Blue whiting (*Micromesistius poutassou*) in subareas 1–9, 12, and 14 (Northeast Atlantic and adjacent waters)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, catches in 2023 should be no more than 1 359 629 tonnes.

Stock development over time

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

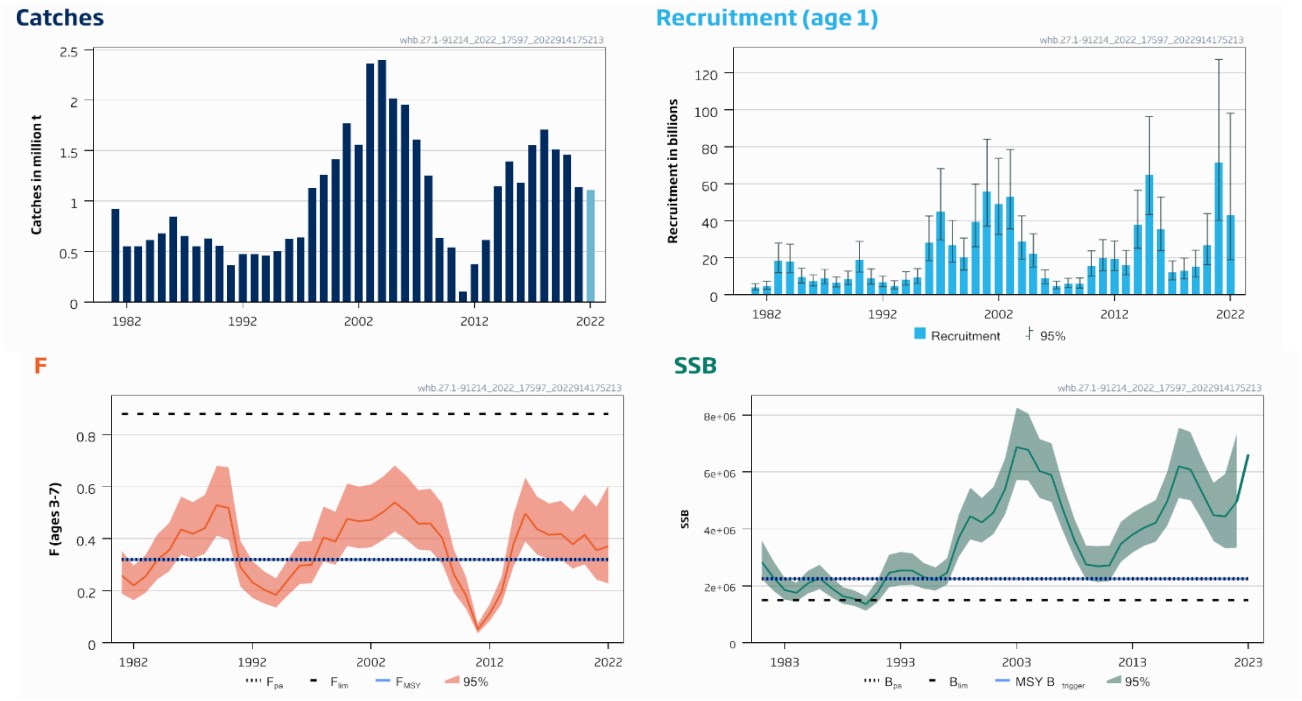

Figure 1 Blue whiting in subareas 1–9, 12, and 14. Summary of the stock assessment. The catch estimate for 2022 is preliminary. The assumed recruitment value for 2023 is shaded in a lighter colour.

Catch scenarios

Table 1 Blue whiting in subareas 1–9, 12, and 14. Values in the forecast and for the interim year.

