

Haddock (*Melanogrammus aeglefinus*) in divisions 7.b–k (southern Celtic Seas and English Channel)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, catches in 2024 should be no more than 8252 tonnes.

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

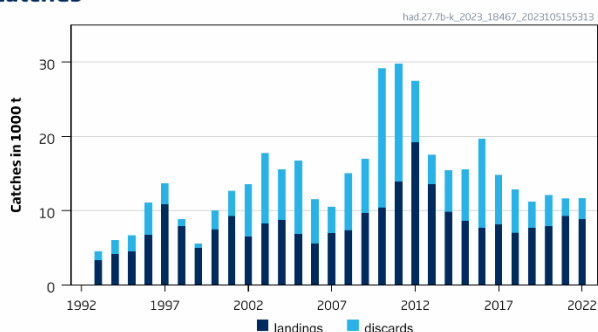
ICES advice on conservation aspects

ICES has not identified any conservation aspects.

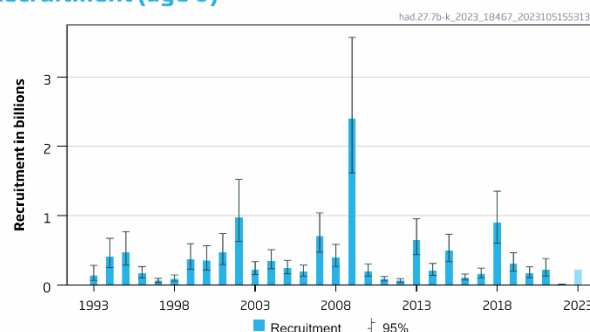
Stock development over time

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

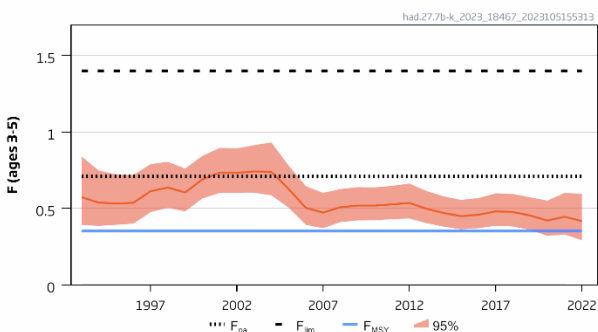
Catches



Recruitment (age 0)



F



SSB

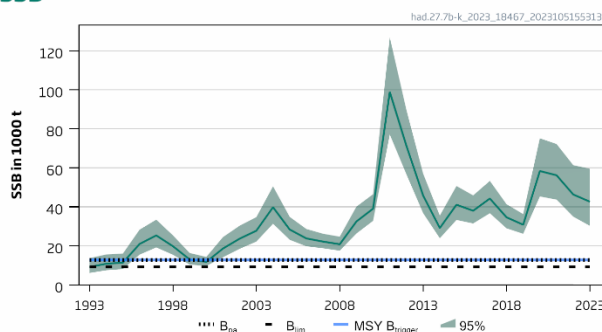


Figure 1^{††} Haddock in divisions 7.b–k. Summary of the stock assessment. The assumed recruitment value for 2023 is shaded in a lighter colour.

Conservation status

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

^{††} Version 2: SSB 2023 values corrected.

Catch scenarios

Table 1 Haddock in divisions 7.b–k. Values in the forecast and for the interim year.

Variable	Value	Notes
$F_{\text{ages } 3-5} (2023)$	0.417	$F = F_{\text{Average } (2020-2022)}$, rescaled to F_{2022}
SSB (2024)	27781 ^{††}	Short-term forecast; in tonnes
$R_{\text{age } 0} (2023, 2024)$	224539	Median recruitment, resampled from the years 1993–2022; in thousands
Total catch (2023)	12100	Short-term forecast; in tonnes
Projected landings (2023)	10540	Short-term forecast, assuming average 2020–2022 landing pattern; in tonnes
Projected discards (2023)	1560	Short-term forecast, assuming average 2020–2022 discard pattern; in tonnes

Table 2 Haddock in divisions 7.b–k. Annual catch scenarios. All weights are in tonnes.

