

Megrim (*Lepidorhombus whiffiagonis*) in divisions 7.b–k, 8.a–b, and 8.d (west and southwest of Ireland, Bay of Biscay)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, catches in 2024 should be no more than 23 303 tonnes.

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

The use of combined species TAC for the two megrim species, megrim (*Lepidorhombus whiffiagonis*) and four-spot megrim (*Lepidorhombus boscii*), prevents effective control of the single-species exploitation rates and could lead to the overexploitation of either species.

ICES advice on conservation aspects

ICES has not identified any conservation aspects.

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} .

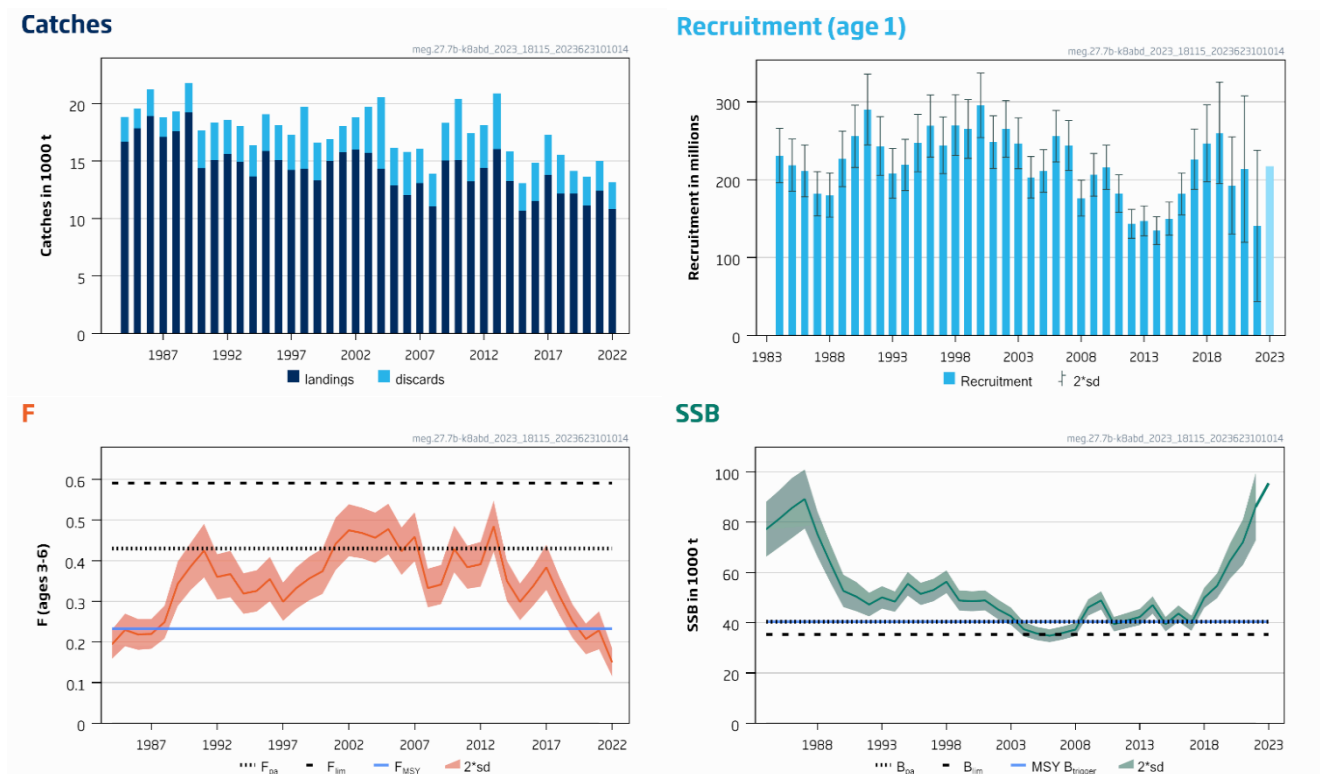


Figure 1 Megrim in divisions 7.b–k, 8.a–b, and 8.d. Summary of the stock assessment. The assumed recruitment value for 2023 is shaded in a lighter colour.

