

## Cod (*Gadus morhua*) in divisions 7.e–k (western English Channel and southern Celtic Seas)

### ICES advice on fishing opportunities

ICES advises that when the MSY approach and precautionary considerations are applied, there should be zero catch in 2025.

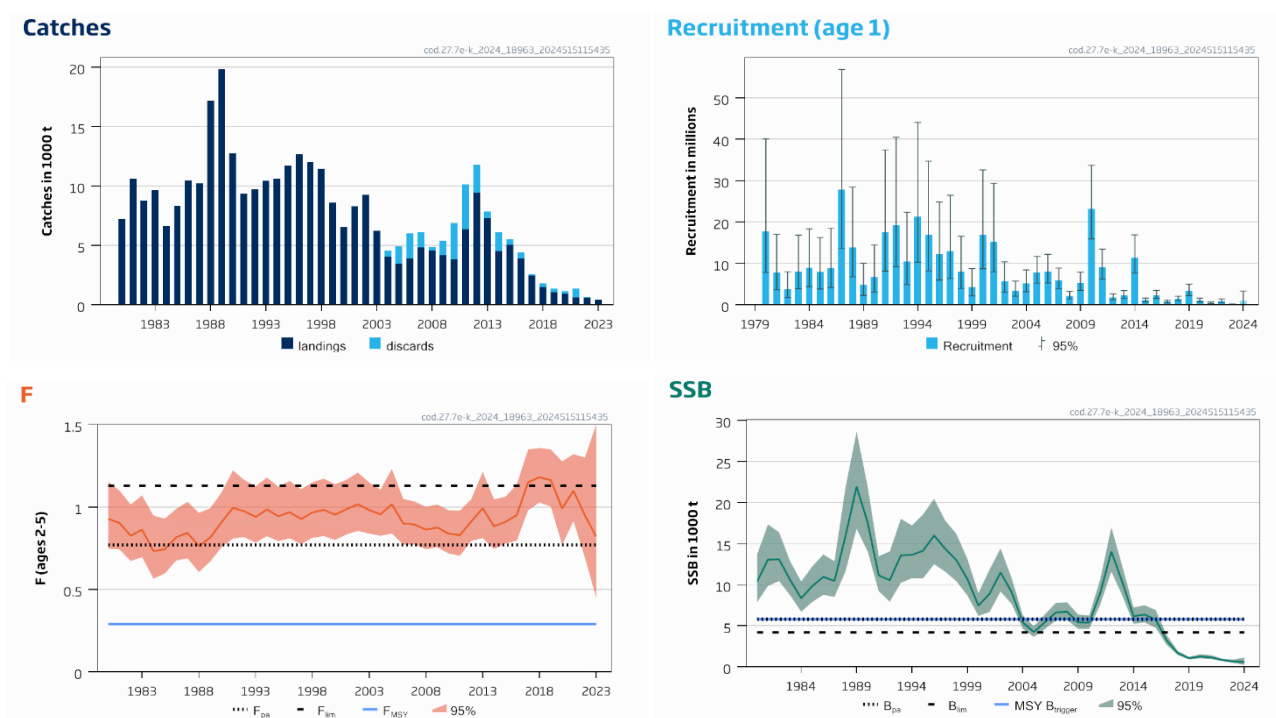
ICES notes the existence of a precautionary management plan, developed and adopted by one of the relevant management authorities for this stock.

### 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  $F_{MSY}$  and between  $F_{pa}$  and  $F_{lim}$ , and spawning-stock size is below MSY  $B_{trigger}$ ,  $B_{pa}$ , and  $B_{lim}$ .



**Figure 1** Cod in divisions 7.e–k. Summary of the stock assessment. Discard estimates are available from 2004. The assumed recruitment value for 2024 is shaded in a lighter colour.

### Catch scenarios

**Table 1** Cod in divisions 7.e–k. Assumptions made for the interim year and in the forecast.

Variable	Value	Notes
$F_{ages\ 2-5}$ (2024)	0.821	$F = F_{2023}$
SSB (2025)	676	Short-term forecast; in tonnes
$R_{age\ 1}$ (2024–2025)	1067	Median recruitment, resampled from the years 2015–2023; in thousands
Total catch (2024)	539	Short-term forecast; in tonnes

