Sole (*Solea solea*) in divisions 7.f and 7.g (Bristol Channel, Celtic Sea)

ICES advice on fishing opportunities

ICES advises that when the maximum sustainable yield (MSY) approach is applied, catches in 2027 should be no more than 972 tonnes.

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

Non-fisheries conservation considerations

Conservation aspects and associated management measures may exist at a national or regional level but were not reviewed by ICES.

Stock development over time

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

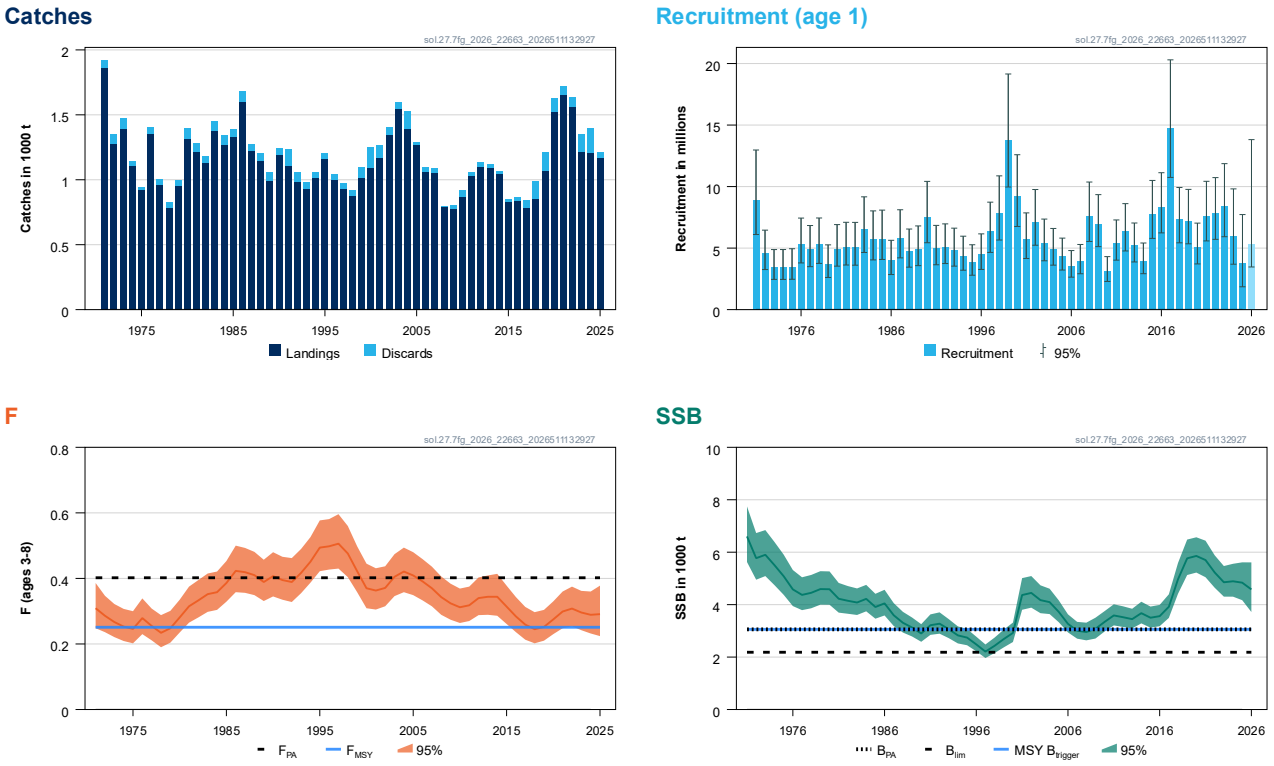

Figure 1 Sole in divisions 7.f and 7.g. Summary of the stock assessment. The assumed recruitment value for 2026 is shaded in a lighter colour.

Catch scenarios

Table 1 Sole in divisions 7.f and 7.g. Assumptions made for the interim year and in the forecast.

