

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

ICES stock advice

ICES advises that when the precautionary approach is applied, catches in 2017 should be no more than 2032 tonnes. All catches are assumed to be landed.

Stock development over time

The F_{proxy} is estimated to be below the reference F_{proxy} in the last two years.

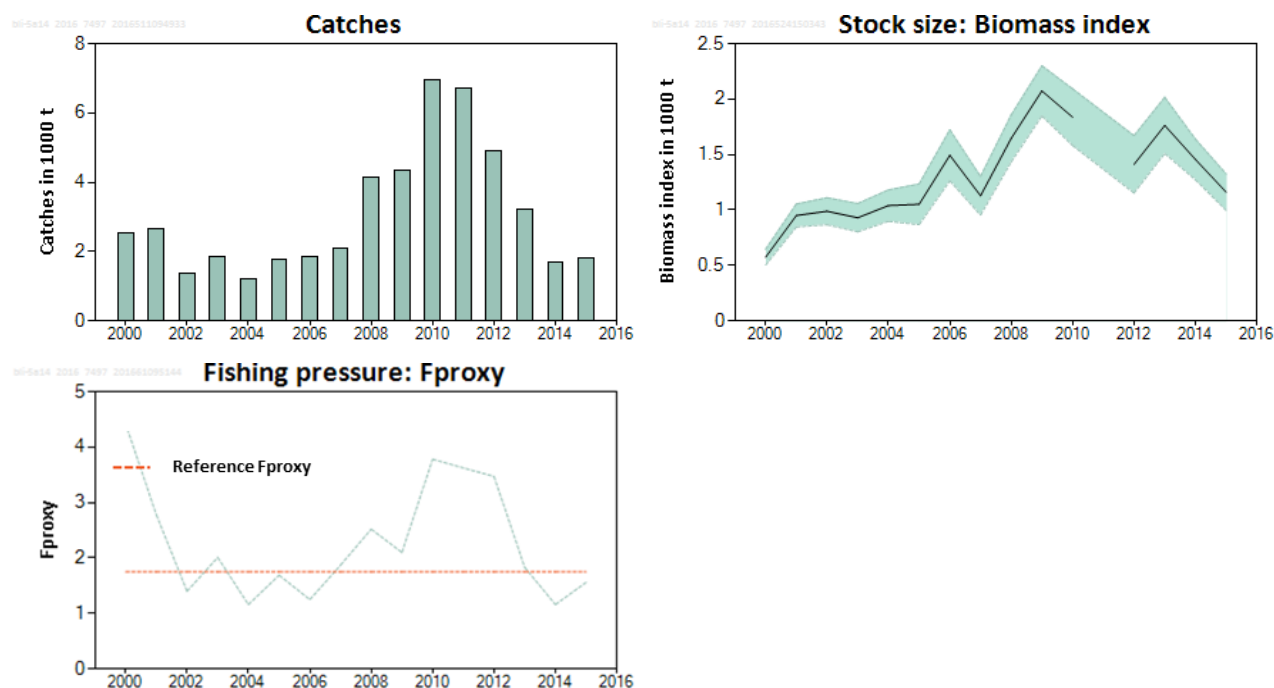


Figure 9.3.3.1 Blue ling in Subarea 14 and Division 5.a. Catches in thousand tonnes. Biomass index (+40 cm) from the Icelandic autumn survey in Division 5.a. F_{proxy} based on catch/survey biomass (the dashed orange line is the reference F_{proxy} calculated as the average F_{proxy} for the reference period 2002 to 2009).

Stock and exploitation status

Table 9.3.3.1 Blue ling in Subarea 14 and Division 5.a. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size			
		2013	2014	2015		2013	2014	2015	
Maximum sustainable yield	F_{MSY}	?	?	?	Undefined	MSY	?	?	?
Precautionary approach	$F_{\text{pa}}, F_{\text{lim}}$?	?	?	Undefined	$B_{\text{pa}}, B_{\text{lim}}$?	?	?
Management plan	F_{MGT}	-	-	-	Not applicable	SSB_{MGT}	-	-	-
Qualitative evaluation	-	↘	↘	↗	Increasing	-	↗	↘	↘
									Decreasing

Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012). The Icelandic autumn trawl survey was used as biomass indicator. The reference F_{proxy} (catch divided by survey biomass and equivalent to a harvest rate) used to provide advice is estimated as the average F_{proxy} for the reference period 2002 to 2009.