Conservation status

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

Catch scenarios

Table 1 Megrim in divisions 7.b–k, 8.a–b, and 8.d. Values in the forecast and for the interim year.

Variable	Value	Notes
$F_{\text{ages 3-6}}$ (2023)	0.195	Average F (2020–2022).
SSB (2024)	95693	Short-term forecast (STF); in tonnes.
$R_{\text{age 1}}$ (2023–2024)	217477	Geometric mean of recruitment (1984–2020); in thousands.
Catch (2023)	19873	STF; in tonnes.
Projected landings (2023)	16636	STF; average (2020–2022) landings ratio at age; in tonnes.
Projected discards (2023)	3237	STF; average (2020–2022) discards ratio at age; in tonnes.

Table 2 Megrim in divisions 7.b–k, 8.a–b, and 8.d. Annual catch scenarios. All weights are in tonnes. Note: The % change in TAC is not computed because the TAC is for the two megrim species combined.

Basis	Total catch (2024)	Projected landings* (2024)	Projected discards** (2024)	$F_{\text{ages 3-6}}$ Total (2024)	SSB (2025)	% SSB change***	% advice change^
ICES advice basis							
MSY approach: F_{MSY}	23303	19670	3633	0.23	89889	-6.1	-1.24
Other scenarios							
EU MAP^^ = F_{MSY}	23303	19670	3633	0.23	89889	-6.1	-1.24
$F = \text{MAP}^{\wedge\wedge} F_{\text{MSY lower}}$	14912	12606	2306	0.14	98649	3.1	-37
$F = \text{MAP}^{\wedge\wedge} F_{\text{MSY upper}}$	37722	31750	5972	0.41	74956	-22	60
$F = 0$	0	0	0	0.00	114313	19.5	-100
F_{pa}	39152	32943	6209	0.43	73485	-23	66
F_{lim}	49586	41616	7970	0.59	62817	-34	110
SSB (2025) = B_{lim}	72018	59997	12021	1.07	40444	-58	205
SSB (2025) = B_{pa}	77246	64204	13042	1.23	35398	-63	227
SSB (2025) = $\text{MSY } B_{\text{trigger}}$	72018	59997	12021	1.07	40444	-58	205
SSB (2025) = SSB (2024)	17739	14988	2751	0.169	95693	0	-25
$F = F_{2023}$	20166	17032	3134	0.195	93158	-2.6	-14.5

* Marketable landings, assuming recent discard rate.

** Including BMS landings (EU stocks), assuming recent discard rate.

*** SSB 2025 relative to SSB 2024 (95 693 tonnes).

^ Advice value for 2024 relative to advice value for 2023 (23 596 tonnes).

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

The advice is similar to last year because although the stock size is on an upward trend, the latest assessment has revised this development down. This has resulted in the stock size at the start of the TAC year being similar for this and the previous advice.

Basis of the advice

Table 3 Megrim in divisions 7.b–k, 8.a–b, and 8.d. 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

This stock was benchmarked in 2022 and this resulted in a different assessment model and data revisions. The perception of stock status, in relation to reference points, however, does not change in comparison to previous years' assessments.

