

5.3.43 Sea bass (*Dicentrarchus labrax*) in Divisions IVb and c, VIIa, and VIId–h (Central and South North Sea, Irish Sea, English Channel, Bristol Channel, Celtic Sea)

ICES stock advice

ICES advises that when the MSY approach is applied, total landings (commercial and recreational) in 2016 should be no more than 541 tonnes. ICES cannot quantify the corresponding catches.

ICES advises that a management plan is urgently needed to develop and implement measures to substantially reduce fishing mortality throughout the range of the stock.

Stock development over time

Strong year classes in 1989 and some subsequent years caused a rapid increase in spawning-stock biomass (SSB). The fishing mortality (F) shows an increasing trend and is well above the F_{MSY} proxy. Recruitment has been very poor since 2008. SSB has been declining since 2010 and is now below $MSY B_{trigger}$.

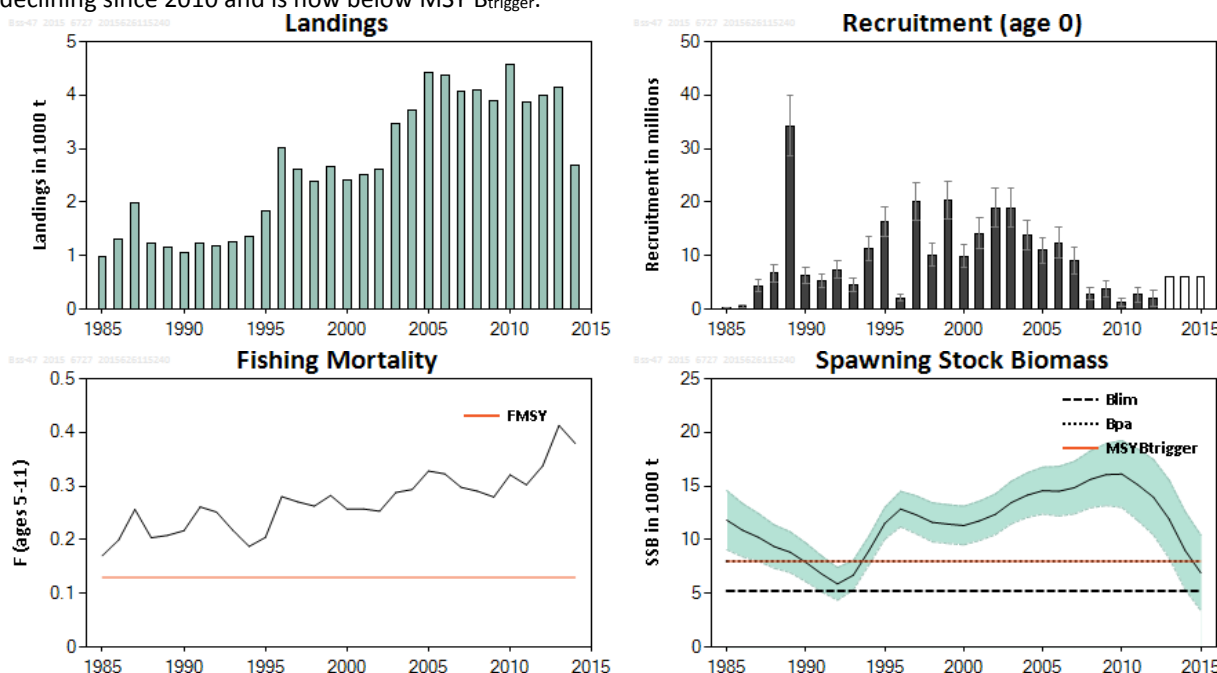


Figure 5.3.43.1 Sea bass in Divisions IVb and c, VIIa, and VIId–h. Summary of stock assessment (weights in thousand tonnes). Landings are from the commercial fishery only. Fishing mortality is shown for the combined commercial and recreational fisheries. Predicted recruitment values are non-shaded.

