

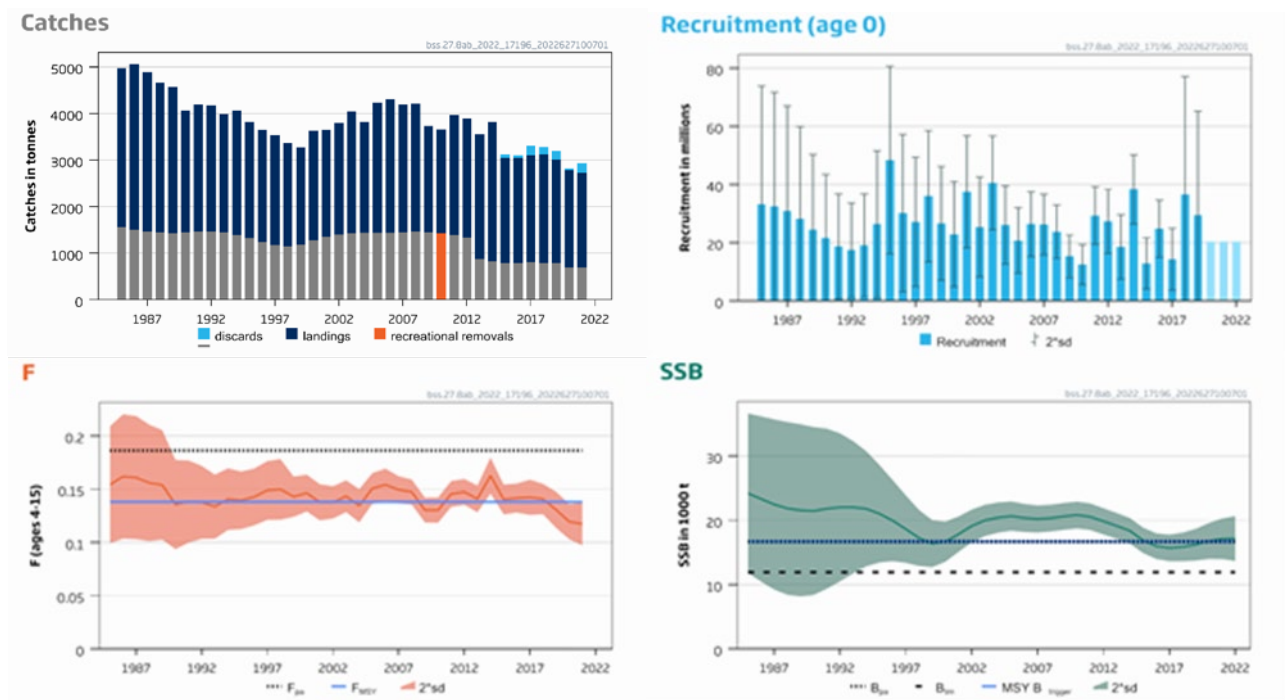
## Sea bass (*Dicentrarchus labrax*) in divisions 8.a–b (northern and central Bay of Biscay)

### ICES advice on fishing opportunities

ICES advises that when the EU multiannual plan (MAP) for Western Waters and adjacent waters is applied, total removals<sup>†</sup> in 2023 that correspond to the F ranges in the plan are between 2897 tonnes and 3398 tonnes.

### Stock development over time

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



**Figure 1<sup>‡</sup>** Sea bass in divisions 8.a–b. Summary of the stock assessment. Commercial landings, discards, and recreational removals (observed only in 2010, and estimated for the remaining time-series). The assumed recruitment values for 2020–2022 are shaded in a lighter colour.

### Catch scenarios

**Table 1** Sea bass in divisions 8.a–b. Values for the forecast and the interim year.

Variable	Value	Notes
$F_{ages\ 4-15}$ (2022)	0.117	Total F: average $F_{2019-2021}$ scaled to $F_{2021}$ (0.088) for the commercial fishery plus $F_{rec} = 0.029$ for the recreational fishery (bag limit of 2 fish/day).
SSB (2023)	16348	Short-term forecast (STF); in tonnes.
$R_{age\ 0}$ (2020–2022)	20321	Geometric mean of recruitment (GM, 2008–2017); in thousands.
Total catch (2022)	2731	STF; in tonnes.
Projected commercial landings (2022)	2023	STF; in tonnes.
Commercial discard rate (2022)	5.45%	Average discard rate, 5.45% (2015–2021) relative to commercial landings; in tonnes.
Projected recreational removals (2022)	708	STF; in tonnes.