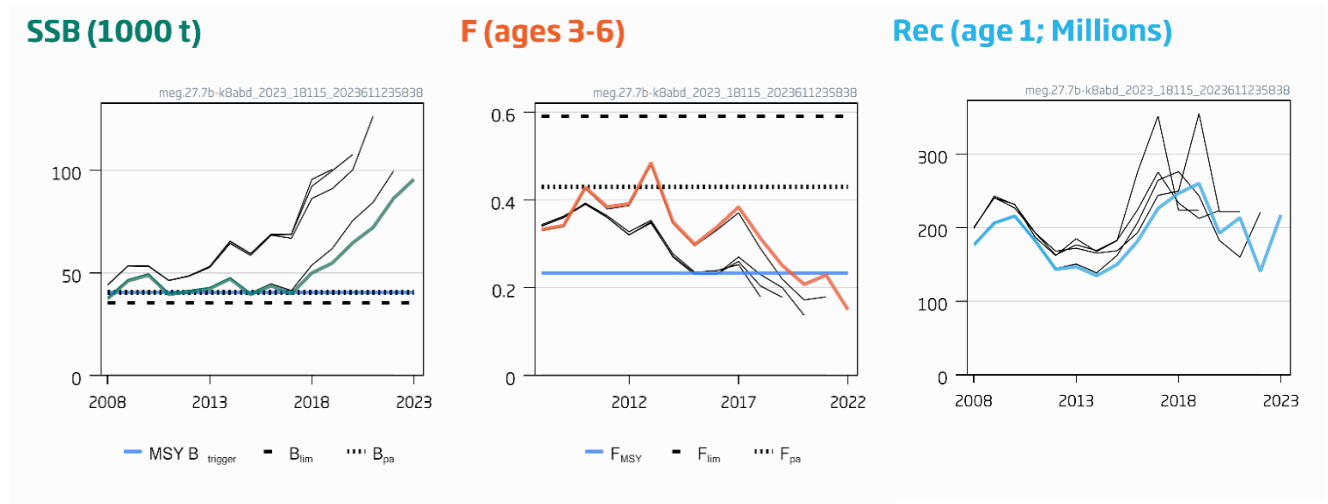


Figure 2 Megrim in divisions 7.b–k, 8.a–b, and 8.d. Historical assessment results (final-year recruitment assumptions included for each line). The reference points were revised in 2022 following a benchmark, and only the last assessment results should be compared to the reference points indicated.

The assessment downscales recent SSB estimates and upscales F.

Issues relevant for the advice

The two megrim species (*Lepidorhombus whiffiagonis* and *L. boscii*) are not separated in the landings statistics. The TACs are set separately for subarea 7 and divisions 8.a–b,d,e with each TAC covering catches of both species. Species specific landings are estimated by ICES. ICES considers that management of the catches of these two species under a combined TAC prevents effective control of single-species exploitation rates and could lead to overexploitation of either species.

Reference points

Table 4 Megrim in divisions 7.b–k, 8.a–b, and 8.d. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY Approach	MSY $B_{trigger}$	40444	B_{pa} , in tonnes.	ICES (2023a)
	F_{MSY}	0.233	F giving maximum yield at equilibrium. Median EqSim estimate for landings.	ICES (2023a)
EU Management plan (MAP); EU (2019)	MAP MSY $B_{trigger}$	40444	MSY $B_{trigger}$, in tonnes.	ICES (2023a)
	MAP F_{MSY}	0.233	F_{MSY}	ICES (2023a)
	MAP range F_{lower}	0.140	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY.	ICES (2023a)
	MAP range F_{upper}	0.414	Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY.	ICES (2023a)
Precautionary Approach	B_{lim}	35398	B_{loss} , which is the lowest biomass observed; in tonnes.	ICES (2023a)
	B_{pa}	40444	$B_{lim} \times \exp(1.645 \times \sigma)$, with $\sigma = 0.081$; in tonnes.	ICES (2023a)
	F_{lim}	0.591	The F that gives 50% probability of SSB being above B_{lim} .	ICES (2023a)
	F_{pa}	0.430	F_{P05} with Advice Rule (AR) (F that gives 5% probability of SSB below B_{lim}).	ICES (2023a)

Basis of the assessment

Table 5 Megrim in divisions 7.b–k, 8.a–b, and 8.d. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2023b).
Assessment type	A4a statistical catch at age (ICES, 2023c) using catches in the model and forecast.
Input data	Commercial catches (international landings, ages, and length frequencies from catch sampling). Three survey indices: Spanish Porcupine Bottom Trawl Survey [G5768], IE-IGFS [G7212] and EVHOE [G9527]; the latter two surveys are combined into a single index. Natural mortality, a fixed value of 0.2 is used for all age groups and all years, and histologically derived maturity ogives are described in ICES (2023a).
Discards and bycatch	Discards are included in the assessment.
Indicators	None.
Other information	Last benchmarked in 2022 (ICES, 2023a).
Working group	Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE).

