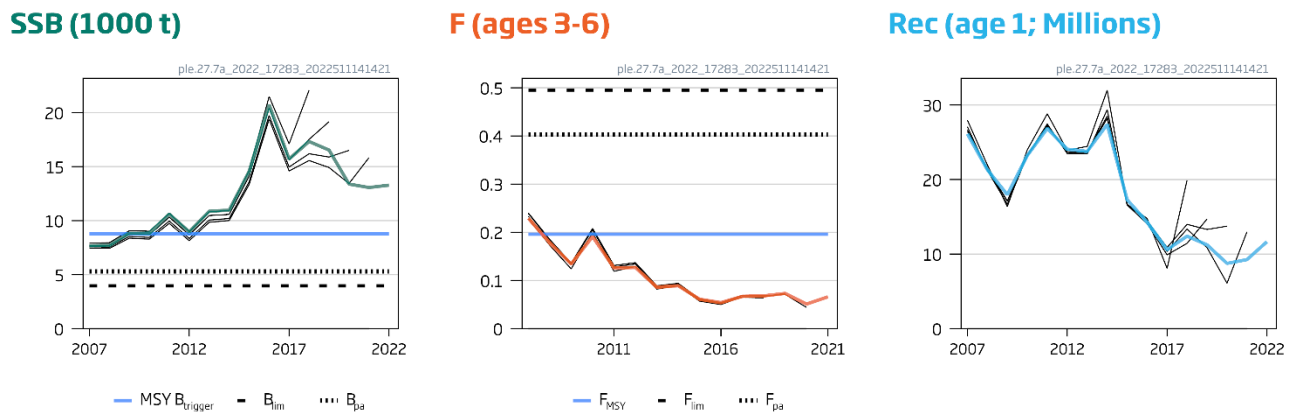


Figure 2 Plaice in Division 7.a. Historical assessment results (final-year SSB estimate and recruitment assumption included).

Issues relevant for the advice

Since 2004, the majority of the catch has been discarded (62% average discard by weight). The assessment only uses the dead portion of the discards (60%; based on Catchpole *et al.* [2015]).

Reference points

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

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	8757	Lower 5th percentile of B_{MSY} ; in tonnes	ICES(2018)
	F_{MSY}	0.196	Stochastic simulations with segmented regression (1981–2017)	ICES(2018)
	$F_{MSY\ lower}$	0.133	F at 95% MSY (below F_{MSY}), based on simulation using a segmented regression stock–recruitment relationship (EqSim)	ICES(2018)
	$F_{MSY\ upper}$	0.293	F at 95% MSY (above F_{MSY}), based on simulation using a segmented regression stock–recruitment relationship (EqSim)	ICES(2018)
Precautionary approach	B_{lim}	3958	B_{loss} = minimum SSB observed; in tonnes	ICES(2018)
	B_{pa}	5294	$B_{lim} \times \exp(1.645 \times \sigma)$; $\sigma = 0.177$; in tonnes	ICES(2018)
	F_{lim}	0.50	F with 50% probability of $SSB < B_{lim}$.	ICES(2018)
	F_{pa}	0.403	F_{POS} , the F that leads to $SSB \geq B_{lim}$ with 95% probability	ICES(2018, 2021)
Management plan	SSB_{mgt}	Not applicable		
	F_{mgt}	Not applicable		

Basis of the assessment

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

ICES stock data category	1 (ICES, 2022a)
Assessment type	Age-based analytical assessment (SAM; Nielsen and Berg, 2014; ICES, 2022b) that uses landings and discards in the model and in the forecast.
Input data	Commercial catch-at-age data; three survey indices UK (E&W)-BTS-Q3 (B6596), NIGFS-WIBTS-Q1 (G7144), and NIGFS-WIBTS-Q4 (G7655); fixed maturity ogive; natural mortality constant over the years and different across the ages
Discards and bycatch	Discard values available from 2004. Estimates of modelled discards for 1981–2003 (WKIRISH3; ICES, 2017). Only the dead fraction of discards (estimated to be 0.6) is accounted for in the model.
Indicators	None
Other information	Last benchmark in 2017 (WKIRISH3; ICES, 2017). Reference points updated in 2018 (ICES, 2018).
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE)

