ICES Advice on fishing opportunities, catch, and effort
Celtic Seas and Greater North Sea ecoregions
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Sea bass (*Dicentrarchus labrax*) in divisions 4.b–c, 7.a, and 7.d–h (central and southern North Sea, Irish Sea, English Channel, Bristol Channel, and Celtic Sea)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, total removals[†] in 2023 should be no more than 2542 tonnes.

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

Stock development over time

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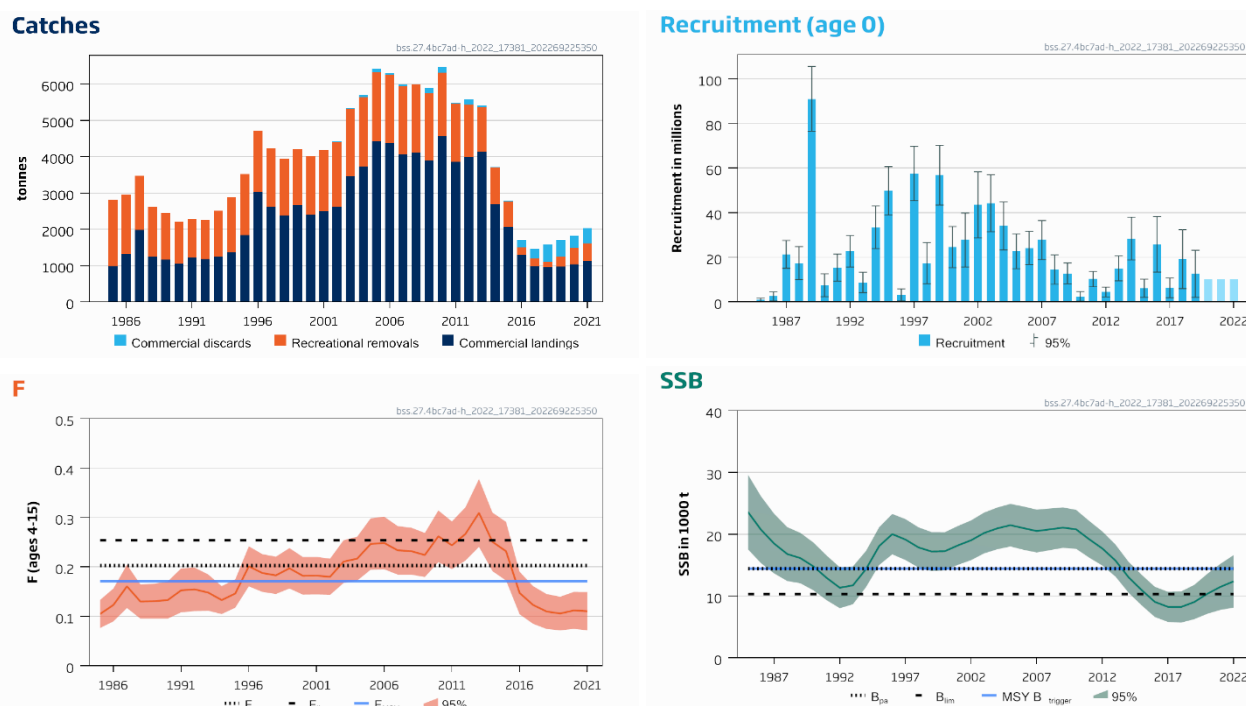

Figure 1   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. Summary of the stock assessment. Recreational removals are model estimates based on a survey in 2012 and implemented management measures. Discard estimates are available since 2002. Fishing mortality (F) is shown for the combined commercial and recreational fisheries. The assumed recruitment values for 2020–2022 are shaded in a lighter colour.

[†]Total removals include both commercial and recreational catches, taking mortality of released fish into account (estimated at approximately 5%).

Catch scenarios

Table 1   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. Assumptions made for the interim year and in the forecast.

Variable	Value	Notes
$F_{ages\ 4-15}$ (2022)	0.113	Total F, F_{sq} = $F_{average\ (2019-2021)}$ (0.081) for commercial fishery, plus F_{rec} = 0.031*, assuming full compliance of recreational fisheries in 2022
SSB (2023)	12899	Short-term forecast; in tonnes
$R_{age\ 0}$ (2020–2023)	10105	Geometric mean (2010–2019); in thousands
Total removals (2022)	1870	Short-term forecast fishing at F = 0.113; in tonnes
Total landings (2022)	1211**	Short-term forecast; in tonnes
Discards (2022)	148**	Short-term forecast; in tonnes
Recreational removals (2022)	511	Short-term forecast assuming an F = 0.031; in tonnes

* Recreational F as estimated in 2012 (0.068, reduced [by 54%]) to account for management measures since 2012.
** The split of total commercial F into commercial landings and commercial discards in the interim year is estimated by the model.

