

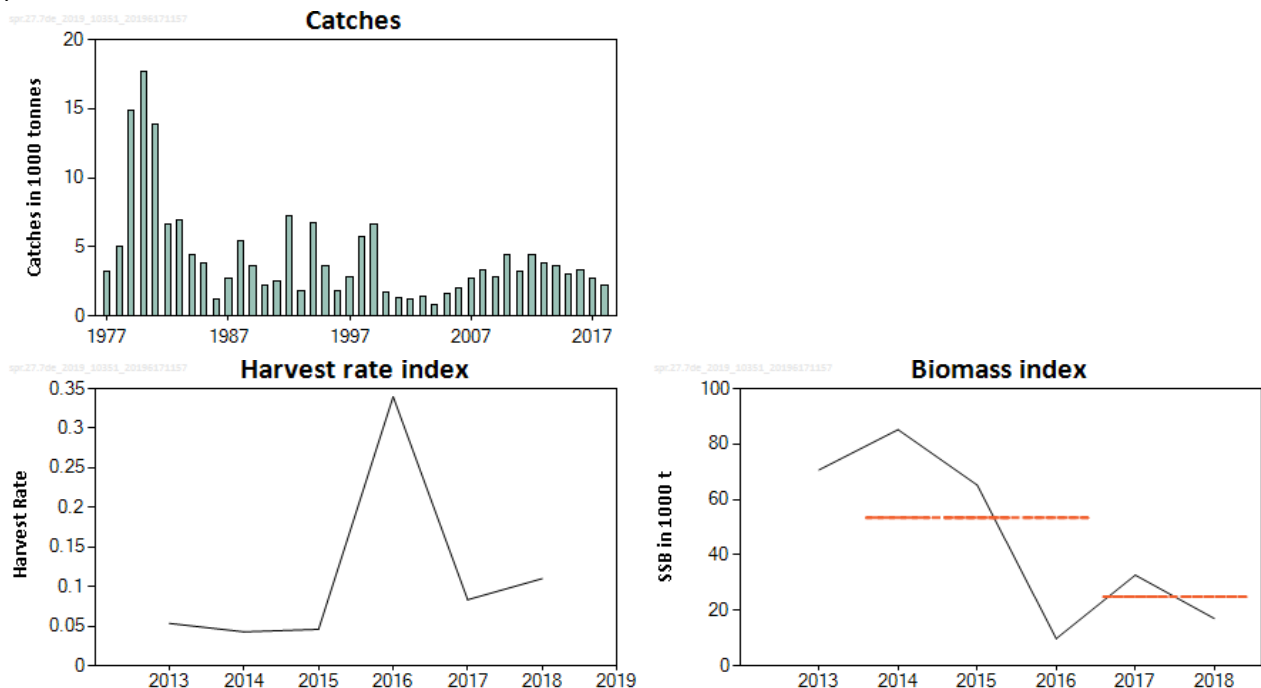
## Sprat (*Sprattus sprattus*) in divisions 7.d and 7.e (English Channel)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches in 2020 should be no more than 1506 tonnes.

### Stock development over time

In 2018 the biomass index decreased compared to the 2017 estimate, and remains less than half the biomass estimated between 2013 and 2015. The harvest rate peaked in 2016 but has declined since and has been around 10% in the past two years.



**Figure 1** Sprat in divisions 7.d and 7.e. Summary of the stock assessment. Upper left, ICES estimated landings (in thousand tonnes). Lower left, harvest rate index (ratio between landings and PELTIC survey acoustic biomass estimate) for Division 7.e only. Lower right, stock size index of acoustic biomass estimates (thousand tonnes) for Division 7.e only. The short orange lines in the biomass plot indicate the average values of the respective years (2014 to 2016 and 2017 to 2018).

