

Norway lobster (*Nephrops norvegicus*) in Division 3.a, functional units 3 and 4 (Skagerrak and Kattegat)

ICES advice on fishing opportunities

Please note: The present advice replaces the advice given in November 2020 for catches in 2021.

ICES advises that when the EU multiannual plan (MAP) for the North Sea is applied, catches in 2021 that correspond to the F ranges in the MAP are between 12 155 tonnes and 17 148 tonnes, assuming recent discard rates. The entire range is considered precautionary when applying the ICES advice rule.

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

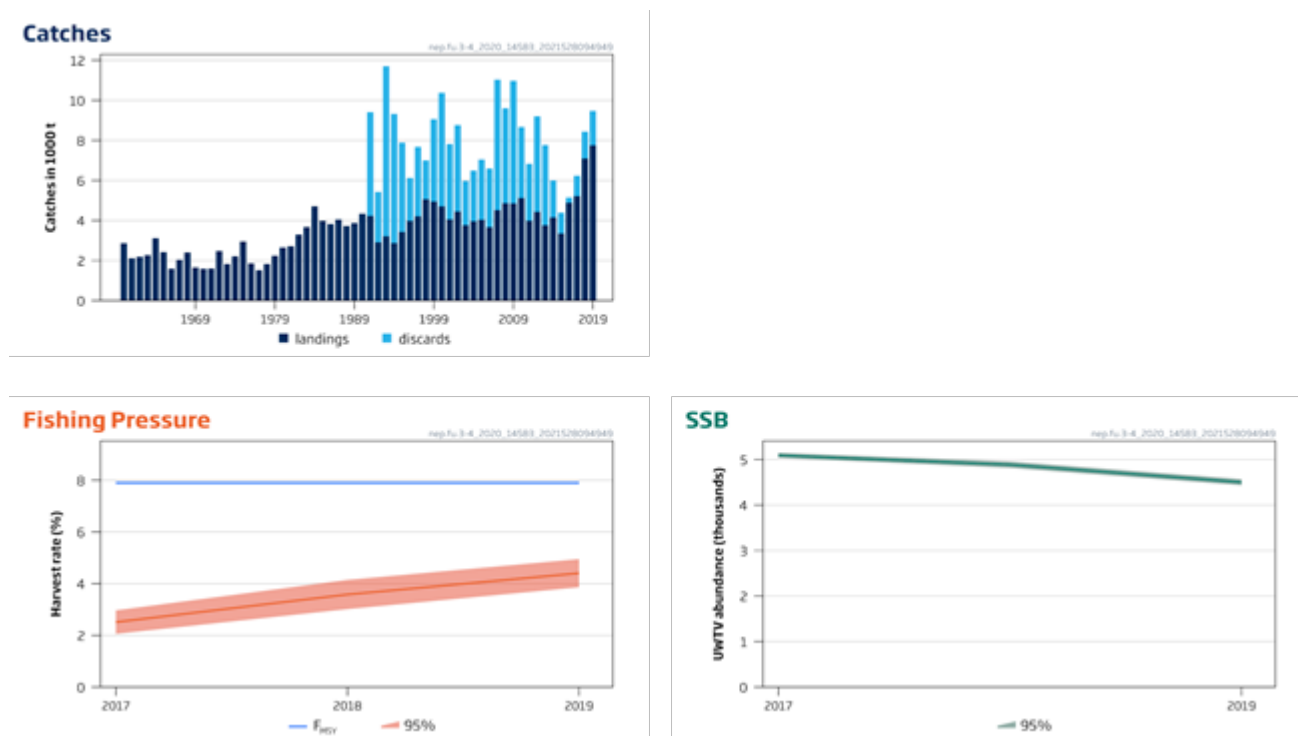


Figure 1 Norway lobster in Division 3.a, functional units 3 and 4. Summary of the stock assessment. Long-term trends in landings (1960–2019) and catches (1991–2019), harvest rate, and underwater TV survey (UWTV) abundance (for animals greater than 17 mm carapace length). The blue line indicates F_{MSY} .

