

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

ICES stock advice

ICES advises that when the MSY approach is applied, catches in 2023 should be no more than 3552 tonnes. 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

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

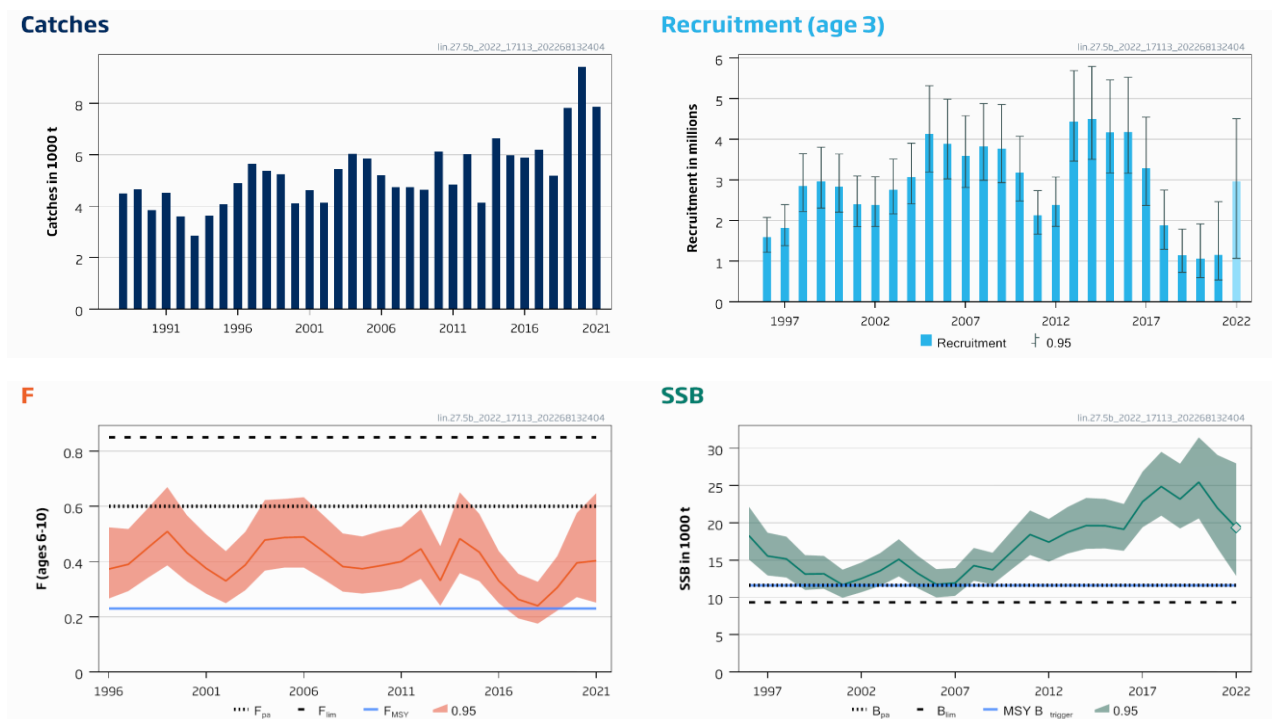


Figure 1 Ling in Division 5.b. Summary of the stock assessment with plots showing 95% confidence intervals. Catches, recruitment (R), fishing mortality (F), and spawning-stock biomass (SSB). The assumed recruitment value for 2022 is shaded in a lighter colour and diamond SSB value for 2022 is predicted.

Catch scenarios

Table 1 Ling in Division 5.b. Assumptions made for the interim year and in the forecast.

Variable	Value	Notes
$F_{ages\ 6-10}$ (2022)	0.40	$F_{sq} = F_{2021}$
SSB (2023)	15 125	Short-term forecast fishing at F_{sq} ; tonnes.
$R_{age\ 3}$ (2022)	2 966	Median recruitment, resampled from the years 1996–2020; thousands
$R_{age\ 3}$ (2023)	2 966	Median recruitment, resampled from the years 1996–2020; thousands
Discards (2022)	0	Discarding is assumed to be negligible
Total catch (2022)	7 045	Short-term forecast using an F_{2021} ; tonnes

Table 2 Ling in Division 5.b. Annual catch scenarios. All weights are in tonnes.

Basis	Total catch (2023)	Ftotal (2023)	SSB (2024)	% SSB change*	% advice change**
ICES advice basis					
MSY approach = F_{MSY}	3 552	0.23	14 529	-4	-37
Other scenarios					
$F = 0$	0	0	18 510	+22	-100
$F_{pa} = F_{P05}$	7 483	0.60	10 110	-33	+33
F_{lim}	9 343	0.85	8 141	-46	+66
$F = F_{2021}$	5 607	0.40	12 195	-19	-1

* SSB₂₀₂₄ relative to SSB₂₀₂₃ (15 125 tonnes).