The advice is based on multiplying the reference F_{proxy} with the most recent index value. This value is constrained by an uncertainty cap of 20% compared to the previous catch advice. The reference F_{proxy} used to provide advice is considered precautionary because it is based on exploitation during a period when no detrimental effects were observed on the stock. Therefore, the precautionary buffer was not applied. Discarding is considered negligible.

Table 9.3.3.2 Blue ling in Subarea 14 and Division 5.a. For stocks in ICES categories 3–6, one catch option is provided.

Index A (2015)	1161.1 t	
Reference F_{proxy} (average 2002–2007)	1.75	
Advice 2015	2548 t	
(Index A * Reference F_{proxy}) / Advice 2015	0.797	
Uncertainty cap	Applied	0.8
Discard rate	Negligible	
Precautionary buffer	Not applied	-
Catch advice *	2038 t	

* Catch advice in 2015 × uncertainty cap.

Basis of the advice

Table 9.3.3.3 Blue ling in Subarea 14 and Division 5.a. The basis of the advice.

Advice basis	Precautionary approach.
Management plan	There is no management plan for blue ling in this area.

Quality of the assessment

The Icelandic autumn survey (IS-SMH) covers the full depth range and geographical distribution of the species and the fisheries. The uncertainty of the survey estimates is small.

Issues relevant for the advice

Last year's advice used the uncertainty cap on the biomass indicator. This year's advice used the uncertainty cap on the catch advice ($(\text{biomass index} \times \text{reference } F_{\text{proxy}}) / \text{catch advised in 2015}$). Both approaches result in the same catch advice.

It is anticipated that the low recruitment estimated in the Icelandic survey since 2010 will result in stock decline when these year classes enter the fishery in the near future.

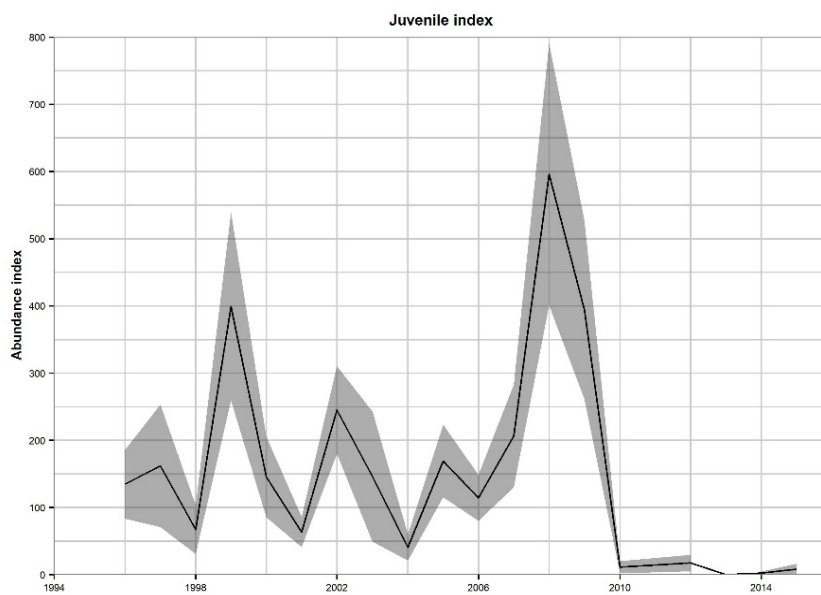


Figure 9.3.3.2 Blue ling in Subarea 14 and Division 5.a. Juvenile abundance index (< 40 cm, in millions) from the autumn survey in Division 5.a.

Blue ling is susceptible to sequential depletion of spawning aggregations. Two spawning areas were depleted prior to 1993 and have not recovered. Maintaining the current closed areas will provide protection for the spawning aggregations.

Reference points

There are no reference points for blue ling in this area.

Basis of the assessment

Table 9.3.3.4 Blue ling in Subarea 14 and Division 5.a. The basis of the assessment.

ICES stock data category	3 (ICES, 2016a)
Assessment type	Survey trends-based assessment (ICES, 2016b)
Input data	Catch data from Division 5.a and Subarea 14 and the Icelandic autumn survey (IS-SMH).
Discards and bycatch	Discarding is considered negligible.
Indicators	None
Other information	None
Working group	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP)

Information from stakeholders

There is no available information.

