

Norway lobster (*Nephrops norvegicus*) in divisions 7.a, 7.g, and 7.j, Functional Unit 19 (Irish Sea, Celtic Sea, eastern part of southwest of Ireland)

ICES advice on fishing opportunities

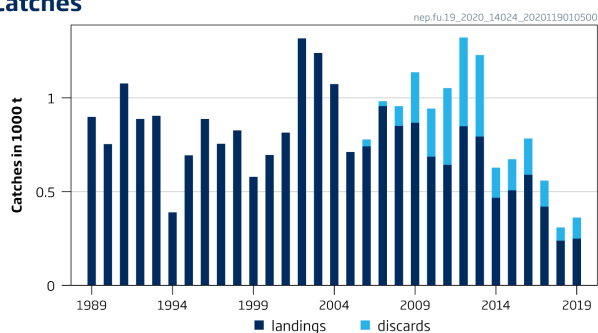
ICES advises that when the EU multiannual plan (MAP) for Western Waters and adjacent waters is applied, catches in 2021 that correspond to the F ranges in the MAP are between 531 tonnes and 595 tonnes, assuming recent discard rates. The entire range is considered precautionary when applying the ICES advice rule.

To ensure that the stock in Functional Unit (FU) 19 is exploited sustainably, management should be implemented at the functional unit level.

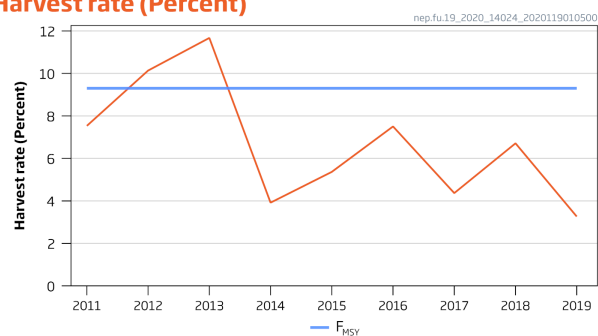
Note: This advice sheet is abbreviated due to the COVID-19 disruption. The previous advice issued for 2020 is attached as Annex 1.

Stock development over time

Catches



Harvest rate (Percent)



Stock abundance

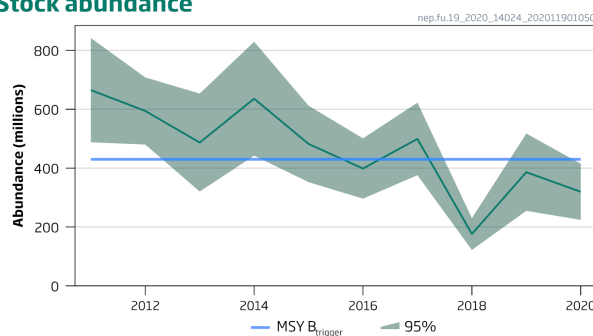


Figure 1 Norway lobster in divisions 7.a, 7.g, and 7.j, Functional Unit 19. Summary of the stock assessment. Catches (discards are only available from 2006 onwards), harvest rate (sum of landings and dead discards in numbers divided by stock abundance), and stock abundance[†] (underwater TV survey).

[†] Version 2: Confidence interval values corrected.

Stock and exploitation status

Table 1 Norway lobster in divisions 7.a, 7.g, and 7.j, Functional Unit 19. 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 $B_{trigger}$	✗	✗	✗ Below trigger
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓ Below possible reference points	B_{pa}, B_{lim}	?	?	? Undefined
Management plan	F_{MGT}	✓	✓	✓ Below the range	B_{MGT}	✗	✗	✗ Below trigger

Catch scenarios

The latest estimate of stock abundance is below $MSY B_{trigger}$ (430 million). The ICES maximum sustainable yield (MSY) approach states that under such conditions, the F_{MSY} harvest rate (9.3%) for FU 19 should be reduced by multiplying it by the ratio of current abundance to $MSY B_{trigger}$. This corresponds to a harvest rate of $9.3 \times (320/430) = 6.9\%$ for the advice in 2021.

Table 2 Norway lobster in divisions 7.a, 7.g, and 7.j, Functional Unit 19. The basis for the catch advice and scenarios.

Variable	Value	Notes
Stock abundance (2021)	320	UWTV survey 2020; numbers of individuals in millions
Mean weight in projected landings	30.2	Average 2017–2019; in grammes
Mean weight in projected discards	15.5	Average 2017–2019; in grammes
Projected discards	40.9	Average 2017–2019; percentage by number
Discard survival *	25	Percentage by number
Projected dead discards	34.3	Average 2017–2019; percentage by number

* Only applied in scenarios where discarding is allowed.