<sup>†</sup> Total removals include both commercial and recreational catches, taking mortality of released fish into account (estimated at 5.45%).

<sup>‡</sup> Version 2: previous version was missing Figure 1.

**Table 2** Sea bass in divisions 8.a–b. Annual catch scenarios. All weights are in tonnes.

Basis	Total removals (2023) #	F <sub>ages 4–15</sub> Total (2023)	SSB (2024)	% SSB change ##	% advice change ^^
ICES advice basis					
EU MAP <sup>^</sup> : $F_{MSY} \times SSB_{2023} / MSY B_{trigger}$	3398	0.135	16568	1.35	7.7
$F = MAP^{\wedge} F_{MSY\ lower} \times SSB_{2023} / MSY B_{trigger}$	2897	0.114	16920	3.5	7.6
Other scenarios					
MSY approach : $F_{MSY}$	3464	0.138	16521	1.06	9.8
$F = 0$	0	0	18976	16.1	–100
$F = F_{pa}$	4570	0.186	15747	–3.7	45
$SSB_{2024} = B_{lim}$	10155	0.47	11920	–27	222
$SSB_{2024} = B_{pa}$	3226	0.128	16688	2.1	2.2
$SSB_{2024} = MSY B_{trigger}$	3226	0.128	16688	2.1	2.2
$SSB_{2024} = SSB_{2023}$	3711	0.149	16348	0	17.6
$F = F_{2021} = F_{sq}$	2971	0.117	16868	3.2	–5.9

<sup>#</sup> Includes commercial landings, recreational removals, and commercial discards computed assuming an average ratio of 5.45%.

<sup>##</sup> SSB 2024 relative to SSB 2023 (16348 tonnes).

<sup>^</sup> EU multiannual plan (MAP) (EU, 2019).

<sup>^^</sup> Advice values for 2023 are relative to the corresponding 2022 values (MAP advice of  $F_{MSY}$  3156 and  $F_{MSY\ lower}$  2692, respectively; all other values are relative to  $F_{MSY}$ ).

### Basis of the advice

**Table 3** Sea bass in divisions 8.a–b. The basis of the advice.

Advice basis	Management plan approach
Management plan	The EU multiannual plan (MAP) for stocks in the Western Waters and adjacent waters applies to this stock. The plan specifies conditions for setting fishing opportunities depending on stock status and making use of the $F_{MSY}$ range for the stock.
	Under the MAP, catches higher than those corresponding to $F_{MSY}$ can only be taken providing SSB is greater than $MSY B_{trigger}$ , and one of the following conditions is met:
	<ul style="list-style-type: none"> <li>a) if it is necessary for the achievement of objectives of mixed fisheries;</li> <li>b) if it is necessary to avoid serious harm to a stock caused by intra- or interspecies stock dynamics;</li> <li>c) to limit variations in fishing opportunities between consecutive years to not more than 20%.</li> </ul>
	ICES considers that the $F_{MSY}$ range for this stock used in the MAP is precautionary.
	Full details of the plan are described in Regulation 2019/472 (EU, 2019).