Stock and exploitation status

Table 5.3.43.1 Sea bass in Divisions IVb and c, VIIa, and VIId–h. State of the stock and fishery, relative to reference points.

		Fishing pressure			Stock size		
		2012	2013	2014	2013	2014	2015
Maximum Sustainable Yield	F_{MSY}	✘	✘	✘	✓	✓	✘
Precautionary approach	F_{pa} F_{lim}	?	?	?	✓	✓	○
Management plan	F_{MGT}	-	-	-	-	-	-
				Above			Below trigger
				Undefined			Increased risk
				Not applicable			Not applicable

Catch options

Table 5.3.43.2 Sea bass in Divisions IVb and c, VIIa, and VIId–h. The basis for the catch options.

Variable	Value	Source	Notes
F ages 5–11 (2015)	0.38	ICES (2015a)	F (2014). Commercial fishery F = 0.28; recreational fishery F = 0.10.
SSB (2016)	5278 t	ICES (2015a)	
R _{age0} (2013, 2014, and 2015)	6.12 millions	ICES (2015a)	Geometric mean 1985–2012
Total catch (2015)	unknown		
Total landings (2015)	2698 t	ICES (2015a)	Commercial + recreational
Discards (2015)	unknown		

Table 5.3.43.3 Sea bass in Divisions IVb and c, VIIa, and VIId–h. The catch options. Weights in tonnes. The option of TAC changes are not presented, since there is no TAC for sea bass.

Rationale	Total landings (2016)*	Basis	F total	SSB (2017)	%SSB change**
MSY approach	541	$F_{MSY} \times SSB_{2016} / MSY B_{trigger}$	0.09	5581	+6%
Zero catch	0	F = 0	0	6058	+15%
Other options	804	$F_{MSY} = 0.13$	0.13	5351	+1%
	2093	F_{2014}	0.38	4232	-20%
	1733	$0.8 \times F_{2015}$	0.30	4543	-14%
	1346	$0.6 \times F_{2015}$	0.23	4879	-8%
	929	$0.4 \times F_{2015}$	0.15	5242	-1%
	482	$0.2 \times F_{2015}$	0.08	5634	+7%

* Commercial and recreational landings.

** SSB in 2017 relative to SSB in 2016.

Basis of the advice

Table 5.3.43.4 Sea bass in Divisions IVb and c, VIIa, and VIId–h. The basis of the advice.

Advice basis	MSY approach.
Management plan	There is no management plan for sea bass in this area.

Quality of the assessment

There are uncertainties in the assessment due to inaccuracies in historical landings, a lack of a time-series of recreational catches, variable fishery sampling rates over time including the absence of length or age compositions for French fleets prior to 2000, and availability of survey data only for the eastern Channel. However the very weak recruitment from 2008 to 2012 is confirmed by the surveys, reduced catches of young fish by the UK and French fisheries, and by the low discard rates in recent years. All the input data to the assessment and additional information (catch per unit effort in the French fishery) shows a declining trend of biomass.

Stock identity remains poorly understood and tagging studies are ongoing. Survival rates of sea bass discarded from commercial vessels or released by anglers are poorly known.