Table 3 Norway lobster in divisions 7.a, 7.g, and 7.j, Functional Unit 19. Annual catch 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							
MSY approach; $F = EU MAP^{\wedge}$: $F_{MSY} \times \text{Stock abundance 2021} / MSY B_{trigger}$	595	556	439	117	39	6.9	-29
MAP $F_{MSY lower} \times \text{Stock abundance 2021} / MSY B_{trigger}$	531	496	392	105	35	6.2	-29
MAP $F_{MSY upper} \times \text{Stock abundance 2021} / MSY B_{trigger}$	595	556	439	117	39	6.9	-29
Other scenarios							
$F = MAP F_{MSY}$	801	748	590	158	53	9.3	-4.5
$F = MAP F_{MSY lower}$	714	668	527	141	47	8.3	-4.7
$F = MAP F_{MSY upper}^{***}$	801	748	590	158	53	9.3	-4.5
F_{2019}	281	262	207	55	18	3.3	-67

Catch scenarios assuming zero discards

Basis	Total catch	Projected landings	Projected discards ^^	Harvest rate * %	% advice change **
	PL + P D	PL	PD	for PL + PD D	
ICES advice basis					
MSY approach; $F = \text{EU MAP} \wedge: F_{\text{MSY}} \times \text{Stock abundance 2021} / \text{MSY } B_{\text{trigger}}$	534	394	140	6.9	-36
MAP $F_{\text{MSY lower}} \times \text{Stock abundance 2021} / \text{MSY } B_{\text{trigger}}$	477	352	125	6.2	-36
MAP $F_{\text{MSY upper}} \times \text{Stock abundance 2021} / \text{MSY } B_{\text{trigger}}$	534	394	140	6.9	-36
Other scenarios					
$F = \text{MAP } F_{\text{MSY}}$	719	531	188	9.3	-14
$F = \text{MAP } F_{\text{MSY lower}}$	642	474	168	8.3	-24
$F = \text{MAP } F_{\text{MSY upper}}^{***}$	719	531	188	9.3	-14.3
F_{2019}	252	186	66	3.3	-70.0

^ EU multiannual plan (MAP) for Western Waters (EU, 2019).

^^ Represents the amount that would normally be discarded.

* By number.

** Advice value for 2021 relative to the corresponding 2020 values (MAP advice value of 839, 749, and 839 tonnes, respectively; other values are relative to F_{MSY}).

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

The decrease in total catch advice is the result of the lower observed stock abundance in 2020, and the lower harvest rate used for the advice.

History of the advice, catch, and management

Table 4 Norway lobster in divisions 7.a, 7.g, and 7.j, Functional Unit 19. ICES advice and estimated landings. All weights are in tonnes.

Year	ICES advice	Landings advice *	Catch advice	ICES landings	Total discards **
1992		3800		888	
1993		~ 4000		905	
1994		~ 4000		390	
1995		~ 4000		694	
1996		4000		888	
1997		4000		756	
1998		4000		827	
1999		4000		579	
2000		4000		696	
2001		4000		815	
2002		4440		1318	
2003		4440		1240	
2004	Restrict landings to 2000–2002 levels	3300		1074	
2005	Restrict landings to 2000–2002 levels	3300		712	
2006	Restrict landings to 2000–2002 levels	3300		741	37
2007	Constrain effort at recent levels	--		957	26
2008	Constrain effort at recent levels	--		851	107
2009	No increase in effort and landings (2007)	< 800	--	868	258
2010	No new advice, same as for 2009	< 800	--	687	269
2011	See scenarios	-		643	387
2012	Reduce catches	-		849	420
2013	MSY approach	< 820		794	404
2014	MSY approach	< 521		468	161
2015	MSY approach	< 715		507	177

Year	ICES advice	Landings advice *	Catch advice	ICES landings	Total discards **
2016	MSY approach		≤ 793 ***	590	194
2017	MSY approach		≤ 838 ^	420	138
2018	MSY approach		≤ 1192 ^	238	71
2019	MSY approach		≤ 173 ^	249	112
2020	Management plan		839 (range 749–839) ^		
2021	Management plan		595 (range 531–595) ^		

* Prior to 2007, ICES provided combined advice for FUs 16, 17, 18, and 19, as well as for “other rectangles” in this area.

** Dead + surviving discards.

*** Assuming all catches are landed.

^ Assuming recent discard rates.

Summary of the assessment

Table 5 Norway lobster in divisions 7.a, 7.g, and 7.j, Functional Unit 19. 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 rate (by number)	Dead discard rate (by number)	Mean weight in landings	Mean weight in discards
	millions			%			tonnes		%		grammes	
1989							899					
1990							754					
1991							1077					
1992							888					
1993							905					
1994							390					
1995							694					
1996							888					
1997							756					
1998							827					
1999							579					
2000							696					
2001							815					
2002							1318					
2003							1240					
2004							1074					
2005							712					
2006							741	37				
2007							957	26				
2008			25	5	29		851	105	17.7	13.9	33.7	19.4
2009			28	19	42		868	269	39.5	32.8	30.5	14.5
2010			23	19	37		687	257	45.1	38.1	29.6	13.5
2011	665	177	26	32	50	7.5	643	409	55.7	48.5	24.9	12.6
2012	594	114	32	37	60	10.1	849	473	53.6	46.4	26.3	12.7
2013	487	166	29	36	57	11.7	794	436	55.3	48.1	26.9	11.9
2014	636	194	16	11	25	3.9	468	161	41.1	34.4	28.6	14.1

