

Norway lobster (*Nephrops norvegicus*) in Division 8.c, Functional Unit 31 (southern Bay of Biscay and Cantabrian Sea)

ICES advice on fishing opportunities

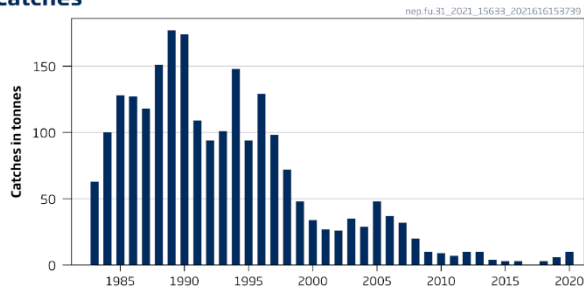
ICES advises that when the MSY approach is applied, catches in 2022 should be no more than 20 tonnes.

To ensure that the stock in Functional Unit 31 is exploited sustainably, management should be implemented at the functional unit level.

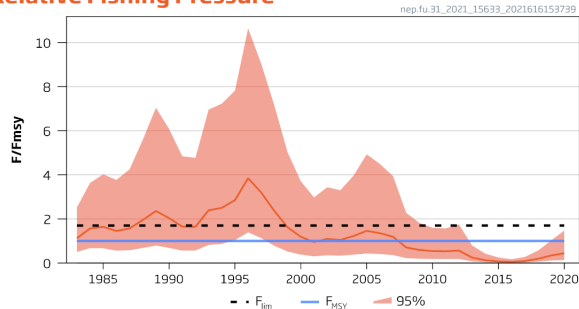
Stock development over time

Fishing pressure on the stock is below F_{MSY} and total biomass is below B_{MSY} and $MSY B_{trigger}$ but above B_{lim} .

Catches



Relative Fishing Pressure



Relative Biomass

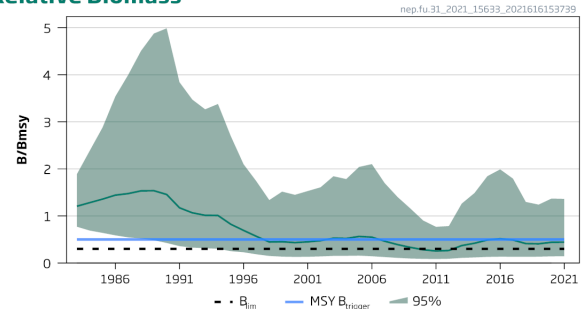


Figure 1 Norway lobster in Division 8.c, Functional Unit (FU) 31. Summary of the stock assessment.

Catch scenarios

Table 1 Norway lobster in Division 8.c, Functional Unit (FU) 31. Assumptions made for the interim year and in the forecast.

Variable	Value	Notes
F (2021) / F_{MSY}	0.4416	Status quo F/F_{MSY}
B (2022) / B_{MSY}	0.4834	Short term forecast (STF) with status quo F/F_{MSY}
Catch (2021)	12.249	STF of catch under status quo F/F_{MSY} ; tonnes

Table 2 Norway lobster in Division 8.c, FU 31. Catch scenarios for 2022. All weights are in tonnes.

Basis	Total catch (2022)	F ₂₀₂₂ /F _{MSY}	B ₂₀₂₃ /B _{MSY}	% B change ^	% advice change ^^
ICES advice basis					
MSY approach : 35 th percentile of predicted catch distribution under F=F _{MSY}	20	0.74	0.51	6.2	-
Other scenarios					
F = F ₂₀₂₀ = F _{sq}	12.3	0.44	0.53	8.7	-
F = F _{msy}	26	0.97	0.50	4.4	-
F = 0	0	0.00	0.54	12.4	-

^ Biomass 2023 relative to the biomass 2022.

^^ Advice value for 2022 relative to the advice value for 2021.

The advice for 2021 for this stock was for zero catch. As a result of the benchmark and the adoption of the SPiCT method for the assessment, the advice for 2022 is 20 t.

Basis of the advice

Table 3 Norway lobster in Division 8.c, FU 31. The basis of the advice.

Advice basis	MSY approach
Management plan	ICES is not aware of any agreed precautionary management plan for Norway lobster in this area.

Quality of the assessment

The input data, catch and SP-NGFS-Q4 bottom trawl survey abundance index time series, as well as the model, were adopted by the Benchmark Workshop on the development of MSY advice for category 3 stocks using Surplus Production Model in Continuous Time; SPiCT (WKMSYSPICT [ICES, 2021c]).

The collection of data from the commercial fishery and research surveys during 2020 has been impacted by COVID-19 restrictions to a varying degree across member states. For this stock, the impact of the COVID-19 pandemic on the perception of the stock status and advice is considered minimal.

Issues relevant for the advice

An analysis of fishery-dependent and -independent data shows that the stock area has contracted by 19% since 1983. This may be related to the reduction in biomass.