History of the advice, catch, and management

Table 6 Megrim in divisions 7.b–k, 8.a–b, and 8.d. ICES advice and landings. All weights are in tonnes.

Year	ICES advice	Catch/landings corresponding to advice *	Agreed TAC**	ICES landings	Discards	ICES catch
1987	Not assessed	-	16460	17114	1705	18819
1988	Not assessed	-	18100	17577	1725	19302
1989	Not assessed	-	18100	19233	2582	21815
1990	Not assessed	-	18100	14370	3284	17654
1991	No advice	-	18100	15094	3282	18376
1992	No advice	-	18100	15600	2988	18588
1993	Within safe biological limits	-	21460	14929	3108	18037
1994	Within safe biological limits	-	20330	13684	2700	16384
1995	No particular concern	-	22590	15862	3206	19068
1996	No long-term gain in increased F	16600	21200	15109	3026	18135
1997	No advice	14300	25000	14230	3066	17296
1998	No increase in F	15200	25000	14345	5371	19716
1999	Reduce F below F_{pa}	14600	20000	13305	3297	16601
2000	Reduce F below F_{pa}	< 14200	20000	15031	1870	16750
2001	Reduce F below F_{pa}	< 14100	16800	15778	2262	18040
2002	Reduce F below F_{pa}	< 13000	14900	15987	2813	18800
2003	Reduce F below F_{pa}	< 16100	16000	15711	4008	19719
2004	Reduce F below F_{pa}	< 20200	20200	14358	6243	20602
2005	Reduce F below F_{pa}	< 22600	21500	12888	3275	16163
2006	Reduce F below F_{pa}	<13600	20425	12037	3751	15788
2007	Less than average landings 2003–2005	< 14200	20425	13060	3033	16092
2008	Less than average landings 2004–2006	< 13000	20425	11048	2860	13908
2009	Same advice as last year	< 13000	20425	15064	3278	18342
2010	No increase in effort	< 13000	20425	15101	5343	20444
2011	See scenarios	-	20106	13226	4187	17413
2012	Catch and effort reduction	-	19101	14433	3704	18137
2013	Decrease landings by 4% (20% increase, followed by 20% PA reduction)	< 12000	19101	16025	4885	20910
2014	Same advice as 2013	< 12000	19101	13277	2569	15846
2015	Increase landings by no more than 13%	< 15180	19101	11569	2393	13962
2016	Precautionary approach (increase recent advised landings by no more than 20%)	\leq 18216	20056	11548	3315	14863
2017	MSY approach (catch advice)	\leq 16021	15043	13784	3518	17303

Year	ICES advice	Catch/landings corresponding to advice *	Agreed TAC**	ICES landings	Discards	ICES catch
2018	MSY approach (catch advice)	≤ 15720	13528	12147	3415	15562
2019	MSY approach (catch advice)	≤ 18976	19836	12164	1966	14130
2020	Management plan	19982 (range 13218–28838) ***	20526	11141	2485	13626
2021	Management plan	19184 (range 12706–27748) ***	20181^	12418	2603	15020
2022	MSY approach	≤ 22964	23459	10821	2340	13161
2023	MSY approach	≤ 23596	23459			
2024	MSY approach	≤ 23303				

* Advice is for catches starting in 2017.

** Includes *L. boschii* and divisions 7.a and 8.e.

*** Catches corresponding to F, EU MAP range in brackets (EU, 2019).

^ EU (2021).

History of catch and landings

Table 7 Megrim in divisions 7.b–k, 8.a–b, and 8.d. Catch distribution by fleet in 2022 as estimated by ICES. All weights are in tonnes.

