

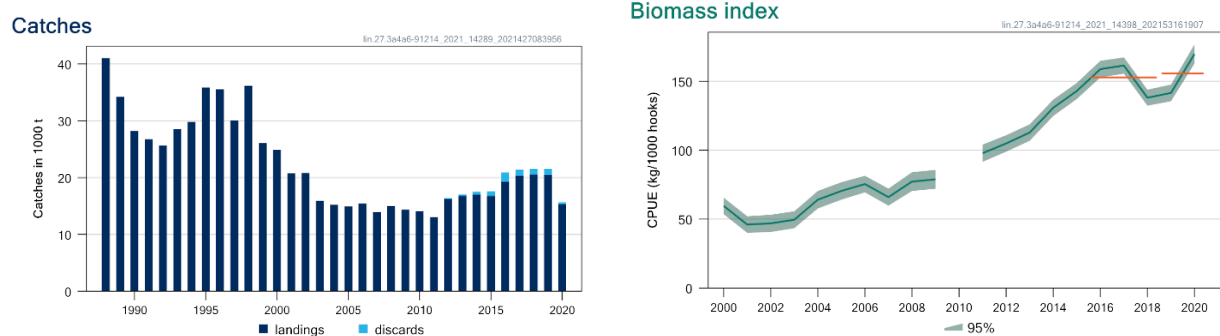
## Ling (*Molva molva*) in subareas 3, 4, 6–9, 12, and 14 (Northeast Atlantic and Arctic Ocean)<sup>†</sup>

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches should be no more than 15 092 tonnes in each of the years 2022 and 2023.

### 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** Ling (*Molva molva*) in subareas 3,4, 6–9, 12, and 14. Left: catches . Right: standardized biomass index from the Norwegian longline fleet (kg per 1000 hooks). The horizontal orange lines indicate the average of the most recent two years and the previous three years. The shaded areas on the biomass index plot represent 95% confidence intervals.

### Catch scenarios

ICES framework for category 3 stocks was applied (ICES, 2012). The standardized CPUE series from the Norwegian longline fleet was used as an index for the stock development. The advice is based on a comparison of the two latest index values (index A) with the three preceding values (index B), multiplied by the recent (2020–2021) advised catch. The index is estimated to have increased by less than 20%, so the uncertainty cap was not applied. The precautionary buffer was never applied and therefore was considered this year. The stock status relative to candidate reference points is unknown; therefore, the precautionary buffer was applied in the advice. The average discard rate in the last three years was 4.4%.

**Table 1** Ling in subareas 3, 4, 6–9, 12, and 14. The basis for the catch scenarios <sup>^</sup>.

Index A (2019–2020)		156
Index B (2016–2018)		153
Index ratio (A/B)		1.02
Uncertainty cap	Not applied	
Advised catch for 2020 and 2021 (issued in 2019)		18 516 tonnes
Discard rate		0.044
Precautionary buffer	Applied	0.8
Catch advice*		15 092 tonnes
Landings corresponding to the catch advice**		14 418 tonnes
% Advice change ***		-18%

<sup>^</sup> 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.

\* [Recent advised catch] × [index ratio] × [precautionary buffer].

\*\* [Advised catch] × [1 – discard rate].

\*\*\* Advice value for 2022 and 2023 relative to advice value for 2020 and 2021.

<sup>†</sup> The stock name has changed; in the previous advice issued in 2019 it was referred to as: Ling (*Molva molva*) in subareas 6–9, 12, and 14, and in divisions 3.a and 4.a (Northeast Atlantic and Arctic Ocean)

The advice has decreased because the precautionary buffer was applied.

