

Norway lobster (*Nephrops norvegicus*) in Division 6.a, Functional Unit 11 (West of Scotland, North Minch)

ICES advice on fishing opportunities

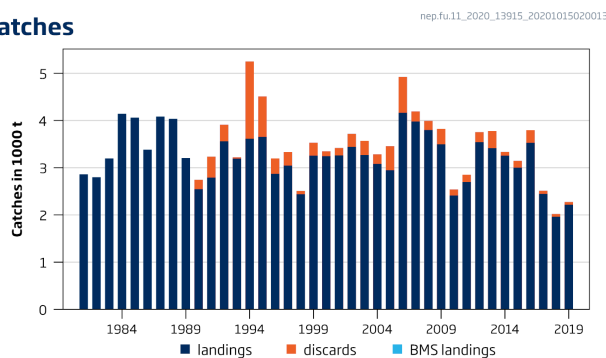
ICES advises that when the EU multiannual plan (MAP) for Western Waters and adjacent waters is applied, catches in 2021 that correspond to the F ranges in the MAP are between 3075 tonnes and 3953 tonnes, assuming recent discard rates. The entire range is considered precautionary when applying the ICES advice rule.

To ensure that the stock in Functional Unit 11 is exploited sustainably, management should be implemented at the functional unit level.

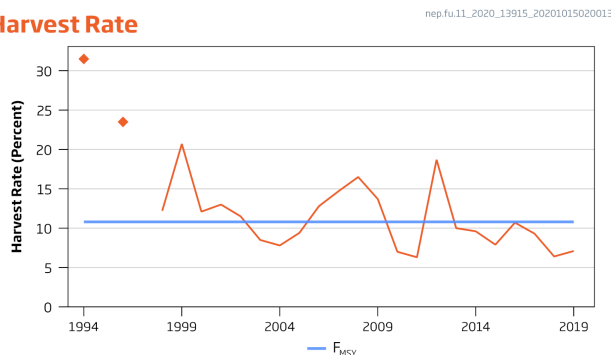
Note: This advice sheet is abbreviated due to the COVID-19 disruption. The previous advice issued for 2020 is attached as Annex 1.

Stock development over time

Catches



Harvest Rate



Stock abundance

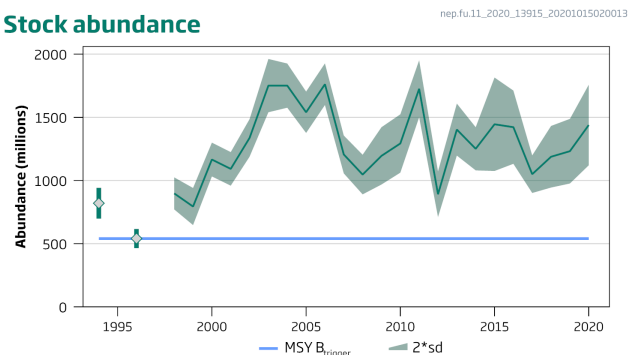


Figure 1 Norway lobster in Division 6.a, Functional Unit 11. Summary of the stock assessment. Catches (discard data are only available from 1990), harvest rate (sum of landings and dead discards in numbers, divided by stock abundance), and stock abundance (underwater TV survey; $2*SD$ is approximate 95% confidence intervals). Harvest rates before 2006 may be unreliable because of underreporting of landings.

Stock and exploitation status

Table 1 Norway lobster in Division 6.a, Functional Unit 11. State of the stock and the fishery relative to reference points.

		Fishing pressure				Stock size		
		2017	2018	2019		2018	2019	2020
Maximum sustainable yield	F_{MSY}	✓	✓	✓ Below		MSY $B_{trigger}$	✓	✓ Above trigger
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓ Below possible reference points		B_{pa}, B_{lim}	✓	✓ Above possible reference points
Management plan	F_{MGT}	✓	✓	✓ Below range		B_{MGT}	✓	✓ Above trigger

Catch scenarios

Table 2 Norway lobster in Division 6.a, Functional Unit 11. The basis for the catch scenarios.

Variable	Value	Notes
Stock abundance (2021)	1439	UWTV Survey 2020; number of individuals in millions
Mean weight in projected landings	25.93	Average 1999–2019 in grammes
Mean weight in projected discards	11.04	Average 1999–2019 in grammes
Projected discards	5.8	Average 2017–2019; percentage by number
Discard survival *	25	Percentage by number
Dead projected discards	4.4	Average 2017–2019; percentage by number

* Only applied in scenarios where discarding is allowed.

Table 3 Norway lobster in Division 6.a, Functional Unit 11. Annual catch advice and scenarios. All weights are in tonnes. 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 tables.

Catch scenarios assuming recent discard rates

Basis	Total catch	Dead removals	Projected landings	Projected dead discards	Projected surviving discards	Harvest rate * %	% advice change **
	PL + PDD + PSD	PL + PDD	PL	PDD	PSD	for PL + PDD	
ICES advice basis							
EU MAP ^: F _{MSY}	3953	3928	3852	76	25	10.8	18.1
F = MAP: F _{MSY lower}	3075	3055	2996	59	20	8.4	18.1
F = MAP: F _{MSY upper} ***	3953	3928	3852	76	25	10.8	18.1
Other scenarios							
MSY approach	3953	3928	3852	76	25	10.8	18.1
F ₂₀₁₉	2599	2582	2532	50	17	7.1	-22

Catch scenarios assuming zero discards

Basis	Total catch	Projected landings	Projected discards ^^	Harvest rate * %	% advice change **
	PL + PD	PL	PD	for PL + PD	
ICES advice basis					
EU MAP ^: F _{MSY}	3896	3796	100	10.8	16.4
F= MAP F _{MSY lower}	3030	2953	77	8.4	16.4
F = MAP F _{MSY upper} ***	3896	3796	100	10.8	16.4
Other scenarios					
MSY approach	3896	3796	100	10.8	16.4
F ₂₀₁₉	2561	2496	65	7.1	-23

* By number.

