

Lemon sole (*Microstomus kitt*) in Subarea 4 and divisions 3.a and 7.d (North Sea, Skagerrak and Kattegat, eastern English Channel)

ICES advice on fishing opportunities

ICES advises that when the maximum sustainable yield (MSY) approach is applied, catches in 2026 should be no more than 1 107 tonnes.

ICES notes the existence of a precautionary management plan, developed and adopted by one of the relevant management authorities for this stock.

Non-fisheries conservation considerations

Conservation aspects and associated management measures may exist at a national or regional level but were not reviewed by ICES.

Stock development over time

Fishing pressure on the stock is below $F_{MSY\ proxy}$, and the stock-size indicator is below $I_{trigger}$.

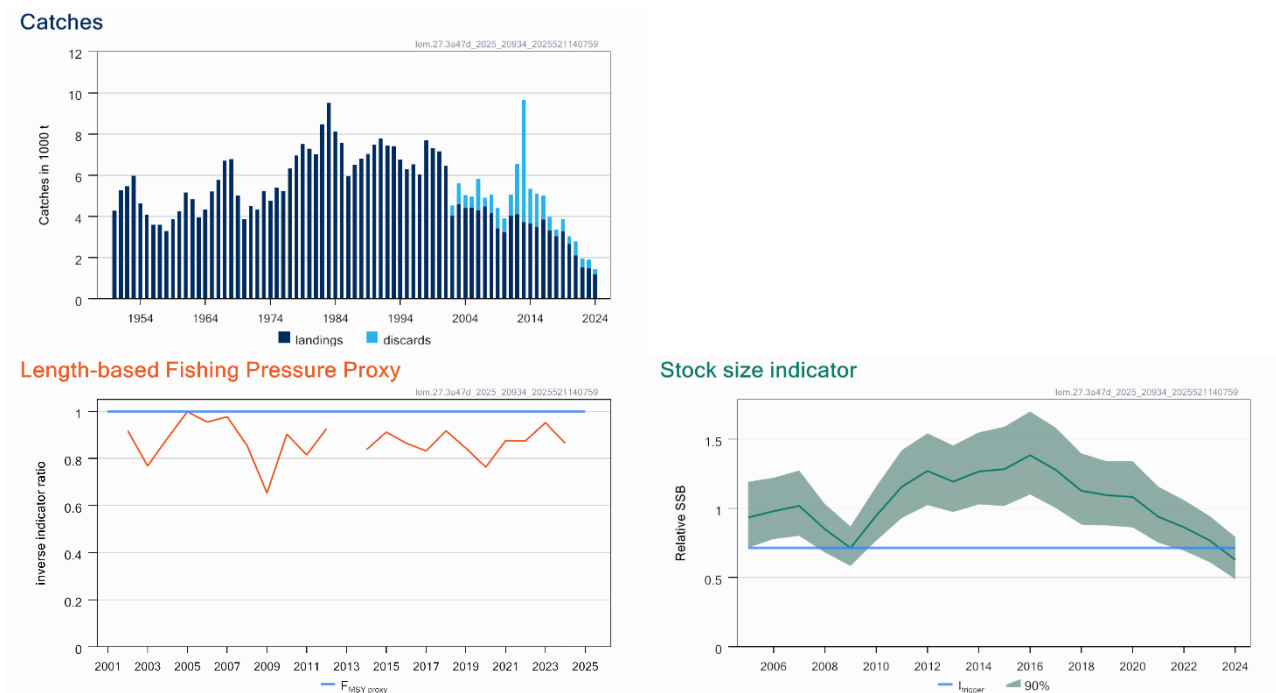


Figure 1 Lemon sole in Subarea 4 and divisions 3.a and 7.d. Summary of the stock assessment. Discard data are available since 2002. Length-based fishing pressure proxy $L_F = M/L_{mean}$ (inverse of the indicator ratio, f) is used for the evaluation of the exploitation status. Stock-size indicator (relative biomass index) based on a survey-based assessment (SURBAR).