History of the advice, catch, and management

Table 6 Plaice in Division 7.a. History of ICES advice, the agreed TAC, and ICES estimates of landings and discards. Weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Landings corresponding to advice	Agreed TAC	Official landings	ICES landings	ICES discards*
1987	F high; no long-term gains in increasing F	-	5000	5000	5600	6220	-
1988	No increase in F	-	4800	5000	4400	5005	-
1989	80% of F (87); TAC	-	5800	5800	4200	4372	-
1990	Halt decline in SSB; TAC	-	5100	5100	4000	3275	-
1991	Rebuild SSB to SSB (90); TAC	-	3300	4500	2800	2554	-
1992	70% of F (90)	-	3000	3800	3200	3267	-
1993	F = 0.55 ~ 2800 tonnes	-	2800	2800	2000	1996	-
1994	Long-term gains in decreasing F	-	< 3700	3100	2100	2066	735
1995	Long-term gains in decreasing F	-	2400	2800	2000	1874	717
1996	No long-term gain in increasing F	-	2500	2450	1900	1707	812
1997	No advice	-	-	2100	2000	1871	1373
1998	No increase in F	-	2400	2400	1800	1765	2263
1999	Keep F below F_{pa}	-	2400	2400	1600	1600	1796
2000	Keep F below F_{pa}	-	< 2300	2400	1400	1371	1306
2001	Keep F below F_{pa}	-	< 2400	2000	1500	1473	1100
2002	Keep F below F_{pa}	-	< 2800	2400	1500	1623	1085
2003	No increase in F	-	1900	1675	1600	1559	1109
2004	F < F_{pa}	-	1600	1340	1100	1143	1031
2005	F < F_{pa}	-	2970	1608	1300	1281	1210
2006	F < F_{pa}	-	5900	1608	937	934	1254
2007	F < F_{pa}	-	6500	1849	802	805	1744
2008	F < F_{pa}	-	5200	1849	563	563	1268
2009	No long-term gains in increasing F above $F_{0.1}$	-	1430	1430	458	457	1132
2010	No long-term gains in increasing F above $F_{0.1}$	-	1630	1630	377	378	2561
2011	Effort should be consistent with no increase in catches	-	-	1627	596	595	603
2012	Catches should not increase	-	-	1627	508	503	1010
2013	Landings should be no more than 2% more than recent landings (last three years)	-	< 490	1627	339	303	725
2014	Catches should be no more than 1% more than recent catches (last three years)	< 1827	< 497	1220	282	287	943
2015	Catches should be no more than recent catches (last three years)	< 1244	< 394	1098	439	440	572
2016	Precautionary approach (same advised catch value as given for 2015)	≤ 1244	≤ 343	1098	742	682	414
2017	Precautionary approach	≤ 1493	≤ 436	1098	585	586	852
2018	MSY approach	≤ 3336	≤ 1793	1793	435	435	395
2019	MSY approach	≤ 3503		3075	225†	465	537
2020	Precautionary approach	≤ 5640		2790	333**	330	271
2021	MSY approach	≤ 2846		2846	281**	276	392
2022	MSY approach	≤ 2925***		2747			
2023	MSY approach	≤ 2039					

* Total discards (dead and surviving components).

** Preliminary.

*** updated in 2022 from 2747 tonnes.

† Incomplete/missing as a result of part of the data being unavailable under data confidentiality clauses.

History of the catch and landings

Table 7 Plaice in Division 7.a. Catch distribution by fleet in 2021 as estimated by ICES.

Catch		Landings			Discards		
Dead 77%	Surviving 23%	Beam trawl	Otter trawl	Other gears	Beam trawl	Otter trawl	Other gears
668 tonnes		68%	31%	< 1%	20%	80%	< 1%
		276 tonnes			392 tonnes		
					60% dead		40% surviving

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

Year	Belgium	France	Ireland	Netherlands	UK (NI, E, & W)	UK (Isle of Man)	UK (Scotland)	Total official landings	ICES discards	ICES estimates of catches
1994	332	13	547	-	1082	14	63	2051	863	2801
1995	327	10	557	-	1050	20	60	2024	747	2592
1996	344	11	538	69	878	16	18	1874	832	2518
1997	459	8	543	110	798	11	25	1954	1285	3246
1998	327	8	730	27	679	14	18	1803	1952	4028
1999	275	5	541	30	687	5	23	1566	1657	3397
2000	325	14	420	47	610	6	21	1443	1223	2678
2001	482	9	378	-	607	1	11	1488	1070	2573
2002	636	8	370	-	569	1	7	1591	1135	2708
2003	628	7	490	-	409	1	9	1544	1077	2668
2004	431	2	328	-	369	0	4	1134	1031	2173
2005	566	9	272	-	422	0	1	1270	1210	2492
2006	343	2	179	0	413	0	0	937	1254	2188
2007	194	2	194	0	412	0	0	802	1744	2549
2008	157	2	102	0	300	1	1	563	1268	1830
2009	197	0	73	0	184	1	2	457	1132	1588
2010	138	0	89	0	147	0	3	377	2561	2939
2011	332	0	118	0	146	0	0	596	603	1198
2012	236	0	107	0	164	0	0	507	1010	1511
2013	144	0	103	0	92	0	0	339	725	1028
2014	100	0	123	0	59	0	0	282	943	1230
2015	115	0	244	0	80	0	0	439	572	1012
2016	82	0	541	-	56	-	-	679	414	1096
2017	77	0	446	-	62	1	-	585	852	1438
2018	53	0	316	-	66	0	-	435	395	830
2019	168	0	†	-	57	-	-	225†	537	1002
2020*	84	-	177	-	70	2	-	333	271	601
2021*	103	0	107	-	70	1	-	281	392	668

* Preliminary official landings.