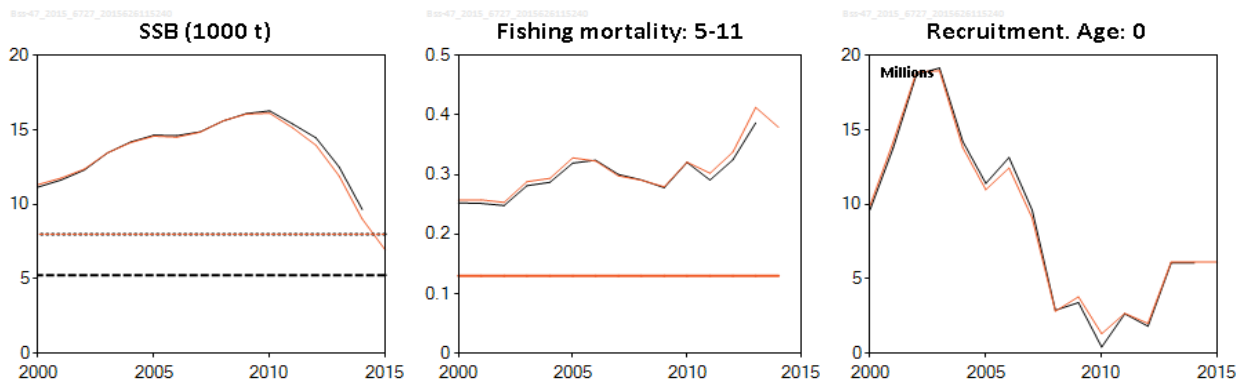


Figure 5.3.43.2 Sea bass in Divisions IVb and c, VIIa, and VIId–h. Historical assessment results (includes assumed long-term average recruitment for 2013 onwards in both assessments).

Issues relevant for the advice

The ICES advice is for the total landings (commercial and recreational fisheries). ICES has no basis for advising on the allocation of the advised landings to commercial and recreational fisheries.

The emergency measures in 2015 reduced pelagic trawling. The fishing mortality in 2015 is therefore assumed to be similar to the 2014 value (when a large reduction in pelagic trawling occurred due to bad weather).

ICES advises that a management plan for sea bass is needed. The stock is likely to decline further in the short term due to recent low recruitment. A reduction in fishing mortality is needed to prevent biomass falling to a level where productivity is impaired, and to move fisheries towards F_{MSY} .

Reference points

Table 5.3.43.5 Sea bass in Divisions IVb and c, VIIa, and VIId–h. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	8000 t	B_{pa}	ICES (2015a)
	F_{MSY}	0.13	Proxy based on $F_{35\% SPR}$.	ICES (2014)
Precautionary approach	B_{lim}	5250 t	Lowest observed spawning-stock biomass.	ICES (2014)
	B_{pa}	8000 t	$B_{lim} \times \exp(1.645 \times \sigma)$; $\sigma=0.254$	ICES (2015a)
	F_{lim}	Not defined.		
	F_{pa}	Not defined.		
Management plan	SSB_{MGT}	Not defined.		
	F_{MGT}	Not defined.		

Basis of the assessment

Table 5.3.43.6 Sea bass in Divisions IVb and c, VIIa, and VIId–h. The basis of the assessment.

ICES stock data category	1 (ICES, 2015b).
Assessment type	Age- and length-based analytical assessment (Stock Synthesis 3; NOAA Toolbox) that uses landings in the model and in the forecast.
Input data	Commercial landings (international landings, ages and length frequencies from catch sampling); one recruit survey (UK Solent autumn survey); one bottom trawl survey (Channel Groundfish Survey); growth and maturity data from sampling of commercial catches and surveys; natural mortality (inferred from life history parameters and maximum observed ages; recreational fishing mortality estimated for 2012 inferred from recreational fishery surveys (since 2009).
Discards and bycatch	Discarding is known to take place but cannot be fully quantified (in the order of 5% in weight).
Indicators	Catch per unit effort in the French fishery.
Other information	This stock was benchmarked in 2012 and 2014 (ICES, 2012, 2014).
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE).

Information from stakeholders

There is no available information.

History of advice, catch, and management

Table 5.3.43.7 Sea bass in Divisions IVb and c, VIIa, and VIId–h. History of ICES advice, the agreed TAC, and the official and ICES estimates of commercial landings. Weights in thousand tonnes.