Catch scenarios

The ICES framework for category 3 stocks was applied (*chr* rule, method 2.2. ICES, 2025a) to provide MSY advice. A biomass index from a survey-based assessment (SURBAR) model was used as an indicator of stock development. The advice is based on the stock-size indicator for 2024, multiplied by a constant harvest rate, a biomass safeguard, and a precautionary multiplier. The stability clause was not applied, since the biomass safeguard in the *chr* rule is below 1. The average discard rate in the period 2022–2024 was 21% of the total catch.

Table 1 Lemon sole in Subarea 4 and divisions 3.a and 7.d. The basis for the catch scenarios. Catches are in tonnes. *

Previous catch advice A_y	1450 tonnes	
Biomass index		
I: most recent biomass index (I_{2024})	0.629	
Maximum sustainable yield (MSY) proxy harvest rate		
$HR_{MSY \text{ proxy}}$: MSY proxy harvest rate (average of the ratio of catch to biomass index for the years for which $f > 1$, where $f = L_{mean}/L_{F=M}$)	4003	
Biomass safeguard		
Index trigger value ($I_{trigger}$)	0.715	
b: index relative to trigger value, $\min\{I_{2024}/I_{trigger}, 1\}$	0.880	
Precautionary multiplier to maintain biomass above B_{lim} with 95% probability		
m: multiplier (generic multiplier based on life history)	0.5	
chr calculation**	1107 tonnes	
Stability clause (+20%/-30% compared to A_y , only considered if $b = 1$)	Not applied	
Discard rate (average 2022–2024)	21%	
Catch advice for 2026	1107 tonnes	
Landings corresponding to the advice	873 tonnes	
% total allowable catch (TAC) change [^]	-24%	
% advice change	-24%	

* 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.

** Formula: $I \times HR_{MSY \text{ proxy}} \times b \times m$.

[^] Total advised catch in 2026 (1 107 tonnes) relative to the EU–UK agreed catch limit approach for 2025 (1 450 tonnes). This limit reflects the sum of the EU–UK agreed TACs in 2025 (1 439 tonnes), divided by 0.9928 to account for a 0.72% deduction for third-country catches, following the method for projecting third-country catches (EU–UK Joint Committee, 2023).

The change in advice (-24%) is because of a decreasing biomass index.

Basis of the advice

Table 2 Lemon sole in Subarea 4 and divisions 3.a and 7.d. The basis of the advice.

Advice basis	Maximum sustainable yield (MSY) approach
Management plan	The EU multiannual plan (MAP) for stocks in the North Sea (EU, 2018) and adjacent waters applies to bycatches of this stock. Neither UK nor Norway has requested ICES to provide advice based on the EU MAP. The MAP stipulates that when the F_{MSY} ranges are not available, fishing opportunities should be based on the best available scientific advice.

Quality of the assessment

Although biological sampling of lemon sole for 2025 has increased compared to 2024, it is still low.

The current survey indices used for North Sea lemon sole are not able to track cohorts, which adds to the uncertainty of the relative spawning-stock biomass (SSB) estimate from SURBAR.

Issues relevant for the advice

A fishery-independent index covering the entire distribution area of the stock and targeting all length/age classes of lemon sole is needed to improve the assessment. To conduct a full age- or length-based analytical assessment, improved information on age/length distributions in landings and discards from countries participating in the fishery are required.

Reference points

Table 3 Lemon sole in Subarea 4 and divisions 3.a and 7.d. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
Maximum sustainable yield (MSY) approach	I_{trigger}	0.715	I_{loss} : the lowest value of the relative stock size indicator based on the survey-based assessment (SURBAR) spawning-stock biomass (SSB). The fishing pressure proxy relative to MSY proxy $f = L_{\text{mean}}/L_{F=M}$ (Table 8) suggests low exploitation throughout the time-series, so $I_{\text{trigger}} = I_{\text{loss}}$.	ICES (2025b)
	$HR_{\text{MSY proxy}}$	4003	Average of the ratio of catch to the relative stock size indicator for the years 2007–2022 (excluding 2013) for which the fishing pressure proxy relative to MSY proxy ($f > 1$), where $f = L_{\text{mean}}/L_{F=M}$ (Table 8)	ICES (2025b)
	$F_{\text{MSY proxy}}$	$\frac{L_{\text{mean}}}{L_{F=M}} = 1^*$	Relative value from LBI analysis, assuming $M/K = 1.5$. $L_{F=M}$ is based on L_c (length at 50% of modal abundance), which varies each year.	ICES (2025b)
	F_{PA}	Not defined		
Management plan	SSB_{mgt}	Not defined		
	F_{mgt}	Not defined		