Basis	Total catch (2024)	Projected landings (2024)	Projected discards (2024)	$F_{\text{total}} (2024)$	$F_{\text{projected landings}} (2024)$	$F_{\text{projected discards}} (2024)$	SSB (2025)	% SSB change*	% advice change [^]
ICES advice basis									
MSY approach: F_{MSY}	8252	6772	1480	0.353	0.30	0.051	30295	9.0	–31
Other scenarios									
EU MAP ^{^^} : F_{MSY}	8252	6772	1480	0.353	0.30	0.051	30295	9.0	–31
EU MAP ^{^^} $F_{\text{MSY lower}}$	5492	4532	960	0.221	0.189	0.032	33103	19.2	–54
EU MAP ^{^^} $F_{\text{MSY upper}}$	11318	9208	2110	0.521	0.45	0.075	27233	–2.0	–4.9
$F = 0$	0	0	0	0	0	0	38627	39.0	–100
F_{pa}	14210	11457	2753	0.708	0.61	0.103	24327	–12.4	19
F_{lim}	21682	17024	4658	1.40	1.20	0.20	17176	–38	82
$\text{SSB}_{2025} = B_{\text{lim}}$	30536	22585	7951	3.1	2.66	0.45	9227	–67	157
$\text{SSB}_{2025} = B_{\text{pa}} = \text{MSY } B_{\text{trigger}}$	26420	20168	6252	2.1	1.80	0.31	12822	–54	122
$F = F_{2023}$	9484	7758	1726	0.42	0.36	0.06	29082	4.7	–20
$\text{SSB}_{2025} = \text{SSB}_{2024}$	10670	8696	1974	0.483	0.413	0.07	27904	0.4	–10.3

* SSB_{2025} forecast relative to SSB_{2024} .

[^] Advice values for 2024 relative to the MSY value for 2023 (11901 tonnes).

^{^^} EU multiannual plan (MAP) for the Western Waters (EU, 2019).

The decrease in advice is due to a decrease and a downward revision in biomass and low recent recruitment.

Basis of the advice

Table 3 Haddock in divisions 7.b–k. The basis of the advice.

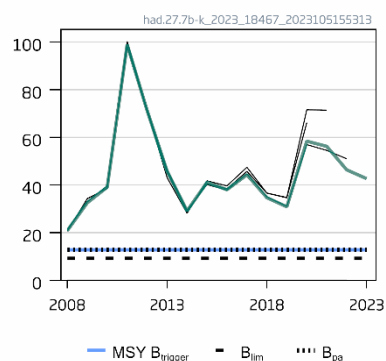
Advice basis	MSY approach
Management plan	ICES is aware of the multiannual management plan (MAP) that has been adopted by the EU for this stock (EU, 2019) and that ICES considers to be precautionary. There is no agreed shared management plan with the UK for this stock, and ICES provides advice according to ICES MSY approach. Catch scenarios consistent with the MAP F_{MSY} ranges are provided.

Quality of the assessment

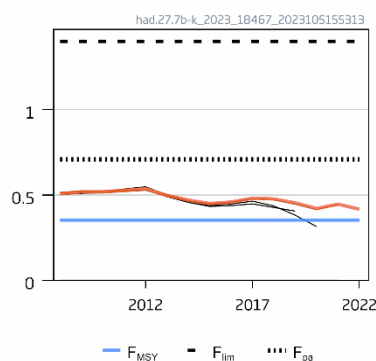
Discard sampling in 2022 was lower than in 2021 for some countries, but this is not considered to have a major impact on the assessment.

^{††} Version 2: Value corrected

SSB (1000 t)



F (ages 3-5)



Rec (age 0; Billions)

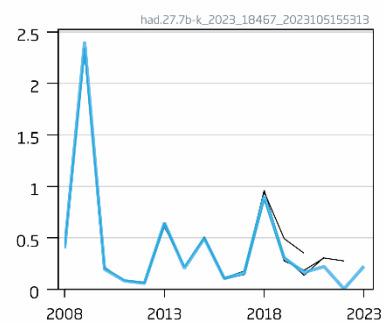


Figure 2^{§§} Haddock in divisions 7.b–k. Historical assessment results (final-year recruitment assumption and SSB estimate included). The assessment was benchmarked in 2020. The reference points were revised in 2020 following a benchmark; therefore, only the last four assessment years are shown.

Issues relevant for the advice

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 (865 tonnes) from Division 7.a accounts for 10% of ICES estimated division 7.b–k landings and 102% 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 7.b–k stock.

