

Ling (*Molva molva*) in Division 5.b (Faroes grounds)

ICES stock advice

ICES advises that when the precautionary approach is applied, catches should be no more than 4157 tonnes in each of the years 2020 and 2021. All catches are assumed to be landed. ICES is not in a position to advise on the corresponding level of fishing effort.

Stock development over time

Catches in the last three years have been around 6000 tonnes. The Faroese summer survey biomass index shows an overall increase since 2003, but there has been a decline since 2014.

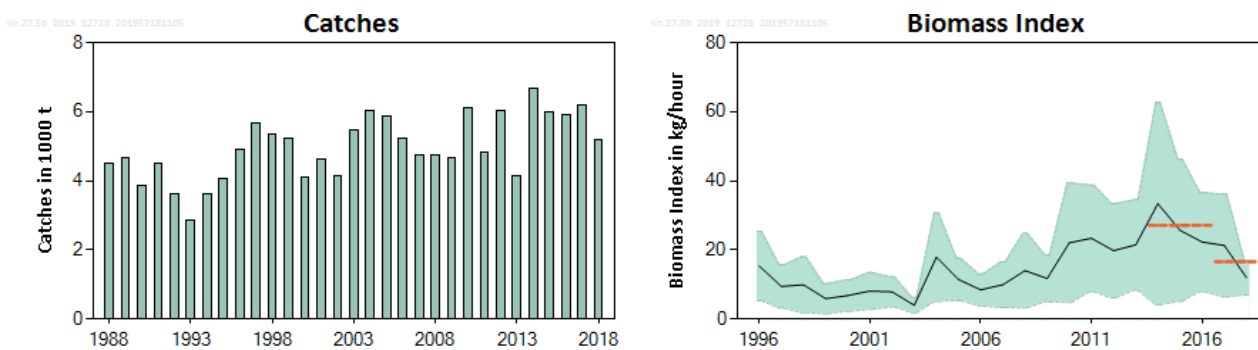


Figure 1 Ling in Division 5.b. Left: Catches in Division 5.b. Right: CPUE (kg hr⁻¹) in the Faroese summer groundfish survey. The dashed red lines indicate the average of the biomass index for 2014 to 2016 and for 2017 to 2018. The shaded areas on the biomass index plot represent 95% confidence intervals.

Stock and exploitation status

ICES assesses that fishing pressure on the stock is above $F_{MSY proxy}$; no reference points for stock size have been defined for this stock.

Table 1 Ling in Division 5.b. State of the stock and fishery relative to reference points. The status evaluation is based on the reference point proxy for F_{MSY} , using the length-based indicator method (ICES, 2019; see Figure 2).

		Fishing pressure			Stock size				
		2016	2017	2018	2016	2017	2018		
Maximum sustainable yield	$F_{MSY proxy}$	✓	✓	✗ Above	$MSY B_{trigger}$?	?	?	Undefined
Precautionary approach	F_{pa}, F_{lim}	✓	✓	? Unknown	B_{pa}, B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	—	—	— Not applicable	B_{MGT}	—	—	—	Not applicable
Qualitative evaluation	-	—	—	— Not applicable	-	↘	↔	↘	Decreasing

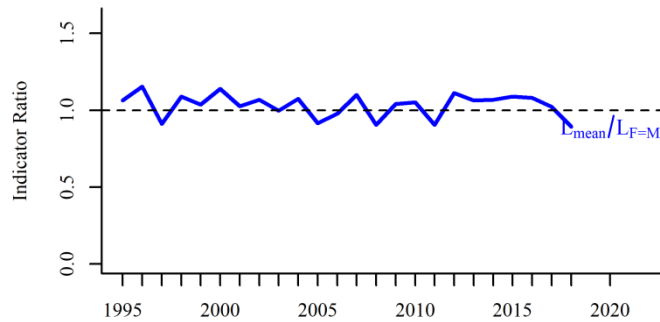


Figure 2 Ling in Division 5.b. Index ratio of the average length relative to the expected length when fishing mortality equals natural mortality ($L_{\text{mean}}/L_{F=M}$) from the length-based indicator method, used for the evaluation of the exploitation status (ICES 2019). The exploitation status is below the $F_{\text{MSY proxy}}$ when the index ratio value is higher than 1.

Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The standardized cpue series from the Faroese summer groundfish survey was used as an 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 the recent advised catches. The index is estimated to have decreased by more than 20%, thus the uncertainty cap was applied to calculate the catch advice. The fishing mortality is above the proxy of the MSY reference point in 2018 and stock size is unknown. The precautionary buffer was applied in 2017, and therefore, was not applied again. Discarding is considered negligible.