* No reference points are defined for this stock in terms of absolute values. The LBI-estimated values of the ratio $L_{\text{mean}}/L_{F=M}$ are used to estimate exploitation status relative to the proxy MSY reference point.

Basis of the assessment

Table 4 Lemon sole in Subarea 4 and divisions 3.a and 7.d. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2023)
Assessment type	Stock-size indicator based on survey-based assessment (SURBAR; Needle, 2015) and applying the <i>chr</i> rule for advice (ICES, 2025b)
Input data	Commercial catches (international landings and discards), two survey indices (IBTS Q1 [G1022] for 2007–2024, combined index for IBTS Q3 [G2829], BTS Q3 [B2453] for 2005–2024), and fixed maturity estimates and annual stock weight-at-age data from three surveys (IBTS Q1 [G1022], IBTS Q3 [G2829], and BTS Q3 [B2453])
Discards and bycatch	Discards have been quantified for 2002–2024
Indicators	Length-based indicator (LBI) based on lengths from commercial catch data (2002–2024). Growth parameters were estimated as $L_{\infty} = 37.5$ cm and $K = 0.383$. L_c is assumed time-varying.
Other information	Last benchmarked in 2018 (ICES, 2018)
Working group	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)

*View assessment in [Transparent Assessment Framework \(TAF\)](#)

History of the advice, catch, and management

Table 5 Lemon sole in Subarea 4 and divisions 3.a and 7.d. ICES advice, total allowable catches (TACs), ICES catch estimates, and official landings. All weights are in tonnes.

Year	ICES advice	Landings corresponding to advice	Catch corresponding to advice	Agreed TAC* in Subarea 4 and Division 2.a	Agreed TAC*** in Subarea 4 and divisions 2.a, 3.a and 7.d	Division 3.a, Subarea 4, and Division 7.d				
						ICES estimated total catch	ICES estimated landings	ICES estimated discards^	Official landings	
				Lemon sole and witch	Lemon sole	Lemon sole			Lemon sole and witch	Lemon sole
2006		-		6175		5809	4294	1515	6593	4290
2007		-		6175		4919	4468	451	6725	4488
2008		-		6793		5051	4153	898	5929	3975
2009		-		6793		4401	3405	996	5212	3394
2010		-		6521		3907	3234	673	4690	3200
2011		-		6391		5054	4030	1024	5575	4045
2012	No increase in catch	-		6391		6560	4099	2461	5967	4071
2013	No new advice, same as for 2012	-		6391		9663	3725	5938	5756	3763
2014	No more than 16% increase in landings (last three years' average)	< 4350		6391		5335	3645	1690	6341	3692
2015	No new advice, same as for 2014	< 4350		6391		5116	3480	1636	5676	3480
2016	Precautionary approach (decrease catches by 9%)		< 5655	6391		5001	3834	1167	6492	3807
2017	Precautionary approach (same advised catch value as given for 2016)		< 5655	6391		3966	3315	651	6208	3343
2018	Precautionary approach (decrease catches by 3%)		< 5484	6391		3377	3046	331	6026	3021
2019	Precautionary approach (same advised catch value as given for 2018)		< 5484	7874		3878	3273	605	5808	3241