### 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.

**Table 1** Sprat in divisions 7.d and 7.e. State of the stock and fishery relative to reference points.

|                           |                   | Fishing pressure |      |      |                | Stock size         |      |      |   |                |
|---------------------------|-------------------|------------------|------|------|----------------|--------------------|------|------|---|----------------|
|                           |                   | 2016             | 2017 | 2018 |                | 2016               | 2017 | 2018 |   |                |
| Maximum sustainable yield | $F_{MSY}$         | ?                | ?    | ?    | Undefined      | $MSY\ B_{trigger}$ | ?    | ?    | ? | Undefined      |
| Precautionary approach    | $F_{pa}, F_{lim}$ | ?                | ?    | ?    | Undefined      | $B_{pa}, B_{lim}$  | ?    | ?    | ? | Undefined      |
| Management plan           | $F_{MGT}$         | —                | —    | —    | Not applicable | $B_{MGT}$          | —    | —    | — | Not applicable |
| Qualitative evaluation    | -                 | ↗                | ↘    | ↗    | Increasing     | -                  | ↘    | ↗    | ↘ | Decreasing     |

## Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The acoustic biomass estimates were applied as the index of stock development. The advice is based on the ratio between the average of the two latest values (index A) and the average of the three preceding values (index B), multiplied by the recent advised catch.

The index is estimated to have decreased by more than 20% and thus the uncertainty cap was applied. The precautionary buffer was last applied in 2017; hence it was not applied in 2019.

**Table 2** Sprat in divisions 7.d and 7.e. The basis for the catch scenarios.\*

|   |             |              |
|---|-------------|--------------|
| Index A (2017–2018)                     |             | 24921 tonnes |
| Index B (2014–2016)                     |             | 53410 tonnes |
| Index ratio (A/B)                       |             | 0.47         |
| Uncertainty cap                         | Applied     | 0.8          |
| Advised catch for 2019 (issued in 2018) |             | 1883 tonnes  |
| Discard rate                            |             | Negligible   |
| Precautionary buffer                    | Not applied | -            |
| % advice change **                      |             | -20%         |
| Catch advice ***                        |             | 1506 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.

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

\*\*\* [advice for 2019] × [uncertainty cap].

The advice has decreased from last year due to a lower biomass index.

## Basis of the advice

**Table 3** Sprat in divisions 7.d and 7.e. The basis of the advice.

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

## Quality of the assessment

The stock structure of sprat populations in the Celtic Seas ecoregion is unknown, and the acoustic survey index covers only part of the potential distribution of this stock in the area (English part of Division 7.e). However, in 2017 the acoustic survey was extended into the French waters of Division 7.e and further extended in to Division 7.d in 2018. The survey showed that little sprat was observed either in the southern part of Division 7.e or in Division 7.d, which suggests that the majority of the stock is within the survey area. The uncertainty associated with the estimated biomass is not currently available.

## Issues relevant for the advice

Sprat in the English Channel mature early (at 90–100 mm) and grow fast, reaching their maximum length between ages 1 to 3. Only 8% survive beyond age 3, and the fishery is dominated by ages 1–3. The fishing season for sprat spans from August to February and catch advice is based on an acoustic survey carried out in October. This means that at the time of the advice a large part of the biomass observed in the 2018 acoustic survey will not be available to the fishery in 2020, because it will have been caught or died already. An in-year advice valid from 1st of July to 30th of June might be more appropriate for this stock.

## Reference points

No reference points have been defined for this stock.

## Basis of the assessment

**Table 4** Sprat in divisions 7.d and 7.e. Basis of the assessment and advice.

|                          |  |
|--------------------------|--|
| ICES stock data category | 3 ( <a href="#">ICES, 2018a</a> ).   |
| Assessment type          | Biomass trend (ICES, 2019).  |
| Input data               | Acoustic survey biomass estimates (PELTIC; 2013–2018) and landings statistics.       |
| Discards and bycatch     | Discards were not included as discarding is considered negligible.                   |
| Indicators               | Harvest rate.  |
| Other information        | This stock was benchmarked in WKSPRAT (ICES, 2018b).                                 |
| Working group            | Herring Assessment Working Group for the Area South of 62°N ( <a href="#">HAWG</a> ) |

## Information from stakeholders

There is no additional available information.

