

Angel shark (*Squatina squatina*) in subareas 1–10, 12, and 14 (the Northeast Atlantic and adjacent waters)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, there should be zero catches in each of the years 2020–2023.

Stock development over time

Reported landings of angel shark declined between the mid-1970s and early 1990s. Landings have been very low since then.

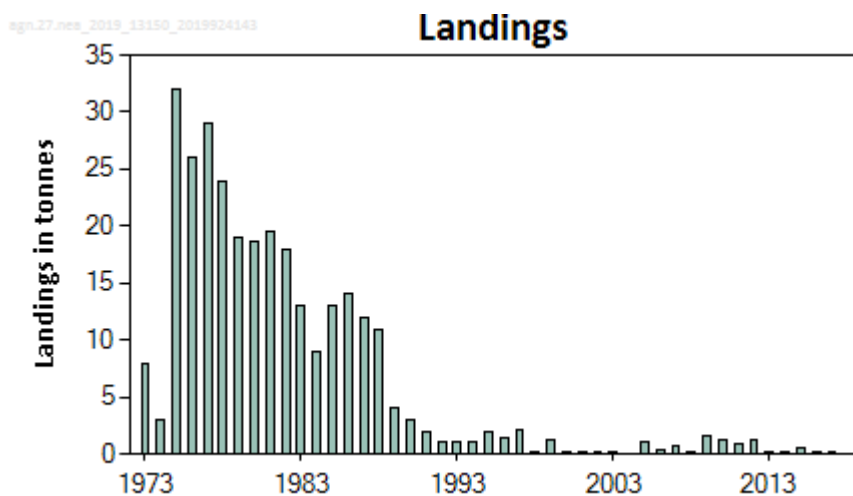


Figure 1 Angel shark in the Northeast Atlantic. ICES landings (tonnes) in subareas 6 and 7 from 1973 and subareas 6, 7, and 8 from 1996. Angel shark has been on the prohibited species list since 2010 and only minimal bycatch landings are reported.

Stock and exploitation status

ICES cannot assess the stock and exploitation status relative to maximum sustainable yield (MSY) and precautionary (PA) reference points because the reference points are undefined.

Table 1 Angel shark in the Northeast Atlantic. 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}	?	?	?	Unknown	$MSY B_{trigger}$?	?	?	Unknown
Precautionary approach	F_{pa}, F_{lim}	?	?	?	Unknown	B_{pa}, B_{lim}	?	?	?	Unknown
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	—	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	✗	✗	✗	Depleted

Catch scenarios

The ICES framework for category 6 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.

Discarding is known to take place, but ICES cannot quantify the corresponding catch. Discard survival, which is likely to occur, has also not been estimated.

Table 2 Angel shark in the Northeast Atlantic. The basis for the catch scenarios.

Recent advised catch for 2016-2019 (issued in 2015)	0 tonnes	
Discard rate	Unknown	
Precautionary buffer	Not applied	-
Catch advice	0 tonnes	
% Advice change*	0%	

* Advice value 2020–2023 relative to advice value 2016–2019.

The advice for 2020–2023 has not changed from the previous advice.

Basis of the advice

Table 3 Angel shark in the Northeast Atlantic. The basis of the advice.

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

Quality of the assessment

There is no assessment for this stock.

Issues relevant for the advice

This species has disappeared from most areas of former habitat in the Northeast Atlantic. There are very few recent, authenticated records of angel shark in this area. According to historical literature it appears to have occurred more frequently in previous decades. ICES, therefore, considers this stock to be depleted. It was included on the EU prohibited species list in 2010.

Small local populations do exist, including in the Celtic Seas ecoregion (Cardigan Bay in Division 7.a and Tralee Bay in Division 7.j (Shephard *et al.*, 2019)) and further south, although numbers are considered to have declined. Angel shark is considered to be extirpated in the North Sea, although it may still occur in Division 7.d. Catches of angel shark are now rare, both in surveys and commercially.

In 2017, angel shark was added to Appendices I and II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS, 2018).

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 4 Angel shark in the Northeast Atlantic. The basis of the assessment.

ICES stock data category	6 (ICES, 2018).
Assessment type	No assessment (ICES, 2019).
Input data	Landings.
Discards and bycatch	Unknown.
Indicators	None.
Other information	Historical accounts, life-history information, contemporary/historical survey catches, recreational fisheries data, and historical landings data.
Working group report	Working Group on Elasmobranch Fishes (WGEEF).

Information from stakeholders

There is no additional available information.

History of advice, catch, and management

Table 5 Angel shark in the Northeast Atlantic. History of ICES advice and ICES estimates of landings. All weights are in tonnes. As a prohibited species in all EU waters, there is no TAC.