Year	ICES advice	Landings corresponding to advice	Catch corresponding to advice	Agreed TAC* in Subarea 4 and Division 2.a	Agreed TAC*** in Subarea 4 and divisions 2.a, 3.a and 7.d	Division 3.a, Subarea 4, and Division 7.d				
						ICES estimated total catch	ICES estimated landings	ICES estimated discards^	Official landings	
				Lemon sole and witch	Lemon sole	Lemon sole			Lemon sole and witch	Lemon sole
2020	Precautionary approach		≤ 4279	6785		3044	2653	391	4589	2656
2021	Precautionary approach		≤ 3742	5428		2775	2107	668	3541	2104
2022	Precautionary approach		≤ 3081	4287		1961	1507	454	3097	1513
2023	Maximum sustainable yield (MSY) approach		≤ 2960	3140		1891	1473	418	2942**	1481**
2024	MSY approach		≤ 2072		2057	1444	1180	264		1186**
2025	MSY approach		≤ 1450		1440					
2026	MSY approach		≤ 1107							

* A combined TAC for witch and lemon sole in EU waters of Subarea 4 and Division 2.a up to 2020 and in UK and European Union waters of 4; UK waters of 2.a thereafter.

** Preliminary.

*** The total EU–UK agreed catch limit representing the sum of TACs for lemon sole in: (1) UK and EU waters of Subarea 4 and Division 2.a, (2) EU waters of Division 3.a, and (3) UK and EU waters of Divisions 7.d. This total is then divided by 0.9928 to account for a 0.72% deduction for third-country catches, following the method for projecting third-country catches (EU-UK Joint Committee, 2023).

^ Since 2021, discards include estimated below minimum size (BMS) landings.

History of the catch and landings

Table 6 Lemon sole in Subarea 4 and divisions 3.a and 7.d. Catch distribution by fleet in 2024 as estimated by ICES.

Catch	Landings					Discards*				
	Otter trawl	Beam trawl	Seine	Gillnet	Other	Otter trawl	Beam trawl	Seine	Other	Gillnet
1 444 tonnes	74%	21%	3%	2%	0%	60%	36%	1%	1%	2%
	1 180 tonnes					264 tonnes				

* Discards include below minimum size (BMS) landings from EU and UK fleets.

Table 7a Lemon sole in Subarea 4 and divisions 3.a and 7.d. **Division 7.d: official landings.** History of commercial catch and landings; the official landings and below minimum size (BMS) landings are presented by area for each country participating in the fishery, along with ICES estimates of landings and discards. All weights are in tonnes.

Year	Official landings							BMS	Total
	Belgium	Denmark	France	Netherlands	UK	Other			
1950	10	0	174	0	24	0		208	
1951	5	0	262	0	47	0		314	
1952	10	0	188	0	100	0		298	
1953	7	0	196	0	183	0		386	
1954	9	0	361	0	164	0		534	
1955	9	0	0	0	132	0		141	
1956	4	0	0	0	99	0		103	
1957	7	0	0	0	95	0		102	
1958	1	0	0	0	81	0		82	
1959	2	0	0	0	80	0		82	
1960	4	0	0	0	62	0		66	
1961	1	0	0	0	106	1		108	
1962	2	0	0	0	99	0		101	
1963	3	0	0	0	63	0		66	
1964	5	0	0	0	72	0		77	
1965	16	0	0	0	89	0		105	
1966	7	0	0	0	194	0		201	
1967	6	0	0	0	325	0		331	
1968	8	0	0	0	329	0		337	
1969	12	0	0	0	303	0		315	
1970	16	0	0	0	240	0		256	
1971	22	0	0	0	335	0		357	
1972	18	0	0	0	457	0		475	
1973	25	0	0	0	426	0		451	
1974	16	0	0	1	334	0		351	
1975	19	0	0	0	14	0		33	
1976	24	0	0	0	18	0		42	
1977	21	1	0	0	15	0		37	
1978	45	2	63	0	31	0		141	
1979	60	0	165	0	35	0		260	
1980	33	0	109	0	10	0		152	
1981	66	0	212	0	12	0		290	
1982	96	0	406	1	81	0		584	
1983	108	0	298	0	85	0		491	
1984	110	0	367	0	109	0		586	
1985	117	0	164	0	66	0		347	
1986	77	0	133	0	41	0		251	
1987	81	0	185	0	44	0		310	
1988	74	0	155	0	29	0		258	
1989	68	0	252	0	44	0		364	
1990	68	0	272	0	83	0		423	
1991	83	0	272	0	73	0		428	
1992	66	0	176	0	122	0		364	

