Norway lobster (*Nephrops norvegicus*) in Division 6.a, Functional Unit 12 (West of Scotland, South 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 4703 tonnes and 5916 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 12 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

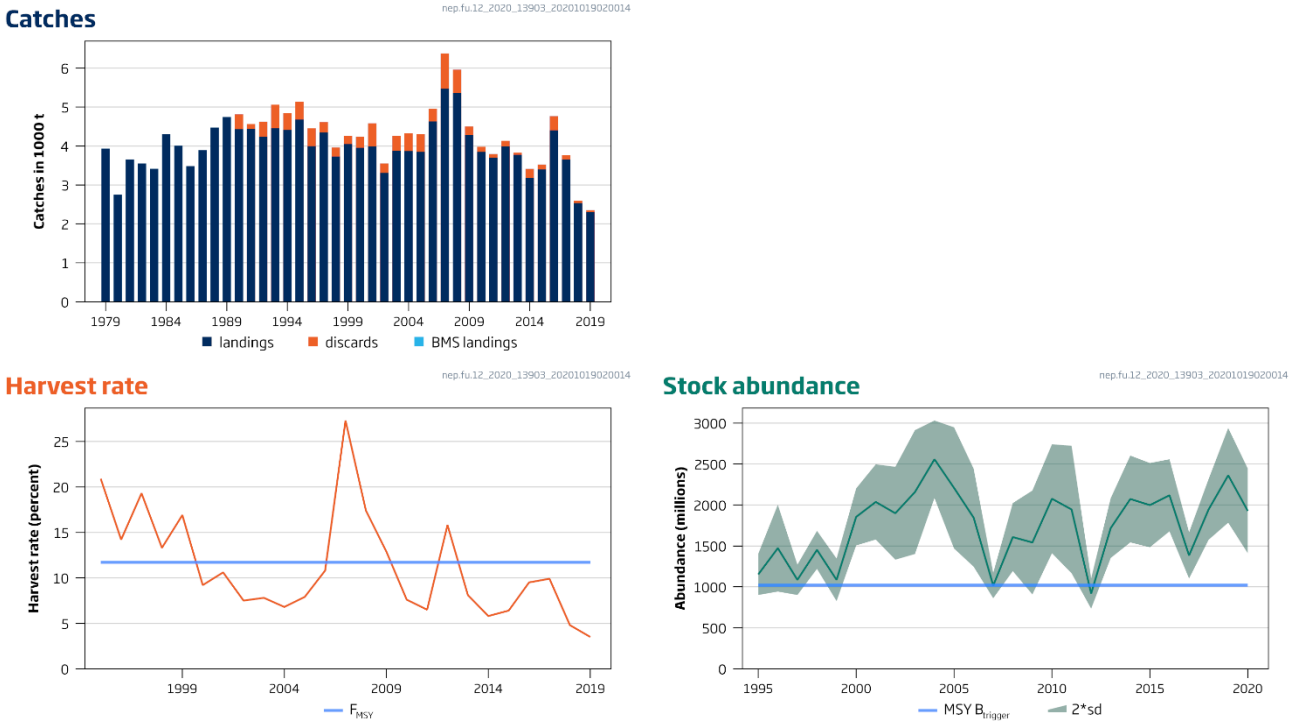

Figure 1 Norway lobster in Division 6.a, Functional Unit 12. Summary of the stock assessment. Catches (discard data only available from 1990), harvest rate (sum of landings and dead discards in numbers, divided by stock abundance), and stock abundance (underwater TV survey). Harvest rates before 2006 may be unreliable because of the underreporting of landings.

Stock and exploitation status

Table 1 Norway lobster in Division 6.a, Functional Unit 12. 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 the range	B_{MGT}	✓	✓	✓ Above trigger

Catch scenarios

Table 2 Norway lobster in Division 6.a, Functional Unit 12. The basis for the catch scenarios.

Variable	Value	Notes
Stock abundance (2021)	1927	UWTV Survey 2020; number of individuals in millions
Mean weight in projected landings	26.87	Average 1999–2019; in grammes
Mean weight in projected discards	10.14	Average 1999–2019; in grammes
Projected discards	6.2	Average 2017–2019; percentage by number
Discards survival *	25	Percentage by number
Dead projected discards	4.7	Average 2017–2019; percentage by number

* Only applied in scenarios where discarding is allowed.

Table 3 Norway lobster in Division 6.a, Functional Unit 12. 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 table.