Table 2 Ling in Division 5.b. The basis for the catch scenarios [^].

Index A (2017–2018)		17
Index B (2014–2016)		27
Index ratio (A/B)		0.63
Uncertainty cap	Applied	0.8
Advised landings for years 2018–2019		5196 tonnes
Discard rate		Negligible
Precautionary buffer	Not applied	-
Catch advice *		4157 tonnes
% Advice change **		-20%

[^] 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.

* [advice for 2018–2019] × [index ratio].

** Advice value for 2020 to 2021 relative to advice value for 2018 to 2019.

The catch advice has decreased because of a decrease in the index ratio which resulted in the application of the uncertainty cap.

Basis of the advice

Table 3 Ling in Division 5.b. The basis of the advice.

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

Quality of the assessment

The Faroese summer survey adequately covers the distribution area of the stock.

Issues relevant for the advice †

This stock is classified as Category 4 in the [NEAFC categorization of deep-sea species/stocks](#) which 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.

ICES is not able to provide direct effort advice, because the relationship between catch and fishing effort in the commercial fisheries is unknown.

Reference points

Table 4 Ling in Division 5.b. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{\text{trigger proxy}}$	Not defined		
	$F_{\text{MSY proxy}}$	98.0 cm (2018)	Expected mean length of catch above L_{mean} when $F = M$.	ICES (2019)
Precautionary approach	B_{lim}	Not defined		
	B_{pa}	Not defined		
	F_{lim}	Not defined		
	F_{pa}	Not defined		
Management plan	SSB_{mgt}	Not defined		
	F_{mgt}	Not defined		

Basis of the assessment

Table 5 Ling in Division 5.b. Basis of assessment and advice.

ICES stock data category	3 (ICES, 2018).
Assessment type	Survey CPUE trends-based assessment (ICES, 2017).
Input data	Faroese summer groundfish trawl survey (kg hr^{-1}).
Discards and bycatch	Discarding is considered negligible.
Indicators	Length-based indicator.
Other information	None.
Working group	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP).

Information from stakeholders

There is no additional available information.

† Version 2: NEAFC categorisation of deep-sea stocks added to section.

History of the advice, catch, and management

Table 6 Ling in Division 5.b. ICES advice, TACs[^] and official landings. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	TAC EU Subarea 5 (EU and international waters)	TAC EU Division 5.b (Faroese waters) **	TAC Norway Division 5.b (Faroese waters) **	ICES landings
2003	30% reduction on fishing effort ***		54	3600		5453
2004	Biennial ***		54	3600	2200	6039
2005	No increased in effort		48	3600	2200	5849
2006	Biennial			3065	2457	5213
2007	No increased in effort	-	34	3065	2406	4731
2008	Biennial	-	34	3065	2525	4747
2009	No increased in effort	-	34	3065	2525	4643
2010	Biennial	-	34	2700	2425	6129
2011	No increase in effort and a reduction in catches should be considered	-	33	0	-	4843
2012	No new advice, same as 2011	-	33	0	-	6011
2013	20% decrease in effort	-	33	0	-	4133
2014	No new advice, same as 2013	-	33	-	1250	6655
2015	Same effort advised as for 2013	-	33	-	1900	5974
2016	Adjust effort corresponding to catch advice	6730	33	2000	2000	5890
2017	Biennial	6730	33	2000	2000	6195
2018	Adjust effort corresponding to catch advice	≤ 5196	33	1885	2200	5185*
2019	Biennial	≤ 5196	33	1885	2300	
2020	Adjust effort corresponding to catch advice	≤ 4157				
2021	Biennial	≤ 4157				

[^] The Faroese fisheries in Division 5.b are managed using days at sea.

* Preliminary value.

** Combined TAC for ling and blue ling.

*** Advice for ling in the Northeast Atlantic.

History of the catch and landings

Table 7 Ling in Division 5.b. Catch distribution by fleet in 2018 as estimated by ICES.

Catch (2018)	Landings		Discards
	Trawl 34%	Longline 66%	
5185 tonnes	5185 tonnes		Discarding is negligible

Table 8 Ling in Division 5.b. History of ICES estimated commercial catch presented by area for each country. All weights are in tonnes.

