

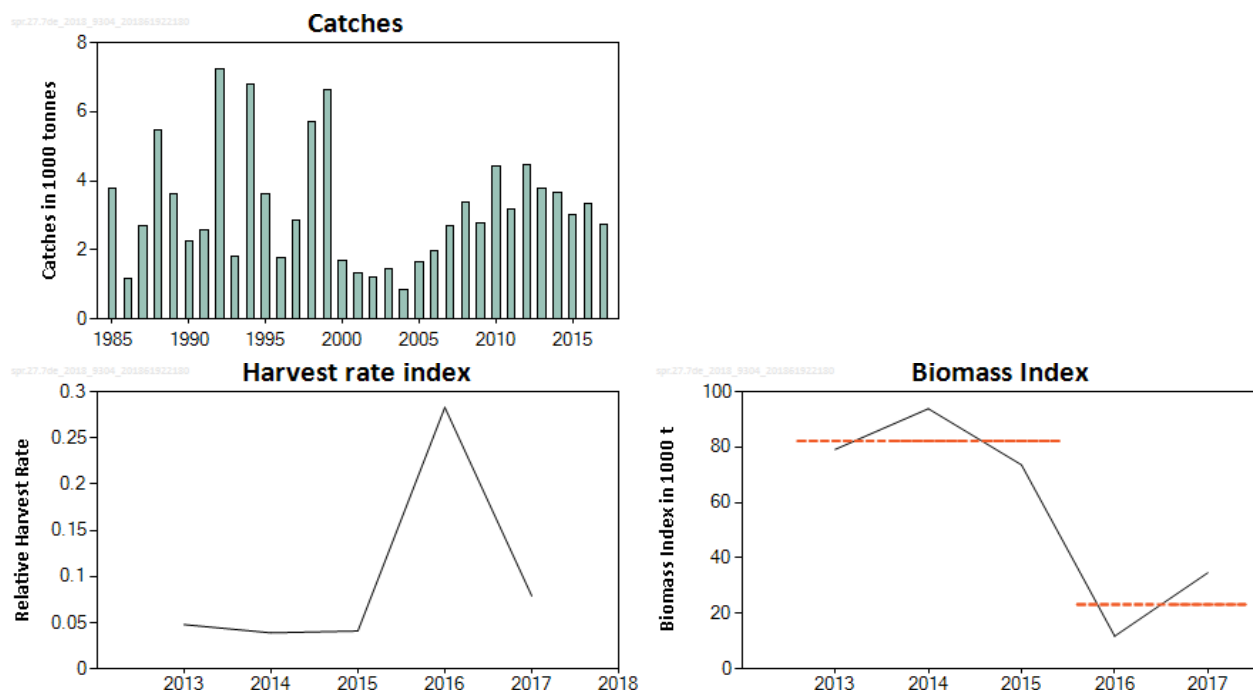
## Sprat (*Sprattus sprattus*) in divisions 7.d and 7.e (English Channel)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catch in 2019 should be no more than 1883 tonnes.

### Stock development over time

In 2017 the biomass index increased compared to the 2016 estimate, but it is still less than half the biomass estimated between 2013 and 2015. The harvest rate peaked in 2016.



**Figure 1** Sprat in divisions 7.d and 7.e. Summary of the stock assessment. Upper left, ICES estimated landings (in thousand tonnes). Discards are not shown and are considered negligible. 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) with red dashed horizontal lines that reflect the averages of the two most recent survey points and the preceding three values.

### Stock and exploitation status

ICES cannot assess the stock and exploitation status relative to MSY and 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			
		2015	2016	2017			2015	2016	2017	
Maximum sustainable yield	$F_{MSY}$	?	?	?	Undefined	$MSYB_{Trigger}$	?	?	?	Undefined
Precautionary approach	$F_{pa}, F_{lim}$	?	?	?	Undefined	$B_{pa}, B_{lim}$	?	?	?	Undefined
Management plan	$F_{MGT}$	—	—	—	Not applicable	$SSB_{MGT}$	—	—	—	Not applicable
Qualitative evaluation	-	→	↗	↘	Decreasing	Qualitative evaluation	↘	↘	↗	Increasing

## 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 stock status relative to candidate reference points is unknown. The precautionary buffer was last applied in 2017; hence it is not applied in 2018.

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

Index A (2016–2017)		23249 tonnes
Index B (2013–2015)		82187 tonnes
Index ratio (A/B)		0.28
Uncertainty cap	Applied	0.8
Advised catch for 2018 (issued in 2017)		2354 tonnes
Discard rate		Negligible
Precautionary buffer	Not applied	
% advice change**		–20%
Catch advice***		1883 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 2019 relative to advice value for 2018.

\*\*\* [advice for 2018] × [uncertainty cap].

## 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 advice is based on biomass estimates from the acoustic survey, available for 2013–2017 (ICES, 2018). The uncertainty associated with the estimated biomass is not currently available.

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. where very little sprat was observed, which suggests containment of the majority of the stock in the survey. A further extension of the survey to Division 7.d is planned for the near future.

## Issues relevant for the advice

Sprat in the English Channel mature early (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 2017 acoustic survey will not be available to the fishery in 2019, 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, 2016</a> )
Assessment type	Biomass trend (ICES, 2018).
Input data	Acoustic survey biomass estimates (PELTIC; 2013–2017) 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, 2013). The basis for the advice was changed in 2016 to include a biomass index, and the LPUE was excluded.
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
2017	Precautionary approach	< 3678	4120	2733	2733
2018	Precautionary approach	< 2354	3296		
2019	Precautionary approach	≤ 1883			

\* 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 2017 as estimated by ICES. All weights are in tonnes.

Catch (2017)	Landings	Discards
2733	100% mid-water trawl	Discarding is negligible
	2733	

**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 (England, Wales, Northern Ireland)	UK (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

## Summary of the assessment

**Table 8** Sprat in divisions 7.d and 7.e. Assessment summary.

Year	Biomass index (tonnes)	Catch (tonnes)	Harvest rate (percent)
1985		3800	
1986		1180	
1987		2700	
1988		5500	
1989		3600	
1990		2200	
1991		2600	
1992		7200	
1993		1800	
1994		6800	
1995		3600	
1996		1790	
1997		2900	
1998		5700	
1999		6600	
2000		1700	
2001		1350	
2002		1200	
2003		1440	
2004		840	
2005		1640	
2006		1980	
2007		2700	
2008		3400	
2009		2800	
2010		4400	
2011		3200	
2012		4500	
2013	79000	3800	0.048
2014	94000	3700	0.039
2015	74000	3000	0.041
2016	11800	3300	0.28
2017	35000	2700	0.079

## Sources and references

ICES. 2012. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM:68. 42 pp.

ICES. 2013. Advice for Sprat in Divisions VII d,e. *In* Report of the ICES Advisory Committee, 2013. ICES Advice 2013, Book 5, Section 5.4.40. 6 pp. <http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/spr-ech.pdf>.

ICES. 2016. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.

ICES. 2018. Report of the Herring Assessment Working Group for the Area South of 62°N (HAWG), 29–31 January 2018 and 14–20 March 2018, ICES Headquarters, Copenhagen, Denmark. ICES CM 2018/ACOM:07. In prep. View sections released so far at <http://ices.dk/community/groups/Pages/HAWG.aspx>.