

## Norway lobster (*Nephrops norvegicus*) in Division 9.a, functional units 28–29 (Atlantic Iberian waters East and southwestern and southern Portugal)

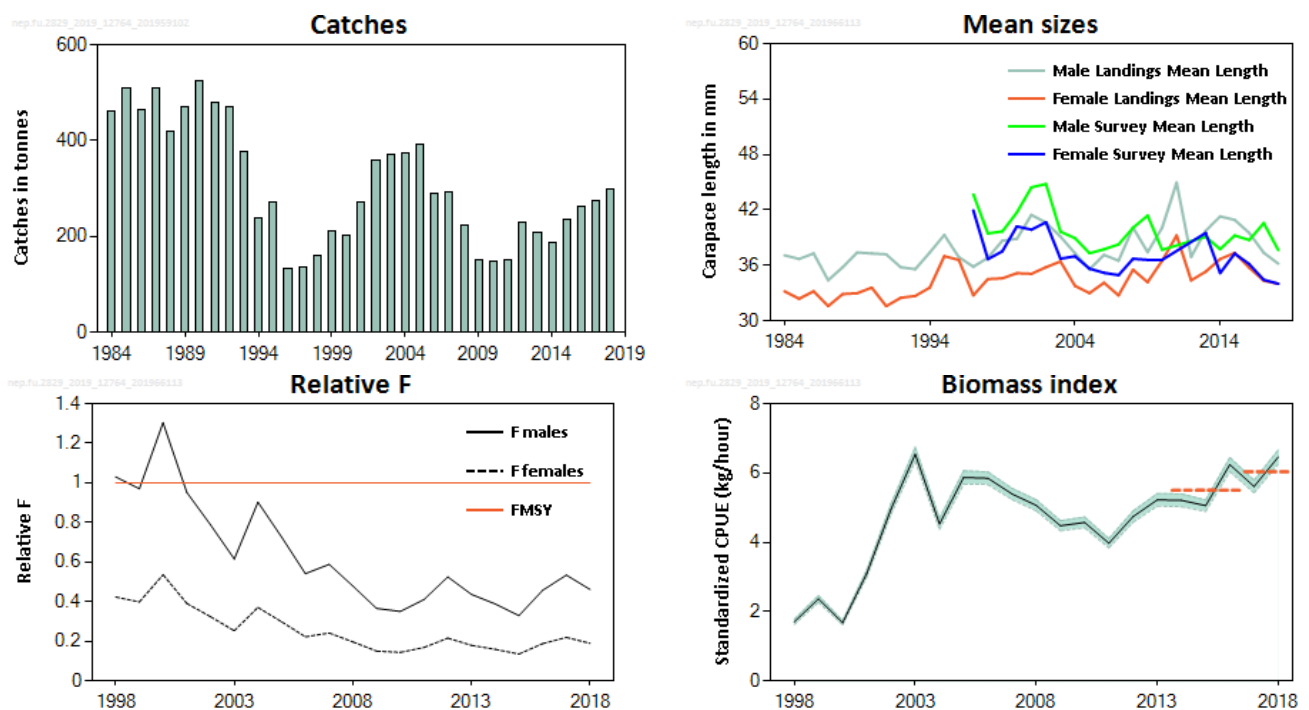
### ICES stock advice

ICES advises that when the precautionary approach is applied, catches in each of the years 2020 and 2021 should be no more than 309 tonnes.

To ensure that the stock in Functional Units 28-29 is exploited sustainably, management should be implemented at the functional unit level.

### Stock development over time

Standardized commercial CPUE (used as the stock size indicator) has increased since 2011 and the mean size of individuals has been relatively stable over the past decade.



**Figure 1** Norway lobster in Division 9.a, functional units 28–29. Summary of the stock assessment. F values for both males and females are presented relative to their respective  $F_{MSY}$ . The biomass index is displayed with 95% confidence intervals.

