

Whiting (*Merlangius merlangus*) in divisions 7.b–c and 7.e–k (southern Celtic Seas and western English Channel)

ICES advice on fishing opportunities

ICES advises that when the MSY approach and precautionary considerations are applied, there should be zero catch in 2024.

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

Management should be implemented at the stock level.

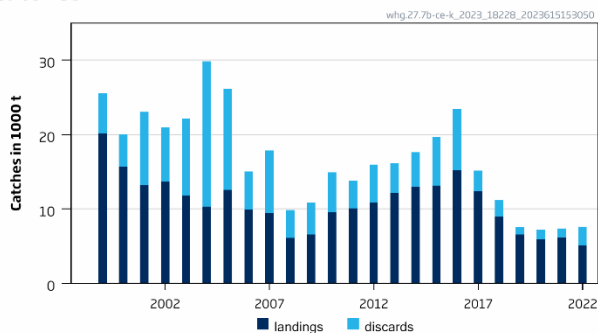
ICES advice on conservation aspects

ICES has not identified any conservation aspects.

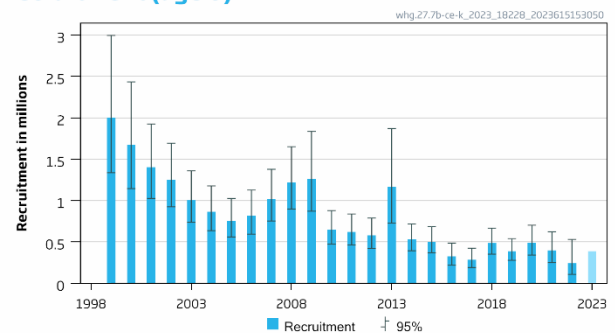
Stock development over time

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

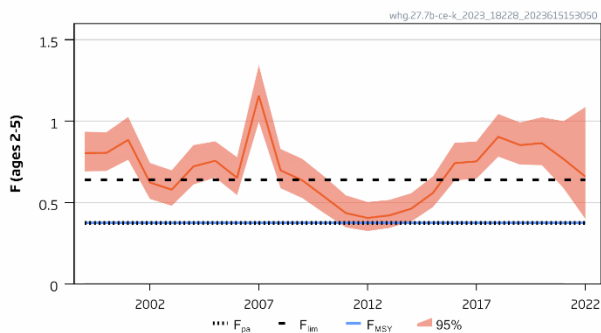
Catches



Recruitment (age 0)



F



SSB

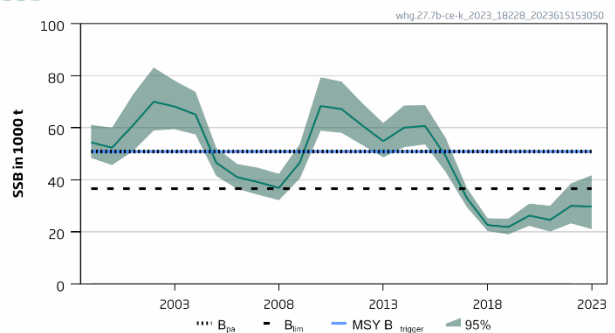


Figure 1 Whiting in divisions 27.7b–ce–k. Summary of the stock assessment. The assumed recruitment value for 2023 is shaded in a lighter colour.

Conservation status

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

Catch scenarios

Table 1 Whiting in divisions 27.7b–ce–k. The basis for the catch scenarios.

Variable	Value	Notes
$F_{\text{ages 2-5}}$ (2023)	0.763	$F_{\text{sq}} = F_{\text{average}}$ (2020–2022), unscaled
SSB (2024)	26361	Short-term forecast; in tonnes.
Recruitment age 0 (2023–2024)	387753	Median resampled (2016–2022); in thousands
Catch (2023)	9817	Short-term forecast; in tonnes.
Projected landings (2023)	8180	Short-term forecast assuming average 2020–2022 landings pattern; in tonnes
Projected discards (2023)	1637	Short-term forecast assuming average 2020–2022 discard pattern; in tonnes

Table 2 Whiting in divisions 7.b–c and 7.e–k. Annual catch scenarios. Weights are in tonnes. No information on % TAC change can be shown because the TAC area differs from the stock area.