** Advice basis values for 2021 are relative to the 2020 advice values (MAP advice of 3347, 2604, and 3347 tonnes, respectively); other option values are relative to F_{MSY} .

*** $F_{MSY upper} = F_{MSY}$ for this stock.

^ EU multiannual plan (MAP) for the Western Waters and adjacent waters (EU, 2019).

^^ Represents the amount that would normally be discarded.

History of the advice, catch, and management

Table 4 Norway lobster in Division 6.a, Functional Unit 11. ICES advice, landings, and discards. All weights are in tonnes.

Year	ICES advice	Landings advice	Catch advice	ICES landings	Total discards *
1989				3205	
1990				2546	199
1991				2793	441
1992	Maintain current effort			3559	353
1993	Maintain current effort			3193	29
1994	Maintain current effort			3614	1637
1995	Maintain current effort			3655	856
1996	Maintain current effort			2872	323
1997	As for 1996			3046	286
1998	Maintain current effort			2441	67
1999	As for 1998			3257	273
2000	Maintain current effort			3247	100
2001	As for 2000			3259	160
2002	Maintain current effort			3440	277
2003	As for 2002			3269	299
2004	Maintain current effort			3082	202
2005	As for 2004			2949	507
2006	No increase in effort			4166	757
2007	No increase in effort and harvest rate of 15%	3200		3978	214
2008	As for 2007	3200		3799	194
2009	No increase in effort and recent average catch	< 4100		3496	327
2010	Harvest rate no greater than that equivalent to fishing at $F_{0.1}$	< 1000		2413	128
2011	MSY transition scheme	< 3100		2697	154
2012	MSY approach	< 3200		3542	213
2013	MSY approach	< 4200		3413	364
2014	MSY approach	< 3485		3257	77
2015	MSY approach	< 3092		3002	143

Year	ICES advice	Landings advice	Catch advice	ICES landings	Total discards *
2016	MSY approach		≤ 3770 **	3529	266
2017	MSY approach		≤ 3814 ***	2448	64
2018	MSY approach		≤ 2819 ***	1961	59
2019	MSY approach		≤ 3270 ***	2216	58
2020	Management Plan		3347 (range 2604–3347) ***		
2021	Management Plan		3953 (range 3075–3953) ***		

* Dead + surviving discards.

** Assuming all catches are landed.

*** Assuming recent discarding rates.

Summary of the assessment

Table 5 Norway lobster in Division 6.a, Functional Unit 11. Assessment summary.

Year	UWTV abundance estimate	± 95% confidence interval	Landings in number	Total discards in number *	Removals in number	Harvest rate (by number) **	Landings	Total discards *	Discard proportion (by number)	Dead discard proportion (by number)	Mean weight in landings	Mean weight in discards
	millions					%	tonnes		%		grammes	
1994	820	122	154	139	258	31.5	3614	1637	47.4	40.3	23.45	11.8
1995	No survey		164	80	225	-	3655	856	32.8	26.8	22.24	10.65
1996	541	76	108	26	127	23.5	2872	323	19.4	15.3	26.68	12.49
1997	No survey		140	26	159	-	3046	286	15.4	12	21.71	11.18
1998	898	127	103	8	110	12.2	2441	67	7.5	5.7	23.65	8.04
1999	794	147	144	28	165	20.7	3257	273	16.4	12.8	22.7	9.69
2000	1166	134	134	10	142	12.1	3247	100	6.9	5.2	24.19	10.08
2001	1092	133	129	17	141	13	3259	160	11.7	9.1	25.33	9.32
2002	1337	149	133	28	154	11.5	3440	277	17.6	13.8	25.93	9.78
2003	1751	211	126	30	148	8.5	3269	299	19.2	15.2	26.03	10
2004	1751	175	122	18	136	7.8	3082	202	13	10.1	25.16	11.02
2005	1540	164	107	50	144	9.4	2949	507	32	26.1	27.65	10.09
2006	1762	165	170	74	225	12.8	4166	757	30.3	24.6	24.52	10.27
2007	1206	150	168	12	177	14.7	3978	214	6.5	5	23.61	18.1
2008	1047	157	159	19	173	16.5	3799	194	10.5	8.1	23.9	10.36
2009	1195	227	138	35	164	13.7	3496	327	20.3	16	25.42	9.34
2010	1293	231	82	12	91	7	2413	128	12.4	9.6	29.39	10.98
2011	1726	226	96	16	108	6.3	2697	154	14.2	11	27.56	9.66
2012	891	181	151	21	167	18.7	3542	213	12.6	9.3	23.43	10.33
2013	1403	206	122	24	140	10	3413	364	16.4	12.8	27.52	15.18
2014	1251	171	115	8	121	9.6	3257	77	6.3	4.8	27.96	9.99
2015	1445	370	103	15	114	7.9	3002	143	12.6	9.8	28.74	9.66
2016	1422	290	136	22	152	10.7	3529	266	14	10.9	25.76	12.05
2017	1050	149	93	5	97	9.3	2448	64	5.2	4	25.89	12.51
2018	1188	244	72	5	76	6.4	1961	59	6.7	5.1	27.39	11.46
2019	1232	256	84	5	88	7.1	2216	58	5.4	4.1	26.35	11.92
2020	1439	319										

* Dead + surviving discards.