Table 2   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. Annual catch scenarios for 2023. All weights are in tonnes.

Basis	Total removals* (2023)	F_{total} (2023)	SSB (2024)	% SSB change**	% advice change ***
ICES advice basis					
MSY approach: F = F_{MSY} × SSB_{2023}/MSY $B_{trigger}$	2542	0.153	12631	−2.1	14.7
Other scenarios					
EU MAP^: F_{MSY} × SSB_{2023}/MSY $B_{trigger}$	2542	0.153	12631	−2.1	14.7
EU MAP^: $F_{MSY\ upper}$ × SSB_{2023}/MSY $B_{trigger}$	2542	0.153	12631	−2.1	14.7
EU MAP^: $F_{MSY\ lower}$ × SSB_{2023}/MSY $B_{trigger}$	2133	0.127	12964	0.50	−3.7
F = F_{MSY}	2821	0.171	12405	−3.8	27
F = 0	0	0	14716	14.1	−100
F_{pa}	3294	0.20	12021	−6.8	49
F_{lim}	4096	0.25	11430	−11.4	85
SSB_{2024} = B_{lim}	5422	0.36	10313	-20	145
SSB_{2024} = B_{pa}	336	0.0190	14439	11.9	−85
SSB_{2024} = MSY $B_{trigger}$	336	0.0190	14439	11.9	−85
F = F_{2022}	1906	0.113	13149	1.94	−14.0
SSB_{2024} = SSB_{2023}	2213	0.132	12899	0.00	−0.135

* Includes commercial catch and recreational removals (taking mortality of released fish into account, estimated at approximately 5%).
** SSB 2024 relative to SSB 2023.
*** Advice value for 2023 relative to the MSY value for 2022 (2216 tonnes).
^ MAP multiannual plan (EU, 2019).

The increase in advice for 2023 is due to an increase in stock size, with the larger spawning-stock biomass also allowing a higher target fishing mortality.

Basis of the advice

Table 3   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. 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 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

Limited sampling of the discards and recreational removals, leads to uncertainty in catch data and increases the uncertainty in the assessment. The discard values are estimated from sampling programmes and more recently from a combination of sampling programmes and logbooks, where sampling is variable across fleets and years. Estimates of discards are available only from the early 2000s, but do not cover all fisheries, are imprecise, and are only included for some fleets in the assessment. For the forecast, the discard ratio assumed is the estimate provided by the assessment model. However, this assumed rate is much lower that the recently observed discards.

The estimate of 1440 tonnes of recreational removals (including post-release mortality, estimated 5%) in 2012 is based on multiple surveys covering a range of years. As in previous years, the mortality rate from recreational removals for 1985−2014 (excluding 2012) was assumed to be the same as estimated for 2012. In the assessment, the mortality rate from recreational removals for 2015–2021 was derived by scaling down the F from 2012 to account for the management measures in these years, assuming full compliance.

Fishery sampling rates have been variable over time for all countries. Additional information on recreational removals from all countries is needed in order to improve these estimates and the stock assessment model.

Stock identity is still under investigation.
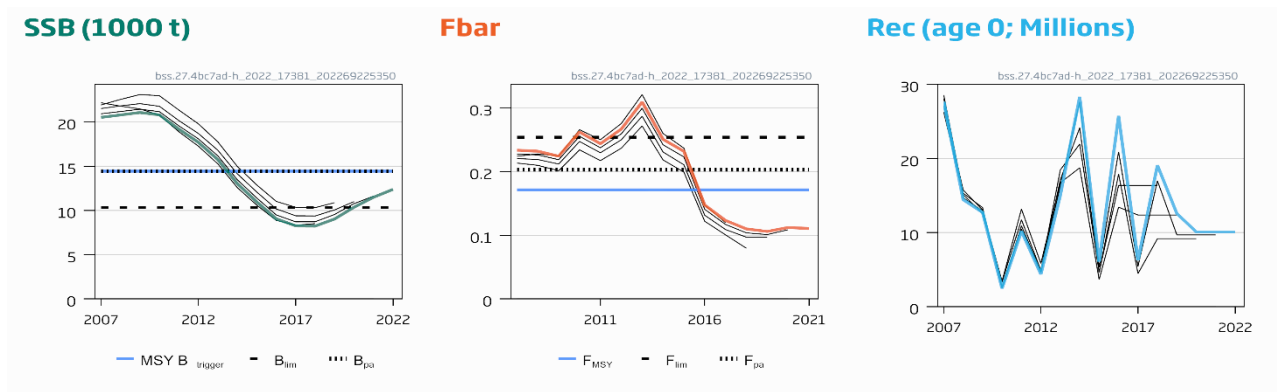
Figure 2   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. Historical assessment results (final-year SSB estimates and final three years of recruitment assumptions are included).