Stock and exploitation status

Table 1 Norway lobster in Division 3.a, functional units 3 and 4. 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	?	?	?	Undefined
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓ Below possible reference points	B_{pa}, B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	✓	✓	✓ Below	B_{MGT}	—	—	—	Not applicable

Catch scenarios

Table 2 Norway lobster in Division 3.a, functional units 3 and 4. The basis for the catch scenarios.

Variable	Value	Notes
Stock abundance	4502 million	UWTV 2019 (data from the underwater TV (UWTV) survey for 2020 are not yet available)
Mean weight in projected landings	54.45 g	Average 2017–2019
Mean weight in projected discards	23.07 g	Average 2017–2019
Projected discard rate (total)	32.3%	Average 2017–2019 (percentage by number)
Discard survival ratio	25%	Percentage by number
Projected dead discard ratio	26.31%	Average 2017–2019 (percentage by number)

Table 3 Norway lobster in Division 3.a, functional units 3 and 4. All weights are in tonnes.

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}	17148	16428	14269	2159	720	7.9	-13.8
F = MAP F _{MSY lower}	12155	11645	10115	1530	510	5.6	-13.8
F = MAP F _{MSY upper} ***	17148	16428	14269	2159	720	7.9	-13.8
Other scenarios							
F ₂₀₁₉	9573	9171	7966	1205	402	4.4	-52

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}	15765	13119	2646	7.9	-21
F = MAP F _{MSY lower}	11175	9299	1876	5.6	-21
F = MAP F _{MSY upper} ***	15765	13119	2646	7.9	-21
Other scenarios					
F ₂₀₁₉	8800	7323	1477	4.4	-56

[^] EU multiannual plan (MAP) for the North Sea (EU, 2018).

^{^^} Represents the amount that would otherwise have been discarded, but is now landed under the landing obligation.

* Calculated in numbers for dead removals.

** Advice basis values for 2021 relative to the 2020 advice values (MAP advice of 19 904, 14 109, and 19 904 tonnes, respectively); other option values are relative to F_{MSY}.

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

History of the advice, catch, and management

Table 4 Norway lobster in Division 3.a, functional units 3 and 4. ICES advice, TACs, and ICES catches. All weights are in tonnes. Values of landings and catches corresponding to advice and TAC prior to 2013 are presented to the nearest hundred tonnes.

Year	ICES advice	Landings corresponding to advice	Catch corresponding to advice	TAC **	ICES landings	ICES discards
1991					4228	5183
1992		~ 4000		3500	2905	2523
1993		~ 4300		3500	3212	8493
1994		2900		3500	2874	6450
1995		2900		4800	3427	4464
1996	Status quo TAC	2900		4800	3980	2148
1997	Status quo TAC	2900		4800	4206	3469
1998		4000		4800	5056	1944
1999		4000		4800	4949	4108
2000		3800		5000	4710	5664
2001		3800		4500	4056	3767
2002	Catches to be maintained at the 2000 level	4700		4500	4448	4311
2003	Catches to be maintained at the 2000 level	4700		4500	3767	2208
2004	Catches to be maintained at the 2000 level	4700		4700	3965	2532
2005	Catches to be maintained at the 2000 level	4700		5200	4034	3014
2006	No increase in effort	-		5200	3672	2926
2007	No increase in effort	-		5200	4512	6524
2008	No increase in effort	-		5200	4860	4746
2009	Current effort appears to be sustainable	< 5200		5200	4846	6129
2010	Current effort appears to be sustainable	< 5200		5200	5123	3548
2011	Recent average landings (2007–2009)	< 4700		5200	3986	2847
2012	MSY approach	< 6000		6000	4429	4771
2013	MSY approach	< 5200		5200	3760	4010
2014	MSY approach	< 5019		5019	4150	1854
2015	MSY approach	< 5318	< 10290	5318	3350	1038
2016	MSY approach	< 7827	< 11793	11001	4889	256 ^
2017	MSY approach		< 13099	12715	5211	1024 ^
2018	MSY approach		≤ 12431	11738	7100	1336 ^
2019	MAP *** F ranges (Harvest rate = 5.6–7.9%)		15339–21639	13733	7753	1719 ^
2020	Management Plan		14109–19904	13733		
2021	Management Plan		12155–17148 *			

* Assuming the high survival exemption continues in 2021, this implies landings of 10 115 - 14269 tonnes. Revised in June 2021 from a total catch of 12 465- 17 585 tonnes.