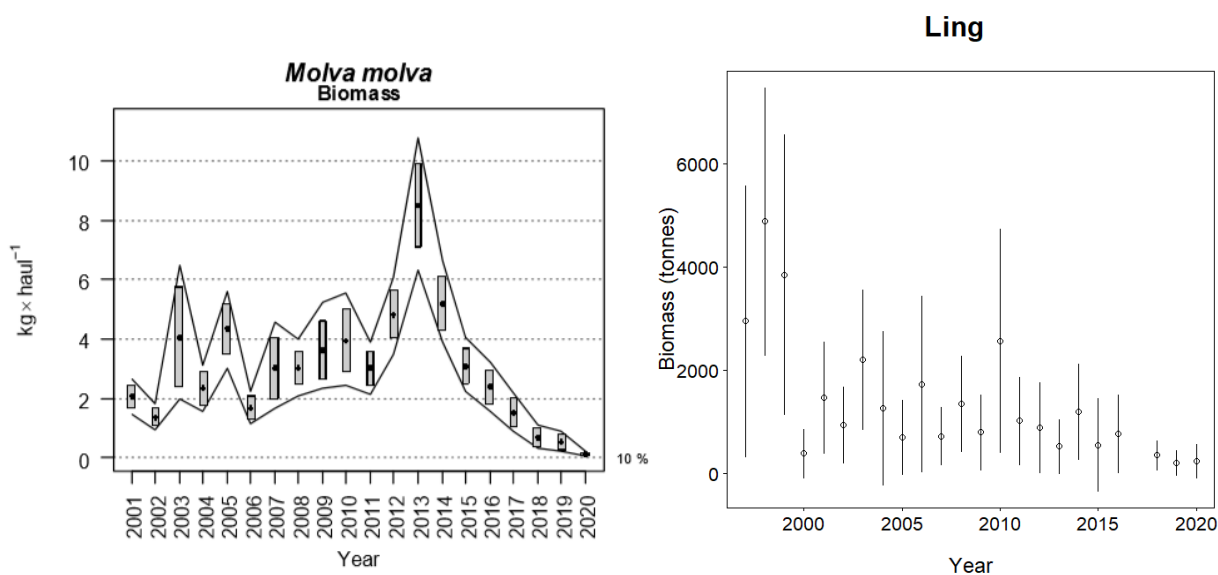
## Basis of the advice

**Table 2** Ling in subareas 3, 4, 6–9, 12, and 14. 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 advice is based on a standardized CPUE series from the Norwegian longline fleet operating in subareas 4 and 6 (ICES, 2021). Approximately three quarters of the landings come from this area. The trends are similar between subareas of the Norwegian data. However, there are different trends in subareas 7 and 8 for this species (Figure 2). There is uncertainty as to whether ling in subareas 3, 4, 6–9, 12, and 14 comprise more than one stock.



**Figure 2** Ling in subareas 3, 4, 6–9, 12, and 14. Estimated biomass index based on the Spanish Porcupine Bank ([SP-PORC; G5768] divisions 7.c and 7.k; left) and French Southern Atlantic Bottom trawl survey ([EVHOE; G9527] divisions 7.g–k and 8.abd; right) surveys for the years 2001–2020 and 1997–2020, respectively.

## Issues relevant for the advice

The index used for advice is suitable for subareas 4 and 6. These subareas, however, show different biomass trends compared to subareas 7 and 8 (Figure 2). While the advice is provided for a wide area, management should be aware of different trends in stock development in different subareas.

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).

There is no common management scheme across the range of this stock, and since 2014 the total catch (except for 2020) has been higher than the advice.

## Reference points

Reference points are not defined for this stock. The length-based index (LBI) reference points presented in previous advice are no longer considered to be robust (ICES, 2021b).

## Basis of the assessment

**Table 3** Ling in subareas 3, 4, 6–9, 12, and 14. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2021a)
Assessment type	CPUE trends-based assessment (ICES, 2021b)
Input data	Standardized CPUE series from the Norwegian longline reference fleet targeting ling and operating in subareas 4 and 6
Discards and bycatch	Discards are estimated at 4.4% of the catch over the last three years
Indicators	None
Other information	Survey indicators in subareas 7 and 8
Working group	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP)

## History of advice, catch, and management

**Table 4** Ling in subareas 3, 4, 6–9, 12, and 14. ICES advice and catch (discard information only included from 2012), TACs, quotas and official landings. All weights are in tonnes.

Year	ICES advice *	Catch corresponding to advice	EU TAC Subarea 3	EU TAC Subarea 4 (EU waters)	EU quota in Norwegian waters of Subarea 4	Sum of TACs in subareas 6,7,8,9,10, 12 and 14***	Total TAC	ICES catch
2003	30% reduction on fishing effort	-	136	4666		25 266	30 068	15 913
2004	Biennial	-	136	4666		25 266	30 068	15 253
2005	Effort reduced by 30%	-	136	3966	1000	22 566	27 668	14 960
2006	Biennial	-	136	3966	1000	22 066	27 168	15 433
2007	Reduce about 30% in catches	10 000	109	3173	1000	18 003	22 285	13 930
2008	Biennial	10 000	100	2856	849	16 664	20 469	15 033
2009	Constrain catches	10 000	100	2854	850	16 662	20 466	14 346
2010	Biennial	10 000	92	2428	850	14 164	17 534	14 107
2011	Constrain catches to 2003–2008 average, and a reduction in catches should be considered	15 000	92	2428	850	14 164	17 534	13 079
2012	No new advice, same as 2011	15 000	92	2428	850	14 164	17 534	16 440
2013	Reduce catches by 20%	10 800	87	2428	945	14 164	17 624	17 063
2014	No new advice, same as 2013	10 800	87	2428	950	14 164	17 629	17 518
2015	No new advice, same as 2013	10 800	87	2428	1100	14 164	17 779	17 596

Year	ICES advice *	Catch corresponding to advice	EU TAC Subarea 3	EU TAC Subarea 4 (EU waters)	EU quota in Norwegian waters of Subarea 4	Sum of TACs in subareas 6,7,8,9,10, 12 and 14***	Total TAC	ICES catch
2016	Precautionary approach	14 746	87	2912	950	16 997	20 946	20 901
2017	Biennial	14 746	87	3494	1350	20 396	25 327	21 444
2018	Precautionary approach	≤ 17 695	87	3843	1350	20 396	25 676	21 566
2019	Precautionary approach	≤ 17 695	170	4035	1350	20 396	25 951	21 561
2020	Precautionary approach	≤ 18 516	179	4237	1350	20 396	26 162	15 664
2021	Precautionary approach	≤ 18 516	**	**	**	**		
2022	Precautionary approach	≤ 15 092						
2023	Precautionary approach	≤ 15 092						

\*Including EC waters of Division 2.a and Subarea 4 until 2007

\*\* TACs were not agreed at the time of publication.