Year	ICES advice	Landings corresponding to advice	ICES estimated landings
2005	No specific advice	-	1
2006	-	-	0.4
2007	ICES noted that "Angel shark (<i>Squatina squatina</i>) is still extinct in the North Sea."	-	1
2008	-	-	0.2
2009	ICES noted that: "This species is (nearly) extirpated in the North Sea and eastern English Channel and should receive the highest possible protection." "Angel shark has a localized and patchy distribution, and is extirpated from parts of its former range. It should receive the highest possible protection. Any incidental bycatch should not be landed, but returned, to the sea, as they are likely to have a high survival rate."	0	2
2010		0	1
2011	Zero catch. Retain on prohibited species list	0	1
2012		0	1
2013	ICES advised "on the basis of the precautionary approach that there should be no catches of angel shark, and that it should remain a species prohibited from being fished. Measures should be taken to minimize bycatch."	0	0.02
2014	Same advice	0	0.01
2015	-	0	1
2016	Precautionary approach: no target fishery, bycatch should be minimized, retain on the EU prohibited species list	0	0.03
2017	Quadrennial advice	0	0.02
2018	Quadrennial advice	0	0
2019	Quadrennial advice	0	
2020	Precautionary approach	0	
2021	Same advice as for 2020	0	
2022	Same advice as for 2020	0	
2023	Same advice as for 2020	0	

History of catch and landings

The distribution of this stock does not extend into the NEAFC Regulatory Area.

This is a bycatch species in bottom trawl, tanglenet, and gillnet fisheries. Historically this species was important for recreational fisheries on the western coast of the British Islands.

Table 6 Angel shark in the Northeast Atlantic. Catch distribution by fleet in 2018 as estimated by ICES.

Total catch (2018)	Landings	Discards
Unknown	0 tonnes	Unknown

Table 7 Angel shark in the Northeast Atlantic, Subareas 6 and 7. ICES landings in tonnes. French landings from ICES and Bulletin de Statistiques des Peches Maritimes. UK data from ICES and DEFRA. UK landings for 1997 are considered to be misreported fish. History of commercial catch and landings (ICES estimates) is presented by area for each country participating in the fishery. Weights in tonnes, “+” ≤ 0.5 t, values > 0.5 t and < 1 t are shown to first significant figure.*

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
France	8	3	32	26	29	24	19	18.7	19.5	18
UK (E,W & N.I.)	0	0	0	0	0	0	0	0	0	0
Total	8	3	32	26	29	24	19	18.7	19.5	18

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
France	13	9	13	14	12	11	2	2	1	1
UK (E,W & N.I.)	0	0	0	0	0	0	2	1	1	0
Total	13	9	13	14	12	11	4	3	2	1

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
France	1	1	2	1	2	+	1	+	+	+
UK (E,W & N.I.)	0	0	0	0	(47)	0	0	0	0	0
Total	1	1	2	1	2	0	1	0	0	0

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
France	+	+	0.8	+	0.6	+	0.6	0.9	0.8	1
UK (E,W & N.I.)	0	0	+	+	+	0	0	0	0	0
Total	0	0	1	0	1	0	1	1	1	1

	2013	2014	2015	2016	2017	2018
France	+	+	0.5	+	+	0
UK (E,W & N.I.)	0	0	0	0	0	0
Total	0	0	1	0	0	0

*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. Figures from 2005 onwards were revised in 2019 following data revision from WKSHARK2 (ICES, 2016).

Table 8 Angel shark in the Northeast Atlantic, Subarea 8. History of commercial landings as reported to ICES (1996–2004) and ICES estimates (2005 onwards) by country. Weights are in tonnes. Values from 2005 < 1 t are shown to the first significant figure.*

Year	France	UK (E&W)	Total
1996	0.4	0	0.4
1997	0.2	0	0.2
1998	0.2	0	0.2
1999	0.2	0	0.2
2000	0.1	0	0.1
2001	0.1	0	0.1
2002	0.1	0	0.1
2003	0.1	0	0.1
2004	0	0	0
2005	0.1	0	0.1
2006	0.1	0	0.1
2007	0.09	0	0.09
2008	0.02	0	0.02
2009	0.9	0	0.9
2010	0.3	0	0.3
2011	0.08	0	0.08

Year	France	UK (E&W)	Total
2012	0	0	0
2013	0	0	0
2014	0	0	0
2015	0.01	0	0.01
2016	0.007	0	0.007
2017	0	0	0
2018	0	0	0

* Figures from 2005 onwards were revised in 2019 following data revision from WKSHARK2 (ICES, 2016).

Summary of the assessment

There is no assessment for this stock.

Sources and references

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