Basis	Total catch (2024)	Projected landings (2024)	Projected discards (2024)	F_{total} (2024)	$F_{\text{projected landings}}$ (2024)	$F_{\text{projected discards}}$ (2024)	SSB (2025)	% SSB change *	% advice change **	% probability of being below B_{lim} in 2025
ICES advice basis										
MSY approach: zero catch	0	0	0	0	0	0	33995	29	–100	67
Other scenarios										
MSY and precautionary considerations: $F = 0$	0	0	0	0	0	0	33995	29	–100	67
EU MAP^^: $F_{\text{MSY upper}} \times \text{SSB}_{2024} / \text{MSY } B_{\text{trigger}}$	2852	2431	421	0.20	0.161	0.034	31307	19	66	81
EU MAP^^: $F_{\text{MSY}} \times \text{SSB}_{2024} / \text{MSY } B_{\text{trigger}}$	2852	2431	421	0.195	0.161	0.034	31307	19	66	81
EU MAP^^: $F_{\text{MSY lower}} \times \text{SSB}_{2024} / \text{MSY } B_{\text{trigger}}$	2433	2075	358	0.163	0.135	0.028	31690	20	42	79
$F = F_{\text{MSY}} = F_{\text{pa}}$	5063	4290	773	0.38	0.31	0.065	29327	11	195	88
$\text{SSB}_{2025} = B_{\text{lim}}^{\wedge}$										
$\text{SSB}_{2025} = B_{\text{pa}} = B_{\text{trigger}}^{\wedge}$										
$F = F_{2023}$	8797	7374	1423	0.76	0.63	0.133	26026	–1	413	96
$\text{SSB}_{2025} = \text{SSB}_{2024}$	8415	7063	1352	0.72	0.59	0.126	26361	0	391	95

* SSB 2025 relative to SSB 2024.

** Advice value for 2024 relative to the advice value for 2023 (1715 tonnes).

\wedge The B_{lim} and $\text{MSY } B_{\text{trigger}}$ options were left blank because neither can be achieved in 2025, even with zero catches.

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

The advice for 2024 is for zero catch because the stock is below B_{lim} . Incoming recruitment remains low. Even with zero catch in 2024, the probability of being above B_{lim} in 2025 is 33%.

Basis of the advice

Table 3 Whiting in divisions 7.b–c and 7.e–k. The basis of the advice.

Advice basis	MSY approach
Management plan	ICES is aware of the multiannual management plan (MAP) which has been adopted by the EU for this stock (EU, 2019) and which ICES considers to be precautionary. There is no agreed shared management plan with 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 assessment overestimates biomass and underestimates fishing mortality (Figure 2), which may indicate model or data issues. Therefore, the forecast will overestimate SSB as well as the probability of the stock exceeding B_{lim} .