** Values prior to 2006 may be underestimates because of the underreporting of landings.

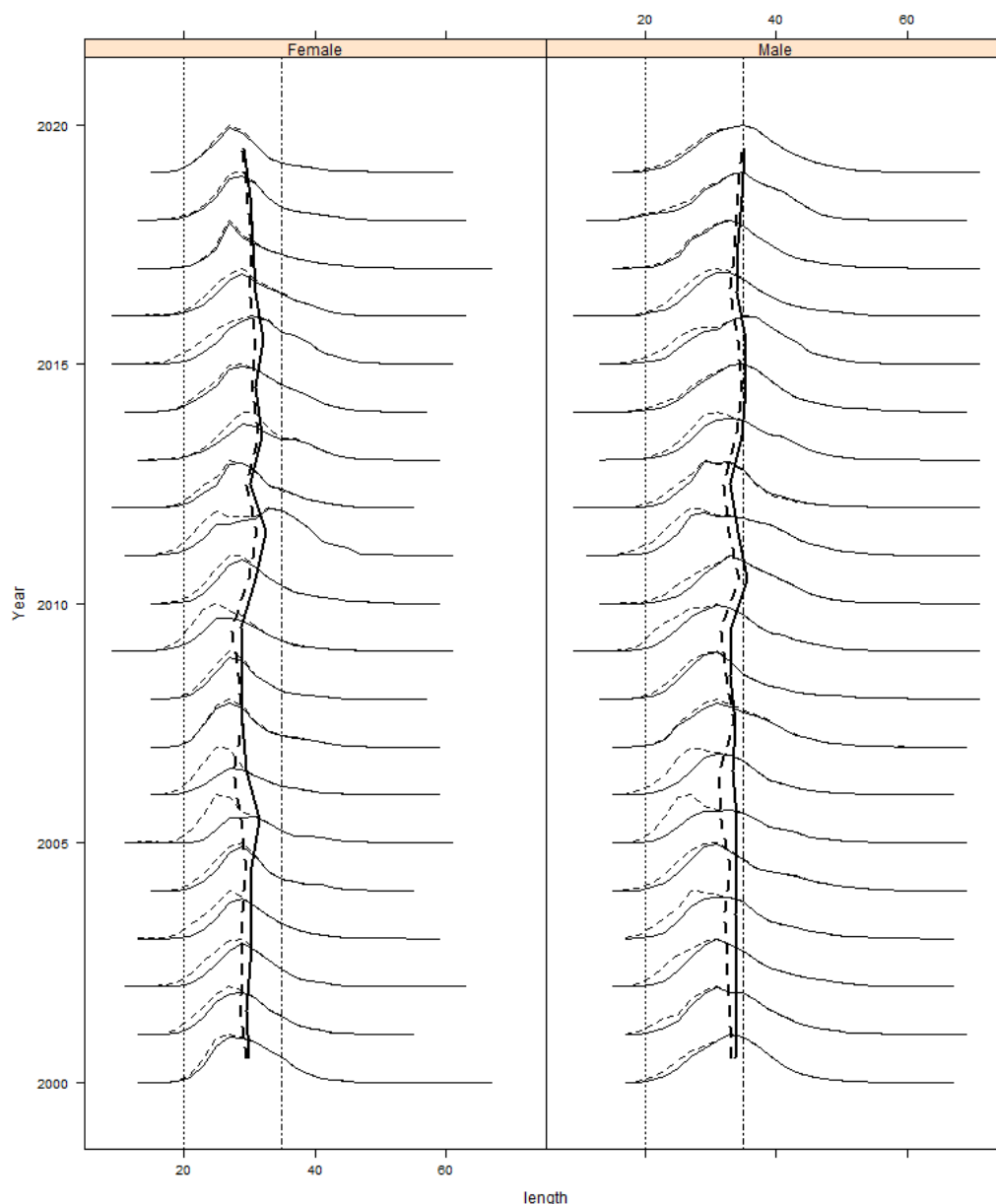


Figure 2 Norway lobster in Division 6.a, Functional Unit 11. Length–frequency distribution for catches (dotted lines) and mean size in landings (solid lines). The vertical lines indicate the minimum conservation reference size (20 mm) and the 35 mm visual reference level.

Sources and references

EU. 2019. Regulation (EU) 2019/472 of the European Parliament and of the Council of 19 March 2019 establishing a multiannual plan for stocks fished in the Western Waters and adjacent waters, and for fisheries exploiting those stocks, amending Regulations (EU) 2016/1139 and (EU) 2018/973, and repealing Council Regulations (EC) No 811/2004, (EC) No 2166/2005, (EC) No 388/2006, (EC) No 509/2007 and (EC) No 1300/2008. Official Journal of the European Union, L 83: 1–17. <http://data.europa.eu/eli/reg/2019/472/oj>.

