

5.3.61 White anglerfish (*Lophius piscatorius*) in Divisions VIIb–k and VIIIa,b,d (Southern Celtic Seas, Bay of Biscay)

ICES stock advice

ICES advises that when the precautionary approach is applied, landings in 2016 should be no more than 26 691 tonnes. ICES cannot quantify the resulting catches.

Management of the two anglerfish species under a combined TAC prevents effective control of the single-species exploitation rates and could lead to the overexploitation of either species.

Stock development over time

The biomass index shows a variable, but overall increasing trend over time. Recent recruitment is around average.

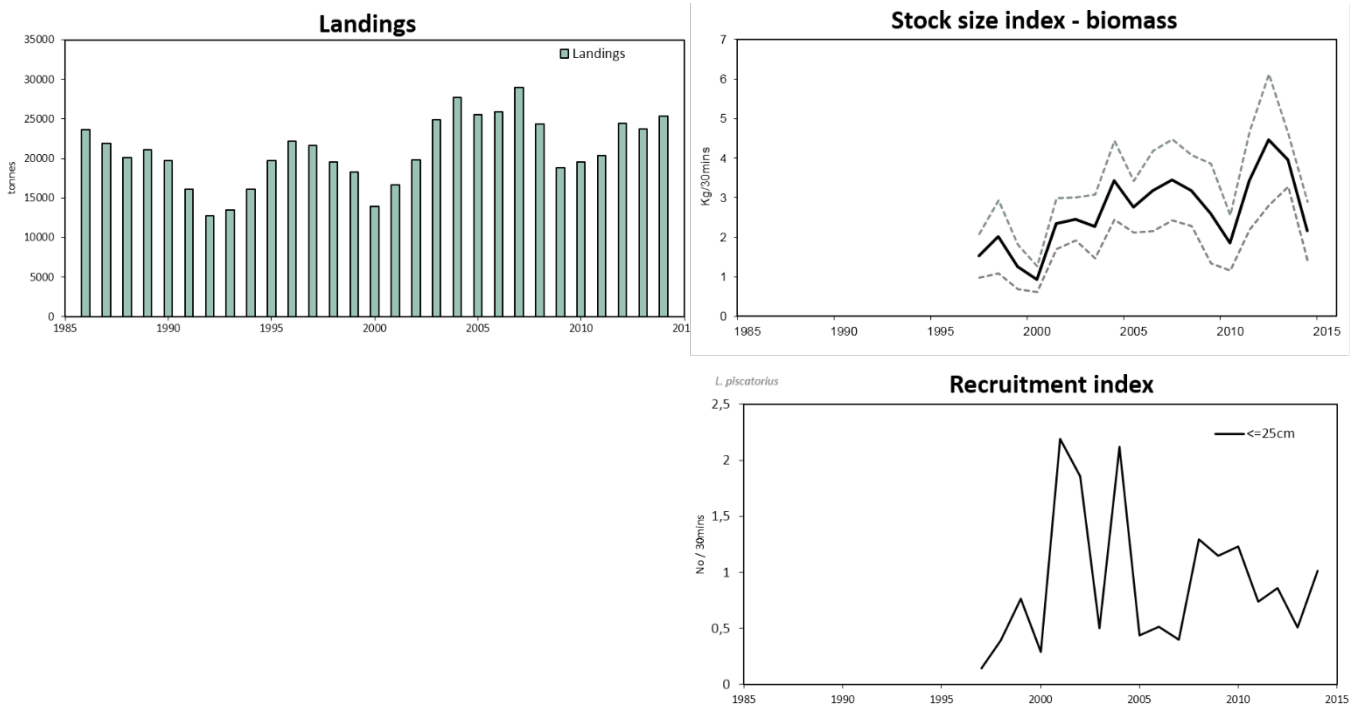


Figure 5.3.61.1 White anglerfish in Divisions VIIb–k and VIIIa,b,d. ICES estimated landings (tonnes) and two stock size indices from the EVHOE-WIBTS-Q4 survey indices: biomass (kg [30 min⁻¹]) and recruitment (number [30 min⁻¹]). The recruitment index is defined by fish ≤ 25cm. Dashed gray lines indicate ±2 s.d. Discards are thought to occur, but no reliable estimates exist.

Stock and exploitation status

Table 5.3.61.1 White anglerfish in Divisions VIIb–k and VIIIa,b,d. State of the stock, relative to reference points, of the stock and fishery.