Variable	Value	Notes
$F_{ages\ 3–7}$ (2022)	0.37	From the assessment (based on assumed 2022 catches)
SSB (2023)	6 621 207	From the assessment; in tonnes
$R_{age\ 1}$ (2022)	43 220 294	From the assessment; in thousands
$R_{age\ 1}$ (2023–2024)	22 537 250	Geometric mean (1996–2021); in thousands
Total catch (2022)	1 107 529	As estimated by ICES, based on declared national quotas and expected uptake; in tonnes

Table 2 Blue whiting in subareas 1–9, 12, and 14. Annual catch scenarios. All weights are in tonnes.

Basis	Total catch (2023)	F (2023)	SSB (2024)	% SSB change*	% catch change**	% advice change***
ICES advice basis						
MSY approach: F_{MSY}	1359629	0.32	7781444	17.5	23	81
Other scenarios						
Long-term management strategy $F = F_{MSY}$	1359629	0.32	7781444	17.5	23	81
F = 0	0	0	9039585	37	−100	−100
F_{pa}	1359629	0.32	7781444	17.5	23	81
F_{lim}	3146002	0.88	6157129	−7	184	318
$SSB_{2024} = B_{lim}$^	8696303	6.503	1499996	−77	685	1055
$SSB_{2024} = B_{pa}$^	7715688	4.401	2249993	−66	597	925
$SSB_{2024} = MSY\ B_{trigger}$^	7715688	4.401	2249993	−66	597	925
$F = F_{2022}$	1550784	0.371	7605942	14.9	40	106
$SSB_{2024} = SSB_{2023}$	2631402	0.698	6621196	0	138	250
$Catch_{2023} = catch_{2022}$ ^	1107553	0.255	8013430	21	0	47
$Catch_{2023} = catch_{2022}$ −20%	886105	0.2	8217731	24	−20	17.7
$Catch_{2023} = catch_{2022}$ +25%	1384385	0.327	7758694	17.2	25	84
$Catch_{2023} = advice_{2022}$ −20%	602183	0.133	8480325	28	−46	−20
$Catch_{2023} = advice_{2022}$ +25%	940871	0.214	8167163	23	−15.0	25

* SSB 2024 relative to SSB 2023.
** Catch 2023 relative to expected catch in 2022 (1 107 529 tonnes).
*** Catch 2023 relative to advice for 2022 (752 736 tonnes).
^ SSB_{2024} and $Catch_{2023}$ values are the closest available approximation to either B_{lim}, B_{pa} and $B_{trigger}$ or target catches.

The advice for 2023 is 81 % higher than that for 2022 because of a large upward revision of estimated recruitment in 2021 (age 1).

Basis of the advice

Table 3 Blue whiting in subareas 1–9, 12, and 14. The basis of the advice.

Advice basis	MSY approach
Management plan	A long-term management strategy was agreed by the European Union, the Faroe Islands, Iceland, and Norway (Anon., 2016) and subsequently by UK in 2021 (Anon., 2021). ICES has evaluated the strategy (excluding clause 6.b.) and found it to be precautionary (ICES, 2016a).

Quality of the assessment

This year's assessment shows a substantial revision of the historical values of F, SSB and recruitment for 2021. The 2020 year class (recruitment at age 1 in 2021) is now estimated to be at a historical high (71.6 billion), while last year's estimate was 22.8 billion. Fishing mortality (F) in 2021 is revised downward by 29%, and SSB in 2021 upward by 46%. The revision of the 2020 year class is due to a historically high survey index value in 2022 and is corroborated by high commercial catch-at-age of the same year class in 2021 and 2022. The catch for 2021 was 9.1% lower than the preliminary value used last year, which contributes to the revision of F and SSB in this year's assessment.

Other surveys, which are not presently used in the assessment, confirm a very large 2020 year class.

Preliminary catch data from Russian Federation for 2021 were used in the assessment, together with Russian catch samples that were available for the first half year. Historically, preliminary catches are comparable to ICES final estimated catch. Russian data on age composition of the catch in 2022 are not available. ICES used the historical (2019–2021) Russian proportion (13%) of total international catch weight to estimate the total catches for 2022. It was assumed that the age distribution of Russian catches is similar to the-catch-at age distribution available from other nations.

