

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

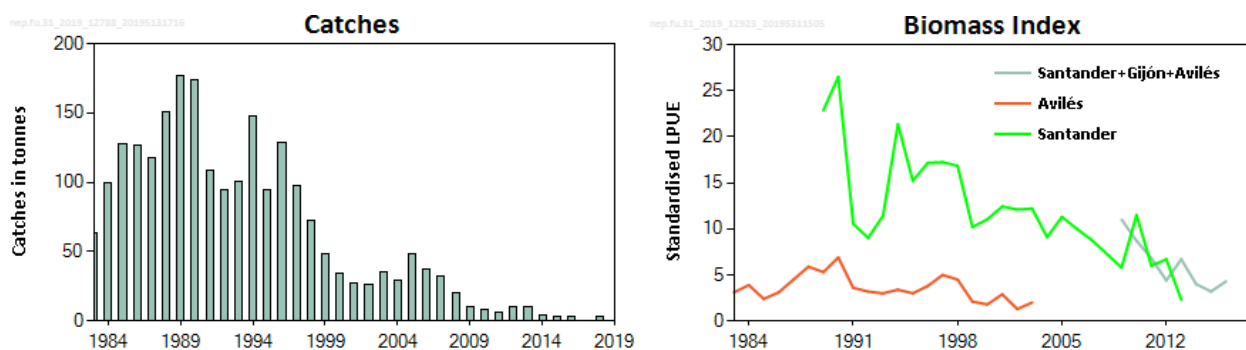
### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, there should be zero catch in each of the years 2020, 2021, and 2022.

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

Catches and CPUE have fluctuated along a marked downward trend and are currently very close to zero. The *Nephrops* fishery in Division 8.c was closed in 2017 and 2018. The available information indicates that the stock is at a very low abundance.



**Figure 1** Norway lobster in Division 8.c, Functional Unit (FU) 31. Left: Catches. Right: Stock size indicators: LPUE from Avilés ( $\text{kg day}^{-1} \times \text{BHP } 100^{-1}$ ), Santander ( $\text{kg [fishing day]}^{-1}$ ), and a combined Avilés+Santander+Gijón series ( $\text{kg [fishing trip]}^{-1}$ ) (1983–2016). LPUE values for 2017 and 2018 are not available due to closure of the fishery.

### Stock and exploitation status

ICES cannot assess the stock and exploitation status relative to maximum sustainable yield (MSY) and precautionary approach (PA) reference points because the reference points are undefined. Qualitatively, the spawning stock size is below any possible biomass reference point.

**Table 1** Norway lobster in Division 8.c, FU 31. State of the stock and fishery relative to reference points.

|                           |                                 | Fishing pressure |      |      | Stock size     |                                 |      |   |   |                                 |
|---------------------------|---------------------------------|------------------|------|------|----------------|---------------------------------|------|---|---|---------------------------------|
|                           |                                 | 2016             | 2017 | 2018 | 2016           | 2017                            | 2018 |   |   |                                 |
| Maximum sustainable yield | $F_{\text{MSY}}$                | ?                | ?    | ?    | Unknown        | $MSY B_{\text{trigger}}$        | ?    | ? | ? | Undefined                       |
| Precautionary approach    | $F_{\text{pa}}, F_{\text{lim}}$ | ?                | ?    | ?    | Unknown        | $B_{\text{pa}}, B_{\text{lim}}$ | ?    | ? | ? | Undefined                       |
| Management plan           | $F_{\text{MGT}}$                | —                | —    | —    | Not applicable | $B_{\text{MGT}}$                | —    | — | — | Not applicable                  |
| Qualitative evaluation    | -                               | ?                | ?    | ?    | Unknown        | -                               | ⊗    | ⊗ | ⊗ | Below possible reference points |

## Catch scenarios

The stock biomass indicator is at a historically low value, below any possible reference points, and therefore the advice is for zero catch for each of the years 2020, 2021, 2022. The Division 8.c *Nephrops* (FUs 25 and 31) fishery was closed in 2017 and 2018.

