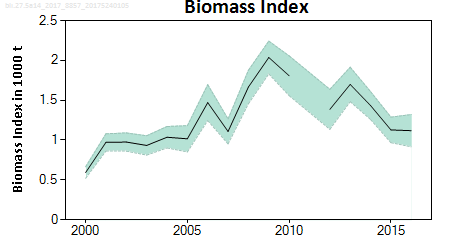
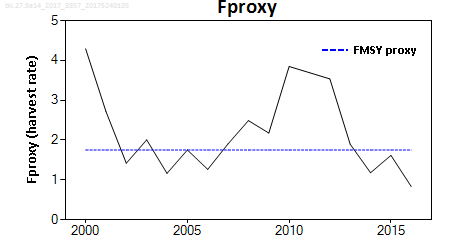
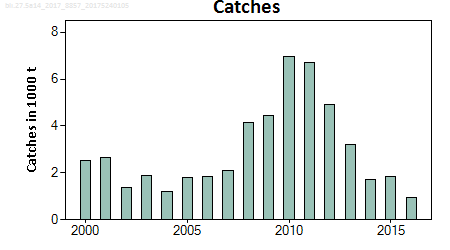
**Blue ling (*Molva dypterygia*) in Subarea 14 and Division 5.a (East Greenland and Iceland grounds)**

ICES stock advice

ICES advises that when the precautionary approach is applied, catches in 2018 should be no more than 1957 tonnes. All catches are assumed to be landed.

**Stock development over time**

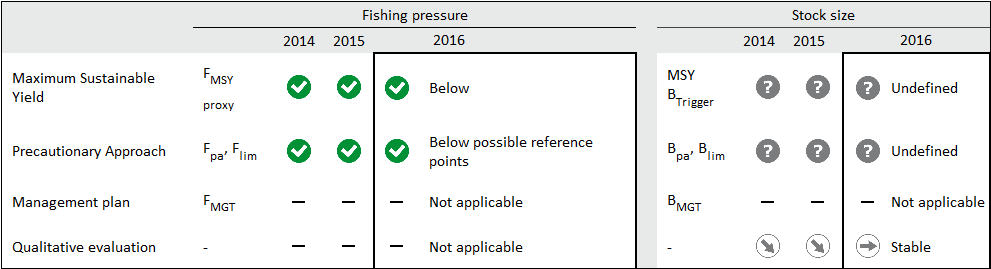
The biomass index in 2016 is at a similar level as in 2015. The Fproxy is estimated to be below the reference FMSY proxy in the last three years.



**Figure 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. Fproxy is based on catch/survey biomass (the dashed blue line is the reference FMSY proxy, calculated as the average Fproxy for the reference period 2002 to 2009).

**Stock and exploitation status**

**Table 1** Blue ling in Subarea 14 and Division 5.a. State of the stock and fishery relative to reference points. The status evaluation is based on reference point proxies (ICES, 2016a).



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 FMSY proxy (catch divided by survey biomass and equivalent to a harvest rate) used to provide advice is estimated as the average Fproxy for the reference period 2002 to 2009.

The advice is based on multiplying the reference FMSY proxy with the most recent index value. The reference FMSY 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 2** Blue ling in Subarea 14 and Division 5.a. The basis for the catch options.

|  |  |  |
| --- | --- | --- |
| Index A (2016) | 1118 t | |
| Reference FMSY proxy (average 2002–2009) | 1.75 | |
| Advice 2016 | 2032 t | |
| (Index A × Reference FMSY proxy) / Advice 2016 | 0.96 | |
| Uncertainty cap | Not applied | - |
| Discard rate | Negligible | |
| Precautionary buffer | Not applied | - |
| Catch advice \* | 1957 t | |

\* Index A (2016) × Reference Fproxy. 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.

Basis of the advice

**Table 3** 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 2017 in this area. |

Quality of the assessment

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

Issues relevant for the 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.