Year	Official landings							
	Belgium	Denmark	France	Netherlands	UK	Other	BMS	Total
1993	36	0	311	0	75	0		422
1994	97	0	505	0	93	0		695
1995	138	0	584	0	155	0		877
1996	213	0	720	0	218	0		1151
1997	143	0	305	0	115	0		563
1998	53	0	198	0	95	0		346
1999	50	0	0	0	90	0		140
2000	62	0	200	0	126	0		388
2001	104	0	191	0	188	0		483
2002	101	0	256	0	117	0		474
2003	128	0	251	0	112	0		491
2004	120	0	198	1	105	0		424
2005	90	0	187	2	71	0		350
2006	98	0	100	0	48	0		246
2007	70	0	72	1	21	0		164
2008	140	0	46	3	45	0		234
2009	149	0	176	9	107	0		441
2010	101	0	85	5	32	0		224
2011	153	0	197	15	57	0		422
2012	171	0	167	20	108	0		466
2013	175	0	181	26	110	0		492
2014	163	0	108	14	72	0		357
2015	122	0	85	10	42	0		260
2016	116	0	69	9	47	0		239
2017	87	0	34	8	30	0		158
2018	57	0	21	5	16	0		99
2019	49	0	27	6	23	0	< 0.5	104
2020	46	0	25	6	19	0	0	96
2021	38	0	18	7	26	0	< 0.5	89
2022	39	0	17	4	11	0	0	72
2023*	22	0	11	3	6	0	0	43
2024*	20	0	7	2	5	0	< 0.5	34

*Preliminary.

Table 7b Lemon sole in Subarea 4 and divisions 3.a and 7.d. **Subarea 4: official landings.** History of commercial catch and landings; the official landings and below minimum size (BMS) landings are presented by area for each country participating in the fishery, along with ICES estimates of landings and discards. All weights are in tonnes.

Year	Official landings									
	Belgium	Denmark	France	Germany	Netherlands	Norway	UK	Other	BMS	Total
1950	112	435	139	31	156	0	2855	26		3754
1951	115	845	90	21	167	0	3430	42		4710
1952	98	391	227	26	168	0	3953	59		4922
1953	73	409	189	18	132	0	4590	29		5440
1954	2	272	177	24	112	0	3368	17		3972
1955	49	311	0	15	78	0	3374	9		3836
1956	48	222	0	19	58	0	3034	14		3395
1957	39	249	0	24	64	0	3032	11		3419
1958	30	171	0	13	43	0	2835	12		3104
1959	85	242	0	40	43	0	3226	11		3647
1960	155	577	0	46	67	0	3178	12		4035
1961	286	488	0	79	102	0	3934	11		4900
1962	175	501	0	54	106	0	3794	0		4630
1963	365	222	0	36	71	0	3097	0		3791
1964	484	358	0	62	75	0	3142	0		4121
1965	562	385	0	91	93	0	3818	0		4949
1966	594	548	0	98	65	0	4110	0		5415