		Fishing pressure			Stock size				
		2012	2013	2014	2012	2013	2014		
Maximum Sustainable Yield	F _{MSY}	?	?	?	MSY B _{trigger}	?	?	?	Undefined
Precautionary approach	F _{pa} , F _{lim}	?	?	?	B _{pa} , B _{lim}	?	?	?	Undefined
Management Plan	F _{MGT}	-	-	-	SSB _{MGT}	-	-	-	Not applicable
Qualitative evaluation	-	?	?	?	-	↗	↘	↘	Stable

Catch options

The ICES framework for category 3 stocks is applied (ICES, 2012a). In the past, the precautionary buffer was not applied due to a steady decrease in fishing effort since the early 1990s and the overall increasing trend in the survey index (ICES, 2013, 2014). The perception of the stock has not changed; therefore, the advice given in the two most recent years is still applicable this year and is described in the table below.

Discarding is known to take place, but ICES cannot quantify the corresponding catch.

Table 5.3.61.2 White anglerfish in Divisions VIIb–k and VIIIa,b,d. For stocks in ICES data categories 3–6, one catch option is possible.

Recent advised landings	26 691 tonnes	
Discard rate	Unknown, but not negligible	
Precautionary buffer	Not applied	-
Landings advice*	26 691 tonnes	

* = recent advised landings.

Basis of the advice

Table 5.3.61.3 White anglerfish in Divisions VIIb–k and VIIIa,b,d. The basis of the advice.

Advice basis	Precautionary approach
Management plan	There is no management plan for anglerfish (<i>L. piscatorius</i>) in this area.

Quality of the assessment

The EVHOE-WIBTS-Q4 survey mainly covers the shelf area in the Celtic Sea and Bay of Biscay. Adult anglerfish are known to migrate down the slope as they grow, and this is where the majority of the fishery occurs. The survey is a good index of recruitment for the stock and may not reflect the trends in the adult biomass. Other information, such as commercial l'pue and the Spanish Porcupine Groundfish Survey (SPPGFS), support the overall increase in stock biomass since the early 2000s.

Due to uncertain growth parameters and incomplete time-series of reliable discard information, ICES is only able to provide a survey trends-based assessment at this time.

Issues relevant for the advice

ICES is not able to give a catch advice because of uncertain quality of the available discard estimates for some of the main countries participating in the fishery. Available data show that discarding is not negligible (>5%).

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 5.3.61.4 White anglerfish in Divisions VIIb–k and VIIIa,b,d. The basis of the assessment.

ICES stock data category	3.2.0 (ICES, 2015a)
Assessment type	Survey trends-based assessment (ICES, 2015b)
Input data	Commercial landings; one survey index (EVHOE-WIBTS-Q4).
Discards and bycatch	Discards are known to take place but cannot be quantified.
Indicators	Effort data for commercial fleets in Divisions VIIb–k and VIIIa,b,d and the SPPGFS.
Other information	This stock was benchmarked in 2012 (WKFLAT; ICES, 2012b).
Working group report	Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE)

Information from stakeholders

There is no available information.

History of advice, catch, and management

Table 5.3.61.5 White anglerfish in Divisions VIIb–k and VIIIa,b,d. History of ICES advice, the agreed TAC, and ICES estimates of landings. All weights are in thousand tonnes.

Year	ICES advice	Predicted landings corresponding to advice	Predicted catch/landings corresp. To advice (both <i>Lophius</i> species) *	Agreed TAC * **	ICES landings (both <i>Lophius</i> species) * **	Landings <i>L. piscatorius</i>
1987	Not assessed	-	-	39.08	29.5	21.9
1988	Not assessed	-	-	42.99	28.5	20.1
1989	Not assessed	-	-	42.99	30	21.1
1990	Not assessed	-	-	42.99	29.4	19.8
1991	No advice	-	-	42.99	24.9	16.2
1992	No advice	-	-	42.99	20.9	12.8
1993	Concern about <i>L. pisc.</i> SSB decrease	-	-	25.1	20.0	13.5
1994	SSB decreasing, still inside safe biological limits	-	-	23.9	21.9	16.1
1995	No increase in F	-	20.0	23.2	26.7	19.7
1996	No increase in F	-	30.3	30.4	20.3	22.2
1997	No increase in F	-	34.3	34.3	29.8	21.7
1998	No increase in F	-	33.0	34.3	28.2	19.6
1999	No increase in F	-	32.9	34.3	25.0	18.2
2000	At least 20% decrease in F	-	< 22.3	29.6	20.6	13.9
2001	Reduce F below F_{pa}	-	< 27.6	27.6	22.4	16.7
2002	Reduce F below F_{pa}	-	< 19.9	23.7	26.2	19.8
2003	At least 30% decrease in F	-	< 16.4	21.0##	33.2	24.9
2004	At least 10% decrease in F	-	< 26.7	26.7	35.2	27.7
2005	Maintain F below F_{pa}	-	< 37.8	31.2	33.1	25.5
2006	Maintain F below F_{pa}	-	< 33.9	34.0	31.6	25.9
2007	Maintain F below F_{pa}	-	< 36.0	36.0	35.3	29.0
2008	Less than average landings	-	< 33.0	36.0	31.8	24.4
2009	Same advice as last year	-	< 33.0	36.0	27.9	18.8
2010	No increase in effort	-	-	41.4	28.9	19.5
2011	No increase in effort	-	-	40.9	28.4***	20.4***
2012	Reduce catch	-	-	38.9	36.4	26.8
2013	Reduce catch by the rate of biomass decrease (14% for <i>L. piscatorius</i> and 20% for <i>L. budegassa</i>) #	17.9#	< 24.8#	37.0	36.9	24.2
2014	Increase landings by the rate of biomass increase (20% for <i>L. piscatorius</i> and 20% for <i>L. budegassa</i>) #	< 26.691#	< 37.5#	42.5	36.2	25.3
2015	Same landings advice for <i>L. piscatorius</i> as in 2014	< 26.691#	<37.5#	42.5		
2016	Precautionary approach (same landings value as advised for 2014)	≤ 26.691#	<37.5#			