ICES. 2020. Working Group for the Celtic Seas Ecoregion (WGCSE). ICES Scientific Reports, 2:40. 924 pp. <http://doi.org/10.17895/ices.pub.5978>.

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Annex 1

ICES Advice on fishing opportunities, catch, and effort
Celtic Seas Ecoregion
Published 31 October 2019

Norway lobster (*Nephrops norvegicus*) in Division 6.a, Functional Unit 11 (West of Scotland, North Minch)

ICES advice on fishing opportunities

ICES advises that when the EU multiannual plan (MAP) for Western waters and adjacent waters is applied, catches in 2020 that correspond to the F ranges in the MAP are between 2604 tonnes and 3347 tonnes. The entire range is considered precautionary when applying the ICES advice rule.

To ensure that the stock in Functional Unit 11 is exploited sustainably, management should be implemented at the functional unit level.

Stock development over time

The historical harvest rate has fluctuated around F_{MSY} , and has been below F_{MSY} since 2013. The stock abundance has been above $MSY B_{trigger}$ since 1998.

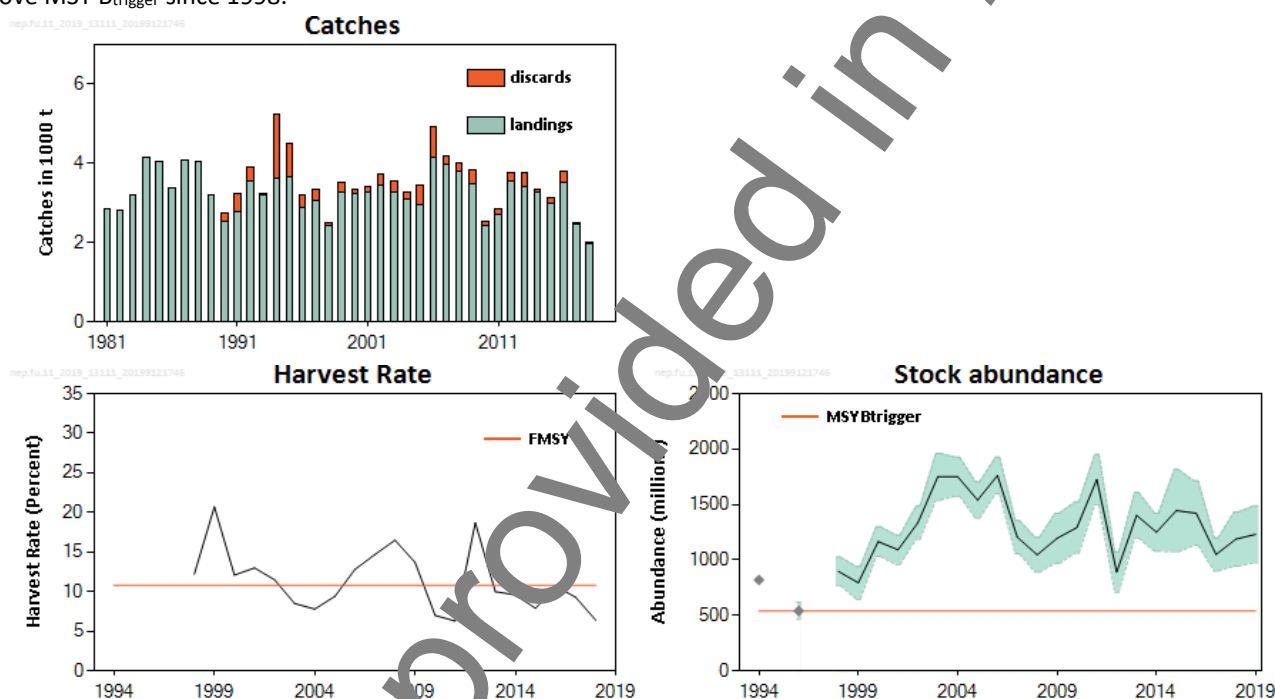


Figure 1 Norway lobster in Division 6.a, Functional Unit 11. Summary of the stock assessment. Catches (discard data are only available from 1990), harvest rate (sum of landings and dead discards in numbers, divided by total abundance), stock abundance (underwater TV survey, in millions; approximate 95% confidence intervals). Harvest rates before 2006 may be unreliable due to under-reporting of landings. Orange lines represent $MSY B_{trigger}$ and the F_{MSY} harvest rate proxy.

Stock and exploitation status

ICES assesses that fishing pressure on the stock is below F_{MSY} , while spawning stock size is above $MSY B_{trigger}$.

Table 1 Norway lobster in Division 6.a, Functional Unit 11. State of the stock and fishery relative to reference points.

		Fishing pressure			Stock size		
		2016	2017	2018	2017	2018	2019
Maximum sustainable yield	F_{MSY}	✓	✓	✓ Below	$MSY B_{trigger}$	✓	✓ Above trigger
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓ Below possible reference points	B_{pa}, B_{lim}	✓	✓ Above possible reference points
Management plan	F_{MGT}	✓	✓	✓ Below range	B_{MGT}	✓	✓ Above trigger

Table 2 Norway lobster in Division 6.a, Functional Unit 11. The basis for the catch scenarios.