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}	5916	5880	5772	108	36	11.7	−17.1
F= MAP $F_{MSY\ lower}$	4703	4674	4588	86	29	9.3	−17.1
F = MAP $F_{MSY\ upper}$***	5916	5880	5772	108	36	11.7	−17.1
Other scenarios							
MSY approach	5916	5880	5772	108	36	11.7	−17.1
F_{2019}	1770	1759	1727	32	11	3.5	−75

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}	5824	5682	142	11.7	−18.4
F= MAP $F_{MSY\ lower}$	4630	4517	113	9.3	−18.4
F = MAP $F_{MSY\ upper}$***	5824	5682	142	11.7	−18.4
Other scenarios					
MSY approach	5824	5682	142	11.7	−18.4
F_{2019}	1742	1700	42	3.5	−76

* By number.
** Advice basis values for 2021 relative to the 2020 advice values (MAP advice of 7134, 5671, and 7134 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 12. ICES advice, landings, and discards. All weights are in tonnes.

Year	ICES advice	Landings advice	Catch advice	ICES landings	Total discards *
1989				4745	
1990				4430	384
1991				4442	122
1992	Maintain current effort			4237	385
1993	Maintain current effort			4458	602
1994	Maintain current effort			4414	435
1995	Maintain current effort			4682	455
1996	Maintain current effort			3995	457
1997	As for 1996			4344	271
1998	Maintain current effort			3730	233
1999	As for 1998			4052	206
2000	Maintain current effort			3953	284
2001	As for 2000			3991	591
2002	Maintain current effort			3305	247
2003	As for 2002			3879	381
2004	Maintain current effort			3869	454
2005	As for 2004			3848	452
2006	No increase in effort			4633	324
2007	No increase in effort and harvest rate of 15%	7200		5471	903
2008	As for 2007	7200		5356	605
2009	No increase in effort and recent average catch	< 5000		4285	216
2010	Harvest rate no greater than that equivalent to fishing at $F_{0.1}$	< 4100		3846	133
2011	MSY transition scheme	< 4000		3702	92
2012	MSY approach	< 5500		3989	145
2013	MSY approach	< 5800		3776	50
2014	MSY approach	< 5211		3179	233
2015	MSY approach	< 6382		3400	121

Year	ICES advice	Landings advice	Catch advice	ICES landings	Total discards *
2016	MSY approach		≤ 6163 **	4402	365
2017	MSY approach		≤ 6419 ***	3652	105
2018	MSY approach		≤ 4112 ***	2536	54
2019	MSY approach		≤ 5844 ***	2304	46
2020	Management Plan		7134 (range 5671–7134) ***		
2021	Management Plan		5916 (range 4703–5916) ***		

* Dead + surviving discards.
** Assuming all catches are landed.
*** Assuming recent discard rates.

Summary of the assessment

Table 5 Norway lobster in Division 6.a, Functional Unit 12. 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	
1995	1152	251	213	37	241	20.9	4682	455	14.8	11.5	21.96	12.28
1996	1473	530	173	48	209	14.2	3995	457	21.6	17.1	23.1	9.61
1997	1086	185	186	31	209	19.3	4344	271	14.3	11.2	23.37	8.7
1998	1452	232	168	32	192	13.3	3730	233	16.1	12.6	22.18	7.23
1999	1086	260	161	29	183	16.9	4052	206	15.4	12	25.14	7
2000	1854	348	145	33	170	9.2	3953	284	18.7	14.7	27.3	8.5
2001	2037	459	168	65	216	10.6	3991	591	27.9	22.5	23.79	9.11
2002	1899	567	123	26	143	7.5	3305	247	17.6	13.8	26.83	9.37
2003	2157	756	139	38	168	7.8	3879	381	21.3	16.9	27.86	10.1
2004	2558	473	141	44	175	6.8	3869	454	23.8	19	27.37	10.26
2005	2208	740	137	49	174	7.9	3848	452	26.5	21.2	28.11	9.17
2006	1845	598	177	30	199	10.8	4633	324	14.3	11.1	26.24	10.97
2007	1016	155	228	66	278	27.3	5471	903	22.4	17.8	23.95	13.73
2008	1608	415	224	74	279	17.4	5356	605	24.7	19.8	23.91	8.23
2009	1542	634	179	26	199	12.9	4285	216	12.5	9.6	23.87	8.44
2010	2076	665	149	12	158	7.6	3846	133	7.7	5.9	25.86	10.76
2011	1945	778	118	11	126	6.5	3702	92	8.2	6.3	31.1	8.78
2012	919	185	133	16	145	15.8	3989	145	10.8	8.3	29.17	9.05
2013	1718	365	136	4	140	8.1	3776	50	3.1	2.4	27.48	11.31
2014	2073	530	105	19	120	5.8	3179	233	15.6	12.1	29.91	12.04
2015	1998	514	120	10	128	6.4	3400	121	7.7	5.9	28.15	12.04
2016	2118	440	177	31	201	9.5	4402	365	14.9	11.6	24.76	11.74
2017	1384	282	127	13	137	9.9	3652	105	9.1	7	27.76	8.29
2018	1946	371	91	4	94	4.8	2536	54	4.5	3.4	27.27	12.74
2019	2362	578	79	4	83	3.5	2304	46	4.9	3.7	28.54	11.22
2020	1927	517										

* Values prior to 2006 may be underestimates because of underreporting of landings.
** Dead + surviving discards.

