

Leafscale gulper shark (*Centrophorus squamosus*) 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

Landings of deep-water sharks (primarily leafscale gulper shark and Portuguese dogfish) peaked in 2001–2004, but declined thereafter in response to restrictive management measures.

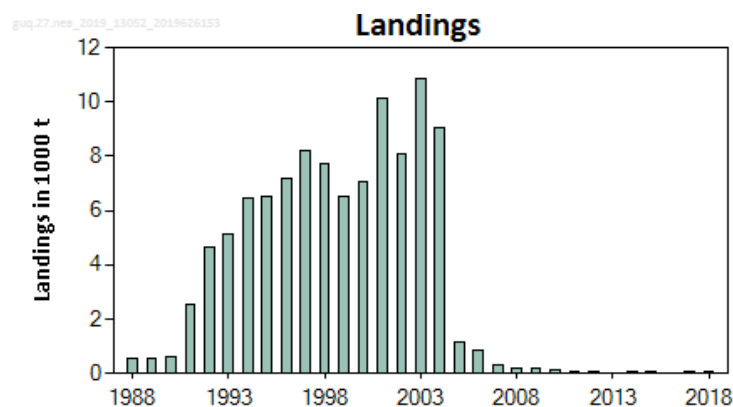


Figure 1 Leafscale gulper shark in the Northeast Atlantic. Combined landings (tonnes) of deep-water sharks (primarily relating to leafscale gulper shark and Portuguese dogfish; 2005–2018 data refer solely to leafscale gulper shark).

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 Leafscale gulper 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	-	?	?	?	Unknown

Catch scenarios

The ICES framework for category 6 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 may occur, has also not been estimated.

Table 2 Leafscale gulper shark in the Northeast Atlantic. Basis for the catch scenario.

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

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

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

Basis of the advice

Table 3 Leafscale gulper 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 leafscale gulper shark in this area.

Quality of the assessment

The main fishing nations used to report landings of leafscale gulper shark combined with other deep-water sharks, mainly Portuguese dogfish, in categories such as “siki sharks”. Historical catches are therefore uncertain.

Issues relevant for the advice

This stock is classified as Category 2 in the [NEAFC categorization of deep-sea species/stocks](#) which implies that NEAFC requires measures stipulating that directed fisheries are not authorised and that bycatches should be minimised.

Total landings have been reduced to low levels compared to the historical landings (ICES, 2018a). Given the management measures currently in place for deep-water fisheries, it is likely that fishing effort has reduced.

The only available survey data, from the Scottish deep-water survey, are currently not considered to be informative given the limited spatial and temporal coverage. A recently initiated longline survey in the Bay of Biscay will increase spatial survey coverage.

Members of the genus *Centrophorus* are among the least productive of all deep-water sharks and can thus only sustain a very low level of fishing mortality.

The stock likely extends into the CECAF area, and data for this part of the stock are not available.

Reference points

No reference points have been defined for this stock.

Basis of the assessment

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

ICES stock data category	6 (ICES, 2018b).
Assessment type	No assessment (ICES, 2019).
Input data	Landings.
Discards and bycatch	Unknown.
Indicators	None.
Other information	Scottish deep-water survey.
Working group	Working Group on Elasmobranch Fishes (WGEF).

Information from stakeholders

There is no additional available information.

History of advice, catch, and management

Table 5 Leafscale gulper shark in the Northeast Atlantic. History of ICES advice, the agreed TAC, and ICES estimates of landings in EU and non-EU waters. Weights in tonnes *.

Year	ICES advice	Catch corresp. to advice **	Agreed EU TAC for deep-water sharks ***	ICES landings ^
2003				10876
2004				9031
2005	Zero catch	0	7020	1147
2006	No new advice, same as for 2005	0	7020	846
2007	TAC = 0, prevent bycatch	0	2591	310
2008	No new advice, same as for 2007	0	1715	168
2009	Zero catch	0	859	164
2010	No new advice, same as for 2009	0	0^^	134
2011	Zero catch	0	0^^	3.3
2012	No new advice, same as for 2011	0	0	2.3
2013	Zero catch	0	0	0.07
2014	No new advice, same as for 2013	0	0	33
2015	No new advice, same as for 2014	0	0	10
2016	Precautionary approach, fishing mortality minimized and no targeted fisheries	0	0	0.01
2017	Quadrennial advice	0	20	7.5
2018	Quadrennial advice	0	20	2.1
2019	Quadrennial advice	0	14	
2020	Precautionary approach	0	14	
2021	Same advice as in 2020	0		
2022	Same advice as in 2020	0		
2023	Same advice as in 2020	0		

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

** Advice prior to 2013 was for leafscale gulper shark and Portuguese dogfish combined.

*** A bycatch of deep-water sharks was allowed, for 2017–2020, in the deep-sea longline fisheries targeting the black scabbardfish (EU, 2016, 2018).

^ Combined landings of leafscale gulper shark and Portuguese dogfish (may include other deep-water shark species) before 2005.