Year	Official landings									
	Belgium	Denmark	France	Germany	Netherlands	Norway	UK	Other	BMS	Total
1967	601	791	0	136	61	0	4599	0		6188
1968	422	775	0	96	34	0	4943	0		6270
1969	292	639	0	80	36	0	3423	0		4470
1970	241	307	0	52	58	0	2776	0		3434
1971	348	514	0	54	122	0	2929	0		3967
1972	423	530	0	59	130	0	2530	0		3672
1973	566	478	0	73	217	16	3218	0		4568
1974	486	447	0	59	269	0	2966	0		4227
1975	748	521	0	83	299	0	3367	11		5029
1976	493	506	0	68	308	0	3443	12		4830
1977	618	321	0	71	262	0	4387	2		5661
1978	760	517	28	54	231	0	4518	0		6108
1979	674	876	136	41	390	0	4308	3		6428
1980	484	599	102	49	303	0	4885	2		6424
1981	555	605	237	39	412	0	4084	1		5933
1982	879	670	419	52	759	0	4386	3		7168
1983	1122	735	402	28	1009	0	4957	4		8257
1984	1144	567	344	22	0	0	4850	3		6930
1985	989	555	157	26	0	0	4703	5		6435
1986	511	577	103	16	0	0	3839	1		5047
1987	448	742	174	14	0	0	4137	1		5516
1988	539	639	184	14	301	0	4220	1		5898
1989	441	828	176	40	397	0	4083	2		5967
1990	491	1007	208	49	0	0	4431	4		6190
1991	544	1099	250	41	0	12	4666	6		6618
1992	577	1149	177	30	0	13	4175	5		6126
1993	525	966	240	37	0	9	4059	3		5839
1994	436	597	436	27	0	11	3754	1		5262
1995	588	585	412	70	0	9	3046	2		4712
1996	592	547	534	67	0	18	2976	3		4737
1997	504	499	224	76	0	29	3391	4		4727
1998	815	796	197	149	838	23	3643	5		6466
1999	662	1015	0	62	681	24	3866	6		6316
2000	711	1277	184	72	492	17	3222	5		5980
2001	694	1281	191	77	451	22	2666	7		5389
2002	604	971	190	116	402	17	1521	6		3827
2003	517	1008	239	136	369	16	1399	4		3688
2004	667	1113	120	81	355	12	1192	3		3543
2005	595	1057	102	85	402	13	1188	2		3444
2006	552	968	57	183	412	13	1440	2		3627
2007	542	1136	66	143	367	23	1609	6		3892
2008	527	925	48	119	434	26	1383	3		3465
2009	389	897	88	63	294	31	927	2		2690
2010	376	821	32	102	323	36	935	2		2626
2011	387	999	60	96	641	27	1157	2		3369
2012	406	999	34	61	587	30	1003	2		3123
2013	527	649	28	67	479	16	1214	2		2981
2014	650	626	27	63	424	23	1203	3		3019
2015	443	794	17	82	453	12	1120	3		2925
2016	448	1055	15	82	443	23	1197	5		3268
2017	345	1032	4	43	360	14	1042	4		2845
2018	370	815	9	52	349	14	1029	3		2641
2019	467	671	8	47	475	13	1122	4	< 0.5	2808
2020	376	497	9	32	385	5	912	6	< 0.5	2221
2021	312	331	2	33	422	7	637	3	< 0.5	1747
2022	150	225	1	29	244	7	475	3	< 0.5	1135
2023*	262	167	2	29	98	14	569	3	< 0.5	1144

Year	Official landings									
	Belgium	Denmark	France	Germany	Netherlands	Norway	UK	Other	BMS	Total
2024*	202	122	1	17	90	10	496	4	< 0.5	943

*Preliminary.

Table 7c Lemon sole in Subarea 4 and divisions 3.a and 7.d. **Division 3.a: official landings.** History of commercial catch and landings; the official landings and below minimum size (BMS) landings are presented by area for each country participating in the fishery, along with ICES estimates of landings and discards. All weights are in tonnes.