Variable	Value	Notes
$F_{ages\ 3–8}$ (2026)	0.25	Based on a catch of 1036 tonnes in 2026 and average exploitation pattern (2023–2025)
Spawning-stock biomass (SSB; 2027)	4406	Short-term forecast; in tonnes
$R_{age\ 1}$ (2026, 2027)	5287	Resampled recruitments from the years 1971–2023 (median shown); in thousands
Catch (2026)	1036	Short-term forecast; total allowable catch (TAC) 2026 + discards; in tonnes
Projected landings (2026)	989	TAC 2026; in tonnes
Projected discards (2026)	47	Short-term forecast; assuming average discard ratio by age 2023–2025; in tonnes

Table 2 Sole in divisions 7.f and 7.g. Annual catch scenarios. Weights are in tonnes.

Basis	Total catch (2027)	Projected landings (2027)	Projected discards (2027)	F_{total} (2027)	$F_{projected\ landings}$ (2027)	$F_{projected\ discards}$ (2027)	Spawning-stock biomass (SSB; 2028)	% SSB change*	% advice change^	Probability of SSB (2028) < B_{lim} (%)#
ICES advice basis										
Maximum sustainable yield (MSY) approach: F = F_{MSY}	972	925	47	0.251	0.238	0.013	4280	−2.9	−1.72	0
Other scenarios										
EU MAP^^: F_{MSY}	972	925	47	0.251	0.24	0.0130	4280	−2.9	−1.72	0
EU MAP^^: $F_{MSY\ lower}$	555	529	26	0.136	0.129	0.0070	4704	6.8	−44	0
EU MAP^^ : $F_{MSY\ upper}$	1625	1544	81	0.462	0.44	0.024	3630	−17.6	64	0.28
F = 0	0	0	0	0	0	0	5273	19.7	−100	0
F= F_{PA}	1452	1381	71	0.402	0.38	0.021	3800	−13.8	47	0.09
$SSB_{2028} = B_{lim}$	3059	2887	172	1.17	1.11	0.061	2184	−50	210	50
$SSB_{2028} = B_{PA} = MSY\ B_{trigger}$	2191	2077	114	0.69	0.65	0.035	3057	−31	122	4.8
$SSB_{2028} = SSB_{2027}$	848	808	40	0.22	0.21	0.0110	4406	0	−14.3	0
$F = F_{2026}$	978	931	47	0.25	0.24	0.0130	4275	−3.0	−1.11	0

* SSB 2028 relative to SSB 2027.
^ Advice value for 2027 relative to the advice value for 2026 (989 tonnes). The 2026 total allowable catch (TAC) is equal to the advice value (989 tonnes).
^^ EU multiannual plan (MAP) for the Western Waters and adjacent waters (EU, 2019).
# The probability of SSB being below B_{lim} in 2028. This probability relates to the short-term probability of SSB < B_{lim} and is not comparable to the long-term probability of SSB < B_{lim} tested in simulations when estimating fishing mortality reference points.

Basis of the advice

Table 3 Sole in divisions 7.f and 7.g. The basis of the advice.

Advice basis	Maximum sustainable yield (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 between the EU and the 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

The UK[E&W]-BTS-Q3 survey coverage in 2024 and 2025 was incomplete because of technical issues, with 9% of the planned stations not sampled in 2024 and 22% not sampled in 2025. Sensitivity analyses indicated that, while the impact of the missing stations result in increased uncertainty in the estimation of recent recruitment, the impact on the assessment and the short-term forecast remains negligible.

This year's assessment has resulted in an upscaling of recent stock size and downscaling of F.