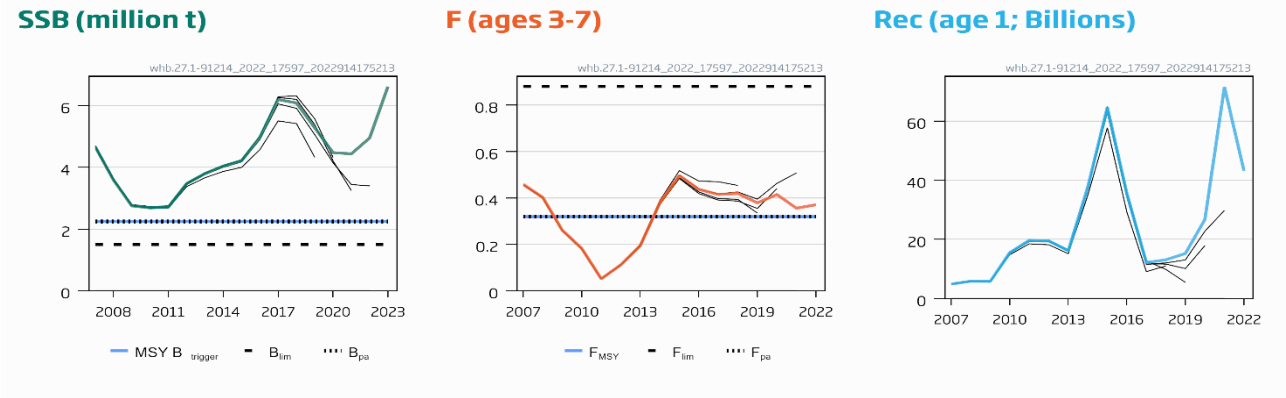

Figure 2 Blue whiting in subareas 1–9, 12, and 14. Historical assessment results.

Issues relevant for the advice

Clause 6.b of the long-term management strategy states that a constraint on annual TAC variation shall not be applied when the catch advice deviates more than 40% from the catch advice of the preceding year. This feature was not part of the LTMS when it was evaluated by ICES (ICES, 2016a). Therefore, the advice is provided based on ICES MSY approach.

There have been consistent deviations from the long-term management strategy since 2018 as evident from the sum of unilateral quotas. During the evaluation of the management strategy (ICES, 2016a), the implementation error in the form of a consistent overshoot of the TAC was not included. Therefore, failing to adhere to the advised catches as derived from the application of the MSY approach or the long-term management strategy may not be precautionary. Specifically, this may result in an increased risk for the stock to fall below B_{lim}, loss of catch in the long term and unsustainable utilization of the resource.

The 2020 year class is estimated to be historically high and will be fully recruited to the fishery in 2023.

F has exceeded F_{pa} since 2014. This does not adhere to the precautionary approach and in the long term could result in increased risk of SSB to fall below B_{lim} and loss of yields.

Reference points

Table 4 Blue whiting in subareas 1–9, 12, and 14. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	2250000 t	B_{pa}	ICES (2013a, 2013b, 2016a)
	F_{MSY}	0.32	Stochastic simulations with segmented regression stock–recruitment relationship capped to F_{P05}	ICES (2016a)
Precautionary approach	B_{lim}	1500000 t	Approximately B_{loss}	ICES (2013a, 2013b, 2016a)
	B_{pa}	2250000 t	B_{lim} exp(1.645 × σ), with σ = 0.246	ICES (2013a, 2013b, 2016a)
	F_{lim}	0.88	Equilibrium scenarios with stochastic recruitment: F value corresponding to 50% probability of (SSB < B_{lim})	ICES (2016a)
	F_{pa}	0.32	F_{P05}; the F that leads to SSB ≥ B_{lim} with 95% probability	ICES(2016a, 2021a)
EU–Faroes–Iceland–Norway long-term management strategy	SSB_{mgt_lower}	1500000 t	B_{lim}	Anon (2016)
	SSB_{mgt}	2250000 t	B_{pa}	
	F_{mgt_lower}	0.05	Arbitrary low F	
	F_{mgt}	0.32	F_{MSY}	