Year	Subdivision 5.b.1									Subdivision 5.b.2				Division 5.b
	Denmark ***	Faroes	France	Germany	Norway	UK (E&W) **	UK (Scotland)	Russia	Total 5.b.1	Faroes	France	Norway	Total 5.b.2	Total 5.b
1988	42	1383	53	4	884	1	5		2372	832		1284	2116	4488
1989		1498	44	2	1415		3		2962	362		1328	1690	4652
1990		1575	36	1	1441		9		3062	162		633	795	3857
1991		1828	37	2	1594		4		3465	492		555	1047	4512
1992		1218	3		1153	15	11		2400	577		637	1214	3614
1993		1242	5	1	921	62	11		2242	282		332	614	2856
1994		1541	6	13	1047	30	20		2657	479		486	965	3622
1995		2789	4	13	446	2	32		3286	281		503	784	4070
1996		2672			1284	12	28		3996	102		798	900	4896
1997		3224	7		1428	34	40		4733	526		398	924	5657
1998		2422	6		1452	4	145		4029	511		819	1330	5359
1999		2446	17	3	2034		71		4571	164	4	498	666	5238
2000		2103	7	1	1305	2	61		3479	229	1	399	629	4109
2001		2069	14	3	1496	5	99		3686	420	6	497	923	4609
2002		1638	6	2	1640	3	239		3528	150	4	457	611	4139
2003		2139	12	2	1526	3	215		3897	624	4	927	1555	5453
2004		2733	15	1	1799	3	178	2	4731	1058	3	247	1308	6039
2005		2886	3		1553	3	175		4620	575	7	647	1229	5849
2006	3	3563	6		850		136		4558	472	6	177	655	5213
2007	2	3004	9		1071		6		4092	327	4	309	640	4731
2008		3354	4		740	32	25	11	4166	458	3	120	580	4747
2009	13	3471	2		419		270		4174	270	1	198	469	4643
2010	28	4906	2		442		121		5500	393	1	236	630	6129
2011	49	4270	2						4321	522	< 1		522	4843
2012	117	5452	7						5576	434	1		435	6011
2013	3	3734	7						3745	387	1		388	4133
2014		5653	10		308		7	13	5983	276		389	672	6655
2015		4375	16		993	1	3	6	5391	244	1	337	585	5976
2016		4214	8		855	< 1	114		5180	569	4	126	710	5890
2017		4371	4		864		54		5294	359		542	901	6195
2018*		3836	2		793		48		4673	428		78	512	5185

* Preliminary.

** Includes Subdivision 5.b.2.

*** Includes Greenland.

Summary of the assessment

Table 9 Ling in Division 5.b. Assessment summary. High and Low for the biomass index represent 95% confidence bounds.

Year	Biomass Index (kg/hr ⁻¹)	High	Low	Catches (tonnes)
1988				4488
1989				4652
1990				3857
1991				4512
1992				3614
1993				2856
1994				3622
1995				4070
1996	15.344	25.363	5.325	4896
1997	9.416	15.667	3.164	5657
1998	9.909	18.009	1.809	5359
1999	5.875	10.218	1.531	5238
2000	6.775	11.32	2.229	4109
2001	8.102	13.436	2.768	4609
2002	7.856	12.208	3.503	4139
2003	3.983	6.192	1.775	5453
2004	17.91	30.722	5.099	6039
2005	11.428	17.53	5.325	5849
2006	8.444	13.075	3.813	5213
2007	9.921	16.565	3.278	4731
2008	14.002	24.746	3.257	4747
2009	11.736	18.483	4.99	4643
2010	22.058	39.346	4.769	6129
2011	23.348	38.79	7.905	4843
2012	19.787	33.435	6.138	6011
2013	21.435	34.507	8.363	4133
2014	33.357	62.622	4.093	6655
2015	25.673	46.223	5.124	5976
2016	22.265	36.553	7.977	5890
2017	21.268	36.132	6.403	6195
2018	11.949	16.951	6.947	5185

Sources and references

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

ICES. 2017. Report of the Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP), 24 April–1 May 2017, Copenhagen, Denmark. ICES CM 2017/ACOM:14. 702 pp.

ICES. 2018. Advice basis. *In* Report of the ICES Advisory Committee, 2018. ICES Advice 2018, Book 1, Section 1.2. <https://doi.org/10.17895/ices.pub.4503>.

ICES. 2019. Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP). ICES Scientific Reports. 1:21. 988 pp. <http://doi.org/10.17895/ices.pub.5262>

Recommended citation: ICES. 2019. Ling (*Molva molva*) in Division 5.b (Faroes grounds). *In* Report of the ICES Advisory Committee, 2019. ICES Advice 2019, lin.27.5b, <https://doi.org/10.17895/ices.advice.4817>