Issues relevant to the advice

Following the prohibition of the directed sea bass fishery in 2015, discarding has increased. Sea bass is still being caught as bycatch.

ICES notes that under the ICES MSY approach scenario, the SSB in 2024 is expected decrease slightly, remaining below MSY $B_{trigger}$.

ICES does not provide any split in the catch scenarios table this year as the recreational fishing pressure cannot be allocated in the absence of known management measures in 2023 (e.g. bag limit) and the limited data on recreational removals.

Reference points

Table 4   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	14439	B_{pa}; in tonnes	ICES (2019)
	F_{MSY}	0.1713	Stochastic simulations (EqSim)	ICES (2019)
Precautionary approach	B_{lim}	10313	B_{loss} (lowest value in the time-series, SSB in 2018 as estimated by the WGCSE 2019 assessment); in tonnes	ICES (2019)
	B_{pa}	14439	$B_{lim} \times 1.4$; in tonnes	ICES (2019)
	F_{lim}	0.254	Stochastic simulations (EqSim)	ICES (2019)
	F_{pa}	0.203	F_{P05}; the F that leads to SSB ≥ B_{lim} with 95% probability	ICES (2019, 2021)
Management plan*	MAP MSY $B_{trigger}$	14439	MSY $B_{trigger}$; in tonnes	EU (2019)
	MAP B_{lim}	10313	B_{lim}; in tonnes	EU (2019)
	MAP F_{MSY}	0.1713	F_{MSY}	EU (2019)
	MAP range F_{lower}	0.142	Consistent with ranges provided by ICES (2019), resulting in no more than 5% reduction in long-term yield compared with MSY	ICES (2019) and EU (2019)
	MAP range F_{upper}	0.1713	Consistent with ranges provided by ICES (2019), resulting in no more than 5% reduction in long-term yield compared with MSY	ICES (2019) and EU (2019)

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

Basis of the assessment

Table 5   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2022b)
Assessment type	Age- and length-based analytical assessment (Stock Synthesis 3; NOAA Toolbox)
Input data	Commercial landings (international landings, ages and length frequencies from catch sampling); commercial discards (UK bottom otter trawl and nets and combined French fleet, length frequencies from catch sampling); one recruit survey (UK Solent autumn survey [G9863], 1986 to present, excluding 2010 and 2012); one bottom trawl survey (Channel Groundfish Survey [G3425], 1988–2014); one commercial tuning fleet (2001 to present); growth and maturity data from sampling of commercial catches and surveys; natural mortality (inferred from life-history parameters and maximum observed ages)
Discards and bycatch	Discards included in the model and forecast for some of the fleets
Recreational	Used in the model and in the forecast
Indicators	None
Other information	Benchmarked in 2018 (ICES, 2018)
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE)

History of the advice, catch, and management

Table 6   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. History of ICES advice, and ICES estimates of landings, discards, and official landings. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice*	Official commercial landings	ICES commercial landings	ICES commercial discards^	ICES recreational removals
2000	-	-	2100	2407		
2001	-	-	2200	2500		
2002	No increase in effort or F	-	2400	2622	17	
2003	No increase in effort or F	-	2900	3459	16	
2004	No increase in effort or F	-	3000	3731	59	
2005	-	-	3200	4430	96	
2006	-	-	3396	4377	53	
2007	-	-	3521	4064	50	
2008	-	-	3027	4107	8	
2009	-	-	4288	3889	151	
2010	-	-	4952	4562	148	
2011	-	-	4183	3858	22	
2012	No increase in catch	-	3982	3987	157	1440
2013	20% reduction in catches (average of the last three years)	< 6000**	4243	4137	53	
2014	36% reduction in commercial landings (20% reduction, followed by 20% precautionary reduction)	< 2707**	2816	2682	25	
2015	MSY approach	< 115***	2081	2066	40	
2016	MSY approach	≤ 541***	1300	1295	199	
2017	Precautionary approach	0	1027	984	271	
2018	MSY approach	≤ 880^^^	931	948	482	
2019	MSY approach	≤ 1806^^^	970	972	464	
2020	Management plan	1634–1946^^^	1150^^	1042	325	
2021	Management plan	2000 (range 1680–2000) ^^^	1275^^	1126	412	
2022	MSY approach	≤ 2216^^^				
2023	MSY approach	≤ 2542^^^				

* Advice prior to 2014 was provided for sea bass in the Northeast Atlantic.