## History of the advice, catch, and management

**Table 5** Sprat in divisions 7.d and 7.e. ICES advice and official landings. All weights are in tonnes.

| Year | ICES advice  | Catch corresponding to advice | Agreed TAC | Official landings | ICES catch * |
|------|--|-------------------------------|------------|-------------------|--------------|
| 1987 | No advice  | -                             | 5000       | 2700              | 2700         |
| 1988 | No advice  | -                             | 5000       | 5500              | 5500         |
| 1989 | No advice  | -                             | 12000      | 3400              | 3600         |
| 1990 | No advice  | -                             | 12000      | 2100              | 2200         |
| 1991 | No advice  | -                             | 12000      | 2600              | 2600         |
| 1992 | No advice  | -                             | 12000      | 1800              | 7200         |
| 1993 | No advice  | -                             | 12000      | 1800              | 1800         |
| 1994 | No advice  | -                             | 12000      | 3200              | 6800         |
| 1995 | No advice  | -                             | 12000      | 1500              | 3600         |
| 1996 | No advice  | -                             | 12000      | 1800              | 1800         |
| 1997 | No advice  | -                             | 12000      | 1600              | 2900         |
| 1998 | No advice  | -                             | 12000      | 2000              | 5700         |
| 1999 | No advice  | -                             | 6300       | 3600              | 6600         |
| 2000 | No advice  | -                             | 12000      | 1700              | 1700         |
| 2001 | No advice  | -                             | 12000      | 1300              | 1300         |
| 2002 | No advice  | -                             | 12000      | 1200              | 1200         |
| 2003 | No advice  | -                             | 9600       | 1400              | 1400         |
| 2004 | No advice  | -                             | 9600       | 800               | 0800         |
| 2005 | No advice  | -                             | 7700       | 1600              | 1600         |
| 2006 | No advice  | -                             | 6100       | 2000              | 2000         |
| 2007 | No advice  | -                             | 6100       | 1800              | 2700         |
| 2008 | No advice  | -                             | 6100       | 3400              | 3400         |
| 2009 | No advice  | -                             | 6100       | 2800              | 2800         |
| 2010 | No advice  | -                             | 5500       | 4400              | 4400         |
| 2011 | No advice  | -                             | 5400       | 3100              | 3100         |
| 2012 | Reduce catches   | -                             | 5100       | 4400              | 4400         |
| 2013 | 20% reduction in catches (last 3-year average)                                   | < 2800                        | 5150       | 3800              | 3800         |
| 2014 | Decrease catches by 4% (20% increased followed by a 20% precautionary reduction) | < 3832                        | 5150       | 3633              | 3633         |
| 2015 | Same advice as last year   | < 3832                        | 5150       | 3000              | 3000         |
| 2016 | Precautionary approach (increase catches by no more than 20%)                    | < 4598                        | 5150       | 2343              | 3339         |

| Year | ICES advice            | Catch corresponding to advice | Agreed TAC | Official landings | ICES catch * |
|------|------------------------|-------------------------------|------------|-------------------|--------------|
| 2017 | Precautionary approach | < 3678                        | 4120       | 2764              | 2733         |
| 2018 | Precautionary approach | < 2354                        | 3296       | 1766              | 2252         |
| 2019 | Precautionary approach | ≤ 1883                        | 2637       |                   |              |
| 2020 | Precautionary approach | ≤ 1506                        |            |                   |              |

\* Catch values are rounded to the nearest 100 tonnes prior to 2014.

## History of the catch and landings

**Table 6** Sprat in divisions 7.d and 7.e. Catch distribution by fleet in 2018 as estimated by ICES. All weights are in tonnes.

| Catch       | Landings                            | Discards                 |
|-------------|-------------------------------------|--------------------------|
| 2252 tonnes | 100% mid-water trawl<br>2252 tonnes | Discarding is negligible |

**Table 7** Sprat in divisions 7.d and 7.e. History of ICES catch and landings are presented for each country. All weights are in tonnes.