**Table 2** Cod in divisions 7.e-k. Annual catch scenarios. Weights are in tonnes.

Basis	Total catch (2025)	F <sub>total</sub> (2025)	SSB (2026)	% SSB change*	% TAC change**	Probability of SSB (2026) < B <sub>lim</sub> (%)
ICES advice basis						
MSY approach: F = 0	0	0	2040	202	-100	91
Other scenarios						
F <sub>MSY</sub> × SSB <sub>2025</sub> /MSY B <sub>trigger</sub>	42	0.034	1976	192	-93	92
EU MAP***: F <sub>MSY lower</sub> × SSB <sub>2025</sub> /MSY B <sub>trigger</sub>	25	0.020	1998	196	-96	92
EU MAP***: F <sub>MSY upper</sub> × SSB <sub>2025</sub> /MSY B <sub>trigger</sub>	60	0.048	1946	188	-91	93
F = F <sub>MSY</sub>	324	0.29	1556	130	-50	97
F = F <sub>MSY lower</sub>	201	0.17	1740	157	-69	95
F = F <sub>MSY upper</sub>	436	0.41	1393	106	-32	98
F = F <sub>lim</sub>	909	1.13	733	8.4	41	100
F = F <sub>pa</sub>	707	0.770	1005	49	10	100
SSB <sub>2026</sub> = SSB <sub>2025</sub>	953	1.22	676	0	48	100
F = F <sub>2024</sub>	739	0.82	961	42	15	99
SSB <sub>2026</sub> = B <sub>lim</sub> <sup>^</sup>						
SSB <sub>2026</sub> = B <sub>pa</sub> = MSY B <sub>trigger</sub> <sup>^</sup>						

\* SSB<sub>2026</sub> relative to SSB<sub>2025</sub>.

\*\* Total catch in 2025 relative to 2024 TAC (644 tonnes).

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

<sup>^</sup> The B<sub>lim</sub>, B<sub>pa</sub>, and MSY B<sub>trigger</sub> options were left blank because none of them can be achieved in 2026, even with zero catch in 2025.

ICES provides zero-catch advice for this stock in 2025 because the SSB is forecast to remain below B<sub>lim</sub> in 2026 under all catch scenarios.

### Basis of the advice

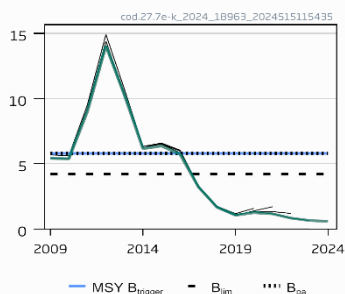
**Table 3** Cod in divisions 7.e-k. The basis of the advice.

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 <sub>MSY</sub> ranges are provided.

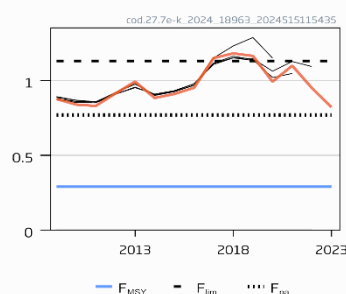
### Quality of the assessment

There is a tendency for the assessment to overestimate SSB and recruitment. However, this does not impact the advice.

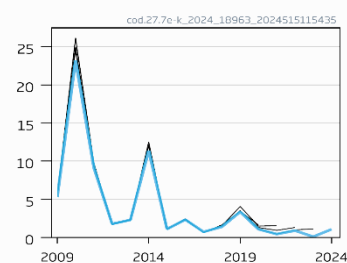
**SSB (1000 t)**



**F (ages 2-5)**



**Rec (age 1; Millions)**



**Figure 2** Cod in divisions 7.e-k. Historical assessment results (final-year SSB estimate and recruitment assumption included). The assessment was benchmarked in 2020 (ICES, 2020); therefore, only the last four assessment years are shown.

### Issues relevant for the advice

The assumed recruitment in 2024 and 2025 contributes 82% to the SSB in 2026, indicating that the forecasted stock size is uncertain and highly dependent on the size of incoming year classes. However, the zero-catch advice is not affected by this uncertainty.

Recent estimates of discard proportions are highly variable because of changing fishery behaviour and limited discard sampling; therefore, no split in forecast discards and landings is provided.

Landings are adjusted to include those reported from rectangles 33E2 and 33E3 in Division 7.a because these rectangles are considered part of this stock. The 2023 reallocation (19 tonnes) accounts for 4% of ICES estimated division 7.e–k landings and 35% of Irish Sea (Division 7.a) landings. This should be taken into consideration when setting TACs for the two management areas (divisions 7.a and 7.e–k), as a portion of the catch taken under the Division 7.a TAC is considered to be part of the division 7.e–k stock.

### Mixed-fisheries considerations

Cod in divisions 7.e–k is caught as part of a mixed fishery, and almost all fisheries operating with demersal gears catch cod (ICES, 2022).