History of the advice, catch, and management

Table 9.3.3.5 Blue ling in Subarea 14 and Division 5.a. History of ICES advice, the agreed TAC, and ICES estimates of landings. Weights are in thousand tonnes.

Year	ICES advice	Predicted catch corresp. to advice	ICES Division 5a and Subarea 14 catches
2003	No direct fisheries*	-	1.9
2004	Biennial*	-	1.2
2005	No direct fisheries*	-	1.8
2006	Biennial*	-	1.9
2007	No direct fisheries	-	2.1
2008	Biennial	-	4.1
2009	No direct fisheries	-	4.4
2010	Biennial	-	7.0
2011	No direct fishery and minimum bycatch	-	6.7
2012	No new advice, same as 2011	-	4.9
2013	F _{proxy} target	3.1	3.2
2014	No new advice, same as 2013	3.1	1.7
2015	F _{proxy} target	3.1	1.8
2016	F _{proxy} target	2.5	
2017	Precautionary approach	≤ 2.032	

* Advice for blue ling was provided for the Northeast Atlantic (not split by different assessment units).

History of catch and landings

Table 9.3.3.6 Blue ling in Subarea 14 and Division 5.a. Catch distribution by fleet in 2015 as estimated by ICES.

Total catch	Landings			Discards
1813 t	50% longline	49% trawl	1% other gear types	Considered to be negligible
	1813 t			

Table 9.3.3.7 Blue ling in Subarea 14 and Division 5.a. History of official commercial catch in Division 5.a by country 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
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	3204
2014	71	0	1588	30	0	1689
2015*	10	0	1734	4	0	1748

* Preliminary.

Table 9.3.3.8 Blue ling in Subarea 14 and Division 5.a. History of official commercial 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
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	0	4	0	0	889	2	0	896
2001	1	0	0	11	61	0	1631	6	0	1710
2002	0	0	0	11	1	0	0	0	0	12
2003	0	0	0	0	36	0	670	5	0	711
2004	0	0	0	0	1	0	0	7	0	8
2005	2	0	0	0	1	0	176	8	0	187
2006	0	0	0	0	3	1	0	0	0	4
2007	19	0	0	0	1	0	0	0	0	20
2008	1	0	0	0	2	0	381	0	1	385
2009	1	0	0	0	3	0	111	4	0	119
2010	1	0	0	0	9	0	34	0	3	47
2011	0	0	0	0	2	0	0	1	6	9
2012	0	0	0	367	9	0	0	0	3	379
2013	0	0	4	0	0	0	0	3	9	16
2014	0	0	0	0	3	0	0	0	0	3
2015*	0	0	59	0	1	0	0	0	5	65

* Preliminary.

Table 9.3.3.9 Landings inside and outside the NEAFC Regulatory Area (RA) as estimated by ICES. Weights are in tonnes.

Year	Inside the NEAFC RA	Outside the NEAFC RA	Landings
2014	0	1692	1692
2015	0	1813	1813

Summary of the assessment

Table 9.3.3.10 Blue ling in Subarea 14 and Division 5.a. Assessment summary. Weights are in tonnes. “NA” corresponds to data not available because of no survey on 2011.

Year	Catch (t)	Survey index (t)	Lower CI	Upper CI	F _{proxy}
2000	2541	574.5	503.3	645.7	4.42
2001	2641	950.2	846.6	1053.8	2.78
2002	1384	988.3	866.7	1109.9	1.4
2003	1871	930.1	802.7	1057.5	2.01
2004	1207	1039.7	898.3	1181.1	1.16
2005	1779	1051.4	868.5	1234.3	1.69
2006	1859	1492.9	1263.0	1722.8	1.25
2007	2111	1128.1	954.4	1301.8	1.87
2008	4148	1645.2	1433.0	1857.4	2.52
2009	4434	2073.8	1847.8	2299.8	2.1
2010	6952	1836.8	1581.5	2092.1	3.78
2011	6711	NA	NA	NA	NA
2012	4900	1411.5	1153.2	1669.8	3.47
2013	3220	1762.3	1508.5	2016.1	1.76
2014	1692	1455.8	1272.4	1639.2	1.16
2015	1813	1161.1	997	1325	1.56

Sources and references

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