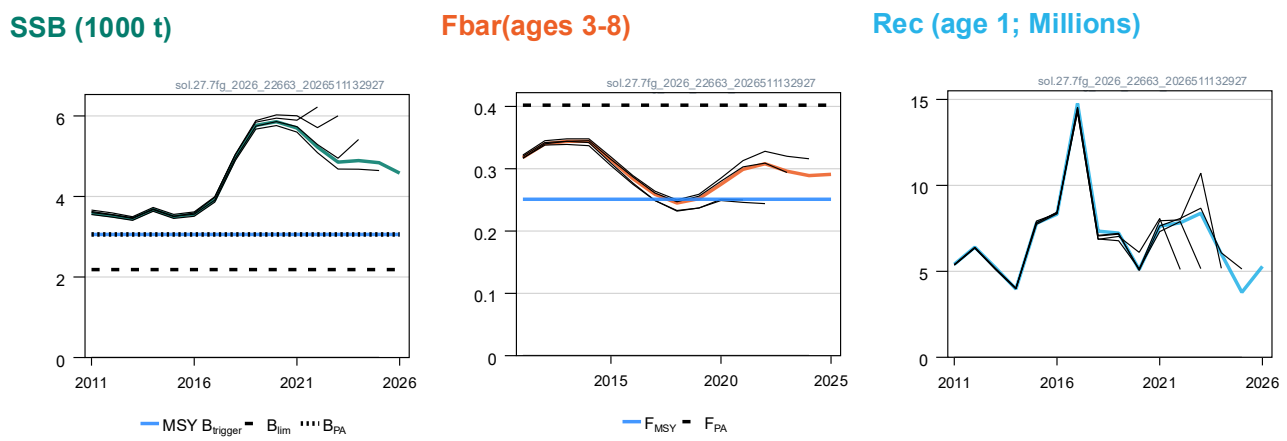

Figure 2 Sole in divisions 7.f and 7.g. Historical assessment results (final-year spawning-stock biomass [SSB] estimate and recruitment assumption included for each line).

Issues relevant for the advice

The ICES estimated catch for 2004–2007 and 2021–2022 was revised to account for area misreporting. The approach for these corrections is described in the benchmark report (ICES, 2020a).

Mixed-fisheries considerations

Sole in divisions 7.f and 7.g is caught as part of a mixed fishery (ICES, 2026a).

Reference points

Table 4 Sole in divisions 7.f and 7.g. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
Maximum sustainable yield (MSY) approach	MSY $B_{trigger}$	3057	B_{PA}; in tonnes.	ICES (2020b)
	F_{MSY}	0.251	Eqsim analysis based on the recruitment period 1971–2018	ICES (2020b)
Precautionary approach	B_{lim}	2184	B_{loss} estimated in 2020, corresponding to spawning-stock biomass (SSB) in 1997; in tonnes	ICES (2020b)
	B_{PA}	3057	B_{lim} × 1.4; in tonnes	ICES (2020b)
	F_{PA}	0.402	F_{P05} ; F that leads to SSB ≥ B_{lim} with 95% probability	ICES (2020b)
Management plan*	MAP MSY $B_{trigger}$	3057	MSY $B_{trigger}$; in tonnes	EU (2019), ICES (2020b)
	MAP B_{PA}	3057	B_{PA}; in tonnes	EU (2019), ICES (2020b)
	MAP B_{lim}	2184	B_{lim}; in tonnes	EU (2019), ICES (2020b)
	MAP F_{MSY}	0.251	F_{MSY}	EU (2019), ICES (2020b)
	MAP range $F_{MSY\ lower}$	0.136	Consistent with ranges provided by ICES (2020b), resulting in no more than 5% reduction in long-term yield compared with MSY	EU (2019), ICES (2020b)
	MAP range $F_{MSY\ upper}$	0.462	Consistent with ranges provided by ICES (2020b), resulting in no more than 5% reduction in long-term yield compared with MSY	EU (2019), ICES (2020b)

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

Basis of the assessment

Table 5 Sole in divisions 7.f and 7.g. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2025)
Assessment type	Age-based analytical model SAM used for the assessment and the forecast (ICES, 2026b)*
Input data	Total international landings, ages and length frequencies from catch sampling by métier; one survey index (UK[E&W]-BTS-Q3 [B6596], 1988–2025); five commercial biomass indices (BE-CBT [1971–1983 and 1984–1996]), BE-CBT3 [2006–2025], and UK[E & W]-CBT [1984–2005 and 2006–2025]); maturity data (ICES, 2020a); natural mortality is assumed to be constant. Catch numbers for ages 1 and 2 prior to 2004 are not used in the assessment model. Stock weights estimated using the Rivard method (Seaver, 2012); due to high variability age 1 weights were set to the lowest estimated age-2 weight.
Discards and bycatch	Discard numbers available from 2004 onwards. Discards prior to 2004 are calculated using a constant ratio of discards to landings by age based on data from 2004–2018 (ICES, 2020a).
Indicators	None
Other information	Last benchmark in 2020 (ICES, 2020a)
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE)

* View assessment in Transparent Assessment Framework (TAF)

History of the advice, catch, and management

Table 6 Sole in divisions 7.f and 7.g. ICES advice, the agreed total allowable catch (TAC), official landings and ICES estimates of landings and discards. Weights are in tonnes.

