

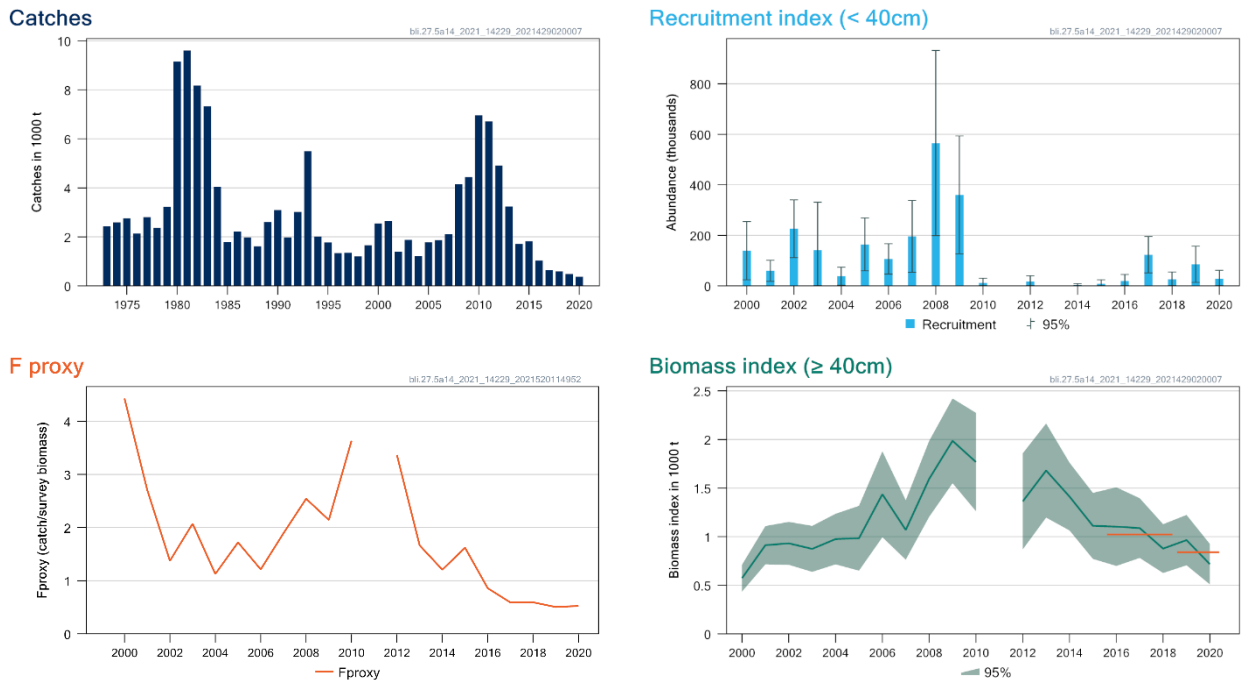
## Blue ling (*Molva dypterygia*) in Subarea 14 and Division 5.a (East Greenland and Iceland grounds)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches in 2021/2022 should be no more than 334 tonnes.

### Stock development over time

ICES cannot assess the stock and exploitation status relative to MSY and precautionary approach (PA) reference points because the reference points are undefined.



**Figure 1** Blue ling in Subarea 14 and Division 5.a. Catches in thousand tonnes (top left); recruitment index (top right) in abundance of < 40 cm fish;  $F_{\text{proxy}}$  (bottom left) based on catch/survey biomass; and biomass index ( $\geq 40$  cm; [bottom right]) from the Icelandic autumn survey in Division 5.a (G4493). The horizontal orange lines indicate the average of the most recent two years and the previous three years.

### Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The Icelandic autumn trawl survey (G4493) was used as the index for the stock development. The advice is based on the ratio of the mean of the last two index values (index A) and the mean of the three preceding values (index B), multiplied by last year's domestic advice, which was established based on ICES framework by national scientists in Iceland (MFRI, 2020). The index is estimated to have decreased by less than 20%, thus the uncertainty cap was not applied. The precautionary buffer was applied in 2019 and was not considered this year. Discarding is considered negligible.

