

Sardine (*Sardina pilchardus*) in Subarea 7 (Southern Celtic Seas, and the English Channel)

ICES stock advice

ICES advises that when the precautionary approach is applied, catches in each of the years 2018 and 2019 should be reduced by at least 20% relative to the average catches of 2014–2016. ICES is not able to quantify the corresponding catch value.

Stock development over time

There is currently no biomass or recruitment index for the whole of Subarea 7. The only available index comes from a survey that partially covers divisions 7.e and 7.f and is not considered sufficient to evaluate the stock biomass and exploitation status.

Stock and exploitation status

Table 1 Sardine in Subarea 7. State of the stock and fishery relative to reference points.

		Fishing pressure			Stock size					
		2014	2015	2016	2014	2015	2016			
Maximum Sustainable Yield	F_{MSY}	?	?	?	Undefined	MSY	?	?	?	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	-	?	?	?	Unknown	-	?	?	?	Unknown

Catch options

The ICES framework for category 5 stocks was applied (ICES, 2012). For stocks without information on abundance or exploitation, ICES considers that a precautionary reduction of catches should be implemented unless there is ancillary information clearly indicating that the current level of exploitation is appropriate for the stock. The stock status relative to reference points is unknown and, therefore, the precautionary buffer is applied this year. This implies that catches in 2018 should be reduced by at least 20% relative to the average catch of 2014–2016. The landings data presently available to ICES are considered too uncertain for the purpose of providing quantitative advice. Additionally, the discard rate is unknown.

Table 2 Sardine in Subarea 7. For stocks in ICES data categories 3–6, one catch option is provided.

Recent catch (2014–2016)	Not available	
Discard rate	Unknown	
Precautionary buffer	Applied	0.8
Catch advice*	Value not quantified	

*[recent catch] × [precautionary buffer].

Basis of the advice

Table 3 Sardine in Subarea 7. The basis of the advice.

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

Quality of the assessment

The landings statistics (Figure 1) available to ICES are presently highly uncertain. In the past, sardine in Subarea 7 was included in a joint data call for Subarea 7 and divisions 8.a, 8.b, and 8.d. In the future, the data call will be specific to Subarea 7.

The only fishery-independent data available come from the PELTIC survey (Figure 2). The survey series is still short (four years) and the spatial coverage is only about one fourth of the total potential sardine habitat in that region. The 2017 PELTIC survey will cover the entire English Channel (divisions 7.d, 7.e, and 7.h).

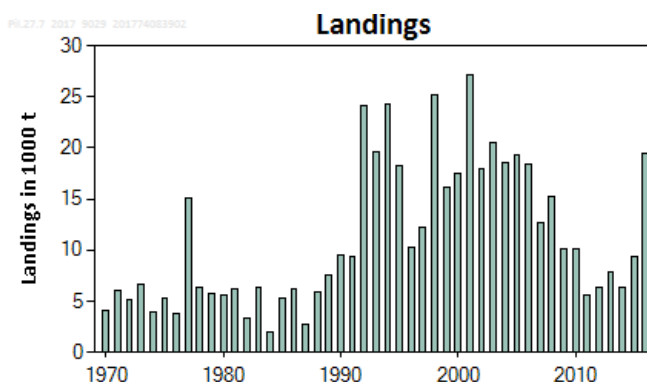


Figure 1 Sardine in Subarea 7. Official landings (1000 t) of sardine in Subarea 7 (excluding rectangles 25E5 and 25E4) from 1970–2016.

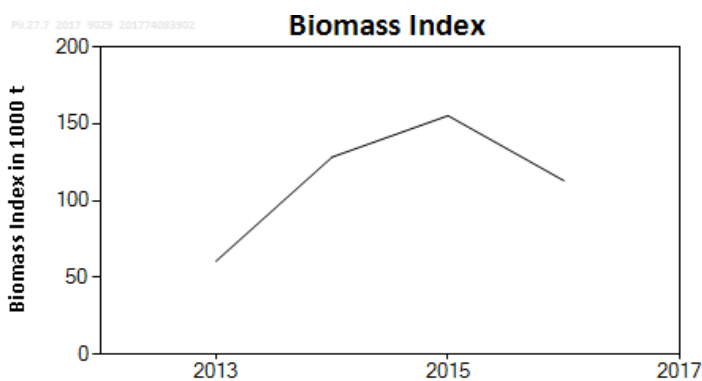


Figure 2 Sardine in Subarea 7. Biomass index from the PELTIC survey.

The lack of catch composition and complete survey information in the Celtic Sea and English Channel impairs the possibility of performing an analytical assessment for this stock. Consequently, there is a need for implementing monitoring, including landings, discards, effort, and biological sampling.

A self-sampling programme for the UK artisanal fishery, starting in the autumn of 2017, is expected to provide catch-at-age data.

French catches originating from rectangles 25E5 and 25E4 (Subarea 7) have been allocated by ICES to Division 8.a, as they occur in the boundary and are considered to be more closely associated with the sardine stock in divisions 8.a, 8.b, and 8.d.

Issues relevant for the advice

Sardine in this area was previously assessed as a single stock combining Subarea 7 (English Channel and Celtic Sea) and divisions 8.a, 8.b, and 8.d (Bay of Biscay). Taking into account the indications of self-sustained populations in each area (whereby sardine at all life-history stages are found in substantial amounts in both regions), and the limited and poor quality of the data available for Subarea 7, the benchmark that took place in 2017 (ICES, 2017a) concluded that it is more appropriate to assess sardine in each area separately.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 4 Sardine in Subarea 7. The basis of the assessment.