Catch	Landings		Discards
	97.3% trawl	2.7% other gears	
13161	10821		2340

Table 8 Megrim in divisions 7.b–k, 8.a–b, and 8.d. History of commercial catch and landings; ICES estimated values are presented by area for each country participating in the fishery. All weights are in tonnes.

Year	France	Spain	UK (England & Wales)	UK (Scotland)	Ireland	Northern Ireland	Belgium	Unallocated	ICES estimated landings	ICES estimated discards	ICES estimated catch
1984									16659	2169	18828
1985									17865	1732	19597
1986	4896	10242	2048		1563		178		18927	2321	21248
1987	5056	8772	1600		1561		125		17114	1705	18819
1988	5206	9247	1956		995		173		17577	1725	19302
1989	5452	9482	1451		2548		300		19233	2582	21815
1990	4336	7127	1380		1381		147		14370	3284	17654
1991	3709	7780	1617		1956		32		15094	3282	18376
1992	4104	7349	1982		2113		52		15600	2988	18588
1993	3640	6526	2131		2592		40		14929	3108	18037
1994	3214	5624	2309		2420		117		13684	3284	16968
1995	3945	6129	2658		2927		203		15862	2652	18514
1996	4146	5572	2493		2699		199		15109	3026	18135
1997	4333	5472	2875		1420		130		14230	3066	17296
1998	4232	4870	2492		2621		129		14345	5371	19716
1999	3751	4615	2193		2597		149		13305	3297	16601
2000	4173	6047	2185		2512		115		15031	1870	16901
2001	3645	7575	1710		2767		80		15778	2262	18040
2002	2929	8797	1787		2413		62		15987	2813	18800
2003	3227	8340	1732		2249		163		15711	4008	19719
2004	2817	7526	1622		2288		106		14358	6243	20602
2005	2972	5841	1764		2155		156		12888	3275	16163
2006	2763	5916	1509		1751		99		12037	3751	15788
2007	2745	6895	1462		1763		195		13060	3033	16092
2008	2578	5402	1387		1514		167		11048	2860	13908

Year	France	Spain	UK (England & Wales)	UK (Scotland)	Ireland	Northern Ireland	Belgium	Unallocated	ICES estimated landings	ICES estimated discards	ICES estimated catch
2009	3032	8062	1840		1918	2	209		15064	3278	18342
2010	3651	7095	1805		2283	5	261		15101	5343	20444
2011	3235	3500	1845		2227		330	2089	13226	4187	17413
2012	4012	4055	1744		3047		609	966	14433	3704	18137
2013	4549	4982	2918		3038		538		16025	4885	20910
2014	4311	3318	2753	176	2391		179	150	13277	2569	15846
2015	3073	2863	2804	147	2436		246	1	11569	2393*	13962
2016	3141	2672	2694	145	2593		302	1	11548	3315*	14863
2017	5101	3178	2512	176	2458		360		13784	3518*	17303
2018	4680	2276	2337	112	2128	6	347	261	12147	3415*	15562
2019	4332	2617	2150	129	2454	1	481		12164	1966*	14130
2020	4387	2420	1883	5	1797	1	649		11141	2485*	13626
2021	4380	2896	2199	144	2075	5	718		12417	2603*	15020
2022	3842	2813	1772	8	1506	1	879		10821	2340*	13161

*Updated including imported and raised discards (ICES, 2023a).

Summary of the assessment

Table 9 Megrim in divisions 7.b–k, 8.a–b, and 8.d. Assessment summary. ‘High’ and ‘Low’ refer to two standard deviations (sd) confidence intervals.