**Table 1** Blue ling in Subarea 14 and Division 5.a. The basis for the catch scenarios <sup>^</sup>.

Index A (2019–2020)		840.6
Index B (2016–2018)		1022.9
Index ratio (A/B)		0.82
Uncertainty cap	Not applied	
Domestic advice 2020/21 (issued in 2020)		406 t
Discard rate	Negligible	
Precautionary buffer	Not applied	

Catch advice *	334 t
% Advice change **	NA

^ The figures in the table are rounded. Calculations were done with unrounded inputs, and computed values may not match exactly when calculated using the rounded figures in the table.

\* [Domestic advice] × [index ratio].

\*\* No advice was requested for 2020/2021. Advice for 2020/2021 was issued by MFRI based on the same method agreed by ICES (406 tonnes).. The change in advice from the Icelandic domestic advice issued last year is -18%.

No ICES advice was requested for the fishing year 2020/2021. The advice for 2021/2022 is lower than the advice provided by MFRI for 2020/2021 because of a decrease in the biomass index.

### Basis of the advice

**Table 2** Blue ling in Subarea 14 and Division 5.a. The basis of the advice.

Advice basis	Precautionary approach
Management plan	ICES is not aware of any agreed precautionary management plan for blue ling in this area

### Quality of the assessment

The Icelandic autumn survey (G4493) covers the full depth range and most of the geographical distribution of the stock and the fisheries.

### Issues relevant for the advice

ICES previously provided advice on this stock on a calendar year basis; the current advice is provided for the 2021/2022 fishing year.

The recruitment has been low in the Icelandic survey since 2010. This low recruitment has occurred in years with a high adult biomass and is believed to result from environmental conditions.

As for many other species, blue ling is susceptible to sequential depletion of spawning aggregations. Two spawning areas were depleted prior to 1993. Maintaining the current closed areas may provide protection for the spawning aggregations.

This stock is classified as Category 4 in the NEAFC categorization of deep-sea species/stocks. This implies that fisheries are primarily restricted to coastal state Exclusive Economic Zones (EEZs) and therefore management measures are not taken by NEAFC unless complementary to coastal state conservation and management measures (NEAFC, 2016).

### Reference points

No reference points are defined for this stock.

### Basis of the assessment

**Table 3** Blue ling in Subarea 14 and Division 5.a. Basis of the assessment and advice.

ICES stock data category	3 ( <a href="#">ICES, 2021a</a> )
Assessment type	Survey trends-based assessment (ICES, 2021b)
Input data	Catch data from Division 5.a and Subarea 14 and the Icelandic autumn survey (IS-SMH [G4493])
Discards and bycatch	Discarding is considered negligible
Indicators	Recruitment index from the Icelandic autumn survey (G4493)
Other information	None
Working group	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources ( <a href="#">WGDEEP</a> )

## History of the advice, catch, and management

**Table 4** Blue ling in Subarea 14 and Division 5.a. ICES advice, catches and TAC. Prior to 2021, ICES advice was given on an annual basis, which was applied on a fishing year basis in Iceland. From 2021/2022 onwards, advice is for the Icelandic fishing year. All weights are in tonnes.

Year	ICES advice*	Catch corresponding to advice	Icelandic TAC for Division 5.a**	ICES catches
2003	No direct fisheries	-	-	1874
2004	Biennial	-	-	1214
2005	No direct fisheries	-	-	1785
2006	Biennial	-	-	1865
2007	No direct fisheries	-	-	2112
2008	Biennial	-	-	4152
2009	No direct fisheries	-	-	4439
2010	Biennial	-	-	6960
2011	No direct fishery and minimum bycatch	-	-	6719
2012	No new advice, same as 2011	-	-	4913
2013	F <sub>proxy</sub> target	3100	-	3234
2014	No new advice, same as 2013	3100	2400	1706
2015	F <sub>proxy</sub> target	3085	3100	1820
2016	F <sub>proxy</sub> target	2548	2550	1031
2017	Precautionary approach	≤ 2032	2040	641
2018	Precautionary approach	≤ 1956	1956	592
2019	Precautionary approach	≤ 1520	1520	486
2020	Precautionary approach	≤ 483	483	376
2021	No ICES advice	-	406***	
2021/22	Precautionary approach	≤ 334		

\* Prior to 2007, advice for blue ling was provided for the Northeast Atlantic (not split into different assessment units).

