

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 2018–2020, total catches in 2022 should be no more than 2747 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} .

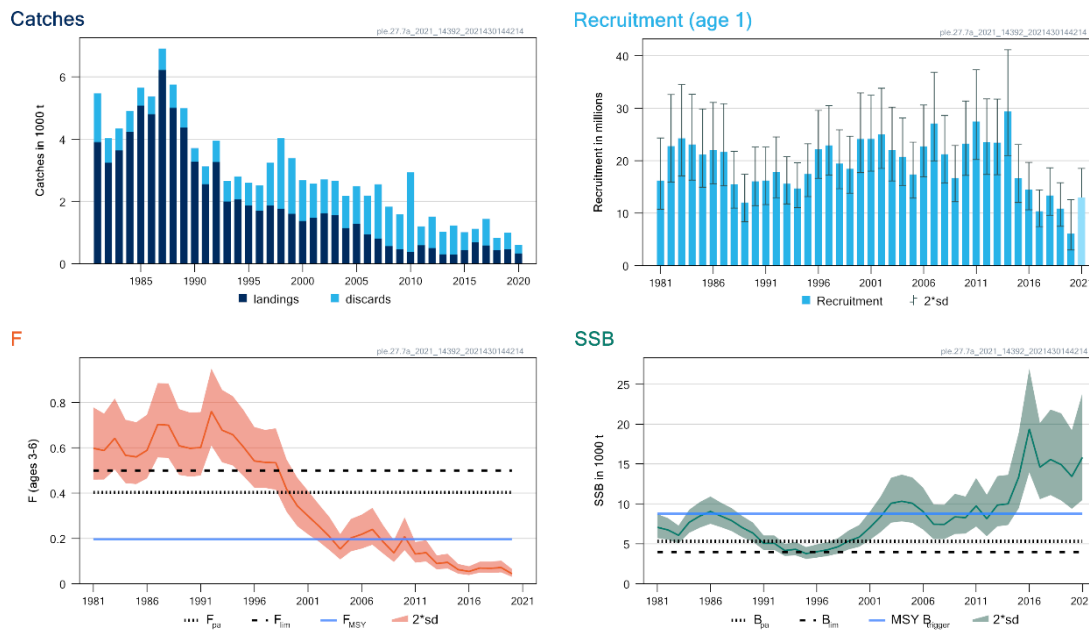


Figure 1 Plaice in Division 7.a. Summary of the stock assessment. The assumed recruitment value for 2021 is shaded in a lighter colour.

Catch scenarios

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

Variable	Value	Notes
F_{2021}	0.061	$F_{sq} = F_{average(2018-2020)}$
SSB_{2022}	16160	Short-term forecast; in tonnes
$R_{age\ 1}$ (2021 and 2022)	13362	Median resampled recruitment (2015–2019) as estimated by a stochastic projection; in thousands
Total catch (2021)	898	Fishing at F_{sq} plus surviving discards; in tonnes
Projected landings (2021)	460	Assuming average landings pattern (2018–2020); in tonnes
Projected discards (2021)	438	Assuming average discard pattern (2018–2020); in tonnes
Discard survival rate	40%	Catchpole <i>et al.</i> (2015)
Projected surviving discards (2021)	175	Assuming an average discard pattern (2018–2020) where 40% of the discards survive; in tonnes
Projected dead discards (2021)	263	Assuming an average discard pattern (2018–2020) 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 (2022)	Projected landings (2022)	Projected Surviving discards (2022)	Projected dead discards (2022)	Total projected discards* (2022)	F _{total} (2022)	F _{projected} landings (2022)	F _{projected} discards** (2022)	SSB (2023)	% SSB change***	% advice change^
ICES advice basis											
F _{MSY}	2747	1407	536	805	1341	0.196	0.061	0.135	14628	-9.5	-3.5
Other scenarios											
F _{MSY lower}	1911	978	373	560	933	0.133	0.041	0.092	15335	-5.1	-33
F _{MSY upper}	3967	2031	774	1162	1936	0.29	0.091	0.20	13536	-16.2	39
F _{pa}	5236	2681	1022	1533	2555	0.40	0.125	0.28	12534	-22	84
F = 0	0	0	0	0	0	0	0	0	17180	6.3	-100
F = F _{lim}	6218	3183	1214	1821	3035	0.50	0.154	0.34	11863	-27	118
SSB ₂₀₂₃ = B _{lim}	15756	8066	3076	4614	7690	2.1	0.66	1.47	3958	-76	450
SSB ₂₀₂₃ = B _{pa}	14233	7287	2779	4168	6947	1.68	0.52	1.16	5294	-67	400
SSB ₂₀₂₃ = MSY _{Btrigger}	10093	5167	1970	2956	4926	0.94	0.29	0.65	8758	-46	250
Rollover advice	2846	1457	556	833	1389	0.20	0.060	0.140	14562	-9.9	0
F = F ₂₀₂₁	905	464	177	265	442	0.061	0.0190	0.042	16210	0.30	-68
SSB ₂₀₂₃ = SSB ₂₀₂₂	982	503	192	287	479	0.067	0.020	0.046	16160	0	-66