### Stock and exploitation status

ICES assesses that fishing pressure on the stock is below  $F_{MSY}$  proxy. No reference points for stock size have been defined for this stock.

**Table 1** Norway lobster in Division 9.a, functional units 28–29. State of the stock and fishery relative to reference points. The status evaluation is based on reference point proxies (ICES, 2017).

		Fishing pressure			Stock size					
		2016	2017	2018	2016	2017	2018			
Maximum sustainable yield	$F_{MSY}$ proxy	✓	✓	✓	Below proxy	$MSY$	?	?	?	Undefined
Precautionary approach	$F_{pa}$ / $F_{lim}$	✓	✓	✓	Below possible reference points	$B_{pa}$ / $B_{lim}$	?	?	?	Undefined
Management plan	$F_{MGT}$	✓	✓	✓	*Below proxy	$B_{MGT}$	?	?	?	Undefined
Qualitative evaluation	-	↗	↗	↘	Decreasing	-	↗	↘	↗	Increasing

\* F ranges are not available for this stock.

### Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012a). The standardized commercial CPUE was used as the index of stock development. The advice is based on the ratio of the mean of the last two index values (Index A) and the mean of the three preceding values (Index B), multiplied by the recent advised catch.

Although stock size is unknown, the fishing mortality has been estimated to be well below the maximum sustainable yield (MSY) reference proxy for over a decade and remains at a low level. The biomass indices (standardized CPUE and the survey index) show a generally increasing trend since 2011 (Figure 1). Therefore, no additional precautionary buffer was applied.

Discarding is considered negligible.

**Table 2** Norway lobster in Division 9.a, functional units 28–29. The basis for the catch scenarios.\*

Index A (2017–2018)		6.0 kg h <sup>-1</sup>
Index B (2014–2016)		5.5 kg h <sup>-1</sup>
Index ratio (A/B)		1.10
Uncertainty cap	Not applied	-
Advised catch for 2018-2019		281 tonnes
Discard rate		Negligible
Precautionary buffer	Not applied	-
Catch advice**		309 tonnes
%Advice change***		+10%

\* 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.

\*\* [Advised catch for 2019] × [index ratio].

\*\*\* Advice value for 2020–2021 relative to the advice value for 2018–2019.

Catch advice increased by 10% as a result of the increased index ratio.

### Basis of the advice

**Table 3** Norway lobster in Division 9.a, functional units 28–29. The basis of the advice.

Advice basis	Precautionary approach.
Management plan	The EU multiannual plan (MAP; EU, 2019) for stocks in the Western Waters and adjacent waters applies to this stock. The MAP stipulates that when the $F_{MSY}$ ranges are not available, fishing opportunities should be based on the best available scientific advice.