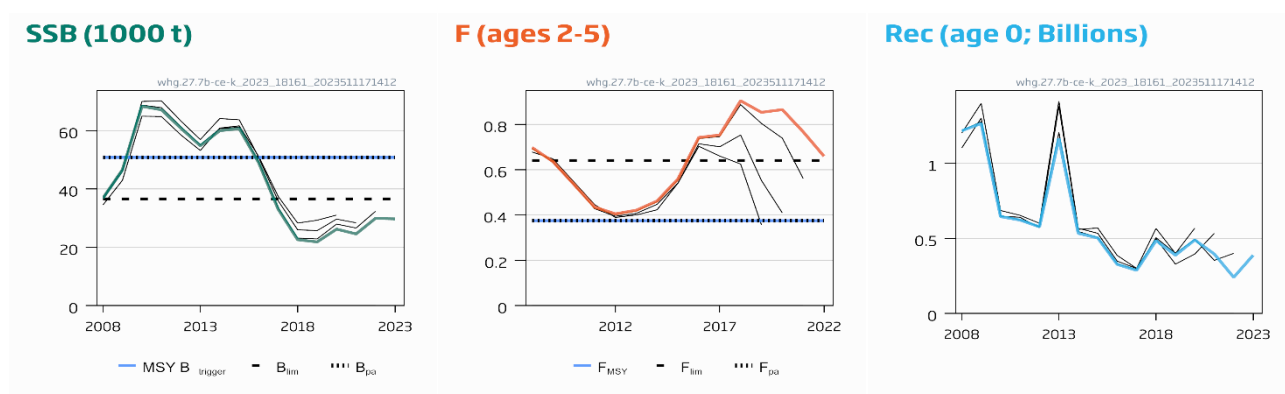


Figure 2 Whiting in divisions 7.b–c and 7.e–k. Historical assessment results (final-year SSB estimate and recruitment assumptions included). The stock was inter-benchmarked in 2021 (ICES, 2021) and reference points were revised, therefore only the last four assessment years are shown.

Issues relevant for the advice

The advice for zero catch is robust given the observed retrospective pattern.

The assumed recruitment in 2023 and 2024 used in the forecast constitutes a significant part (52.9%) of the projected SSB in 2025.

Estimates of discarding in 2022 are based on few sampling opportunities for some of the main fleets catching whiting, and while considered appropriate for this year’s assessment, on-going low observations will be a cause for concern in future assessments. There is also uncertainty with the ratio of landings/discards split used in the forecast.

The assessment and advice are for divisions 7.b–k, including rectangles 33E2 and 33E3 in Division 7.a, as they are considered part of this stock. The 2022 reallocation (21 tonnes) from Division 7.a accounts for 37% of ICES estimated division 7.b–k landings and 0.42% of the Irish Sea (Division 7.a) landings. This should be considered when setting TACs, as a portion of the catch taken under the Division 7.a TAC is considered to be part of the divisions 27.7b–ce–k stock.

Whiting in divisions 7.b–c and 7.e–k is fished under a common TAC with whiting in Division 7.d. Mixing the biological and TAC areas for different whiting stocks will make it difficult to appropriately manage the two stocks. ICES recommends, therefore, that the TAC area corresponds to the assessment area.

Mixed fisheries considerations

Whiting in divisions 27.7b–ce–k is caught as part of a mixed fishery. Most whiting was caught by otter trawls targeting demersal fish; these trawls also catch haddock and varying amounts of other benthic and gadoid species (ICES, 2022). Seine netting, however, has become a more prominent métier over the last couple of years.

Reference points

Table 5 Whiting in divisions 27.7b–ce–k. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	50818	B_{pa} ; in tonnes	ICES (2021)
	F_{MSY}	0.375	From EqSim with segmented regression and fixed breakpoint (B_{lim}) capped to F_{P05} .	ICES (2021)
Precautionary approach	B_{lim}	36571	B_{loss} ; lowest observed SSB (2008) from which stock recovery was observed; in tonnes	ICES (2021)
	B_{pa}	50818	B_{lim} combined with the assessment error; $B_{lim} \times \exp(1.645 \times \sigma)$; $\sigma = 0.20$ (default setting); in tonnes	ICES (2021)
	F_{lim}	0.64	F with 50% probability of SSB less than B_{lim}	ICES (2021)
	F_{pa}	0.375	F_{P05} ; the F that leads to SSB $\geq B_{lim}$ with 95% probability	ICES (2021)
Management plan*	MAP MSY $B_{trigger}$	50818	MSY $B_{trigger}$; in tonnes	EU (2019), ICES (2021)
	MAP B_{lim}	36571	B_{lim} ; in tonnes	EU (2019), ICES (2021)
	MAP F_{MSY}	0.375	F_{MSY} .	EU (2019), ICES (2021)
	MAP range F_{lower}	0.315	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY	EU (2019), ICES (2021)
	MAP range F_{upper}	0.375	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY capped to F_{P05} .	EU (2019), ICES (2021)

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

Basis of the assessment

Table 6 Whiting in divisions 7.b–c and 7.e–k. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2023a)
Assessment type	Analytical age-based assessment (State–space fish stock assessment model; SAM) that uses catches in the model and the forecast (ICES, 2023b)
Input data	Commercial catches (age composition of landings and discards); vector autoregressive spatio-temporal (VAST) standardized survey index (combined IGFS-WIBTS-Q4 [G7212] and EVHOE-WIBTS-Q4 [G9527]); maturity data (surveys and observer data; constant for all years); age-dependent natural mortalities (Lorenzen, 1996)
Discards and bycatch	Included in the assessment for the full time-series. Full observer-based estimates from 2003, partial observer-based estimates from 1999 to 2002.
Indicators	None
Other information	This stock was benchmarked in 2020 (ICES, 2020) and inter-benchmarked in 2021 (ICES, 2021)
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE)