Year	ICES advice	Predicted catch corresp. to advice*	Agreed TAC	Official commercial landings	ICES commercial landings
2000	-	-	none	2.1	2.4
2001	-	-	none	2.2	2.5
2002	No increase in effort or F	-	none	2.4	2.6
2003	No increase in effort or F	-	none	2.9	3.4
2004	No increase in effort or F	-	none	3.0	3.7
2005	-	-	none	3.2	4.4
2006	-	-	none	3.4	4.5
2007	-	-	none	3.5	4.2
2008	-	-	none	3.0	4.2
2009	-	-	none	4.3	4.0
2010	-	-	none	4.9	4.8
2011	-	-	none	3.9	3.9
2012	No increase in catch	-	none	3.9	4.1
2013	20% reduction in catches (last 3 years' average)	< 6.0**	none	4.1	4.1
2014	36% reduction in commercial landings (20% reduction, followed by 20% precautionary reduction)	< 2.707**	none	2.8	2.7
2015	MSY approach	< 1.155***	none		
2016	MSY approach	≤ 0.541***			

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

** Commercial landings.

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

History of catch and landings

Table 5.3.43.8 Sea bass in Divisions IVb and c, VIIa, and VIII-d-h. Catch distribution by fleet in 2014 as estimated by ICES.

Total catch (2014)	Commercial landings UK and France					Commercial landings other countries	Commercial discards	Recreational catch (partially reported)
unknown	9% pelagic pair trawlers	25% bottom trawlers	30% fixed/drift nets	19% lines	3% other gears	13% all gears	unknown (in the order of 5% in weight)	Known to be substantial but cannot be fully quantified (surveys indicate total annual removals by France, UK (England), Netherlands, and Belgium to the order of 1500 tonnes in 2012)
	2682 tonnes							

Table 5.3.43.9 Sea bass in Divisions IVb and c, VIIa, and VIII-d-h. History of commercial landings; both the official and ICES estimated values are presented for each country participating in the fishery (in tonnes). Source: Official landings statistics 1950–2013 and provisional data for 2014, ICES, Copenhagen.

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	0	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	3458
2004	159	1	0	1883	617	191	159	3010	3731
2005	206	1	0	1937	512	327	220	3203	4430
2006	211	2	0	2033	574	308	162	3290	4377
2007	178	1	0	1975	713	376	142	3385	4064
2008	188	0	0	1420	791	380	123	2902	4107
2009	173	0	0	2732	697	395	91	4088	3889
2010	215	4	0	3294	736	399	120	4768	4563
2011	152	2	0	2566	793	395	90	3998	3858
2012	154	3	0	2399	892	376	55	3879	3987
2013	145	5	2	2786	803	370	37	4148	4136
2014**	146	1	0	1309	1038	253	37	2784	2682

* Landings since 2000 are ICES estimates.

** Preliminary.

Table 5.3.43.10 Sea bass in Divisions IVb and c, VIIa, and VIId–h. History of recreational catch and landings estimates provided to ICES by area for each country which has conducted surveys of the fishery. RSE = relative standard error.

Country	Year	Area	Weight / Number	Kept	RSE	Released	RSE	Total	RSE	Release rate
France	2009–2011 ^{*,**}	Northeast Atlantic	Weight	2343 t	-	830 t		3173 t	26%	26%
		ICES Subareas IV & VII	Weight	940 t		332 t		1272 t	>26%	26%
	2011–2012	Northeast Atlantic	Weight	3146 t	-	776 t		3922t	-	20%
Netherlands	March 2010–Feb 2011	North Sea	Number	234000	38%	131000	27%	366000	30%	64%
		North Sea	Weight ^{***}	138 t	37%					
	March 2012–Feb 2013	North Sea	Number	335000	26%	332000	21%	667000	17%	50%
		North Sea	Weight ^{***}	229 t	26%					
UK (England)	2012 [^]	ICES Subareas IV & VII	Weight	230–440 t		150–250 t		380–690 t	26–38%	36–39%
Belgium	2013	North Sea	Weight	60 t	-	-	-	-	-	-

* ~ 80% by weight in 2009/11 was recreational sea angling.