Variable	Value	Notes
Stock abundance (2020)	1232 million	Underwater TV Survey 2019 (number of individuals)
Mean weight in wanted catch	25.9 g	Average 1999–2018
Mean weight in unwanted catch	10.99 g	Average 1999–2018
Unwanted catch	8.6%	Average 2016–2018 (proportion by number)
Discards survival	25%	Proportion by number
Dead unwanted catch	6.6%	Average 2016–2018 (proportion by number)

Table 3 Norway lobster in Division 6.a, Functional Unit 11. Annual catch advice and scenarios. All weights are in tonnes. 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 tables.

Catch scenarios assuming recent discard rates

Basis	Total catch	Dead removals	Wanted catch	Dead unwanted catch	Surviving unwanted catch	Harvest rate * %	% advice change **
	WC+DUC+SUC	WC+DUC	WC	DUC	SUC	for WC+DUC	
ICES advice basis							
EU MAP [^] : F _{MSY}	3347	3315	3219	96	2	10.8	2.4
F = MAP: F _{MSY lower}	2604	2579	2504	75	25	8.4	-20
F = MAP: F _{MSY upper} ***	3347	3315	3219	96	32	10.8	2.4
Other options							
MSY approach	3347	3315	3219	96	32	10.8	2.4
F ₂₀₁₈	1984	1965	1908	57	19	6.4	-39

Catch scenarios assuming zero discards

Basis	Total catch	Wanted catch	Unwanted catch	Harvest rate * %	% advice change **
	WC + UC	WC	UC	for WC + UC	
ICES advice basis					
EU MAP [^] : F _{MSY}	3276	3150	126	10.8	0.183
F = MAP F _{MSY lower}	2548	2450	98	8.4	-22
F = MAP F _{MSY upper} ***	3276	3150	126	10.8	0.183
Other options					
MSY approach	3276	3150	126	10.8	0.183
F ₂₀₁₈	1942	1867	75	6.4	-41

* By number.

** Advice value 2020 relative to the advice value 2019 (3270 tonnes).

*** F_{MSY upper} = F_{MSY} for this stock.

[^] EU multiannual plan (MAP) for the Western Waters and adjacent waters (EU, 2019).

Advice for 2020 is higher than for 2019 because of a higher estimated stock abundance and updates to mean discard rates as well as to mean weights.

Basis of the advice

Table 4 Norway lobster in Division 6.a, Functional Unit 11. The basis of the advice.

Advice basis	EU multiannual plan (MAP) for stocks in the Western Waters and adjacent waters (EU, 2019).
Management plan	The EU MAP for stocks in the Western Waters and adjacent waters applies to this stock. The plan specifies conditions for setting fishing opportunities depending on stock status and making use of the F_{MSY} range for the stock. In accordance with the MAP, catches higher than those corresponding to F_{MSY} can only be taken providing that SSB is greater than $MSY B_{trigger}$, and that one of the following conditions is met: a) if it is necessary for the achievement of objectives of mixed fisheries; b) if it is necessary to avoid serious harm to a stock caused by inter- or intra-species stock dynamics; c) in order to limit variations in fishing opportunities between consecutive years to not more than 20%. ICES considers that the F_{MSY} range for this stock used in the MAP is precautionary. Full details of the plan are described in EU (2019).

Quality of the assessment

Since 1994, the underwater TV survey (UWTV) has provided abundance estimates by functional unit (FU) with acceptable precision. The UWTV survey for FU 11 (Figure 2) does not cover *Nephrops* grounds in the inshore waters and sea lochs, waters that are typically fished by smaller vessels. The total area of these grounds is estimated to be less than 5% of the total stock areas; the exclusion of these inshore areas from the survey is not, therefore, considered to impact the quality of the assessment.

The long-term average (rather than a three-year average) was considered more appropriate as input for the mean weight in landings and discards in the calculation of catch scenarios. This is due to interannual variation.

Issues relevant for the advice

From 2016, the EU landing obligation was applied to all catches of Norway lobster fisheries in ICES Subarea 6, with several exemptions. Observations from the 2016–2018 fisheries indicate that some discarding above the minimum conservation reference size (MCRS) continues (Figure 3). Consequently, ICES is providing advice for 2020 assuming average discard rates as observed over the last three years. This is considered to be the most realistic assumption.

ICES notes that catches in Subarea 6 have been less than the TAC in recent years, as there has been a general decline in the trawl fishery effort for Norway lobster (ICES, 2019).

Scottish discard survival experiments indicate that the trawl discard survival may be greater than 50% (Fox and Albalat, 2018). As a result, an exemption from the landing obligation based on high survivability has been granted by the European Commission. ICES continues to use the discard survival rate of 25% (ICES, 2016) because the new survival rates have not been evaluated by ICES.

The absolute density observed for FU 11 in the UWTV survey is intermediate compared to other *Nephrops* FUs, with an average density of around 0.6 individuals m^{-2} . This suggests that the stock may have a medium productivity capability. Historical harvest rates in this FU have been around $F_{35\%SPR}$ (the fishing mortality that gives 35% virgin SSB per recruit), and landings have been relatively stable in the last thirty years. For these reasons, $F_{35\%SPR}$ (combined between sexes) is considered to deliver high long-term yield with a low probability of recruitment overfishing and is therefore chosen as a proxy for F_{MSY} .

A single TAC covers the entire ICES Subarea 6. Management should be implemented at the functional unit level, to ensure that fishing opportunities are in line with the scale of the resource for each of the stocks and the corresponding MSY approach.