** Commercial landings.

*** Total landings (commercial and recreational landings).

^ Incomplete for some fleets 2002-2008.

^^ Preliminary.

^^^ Includes commercial catch and recreational removals (taking mortality of released fish into account, estimated at approximately 5%).

History of the catch and landings

Table 7   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. Catch distribution by fleet in 2021 as estimated by ICES.

Total catch	Commercial landings						Commercial discards	Recreational removals
2027 tonnes	Lines 46%	Bottom trawlers 21%	Other gears 2.9%	Fixed/drift nets 24%	Danish seine 5.4%	Pelagic trawlers < 1%	412 tonnes	489 tonnes
	1126 tonnes							

Table 8   Sea bass in divisions 4.b–c, 7.a, and 7.d–h. History of commercial landings by country and ICES estimates of landings. All weights are in tonnes.

Year	Belgium	Denmark	Germany	France	UK	Netherlands	Channel Is.	Total	Total ICES
1985	0	0	0	620	105	0	18	743	994
1986	0	0	0	841	124	0	15	980	1319
1987	0	0	0	1226	123	0	14	1363	1980
1988	0	18	0	714	173	8	12	925	1239
1989	0	2	0	675	192	2	48	919	1161
1990	0	0	0	609	189	0	25	824	1063
1991	0	0	0	726	239	0	16	982	1227
1992	0	0	0	721	148	0	36	906	1186
1993	0	1	0	718	230	0	45	994	1255
1994	0	1	0	593	535	0	49	1178	1371
1995	0	1	0	801	708	0	69	1579	1835
1996	0	1	0	1703	563	8	56	2331	3022
1997	0	1	0	1429	561	1	74	2066	2620
1998	0	2	0	1363	488	48	79	1980	2390
1999	0	1	0	na	685	32	108	826	2670
2000	0	5	0	1522	407	60	130	2124	2407
2001	0	2	0	1619	458	77	80	2236	2500
2002	0	1	0	1580	627	96	73	2377	2622
2003	154	1	0	1903	586	163	84	2891	3459
2004	159	1	0	1883	617	191	159	3010	3731
2005	206	1	0	1937	512	327	220	3203	4430
2006	211	2	0	2116	736	308	23	3396	4377
2007	178	1	0	2075	873	376	18	3521	4064
2008	187	0	0	1506	934	380	20	3027	4107
2009	174	0	0	2904	801	395	15	4288	3889
2010	216	4	0	3441	879	399	14	4952	4562
2011	152	2	0	2688	928	395	17	4183	3858
2012	154	3	0	2492	946	376	12	3982	3987
2013	146	4	2	2868	841	370	12	4243	4137
2014	148	1	1	1322	1080	253	11	2816	2682
2015	40	0	0	1113	701	218	9	2081	2066
2016	23	0	1	545	551	156	24	1300	1295
2017	22	0	0	423	438	132	12	1027	984
2018	18	0	0	297	432	172	11	931	948
2019	19	0	0	309	411	209	22	970	972
2020*	24	0	0	387	521	218	0	1150	1042
2021*	45	0	0	385	613	231	1	1275	1126

* Preliminary official landings.

Summary of the assessment

Table 9 Sea bass in divisions 4.b–c, 7.a, and 7.d–h. Assessment summary. Weights are in tonnes and recruitment in thousands. 'High' and 'Low' refer to 95% confidence intervals.