**Table 2** Norway lobster in Division 8.c, FU 31. The catch scenarios. For stocks in ICES data categories 3–6, one catch scenario is possible.

|                      |             |          |
|----------------------|-------------|----------|
| Recent advised catch |             | 0 tonnes |
| Discard rate         |             | 100%*    |
| Precautionary buffer | Not applied | -        |
| Catch advice         |             | 0 tonnes |

\* Assumed 100% discard rate owing to the closure of the fishery.

The advice for this stock remains unchanged.

## Basis of the advice

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

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

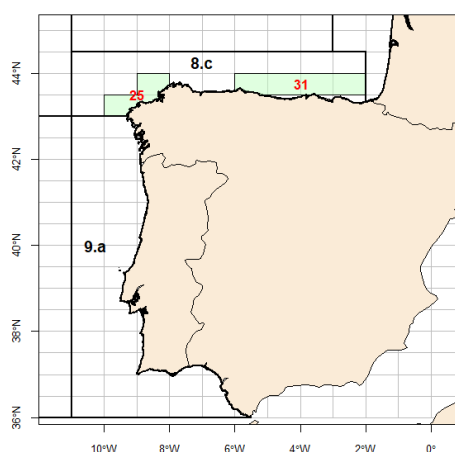
## Quality of the assessment

The FU 31 *Nephrops* fishery was closed in 2017 and 2018. In 2018 there was a high quantity of *Nephrops* discards in this FU.

Historical official landings and commercial CPUE trends match with Spanish trawl survey (SPNGFS-IBTS-Q4) abundance index trend for FU 31 *Nephrops*. However, this survey has yet to be fully evaluated for *Nephrops*.

## Issues relevant for the advice

A single TAC covers the entire ICES Division 8.c. ICES advises that the management area should be consistent with the assessment area (Figure 2).



**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   | Value                       | Technical basis                            | Source      |
|------------------------|-------------------|-----------------------------|--|-------------|
| MSY approach           | MSY $B_{trigger}$ | Not defined                 | $F_{0.1}$ from yield-per-recruit analysis. | ICES (2016) |
|                        | $F_{MSY}$ proxy   | 0.28 males;<br>0.47 females |  |             |
| 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 8.c, FU 31. The basis of the assessment.

|                          |  |
|--------------------------|--|
| ICES stock data category | 3 (ICES, 2018).  |
| Assessment type          | Trends from commercial CPUE.   |
| Input data               | Spanish commercial catches (1983–2018), three commercial CPUE indices from Santander (kg/fishing day, 1989–2013), Avilés (kg/fishing day, 1983–2003) and combined (Santander+Gijón+Avilés, kg/trip 2009–2018) trawl fleets.                            |
| Discards and bycatch     | Negligible until 2018. The Division 8.c <i>Nephrops</i> fishery has been closed since 2017. Logbooks reported discards of 3 tonnes in 2018.  |
| Indicators               | Mean length in commercial catches (1988–2016). FU 31 <i>Nephrops</i> CPUE (kg/haul) time-series and spatial distribution, and Division 8.c <i>Nephrops</i> mean length and percentage of males from Spanish trawl survey (SPNGFS-IBTS-Q4) (1983–2018). |
| Other information        | None.  |
| 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 8.c, FU 31. History of ICES advice, the agreed TAC, and ICES estimates of catches. Weights are in tonnes.