Year	Recruitment (age 1)			Spawning-stock biomass			Landings	Discards	Fishing pressure (ages 3–6)		
	Low	R	High	Low	SSB	High			Low	F	High
	thousands			tonnes			tonnes				
1984	196110	231065	266020	66223	77182	88141	16659	2169	0.158	0.194	0.23
1985	185185	218856	252526	69944	81298	92651	17865	1732	0.189	0.23	0.27
1986	178101	211301	244501	73688	85654	97620	18927	2321	0.180	0.22	0.26
1987	153368	181817	210266	77500	89266	101032	17114	1705	0.183	0.22	0.26
1988	151933	180340	208747	66146	75190	84234	17577	1725	0.21	0.25	0.29
1989	191073	226734	262396	55892	63649	71405	19233	2582	0.29	0.34	0.40
1990	215897	255886	295875	46245	52697	59150	14370	3284	0.33	0.39	0.44
1991	244845	290394	335942	44565	50412	56259	15094	3282	0.36	0.42	0.49
1992	205569	243321	281074	42529	47244	51960	15600	2988	0.30	0.36	0.42
1993	176359	208311	240263	45603	50094	54585	14929	3108	0.31	0.37	0.42
1994	185946	218960	251974	44325	48395	52466	13684	2700	0.27	0.32	0.37
1995	210224	247165	284107	50772	55502	60232	15862	3206	0.27	0.33	0.38
1996	229309	269201	309093	47029	51476	55923	15109	3026	0.30	0.35	0.41
1997	207866	244209	280553	48566	53051	57536	14230	3066	0.25	0.3	0.35
1998	231185	270216	309247	51769	56327	60886	14345	5371	0.28	0.33	0.38
1999	227343	265291	303240	44821	48860	52899	13305	3297	0.30	0.36	0.41
2000	254112	295696	337281	44595	48576	52557	15031	1870	0.32	0.37	0.43
2001	214530	248355	282180	44894	48895	52897	15778	2262	0.38	0.44	0.51
2002	229068	265348	301628	41397	45322	49247	15987	2813	0.41	0.47	0.54
2003	213957	246727	279496	39139	42614	46089	15711	4008	0.41	0.47	0.53
2004	176510	203134	229759	34571	37421	40272	14358	6243	0.39	0.46	0.52
2005	183739	211247	238754	33077	35743	38410	12888	3275	0.42	0.48	0.54
2006	222765	255921	289077	32247	34832	37418	12037	3751	0.36	0.42	0.48
2007	211975	243909	275843	33269	35905	38541	13060	3033	0.40	0.46	0.52
2008	153231	176309	199386	34672	37278	39884	11048	2860	0.29	0.33	0.38
2009	178840	206289	233738	42827	46101	49376	15064	3278	0.29	0.34	0.39
2010	187376	215944	244511	45231	48885	52539	15101	5343	0.37	0.43	0.49
2011	158096	182268	206441	36544	39442	42339	13226	4187	0.33	0.38	0.44
2012	124829	143396	161963	37823	40873	43923	14433	3704	0.34	0.39	0.45
2013	127745	147056	166367	39039	42291	45542	16025	4885	0.42	0.48	0.55
2014	116767	134691	152615	43597	47062	50527	13277	2569	0.30	0.35	0.40

Year	Recruitment (age 1)			Spawning-stock biomass			Landings	Discards	Fishing pressure (ages 3–6)		
	Low	R	High	Low	SSB	High			Low	F	High
	thousands			tonnes			tonnes				
2015	128768	150045	171323	36552	39433	42313	10682	2393	0.25	0.30	0.34
2016	154675	181659	208642	40405	43676	46947	11548	3315	0.29	0.34	0.39
2017	187517	226286	265055	36783	39810	42837	13784	3518	0.33	0.38	0.44
2018	197450	246878	296305	45899	49919	53939	12147	3415	0.26	0.31	0.36
2019	195069	260207	325345	49779	54744	59709	12164	1966	0.21	0.25	0.29
2020	130187	192651	255116	57552	64562	71572	11141	2485	0.170	0.21	0.25
2021	119556	213694	307832	62967	72086	81205	12418	2603	0.182	0.23	0.28
2022	43466	140647	237828	72764	86224	99683	10821	2340	0.115	0.150	0.184
2023		217477*			95559						

* Geometric mean (1984–2020).

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