** RSE was 26% for Subareas VII and VIII combined; Subarea VII represented 40% of the total.

*** 93% by weight in 2010/11 is recreational sea angling; 2012/13 estimates are sea angling only.

[^] Survey covered only recreational sea angling

Summary of the assessment

Table 5.3.43.11 Sea bass in Divisions IVb and c, VIIa, and VIId–h. Assessment summary.

Year	Recruitment Age 0	High	Low	SSB	High	Low	Commercial landings	Recreational landings**	Mean F Ages 5–11
	thousands			tonnes					
1985	156	242	70	11833	14587	9078	994	1238	0.17
1986	559	803	314	10891	13371	8410	1320	1114	0.20
1987	4389	5502	3277	10233	12451	8015	1980	1057	0.26
1988	6745	8342	5148	9369	11384	7354	1239	1051	0.20
1989	34257	39855	28660	8854	10755	6953	1161	990	0.21
1990	6351	7843	4858	7906	9703	6108	1064	840	0.22
1991	5259	6540	3978	6831	8500	5161	1226	677	0.26
1992	7379	8981	5777	5894	7414	4374	1185	600	0.25
1993	4543	5692	3394	6699	8073	5325	1256	698	0.22
1994	11319	13499	9139	9010	10348	7673	1371	1143	0.19
1995	16345	19196	13494	11537	13012	10062	1835	1510	0.20
1996	2124	2806	1442	12864	14513	11214	3024	1503	0.28
1997	20131	23702	16560	12318	14091	10545	2621	1372	0.27
1998	10177	12401	7952	11628	13447	9809	2390	1258	0.26
1999	20285	23762	16808	11463	13268	9658	2669	1224	0.28
2000	9926	12052	7799	11332	13130	9534	2407	1305	0.26
2001	14193	16982	11403	11770	13607	9933	2501	1329	0.26
2002	18886	22524	15248	12376	14270	10481	2622	1416	0.25
2003	18972	22627	15317	13465	15445	11484	3459	1530	0.29
2004	13826	16703	10949	14151	16225	12076	3730	1630	0.29
2005	10986	13454	8518	14580	16765	12394	4430	1649	0.33
2006	12448	15357	9539	14518	16820	12216	4377	1613	0.32
2007	9095	11570	6621	14854	17301	12407	4064	1681	0.30
2008	2830	3979	1681	15622	18271	12974	4107	1805	0.29
2009	3792	5291	2293	16069	18954	13185	3889	1861	0.28
2010	1314	2025	604	16124	19242	13005	4563	1789	0.32
2011	2684	4168	1200	15137	18471	11802	3857	1670	0.30
2012	2006	3527	485	13971	17490	10453	3987	1511	0.34
2013	6119*			11912	15547	8277	4136	1210	0.41
2014	6119*			9012	12642	5382	2683	908	0.38
2015	6119*			6925	10437	3414			
Average	9333	11765	7590	11585	13856	9315	2671	1306	0.27

* Long-term geometric mean.

** Annual recreational landings consistent with recreational F(5–1) of 0.10, estimated by assessment model.

Sources and references

ICES. 2012. Report of the Inter-Benchmark Protocol on New Species (Turbot and Sea Bass; IBPNew 2012), 1–5 October 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:45. 239 pp.

ICES. 2014. Report of the Inter-Benchmark Protocol for Sea Bass in the Irish Sea, Celtic Sea, English Channel, and Southern North Sea (IBP–Bass). By correspondence. ICES CM 2014/ ACOM:46.

ICES. 2015a. Report of the Working Group for the Celtic Seas Ecoregion (WGCE), 12–21 May 2015, ICES Headquarters, Copenhagen, Denmark. ICES CM 2015/ACOM:12.

ICES. 2015b. Advice basis. *In* Report of the ICES Advisory Committee, 2015. ICES Advice 2015, Book 1. In preparation.