Basis of the assessment

Table 5 Blue whiting in subareas 1–9, 12, and 14. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2022a)
Assessment type	Age-based analytical assessment (SAM; ICES, 2021a) that uses catches in the model and the forecast
Input data	Commercial catches, preliminary estimate of catch-at-age in the year (Q1–Q2) in which the assessment is carried out. One survey index (International Blue Whiting Spawning Stock Survey [IBWSS; A1142] ages 1–8, 2004–2022, excluding 2010 and 2020). Time invariant maturity at age was estimated in 1994 by combining maturity ogives from the southern and northern areas. Time invariant natural mortality fixed at 0.2 for all ages, derived in the 1980s from age compositions before the targeted fishery started.
Discards and bycatch	Discard data since 2014 have been included in the assessment
Indicators	Estimates of recruitment from surveys: Joint Norwegian-Russian survey Barents Sea (G5348), International Ecosystem Survey in the Nordic Seas in May (A3675, [IESNS]), the Faroese bottom-trawl surveys (G1264 [FO-GFS-Q1], G3284 [FO-GFS-Q3]) and the Icelandic bottom-trawl survey in spring (G3239 [IS-SMB]).
Other information	The stock was benchmarked in 2012 (WKPELA; ICES, 2012). An interbenchmark protocol was conducted in the spring of 2016 (ICES, 2016b).
Working group	Working Group on Widely Distributed Stocks (WGWIDE; ICES 2022b)

History of the advice, catch, and management

Table 6 Blue whiting in subareas 1–9, 12, and 14. ICES advice and catch. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	TAC	ICES estimated landings	ICES estimated discards§	ICES catch
1987	TAC for northern areas; no advice for southern areas	950000	-			655000
1988	TAC for northern areas; no advice for southern areas	832000	-			557847
1989	TAC for northern areas; no advice for southern areas	630000	-			627447
1990	TAC for northern areas; no advice for southern areas	600000	-			561610
1991	TAC for northern areas; no advice for southern areas	670000	-			369524
1992	No advice	-	-			475026
1993	Catch at *status quo* F (northern areas); no assessment for southern areas	490000	-			480679
1994	Precautionary TAC (northern areas); no assessment for southern areas	485000	650000*			459414
1995	Precautionary TAC for combined stock	518000	650000*			578905
1996	Precautionary TAC for combined stock	500000	650000*			645982
1997	Precautionary TAC for combined stock	540000	-			672437
1998	Precautionary TAC for combined stock	650000	-			1128969
1999	Catches above 650 000 t may not be sustainable in the long run	650000	-			1256228
2000	F should not exceed the proposed F_{pa}	800000	-			1412927
2001	F should not exceed the proposed F_{pa}	628000	-			1780170
2002	Rebuilding plan	0	-			1556792
2003	F should be less than the proposed F_{pa}	600000	-			2321406
2004	Achieve 50% probability that F will be less than F_{pa}	925000	-			2380161
2005	Achieve 50% probability that F will be less than F_{pa}	1075000	-			2034309
2006	F old management plan	1500000	2100000**			1976176
2007	F should be less than the proposed F_{pa}	980000	1847000***			1625255
2008	F should be less than F_{pa}	835000	1250000^			1260615
2009	Maintain stock above B_{pa}	384000	606000^^			641818
2010	Follow the agreed management plan	540000	548000			526357
2011	See scenarios	40100–223000	40000			103620
2012	Follow the agreed management plan	391000	391000			384021
2013	Follow the agreed management plan	643000	643000			628169
2014	Follow the agreed management plan	948950	1200000			1155279
2015	Follow the agreed management plan	839886	1260000^^^	1389953	6291	1396244
2016	MSY approach	≤ 76391	1147000^^^	1178180	5007	1183187