Year	ICES advice	Catches corresponding to advice	Landings corresponding to advice	Agreed TAC	Official landings	ICES landings	ICES discards
1987	Status quo F; TAC		1600	1600	1264	1222	
1988	F = F (pre-86); TAC		900	1100	1204	1146	
1989	F at F (81–85); TAC		1000	1000	992	992	
1990	No increase in F		1200	1200	1239	1189	
1991	No increase in F		1100	1200	1496	1107	
1992	No long-term gains in increasing F		1100	1200	1060	981	
1993	No long-term gains in increasing F		-	1100	1030	928	
1994	No long-term gains in increasing F		-	1100	1018	1009	
1995	No increase in F		1000	1100	1165	1157	
1996	20% reduction in F		800	1000	1081	995	
1997	20% reduction in F		800	900	1038	927	
1998	20% reduction in F		700	850	1013	875	
1999	Reduce F below F_{pa}		810	960	947	1012	
2000	Reduce F below F_{pa}		< 1160	1160	1040	1091	
2001	Reduce F below F_{pa}		< 810	1020	1120	1168	
2002	Reduce F below F_{pa}		< 1000	1070	1118	1345	
2003	Reduce F below F_{pa}		< 1240	1240	1207	1547	
2004	Reduce F below F_{pa}		< 1000	1050	1130	1391	140
2005	Reduce F below F_{pa}		< 840	1000	997	1263	23
2006	Reduce F below F_{pa}		< 880	950	921	1058	41
2007	Reduce F below F_{pa}		< 840	893	943	1052	36
2008	Keep F below F_{pa}		< 1000	964	781	790	8
2009	No long-term gains in increasing F		< 940	993	806	772	30
2010	No long-term gains in increasing F		< 920	993	871	867	56
2011	See scenarios		-	1241	1027	1027	28
2012	Maximum sustainable yield (MSY) approach		< 1060	1060	1099	1101	32
2013	MSY approach		< 1100	1100	1085	1093	26
2014	MSY approach		< 920	1001	1042	1041	27
2015	MSY approach		< 652	851	830	831	17
2016	MSY approach	≤ 760	≤ 745	779	830	832	31
2017	MSY approach	≤ 806		845	777	778	65
2018	MSY approach	≤ 931		920	849	850	141
2019	MSY approach	≤ 864		1009	1071	1068	145

Year	ICES advice	Catches corresponding to advice	Landings corresponding to advice	Agreed TAC	Official landings	ICES landings	ICES discards
2020	Management plan	1686 (range 993–2597)		1652	1505	1524	106
2021	Management plan	1413 (range 811–2364)		1413	1370	1648	76
2022	MSY approach	≤ 1337		1337	1308	1556	83
2023	MSY approach	≤ 1338		1338	1237	1215	135
2024	MSY approach	≤ 1267		1267	1210*	1208	188
2025	MSY approach	≤ 1149		1149	1168*	1164	51
2026	MSY approach	≤ 989		989			
2027	MSY approach	≤ 972					

* Preliminary.

History of the catch and landings

Table 7 Sole in divisions 7.f and 7.g. Catch distribution by fleet in 2025, as estimated by ICES.

Catch	Landings			Discards		
1 215 tonnes	Beam trawlers 90%	Otter trawlers 9.5%	Other gears < 1%	Beam trawlers 94%	Otter trawlers 5.9%	Other gears < 1%
	1 164 tonnes			51 tonnes		

Table 8 Sole in divisions 7.f and 7.g. History of official landings by country and ICES estimates of landings and area misreporting. Weights are in tonnes.