^^ Bycatches of up to 10% (2010) and 3% (2011) of 2009 TAC permitted.

History of catch and landings

The distribution of this stock extends into the NEAFC Regulatory Area, but the proportional split of catches cannot be determined.

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

Catch (2018)	Landings	Discards
Unknown	Hooks and lines 100%	Unknown
	2.1 tonnes	

Table 7 Leafscale gulper shark in the Northeast Atlantic. History of commercial landings of leafscale gulper shark in EU and non-EU waters. ICES estimated values are presented by country participating in the fishery (in tonnes). Landings are combined for leafscale gulper shark and Portuguese dogfish until 2004; from 2005 onwards landings are presented only for leafscale gulper shark. + = catches less than 0.5 tonnes.

Year	France	UK	Ireland	Iceland	Portugal	Germany	Estonia	Latvia	Lithuania	Poland	Russia	Spain	Faroe Islands	Norway	Total
1988	+	+	+	+	560	+	+	+	+	+	+	+	+	+	560
1989	+	20	+	+	507	+	+	+	+	+	+	+	+	+	527
1990	140	14	+	+	481	+	+	+	+	+	+	+	+	+	635
1991	1288	128	+	+	1093	+	+	+	+	+	+	+	+	+	2509
1992	3104	245	+	1	1128	148	+	+	+	+	+	+	+	+	4626
1993	3468	643	+	1	946	91	+	+	+	+	+	+	3	+	5152
1994	3812	1130	+	+	1155	358	+	+	+	+	+	+	+	+	6455
1995	3186	1787	33	+	1354	92	+	+	+	+	+	+	60	+	6512
1996	3630	1612	5	+	1189	164	+	+	+	+	+	286	282	+	7168
1997	3095	2968	+	+	1314	106	+	+	+	+	+	473	226	+	8182
1998	3177	2501	3	5	1260	40	+	+	+	+	+	561	158	+	7705
1999	3079	1644	2	+	1036	214	+	+	+	+	+	450	54	5	6484
2000	3519	1036	138	+	1108	265	+	+	+	+	+	852	23	118	7059
2001	3684	2749	454	+	1151	431	+	+	14	+	+	1223	+	399	10105
2002	2103	1519	577	+	1198	518	53	+	40	8	+	2002	+	75	8093
2003	1454	5621	493	+	1180	640	4	+	28	+	+	1456	+	+	10876
2004	1189	4745	764	+	1125	+	+	+	+	+	+	1189	+	19	9031
2005	153	404			457	35						98			1147
2006	64	28			496	+									846
2007	61	19			231	+									310
2008	78	2	+		87										168
2009	138				26										164
2010	130			+	4										134
2011	3				1										3
2012	1				1										2
2013					0										+
2014	33				0										33
2015	10				0										10
2016					0										+
2017					7										7
2018					2										2

Table 8 Leafscale gulper shark in the Northeast Atlantic. History of commercial landings (ICES estimates) of leafscale gulper shark in EU and non-EU waters, presented by area (in tonnes). Landings are combined for leafscale gulper shark and Portuguese dogfish until 2004; from 2005 onwards landings are presented only for leafscale gulper shark. + = catches less than 0.5 t. UA= unknown area.

Year	27.2	27.4	27.5	27.6	27.7	27.8	27.9	27.1	27.12	27.14	UA	Total
1988		+	+	+	+	+	560	+	0	+		560
1989		12	+	8	+	+	507	+	0	+		527
1990		8	140	6	+	6	475	+	0	+		635
1991		10	75	1013	265	70	1075	+	1	+		2509
1992		140	124	2013	1171	62	1114	+	2	+		4626
1993		63	98	2781	1232	25	946	+	7	+		5152
1994		98	198	2872	2087	36	1155	+	9	+		6455
1995		78	272	2824	1800	45	1354	+	139	+		6512
1996		298	391	3639	1168	336	1189	+	147	+		7168
1997		227	328	4135	1637	503	1311	+	32	9		8182
1998		81	557	4133	1038	605	1220	+	56	15		7705
1999		55	469	3471	895	531	972	+	91	+		6484
2000		1	411	3455	892	361	1049	+	890	+		7059
2001		3	475	4459	2685	634	1130	+	719	+		10105
2002		10	215	3086	1487	669	1198	+	1416	12		8093
2003		16	300	3855	3926	746	1180	+	849	4		10876
2004		5	229	2754	3477	674	1125	+	767	+		9031
2005	+	+	32	189	249	154	457	+	1	64	+	1147
2006		+	47	158	93	39	508		+			846
2007	+	+	44	26	9	+	231				+	310
2008		+	41	38	+	1	87					168
2009		+	50	83	4	+	26					164
2010		+	58	59	12	+	4					134
2011					3		1					3
2012					1		1					2
2013							+					+
2014			32		+		+					33
2015		1	9			+	+					10
2016							+					+
2017							7					7
2018							2					2

Summary of the assessment

There is no assessment for this stock.

Sources and references

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