History of the advice, catch, and management

Table 7 Whiting in divisions 7.b–c and 7.e–k. ICES advice and catches, as used in the assessment. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Landings corresponding to advice	Agreed TAC [^]	ICES landings	ICES discards
1987	<i>Status quo</i> F; TAC	-	7100*	18500	13720	
1988	Precautionary TAC	-	7000*	18500	15822	
1989	Precautionary TAC	-	7900*	19300	24276	
1990	No increase in F; TAC	-	8400*	24000	24099	
1991	Precautionary TAC	-	8000*	24000	14402	
1992	If required, precautionary TAC	-	8000*	22000	14419	
1993	Within safe biological limits	-	6600*	22000	17904	
1994	Within safe biological limits	-	< 9400*	29000	21659	
1995	20% reduction in F	-	8200**	31000	23559	
1996	20% reduction in F	-	600**	28000	19539	
1997	At least 20% reduction in F	-	< 7300***	27000	21067	
1998	At least 20% reduction in F	-	< 8200***	27000	19710	

Year	ICES advice	Catch corresponding to advice	Landings corresponding to advice	Agreed TAC [^]	ICES landings	ICES discards
1999	No increase in F	-	12400***	25000	20180	5420
2000	17% reduction in F	-	< 13100***	22200	15644	4400
2001	No increase in F	-	13500***	21000	13196	9877
2002	No increase in F	-	27700***	31700	13640	7336
2003	No increase in F	-	20200***	27000	11788	10337
2004	No increase in F	-	14000***	27000	10321	19522
2005	No increase in F	-	10600***	21600	12575	13598
2006	No increase in F	-	10800***	19940	9908	5098
2007	No increase in F	-	-	19940	9424	8439
2008	Reduction in F	-	-	19940	6080	3760
2009	Same advice as last year	-	-	16949	6574	4281
2010	Same advice as last year	-	-	14407	9570	5346
2011	See scenarios	-	-	16658	10084	3750
2012	No increase in catch and improved gear selection	-	-	19053	10834	5116
2013	MSY approach	-	< 17500***	24500	12131	4026
2014	MSY approach	-	< 15562***	19162	12983	4672
2015	MSY approach	< 18501	< 14230	17742	13110	6528
2016	MSY approach	≤ 19076	≤ 15395	22778	15201	8259
2017	MSY approach	≤ 25125	≤ 19825	27500	12377	2791
2018	MSY approach	≤ 19429	≤ 13759	22213	9007	2139
2019	MSY approach	≤ 15841		19184	6588 ^c	970
2020	Management plan	6481 (range 4157–6481)		10863	5931	1266
2021	Management plan	5261 (range 4458–5261)		10259	6153	1224
2022	MSY approach	≤ 4452		8352	5115	2462
2023	MSY approach	≤ 1715		3877		
2024	MSY approach	0				

[^] TAC covers Subarea 7 (except Division 7.a).

* For the divisions 7.f and 7.g stock component.

** For the divisions 7.f–h stock component.

*** For the divisions 7.e–k stock component.

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

History of the catch and landings

Table 8 Whiting in divisions 7.b–c and 7.e–k. Catch distribution by fleet in 2022, as estimated by ICES.

Catch	Landings					Discards				
	Otter trawls	Seine nets	Beam trawls	Gillnets	Other gears	Otter trawls	Seine nets	Beam trawls	Gillnets	Other gears
7577 tonnes	76%	19%	3%	1%	2%	69%	0%	6%	24%	1%
	5115 tonnes					2462 tonnes				

Table 9 Whiting in divisions 27.7b–ce–k. History of commercial landings; the official landings by country. Weights are in tonnes.