† Incomplete/missing as a result of part of the data being unavailable under data confidentiality clauses.

Summary of the assessment

Table 9 Plaice in Division 7.a. Assessment summary. Recruitment is in thousands and weights in tonnes. ‘High’ and ‘Low’ refer to 2 × standard deviation.

Year	Recruitment at age 1			SSB			Landings *	Dead discards *	Surviving discards*	Fishing mortality ages 3–6		
	Low	Value	High	Low	Value	High				Low	Value	High
1981	11478	17044	25310	5650	7057	8814	3906	940	627	0.452	0.594	0.78
1982	15679	22045	30995	5521	6792	8356	3237	476	317	0.459	0.589	0.757
1983	16814	23466	32751	5030	6092	7378	3639	422	281	0.497	0.637	0.817
1984	16365	22715	31529	6322	7676	9319	4241	394	263	0.444	0.569	0.729
1985	15322	21205	29348	6924	8417	10232	5075	349	232	0.438	0.56	0.716
1986	15547	21558	29892	7419	9019	10964	4806	340	227	0.463	0.589	0.749
1987	14943	20833	29044	6984	8431	10176	6220	413	275	0.546	0.692	0.878
1988	11429	15812	21876	6533	7901	9556	5005	451	301	0.54	0.686	0.872
1989	9099	12910	18316	5806	7055	8573	4372	377	251	0.471	0.6	0.764
1990	11449	15754	21678	5293	6436	7826	3275	262	174	0.466	0.592	0.752
1991	11815	16149	22074	4247	5125	6185	2554	344	229	0.475	0.602	0.762
1992	12996	17592	23814	4226	5099	6153	3267	409	272	0.586	0.734	0.92
1993	12063	15873	20886	3538	4278	5174	1996	395	264	0.519	0.656	0.83
1994	11477	15159	20024	3682	4508	5519	2066	441	294	0.506	0.638	0.805
1995	13516	17792	23419	3200	3927	4820	1874	430	287	0.457	0.581	0.738
1996	16486	21761	28724	3430	4237	5234	1707	487	325	0.412	0.526	0.673
1997	17177	22635	29828	3597	4435	5469	1871	824	549	0.409	0.52	0.661
1998	15099	19868	26142	3859	4790	5946	1765	1358	905	0.393	0.508	0.655
1999	14368	19050	25258	4435	5565	6982	1600	1078	719	0.303	0.398	0.525
2000	17726	23845	32076	4852	6151	7796	1371	784	523	0.243	0.331	0.45
2001	18163	24174	32175	5808	7467	9602	1473	660	440	0.209	0.287	0.395
2002	18432	24688	33067	6766	8806	11461	1623	651	434	0.177	0.245	0.338
2003	16386	22155	29955	7980	10527	13886	1559	665	443	0.143	0.202	0.287
2004	15564	20893	28048	7999	10579	13990	1143	618	412	0.107	0.154	0.222
2005	13532	18137	24308	7837	10324	13602	1281	726	484	0.139	0.196	0.278
2006	16854	22440	29878	7019	9283	12276	934	752	502	0.151	0.212	0.296
2007	19368	26127	35246	5793	7676	10171	805	1046	698	0.164	0.229	0.319
2008	16000	21325	28422	5839	7714	10192	563	761	507	0.128	0.178	0.247
2009	13288	17967	24293	6619	8830	11778	457	679	453	0.095	0.134	0.189
2010	17379	23232	31057	6732	8828	11577	378	1536	1024	0.135	0.191	0.269
2011	19947	26850	36143	7887	10606	14262	595	362	241	0.09	0.126	0.178
2012	17988	24072	32215	6617	8952	12112	503	606	404	0.091	0.127	0.178
2013	17763	23785	31849	8021	10870	14730	303	435	290	0.061	0.086	0.121
2014	19734	27392	38021	8126	10961	14785	287	566	377	0.064	0.089	0.125
2015	12734	17302	23508	10482	14562	20230	440	343	229	0.043	0.061	0.086
2016	10637	14284	19183	15157	20726	28342	682	249	166	0.038	0.054	0.077
2017	7741	10582	14464	11551	15705	21352	586	511	341	0.047	0.067	0.094
2018	9162	12406	16799	12609	17324	23801	435	237	158	0.048	0.068	0.097
2019	8214	11245	15395	11862	16532	23040	465	322	215	0.052	0.073	0.104
2020	6011	8749	12733	9617	13383	18625	330	162	108	0.035	0.051	0.075
2021	6256	9261	13709	9167	13064	18618	276	235	157	0.046	0.066	0.095
2022	7416	11663**	18344	8744	13282	20173						

*Landings and discards are ICES estimates, which are used as assessment inputs. Discard estimates are available from 2004 prior to 2004, discard values were reconstructed.

** Median resampled recruitment (2015–2021) as estimated by a stochastic projection.

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[Download the stock assessment data and figures.](#)

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