** The advice value for 2023 relative to advice value for 2022 (5 636 tonnes).

The advised catch for 2023 is lower than the advised catch for 2022 because of a downward revision of the recent stock size and a declining trend in the last few years.

Basis of the advice

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

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

Quality of the assessment

SSB in 2021 and recruitments since 2019 are currently estimated to be lower than in the previous assessment.

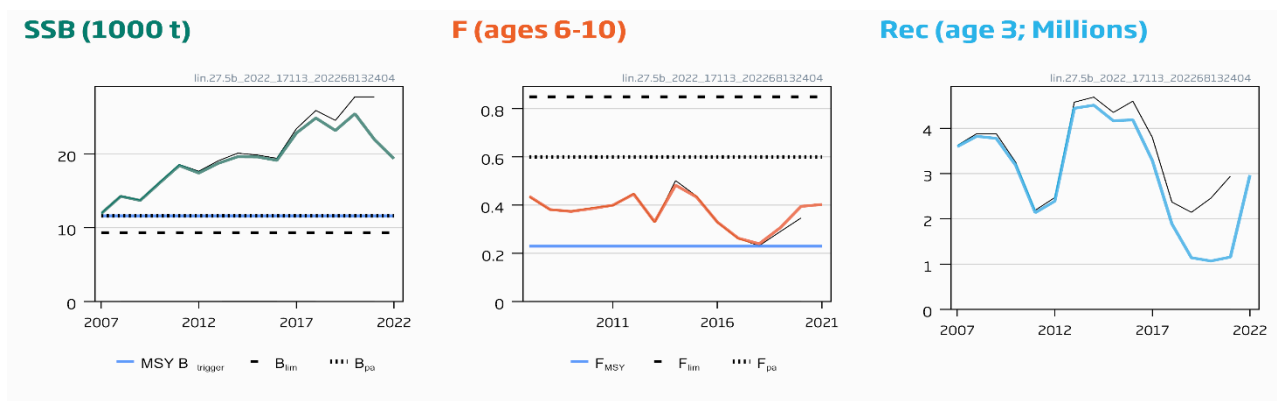


Figure 2 Ling in Division 5.b. Historical assessment results. Final-year recruitment and biomass estimates are included.

Issues relevant for the advice

The Faroese fishery for ling in Division 5.b is managed by effort. ICES is not able to provide direct effort advice, because the relationship between catch and fishing effort in the commercial fisheries is unknown.

The catch in 2019-2021 has exceeded the advised catch. This is resulting in an F almost twice F_{MSY} .

This stock is classified as Category 4 in the NEAFC categorization of deep-sea species/stocks (NEAFC, 2016). 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.

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 $B_{trigger}$	11 627	B_{pa} ; in tonnes	ICES (2021)
	F_{MSY}	0.23	Stochastic simulations (EqSim) with segmented regression fixed at B_{lim}	ICES (2021)
Precautionary approach	B_{lim}	9 340	$B_{lim} = B_{pa}/\exp(\sigma \times SSB \times 1.645)$, $\sigma = 0.13$; in tonnes	ICES (2021)
	B_{pa}	11 627	$B_{pa} = B_{loss}$ lowest observed SSB (2001) from benchmark assessment; in tonnes	ICES (2021)
	F_{lim}	0.85	The F that on average leads to B_{lim} from Eqsim	ICES (2021)
	F_{pa}	0.60	The F that leads to $SSB \geq B_{lim}$ with 95% probability	ICES (2021)
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	1 (ICES, 2022a)
Assessment type	Age-based analytical assessment (SAM; ICES, 2022b) that uses catches in the model and in the forecast
Input data	Commercial catches (mainly Faroese catches, ages and length frequencies from catch sampling); survey indices from the Faroese groundfish spring survey (G1264) and the Faroese groundfish summer survey (G3284); time invariant maturity ogive; natural mortalities set at 0.15
Discards and bycatch	Discarding is considered negligible
Indicators	None
Other information	Benchmarked for the first time in 2021 (ICES, 2021).
Working group	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP)

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 UK 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

Year	ICES advice	Catch corresponding to advice	TAC EU Subarea 5 (EU and international waters)	TAC EU Division 5.b (Faroeese waters)**	TAC UK Division 5.b (Faroeese waters)**	TAC Norway Division 5.b (Faroeese waters)**	ICES landings
2018	Adjust effort corresponding to catch advice	≤ 5196	33	1885		2200	5185
2019	Biennial	≤ 5196	33	1885		2300	7816
2020	Adjust effort corresponding to catch advice	≤ 4157	33	1885		2500	9427
2021	Biennial	≤ 4157	26	0	6	2500	7869*
2022	MSY approach	≤ 5636	26	0	225	3000	
2023	MSY approach	≤ 3552					

^ The Faroeese 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

There are no reported catches in the NEAFC Regulatory Area.