Year	ICES advice	Catch corresponding to advice	TAC	ICES estimated landings	ICES estimated discards§	ICES catch
2017	MSY approach	≤ 1342330	1675400^^^	1556030	2030	1558061
2018	Long-term management strategy	≤ 1387872	1727964^^^	1707152	4325	1711477
2019	Long-term management strategy	≤ 1143629	1483208^^^	1512922	2604	1515527
2020	Long-term management strategy	≤ 1161615	1478358^^^	1492420	2828	1495248
2021	Long-term management strategy	929292	1157604^^^	1139514	3936	1143450
2022	Long-term management strategy	≤ 752736	752736 §§§			1107529§§
2023	MSY approach	≤ 1359629				

* NEAFC proposal for NEAFC regions 1 and 2.
** Agreed TAC from the four Coastal States of 2 million tonnes and an additional allocation of 100 000 tonnes to Russian Federation in the international zone.
*** Agreed TAC from the four Coastal States of 1.7 million tonnes and an additional allocation of 147 000 tonnes to Russian Federation and Greenland.
^ Agreed TAC from the four Coastal States of 1.1 million tonnes and an additional allocation to Russian Federation and Greenland.
^^ Agreed TAC from the four Coastal States of 0.59 million tonnes and an additional allocation of 16 000 tonnes to Russian Federation.
^^^ Sum of unilateral quotas (Note: the Coastal States agree a TAC of 1 161 615 tonnes for 2020 and 929 292 tonnes for 2021).
§ Discards estimates include BMS landings.
§§ Preliminary.
§§§ Official TAC agreed between the coastal states who have signed up to the MP.

History of the catch and landings

Table 7 Blue whiting in subareas 1–9, 12, and 14. Catch distribution by fleet in 2021, as estimated by ICES.

Total catch (2021)	Landings		Discards
1143450 tonnes	96% pelagic trawl	4% other gears	3936 tonnes
	1139514 tonnes		

Table 8 Blue whiting in subareas 1–9, 12, and 14. History of commercial catch; ICES estimated values are presented for each country participating in the fishery. Discard data are included since 2014. All weights are in tonnes.

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Denmark	48659	18134	248	140	165	340	2167	35256	45178	39395	60868	87348	68716	58997	40321
Estonia													0		
Faroe Islands	317859	225003	58354	49979	16405	43290	85768	224700	282502	282416	356501	349838	336569	343372	202415
France	16638	11723	8831	7839	4337	9799	8978	10410	9659	10345	13369	16784	16095	13769	14612
Germany	34404	25259	5044	9108	278	6239	11418	24487	24107	20025	45555	47708	38244	42362	35327
Iceland	236538	159307	120202	87942	5887	63056	104918	182879	214870	186914	228934	292944	268356	243725	190146
Ireland	31132	22852	8776	8324	1195	7557	13205	21466	24785	27657	43238	49903	38836	40135	39514
Lithuania	9812	5338						4717		1129	5300			9543	21183
Netherlands	79875	78684	35686	33762	4595	26526	51635	38524	56397	58148	81156	121864	75020	62309	62017
Norway	539587	418289	225995	194317	20539	118832	196246	399520	489439	310412	399363	438426	351429	354033	233968
Poland											15889	12152	27185	47616	26077
Portugal	3897	4220	2043	1482	603	1955	2056	2150	2547	2586	2046	2497	3481	2819	2522
Spain	13557	14342	20637	12891	2416	6726	15274	32065	29206	31952	28920	24718	22782	23676	25509
Sweden	464	4	3	50	1	4	199	2	32	42	90	16**	54	25	40
UK (England + Wales)	12926	14147	6176	2475	27	1590	4100	11	131	1374+	3447	1864	4062	7458	8783
UK (Northern Ireland)							1232	2205	1119			4508	2899	2958	
UK (Scotland)	43540	38150	173	5496	1331	6305	8166	24630	30508	37173	64724	66682	54040	41344	65085
Russia	236369	225163	149650	112553	45841	88303	120674	152256	185763	173655	188449	170892	188006	181496	133605^
Greenland							2133				20212	23333	19753	19611	20190
Unallocated						3499									22137
Total	1625255	1260615	641818	526357	103620	384021	628169	1155279	1396244	1181850	1558061	1711461	1515527	1495248	1143450