** Since 2016, catch quota.

*** EU multiannual plan (MAP) for the North Sea (EU, 2018).

^ Since 2016, discard estimates include below minimum size (BMS) landings as reported to ICES.

Summary of the assessment

Table 5 Norway lobster in Division 3.a, functional units 3 and 4. Assessment summary.

Year	UWTV abundance *			Landings	Discards	Harvest rate * (by numbers)			Mean weight		Discard ratio (by number)
	Value	High	Low			Value	High	Low	Landings	Discards	
	millions					tonnes		%			
1960				2871							
1961				2118							
1962				2188							
1963				2275							
1964				3112							
1965				2424							
1966				1595							
1967				2036							
1968				2408							
1969				1657							
1970				1584							
1971				1606							
1972				2478							
1973				1829							
1974				2215							
1975				2950							
1976				1863							
1977				1518							
1978				1830							
1979				2240							
1980				2648							
1981				2720							
1982				3298							
1983				3676							
1984				4711							
1985				3989							
1986				3825							
1987				4046							
1988				3727							
1989				3877							
1990				4341							
1991				4228	5183						
1992				2905	2523						
1993				3212	8493						
1994				2874	6450						
1995				3427	4464						
1996				3979	2148						
1997				4206	3469						
1998				5056	1944						
1999				4949	4108						
2000				4710	5664						
2001				4056	3767						
2002				4448	4311						
2003				3767	2208						

Year	UWTV abundance *			Landings	Discards	Harvest rate * (by numbers)			Mean weight		Discard ratio (by number)
	Value	High	Low			Value	High	Low	Landings	Discards	
	millions			tonnes		%			grammes		%
2004				3965	2532						
2005				4034	3014						
2006				3672	2926						
2007				4512	6524						
2008				4860	4746						
2009				4846	6129						
2010				5123	3548						
2011	3577	3612	3542	3986	2847	4.2	4.5	3.8	60.7	25.9	62.6
2012	2526	2577	2475	4429	4771	8.6	9.1	8.0	55.9	26.1	69.8
2013	2914	2984	2844	3760	4010	5.8	6.5	5.1	59.8	28.2	69.3
2014	3762	3853	3670	4150	1854	3.0	4.0	2.1	62.5	29.4	48.7
2015	3857	3945	3770	3350	1038	2.1	2.9	1.2	63.9	29.2	40.5
2016	2863	2912	2814	4890	256 **	3.1	3.6	2.6	61.3	22.7	12.4
2017	5093	5150	5036	5211	1024 **	2.5	3.0	2.1	55.4	22.9	32.2
2018	4887	4957	4816	7100	1336 **	3.6	4.1	3.0	54.4	22.3	31.4
2019	4502	4571	4434	7753	1719 **	4.4	5.0	3.9	53.6	24.0 [†]	33.1

* The area of the Norway lobster ground surveyed has changed over time, with spatial changes between 2013 and 2014, and a 27% increase in the area between 2016 and 2017. This implies that the harvest rate was overestimated, and that abundance was underestimated before 2017.