\*\*\* TAC EU subareas 6,7,8,9,10,12 and 14 + TAC Faroe subareas 6,7,8,9,10,12 and 14 (EU waters) + TAC Norway subareas 6,7,8,9,10,12 and 14 (EU waters)

### History of the catch and landings

There are no reported catches in the NEAFC Regulatory Area.

**Table 5** Ling in subareas 3, 4, 6–9, 12, and 14. Catch distribution by fleet in 2020 as estimated by ICES.

Catch (2020)	Landings				Discards
	Longline 40%	Trawl 45%	Gillnets 9%	Other 6%	
15 664 tonnes	15 257 tonnes				407 tonnes

**Table 6** Ling in subareas 3, 4, 6–9, 12, and 14. History of official commercial landings are presented by subarea. All weights are in tonnes.

Year	Subarea						All areas
	3	4	6	7	8	9, 12, 14	
1988	331	11602	16321	11771	1028	3	41056
1989	422	12064	12374	8171	1221	1	34253
1990	543	10482	8235	7531	1372	12	28175
1991	484	10459	7457	7227	1139	11	26777
1992	549	11605	6479	6192	802	17	25644
1993	642	13607	6823	6940	510	9	28531
1994	469	11819	9270	8169	85	11	29823
1995	412	13700	10485	10366	845	67	35875
1996	402	13274	9701	11135	1041	2	35555
1997	311	12014	7560	9106	1034	70	30095
1998	241	14269	8756	11105	1797	10	36178
1999	245	10264	8074	7026	452	12	26073
2000	228	9631	8788	5897	339	34	24917
2001	262	8141	5931	5707	594	96	20731
2002	263	9461	4660	5960	467	31	20843
2003	261	6667	3906	4540	436	102	15913
2004	236	6547	3833	4126	492	19	15253
2005	210	6598	4170	3513	450	19	14960
2006	188	6863	3984	3980	398	20	15433
2007	174	6017	4434	2985	312	8	13930
2008	175	7459	4463	2571	345	20	15033
2009	149	7722	4959	1321	186	9	14346
2010	142	6599	5718	1508	134	6	14107
2011	140	6719	4258	1752	201	9	13079
2012	145	7210	5045	3150	552	116	16218
2013	130	7373	5455	3354	459	2	16773
2014	120	7890	5535	3057	395	17	17014
2015	125	8216	5979	2079	337	21	16757
2016	152	9890	6747	2173	287	35	19284
2017	138	11373	7101	1476	201	7	20296
2018	177	11710	7384	1095	183	5	20554
2019	205	11601	7447	934	163	130	20480
2020*	183	8958	5250	704	162	0	15257

\* Preliminary.

### Summary of the assessment

**Table 7** Ling in subareas 3, 4, 6–9, 12, and 14. Standardized biomass index from the Norwegian longline fleet (kg per 1000 hooks [no survey was conducted in 2010]), landings, and discards. High and low refer to the 95% confidence bounds.

Year	Biomass index kg/1000 hooks	High	Low	Landings (tonnes)	Discards (tonnes)
1988				41056	
1989				34253	
1990				28175	
1991				26777	
1992				25644	
1993				28531	
1994				29823	
1995				35875	
1996				35555	
1997				30095	
1998				36178	

Year	Biomass index kg/1000 hooks	High	Low	Landings (tonnes)	Discards (tonnes)
1999				26073	
2000	59.57	65.54	53.59	24917	
2001	46.03	52.05	40	20731	
2002	46.86	53.12	40.6	20843	
2003	49.49	55.63	43.35	15913	
2004	64.06	70.43	57.69	15253	
2005	70.41	76.75	64.07	14960	
2006	75.42	81.44	69.41	15433	
2007	65.94	72.13	59.75	13930	
2008	77.21	84.02	70.41	15033	
2009	78.87	85.73	72.01	14346	
2010				14107	
2011	97.83	104.11	91.56	13079	
2012	104.91	110.88	98.93	16218	222
2013	112.83	118.81	106.85	16773	290
2014	130.82	136.81	124.84	17014	504
2015	143.03	148.86	137.19	16757	839
2016	158.9	164.94	152.86	19284	1617
2017	161.53	167.44	155.61	20296	1148
2018	138.16	143.97	132.34	20554	1012
2019	141.61	147.65	135.56	20480	1081
2020	169.88	176.86	162.91	15257	407

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

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