* Dead + surviving projected discards.

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

*** SSB 2023 relative to SSB 2022.

^Advice value for 2022 relative to the advice value for 2021 (2846 tonnes).

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 the UK for this stock, and ICES provides advice according to ICES MSY approach.

Quality of the assessment

The assessment indicates that recruitment and F have both been decreasing in recent years and that the average age of catches has been increasing. An increasing amount of the stock is contained within the modelled plusgroup (41% 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.

In 2020, the UK BTS survey could not take place in this area due to COVID-19 pandemic. As a result estimates of young fish abundance are more uncertain than in previous years. Discard estimates in 2020 are based on incomplete sampling of the fisheries. Sensitivity analyses shown that these have minimal impact on the perception of the stock status.

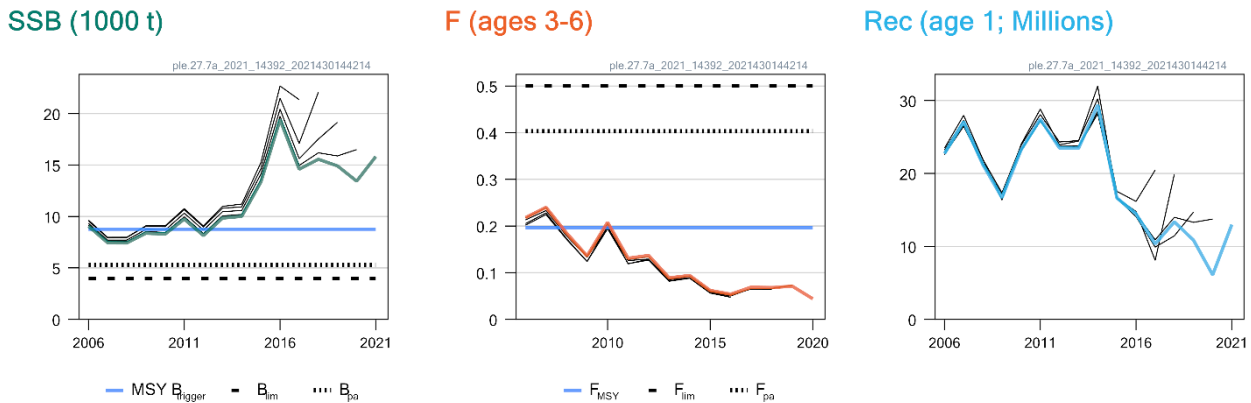


Figure 2 Plaice in Division 7.a. Historical assessment results (final-year SSB estimate and recruitment assumption included).

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 from (1981–2017)	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)
Management plan	F_{pa}	0.403	F_{P05} ; the F that leads to SSB $\geq B_{lim}$ with 95% probability	ICES(2018, 2021)
	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, 2021a)
Assessment type	Age-based analytical assessment (SAM; Nielsen and Berg, 2014; ICES, 2021b) 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	-
1995	Long-term gains in decreasing F	-	2400	2800	2000	1874	-
1996	No long-term gain in increasing F	-	2500	2450	1900	1707	-
1997	No advice	-	-	2100	2000	1871	-
1998	No increase in F	-	2400	2400	1800	1765	-
1999	Keep F below F_{pa}	-	2400	2400	1600	1600	-
2000	Keep F below F_{pa}	-	< 2300	2400	1400	1371	-
2001	Keep F below F_{pa}	-	< 2400	2000	1500	1473	-
2002	Keep F below F_{pa}	-	< 2800	2400	1500	1623	-
2003	No increase in F	-	1900	1675	1600	1559	-
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	437
2017	Precautionary approach	≤ 1493	≤ 436	1098	585	586	852
2018	MSY approach	≤ 3336	≤ 1793	1793	435	435	395
2019	MSY approach	≤ 3503		3075	466**	465	537
2020	Precautionary approach	≤ 5640		2790	333**	330	271
2021	MSY approach	≤ 2846		2846			
2022	MSY approach	≤ 2747					

* Total discards (dead and surviving components).