** Since 2016, discard estimates include BMS landings as reported to ICES.

[†] Version 2: Value corrected

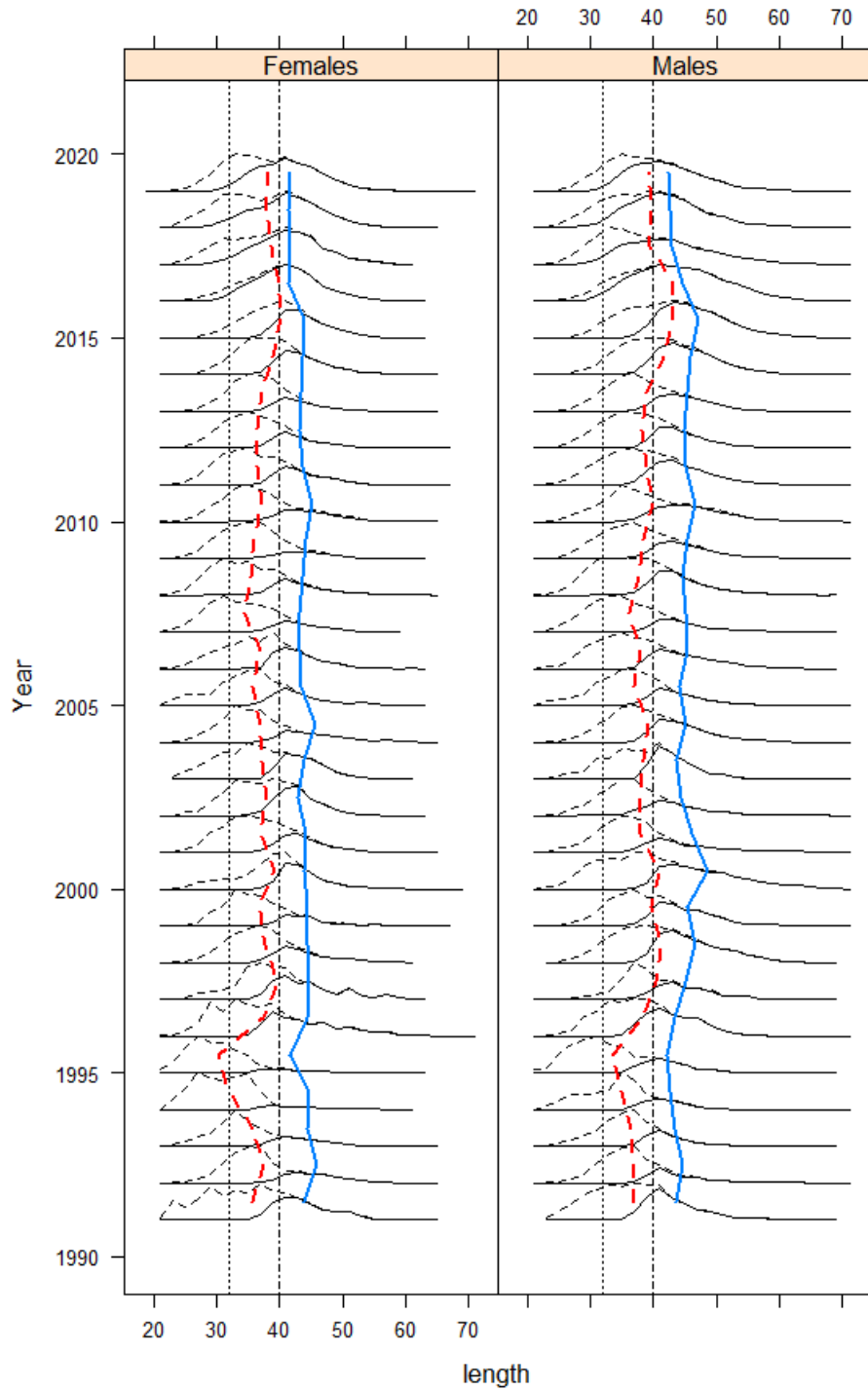


Figure 2 Norway lobster in Division 3.a, functional units 3 and 4. Catch length–frequency distribution and mean size in catches (broken red line) and landings (solid blue line). Vertical lines are the current minimum conservation reference size (MCRS) at 32 mm and the old minimum landing size (MLS) at 40 mm.

Sources and references

EU. 2018. Regulation (EU) 2018/973 of the European Parliament and of the Council of 4 July 2018 establishing a multiannual plan for demersal stocks in the North Sea and the fisheries exploiting those stocks, specifying details of the implementation of the landing obligation in the North Sea and repealing Council Regulations (EC) No 676/2007 and (EC) No 1342/2008. Official Journal of the European Union, L 179: 1–13. <http://data.europa.eu/eli/reg/2018/973/oj>.

ICES. 2020. Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK). ICES Scientific Reports, 2:61. 1140 pp. <http://doi.org/10.17895/ices.pub.6092>.

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