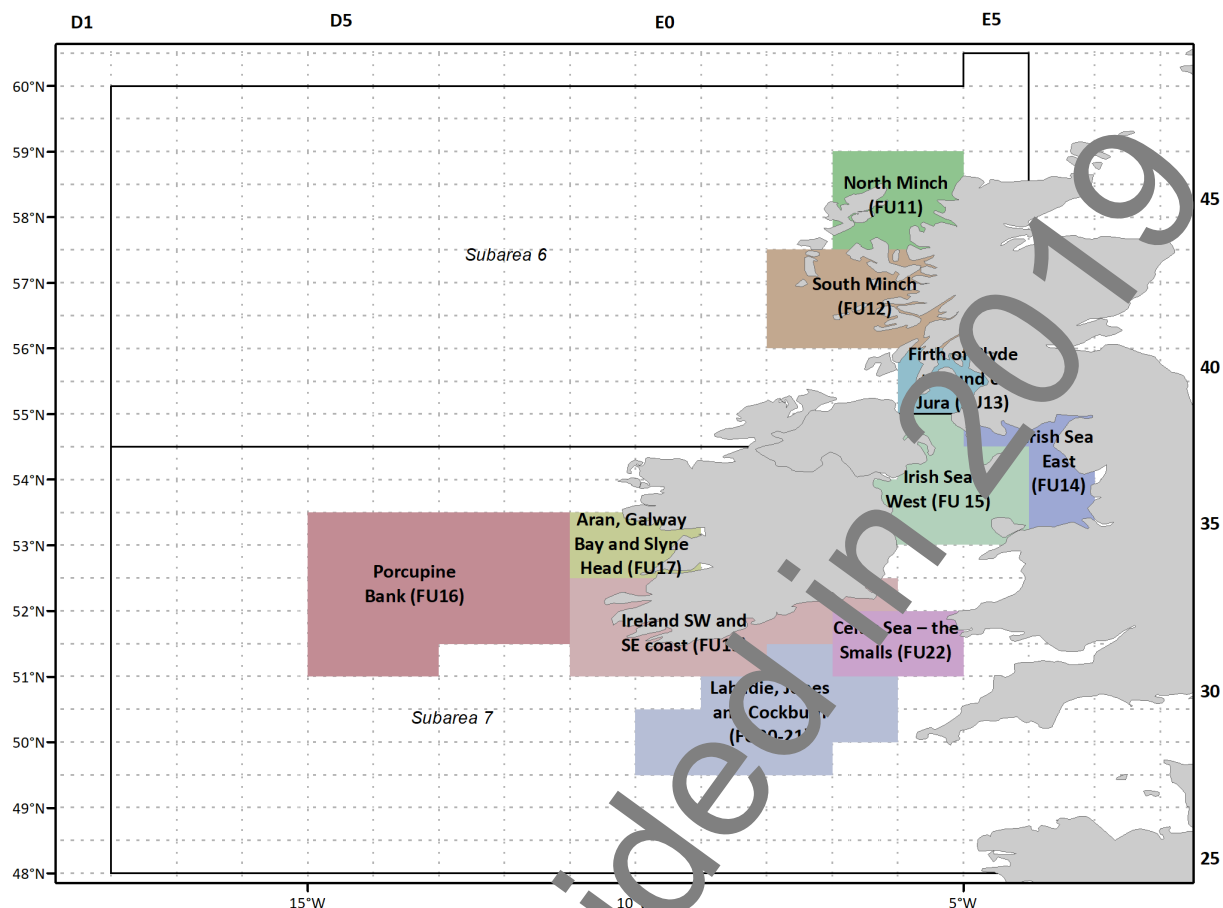


Figure 2 Norway lobster functional units in subareas 6 and 7

Reference points

Table 5 Norway lobster in Division 6.a, Functional Unit 11. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	540 million individuals	Lowest observed abundance estimate from UWTV survey time-series.	ICES (2016)
	F_{MSY}	10.8% harvest rate	F_{MSY} proxy equivalent to $F_{35\%SPR}$ combined sexes derived from length-based per recruit analysis.	ICES (2016)
Precautionary approach	B_{lim}	Not defined		
	B_{pa}	Not defined		
	F_{lim}	Not defined		
	F_{pa}	Not defined		
Management plan	MAP MSY $B_{trigger}$	540 million individuals	MSY $B_{trigger}$	EU (2019), ICES (2016)
	MAP B_{lim}	Not defined		
	MAP F_{MSY}	10.8% harvest rate	F_{MSY}	EU (2019), ICES (2016)
	MAP range F_{lower}	8.4–10.8% harvest rate	Consistent with ranges provided by ICES (2016), resulting in no more than 5% reduction in long-term yield compared with MSY.	EU (2019), ICES (2016)
	MAP range F_{upper}	10.8–10.8% harvest rate	F_{MSY} upper value capped at F_{MSY} because it has not been possible to evaluate the probability of $SSB < B_{lim}$ (ICES, 2016).	EU (2019), ICES (2016)

Basis of the assessment

Table 6 Norway lobster in Division 6.a, Functional Unit 11. Basis of the assessment and advice.