| Year | ICES advice | Landings correspond. to advice | Agreed TAC* | ICES catches |
|------|-------------|--------------------------------|-------------|--------------|
| 1987 |             |                                |             | 118          |
| 1988 |             |                                |             | 151          |
| 1989 |             |                                |             | 177          |
| 1990 |             |                                |             | 174          |
| 1991 |             |                                |             | 109          |
| 1992 |             | 510                            | 800         | 94           |
| 1993 |             | 510                            | 1000        | 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           |

| Year | ICES advice                         | Landings correspond. to advice | Agreed TAC*     | ICES catches    |
|------|-------------------------------------|--------------------------------|-----------------|-----------------|
| 2000 |                                     | 510                            | 800             | 34              |
| 2001 |                                     | 510                            | 720             | 27              |
| 2002 | Reduce catches to zero              | 0                              | 360             | 26              |
| 2003 | Reduce catches to zero              | 0                              | 180             | 35              |
| 2004 | Reduce catches to zero              | 0                              | 180             | 29              |
| 2005 | Reduce catches to zero              | 0                              | 160             | 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 catches to zero              | 0                              | 62              | 10              |
| 2014 | No new advice, same as 2013         | 0                              | 67              | 4               |
| 2015 | Zero catch and reduce by catch      | 0                              | 60              | 3               |
| 2016 | No new advice, same as 2015         | 0                              | 48 <sup>#</sup> | 4               |
| 2017 | Precautionary approach (zero catch) | 0                              | 0               | 0               |
| 2018 | Precautionary approach (zero catch) | 0                              | 0               | 3 <sup>**</sup> |
| 2019 | Precautionary approach (zero catch) | 0                              | 0               |                 |
| 2020 | Precautionary approach (zero catch) | 0                              |                 |                 |
| 2021 | Precautionary approach (zero catch) | 0                              |                 |                 |
| 2022 | Precautionary approach (zero catch) | 0                              |                 |                 |

\* For the whole of Division 8.c.

\*\* Preliminary.

<sup>#</sup> Updated by WGBIE (ICES, 2019).

### History of catch and landings

**Table 7** Norway lobster in Division 8.c, FU 31. Catch distribution by fleet in 2018 as estimated by ICES.

| Total catch (2018) | Landings       | Discards |
|--------------------|----------------|----------|
| 3 tonnes           | Not applicable | 3 tonnes |
|                    | 0 tonnes       |          |

**Table 8<sup>†</sup>** Norway lobster in Division 8.c. Landings by FU and all of Division 8.c. Total landings in tonnes (only exploited by the Spanish fleet).

| Year | Landings (Official + non-reported) |       |            | Discards |       |            | ICES catch<br>Division 8.c |
|------|------------------------------------|-------|------------|----------|-------|------------|----------------------------|
|      | FU 25                              | FU 31 | Out of FUs | FU 25    | FU 31 | Out of FUs |                            |
| 1975 | 731                                |       |            |          |       |            | 731                        |
| 1976 | 559                                |       |            |          |       |            | 559                        |
| 1977 | 667                                |       |            |          |       |            | 667                        |
| 1978 | 690                                |       |            |          |       |            | 690                        |
| 1979 | 475                                |       |            |          |       |            | 475                        |
| 1980 | 412                                |       |            |          |       |            | 412                        |
| 1981 | 318                                |       |            |          |       |            | 318                        |
| 1982 | 431                                |       |            |          |       |            | 431                        |
| 1983 | 433                                | 63    |            |          |       |            | 496                        |
| 1984 | 515                                | 100   |            |          |       |            | 615                        |
| 1985 | 477                                | 128   |            |          |       |            | 605                        |

<sup>†</sup> Version 2: Corrected values updated by WGBIE.