* Only landings.

^ Russia 2021 preliminary data (Q1+Q2) submitted to WGWIDE 2021.

Table 9 Blue whiting in subareas 1–9, 12, and 14. ICES estimated catches by main fishing areas. All weights are in tonnes.

Area	Norwegian Sea fishery (subareas 1 and 2; divisions 5.a, 14.a–b)	Fishery in the spawning area (Subarea 12; divisions 5.b, 6.a–b, 7.a–c)	Directed- and mixed fisheries in the North Sea (Subarea 4; Division 3.a)	Total northern areas	Total southern areas (subareas 8, 9; divisions 7.d–k)	Total
1988	55829	426037	45143	527009	30838	557847
1989	42615	475179	75958	593752	33695	627447
1990	2106	463495	63192	528793	32817	561610
1991	78703	218946	39872	337521	32003	369524
1992	62312	318018	65974	446367	28722	475026
1993	43240	347101	58082	448423	32256	480679
1994	22674	378704	28563	429941	29473	459414
1995	23733	423504	104004	551241	27664	578905
1996	23447	478077	119359	620883	25099	645982
1997	62570	514654	65091	642315	30122	672437
1998	177494	827194	94881	1099569	29400	1128969
1999	179639	943578	106609	1229826	26402	1256228
2000	284666	989131	114477	1388274	24654	1412928
2001	591583	1045100	118523	1755206	24964	1780170
2002	541467	846602	145652	1533721	23071	1556792
2003	931508	1211621	158180	2301309	20097	2321406
2004	921349	1232534	138593	2292476	85093	2377569
2005	405577	1465735	128033	1999345	27608	2026953
2006	404362	1428208	105239	1937809	28331	1966140
2007	172709	1360882	61105	1594695	17634	1612330
2008	68352	1111292	36061	1215704	30761	1246465
2009	46629	533996	22387	603012	32627	635639
2010	36214	441521	17545	495280	28552	523832
2011	20599	72279	7524	100401	3191	103592
2012	24391	324545	5678	354614	29402	384016*
2013	31759	481356	8749	521864	103973	625837**
2014	45580	885483	28596	959659	195620	1155279
2015	150828	895684	44661	1091173	305071	1396244
2016	59744	905087	55774	1020604	162583	1183187***
2017	136565	1284105	45474	1466144	91917	1558061
2018	143204	1445957	43484	1632646	78831	1711477
2019	68593	1271883	44856	1385333	130194	1515527
2020	92084	1059197	64327	1215608	279640	1495248
2021	112082	801768	39509	953359	190091	1143450

* Official catches by area from Sweden are not included (2012).

** Official catches by area from Sweden and Greenland are not included (2013).

*** The total includes only 1336 tonnes from UK (England + Wales; 2016 total catch from UK [England + Wales] = 1374 tonnes).

Table 10 Blue whiting in subareas 1–9, 12, and 14. Landings inside and outside the NEAFC Regulatory Area (RA), as estimated by ICES, as well as total landings. Weights are in tonnes.