High recruitment was last seen in 2018, with an historic low observed in 2022. The assumed recruitment in 2023 and 2024 contributes 43% to the SSB in 2025, indicating that the forecast stock size is now more uncertain and highly dependent on individual year classes.

Mixed fisheries considerations

Haddock in divisions 7.b–k is caught as part of a mixed fishery with cod and whiting (ICES, 2022c).

^{§§} Version 2: SSB 2023 value corrected.

Reference points

Table 4 Haddock in divisions 7.b–k. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY B_{trigger}	12822	B_{pa} ; in tonnes	ICES (2020)
	F_{MSY}	0.353	Based on simulation using a segmented regression stock–recruitment relationship (EqSim)	ICES (2020)
Precautionary approach	B_{lim}	9227	Lowest observed SSB; in tonnes	ICES (2020)
	B_{pa}	12822	B_{lim} combined with the assessment error; $B_{\text{lim}} \times \exp(1.645 \times \sigma)$; $\sigma = 0.20$ (default setting); in tonnes	ICES (2020)
	F_{lim}	1.40	F with 50% probability of $\text{SSB} < B_{\text{lim}}$	ICES (2020)
	F_{pa}	0.708	F_{P05} ; the F that leads to $\text{SSB} \geq B_{\text{lim}}$ with 95% probability	ICES (2020)
Management Plan*	MAP MSY B_{trigger}	12822	MSY B_{pa} ; in tonnes	EU (2019) and ICES (2020)
	MAP B_{lim}	9227	Lowest observed SSB; in tonnes	EU (2019) and ICES (2020)
	MAP F_{MSY}	0.353	F_{MSY}	EU (2019) and ICES (2020)
	MAP range F_{lower}	0.221	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY	EU (2019) and ICES (2020)
	MAP range F_{upper}	0.521	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY	EU (2019) and ICES (2020)

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

Basis of the assessment

Table 5 Haddock in divisions 7.b–k. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2023a)
Assessment type	Age-based stochastic analytical assessment (SAM; 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 mortality (time invariant) (Lorenzen, 1996)
Discards and bycatch	Included in the assessment for the full time-series. Full observer-based estimates from 2005, partial observer-based estimates from 1993 to 2004.
Indicators	None
Other information	This stock was benchmarked in 2020 (ICES, 2020)
Working groups	Working Group for the Celtic Seas Ecoregion (WGCSE)

History of the advice, catch, and management

Table 6 Haddock in divisions 7.b–k. ICES advice and official landings. Weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Landings corresponding to advice	Agreed TAC	Official landings	ICES landings ^{##}	ICES discards ^{^^^}	ICES catch
1987	Not dealt with				3000 ^{^^}	2600 ^{^^}	n/a	2600 ^{^^}
1988	Not dealt with				4000 ^{^^}	3600 ^{^^}	n/a	3600 ^{^^}
1989	Not dealt with				4200 ^{^^}	3200 ^{^^}	n/a	3200 ^{^^}
1990	Not dealt with				2900 ^{^^}	2000 ^{^^}	n/a	2000 ^{^^}
1991	Not dealt with				2900 ^{^^}	2300 ^{^^}	n/a	2300 ^{^^}
1992	Not dealt with				2900 ^{^^}	2700 ^{^^}	n/a	2700 ^{^^}
1993	Not dealt with				3400 ^{^^}	3348	1208	4556
1994	Not dealt with				4076	4131	1886	6017
1995	Not dealt with			6000*	4468	4470	2218	6688
1996	Not dealt with			7000**	6653	6756	4309	11065
1997	Not dealt with			14000	10270	10827	2883	13710
1998	Not dealt with			20000	7360	7928	934	8862
1999	Not dealt with			22000***	5247	4970	586	5556
2000	No expansion of catches			16600***	6656	7499	2503	10002
2001	No expansion of catches			12000***	9702	9278	3418	12696
2002	No expansion of catches		8000	9300***	7089	6488	7073	13561
2003	No expansion of catches		7200	8185***	8241	8292	9456	17748
2004	No increase in F			9600***	8453	8777	6750	15527
2005	No increase in effort			11520***	6867	6839	9953	16792
2006	No increase in effort			11520***	5621	5592	5899	11491
2007	No increase in effort			11520***	6628	6961	3552	10513
2008	Same advice as last year			11579***	6234	7392	7660	15052
2009	Same advice as last year			11579^	9308	9664	7322	16986
2010	Same advice as last year			11579^	9999	10429	18701	29130
2011	See scenarios			13316^	13709	13957	15807	29764
2012	No increase in catch and technical measures to reduce discard rates			16645^	18221	19196	8285	27481
2013	MSY transition		< 9500	14148^	13098	13538	3962	17501
2014	MSY transition	< 5281	< 3602	9479^	9372	9846	5619	15464
2015	MSY approach	< 10434	< 5605	8342^	8229	8608	6941	15549
2016	MSY approach	≤ 8590	≤ 6078	7258^	7024	7648	12065	19713
2017	MSY approach	≤ 12444	≤ 7751	7751^	7374	8099	6691	14789