ICES stock data category	5 (ICES, 2016)
Assessment type	No assessment (ICES, 2017b)
Input data	None
Discards and bycatch	Unknown
Indicators	Official landings; Peltic survey biomass index (2013–2016)
Other information	This stock was benchmarked in February 2017 (WKPELA; ICES, 2017a).
Working group	Working Group on Southern Horse Mackerel, Anchovy, and Sardine (WGHANSA)

Information from stakeholders

There is no additional available information.

History of the advice, catch, and management

Table 5a Sardine in divisions 8.a–b and 8.d and Subarea 7. ICES advice and official landings. All weights are in tonnes.

Year	ICES Advice	Predicted catch corresp. to advice	Official landings	ICES catches
2010	None		32592	32224
2011	None		28847	30847
2012	None		37214	37214
2013	None		40971	39681
2014	20% Reduction of catches (average of last 3 years)	< 27554	45312	40254
2015	No new advice, same as for 2014	< 27554	36928	36598
2016	Precautionary approach (increase catches by no more than 20%)	≤ 33065	47324	49587
2017	Precautionary approach (same advised catch value as given for 2016)	≤ 33065		

Table 5b Sardine in Subarea 7. ICES advice and official landings. All weights are in tonnes.

Year	ICES Advice	Predicted catch corresp. to advice	Official landings	ICES catches
2018	Precautionary approach: 20% reduction in catch relative to the 2014–2016 average	Value not quantified		
2019	Precautionary approach: Same advice as for 2018	Value not quantified		

History of the catch and landings

Table 6 Sardine in Subarea 7. Catch distribution by fleet in 2016 as estimated by ICES.

Catch 2016	Landings			Discards
	Pelagic trawl	Purse seine	Other gears	
Unknown	Unknown	Unknown	Unknown	Unknown
	Unknown			

Table 7 Sardine in Subarea 7. History of official landings; values are presented for each country participating in the fishery. All weights are in tonnes.

Year	France	United Kingdom	Netherlands	Ireland	Germany	Denmark	Lithuania	Belgium	Spain
1970	1014	890	38	0	2112	0	0	0	0
1971	1350	1242	108	0	3362	0	0	0	0
1972	1297	2190	54	0	1553	0	0	0	0
1973	1603	2375	17	0	2577	0	0	0	0
1974	833	1280	15	0	1826	0	0	0	0
1975	678	6	561	0	4043	0	0	0	0
1976	1284	3	127	0	2346	0	0	0	0
1977	3544	10778	623	0	183	0	0	0	0
1978	2773	549	1523	0	1463	0	0	0	0
1979	3247	46	1321	0	1188	0	0	0	0
1980	3573	753	1131	0	79	0	0	0	0
1981	1125	35	553	0	0	4471	0	0	0
1982	908	141	928	0	0	1311	0	0	0
1983	802	6	795	0	19	4743	0	0	0
1984	817	1	0	0	0	1210	0	0	0
1985	2089	20	0	0	0	3111	0	0	0
1986	2570	30	0	0	0	3602	0	0	0
1987	965	124	0	0	0	1573	0	0	0
1988	2586	0	0	0	0	3234	0	0	0
1989	1219	1660	11	0	0	4667	0	0	0
1990	1128	2078	6	0	107	6113	0	0	0
1991	1963	2952	0	0	8	4462	0	0	0
1992	1777	4493	41	0	4	17843	0	0	0
1993	1135	4917	109	0	0	13395	0	0	0
1994	1285	2081	20	0	2	20804	0	0	0
1995	1282	7133	107	0	66	9603	0	0	0
1996	1563	7304	48	0	0	1396	0	0	0
1997	3346	7280	411	0	13	1124	0	0	0
1998	1974	6873	1647	192	100	14316	0	0	0
1999	119	4815	5166	2375	146	3490	0	0	8
2000	4074	4353	6586	354	436	1682	0	0	0
2001	8589	10375	6609	1060	454	0	0	0	0
2002	5324	7858	1905	2652	224	0	0	0	10
2003	6594	4358	6897	2580	25	0	0	0	0
2004	6681	2681	2187	6195	109	742	0	0	0
2005	11113	3631	2231	2083	274	0	0	0	5
2006	12965	1925	2287	698	481	0	17	0	2
2007	8865	2654	1106	14	0	4	0	0	0
2008	8665	3470	2073	875	42	54	0	0	0
2009	4135	2541	3406	33	0	0	0	0	0
2010	850	2521	6645	25	106	13	0	0	0
2011	508	3604	513	983	22	3	0	0	0
2012	444	4423	1439	8	0	0	0	0	0
2013	1768	3722	1804	236	214	40	0	0	0
2014	1202	3889	249	0	18	953	0	0	0
2015	1040	4293	1137	380	1551	1011	1	0	0
2016	863	9389	4697	232	1941	2286	0	1	0

Summary of the assessment

There is no assessment for sardine in this area.

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. 2016. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.
- ICES. 2017a. Report of the Benchmark Workshop on Pelagic Stocks (WKPELA), 6–10 February 2017, Lisbon, Portugal. ICES CM 2017/ACOM:35. 294 pp.
- ICES. 2017b. Working Group on Southern Horse Mackerel, Anchovy and Sardine (WGHANSA), 24–29 June 2017, Bilbao, Spain. ICES CM 2017/ACOM:17.