Year	Inside the NEAFC RA	Outside the NEAFC RA	Total catches	Percentage inside the NEAFC RA
2017	263019	1295042	1558061	17
2018	176399	1535078	1711477	10
2019	340062	1175465	1515527	22
2020	246412	1248836	1495248	16
2021	154661	833047	987708*	16

* Without the Russian 2021 preliminary catch data (quarter 1 and 2) submitted to WGWIDE 2021 and the unallocated catch data.

Summary of the assessment

Table 11 Blue whiting in subareas 1–9, 12, and 14. Assessment summary.

Year	Recruitment age 1 (thousands)			SSB (tonnes)			Catches (tonnes)*	F ages 3–7		
	Low	Value	High	Low	Value	High		Low	Value	High
1981	2549746	3948198	6113656	2245456	2846036	3607250	922980	0.189	0.259	0.354
1982	3001694	4696698	7348843	1835126	2299742	2881988	550643	0.164	0.221	0.297
1983	11937083	18293953	28036056	1512075	1854216	2273776	553344	0.192	0.255	0.337
1984	11900836	18077398	27459608	1454927	1756125	2119676	615569	0.244	0.319	0.417
1985	6312234	9550303	14449447	1732609	2095632	2534718	678214	0.275	0.356	0.461
1986	4792760	7206799	10836753	1884455	2274475	2745217	847145	0.339	0.436	0.562
1987	6047121	9113538	13734894	1603976	1933155	2329890	654718	0.324	0.419	0.541
1988	4251396	6409993	9664593	1370653	1638205	1957983	552264	0.342	0.441	0.569
1989	5609692	8492388	12856438	1297863	1546404	1842541	630316	0.412	0.529	0.680
1990	12270809	18840757	28928337	1128145	1356528	1631147	558128	0.396	0.518	0.676
1991	5826489	9049081	14054068	1429325	1777830	2211309	364008	0.216	0.291	0.393
1992	4365051	6698667	10279865	1951887	2460102	3100643	474592	0.173	0.233	0.315
1993	3184796	4942776	7671146	2027313	2543671	3191545	475198	0.151	0.204	0.275
1994	5277115	8113390	12474069	2042807	2535468	3146943	457696	0.136	0.184	0.248
1995	6125353	9322644	14188844	1901995	2308211	2801183	505176	0.183	0.242	0.320
1996	18496998	28090039	42658289	1836837	2207682	2653398	621104	0.226	0.297	0.390
1997	29748090	45080996	68316864	2048273	2467358	2972189	639681	0.229	0.300	0.392
1998	17717886	26696161	40224044	3017327	3685247	4501018	1131955	0.313	0.405	0.524
1999	13419599	20303064	30717343	3630259	4449851	5454480	1261033	0.300	0.389	0.504
2000	26002313	39448363	59847495	3521792	4233012	5087862	1412449	0.372	0.477	0.613
2001	37187292	55947436	84171646	3821738	4575712	5478433	1771805	0.363	0.467	0.600
2002	32631938	49106855	73899478	4504809	5401566	6476838	1556955	0.367	0.473	0.609
2003	35655989	52947963	78625974	5716742	6875173	8268346	2365319	0.395	0.502	0.638
2004	19302031	28714768	42717673	5701925	6778079	8057341	2400795	0.428	0.540	0.682
2005	14998683	22271163	33069881	5083744	6031586	7156150	2018344	0.396	0.504	0.641
2006	6005043	9009113	13515995	4948048	5891687	7015288	1956239	0.358	0.458	0.587
2007	3264414	4913368	7395256	3915203	4673775	5579322	1612269	0.355	0.459	0.593
2008	3862867	5883847	8962167	2971047	3593824	4347144	1251851	0.303	0.403	0.535
2009	3702391	5813482	9128311	2222003	2754203	3413874	634978	0.192	0.262	0.357
2010	10141289	15534228	23795027	2129607	2690487	3399087	539539	0.131	0.183	0.255
2011	12986631	19713440	29924598	2166277	2717639	3409333	103771	0.036	0.052	0.075
2012	13074672	19509226	29110475	2840438	3476370	4254677	375692	0.084	0.112	0.149
2013	10896851	16196200	24072726	3168694	3803134	4564602	613863	0.149	0.195	0.255
2014	25189811	37769539	56631551	3409524	4045006	4798933	1147650	0.292	0.379	0.492
2015	43428474	64728113	96474232	3548784	4218197	5013883	1390656	0.389	0.497	0.635
2016	23913789	35567778	52901145	4114630	4974200	6013339	1180786	0.339	0.437	0.562
2017	8062125	12172965	18379902	5085700	6199504	7557239	1555069	0.322	0.415	0.536
2018	8655930	13119298	19884169	5006887	6090429	7408460	1709856	0.322	0.419	0.546
2019	9638265	15254049	24141898	4319920	5284355	6464102	1512026	0.285	0.379	0.505
2020	16299607	26772174	43973408	3571612	4480563	5620836	1460507	0.302	0.415	0.571
2021	40213851	71562826	127350103	3320100	4440379	5938666	1139531	0.243	0.356	0.523
2022	19011128	43220294	98257917	3341999	4955777	7348815	1107529***	0.228	0.371	0.605
2023		22537250**			6621207^					