Year	ICES advice	Catch corresponding to advice	Landings corresponding to advice	Agreed TAC	Official landings	ICES landings ^{##}	ICES discards ^{^^^}	ICES catch
2018	MSY approach	≤ 8358	≤ 5911	6910 [^]	6595	7046	5798	12844
2019	MSY approach	≤ 6317		8329 [^]	6861	7656	3603	11259
2020	Management plan	16671 (range 11418–23262)		10859 [^]	7308	7859	4260	12119
2021	Management plan	18382 (range 12128–25454)		15000	8447 [#]	9260	2385	11645
2022	MSY approach	≤ 15946		15000	8025 [#]	8895	2773	11668
2023	MSY approach	≤ 11901		11901				
2024	MSY approach	≤ 8252						

* Applies to subareas 7–10.

** Increased in-year to 14 000 tonnes.

*** Includes separate Division 7.a allocation.

[^] Applies to divisions 7.b–k and subareas 8–10.

^{^^} Values presented to the nearest 100.

^{^^^} Discard estimates are available from 2005; prior to 2005, discard estimates are based on limited sampling.

[#] Preliminary.

^{##} Including landings from rectangles 33E2 and 33E3 since 2003.

History of the catch and landings

Table 7 Haddock in divisions 7.b–k. Catch distribution by fleet in 2022, as estimated by ICES.

Catch	Landings				Discards			
	Otter trawls	Beam trawls	Gillnets	Other	Otter trawls	Beam trawls	Gillnets	Other
11668 tonnes	68.0%	4.8%	4.2%	23.0%	56.4%	35.8%	1.0%	6.8%
	8895 tonnes				2773 tonnes			

Table 8 Haddock in divisions 7.b–k. History of commercial catch and landings and ICES estimates. Weights are in tonnes.

Year	Official landings						ICES estimates			
	Belgium	France	Ireland	UK	Others	Total	Landings from rectangles 33E2 and 33E3**	Landings	Discards ***	Catch
1993	51	1839	1262	256	0	3408		3348	1208	4556
1994	123	2788	908	240	17	4076		4131	1886	6017
1995	189	2964	966	266	83	4468		4470	2218	6688
1996	133	4527	1468	439	86	6653		6756	4309	11065
1997	246	6581	2789	569	85	10270		10827	2883	13710
1998	142	3674	2788	444	312	7360		7928	934	8862
1999	51	2725	2034	278	159	5247		4970	586	5556
2000	90	3088	3066	289	123	6656		7499	2503	10002
2001	165	4842	3608	422	665	9702		9278	3418	12696
2002	132	4348	2188	315	106	7089		6488	7073	13561
2003	118	5781	1867	393	82	8241	64	8292	9456	17748
2004	136	6130	1715	313	159	8453	53	8777	6750	15527
2005	167	4174	2037	292	197	6867	35	6839	9953	16792
2006	99	3191	1874	274	183	5621	26	5592	5899	11491
2007	119	4143	1931	385	50	6628	222	6961	3552	10513
2008	109	3638	1800	566	121	6234	194	7392	7660	15052
2009	131	5430	2983	716	48	9308	285	9664	7322	16986
2010	170	6240	2609	852	128	9999	267	10429	18701	29130
2011	211	8389	3323	1657	129	13709	374	13957	15807	29764
2012	232	11793	4129	1901	166	18221	473	19196	8285	27481
2013	174	8747	2699	1455	23	13098	410	13538	3962	17501
2014	99	6375	2092	785	21	9372	444	9846	5619	15464
2015	118	5679	1657	769	6	8229	322	8608	6941	15549
2016	88	4487	1730	692	27	7024	468	7648	12065	19713
2017	110	4885	1677	690	12	7374	715	8099	6691	14789
2018	89	4470	1444	583	9	6595	532	7046	5798	12844
2019	90	4526	1559	516	170	6861	764	7656	3603	11259
2020	107	3808	2628	543	222	7308	559	7859	4260	12119
2021*	155	4249	3379	515	149	8447	827	9260	2385	11645
2022*	190	3904	3110	587	234	8025	865	8895	2773	11668

* Preliminary official landings.