Year	Belgium	France	Ireland	UK England and Wales	Others	Total
1998	479	11748	5549	1853	81	19710
1999	448	16418	6013	1354	27	24260
2000	194	9184	5358	1279	15	16030
2001	171	7317	5365	963	16	13832
2002	149	7546	5718	860	22	14295
2003	129	5989	4516	772	12	11418
2004	180	4870	4350	594	125	10119
2005	218	5886	5774	482	136	12496
2006	128	4711	4570	413	129	9951

Year	Belgium	France	Ireland	UK England and Wales	Others	Total
2007	127	3575	4864	575	86	9227
2008	122	3072	2406	619	35	6254
2009	87	2815	2798	829	25	6554
2010	101	3464	4331	796	86	8778
2011	100	4390	5433	754	179	10856
2012	170	3766	7006	781	147	11870
2013	226	4055	8218	927	97	13523
2014	222	4982	8122	1085	41	14452
2015	152	5676	7156	831	101	13916
2016	186	6334	8390	896	41	15847
2017	102	5293	7014	608	34	13051
2018	103	3684	5103	596	875	10361
2019	73	3241	2344 ^c	487	136	6281 ^c
2020	82	2674	2656	335	143	5890
2021*	83	2666	2915	352	66	6082
2022*	75	2750	1977	347	14	5163

* Preliminary.

** Included in Irish landings. 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.

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

Summary of the assessment

Table 10 Whiting in divisions 27.7b–ce–k. Assessment summary. Weights are in tonnes, recruitment in thousands. High and Low refer to approximate 95% confidence intervals.

Year	Recruitment age 0			SSB			Landings	Discards	Ages 2–5		
	Low	Value	High	Low	Value	High			Low	Value	High
1999	1337548	2002018	2996584	48381	54359	61076	20180	5420	0.69	0.80	0.94
2000	1145754	1670339	2435106	45630	52323	59998	15644	4400	0.69	0.81	0.93
2001	1026375	1405898	1925757	50965	60851	72655	13196	9877	0.76	0.89	1.03
2002	925888	1252362	1693953	58918	69983	83127	13640	7336	0.52	0.62	0.74
2003	739432	1003041	1360625	59421	68113	78076	11788	10337	0.48	0.58	0.70
2004	636246	865620	1177687	57394	65074	73782	10321	19522	0.61	0.72	0.85
2005	559835	758102	1026585	41418	46503	52212	12575	13598	0.65	0.76	0.88
2006	594248	818807	1128226	36492	41000	46066	9908	5098	0.55	0.65	0.78
2007	753743	1019549	1379091	34237	39087	44624	9424	8439	1.00	1.16	1.34
2008	896908	1217047	1651456	32136	36860	42278	6080	3760	0.59	0.70	0.83
2009	872545	1266036	1836979	40388	46557	53669	6574	4281	0.53	0.64	0.77
2010	473116	644934	879149	58839	68321	79330	9570	5346	0.44	0.54	0.66
2011	461205	621732	838131	58020	67151	77720	10084	3750	0.35	0.44	0.54
2012	421962	577033	789093	53334	60835	69390	10834	5116	0.33	0.41	0.50
2013	727971	1167025	1870883	48607	54807	61798	12131	4026	0.34	0.42	0.52
2014	394940	533085	719553	52491	59982	68543	12983	4672	0.38	0.46	0.56
2015	368748	502674	685242	53583	60675	68706	13110	6528	0.47	0.56	0.66
2016	218673	326715	488138	42873	48990	55981	15201	8259	0.64	0.74	0.87
2017	192715	286223	425102	29574	33064	36966	12377	2791	0.65	0.75	0.88
2018	352647	485022	667088	20284	22589	25155	9007	2139	0.78	0.90	1.04
2019	278302	387753	540248	19029	21834	25053	6588	970	0.73	0.85	0.99
2020	340870	489419	702705	22287	26214	30834	5931	1266	0.73	0.87	1.02
2021	251543	395703	622482	20107	24565	30010	6153	1224	0.59	0.77	1.00
2022	108813	240196	530215	23230	29946	38603	5115	2462	0.64	0.66	0.87
2023		387753*		21020	29740	41713					

* Median resampled (2016–2022).

Sources and references

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