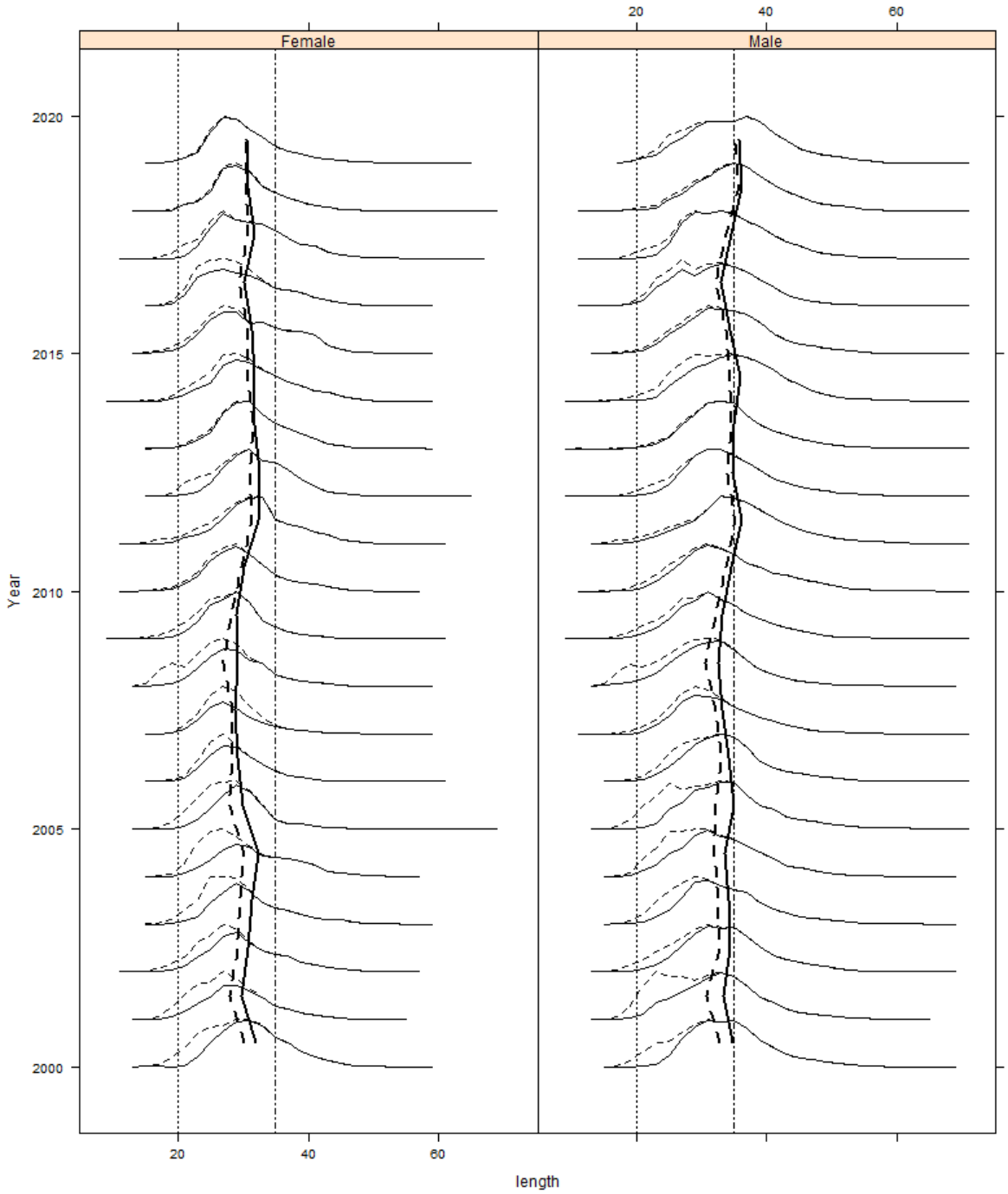

Figure 2 Norway lobster in Division 6.a, Functional Unit 12. Catch length–frequency distribution and mean size in catches (dotted lines) and landings (solid lines). The vertical lines indicate the minimum conservation reference size (20 mm) and the 35 mm visual reference level.

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 12 (West of Scotland, South 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 5671 tonnes and 7134 tonnes. The entire range is considered precautionary when applying the ICES advice rule.

To ensure that the stock in Functional Unit 12 is exploited sustainably, management should be implemented at the functional unit level.

Stock development over time

The harvest rate has been below F_{MSY} since 2013 and is now at its lowest value. The stock abundance has generally fluctuated above MSY $B_{trigger}$.