### Reference points

**Table 4** Cod in divisions 7.e–k. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	5800	$B_{pa}$ ; in tonnes	ICES (2020)
	$F_{MSY}$	0.29	Segmented regression with $B_{lim}$ (EqSim)	ICES (2020)
Precautionary approach	$B_{lim}$	4200	$B_{loss}$ , lowest observed SSB from which there has been some recovery (2005), rounded value; in tonnes	ICES (2020)
	$B_{pa}$	5800	$B_{lim} \times 1.4$ ; in tonnes	ICES (2020)
	$F_{lim}$	1.13	Segmented regression with $B_{lim}$ (EqSim)	ICES (2020)
	$F_{pa}$	0.77	$F_{P05}$ ; the F that leads to SSB $\geq B_{lim}$ with 95% probability	ICES (2020)
Management plan (MAP)*	MAP MSY $B_{trigger}$	5800	MSY $B_{trigger}$ ; in tonnes	EU (2019), ICES (2020)
	MAP $B_{lim}$	4200	$B_{lim}$ ; in tonnes	EU (2019), ICES (2020)
	MAP $F_{MSY}$	0.29	$F_{MSY}$	EU (2019), ICES (2020)
	MAP range $F_{lower}$	0.17	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY	EU (2019), ICES (2020)
	MAP range $F_{upper}$	0.41	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY	EU (2019), ICES (2020)

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

## Basis of the assessment

**Table 5** Cod in divisions 7.e-k. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2023)
Assessment type	Age-based stochastic analytical assessment (SAM; ICES, 2024)
Input data	Commercial landings, ages, and length frequencies from sampling by métier; one combined VAST-modelled survey index (combined IGFS-WIBTS-Q4 [G7212] and EVHOE-WIBTS-Q4 [G9527]); one commercial index (FR-OTDEF Q2+3+4 trawlers in divisions 7.e-k); fixed maturity ogive derived from UK-WCGFS survey Q1 data; age-dependent natural mortalities (time invariant; Lorenzen, 1996)
Discards and bycatch	Included in the assessment. Observer-based estimates from 2004; discards and bycatch prior to that (between 1980 and 2003) are model estimated. No discards proportion was provided in the 2024 assessment for the 2025 advice.
Indicators	None
Other information	Benchmarked at WKCELTIC 2020 (ICES, 2020)
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE)

## History of the advice, catch, and management

**Table 6** Cod in divisions 7.e-k. ICES advice, the agreed TAC and ICES estimates of landings and discards. Weights in tonnes.

Year	ICES advice	Landings corresponding to advice	Catch corresponding to advice	Agreed TAC*	ICES landings <sup>^^</sup>	ICES discards
1987	Reduce F	< 6400**			10390	
1988	No increase in F; TAC	7000**			17196	
1989	No increase in F; TAC	8600**			19804	
1990	No increase in F; TAC	9200**			12878	
1991	TAC; SSB mean	4500**			9336	
1992	Appropriate to reduce F	-			9747	
1993	20% reduction in F	6500**		17500	10416	
1994	20% reduction in F	5600**		17000	10620	
1995	20% reduction in F	4700***		17000	11710	
1996	20% reduction in F	4700***		20000	12681	
1997	20% reduction in F	7400***		20000	12028	
1998	10% reduction in F	8800^		20000	11418	
1999	Reduce F below $F_{pa}$	9200^		19000	8580	
2000	Reduce F below $F_{pa}$	< 7600^^		16000	6539	
2001	40% reduction in F	< 4300^^		10500	8316	
2002	45% reduction in F	< 5300^^		8700	9239	
2003	60% reduction in F	< 3800^^		n/a	6425	
2004	90% reduction in F or management plan	< 700		n/a	4027	543
2005	17% reduction in F	< 5200		6200	3478	1426
2006	No increase in effort (should have been "reduce effort")	Cannot be estimated		5580	3902	2118
2007	Zero catch	0		4743	4842	1248
2008	Zero catch	0		4316	4577	306
2009	50% reduction in F	< 2600		4023	4187	1229
2010	Substantial catch reduction	-		4023	3831	3040
2011	Catch and effort reduction	-		5379	6376	3749
2012	MSY framework	< 10000		10059	9443	2341
2013	MSY framework	< 10200		10200	7273	562
2014	MSY approach	< 6848		6848	4512	1569
2015	MSY approach	< 4024		5072	5028	483
2016	MSY approach	≤ 3569		4565	3924	525
2017	MSY approach	≤ 1447		2830	2471	134
2018	MSY approach	≤ 3076	≤ 3428	3076	1496	316
2019	MSY approach		0	1610	1051	300
2020	MSY approach		0	805	922	231
2021	MSY approach and precautionary considerations		0	805	627	733