** Preliminary.

History of the catch and landings

Table 7 Plaice in Division 7.a. Catch distribution by fleet in 2020 as estimated by ICES.

Catch		Landings			Discards		
Dead 82%	Surviving 18%	Beam trawl	Otter trawl	Other gears	Beam trawl	Otter trawl	Other gear types
601 t		61%	36%	3.1%	48%	49%	2.5%
		330 t			271 t		
					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	927	2173
2005	566	9	272	-	422	0	1	1270	1183	2492
2006	343	2	179	0	413	0	0	937	1330	2188
2007	194	2	194	0	412	0	0	802	1523	2549
2008	157	2	102	0	300	1	1	562	1298	1830
2009	197	0	73	0	185	1	2	457	1022	1588
2010	138	0	89	0	148	0	3	379	2295	2939
2011	332	0	118	0	145	0	0	594	763	1198
2012	236	0	106	0	154	0	0	496	865	1511
2013	144	0	67	0	91	0	0	303	695	1028
2014	100	0	123	0	59	0	0	282	913	1230
2015	115	0	244	0	80	0	0	439	492	1012
2016	82	0	605	-	56	-	-	742	498	1119
2017	77	0	446	-	62	-	-	585	852	1438
2018	52	-	315	-	64	-	-	435	395	830
2019*	168	0	244	-	53	-	-	466	537	1002
2020*	84	-	177	-	70	2	-	333	271	601

* Preliminary official landings.

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		
	Low	Value	High	Low	Value	High				Low	Value	High
1981	10751	16179	24347	5715	7062	8728	3906	939	626	0.46	0.60	0.78
1982	15902	22776	32622	5524	6738	8219	3237	475	317	0.46	0.59	0.75
1983	17069	24276	34526	5045	6062	7284	3639	421	281	0.50	0.64	0.82
1984	16309	23081	32667	6373	7687	9271	4241	393	262	0.44	0.57	0.72
1985	14951	21125	29850	7018	8476	10236	5075	348	232	0.44	0.56	0.71
1986	15556	21991	31088	7502	9052	10924	4806	340	226	0.47	0.59	0.75
1987	15200	21660	30865	7074	8472	10147	6220	412	275	0.56	0.70	0.89
1988	10943	15439	21784	6589	7897	9466	5005	451	300	0.56	0.70	0.88
1989	8310	12027	17409	5819	7024	8478	4372	376	251	0.48	0.61	0.77
1990	11414	16060	22597	5253	6342	7657	3275	261	174	0.47	0.60	0.76
1991	11619	16202	22591	4220	5052	6048	2554	343	229	0.48	0.60	0.76
1992	12931	17807	24521	4235	5064	6056	3267	408	272	0.61	0.76	0.95
1993	11748	15617	20760	3471	4155	4975	1996	395	263	0.54	0.68	0.86
1994	11020	14687	19573	3555	4309	5223	2066	441	294	0.52	0.66	0.83
1995	13133	17464	23223	3094	3769	4591	1874	430	286	0.48	0.60	0.77
1996	16627	22178	29583	3266	4009	4922	1707	487	324	0.42	0.54	0.69
1997	17235	22932	30511	3463	4241	5195	1871	823	549	0.42	0.54	0.68
1998	14641	19464	25876	3757	4629	5703	1765	1357	905	0.42	0.53	0.69
1999	13781	18438	24668	4290	5346	6663	1600	1077	718	0.32	0.42	0.55
2000	17709	24145	32919	4624	5833	7358	1371	783	522	0.25	0.34	0.47
2001	17986	24161	32456	5483	7036	9029	1473	660	440	0.22	0.30	0.41
2002	18519	25014	33786	6456	8390	10902	1623	651	434	0.186	0.26	0.35
2003	16119	22061	30193	7645	10073	13274	1559	665	443	0.148	0.21	0.29
2004	15272	20727	28131	7807	10330	13669	1143	618	412	0.107	0.153	0.22
2005	12852	17385	23517	7621	10072	13312	1281	726	484	0.143	0.20	0.29
2006	16885	22724	30582	6793	9047	12048	934	752	501	0.155	0.22	0.31
2007	19939	27099	36830	5580	7449	9945	805	1046	697	0.172	0.24	0.34
2008	15756	21225	28592	5580	7429	9891	563	760	507	0.133	0.185	0.26
2009	12162	16685	22892	6223	8372	11264	457	679	452	0.096	0.136	0.192
2010	17198	23236	31393	6281	8284	10925	378	1536	1024	0.148	0.21	0.29
2011	20196	27460	37336	7165	9743	13248	595	361	241	0.093	0.131	0.184
2012	17358	23488	31782	5951	8143	11143	503	606	404	0.098	0.137	0.192
2013	17322	23449	31745	7186	9845	13487	303	435	290	0.063	0.089	0.125
2014	20976	29380	41150	7350	10010	13633	287	565	377	0.067	0.094	0.132
2015	12016	16650	23071	9438	13347	18874	440	343	228	0.044	0.062	0.087
2016	10635	14461	19663	13955	19394	26955	682	262	174	0.038	0.054	0.077
2017	7420	10346	14426	10584	14596	20130	586	511	340	0.049	0.069	0.097
2018	9573	13362	18651	11100	15563	21822	435	237	158	0.048	0.068	0.097
2019	7458	10859	15809	10420	14915	21348	465	322	214	0.050	0.071	0.102
2020	2956	6098	12580	9385	13434	19229	330	162	108	0.030	0.044	0.065
2021	9116	12994**	18522	10485	15830	23899						