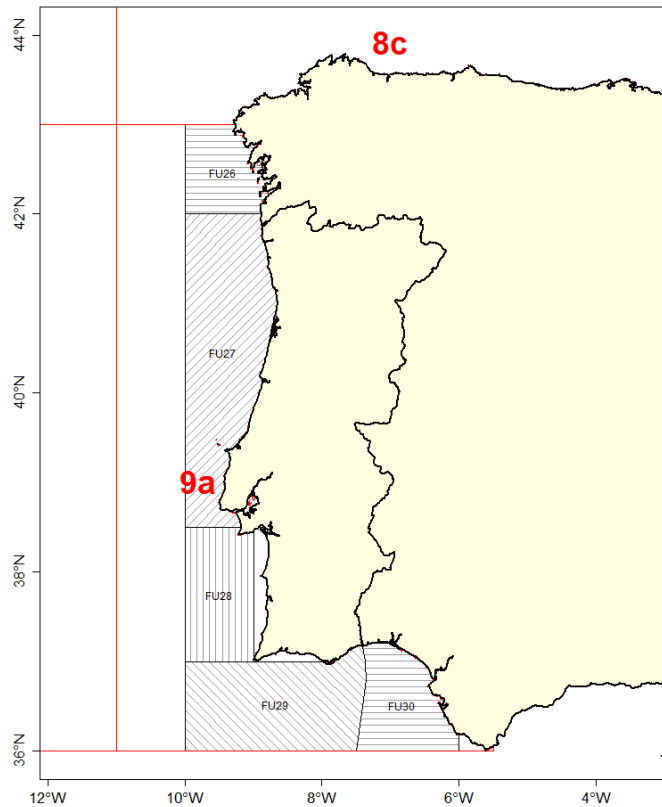
### Quality of the assessment

Spanish vessels have been licensed for crustacean fisheries in these functional units under a bilateral agreement since 2004. Prior to 2011, no data from the operations of these vessels were available. Landings include Spanish official landings since 2011.

### Issues relevant for the advice

A single TAC covers the entire ICES subareas 9 and 10 and EU waters of CECAF 34.1.1. ICES advises that the management area should be consistent with the assessment area (Figure 3).

The  $F_{MSY}$  proxy reference points were updated in 2017 and remain valid. The values are presented in Table 4.



**Figure 3** Norway lobster in Division 9.a, functional units 28–29. Map of functional units.

### Reference points

**Table 4** Norway lobster in Division 9.a, functional units 28–29. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	Not defined		
	$F_{MSY}$ proxy	0.23 males; 0.24 females	$F_{0.1}$ from a yield-per-recruit analysis	ICES (2017)
Precautionary approach	$B_{lim}$	Not defined		
	$B_{pa}$	Not defined		
	$F_{lim}$	Not defined		
	$F_{pa}$	Not defined		
Management plan	$SSB_{mgt}$	Not defined		
	$F_{mgt}$	Not defined		

## Basis of the assessment

**Table 5** Norway lobster in Division 9.a, functional units 28–29. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2018).
Assessment type	Trends from standardized commercial CPUE.
Input data	Commercial catches (Portuguese catches 1984–2016 and Spanish catches 2011–2016); one commercial index (standardized CPUE from the Portuguese crustacean trawl fleet, 1998–2016).
Discards and bycatch	Negligible.
Indicators	Biomass index from the crustacean trawl survey (PT-CTS; 1998-2016), mean length in commercial catches and in surveys.
Other information	Last benchmark in 2012 (ICES, 2012b).
Working group	Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE).

## Information from stakeholders

There is no additional available information.

## History of the advice, catch, and management

**Table 6** Norway lobster in Division 9.a, functional units 28–29. ICES advice and official landings. All weights are in tonnes.

Year	ICES advice	Predicted catches correspond. to advice	Agreed TAC *	ICES landings	ICES discards
2003	Zero catches	0	600	370	0
2004	Zero catches	0	600	375	10
2005	Zero catches	0	540	391	30
2006	Average landings in times when stock was recovering (1996–2002)	< 200	486	291	0
2007	Average landings in times when stock was recovering (1996–2002)	< 200	437	291	0
2008	Average landings in times when stock was recovering (1996–2002)	< 200	415	223	0
2009	Average landings in times when stock was recovering (1996–2002)	< 200	374	151	0
2010	No new advice, same as for 2009	< 200	337	147	0
2011	See scenarios	-	303	150	0
2012	Reduce catch	-	273	229	0
2013	Reduce catch by 14%	110	246	209	3
2014	No new advice, same as for 2013	110	221	193	0
2015	Increase catch by up to 14%	226	254	247	0
2016	No new advice, same as for 2015	226	320	283	0
2017	Precautionary approach	≤ 260	336	275	0
2018	Precautionary approach	≤ 281	381	299**	0**
2019	Precautionary approach	≤ 281	401		
2020	Precautionary approach	≤ 309			
2021	Precautionary approach	≤ 309			

\* TAC set for the entire ICES Division 9.a.

\*\* Preliminary.

## History of the catch and landings

**Table 7** Norway lobster in Division 9.a, functional units 28–29. Catch distribution by fleet in 2018 as estimated by ICES.