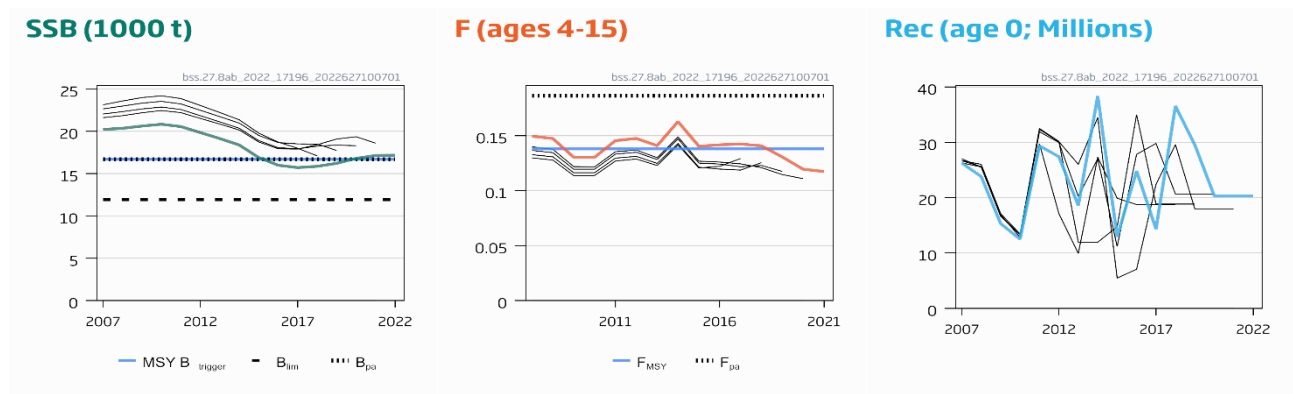
### Quality of the assessment

The assessment tends to overestimate stock size and underestimate fishing pressure. This change is particularly large this year. If this pattern continues, this may result in an inflated advised catch.

Recreational removals are based on one year of data only; this affects the quality of the assessment.

The quality of the assessment may improve when recruitment information from scientific surveys becomes available. Pilot surveys have been conducted by France in the Bay of Biscay (Baie de Douarnenez, Loire, and Gironde estuaries) since 2016.

Stock identity remains poorly understood, and tagging and genetics studies are ongoing.



**Figure 2** Sea bass in divisions 8.a–b. Historical assessment results (three final-year recruitment assumption included for each line).

### Issues relevant for the advice

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 8.a–b. Reference points.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY B <sub>trigger</sub>	16688	B <sub>pa</sub> ; in tonnes.	ICES (2018a)
	F <sub>MSY</sub>	0.138	The F that maximizes median long-term yield in stochastic simulations under constant F exploitation; constrained by the requirement that F <sub>MSY</sub> ≤ F <sub>pa</sub> .	ICES (2018a, 2021)
Precautionary approach	B <sub>lim</sub>	11920	B <sub>pa</sub> /exp (1.645 × σ), σ = 0.2045; in tonnes.	ICES (2018a)
	B <sub>pa</sub>	16688	Lowest observed SSB; in tonnes.	ICES (2018a)
	F <sub>lim</sub>	Undefined	F <sub>lim</sub> (0.172) is no longer considered appropriate given the estimate of F <sub>pa</sub> .	ICES (2021)
	F <sub>pa</sub>	0.186	F <sub>p05</sub> with advice rule (AR): the F that provides a 95% probability for SSB to be above B <sub>lim</sub> .	ICES (2021)
Management plan	MAP MSY B <sub>trigger</sub>	16688	MSY B <sub>trigger</sub>	EU (2019)
	MAP B <sub>lim</sub>	11920	B <sub>lim</sub>	EU (2019)
	MAP F <sub>MSY</sub>	0.138	F <sub>MSY</sub>	EU (2019), ICES (2021)
	MAP range F <sub>lower</sub>	0.117	Consistent with ranges provided by ICES (2018b), resulting in no more than 5% reduction in long-term yield compared with MSY.	ICES (2018a), EU (2019)
	MAP range F <sub>upper</sub>	0.151	Consistent with ranges provided by ICES (2018b), resulting in no more than 5% reduction in long-term yield compared with MSY.	ICES (2018a, 2021), EU (2019)

## Basis of the assessment

**Table 5** Sea bass in divisions 8.a–b. The basis of the assessment.

ICES stock data category	1 (ICES, 2022a).
Assessment type	Age- and length-based analytical assessment (Stock Synthesis) that uses landings and recreational removals in the assessment and forecast (ICES, 2022b).
Input data	Commercial landings since 1985, age-at-length and length frequencies from catch sampling; growth and maturity data from sampling of commercial catches and surveys; natural mortality (0.24); recreational removals and length composition for 2010 estimated from a recreational fishery survey; French commercial LPUE series inferred from logbook data.
Discards and bycatch	Discards are considered negligible and are not included in the stock assessment.
Indicators	None.
Other information	Last benchmarked in 2018 (ICES, 2018a, 2018b).
Working group report	Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE).

## History of the advice, catch, and management

**Table 6** Sea bass in divisions 8.a–b. History of ICES advice, the agreed TAC, and ICES estimates of commercial landings, commercial discards, and recreational removals. All weights are in tonnes.