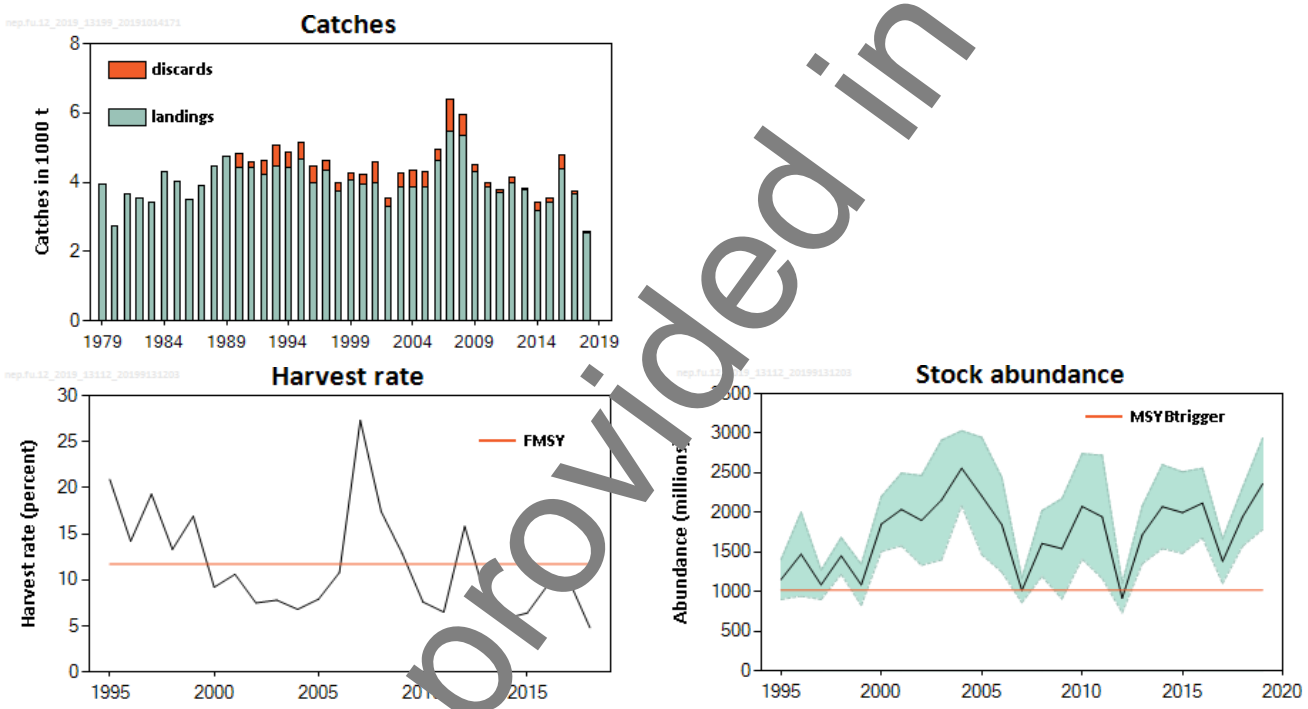

Figure 1 Norway lobster in Division 6.a, Functional Unit 12. Summary of the stock assessment. Catches (discard data only available from 1990), harvest rate (sum of landings and dead discards in numbers, divided by total abundance), and stock abundance (Underwater TV survey, in millions; approximate 95% confidence intervals). Harvest rates before 2006 may be unreliable because of the underreporting of landings. Orange lines represent MSY $B_{trigger}$ and the F_{MSY} harvest rate.

Stock and exploitation status

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

Table 1 Norway lobster in Division 6.a, Functional Unit 12. State of the stock and fishery relative to reference points.

	Fishing pressure	2016	2017	2018		Stock size	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

Catch scenarios

Table 2 Norway lobster in Division 6.a, Functional Unit 12. The basis for the catch scenarios.

Variable	Value	Notes
Stock abundance (2020)	2362 million	Underwater TV survey 2019 (number of individuals)
Mean weight in wanted catch	26.79 grammes	Average 1999–2018
Mean weight in unwanted catch	10.08 grammes	Average 1999–2018
Unwanted catch	9.5%	Average 2016–2018 (proportion by number)
Discards survival	25%	Proportion by number
Dead unwanted catch	7.3%	Average 2016–2018 (proportion by number)

Table 3 Norway lobster in Division 6.a, Functional Unit 12. Annual catch advice and scenarios. All weights are in tonnes. The figures in the table are rounded. Calculations were done with unrounded input and computed values may not match exactly when calculated using the rounded figures in the table.