* Catches presented are the sum of product (SOP) values from catch- and weight-at-age used in the assessment model.
** Geometric mean (1996–2021).
*** Preliminary catches.
^ SSB calculated from the assessment and assumed recruitment for 2023.

Sources and references

Anon. 2016. Agreed record of conclusions of fisheries consultations between the European Union, the Faroe Islands, Iceland and Norway on the management of blue whiting in the north-east Atlantic in 2017. 6 pp. https://d3b1dqw2kzexi.cloudfront.net/media/8742/agreed-record-blue-whiting-2017.pdf

Anon 2021. Agreed record of conclusions of fisheries consultations between the European Union, the Faroe Islands, Iceland, Norway and UK on the management of blue whiting in the north-east Atlantic in 2022. https://www.regjeringen.no/contentassets/2ea04e97a8fd45c2b1758e2602e79c46/blue-whiting-agreed-record-october-2021.pdf

ICES. 2012. Report of the Benchmark Workshop on Pelagic Stocks (WKPELA 2012), 13–17 February 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:47. 572 pp.

ICES. 2013a. NEAFC request to ICES to evaluate the harvest control rule element of the long-term management plan for blue whiting. *In* Report of the ICES Advisory Committee, 2013. ICES Advice 2013, Book 9, Section 9.3.3.1. 13 pp.

ICES. 2013b. NEAFC request on additional management plan evaluation for blue whiting. *In* Report of the ICES Advisory Committee, 2013. ICES Advice 2013, Book 9, Section 9.3.3.7. 8 pp.

ICES. 2016a. Report of the Workshop on Blue Whiting Long Term Management Strategy Evaluation (WKBWMS), 30 August 2016, ICES HQ, Copenhagen, Denmark. ICES CM 2016/ACOM:53. 104 pp.

ICES. 2016b. Report of the Inter-Benchmark Protocol for Blue Whiting (IBPBLW), 10 March–10 May 2016, by correspondence. ICES CM 2016/ACOM:36. 118 pp.

ICES. 2022a. Advice on fishing opportunities. In Report of the ICES Advisory Committee, 2022. ICES Advice 2022, Section 1.1.1. https://doi.org/10.17895/ices.advice.19928060.

ICES. 2022b. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports. 4:73. 922 pp. http://doi.org/10.17895/ices.pub.21088804

Download the stock assessment data and figures.

Recommended citation: ICES. 2022. Blue whiting (*Micromesistius poutassou*) in subareas 1-9, 12, and 14 (Northeast Atlantic and adjacent waters). *In* Report of the ICES Advisory Committee, 2022. ICES Advice 2022, whb.27.1-91214. https://doi.org/10.17895/ices.advice.19772470