

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 2021 should be no more than 1446 tonnes.

Stock development over time

In 2019, the biomass index increased compared to the 2018 estimate; however, it remains less than half the value estimated between 2013 and 2015. The harvest-rate index peaked in 2016, but has declined since and has been around 0.1 in 2017 and 2018. The harvest rate for 2019 was half the 2018 value.

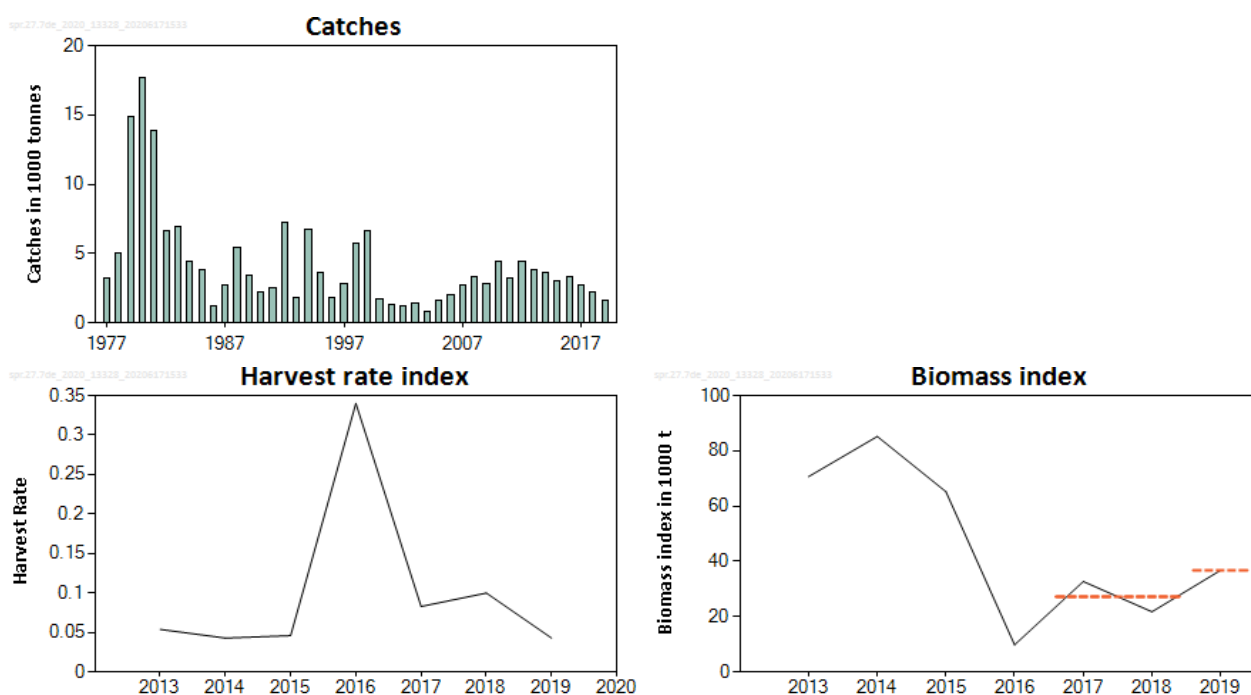


Figure 1 Sprat in divisions 7.d and 7.e. Summary of the stock assessment. Upper left: ICES estimated landings (in thousand tonnes). Lower left: harvest-rate index (ratio between landings and PELTIC survey acoustic biomass estimate) for Division 7.e only. Lower right: stock-size index of acoustic biomass estimates (thousand tonnes) for Division 7.e only. The short orange lines in the biomass plot indicate the average values of the respective years (2017 to 2018 and 2019).

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.

		Fishing pressure			Stock size					
		2017	2018	2019	2017	2018	2019			
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	-	↘	↗	↘	Decreasing	-	↗	↘	↗	Increasing

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

Catch scenarios

The ICES framework for category 3 stocks (ICES, 2012) is used. The acoustic biomass estimates were applied as the index of stock development. The advice was previously based on the ratio between the average of the two latest values (index A) and the average of the three preceding values (index B), the two-over-three rule. Following the recommendations of ICES (2019a), the one-over-two rule, i.e. the current year (index A) over the average of the two preceding values (index B), should be used as the basis for the advice for 2021.

The index is estimated to have increased by more than 20%; thus, the uncertainty cap was applied.

The stock size and fishing pressure status relative to candidate reference points is unknown. The precautionary buffer had not been applied since 2017 and was applied in 2020.

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

Index A (2019)		36789 tonnes
Index B (2017–2018)		27261 tonnes
Index ratio (A/B)		1.35
Uncertainty cap	Applied	1.2
Advised catch for 2020 (issued in 2019)		1506 tonnes
Discard rate		Negligible
Precautionary buffer	Applied	0.8
Catch advice for 2021 **		1446 tonnes
% advice change ***		-4%

* 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 2020] × [uncertainty cap] × [precautionary buffer].

*** Advice value for 2021 relative to the advice value for 2020.

The advice from last year has decreased, following the precautionary approach and the application of the precautionary buffer.

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 in the western English Channel area covers only part of the potential distribution of this stock in the area (the 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 into Division 7.d in 2018. The 2019 survey again covered the extension into French waters, but did not extend into the eastern English Channel (Division 7.d). 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 currently not 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 2019 acoustic survey will not be available to the fishery in 2021, because it will have been caught or died already. An in-year advice valid from 1 July to 30 June in the following year has been recommended as more appropriate for the 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 (ICES, 2019b).
Assessment type	Biomass trend (ICES, 2020).
Input data	Acoustic survey biomass estimates (PELTIC; 2013–2019) 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, 2018).
Working group	Herring Assessment Working Group for the Area South of 62°N (HAWG)

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	800
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

Year	ICES advice	Catch corresponding to advice	Agreed TAC	Official landings	ICES catch *
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	2764	2733
2018	Precautionary approach	< 2354	3296	1766 **	2252
2019	Precautionary approach	≤ 1883	2637	1573 **	1573
2020	Precautionary approach	≤ 1506	1506		
2021	Precautionary approach	≤ 1446			

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

** Preliminary.

Summary of the assessment

Table 6 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	

Year	Biomass	Catches	Harvest rate
2012		4474	
2013	70680	3793	0.054
2014	85184	3658	0.043
2015	65219	3012	0.046
2016	9826	3339	0.340
2017	32751	2733	0.083
2018 *	21772	2252	0.103
2019	36789	1573	0.043

* Updated value from the PELTIC survey.

Sources and references

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