\*\* Icelandic national fishing year from 1 September to 31 August.

\*\*\* Domestic advice and TAC (no ICES advice requested due to the COVID-19 disruption).

## History of the catch and landings

There are no reported catches in the NEAFC Regulatory Area.

**Table 5** Blue ling in Subarea 14 and Division 5.a. Catch distribution by fleet in 2020 as estimated by ICES.

Catch (2020)	Landings			Discards
	Longline 22%	Trawl 74%	Other 4%	Negligible
376 tonnes	376 tonnes			

**Table 6** Blue ling in Subarea 14 and Division 5.a. History of official catch in Division 5.a by country participating in the fishery (in tonnes).

Year	Faroes	Germany	Iceland	Norway	UK	Total
1973	74	1678	548	6	61	2367
1974	34	1959	331	140	32	2496
1975	69	1418	434	366	89	2376
1976	29	1222	624	135	28	2038
1977	39	1253	700	317	0	2309
1978	38	0	1237	156	0	1431
1979	85	0	2019	98	0	2202
1980	183	0	8133	83	0	8399
1981	220	0	7952	229	0	8401
1982	224	0	5945	64	0	6233
1983	1195	0	5117	402	0	6714
1984	353	0	3122	31	0	3506
1985	59	0	1407	7	0	1473
1986	69	0	1774	8	0	1851
1987	75	0	1693	8	0	1776

Year	Faroes	Germany	Iceland	Norway	UK	Total
1988	271	0	1093	7	0	1371
1989	403	0	2124	5	0	2532
1990	1029	0	1992	0	0	3021
1991	241	0	1582	0	0	1823
1992	321	0	2584	0	0	2905
1993	40	0	2193	0	0	2233
1994	89	1	1542	0	0	1632
1995	113	3	1519	0	0	1635
1996	36	3	1284	0	0	1323
1997	25	0	1319	0	0	1344
1998	59	9	1086	0	0	1154
1999	31	8	1525	8	11	1583
2000	0	7	1605	25	8	1645
2001	95	12	752	49	23	931
2002	28	4	1256	74	10	1372
2003	16	16	1098	6	24	1160
2004	38	9	1083	49	20	1199
2005	24	25	1497	20	26	1592
2006	63	22	1734	27	9	1855
2007	78	0	1999	4	10	2091
2008	88	0	3653	21	0	3762
2009	178	0	4132	5	0	4315
2010	515	0	6377	13	0	6905
2011	797	0	5903	2	0	6702
2012	312	0	4207	2	0	4521
2013	435	0	2769	2	0	3206
2014	71	0	1588	30	0	1689
2015	10	0	1734	4	0	1748
2016	6	0	925	84	0	1015
2017	4	0	618	0	0	622
2018	28	0	513	0	0	541
2019	28	0	415	4	0	447
2020	6	0	343	0.1	0	349

**Table 7** Blue ling in Subarea 14 and Division 5.a. History of official catch in Subarea 14 by country (in tonnes).

Year	Faroes	Germany	Greenland	Iceland	Norway	Russia	Spain	UK	Denmark	Total
1973	0	50	0	10	0	0	0	0	0	60
1974	0	90	0	6	0	0	0	0	0	96
1975	0	285	0	90	3	0	0	0	0	378
1976	0	65	0	21	0	0	0	13	0	99
1977	0	491	0	0	0	0	0	6	0	497
1978	0	933	0	0	4	0	0	0	0	937
1979	0	1026	0	0	0	0	0	0	0	1026
1980	0	746	0	0	0	0	0	0	0	746
1981	0	1206	0	0	0	0	0	0	0	1206
1982	0	1946	0	0	0	0	0	0	0	1946
1983	0	621	0	0	0	0	0	0	0	621
1984	0	537	0	0	0	0	0	0	0	537
1985	0	315	0	0	0	0	0	0	0	315
1986	214	149	0	0	0	0	0	0	0	363
1987	0	199	0	0	0	0	0	0	0	199
1988	21	218	3	0	0	0	0	0	0	242
1989	13	58	0	0	0	0	0	0	0	71
1990	0	64	5	0	0	0	0	10	0	79
1991	0	105	5	0	0	0	0	45	0	155
1992	0	27	2	0	50	0	0	32	0	111
1993	0	16	0	3124	103	0	0	22	0	3265