Catch scenarios assuming recent discard rates

Basis	Total catch	Dead removals	Wanted catch	Dead unwanted catch	Surviving unwanted catch	Harvest rate * % (for	% advice change **
	WC+DUC+SUC	WC+DUC	WC	DUC	SUC	for WC+DUC	
ICES advice basis							
EU MAP ^: F_{MSY}	7134	7066	6863	203	68	11.7	22
F= MAP $F_{MSY\ lower}$	5671	5617	5455	162	54	9.3	−3
F = MAP $F_{MSY\ upper}$***	7134	7066	6863	203	68	11.7	22
Other options							
MSY approach	7134	7066	6863	203	68	11.7	22
F_{2018}	2927	2899	2816	83	28	4.8	−50

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}	6965	6700	265	11.7	19.2
F= MAP $F_{MSY\ lower}$	5536	5326	210	9.3	−5.3
F = MAP $F_{MSY\ upper}$***	6965	6700	265	11.7	19.2
Other options					
MSY approach	6965	6700	265	11.7	19.2
F_{2018}	2858	2749	109	4.8	−51

* By number.
** Advice value 2020 relative to the advice value 2019 (5844 tonnes).
*** $F_{MSY\ upper}$ = F_{MSY} for this stock.
^ EU multiannual plan (MAP) for the Western Waters and adjacent waters (EU, 2019).

The advice for 2020 is higher than for 2019 because of a higher estimated stock abundance and updates of mean discard rates and mean weights.

Basis of the advice

Table 4 Norway lobster in Division 6.a, Functional Unit 12. The basis of the advice.

Advice basis	The EU multiannual plan (MAP) for stocks in the Western Waters and adjacent waters (EU, 2019)
Management plan	The EU multiannual plan (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 SSB is greater than MSY $B_{trigger}$, and 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 intra- or inter-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

The underwater TV survey (UWTV) has provided abundance estimates for FU 12 (Figure 2) with acceptable precision since 1995.

Some patches of muddy sediment supporting *Nephrops* populations in the inshore areas and sea lochs of FU 12 are not routinely surveyed, and are not included in the estimate of abundance. The current estimate of abundance is therefore likely to be a slight underestimate of actual abundance.

The long-term average (rather than a three-year average) was considered to be 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 fishery 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 effort of the trawling fishery 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 survival rate of 25% (ICES, 2016), because the new survival rates have not been evaluated by ICES.

The absolute density observed for FU 12 in the UWTV survey is medium (~0.44 individuals m^{-2}). This suggests that the stock may have a medium productivity capability. The fishery in this area has been in existence since the 1960s. Historical harvest rates in this FU have been variable, but generally remained around $F_{35\%SPR}$ (the fishing mortality that gives 35% virgin SSB per recruit). $F_{35\%SPR}$ (combined between sexes) is expected to deliver high long-term yield with a low probability of recruitment overfishing; thus it is chosen as 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 as well as the corresponding MSY approach in each of the stocks.