Year	ICES advice *	Catch corresponding to advice*	Agreed TAC	Official commercial landings	ICES commercial landings	ICES commercial discards	ICES recreational removals^^
2000	-	-	none	2147	2362		
2001	-	-	none	2091	2306		
2002	No increase in effort or F	-	none	2113	2392		
2003	No increase in effort or F	-	none	2931	2616		
2004	No increase in effort or F	-	none	2657	2380		
2005	-	-	none	3258	2796		
2006	-	-	none	3487	2875		
2007	-	-	none	3060	2751		
2008	-	-	none	1653	2745		
2009	-	-	none	2534	2278		
2010	-	-	none	2489	2229		1430
2011	-	-	none	2848	2575		
2012	No increase in catch	-	none	2535	2549		
2013	20% reduction in catches (last three-years' average)	< 6000*	none	2660	2685		
2014	20% reduction in catches (last three-years' average)	< 1890^	none	3015	2991		
2015	Same advice as last year	< 1890^	none	2287	2264	68	
2016	Precautionary approach	< 2634^	none	2206	2252	65	
2017	Precautionary approach	< 2634^	none	2211	2295	196	
2018	Precautionary approach	≤ 2440^	none	2288	2338	155	
2019	MSY approach (commercial + recreational)	≤ 2495	none	2213	2227	183	
2020	Management plan**	2533 (range 2417–3075)#	none	2056	2090	41	
2021	Management plan**	3108 (range 2966–3770)#	none	1997	2032	196	
2022	Management plan**	3156 (range 2692–3422)#	none				
2023	Management plan**	3398 (range 2897–3398)#	none				

\* ICES advice before 2014 was for European sea bass in the Northeast Atlantic. Since 2014, the advice is for sea bass in divisions 8.a–b.

\*\* Catches corresponding to  $F_{MSY}$ , EU MAP range in brackets (MAP; EU, 2019).

^ Catch advice for commercial catch only.

^^ Recreational removals were only observed in 2010. Estimates derived from the 2010 data for the time-series are shown in Table 9.

# Catches corresponding to  $F_{MSY}$ , EU MAP range in brackets.

## History of catch and landings

**Table 7** Sea bass in divisions 8.a–b. Catch distribution by fleet, landings, discards, and estimated recreational removals in 2021 as estimated by ICES. All weights are in tonnes.

Total catch	Commercial landings							Commercial discards	Recreational removals*
2924	35.1% nets	36.2% lines	20.4% bottom trawl	2.8% pelagic trawl	0.2% others	3.6% Danish seine	1.7% purse-seine	196	696
	2032								

\* Recreational removals are estimates derived from the 2010 observed data.

**Table 8** Sea bass in divisions 8.a–b. History of the official commercial landings presented for each country participating in the fishery. History of the total ICES estimated commercial landings. All weights are in tonnes.

Year	Belgium	France	Netherlands	Spain	UK (England, Wales, N. Ireland, and Scotland)	Total official landings	Total ICES estimated landings
1985	0	2477	0	0	0	2477	3420
1986	0	2606	0	0	0	2606	3549
1987	0	2474	0	0	5	2479	3417
1988	0	2274	0	0	15	2289	3217
1989	0	2201	0	0	0	2201	3144
1990	0	1678	0	0	0	1678	2621
1991	0	1774	0	17	0	1791	2734
1992	0	1752	0	14	0	1766	2709
1993	0	1595	0	14	0	1609	2552
1994	0	1708	0	17	0	1725	2668
1995	0	1549	0	0	0	1549	2492
1996	0	1459	0	0	0	1459	2402
1997	0	1415	0	0	0	1415	2358
1998	0	1261	0	27	0	1288	2231
1999	0	NA	0	11	0	11	2091
2000	0	2080	0	67	0	2147	2362
2001	0	2020	3	68	0	2091	2306
2002	0	1937	0	176	0	2113	2392
2003	0	2812	0	119	0	2931	2616
2004	0	2561	0	96	0	2657	2380
2005	0	3184	0	74	0	3258	2796
2006	0	3318	0	167	2	3487	2875
2007	1	2984	0	74	1	3060	2751
2008	0	1508	0	145	0	1653	2745
2009	1	2339	0	194	0	2534	2278
2010	0	2322	0	165	2	2489	2229
2011	1	2536	0	311	0	2848	2575
2012	1	2325	0	204	5	2535	2549
2013	0	2504	0	156	0	2660	2685
2014	0	2926	0	89	0	3015	2991
2015	0	2216	0	71	0	2287	2264
2016	0	2121	0	85	0	2206	2252
2017	0	2146	0	65	0	2211	2295
2018	0	2204	0	84	0	2288	2316
2019	0	2116	0	97	0	2213	2227
2020*	0	2032	0	24	0	2056	2090
2021*	0	1956	0	41	0	1997	2032

\*Preliminary.