Year	ICES advice	Landings corresponding to advice	Catch corresponding to advice	Agreed TAC*	ICES landings <sup>^^</sup>	ICES discards
2022	MSY approach and precautionary considerations		0	644	573	75
2023	MSY approach and precautionary considerations		0	644	444	13
2024	MSY approach and precautionary considerations		0	644		
2025	MSY approach and precautionary considerations		0			

\* TAC covers subareas 7 (except Division 7.a) and 8. From 2009 onwards, the TAC covers divisions 7.b-c and 7.e-k, subareas 8-10, and EU waters of CECAF Division 34.1.1 (with a separate TAC established for Division 7.d).

\*\* For the division 7.f-g stock component.

\*\*\* For the division 7.f-h stock component.

^ For the division 7.e-h stock component.

^^ For the division 7.e-k stock component.

^^^ Landings have been adjusted to include those taken or reported in rectangles 33E2 and 33E3 since 2004.

## History of the catch and landings

**Table 7** Cod in divisions 7.e-k. Catch distribution by fleet in 2023, as estimated by ICES.

Catch	Landings				Discards			
	Otter trawls	Seine nets	Beam trawls	Other gears	Otter trawls	Seine nets	Beam trawls	Other gears
457 tonnes	64.9%	15.6%	10.2%	9.3%	33.3%	8.3%	58.3%	0%
	444 tonnes				13 tonnes			

**Table 8** Cod in divisions 7.e-k. History of official commercial landings by country and ICES estimates of discards. Weights in tonnes.

Year	Belgium	France	Ireland	UK	Others	Total	Discard estimates	Landings from rectangles 33E2 and 33E3*
1971						5782		
1972						4737		
1973						4015		
1974						2898		
1975						3993		
1976						4818		
1977						3059		
1978						3647		
1979						4650		
1980						7243		
1981						10597		
1982						8766		
1983						9641		
1984						6631		
1985						8317		
1986						10475		
1987						10228		
1988	554	13863	1480	1292	2	17191		
1989	910	15801	1860	1223	15	19809		
1990	621	9383	1241	1346	158	12749		
1991	303	6260	1659	1094	20	9336		
1992	195	7120	1212	1207	13	9747		
1993	391	8317	766	945	6	10425		
1994	398	7692	1616	906	8	10620		
1995	400	8321	1946	1034	8	11709		
1996	552	8981	1982	1166	0	12681		
1997	694	8662	1513	1166	0	12035		
1998	528	8096	1718	1089	0	11431		
1999	326	5488	1883	897	0	8594		
2000	208	4281	1302	744	0	6535		
2001	347	6033	1091	838	0	8309		

Year	Belgium	France	Ireland	UK	Others	Total	Discard estimates	Landings from rectangles 33E2 and 33E3*
2002	555	7368	694	618	0	9235		
2003	136	5222	517	346	0	6221		
2004	153	2934	657	281	1	4027	543	108
2005	186	2127	855	309	1	3478	1426	54
2006	101	2431	995	371	3	3902	2118	103
2007	107	3113	1208	411	3	4842	1248	527
2008	65	2994	1222	295	1	4577	306	558
2009	48	3020	847	267	5	4187	1229	193
2010	52	2449	1030	296	3	3831	3040	143
2011	123	4808	1010	427	7	6376	3749	147
2012	290	6900	1539	706	8	9443	2341	85
2013	202	5051	1470	548	3	7273	562	76
2014	141	2715	1189	466	0	4512	1569	24
2015	121	3373	1109	422	3	5028	483	39
2016	97	2579	881	365	1	3924	525	40
2017	82	1578	623	188	0	2471	134	19
2018	49	611	706 <sup>c</sup>	130	0	1496 <sup>c</sup>	316	20
2019	43	369	554 <sup>c</sup>	84	n/a	1051 <sup>c</sup>	300	37
2020	18	371	487	44	2	922	231	71
2021	11	261	309	46	0	627	733	52
2022**	8	204	309	51	0	573	75	30
2023**	8	155	229	52	0	444	13	19

\* Landings in the southern part of Division 7.a (rectangles 33E2 and 33E3) are included in the assessment and are considered to be part of the stock.

\*\* Preliminary official landings.

<sup>c</sup> Incomplete/missing as a result of part of the data being unavailable under data confidentiality clauses.