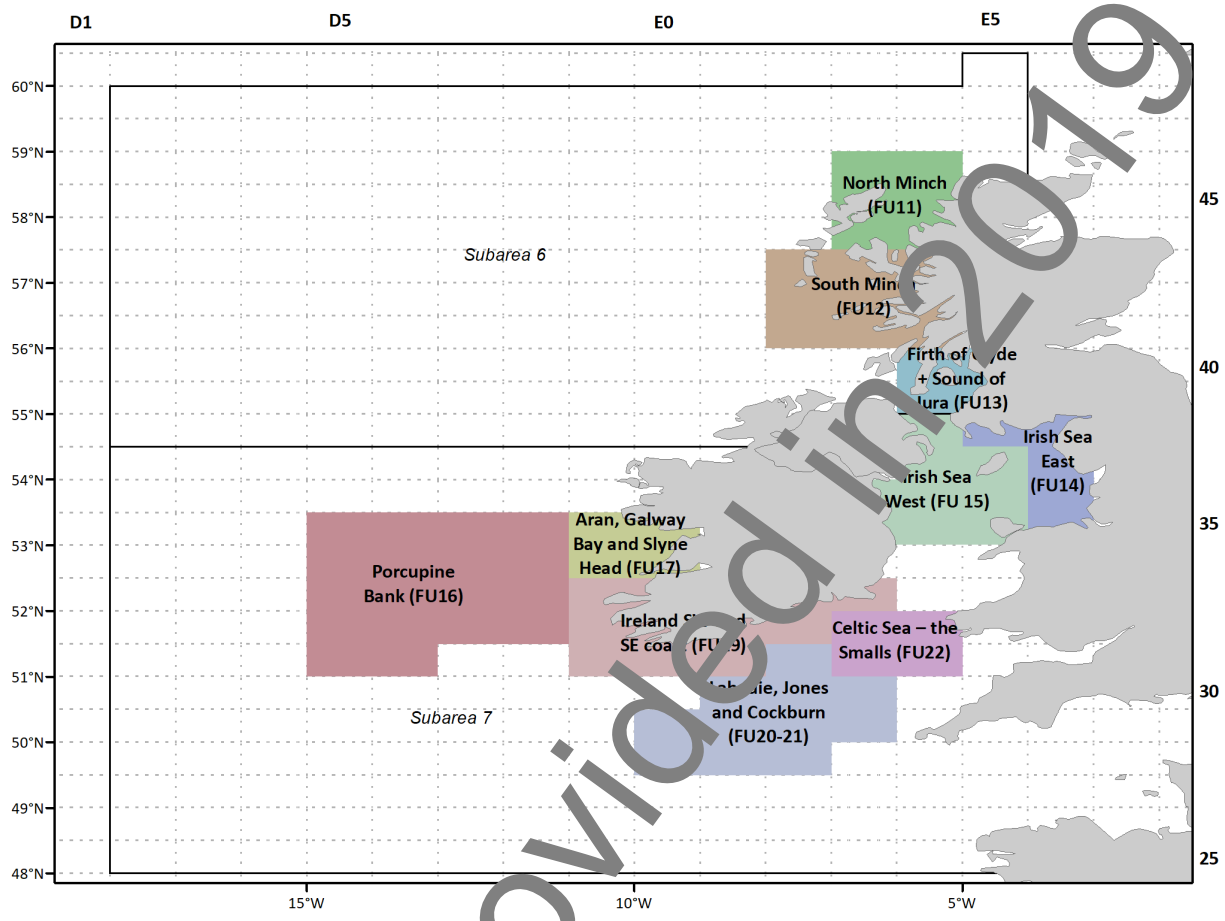

Figure 2 Norway lobster functional units in subareas 6 and 7.

Reference points

Table 5 Norway lobster in Division 6.a, Functional Unit 12. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	1020 million individuals	Lowest observed abundance estimate from the UWTV survey time-series as calculated in 2010.	ICES (2016)
	F_{MSY}	11.7% harvest rate	F_{MSY} proxy, equivalent to the $F_{35\%SPR}$ for combined sexes derived from the 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 $B_{trigger}$	1020 million individuals	MSY $B_{trigger}$	EU (2019), ICES (2016)
	MAP B_{lim}	Not defined		
	MAP F_{MSY}	11.7% harvest rate	F_{MSY}	EU (2019), ICES (2016)
	MAP range $F_{MSY\ lower}$	9.3–11.7% 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 $F_{MSY\ upper}$	11.7–11.7% harvest rate	The $F_{MSY\ upper}$ value is 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 12. 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-FU12); commercial catches (international landings, length frequencies from Scottish catch sampling); fixed maturity parameters (from survey data); and natural mortality. Discard survival rate.
Discards and bycatch	Included in the assessment since 1990; data series from the majority of the main fleets cover almost 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 2009 (WKNEPH; ICES, 2009).
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 the sampling of Norway lobster catches in FU 12. In 2018, approximately 35% 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 12. ICES advice, landings, and discards. All weights are in tonnes.

Year	ICES advice	Landings advice	Catch advice	ICES landings	Total discards*
1989				4745	
1990					384
1991				4442	122
1992	Maintain current effort			4237	385
1993	Maintain current effort			4458	602
1994	Maintain current effort			4414	435
1995	Maintain current effort			4682	455
1996	Maintain current effort			3995	457
1997	As for 1996			4344	271
1998	Maintain current effort			3730	233
1999	As for 1998			4052	206
2000	Maintain current effort			3953	284
2001	As for 2000			3991	591
2002	Maintain current effort			3305	247
2003	As for 2002			3879	381
2004	Maintain current effort			3869	454
2005	As for 2004			3848	452
2006	No increase in effort			4633	324
2007	No increase in effort and harvest rate of 15%	20		5471	903
2008	As for 2007	0		5356	605
2009	No increase in effort and recent average catch	5000		4285	216
2010	Harvest rate no greater than that equivalent to fishing at $F_{0.1}$	< 4 00		3846	133
2011	MSY transition scheme	< 4000		3702	92
2012	MSY approach	< 5500		3989	145
2013	MSY approach	< 5800		3776	50
2014	MSY approach	< 5211		3179	233
2015	MSY approach	< 6382		3400	121
2016	MSY approach		≤ 6163**	4402	365
2017	MSY approach		≤ 6419***	3652	105
2018	MSY approach		≤ 4112***	2536	54
2019	MSY approach		≤ 5844***		
2020	Management Plan		7134 (range 5671–7134)***		

* Dead + surviving discards.
** Assuming all catches are landed
*** Assuming recent discard rates.

History of the catch and landings

Table 8 Norway lobster in Division 6.a, Functional Unit 12. Catch distribution by fleet in 2018 as estimated by ICES. All weights are in tonnes (t).