## Summary of the assessment

**Table 9** Sea bass in divisions 8.a–b. Assessment summary. ‘High’ and ‘Low’ refer to two standard deviations (sd) confidence intervals. All weights are in tonnes; recruitment in thousands.

Year	Recruitment			Biomass			Fishing pressure			Catch		
	R <sub>age 0</sub>	High	Low	SSB	High	Low	F <sub>ages 4–15</sub>	High	Low	Comm landings	Comm. discards	Recreational removals*
1985	33176	73889	0	24220	36654	11785	0.154	0.21	0.099	3420		1556
1986	32493	71747	0	23344	36215	10473	0.162	0.22	0.104	3549		1504
1987	30840	67025	0	22477	35730	9224	0.161	0.22	0.103	3417		1464
1988	28189	59910	0	21862	35317	8407	0.156	0.21	0.101	3217		1441
1989	24395	50351	0	21565	34977	8154	0.154	0.21	0.103	3144		1433
1990	21612	43484	0	21461	34542	8380	0.136	0.178	0.094	2621		1444
1991	18744	36758	730	21821	34289	9354	0.139	0.177	0.1	2734		1460
1992	17454	33682	1226	22029	33552	10505	0.138	0.172	0.103	2709		1458
1993	19070	36759	1381	22037	32352	11721	0.134	0.164	0.104	2552		1440
1994	26357	51598	1116	21803	30767	12840	0.141	0.17	0.112	2668		1394
1995	48425	80675	16175	21027	28616	13437	0.14	0.167	0.113	2492		1326
1996	30209	57226	3193	19956	26283	13629	0.143	0.17	0.116	2402		1246
1997	27205	49431	4979	18632	23883	13380	0.149	0.177	0.121	2358		1174
1998	35996	58548	13444	17255	21630	12881	0.15	0.178	0.121	2231		1142
1999	26672	46236	7108	16383	20053	12713	0.143	0.162	0.124	2091		1182
2000	22947	41053	4841	16684	19816	13551	0.146	0.164	0.129	2362		1269
2001	37524	56790	18258	17857	20621	15093	0.138	0.155	0.121	2306		1348
2002	25452	42635	8268	19130	21691	16570	0.138	0.153	0.123	2392		1401
2003	40608	56721	24495	19990	22439	17541	0.143	0.158	0.128	2616		1429
2004	26103	39510	12696	20432	22797	18067	0.135	0.15	0.119	2380		1436
2005	20778	32004	9551	20666	22952	18380	0.151	0.165	0.136	2796		1436
2006	26387	37527	15248	20370	22566	18174	0.154	0.169	0.139	2875		1437
2007	26254	36707	15802	20214	22332	18096	0.15	0.162	0.137	2751		1449
2008	23824	33015	14632	20351	22449	18253	0.147	0.159	0.136	2745		1459
2009	15326	22714	7939	20616	22718	18514	0.13	0.142	0.119	2278		1452
2010	12496	19348	5643	20832	22929	18735	0.13	0.142	0.118	2229		1430
2011	29365	39239	19490	20555	22635	18475	0.146	0.158	0.133	2575		1392
2012	27397	38427	16366	19845	21900	17791	0.148	0.16	0.135	2549		1340
2013	18585	29648	7522	19140	21162	17118	0.141	0.154	0.128	2685		875
2014	38341	50234	26448	18377	20378	16377	0.163	0.18	0.146	2991		823
2015	12920	21689	4151	16894	18884	14904	0.14	0.155	0.126	2264	68	787
2016	24813	34642	14984	15984	17986	13982	0.142	0.155	0.128	2252	65	791
2017	14323	24962	3683	15708	17788	13629	0.142	0.159	0.126	2295	196	813
2018	36555	77157	0	15859	18097	13621	0.141	0.155	0.126	2338	155	789
2019	29521	65218	0	16212	18690	13734	0.131	0.148	0.114	2227	183	785
2020	20321**			16794	19601	13986	0.120	0.136	0.103	2090	41	694
2021	20321**			17135	20296	13974	0.117	0.138	0.097	2032	196	696
2022	20321**			17174	20679	13669						

\* Recreational removals are estimates derived from the 2010 observed data.

\*\* Geometric mean 2008–2017.

## Sources and references

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