| Year  | Landings (Official + non-reported) |       |            | Discards |       |            | ICES catch      |
|-------|------------------------------------|-------|------------|----------|-------|------------|-----------------|
|       | FU 25                              | FU 31 | Out of FUs | FU 25    | FU 31 | Out of FUs | Division 8.c    |
| 1986  | 364                                | 127   |            |          |       |            | 491             |
| 1987  | 412                                | 118   |            |          |       |            | 530             |
| 1988  | 445                                | 151   |            |          |       |            | 596             |
| 1989  | 376                                | 177   |            |          |       |            | 553             |
| 1990  | 285                                | 174   |            |          |       |            | 459             |
| 1991  | 453                                | 109   |            |          |       |            | 562             |
| 1992  | 428                                | 94    |            |          |       |            | 522             |
| 1993  | 274                                | 101   |            |          |       |            | 375             |
| 1994  | 245                                | 148   |            |          |       |            | 393             |
| 1995  | 273                                | 94    |            |          |       |            | 367             |
| 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  | 21                                 | 10    | 5          |          |       |            | 36              |
| 2010  | 34                                 | 9     | 5          |          |       |            | 47              |
| 2011  | 44                                 | 7     | 3          |          |       |            | 54              |
| 2012  | 10 <sup>#</sup>                    | 10    | 5          |          |       |            | 25 <sup>#</sup> |
| 2013  | 11                                 | 10    | 4          |          |       |            | 25              |
| 2014  | 9                                  | 4     | 2          |          |       |            | 15              |
| 2015  | 14                                 | 3     | 2          |          |       |            | 19              |
| 2016  | 12 <sup>#</sup>                    | 3     | 4          |          |       |            | 20 <sup>#</sup> |
| 2017  | 2                                  | 0     | 0          |          |       |            | 2               |
| 2018* | 2.0                                | 0.0   | 0.1        | 0.2      | 3.4   | 4.0        | 9.7             |

\* Preliminary.

<sup>#</sup> Updated by WGBIE (ICES, 2019).

### Summary of the assessment

**Table 9** Norway lobster in Division 8.c, FU 31. Assessment summary with weights in tonnes.

| Year | Catch | Santander+Gijón+Avilés (kg/trip) | Avilés (kg/day) | Santander (kg/day) |
|------|-------|----------------------------------|-----------------|--------------------|
| 1983 | 63    |                                  | 3.1             |                    |
| 1984 | 100   |                                  | 3.9             |                    |
| 1985 | 128   |                                  | 2.4             |                    |
| 1986 | 127   |                                  | 3.1             |                    |
| 1987 | 118   |                                  | 4.5             |                    |
| 1988 | 151   |                                  | 5.9             |                    |
| 1989 | 177   |                                  | 5.3             | 23                 |
| 1990 | 174   |                                  | 6.9             | 27                 |
| 1991 | 109   |                                  | 3.6             | 10.5               |
| 1992 | 94    |                                  | 3.2             | 9.0                |

| Year | Catch | Santander+Gijón+Avilés (kg/trip) | Avilés (kg/day) | Santander (kg/day) |
|------|-------|----------------------------------|-----------------|--------------------|
| 1993 | 101   |                                  | 3               | 11.4               |
| 1994 | 148   |                                  | 3.4             | 21                 |
| 1995 | 94    |                                  | 3               | 15.2               |
| 1996 | 129   |                                  | 3.8             | 17.2               |
| 1997 | 98    |                                  | 5               | 17.2               |
| 1998 | 72    |                                  | 4.5             | 16.8               |
| 1999 | 48    |                                  | 2.1             | 10.2               |
| 2000 | 34    |                                  | 1.8             | 11.0               |
| 2001 | 27    |                                  | 2.9             | 12.4               |
| 2002 | 26    |                                  | 1.3             | 12.1               |
| 2003 | 35    |                                  | 2               | 12.2               |
| 2004 | 29    |                                  |                 | 9.1                |
| 2005 | 48    |                                  |                 | 11.3               |
| 2006 | 37    |                                  |                 | 10.0               |
| 2007 | 32    |                                  |                 | 8.8                |
| 2008 | 20    |                                  |                 |                    |
| 2009 | 10    | 11                               |                 | 5.8                |
| 2010 | 9     | 8.7                              |                 | 11.5               |
| 2011 | 7     | 6.8                              |                 | 6.0                |
| 2012 | 10    | 4.4                              |                 | 6.7                |
| 2013 | 10    | 6.7                              |                 | 2.3                |
| 2014 | 4     | 4                                |                 |                    |
| 2015 | 3     | 3.2                              |                 |                    |
| 2016 | 3     | 4.3                              |                 |                    |
| 2017 | 0     |                                  |                 |                    |
| 2018 | 3     |                                  |                 |                    |

### Sources and references

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