ICES stock data category	1 (ICES, 2018).
Assessment type	Underwater TV survey (ICES, 2019).
Input data	One survey index (UWTV-FU11); commercial catches (international landings, length frequencies from Scottish catch sampling); fixed maturity parameters from survey data; fixed natural mortality. Discard survival rate.
Discards and bycatch	Included in the assessment since 1990, data series from the majority of the main fleets covering all landings.
Indicators	Size structure, mean size, and sex ratio of catches.
Other information	The latest benchmark (based on the UWTV survey) was performed in 2013 (ICES, 2013).
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE)

Information from stakeholders

Since 2017, observer sampling from the Scottish Industry–Science observer sampling scheme was extended to include sampling of Norway lobster catches in FU 11. In 2018, approximately 75% of the samples used in the discard estimation for this stock were collected by industry observers.

History of the advice, catch, and management

Table 7 Norway lobster in Division 6.a, Functional Unit 11. ICES advice, landings, and discards. All weights are in tonnes.

Year	ICES advice	Landings advice	Catch advice	ICES landings	Total discards*
1989				3205	
1990				2542	199
1991				2793	441
1992	Maintain current effort			3559	353
1993	Maintain current effort			3143	29
1994	Maintain current effort			3614	1637
1995	Maintain current effort			3655	856
1996	Maintain current effort			2872	323
1997	As for 1996			3046	286
1998	Maintain current effort			2441	67
1999	As for 1998			3257	273
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2007	No increase in effort and harvest rate of 15%	3200		3978	214
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2010	Harvest rate no greater than that equivalent to	< 1000		2413	128
2011	MSY transition scheme	< 1000		2697	154
2012	MSY approach	< 3200		3542	213
2013	MSY approach	< 4200		3413	364
2014	MSY approach	< 3485		3257	77
2015	MSY approach	< 3092		3002	143
2016	MSY approach		≤ 3770**	3529	266
2017	MSY approach		≤ 3814***	2448	64
2018	MSY approach		≤ 2819***	1961	59
2019	MSY approach		≤ 3270***		
2020	Management Plan		3347 (range 2604–3347)***		

* Dead + surviving discards.

** Assuming all catches are landed.

*** Assuming recent discarding rates.

History of the catch and landings

Table 8 Norway lobster in Division 6.a, Functional Unit 11. Catch distribution by fleet in 2018 as estimated by ICES. All weights are in tonnes.

Catch		Landings			Discards	
99.3% dead	0.7% surviving	Directed <i>Nephrops</i> fishery		Mixed <i>Nephrops</i> /demersal fishery	75% dead	25% surviving
		81.7% trawl	16.8% creels	1.5% trawl		
2020		1961 t			59 t	

Table 9 Norway lobster in Division 6.a, Functional Unit 11. History of ICES estimates of landings (for Scotland by gear) and total discards. All weights are in tonnes (t).

Year	UK – Scotland					Other UK & Ireland	Total landings	Total discards*
	Nephrops trawl	Other trawl	Creel	Below minimum conservation reference size	Subtotal			
1981	2320	171	370		2861	0	2861	
1982	2323	105	371		2799	0	2799	
1983	2784	96	317		3197	0	3197	
1984	3449	160	534		4143	0	4143	
1985	3235	117	708		4060	0	4060	
1986	2641	203	537		3381	0	3381	
1987	3459	143	482		4084	0	4084	
1988	3450	148	437		4035	0	4035	
1989	2603	112	490		3205	0	3205	
1990	1941	134	471		2546	0	2546	199
1991	2229	126	438		2793	0	2793	441
1992	2978	149	432		3559	0	3559	353
1993	2699	86	408		3193	0	3193	29
1994	2916	246	453		3614	0	3614	1637
1995	2940	183	532		3655	0	3655	856
1996	2354	148	370		2872	0	2872	323
1997	2553	102	391		3046	0	3046	286
1998	2023	68	350		2441	0	2441	67
1999	2792	56	409		3257	0	3257	273
2000	2695	28	524		3247	0	3247	100
2001	2649	42	568		3259	0	3259	160
2002	2775	79	586		3440	0	3440	277
2003	2606	45	618		3269	0	3269	299
2004	2391	30	661		3082	0	3082	202
2005	2270	23	656		2949	0	2949	507
2006	3446	23	697		4166	0	4166	757
2007	3361	26	591		3978	0	3978	214
2008	3229	13	557		3799	0	3799	194
2009	2849	34	583		3496	0	3496	327
2010	1783	9	621		2413	0	2413	128
2011	2109	17	571		2697	0	2697	154
2012	2963	12	565		3540	2	3542	213
2013	2356	480	575		3411	2	3413	364
2014	2752	13	490		3255	2	3257	77
2015	2561	23	418		3002	0	3002	143
2016	3039	15	475	0.4**	3529	0	3529	266
2017	2041	45	361	na	2447	1	2448	64
2018	1599	30	329	na	1958	3	1961	59

* Dead + surviving discards.

** Below minimum conservation reference size landings are not rounded; the values shown are the reported ones.

na = Not available.

Summary of the assessment

Table 10 Norway lobster in Division 6.a, Functional Unit 11. Assessment summary.