ICES provides advice for two FUs separately (FU25 and FU31) in ICES division 8.c but a single TAC covers this entire division. The advice for FU25 is for zero catch while the advice for FU31 is 20 tonnes, both for 2022. ICES advises that the management area should be consistent with the assessment area (Figure 2). This implies that the advised catch of 20 tonnes should be taken in FU31 and not in FU25.

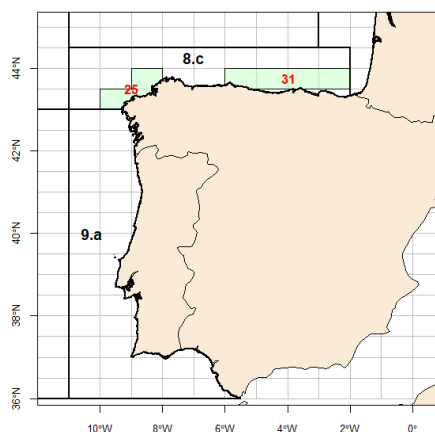


Figure 2 Nephrops functional units in Division 8.c. FU 31 covers statistical rectangles 16E4-E7.

Reference points

Table 4 Norway lobster in Division 8.c, FU 31. Reference points, values, and their technical basis.

Framework	Reference point	Relative value *	Technical basis	Source
MSY approach	MSY $B_{trigger}$	0.5	Relative value. B_{MSY} is estimated directly from the assessment model and changes when the assessment is updated.	ICES (2021c)
	F_{MSY}	1	Relative value. The F_{MSY} is estimated directly from the assessment model and changes when the assessment is updated.	ICES (2021c)
Precautionary approach	B_{lim}	$0.3 \times B_{MSY}$	Relative value (equilibrium yield at this biomass is 50% of MSY).	ICES (2021c)
	B_{pa}	Not defined		
	F_{lim}	$1.7 \times F_{MSY}$	Relative value (the F that drives the stock to B_{lim}).	ICES (2021c)
	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 SPiCT-estimated values of the ratios F/F_{MSY} and B/B_{MSY} are used to estimate stock status relative to the MSY reference points.

Basis of the assessment

Table 5 Norway lobster in Division 8.c, FU 31. The basis of the assessment.

ICES stock data category	2 (ICES, 2021a).
Assessment type	Production model (SPiCT; ICES, 2021b) that uses catches in the model and in the forecast.
Input data	Commercial catches (Spanish catches (1983–2020)); the Spanish North Coast Bottom Trawl Survey (SP-NGFS-WIBTS-Q4 [G2784]) <i>Nephrops</i> abundance index (since 1983).
Discards and bycatch	Included.
Indicators	Percentage contraction stock area. Recruitment proxy, mean length by sex in commercial catches and sex ratio time series.
Other information	Last benchmarked in 2021 (ICES 2021c).
Working group	Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE).

History of the advice, catch, and management

Table 6 Norway lobster in Division 8.c, FU 31. History of ICES advice, the agreed TAC, and ICES estimates of catches. Weights are in tonnes.

Year	ICES advice	Predicted landings correspond. to advice	Agreed TAC *	ICES catches
1987			520 [#]	118
1988			520 [#]	151
1989			600 [#]	177
1990			800 [#]	174
1991			600 [#]	109
1992		510	800	94
1993		510	800 [#]	101
1994		510	1000	148
1995		510	1000	94
1996		510	1000	129
1997		510	1000	98
1998		510	1000	72
1999		510	1000	48
2000		510	800	34
2001		510	720	27
2002	Reduce catches to zero	0	360	26
2003	Reduce catches to zero	0	180	35

Year	ICES advice	Predicted landings correspond. to advice	Agreed TAC *	ICES catches
2004	Reduce catches to zero	0	180	29
2005	Reduce catches to zero	0	162 [#]	48
2006	Reduce catches to zero	0	146	37
2007	Reduce catches to zero	0	131	32
2008	Reduce catches to zero	0	124	20
2009	Reduce catches to zero	0	112	10
2010	No new advice, same as 2009	0	101	9
2011	Reduce catches to zero	0	91	7
2012	No new advice, same as 2011	0	82	10
2013	Reduce catch to zero	0	74 [#]	10
2014	No new advice, same as 2013	0	67	4
2015	Zero catch and reduce bycatch	0	60	3
2016	No new advice, same as 2015	0	48	3
2017	Precautionary approach (zero catch)	0	0	0
2018	Precautionary approach (zero catch)	0	0	3 **
2019	Precautionary approach (zero catch)	0	0	6 ***
2020	Precautionary approach (zero catch)	0	0	10 ^{*** ^}
2021	Precautionary approach (zero catch)	0	0	
2022	MSY approach	20 tonnes		

* For the whole of Division 8.c.

** Discards only.

*** Sentinel + Discards.

^ Preliminary.

Updated by WGBIE (ICES, 2021b).

History of catch and landings

Table 7 Norway lobster in Division 8.c, FU 31. Catch distribution by fleet in 2020 as estimated by ICES.

Catch (2020)	Landings*	Discards**
10 tonnes	100% bottom otter trawl	10 tonnes
	< 1 tonne	

* Sentinel fishery.