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

**Table 4** Blue ling in Subarea 14 and Division 5.a. Reference points, values, and their technical basis.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Framework | Reference point | Value | Technical basis | Source |
| MSY approach | MSY Btriggerproxy | Not defined |  |  |
| FMSYproxy | 1.75 | The harvest rate FMSY proxy from catch and survey data: (total catch) / (survey biomass) for the period 2002–2009 when no detrimental effects were observed. | ICES, 2017 |
| Precautionary approach | Blim | Not defined |  |  |
| Bpa | Not defined |  |  |
| Flim | Not defined |  |  |
| Fpa | Not defined |  |  |
| Management plan | SSBmgt | Not applicable |  |  |
| Fmgt | Not applicable |  |  |

Basis of the assessment

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

|  |  |
| --- | --- |
| ICES stock data category | 3 ([ICES, 2016b](http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/Introduction_to_advice_2016.pdf)). |
| Assessment type | Survey trends-based assessment (ICES, 2017). |
| 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](http://www.ices.dk/community/groups/Pages/WGDEEP.aspx)) |

Information from stakeholders

There is no available information.

**History of the advice, catch, and management**

**Table 6** Blue ling in Subarea 14 and Division 5.a. ICES advice and official landings. All weights are in tonnes.

| Year | ICES advice | Predicted catch corresp. to advice | ICES Division 5a and Subarea 14 catches |
| --- | --- | --- | --- |
| 2003 | No direct fisheries\* | - | 1871 |
| 2004 | Biennial\* | - | 1207 |
| 2005 | No direct fisheries\* | - | 1779 |
| 2006 | Biennial\* | - | 1859 |
| 2007 | No direct fisheries | - | 2111 |
| 2008 | Biennial | - | 4147 |
| 2009 | No direct fisheries | - | 4434 |
| 2010 | Biennial | - | 6952 |
| 2011 | No direct fishery and minimum bycatch | - | 6711 |
| 2012 | No new advice, same as 2011 | - | 4900 |
| 2013 | Fproxy target | 3100 | 3220 |
| 2014 | No new advice, same as 2013 | 3100 | 1692 |
| 2015 | Fproxy target | 3085 | 1823 |
| 2016 | Fproxy target | 2548 | 932 |
| 2017 | Precautionary approach | ≤ 2032 |  |
| 2018 | Precautionary approach | ≤ 1956 |  |

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

**History of the catch and landings**

**Table 7** Blue ling in Subarea 14 and Division 5.a. Catch distribution by fleet in 2016 as estimated by ICES.

|  |  |  |  |
| --- | --- | --- | --- |
| Catch (2016) | Landings | | Discards |
| 932 tonnes | Longlines 29% | Trawl 71% | negligible |
| 932 tonnes | |

**Table 8** Blue ling in Subarea 14 and Division 5.a. History of official commercial 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 |
| 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 | 1744 | 4 | 0 | 1758 |
| 2016\* | 0 | 0 | 925 | 0 | 0 | 925 |

\* Preliminary.

**Table 9** 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 |
| 2016\* | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 |

\* Preliminary.

**Summary of the assessment**

**Table 10** Blue ling in Subarea 14 and Division 5.a. Assessment summary. The index is from the Icelandic autumn survey (IS-SMH). Weights are in tonnes.

| Year | Biomass index (tonnes) | High | Low | Total catch  (tonnes) | Fproxy |
| --- | --- | --- | --- | --- | --- |
| 2000 | 592 | 665 | 520 | 2541 | 4.292 |
| 2001 | 971 | 1079 | 863 | 2641 | 2.72 |
| 2002 | 975 | 1090 | 861 | 1384 | 1.419 |
| 2003 | 933 | 1054 | 812 | 1871 | 2.005 |
| 2004 | 1036 | 1171 | 901 | 1207 | 1.165 |
| 2005 | 1016 | 1181 | 851 | 1779 | 1.751 |
| 2006 | 1470 | 1695 | 1245 | 1859 | 1.265 |
| 2007 | 1108 | 1264 | 952 | 2111 | 1.905 |
| 2008 | 1666 | 1876 | 1456 | 4147 | 2.489 |
| 2009 | 2037 | 2242 | 1831 | 4434 | 2.177 |
| 2010 | 1807 | 2057 | 1558 | 6952 | 3.847 |
| 2011 |  |  |  | 6711 | 3.691 |
| 2012 | 1386 | 1637 | 1135 | 4900 | 3.535 |
| 2013 | 1699 | 1915 | 1483 | 3220 | 1.895 |
| 2014 | 1433 | 1608 | 1259 | 1692 | 1.181 |
| 2015 | 1128 | 1288 | 968 | 1823 | 1.616 |
| 2016 | 1118 | 1320 | 916 | 932 | 0.834 |

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