*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 (2015–2019) as estimated by a stochastic projection.

Sources and references

- Catchpole, T., Randall, P., Forster, R., Smith, S., Ribeiro Santos, A., Armstrong, F., Hetherington, S., et al. 2015. Estimating the discard survival rates of selected commercial fish (plaice – *Pleuronectes platessa*) in four English fisheries. MF1234, Cefas report. 108 pp. shorturl.at/hCV37 [Last accessed 28 June 2021].
- EU. 2019. Regulation (EU) 2019/472 of the European Parliament and of the Council of 19 March 2019 establishing a multiannual plan for stocks fished in the Western Waters and adjacent waters, and for fisheries exploiting those stocks, amending Regulations (EU) 2016/1139 and (EU) 2018/973, and repealing Council Regulations (EC) No 811/2004, (EC) No 2166/2005, (EC) No 388/2006, (EC) No 509/2007 and (EC) No 1300/2008. Official Journal of the European Union, L 83: 1–17. <http://data.europa.eu/eli/reg/2019/472/oj>.
- ICES. 2017. Report of the Benchmark Workshop on the Irish Sea Ecosystem (WKIrish3), 30 January–3 February 2017, Galway, Ireland. ICES CM 2017/BSG:01. 165 pp.
- ICES. 2018. EU request to ICES to provide plausible and updated F_{MSY} ranges for the stocks of species inhabiting western EU waters. *In* Report of the ICES Advisory Committee, 2018. ICES Advice 2018, sr.2018.04. <https://doi.org/10.17895/ices.pub.4149>.
- ICES. 2021a. Advice on fishing opportunities. *In* Report of the ICES Advisory Committee, 2021. ICES Advice 2021, section 1.1.1. <https://doi.org/10.17895/ices.advice.7720>.
- ICES. 2021b. Working Group for the Celtic Seas Ecoregion (WGCSE). Draft report. ICES Scientific Reports. 3:56. 1082 pp. <http://doi.org/10.17895/ices.pub.8139>. Publication of the full report is expected at the end of October 2021.
- Nielsen, A., and Berg, C. W. 2014. Estimation of time-varying selectivity in stock assessments using state–space models. *Fisheries Research*, 158: 96–101. <https://doi.org/10.1016/j.fishres.2014.01.014>.

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

Recommended citation: ICES. 2021. Plaice (*Pleuronectes platessa*) in Division 7.a (Irish Sea). *In* Report of the ICES Advisory Committee, 2021. ICES Advice 2021, ple.27.7a. <https://doi.org/10.17895/ices.advice.7820>.