Year	Official landings							
	Belgium	Denmark	Germany	Netherlands	Sweden	Other	BMS	Total
1950	0	100	1	0	206	0		307
1951	0	74	1	0	173	0		248
1952	0	64	0	0	179	0		243
1953	0	35	0	0	97	0		132
1954	0	33	0	0	95	0		128
1955	0	29	0	0	73	0		102
1956	0	33	0	0	63	0		96
1957	0	27	0	0	51	0		78
1958	0	38	0	0	56	0		94
1959	0	71	0	0	59	0		130
1960	0	95	1	0	57	0		153
1961	0	90	0	0	71	0		161
1962	0	92	1	0	0	0		93
1963	0	99	0	0	0	0		99
1964	0	133	1	0	0	0		134
1965	0	163	1	0	0	0		164
1966	0	159	0	0	0	0		159
1967	0	189	1	0	0	1		191
1968	0	184	0	0	0	1		185
1969	0	215	0	0	0	0		215
1970	0	169	0	0	0	0		169
1971	0	173	0	0	0	0		173
1972	0	168	0	0	0	0		168
1973	0	214	0	0	0	0		214
1974	0	183	0	0	0	0		183
1975	0	263	1	1	52	0		317
1976	10	294	1	19	37	0		361
1977	9	528	2	37	51	0		627
1978	4	628	2	12	59	0		705
1979	7	704	1	10	111	0		833
1980	12	622	0	0	87	1		722
1981	1	710	0	3	75	4		793
1982	2	647	0	9	77	0		735
1983	3	636	0	10	110	0		759
1984	6	525	0	0	64	0		595
1985	0	729	0	0	64	0		793
1986	7	576	0	0	56	0		639
1987	24	577	0	0	68	0		669
1988	11	569	0	6	56	0		642
1989	8	610	0	0	75	0		693
1990	16	782	0	0	74	0		872
1991	11	640	0	0	83	0		734
1992	22	793	0	0	120	17		952
1993	14	980	4	0	141	17		1156
1994	10	648	2	0	127	16		803
1995	27	576	2	0	91	18		714
1996	0	513	1	0	97	24		635
1997	0	628	2	0	115	23		768

Year	Official landings							Total
	Belgium	Denmark	Germany	Netherlands	Sweden	Other	BMS	
1998	0	743	3	0	100	22		868
1999	0	731	3	0	88	22		844
2000	0	722	1	0	65	15		803
2001	0	511	1	0	53	19		584
2002	0	457	4	0	41	20		522
2003	0	451	6	30	35	21		543
2004	0	472	5	82	29	19		607
2005	0	468	5	147	38	16		674
2006	0	321	8	40	32	16		417
2007	0	374	5	16	18	19		432
2008	0	239	7	3	15	12		276
2009	0	233	4	1	15	9		262
2010	0	286	3	35	19	8		350
2011	0	223	3	0	12	16		254
2012	0	446	3	0	15	18		482
2013	0	259	3	5	10	12		290
2014	0	276	7	12	14	6		315
2015	0	250	4	25	10	6		295
2016	0	265	5	16	8	6		300
2017	0	314	1	11	7	7		340
2018	0	253	5	14	6	2		280
2019	0	292	1	30	5	1	0.5	329
2020	0	286	3	45	4	1	< 0.5	339
2021	0	226	1	25	3	1	< 0.5	256
2022	0	281	1	20	4	1	< 0.5	307
2023*	0	283	1	5	3	1	< 0.5	293
2024*	0	194	1	9	3	2	< 0.5	209

*Preliminary.

Table 7d Lemon sole in Subarea 4 and divisions 3.a and 7.d. **Subarea 4 and divisions 3.a and 7d: ICES estimates of landings and discards.** History of commercial catch and landings; the official landings and below minimum size (BMS) landings are presented by area for each country participating in the fishery, along with ICES estimates of landings and discards. All weights are in tonnes.

Year	ICES landings				ICES discards*				ICES catch
	4	3a	7d	Total landings	4	3a	7d	Total discards	Total
2002	3119	528	364	4011	299	176	37	511	4522
2003	3525	549	501	4575	878	106	53	1037	5612
2004	3366	618	410	4394	479	94	61	635	5029
2005	3426	668	335	4429	374	122	31	527	4956
2006	3624	432	238	4294	1367	122	26	1515	5809
2007	3872	437	159	4468	363	67	21	451	4919
2008	3519	290	344	4153	755	47	96	898	5051
2009	2688	270	447	3405	877	50	70	996	4401
2010	2653	361	221	3234	519	111	42	673	3907
2011	3349	264	417	4030	853	71	100	1024	5054
2012	3118	504	477	4099	2197	95	169	2461	6560
2013	2870	298	557	3725	1631	4208	99	5938	9663
2014	2892	322	431	3645	1442	99	149	1690	5335
2015	2849	302	329	3480	1468	65	104	1636	5116
2016	3251	302	281	3834	1049	57	61	1167	5001
2017	2794	345	176	3315	571	55	25	651	3966
2018	2643	288	114	3046	229	76	27	331	3377
2019	2783	339	151	3273	487	74	44	605	3878
2020	2200	345	107	2653	253	102	36	391	3044
2021	1751	257	96	2107	564	65	39	668	2775
2022	1125	308	74	1507	349	92	12	454	1961

Year	ICES landings				ICES discards*				ICES catch
	4	3a	7d	Total landings	4	3a	7d	Total discards	Total
2023	1137	290	46	1473	356	37	25	418	1891
2024	931	207	42	1180	215	30	19	264	1444

*Since 2021, discards include estimated below minimum size (BMS) landings.