Year	Belgium	France	Ireland	UK (E, W and N.I.)	UK (Scotland)	Other	Total official	ICES landings	Area misreported landings	ICES discards
1986	1039*	146	188	611	-	5	1989	1600		
1987	701*	117	9	437	-	-	1264	1222		
1988	705*	110	72	317	-	-	1204	1146		
1989	684*	87	18	203	-	-	992	992		
1990	716*	130	40	353	0	-	1239	1189		
1991	982*	80	32	402	0	-	1496	1107		
1992	543*	141	45	325	6	-	1060	981		
1993	575*	108	51	285	11	-	1030	928		
1994	619*	90	37	264	8	-	1018	1009		
1995	763*	88	20	294	-	-	1165	1157		
1996	695*	102	19	265	0	-	1081	995		
1997	660*	99	28	251	0	-	1038	927		
1998	675*	98	42	198	-	-	1013	875		
1999	604	61	51	231	0	-	947	1012		
2000	694	74	29	243	-	-	1040	1091		
2001	720	77	35	288	-	-	1120	1168		
2002	703	65	32	318	-	-	1118	1345		
2003	715	124	26	342	-	-	1207	1547		
2004	735	79	33	283	-	-	1130	1391	237	140
2005	645	101	34	217	-	-	997	1263	279	23
2006	576	75	38	232	-	-	921	1058	146	41
2007	582	85	32	245	-	-	943	1052	120	36
2008	466	68	28	218	-	-	781	790	-	8
2009	513	73	26	195	-	-	806	772	-	30
2010	620	44	27	180	-	-	871	867	-	56
2011	775	54	30	168	-	-	1027	1027	-	28
2012	843	48	33	175	-	-	1099	1101	-	32
2013	789	49	42	205	-	-	1085	1093	-	26
2014	703	58	28	252	-	-	1042	1041	-	27

Year	Belgium	France	Ireland	UK (E, W and N.I.)	UK (Scotland)	Other	Total official	ICES landings	Area misreported landings	ICES discards
2015	674	24	27	105	-	-	830	831	-	17
2016	563	72	21	174	-	-	830	832	-	31
2017	551	49	28	149	-	-	777	778	-	65
2018	607	44	27	171	-	-	849	850	-	141
2019	800	42	34	193	-	< 1	1071	1068	-	145
2020	1121	44	51	290	-	< 1	1505	1524	-	106
2021	863	62	48	395	-	2	1370	1648	303	76
2022	847	68	31	354	-	7	1308	1556	252	83
2023	889	42	43	248	-	14	1237	1215	-	135
2024**	759	59	43	339	-	10	1210	1208	-	188
2025**	702	43	56	360	-	7	1168	1164	-	51

* Including divisions 7.g–k.
** Preliminary official landings.

Summary of the assessment

Table 9 Sole in divisions 7.f and 7.g. Assessment summary. Weights are in tonnes and recruitment in thousands. "High" and "low" refer to approximate 95% confidence intervals. Landings and discards are ICES estimates, which are used as assessment inputs.

Year	Recruitment age 1			Spawning-stock biomass (SSB)			Landings	Discards **	Fishing mortality ages 3–8		
	Low	Value	High	Low	Value	High			Low	Value	High
1971	6103	8897	12972	5625	6601	7746	1861	62	0.25	0.31	0.39
1972	3256	4585	6458	4951	5772	6730	1278	74	0.24	0.29	0.35
1973	2457	3462	4880	5089	5901	6843	1391	81	0.22	0.27	0.32
1974	2454	3461	4882	4742	5504	6388	1105	36	0.21	0.25	0.31
1975	2466	3493	4948	4374	5083	5907	919	27	0.20	0.25	0.30
1976	3793	5312	7439	3945	4581	5320	1350	58	0.23	0.28	0.34
1977	3490	4884	6834	3790	4372	5043	961	41	0.21	0.26	0.31
1978	3754	5287	7446	3861	4451	5132	780	45	0.190	0.23	0.29
1979	2610	3706	5262	3999	4593	5276	954	45	0.20	0.25	0.30
1980	3531	4940	6909	3996	4587	5267	1314	81	0.24	0.28	0.34
1981	3624	5071	7096	3695	4224	4828	1212	70	0.27	0.32	0.38
1982	3610	5059	7088	3652	4147	4708	1128	52	0.28	0.33	0.40
1983	4642	6522	9165	3606	4081	4618	1373	81	0.30	0.35	0.42
1984	4040	5693	8022	3745	4220	4754	1266	77	0.30	0.36	0.42
1985	4074	5739	8085	3464	3910	4413	1328	60	0.33	0.39	0.45
1986	2849	4006	5632	3587	4048	4567	1600	80	0.36	0.42	0.50
1987	4204	5840	8114	3185	3595	4059	1222	56	0.36	0.42	0.49
1988	3448	4752	6548	2936	3308	3726	1146	61	0.35	0.41	0.48
1989	3573	4929	6800	2786	3127	3509	992	70	0.33	0.39	0.46
1990	5434	7525	10420	2583	2900	3255	1189	57	0.35	0.41	0.48
1991	3643	4993	6843	2847	3214	3628	1107	126	0.34	0.40	0.47
1992	3743	5106	6966	2892	3274	3706	981	77	0.33	0.39	0.46
1993	3532	4834	6618	2722	3063	3447	928	56	0.36	0.42	0.49
1994	3201	4369	5965	2520	2827	3170	1009	52	0.39	0.45	0.53
1995	2793	3836	5269	2451	2743	3070	1157	50	0.42	0.49	0.58
1996	3263	4482	6154	2221	2484	2779	995	47	0.43	0.50	0.58
1997	4647	6370	8731	1965	2208	2481	927	46	0.43	0.51	0.60
1998	5653	7838	10869	2153	2431	2744	875	43	0.40	0.48	0.56
1999	9963	13812	19148	2370	2688	3048	1012	89	0.36	0.42	0.50
2000	6754	9220	12586	2575	2922	3316	1091	158	0.31	0.37	0.45
2001	4152	5712	7859	3804	4366	5011	1168	101	0.31	0.36	0.43
2002	5230	7143	9758	3885	4447	5090	1345	58	0.32	0.37	0.44
2003	3966	5401	7356	3674	4172	4737	1547	54	0.35	0.41	0.47