| Year | Denmark | France | Netherlands | Germany | UK<br>(England, Wales, Northern Ireland) | UK<br>(Scotland) | Total |
|------|---------|--------|-------------|---------|--|------------------|-------|
| 1985 | 0       | 14     | 0           | 0       | 3771                                     | 0                | 3785  |
| 1986 | 15      | 0      | 0           | 0       | 1163                                     | 0                | 1178  |
| 1987 | 250     | 23     | 0           | 0       | 2441                                     | 0                | 2714  |
| 1988 | 2529    | 2      | 1           | 0       | 2944                                     | 0                | 5476  |
| 1989 | 2092    | 10     | 0           | 0       | 1520                                     | 0                | 3622  |
| 1990 | 608     | 79     | 0           | 0       | 1562                                     | 0                | 2249  |
| 1991 | 0       | 0      | 0           | 0       | 2567                                     | 0                | 2567  |
| 1992 | 5389    | 35     | 0           | 0       | 1791                                     | 0                | 7215  |
| 1993 | 0       | 3      | 0           | 0       | 1798                                     | 0                | 1801  |
| 1994 | 3572    | 1      | 0           | 0       | 3176                                     | 40               | 6789  |
| 1995 | 2084    | 0      | 0           | 0       | 1516                                     | 0                | 3600  |
| 1996 | 0       | 2      | 0           | 0       | 1789                                     | 0                | 1791  |
| 1997 | 1245    | 1      | 0           | 0       | 1621                                     | 0                | 2867  |
| 1998 | 3741    | 0      | 0           | 0       | 1973                                     | 0                | 5714  |
| 1999 | 3064    | 0      | 1           | 0       | 3558                                     | 0                | 6623  |
| 2000 | 0       | 1      | 1           | 0       | 1693                                     | 0                | 1695  |
| 2001 | 0       | 0      | 0           | 0       | 1349                                     | 0                | 1349  |
| 2002 | 0       | 0      | 0           | 0       | 1196                                     | 0                | 1196  |
| 2003 | 0       | 2      | 72          | 0       | 1368                                     | 0                | 1442  |
| 2004 | 0       | 6      | 0           | 0       | 836                                      | 0                | 842   |
| 2005 | 0       | 0      | 0           | 0       | 1635                                     | 0                | 1635  |
| 2006 | 0       | 7      | 0           | 0       | 1969                                     | 0                | 1976  |
| 2007 | 0       | 0      | 0           | 0       | 2706                                     | 0                | 2706  |
| 2008 | 0       | 0      | 0           | 0       | 3367                                     | 0                | 3367  |
| 2009 | 0       | 2      | 0           | 0       | 2773                                     | 0                | 2775  |
| 2010 | 0       | 2      | 0           | 0       | 4408                                     | 0                | 4410  |
| 2011 | 0       | 1      | 37          | 0       | 3138                                     | 0                | 3176  |
| 2012 | 6       | 2      | 8           | 0       | 4458                                     | 0                | 4474  |
| 2013 | 0       | 0      | 0           | 0       | 3793                                     | 0                | 3793  |
| 2014 | 45      | 0      | 275         | 0       | 3338                                     | 0                | 3658  |
| 2015 | 0       | 1      | 352         | 0       | 2659                                     | 0                | 3012  |
| 2016 | 185     | 7      | 231         | 49      | 2867                                     | 0                | 3339  |
| 2017 | 0       | 0.03   | 235         | 0       | 2498                                     | 0                | 2733  |
| 2018 | 474     | 1.3    | 0           | 0       | 1776                                     | 0                | 2252  |

## Summary of the assessment

**Table 8** Sprat in divisions 7.d and 7.e. Assessment summary. All weights are in tonnes.

| Year | Biomass | Catches | Harvest rate |
|------|---------|---------|--------------|
| 1977 |         | 3237    |              |
| 1978 |         | 4999    |              |
| 1979 |         | 14833   |              |
| 1980 |         | 17732   |              |
| 1981 |         | 13890   |              |
| 1982 |         | 6612    |              |
| 1983 |         | 6911    |              |
| 1984 |         | 4455    |              |
| 1985 |         | 3785    |              |
| 1986 |         | 1178    |              |
| 1987 |         | 2714    |              |
| 1988 |         | 5476    |              |
| 1989 |         | 3622    |              |
| 1990 |         | 2249    |              |
| 1991 |         | 2567    |              |
| 1992 |         | 7215    |              |
| 1993 |         | 1801    |              |
| 1994 |         | 6789    |              |
| 1995 |         | 3600    |              |
| 1996 |         | 1791    |              |
| 1997 |         | 2867    |              |
| 1998 |         | 5714    |              |
| 1999 |         | 6623    |              |
| 2000 |         | 1695    |              |
| 2001 |         | 1349    |              |
| 2002 |         | 1196    |              |
| 2003 |         | 1442    |              |
| 2004 |         | 842     |              |
| 2005 |         | 1635    |              |
| 2006 |         | 1976    |              |
| 2007 |         | 2706    |              |
| 2008 |         | 3367    |              |
| 2009 |         | 2775    |              |
| 2010 |         | 4410    |              |
| 2011 |         | 3176    |              |
| 2012 |         | 4474    |              |
| 2013 | 70680   | 3793    | 0.054        |
| 2014 | 85184   | 3658    | 0.043        |
| 2015 | 65219   | 3012    | 0.046        |
| 2016 | 9826    | 3339    | 0.34         |
| 2017 | 32751   | 2733    | 0.083        |
| 2018 | 17091   | 2252    | 0.110        |

## Sources and references

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