Summary of the assessment

Table 8 Lemon sole in Subarea 4 and divisions 3.a and 7.d. Assessment summary. All weights are in tonnes. Catch, stock-size indicator, and length-based fishing pressure proxy are given for the years used in the application of the *chr* rule. L_{mean} refers to the mean length above length at first capture (L_c), and $L_{F=M}$ refers to the target reference length. Low and High represent 90% confidence intervals.

Year	Landings*	Discards**	Catch	Stock-size indicator			Length-based fishing pressure proxy*** ($L_{F=M}/L_{mean}$)
				Low	Value	High	
1950	4269						
1951	5272						
1952	5463						
1953	5958						
1954	4634						
1955	4079						
1956	3594						
1957	3599						
1958	3280						
1959	3859						
1960	4254						
1961	5169						
1962	4824						
1963	3956						
1964	4332						
1965	5218						
1966	5775						
1967	6710						
1968	6792						
1969	5000						
1970	3859						
1971	4497						
1972	4315						
1973	5233						
1974	4761						
1975	5379						
1976	5233						
1977	6325						
1978	6954						
1979	7521						
1980	7298						
1981	7016						
1982	8487						
1983	9507						
1984	8111						
1985	7575						
1986	5937						
1987	6495						
1988	6798						
1989	7024						
1990	7485						
1991	7780						

Year	Landings*	Discards**	Catch	Stock-size indicator			Length-based fishing pressure proxy*** ($L_F = M/L_{mean}$)
				Low	Value	High	
1992	7442						
1993	7417						
1994	6760						
1995	6303						
1996	6523						
1997	6058						
1998	7680						
1999	7300						
2000	7171						
2001	6456						
2002	4011	511	4522				0.918
2003	4575	1037	5612				0.768
2004	4394	635	5029				0.886
2005	4429	527	4956	0.715	0.934	1.193	0.999
2006	4294	1515	5809	0.779	0.98	1.222	0.955
2007	4468	451	4919	0.802	1.019	1.275	0.977
2008	4153	898	5051	0.682	0.851	1.033	0.855
2009	3405	996	4401	0.584	0.715	0.871	0.653
2010	3234	673	3907	0.766	0.947	1.159	0.903
2011	4030	1024	5054	0.931	1.157	1.422	0.815
2012	4099	2461	6560	1.024	1.271	1.543	0.928
2013	3725	5938	9663	0.974	1.194	1.456	^
2014	3645	1690	5335	1.029	1.267	1.55	0.837
2015	3480	1636	5116	1.018	1.284	1.591	0.912
2016	3834	1167	5001	1.101	1.385	1.701	0.865
2017	3315	651	3966	1.003	1.279	1.584	0.832
2018	3046	331	3377	0.883	1.128	1.398	0.918
2019	3273	605	3878	0.877	1.096	1.341	0.844
2020	2653	391	3044	0.863	1.083	1.341	0.763
2021	2107	668	2775	0.752	0.94	1.158	0.876
2022	1507	454	1961	0.695	0.864	1.061	0.875
2023	1473	418	1891	0.612	0.769	0.946	0.952
2024	1180	264	1444	0.489	0.629	0.795	0.864

* Official landings statistics 1950–2001, ICES estimated landings 2002–2024.

** Since 2021, discards include below minimum size (BMS) landings from EU and UK fleets.

*** Only the ratio of catch to stock size indicator in years from 2007–2022 where length-based fishing pressure proxy ($L_F = M/L_{mean}$) is below 1 are included in the calculation of $HR_{MSY proxy}$.

^ Length data and harvest rates for 2013 have been treated as missing.

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