Year	Recruitment age 1			Spawning-stock biomass (SSB)			Landings	Discards **	Fishing mortality ages 3–8		
	Low	Value	High	Low	Value	High			Low	Value	High
2004	3611	4879	6593	3640	4095	4607	1391	140	0.36	0.42	0.49
2005	3213	4320	5808	3328	3722	4162	1263	23	0.35	0.41	0.48
2006	2635	3556	4797	2941	3268	3630	1058	41	0.33	0.39	0.46
2007	2912	3925	5291	2702	3005	3343	1052	36	0.32	0.37	0.44
2008	5535	7574	10366	2638	2956	3312	790	8	0.29	0.34	0.41
2009	5116	6913	9342	2707	3079	3502	772	30	0.27	0.32	0.38
2010	2285	3136	4304	2977	3343	3754	867	56	0.26	0.31	0.37
2011	4017	5409	7285	3208	3588	4013	1027	28	0.27	0.32	0.38
2012	4763	6404	8610	3148	3521	3937	1101	32	0.29	0.34	0.40
2013	3870	5218	7036	3093	3447	3843	1093	26	0.29	0.34	0.41
2014	2916	3972	5410	3285	3675	4111	1041	27	0.29	0.34	0.41
2015	5784	7791	10495	3121	3501	3927	831	17	0.26	0.31	0.38
2016	6232	8326	11123	3178	3561	3990	832	31	0.24	0.28	0.34
2017	10740	14764	20296	3493	3918	4394	778	65	0.21	0.26	0.31
2018	5425	7338	9924	4414	4967	5589	850	141	0.20	0.25	0.30
2019	5344	7224	9767	5130	5766	6482	1068	145	0.21	0.25	0.30
2020	3709	5105	7026	5223	5857	6569	1524	106	0.23	0.28	0.33
2021	5579	7626	10424	5045	5700	6439	1648	76	0.25	0.30	0.36
2022	5706	7823	10725	4644	5227	5882	1556	83	0.25	0.31	0.38
2023	5920	8379	11859	4305	4853	5472	1215	135	0.24	0.30	0.36
2024	3686	6013	9808	4304	4891	5558	1208	188	0.23	0.29	0.36
2025	1851	3780	7721	4170	4838	5613	1164	51	0.22	0.29	0.38
2026	3461	5287*	13812	3719	4580	5611					

* Resampled recruitments from the years 1971–2023 (median shown).

** ICES discard estimates only available from 2004. Discards prior to 2004 are calculated using a discard rate-at-age based on 2004–2018 discard data.

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Download the stock assessment data and figures

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