Year	UWTV abundance estimate	95% CI	Harvest. rate (by number) *	Landings numbers	Total discards in numbers **	Removals numbers	Landings	Total discards **	Discard rate (by number)	Mean weight in landings	Mean weight in discards	Dead discard rate (by number)
	millions		%	millions			tonnes		%	grammes		%
1994	820	121	31.5	154	139	258	3614	1637	47.4	23.45	11.8	40.3
1995	No survey			164	80	225	3655	856	22.8	22.2	10.65	26.8
1996	541	77	23.5	108	26	127	2872	323	19.4	26.68	12.49	15.3
1997	No survey			140	26	159	3046	286	15.4	21.71	11.18	12
1998	898	126	12.2	103	8	110	2441	67	7.5	23.65	8.04	5.7
1999	794	147	20.7	144	28	165	3257	273	16.4	22.7	9.69	12.8
2000	1166	134	12.1	134	10	142	3247	100	6.9	24.19	10.08	5.2
2001	1092	133	13	129	17	141	3259	160	11.7	25.33	9.32	9.1
2002	1337	149	11.5	133	28	154	3440	277	17.6	25.93	9.78	13.8
2003	1751	211	8.5	126	30	148	3269	299	19.2	26.03	10	15.2
2004	1751	175	7.8	122	18	136	3082	202	13	25.16	11.02	10.1
2005	1540	164	9.4	107	50	144	2949	507	32	27.65	10.09	26.1
2006	1762	165	12.8	170	74	225	4166	57	30.3	24.52	10.27	24.6
2007	1206	150	14.7	168	12	177	3577	214	6.5	23.61	18.1	5
2008	1047	157	16.5	159	19	173	3779	194	10.5	23.9	10.36	8.1
2009	1195	227	13.7	138	35	164	3496	327	20.3	25.42	9.34	16
2010	1293	231	7	82	12	97	2413	128	12.4	29.39	10.98	9.6
2011	1726	226	6.3	96	16	109	2997	154	14.2	27.56	9.66	11
2012	891	181	18.7	151	21	167	3542	213	12.6	23.43	10.33	9.3
2013	1403	206	10	122	24	140	3413	364	16.4	27.52	15.18	12.8
2014	1251	171	9.6	115	8	121	3257	77	6.3	27.96	9.99	4.8
2015	1445	370	7.9	103	15	114	3002	143	12.6	28.74	9.66	9.8
2016	1422	290	10.7	136	22	152	3529	266	14	25.76	12.05	10.9
2017	1050	149	9.3	93	5	97	2448	64	5.2	25.89	12.51	4
2018	1188	244	6.4	72	1	76	1961	59	6.7	27.39	11.46	5.1
2019	1232	256										

* Values prior to 2006 may be underestimated because of the underreporting of landings.

** Dead + surviving discards.

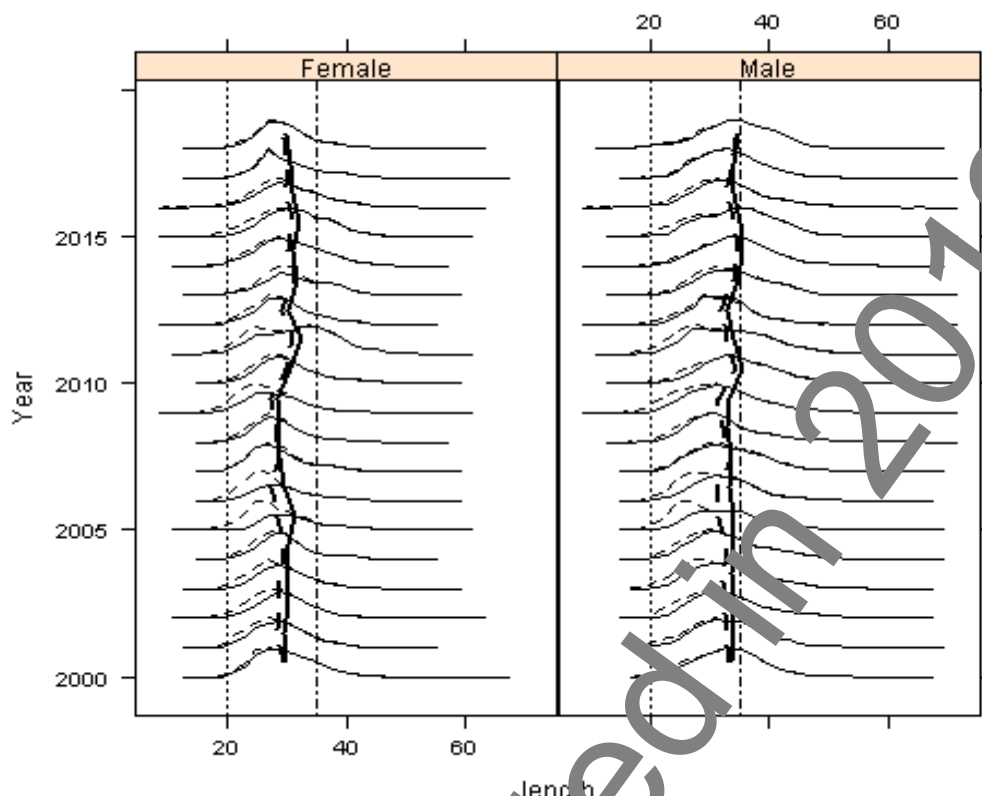


Figure 3 Norway lobster in Division 6.a, Functional Unit 11. Length frequency distribution for catches (dotted lines) and mean size in catches and landings (solid lines). The vertical lines indicate the minimum conservation reference size (20 mm) and the 35 mm visual reference level.

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