Year	Faroes	Germany	Greenland	Iceland	Norway	Russia	Spain	UK	Denmark	Total
1994	1	15	0	300	11	0	0	57	0	384
1995	0	5	0	117	0	0	0	19	0	141
1996	0	12	0	0	0	0	0	2	0	14
1997	1	1	0	0	0	0	0	2	0	4
1998	48	1	0	0	1	0	0	6	0	56
1999	0	0	0	0	1	0	66	7	0	74
2000	0	1	2	4	0	0	889	2	0	898
2001	1	0	1	11	61	0	1631	6	0	1711
2002	0	0	0	11	1	0	0	0	0	12
2003	0	0	3	0	36	0	670	5	0	714
2004	0	0	7	0	1	0	0	7	0	15
2005	2	0	6	0	1	0	176	8	0	193
2006	0	0	6	0	3	1	0	0	0	10
2007	19	0	1	0	1	0	0	0	0	21
2008	1	0	5	0	2	0	381	0	1	390
2009	1	0	5	0	3	0	111	4	0	124
2010	1	0	8	0	9	0	34	0	3	55
2011	0	0	8	0	2	0	0	1	6	17
2012	0	0	13	367	9	0	0	0	3	392
2013	0	0	16	0	0	0	0	3	9	28
2014	0	0	14	0	3	0	0	0	0	17
2015	0	0	66	0	1	0	0	0	5	72
2016	0	0	9	0	0	0	0	0	7	16
2017	0	0	12	0	4	0	0	0	3	19
2018	0	0	34	0	12	0	0	0	5	51
2019	0	7	20	0	36	0	0	0	0	62
2020	0	7	18	0	2	0	0	0	0	27

## Summary of the assessment

**Table 8** Blue ling in Subarea 14 and Division 5.a. Assessment summary. The index is from the Icelandic autumn survey (G4493). Weights are in tonnes. High and low refer to 95% confidence bounds.

Year	Recruitment (thousands)	Biomass index (tonnes)	High	Low	Total catch (tonnes)	F <sub>proxy</sub>
2000	139.0	572.9	711.015	434.78	2543	4.43
2001	59.6	912.3	1108.99	715.61	2642	2.71
2002	226.1	931.2	1152.043	710.36	1384	1.37
2003	141.7	874.2	1110.65	637.75	1874	2.072
2004	38.1	975.3	1235.27	715.32	1214	1.126
2005	164.1	983.6	1317.119	650.080	1785	1.72
2006	106.5	1436.2	1878.147	994.25	1865	1.21
2007	196.0	1069.1	1375.034	763.166	2112	1.89
2008	565.2	1594.5	1985.152	1203.85	4148	2.54
2009	359.9	1985.9	2421.84	1549.96	4357	2.14
2010	12.0	1767.9	2273.80	1261.99	6960	3.63
2011*					6719	
2012	16.7	1362.9	1857.087	868.71	4913	3.36
2013	0.0	1680.4	2164.56	1196.24	3110	1.66
2014	3.0	1412.2	1760.96	1063.44	1605	1.20
2015	8.1	1110.8	1450.44	771.161	1806	1.62
2016	18.8	1103.3	1507.68	698.92	941	0.85
2017	123.3	1088.3	1395.46	781.14	642	0.58
2018	26.4	877.2	1128.22	626.18	592	0.59
2019	85.2	964.6	1223.61	705.59	486	0.50
2020	27.9	716.6	924.47	508.73	376	0.52

\* No survey in 2011.

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[Download the stock assessment data and figures.](#)

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