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

*** Prior to 2005, discard estimates are based on limited sampling.

Summary of the assessment

Table 9 Haddock in divisions 7.b–k. Assessment summary. High and Low refer to approximate 95% confidence intervals. Weights are in tonnes and recruitment in thousands.

Year	Recruitment (age 0)			SSB			Landings	Discards**	Fishing mortality ages 3–5		
	Low	Value	High	Low	Value	High			Low	Value	High
1993	64803	135139	281817	6152	9187	13718	3348	1208	0.39	0.57	0.84
1994	248039	408464	672646	7544	10860	15635	4131	1886	0.39	0.54	0.75
1995	285601	468616	768908	8165	11463	16093	4470	2218	0.39	0.53	0.72
1996	100903	164157	267063	15547	20989	28337	6756	4309	0.40	0.54	0.72
1997	35927	58453	95101	19251	25376	33451	10827	2883	0.48	0.61	0.79
1998	54188	88306	143904	15474	19834	25423	7928	934	0.50	0.64	0.81
1999	226401	367468	596432	10458	13082	16364	4970	586	0.48	0.61	0.76
2000	217640	351883	568928	9731	11825	14369	7499	2503	0.56	0.69	0.84
2001	294369	467324	741898	14213	18672	24530	9278	3418	0.60	0.73	0.90
2002	628446	978329	1523007	18526	23719	30370	6488	7073	0.60	0.73	0.89
2003	150363	224539	335306	22224	27793	34759	8292	9456	0.60	0.74	0.91
2004	232086	343755	509153	31383	39835	50564	8777	6750	0.59	0.74	0.93
2005	160571	238663	354735	23141	28406	34869	6839	9953	0.51	0.63	0.78
2006	126678	190031	285067	19805	23831	28675	5592	5899	0.39	0.50	0.65
2007	472360	700929	1040098	18818	22223	26244	6961	3552	0.37	0.47	0.60
2008	267311	395303	584578	17573	20853	24745	7392	7660	0.41	0.51	0.63
2009	1617034	2404545	3575580	26354	32517	40123	9664	7322	0.42	0.52	0.64
2010	126032	195875	304424	32868	39105	46525	10429	18701	0.42	0.52	0.64
2011	56331	82791	121679	77129	98934	126905	13957	15807	0.43	0.53	0.65
2012	39830	59948	90228	56675	71264	89607	19196	8285	0.43	0.54	0.66
2013	436255	645850	956144	36812	45832	57062	13538	3962	0.40	0.50	0.61
2014	135937	204782	308495	23938	29164	35530	9846	5619	0.38	0.47	0.58
2015	336612	496234	731551	33332	41119	50725	8608	6941	0.36	0.45	0.56
2016	71569	106100	157292	31517	38032	45895	7648	12065	0.37	0.46	0.57
2017	102716	158270	243872	36767	44283	53335	8099	6691	0.39	0.48	0.60
2018	600655	901919	1354284	29038	34674	41403	7046	5798	0.38	0.48	0.60
2019	201221	305863	464921	26227	30858	36306	7656	3603	0.36	0.45	0.57
2020	105608	165621	259737	45358	58388	75161	7859	4260	0.32	0.42	0.55
2021	128731	221242	380232	43748	56215	72234	9260	2385	0.33	0.45	0.60
2022	2062	4880	11549	35014	46369	61408	8895	2773	0.29	0.42	0.60
2023 ^{††}		224539*		30292	42660	59553					

* Median resampled (1993–2022), as estimated by stochastic projection.

** Discard estimates are available from 2005; prior to 2005, discard estimates are based on limited sampling.

^{††} Version 2: SSB values for 2023 corrected.

Sources and references

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