Table 7 Ling in Division 5.b. Catch distribution by fleet in 2021 as estimated by ICES.

Catch (2021)	Landings		Discards
7869 tonnes	Bottom trawl 23%	Longline 77%	Negligible
	7869 tonnes		

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

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
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
2019		4861	25		1983		29		6895	338		580	920	7816
2020		5642	16		2537		83		8277	1015		128	1149	9427
2021*		5074	11		1444		0		6529	1268		72	1340	7869

* Preliminary.

** Includes Subdivision 5.b.2.

*** Includes Greenland.

Summary of the assessment

Table 9 Ling in Division 5.b. Assessment summary. Weights are in tonnes, recruitment in thousands. 'High' and 'Low' indicate 95% confidence intervals

Year	Recruitment			Spawning-stock biomass			Catch	Fishing mortality		
	Age 3	High	Low	SSB	High	Low		Ages 6–10	High	Low
	thousands			tonnes				tonnes		
1988							4488			
1989							4652			
1990							3857			
1991							4512			
1992							3614			
1993							2856			
1994							3622			
1995							4070			
1996	1594	2080	1221	18303	22192	15095	4896	0.37	0.52	0.27
1997	1821	2394	1385	15554	18691	12943	5657	0.39	0.52	0.29
1998	2847	3646	2223	15171	18165	12671	5359	0.45	0.59	0.34
1999	2966	3808	2310	13136	15684	11002	5238	0.51	0.67	0.39
2000	2835	3639	2208	13179	15576	11151	4109	0.43	0.57	0.33
2001	2395	3098	1851	11689	13729	9953	4609	0.38	0.50	0.28
2002	2390	3079	1855	12536	14686	10701	4139	0.33	0.44	0.25
2003	2760	3515	2167	13567	15953	11538	5453	0.39	0.51	0.30
2004	3069	3903	2413	15118	17825	12822	6039	0.48	0.62	0.37
2005	4126	5323	3198	13249	15617	11239	5849	0.49	0.63	0.38
2006	3888	4991	3028	11749	13804	10000	5213	0.49	0.63	0.38
2007	3592	4582	2817	11935	13953	10209	4731	0.44	0.57	0.34
2008	3822	4883	2992	14270	16647	12231	4747	0.38	0.50	0.29
2009	3777	4860	2936	13711	16010	11741	4643	0.37	0.49	0.28
2010	3180	4076	2482	16101	18872	13738	6129	0.39	0.51	0.29
2011	2135	2739	1665	18439	21672	15689	4843	0.40	0.53	0.30
2012	2390	3075	1858	17424	20529	14789	6011	0.45	0.59	0.34
2013	4441	5693	3464	18748	22132	15881	4133	0.33	0.46	0.24
2014	4509	5796	3508	19641	23353	16519	6655	0.48	0.65	0.36

Year	Recruitment			Spawning-stock biomass			Catch	Fishing mortality		
	Age 3	High	Low	SSB	High	Low		Ages 6–10	High	Low
	thousands			tonnes				tonnes		
2015	4165	5466	3174	19616	23227	16566	5976	0.43	0.57	0.33
2016	4185	5530	3167	19145	22547	16256	5890	0.33	0.44	0.25
2017	3286	4547	2375	22845	26888	19410	6195	0.26	0.36	0.19
2018	1888	2753	1295	24882	29537	20961	5185	0.24	0.33	0.17
2019	1140	1790	726	23194	27948	19249	7816	0.31	0.42	0.22
2020	1068	1920	594	25466	31483	20599	9427	0.40	0.58	0.27
2021	1155	2467	540	21971	29108	16584	7869*	0.40	0.65	0.25
2022	2966**	4509**	1068**	19363	27986	12866				

* Preliminary.

** Resampled from the years 1996–2020

Sources and references

ICES. 2021. Benchmark Workshop for Barents Sea and Faroese Stocks (WKBARFAR 2021). ICES Scientific Reports. 3:21. 205 pp. <https://doi.org/10.17895/ices.pub.7920>

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 the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP). ICES Scientific Reports. 4:40. 995 pp. <http://doi.org/10.17895/ices.pub.20037233>.

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

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