[‡] Version 2: Confidence interval values corrected

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 rate (by number)	Dead discard rate (by number)	Mean weight in landings	Mean weight in discards
	millions					%	tonnes		%		grammes	
2015	482	130	17	12	26	5.4	507	167	41.1	34.3	29.8	14.1
2016	399	103	20	14	30	7.5	590	193	40.8	34.1	29.9	14.2
2017	499	123	15	10	22	4.4	420	139	39.7	33.1	28.8	14.5
2018	176	54	8	4	11	6.7	238	71	34.8	28.6	28.2	15.7
2019	386	131	7	7	13	3.3	249	112	48.2	41.1	33.6	16.3
2020	320	95										

* Dead + surviving discards.

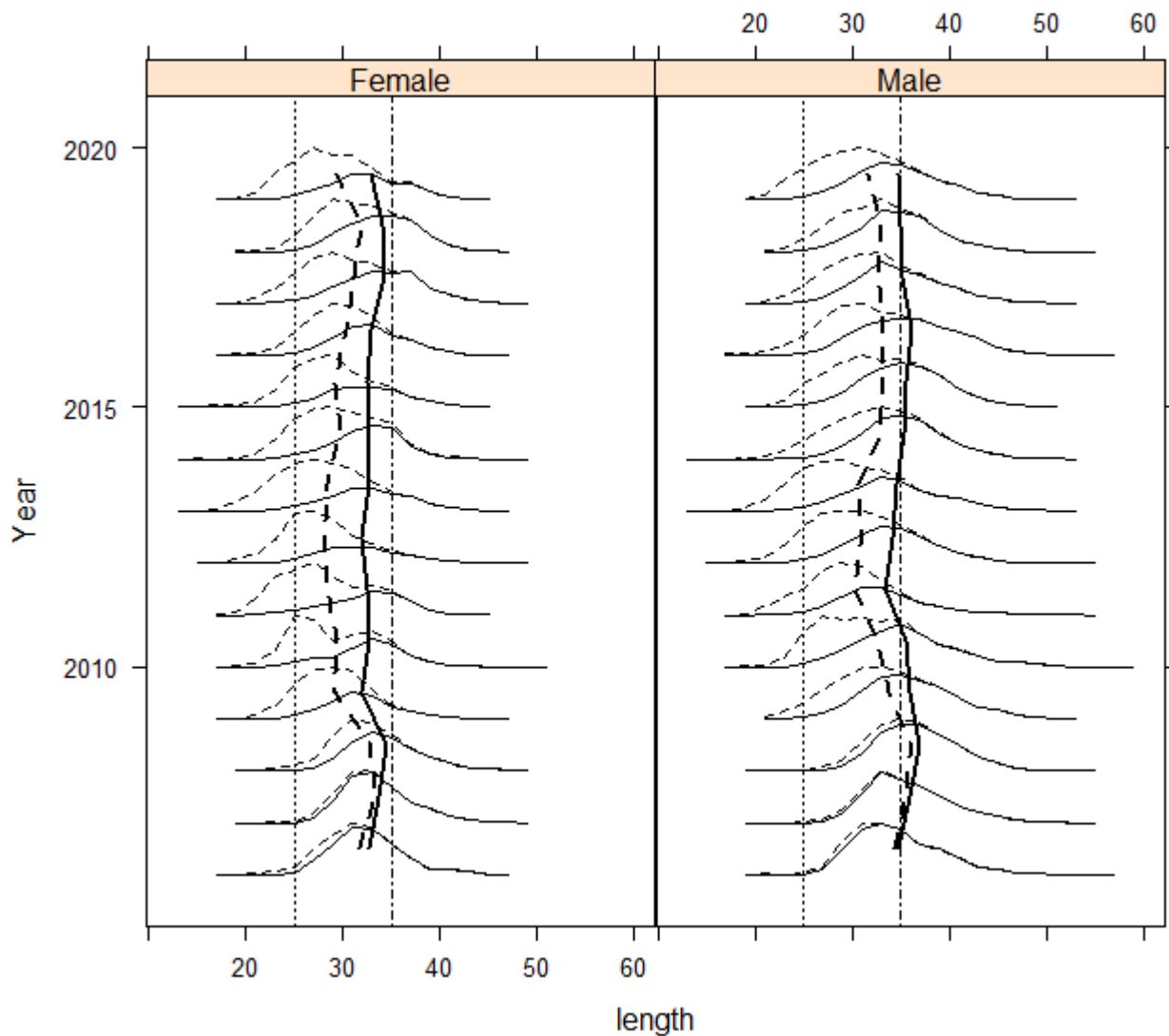


Figure 2 Norway lobster in divisions 7.a, 7.g, and 7.j, Functional Unit 19. Catch length–frequency distribution and mean size in catches (dotted lines) and landings (solid lines). The vertical lines indicate the minimum conservation reference size (25 mm) and the 35 mm visual reference level.

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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