* Applies to the combined *Lophius* species.

** Includes Divisions VIIa and VIIIe.

*** Revised.

Advice refers to landings, not catch.

TAC was changed during 2003, from 19 400 t to 21 000 t, following fast-track advice from ICES.

History of catch and landings

Table 5.3.61.6 White anglerfish in Divisions VIIb–k and VIIIa,b,d. Catch distribution by fleet in 2014 as estimated by ICES.

Total catch (2014)	Landings				Discards
Unknown	78% Otter trawl	10% Beam trawl	11% Gillnet	2% <i>Nephrops</i> trawl	Discards are known to take place but cannot be quantified.
	25.3 kt				

Table 5.3.61.7 White anglerfish in Divisions VIIb–k and VIIIa,b,d. History of commercial catch and landings; both the official and ICES estimated values are presented for Divisions VIIb–k for each country participating in the fishery. All weights are in tonnes.

Year	Divisions VIIb–k													Unallocated	Total
	Ireland		Belgium	UK					France			Spain			
	Trawl		Beam Trawl	Gillnet	Trawl		Beam Trawl	Other	Gillnet	Trawl		Neph.Trawl	Trawl		
	Unit 4	Unit 5	Unit 6	Unit 3	Unit 4	Unit 5	Unit 6		Unit 3+13	Unit 4	Unit 5	Unit 8	Unit 4		
1986	582	368	438	429	1349	369	998	0	0	6019	2140	1021	5831	0	19544
1987	511	357	90	560	904	271	1429	0	0	4940	2272	787	5059	0	17180
1988	349	259	156	643	769	345	1658	0	0	4403	2500	774	4291	0	16147
1989	112	1370	526	481	210	583	2472	0	300	3873	3306	754	4253	0	18240
1990	536	835	211	421	321	380	1525	0	600	3946	2735	880	3985	0	16375
1991	203	809	52	452	700	211	1090	0	1300	3106	1772	752	3554	0	14001
1992	999	50	95	573	913	181	903	0	1200	1859	1261	887	2484	0	11405
1993	948	199	223	442	635	234	1035	0	1300	1650	1692	969	2543	0	11870
1994	1364	527	582	377	553	246	941	0	1000	2776	1821	1236	2652	0	14075
1995	1104	436	831	415	592	394	974	0	1500	3760	2365	1242	3004	0	16617
1996	952	337	800	342	794	337	1388	138	1902	4201	1985	1149	3849	0	18174
1997	1346	510	548	389	935	297	1483	39	2150	3642	2138	964	3302	0	17743
1998	1109	787	385	580	950	181	1336	3	2818	3252	1170	812	3403	0	16786
1999	3076	0	311	378	1192	125	1098	19	2784	1815	2244	780	2954	0	16776
2000	1660	0	321	317	1019	120	1112	6	1717	2201	1522	726	2187	0	12908
2001	1535	0	444	478	684	190	1534	17	1524	3266	2103	886	2395	0	15056
2002	1627	0	470	586	890	228	1366	22	2133	3863	2381	924	3084	0	17574
2003	1170	0	648	419	749	213	1335	81	3079	5752	2573	974	4662	0	21655
2004	1614	0	846	513	687	217	1614	14	4491	5961	2425	852	4507	0	23741
2005	1968	0	825	630	669	222	1563	7	4524	4235	2178	594	4683	0	22098
2006	2572	0	773	511	757	279	1648	3	3230	5491	1937	700	4589	0	22490
2007	2355	0	862	707	1026	334	1973	11	3888	6931	2048	660	4637	0	25432
2008	1845	0	533	347	787	356	1457	10	4760	5027	1528	491	4107	0	21248
2009	1975	0	401	444	770	358	1478	16	3513	4440	0	48	2754	0	16197
2010	2478	0	574	465	898	539	1929	31	2933	3966	0	21	2510	0	16344
2011	2213	0	840	429	1211	548	2180	42	1723	4361	0	12	1183	1616	16358
2012	2563	0	1253	578	915	513	1978	9	2327	5544	0	14	1371	1251	18316
2013	2435	0	1090	734	1556	392	1991	43	1311	5414	0	71	1832	1455	18324
2014*	2512	0	473	446	1931	494	2095	6	2234	8646	0	102	1929	337	21205