Catch		Landings			Discards	
99.5% dead	0.5% surviving	Directed *Nephrops* fishery		Mixed *Nephrops*/demersal fishery	75% dead	25% surviving
2590 t		68.9% trawl	27.6% creels	3.5%	54 t	
		2536 t				

Table 9 Norway lobster in Division 6.a, Functional Unit 12. History of ICES estimates of landings (for Scotland by gear) and total discards. All weights are in tonnes.

Year	UK Scotland				Other UK	Ireland	Total Landings	Discards*
	Nephrops trawl	Other trawl	Creel	Subtotal				
1981	2966	254	432	3652	0	0	3652	
1982	2925	206	421	3552	0	0	3552	
1983	2595	362	456	3413	0	0	3413	
1984	3229	477	594	4300	0	0	4300	
1985	3096	424	488	4008	0	0	4008	
1986	2694	288	502	3484	0	0	3484	
1987	2928	418	546	3892	0	0	3892	
1988	3544	364	555	4463	10	0	4473	
1989	3846	338	561	4745	0	0	4745	
1990	3732	263	435	4430	0	0	4430	384
1991	3596	342	503	4441	1	0	4442	122
1992	3478	209	549	4236	1	0	4237	385
1993	3609	194	650	4453	5	0	4458	602
1994	3742	264	405	4411	3	0	4414	435
1995	3443	717	508	4668	14	0	4682	455
1996	3108	417	469	3994	1	0	3995	457
1997	3518	329	493	4340	3	1	4344	271
1998	2851	340	538	3729	0	1	3730	233
1999	3165	359	514	4038	0	14	4052	206
2000	2940	311	700	3951	0	2	3953	284
2001	2823	391	768	3982	0	9	3991	591
2002	2234	314	743	3291	0	14	3305	247
2003	2812	203	858	3873	0	6	3879	381
2004	2864	105	879	3848	0	21	3869	454
2005	2812	46	955	3813	1	34	3848	452
2006	3570	97	922	4589	9	35	4633	324
2007	4437	21	959	5417	19	35	5471	903
2008	4433	12	896	5341	2	13	5356	605
2009	3346	24	900	4270	4	11	4285	216
2010	2836	19	969	3824	16	6	3846	133
2011	2876	11	783	3670	23	9	3702	92
2012	3159	32	773	3964	19	6	3989	145
2013	2490	541	729	3762	13	1	3776	50
2014	2490	3	637	3130	32	17	3179	233
2015	2662	18	665	3345	22	33	3400	121
2016	3450	22	838	4310	33	59	4402	365
2017	2741	54	768	3563	23	66	3652	105
2018	1692	86	679	2457	45	34	2536	54

* Dead + surviving discards.

Summary of the assessment

Table 10 Norway lobster in Division 6.a, Functional Unit 12. Assessment summary.

Year	UWTV abundance estimate	95% CI	Harvest. rate (by number)*	Landings In numbers	Total discards in numbers**	Removals in numbers	Landings	Total discards**	Discard rate (by numbers)	Mean weight in landings	Mean weight in discards	Dead discard rate (by numbers)
	millions		%	millions			tonnes		%	grammes		%
1995	1152	251	20.9	213	37	241	4682	455	14.8	21.96	12.28	11.5
1996	1473	530	14.2	173	48	209	3995	457	21.6	23.1	9.61	17.1
1997	1086	185	19.3	186	31	209	4344	271	14.3	23.37	8.7	11.2
1998	1452	232	13.3	168	32	192	3730	233	16.1	22.18	7.23	12.6
1999	1086	260	16.9	161	29	183	4052	206	15.4	25.14	7	12
2000	1854	348	9.2	145	33	170	3953	284	18.7	27.3	8.5	14.7
2001	2037	459	10.6	168	65	216	3991	591	27.9	23.79	9.11	22.5
2002	1899	567	7.5	123	26	143	3305	247	17.6	26.83	9.37	13.8
2003	2157	756	7.8	139	38	168	3879	381	21.3	27.86	10.1	16.9
2004	2558	473	6.8	141	44	175	3869	454	23.8	27.37	10.26	19
2005	2208	740	7.9	137	49	174	3848	452	26.5	28.11	9.17	21.2
2006	1845	598	10.8	177	30	199	4633	224	14.3	26.24	10.97	11.1
2007	1016	155	27.3	228	66	278	5471	90[illegible]	22.4	23.95	13.73	17.8
2008	1608	415	17.4	224	74	279	5356	[illegible]95	24.7	23.91	8.23	19.8
2009	1542	634	12.9	179	26	199	[illegible]285	216	12.5	23.87	8.44	9.6
2010	2076	665	7.6	149	12	158	[illegible]76	133	7.7	25.86	10.76	5.9
2011	1945	778	6.5	118	11	126	[illegible]702	92	8.2	31.1	8.78	6.3
2012	919	185	15.8	133	16	145	39[illegible]	145	10.8	29.17	9.05	8.3
2013	1718	365	8.1	136	4	140	[illegible]76	50	3.1	27.48	11.31	2.4
2014	2073	530	5.8	105	19	120	3179	233	15.6	29.91	12.04	12.1
2015	1998	514	6.4	120	10	[illegible]8	3400	121	7.7	28.15	12.04	5.9
2016	2118	440	9.5	177	31	20[illegible]	4402	365	14.9	24.76	11.74	11.6
2017	1384	282	9.9	127	[illegible]	137	3652	105	9.1	27.76	8.29	7
2018	1946	371	4.8	91	4	94	2536	54	4.5	27.27	12.74	3.4
2019	2362	578										