Year	Recruitment age 0			SSB			Total $F_{ages\ 4-15}$			F_{bar} commercial catch	F_{bar} recreational removals	Commercial landings	Commercial discards*	Recreational removals**
	Low	Value	High	Low	Value	High	Low	Value	High					
1985	74	855	1635	17572	23629	29686	0.076	0.105	0.133	0.037	0.068	994		1820
1986	442	2490	4538	15315	20735	26155	0.09	0.123	0.157	0.056	0.068	1318		1638
1987	15045	21289	27534	13658	18496	23333	0.117	0.161	0.20	0.093	0.068	1979		1493
1988	9976	17384	24793	12431	16800	21168	0.095	0.130	0.165	0.062	0.068	1239		1384
1989	76439	90994	105549	12061	16146	20231	0.096	0.131	0.166	0.063	0.067	1161		1279
1990	2289	7431	12574	10912	14789	18665	0.095	0.133	0.17	0.066	0.068	1064		1150
1991	9230	15313	21397	9323	12945	16566	0.108	0.153	0.197	0.085	0.068	1226		1056
1992	15613	22686	29758	8027	11350	14673	0.111	0.155	0.199	0.087	0.068	1186		1080
1993	4094	8674	13254	8663	11735	14807	0.111	0.148	0.185	0.08	0.068	1256		1258
1994	23880	33431	42982	11432	14377	17322	0.105	0.133	0.161	0.066	0.067	1370		1508
1995	38898	49741	60583	15017	18087	21156	0.118	0.146	0.175	0.079	0.067	1835		1689
1996	455	3124	5793	16747	20021	23296	0.161	0.20	0.24	0.133	0.068	3022		1696
1997	45330	57526	69722	15828	19147	22467	0.150	0.188	0.23	0.120	0.068	2620		1605
1998	8068	17317	26565	14607	17868	21128	0.145	0.183	0.22	0.115	0.068	2390		1548
1999	43395	56771	70148	14047	17205	20362	0.156	0.197	0.24	0.129	0.068	2670		1548
2000	15298	24547	33797	14165	17255	20346	0.144	0.182	0.22	0.114	0.068	2407		1601
2001	15645	27708	39770	15049	18200	21351	0.145	0.182	0.22	0.114	0.068	2500		1685
2002	28707	43508	58309	15800	19024	22247	0.143	0.18	0.22	0.112	0.068	2622	17	1782
2003	31439	44224	57010	16902	20213	23524	0.168	0.21	0.25	0.143	0.068	3459	16	1863
2004	23245	34018	44791	17568	20953	24337	0.172	0.22	0.26	0.149	0.068	3731	59	1908
2005	14857	22668	30479	18014	21470	24925	0.194	0.25	0.30	0.178	0.068	4430	96	1905
2006	16681	24147	31614	17485	20993	24501	0.195	0.25	0.30	0.180	0.068	4377	53	1874
2007	18925	27697	36469	17050	20524	23998	0.185	0.23	0.28	0.165	0.068	4064	50	1871
2008	7871	14458	21046	17419	20797	24175	0.184	0.23	0.28	0.164	0.068	4107	8	1878
2009	8033	12729	17424	17793	21070	24347	0.180	0.22	0.27	0.156	0.068	3889	151.2	1852
2010	339	2456	4572	17643	20805	23967	0.21	0.26	0.31	0.194	0.068	4562	147.9	1751
2011	6762	10188	13613	16213	19192	22171	0.196	0.24	0.29	0.176	0.068	3858	22	1605

Year	Recruitment age 0			SSB			Total $F_{ages\ 4-15}$			F_{bar} commercial catch	F_{bar} recreational removals	Commercial landings	Commercial discards*	Recreational removals**
	Low	Value	High	Low	Value	High	Low	Value	High					
2012	2163	4378	6593	14932	17702	20471	0.21	0.27	0.32	0.199	0.068	3987	156.6	1440
2013	9443	15034	20624	13144	15749	18355	0.24	0.31	0.38	0.24	0.068	4137	53.4	1222
2014	18802	28374	37947	10524	13040	15557	0.191	0.25	0.31	0.184	0.067	2682	24.7	1008
2015	2030	6095	10161	8483	10967	13451	0.172	0.23	0.29	0.177	0.055	2066	39.5	689
2016	13317	25790	38263	6603	9058	11514	0.104	0.147	0.191	0.128	0.019	1295	198.6	209
2017	1860	6281	10702	5810	8254	10699	0.085	0.123	0.161	0.104	0.0189	984	271.102	206
2018	5906	19116	32326	5706	8231	10756	0.074	0.11	0.145	0.097	0.0131	948	482.4	150
2019	2009	12589	23169	6251	9033	11816	0.072	0.106	0.140	0.085	0.021	972	463.9	274
2020		10105^		7130	10369	13609	0.075	0.112	0.150	0.081	0.032^	1042	325	453
2021		10105^		7754	11491	15227	0.072	0.111	0.149	0.079	0.032	1126	411.8	489
2022		10105^		8128	12384	16640								

* Incomplete for some fleets 2002–2008.
** All values were derived from the 2012 survey estimate (1440 tonnes).
^ Geometric mean recruitment (2010–2019).

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Download the stock assessment data and figures.

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