*Provisional.

Table 5.3.61.8 White anglerfish in Divisions VIIb–k and VIIIa,b,d. History of commercial catch and landings; both the official and ICES estimated values are presented for Divisions VIIIa,b,d for each country participating in the fishery, and the total for Divisions VIIb–k and VIIIa,b,d. All weights are in tonnes.

Year	Divisions VIIIa,b,d				Unallocated	Total	TOTAL
	France		Spain				
	Neph.Trawl	Trawl		Trawl			
Unit 9	Unit 10	Unit 14	Unit 14				
1986	746	720	1799	858	0	4123	23666
1987	1035	542	2378	774	0	4729	21909
1988	927	534	1668	819	0	3948	20095
1989	673	444	1147	625	0	2889	21130
1990	410	391	1779	800	0	3380	19753
1991	284	218	1155	502	0	2159	16160
1992	254	166	646	296	0	1362	12766
1993	360	278	676	274	0	1588	13458
1994	261	198	1105	481	0	2045	16120
1995	501	429	1472	482	228	3112	19730
1996	441	379	1396	834	938	3988	22162
1997	429	376	1338	707	1068	3918	21660
1998	397	149	988	711	542	2787	19572
1999	98	116	710	549	0	1473	18250
2000	91	77	522	341	0	1031	13941
2001	146	76	1018	384	0	1624	16681
2002	247	96	1394	514	0	2251	19826
2003	470	168	2067	508	0	3213	24865
2004	457	218	2578	718	0	3971	27714
2005	342	165	2365	571	2	3445	25543
2006	429	218	2338	420	2	3407	25898
2007	286	244	2615	401	0	3546	28977
2008	227	325	2047	527	1	3127	24376
2009	221	0	1779	374	275	2649	18844
2010	301	0	2000	372	504	3177	19521
2011	231	0	1908	377	1497	4013	20370
2012	195	0	3355	376	2168	6094	24409
2013	216	0	3944	288	1429	5877	24200
2014*	286	0	3345	408	84	4123	25328

*Provisional.

Summary of the assessment

Table 5.3.61.9 White anglerfish in Divisions VIIb–k and VIIIa,b,d. Assessment summary: biomass (kg [30 min⁻¹]), total abundance (number [30 min⁻¹]), and recruitment (number [30 min⁻¹]) indices.

Year	Biomass index	Abundance index	Recruitment index
1997	1.53	0.89	0.14
1998	2.01	0.95	0.39
1999	1.25	1.24	0.76
2000	0.94	0.98	0.29
2001	2.34	3.12	2.19
2002	2.46	3.41	1.86
2003	2.27	1.76	0.50
2004	3.44	3.24	2.12
2005	2.77	2.04	0.44
2006	3.17	1.94	0.51
2007	3.45	1.56	0.40
2008	3.18	2.36	1.29
2009	2.6	2.06	1.15
2010	1.85	2.13	1.23
2011	3.43	2.5	0.74
2012	4.47	2.34	0.86
2013	3.95	1.68	0.51
2014	2.16	1.7	1.01

Sources and references

ICES. 2012a. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM:68. 42 pp.

ICES. 2012b. Report of the Benchmark Workshop on Flatfish Species and Anglerfish (WKFLAT), 1–8 March 2012, Bilbao, Spain. ICES CM 2012/ACOM:46. 283 pp.

ICES. 2013. Anglerfish (*Lophius piscatorius* and *L. budegassa*) in Divisions VIIb–k and VIIIa,b,d. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 5, Section 5.4.2.

<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/ang-78ab.pdf>.

ICES. 2014. Anglerfish (*Lophius piscatorius*) in Divisions VIIb–k and VIIIa,b,d. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 5, Section 5.3.2b. <http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/ang-78ab.pdf>.

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

ICES. 2015b. Report of the Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE), 6–12 May 2015, ICES Headquarters, Copenhagen, Denmark. ICES CM 2015/ACOM:11.