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

** Dead + surviving discards.

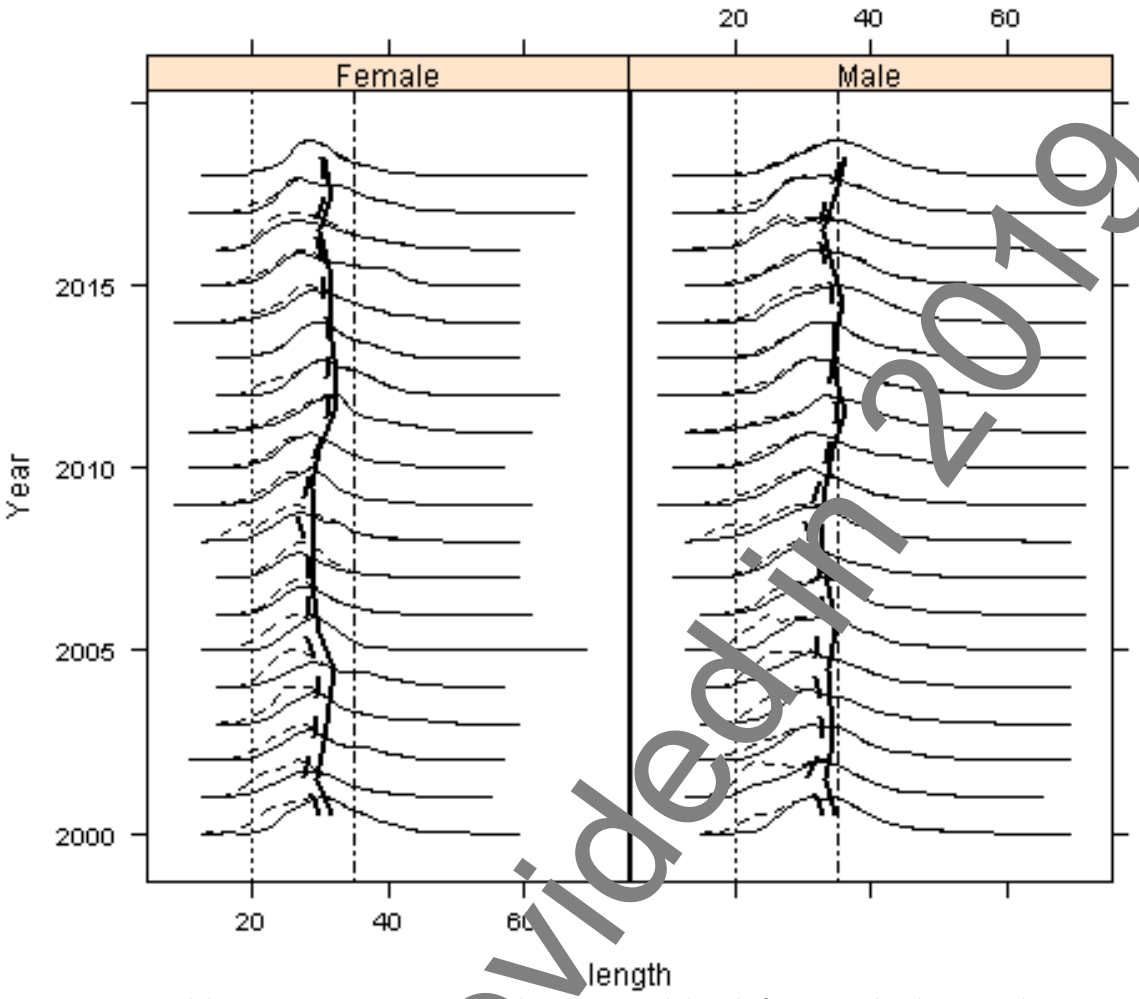

Figure 3 Norway lobster in Division 6.a, Functional Unit 12. Catch length–frequency distribution and mean size in catches (dotted lines) and landings (solid lines). The vertical lines indicate the minimum conservation reference size (20 mm) and the 35 mm visual reference level.

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