Catch (2018)	Landings		Discards
	97% trawl	3% others	
299 tonnes	299 tonnes		Negligible

**Table 8** Norway lobster in Division 9.a, functional units 28–29. History of commercial catch and landings; both the official and ICES estimated values are presented by area for each country participating in the fishery. All weights are in tonnes.

Year	Official landings					Total ICES landings
	Spain		Portugal			
	FU 28	FU 29*	FUs 28 and 29			FUs 28 and 29
	Trawl	Trawl	Artisanal	Trawl	Total	
1975	137	1510		34	34	1681
1976	132	1752		30	30	1914
1977	95	1764		15	15	1874
1978	120	1979		45	45	2144
1979	96	1532		102	102	1730
1980	193	1300		147	147	1640
1981	270	1033		128	128	1431
1982	130	1177		86	86	1393
1983				244	244	244
1984				461	461	461
1985				509	509	509
1986				465	465	465
1987			11	498	509	509
1988			15	405	420	420
1989			6	463	469	469
1990			4	520	524	524
1991			5	473	478	478
1992			1	469	470	470
1993			1	376	377	377
1994				237	237	237
1995			1	272	273	273
1996			4	128	132	132
1997			2	134	136	136
1998			2	159	161	161
1999			5	206	211	211
2000			4	197	201	201
2001			2	269	271	271
2002			1	358	359	359
2003			35	335	370	370
2004			31	345	375	375
2005			31	360	391	391
2006			17	274	291	291
2007			18	274	291	291
2008			35	188	223	223
2009			17	133	151	151
2010			16	131	147	147
2011		17	16	117	133	150
2012	<1	14	3	211	214	229
2013		10	1	198	199	209
2014		8	3	183	186	193
2015		12	4	231	235	247
2016		21	8	254	262	283
2017		26	9	241	249	275
2018**		25	10	263	274	299

\* Spanish landings recorded in FU 29 include landings in FU 28.

\*\* Preliminary.

**Summary of the assessment**

**Table 9** Norway lobster in Division 9.a, functional units 28–29. Assessment summary.

Year	Biomass index	High	Low	Landings tonnes	F
	Kilogrammes per hour				
1984				461	
1985				509	
1986				465	
1987				509	
1988				420	
1989				469	
1990				524	
1991				479	
1992				469	
1993				377	
1994				237	
1995				273	
1996				132	
1997				136	
1998	1.70	1.78	1.63	161	0.24
1999	2.4	2.5	2.3	211	0.22
2000	1.68	1.74	1.62	201	0.30
2001	3.1	3.2	3.0	271	0.22
2002	5.0	5.1	4.8	359	0.181
2003	6.5	6.7	6.3	370	0.142
2004	4.5	4.7	4.4	375	0.21
2005	5.9	6.1	5.7	391	0.167
2006	5.9	6.0	5.7	291	0.125
2007	5.4	5.6	5.2	291	0.135
2008	5.1	5.2	4.9	223	0.110
2009	4.5	4.6	4.3	151	0.084
2010	4.6	4.7	4.4	147	0.081
2011	4.0	4.1	3.8	150	0.094
2012	4.7	4.9	4.6	229	0.121
2013	5.2	5.4	5.0	209	0.100
2014	5.2	5.4	5.0	186	0.089
2015	5.1	5.2	4.9	235	0.076
2016	6.2	6.4	6.0	262	0.105
2017	5.6	5.8	5.4	275	0.123
2018	6.5	6.7	6.3	299*	0.106

\* Preliminary.

## Sources and references

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Recommended citation: ICES. 2019. Norway lobster (*Nephrops norvegicus*) in Division 9.a, Functional Units 28–29 (Atlantic Iberian waters East and southwestern and southern Portugal). In Report of the ICES Advisory Committee, 2019. ICES Advice 2019, nep.fu.2829, <https://doi.org/10.17895/ices.advice.4770>