** Bottom trawl fleet.

Table 8 Norway lobster in Division 8.c. Landings by FU and for all of Division 8.c. Total landings in tonnes (only exploited by the Spanish fleet).

Year	Landings			Discards			ICES catch
	FU 25	FU 31	Outside of FUs	FU 25	FU 31	Outside of FUs	Division 8.c
1975	743 #						743 #
1976	578 #						578 #
1977	828 #						828 #
1978	706 #						706 #
1979	475						475
1980	532 #						532 #
1981	318						318
1982	431						431
1983	433	63					496
1984	515	100					615
1985	477	128					605
1986	364	127					491
1987	412	118					530
1988	445	151					596
1989	405 [#]	177					582 [#]
1990	335 [#]	174					509 [#]

Year	Landings			Discards			ICES catch
	FU 25	FU 31	Outside of FUs	FU 25	FU 31	Outside of FUs	Division 8.c
1991	453	109					562
1992	428	94					522
1993	274	101					375
1994	246 [#]	148					394 [#]
1995	275 [#]	94					369 [#]
1996	209	129					338
1997	219	98					317
1998	103	72					175
1999	124	48					172
2000	81	34					115
2001	147	27					174
2002	143	26					169
2003	89	35	30				154
2004	75	29	10				114
2005	63	48	12				123
2006	62	37	11				110
2007	67	32	13				112
2008	39	20	10				69
2009	23 [#]	10	5				38 [#]
2010	32 [#]	9	5				46 [#]
2011	46 [#]	7	3				56 [#]
2012	9 [#]	10	5				24 [#]
2013	11	10	4				25
2014	10 [#]	4	2				16 [#]
2015	14	3	2				19
2016	13	3	4				20
2017	2	0	0				2
2018	2	0	0	0	3	4	10
2019	2	1	0	1	6	3	12
2020*	2	1	0	1	10	0	13

* Preliminary

[#] Updated by WGBIE (ICES, 2021b).

Summary of the assessment

Table 9 Norway lobster in Division 8.c, FU 31. Assessment summary. Weights are in tonnes and highs and lows represent 95% confidence intervals.

Year	Relative biomass	High	Low	Total Catch	Relative fishing pressure	High	Low
1983	1.206	1.89	0.77	63	1.12	2.5	0.50
1984	1.28	2.4	0.69	100	1.57	3.6	0.68
1985	1.36	2.9	0.64	128	1.64	4.0	0.67
1986	1.44	3.5	0.59	127	1.45	3.8	0.56
1987	1.48	4.0	0.54	118	1.57	4.2	0.58
1988	1.53	4.5	0.52	151	1.95	5.6	0.68
1989	1.54	4.9	0.48	177	2.4	7.0	0.79
1990	1.46	5.0	0.43	174	2.0	6.1	0.68
1991	1.17	3.8	0.36	109	1.65	4.8	0.56
1992	1.07	3.5	0.33	94	1.64	4.8	0.57
1993	1.01	3.3	0.32	101	2.4	7.0	0.82
1994	1.01	3.4	0.30	148	2.5	7.2	0.87
1995	0.82	2.7	0.25	94	2.9	7.8	1.04
1996	0.69	2.1	0.23	129	3.8	10.6	1.39
1997	0.57	1.74	0.185	98	3.2	9.0	1.13

Year	Relative biomass	High	Low	Total Catch	Relative fishing pressure	High	Low
1998	0.45	1.34	0.149	72	2.4	7.1	0.78
1999	0.45	1.52	0.135	48	1.62	5.0	0.52
2000	0.43	1.45	0.129	34	1.19	3.7	0.38
2001	0.45	1.53	0.132	27	0.95	3.0	0.30
2002	0.48	1.61	0.14	26	1.10	3.4	0.35
2003	0.53	1.84	0.151	35	1.05	3.3	0.33
2004	0.52	1.78	0.153	29	1.23	4.0	0.38
2005	0.57	2.0	0.156	48	1.46	4.9	0.43
2006	0.55	2.1	0.144	37	1.35	4.5	0.41
2007	0.46	1.70	0.126	32	1.19	3.9	0.36
2008	0.39	1.40	0.109	20	0.71	2.3	0.22
2009	0.33	1.16	0.095	10	0.59	1.82	0.194
2010	0.28	0.90	0.088	9	0.54	1.60	0.183
2011	0.26	0.77	0.085	7	0.53	1.57	0.181
2012	0.27	0.79	0.09	10	0.57	1.75	0.183
2013	0.37	1.26	0.109	10	0.25	0.80	0.076
2014	0.42	1.49	0.119	4	0.127	0.43	0.038
2015	0.49	1.84	0.129	3	0.072	0.25	0.021
2016	0.52	1.99	0.135	3	0.053	0.175	0.0161
2017	0.49	1.79	0.133	0	0.088	0.27	0.029
2018	0.41	1.30	0.131	3	0.191	0.56	0.064
2019	0.41	1.24	0.134	6	0.34	1.02	0.114
2020	0.44	1.37	0.141	10	0.44	1.47	0.132
2021	0.44	1.36	0.144				

Sources and references

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[Download the stock assessment data and figures.](#)

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