### Summary of the assessment

**Table 9** Cod in divisions 7.e–k. Assessment summary. All weights are in tonnes, recruitment in thousands. “Low” and “High” refer to 95% confidence intervals.

Year	Recruitment age 1			SSB			Landings	Discards	F ages 2–5		
	Low	Value	High	Low	Value	High			Low	Value	High
1980	7831	17716	40076	7820	10318	13614	7243		0.75	0.93	1.16
1981	3624	7859	17042	9837	13063	17347	10597		0.74	0.90	1.10
1982	1731	3721	8002	10434	13081	16401	8766		0.67	0.83	1.02
1983	3888	8095	16855	8706	10587	12874	9641		0.70	0.86	1.07
1984	4378	8966	18362	6699	8347	10399	6631		0.57	0.73	0.95
1985	3823	7885	16262	7895	9830	12238	8317		0.60	0.74	0.93
1986	4186	8806	18527	8771	10957	13689	10475		0.68	0.82	0.99
1987	13584	27792	56860	8502	10456	12860	10228		0.69	0.84	1.03
1988	6783	13893	28458	11592	15919	21861	17191		0.61	0.76	0.97
1989	2272	4774	10035	16788	21934	28656	19809		0.67	0.82	0.99
1990	3081	6671	14445	14041	17572	21990	12749		0.76	0.91	1.09
1991	8123	17437	37432	9210	11136	13464	9336		0.81	1.00	1.22
1992	9209	19312	40495	7923	10555	14061	9747		0.82	0.98	1.17
1993	4877	10442	22358	10224	13579	18035	10425		0.78	0.94	1.13
1994	10285	21288	44064	10798	13634	17213	10620		0.82	0.99	1.18
1995	8206	16879	34720	10761	14134	18564	11709		0.79	0.94	1.12
1996	5993	12199	24831	12490	15989	20468	12681		0.81	0.97	1.16
1997	6360	12977	26475	11590	14370	17816	12035		0.78	0.93	1.11
1998	3967	8111	16586	10424	13007	16230	11431		0.81	0.97	1.15
1999	2146	4338	8770	8691	10700	13173	8594		0.82	0.98	1.17
2000	8729	16869	32602	6201	7460	8974	6535		0.80	0.95	1.14
2001	7955	15280	29350	6664	8886	11849	8309		0.83	0.99	1.17
2002	3052	5633	10394	9165	11500	14431	9235		0.86	1.02	1.21

Year	Recruitment age 1			SSB			Landings	Discards	F ages 2-5		
	Low	Value	High	Low	Value	High			Low	Value	High
2003	2091	3466	5747	7638	9096	10832	6221		0.84	0.9	1.15
2004	3146	5158	8455	4630	5404	6306	4027	543	0.83	0.96	1.11
2005	5247	7830	11686	3639	4241	4943	3478	1426	0.84	1.02	1.23
2006	5266	8018	12207	4613	5435	6403	3902	2118	0.77	0.90	1.05
2007	3951	5923	8879	5639	6632	7799	4842	1248	0.77	0.89	1.03
2008	1454	2177	3259	5723	6708	7863	4577	306	0.74	0.86	1.00
2009	3512	5266	7897	4605	5416	6369	4187	1229	0.76	0.88	1.02
2010	15940	23178	33703	4626	5383	6266	3831	3040	0.72	0.84	0.98
2011	6184	9123	13458	7578	9009	10709	6376	3749	0.70	0.83	0.98
2012	1195	1778	2647	11602	14045	17003	9443	2341	0.80	0.91	1.05
2013	1527	2295	3449	8623	10270	12231	7273	562	0.81	0.99	1.22
2014	7644	11368	16906	5234	6159	7247	4512	1569	0.75	0.88	1.05
2015	726	1096	1655	5413	6370	7496	5028	483	0.78	0.91	1.06
2016	1551	2327	3492	4744	5735	6934	3924	525	0.80	0.95	1.14
2017	478	732	1119	2666	3215	3877	2471	134	0.98	1.15	1.35
2018	908	1381	2098	1429	1665	1939	1496	316	1.03	1.18	1.36
2019	2245	3343	4979	908	1058	1233	1050	300	1.00	1.16	1.35
2020	708	1067	1608	1027	1253	1528	922	231	0.77	0.99	1.28
2021	284	437	673	947	1164	1432	627	733	0.92	1.10	1.32
2022	554	886	1415	696	835	1002	573	75	0.69	0.95	1.30
2023	39	97	241	484	655	887	444	13	0.45	0.82	1.50
2024	97	1067*	3343	237	585	1144					

\* Median resampled (2015-2023).

## Sources and references

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