

Smooth-hound (*Mustelus spp.*) 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, landings should be no more than 4626 tonnes in each of the years 2020 and 2021. ICES cannot quantify the corresponding catches.

Stock development over time

The stock size indicator has increased since the late 1990s.

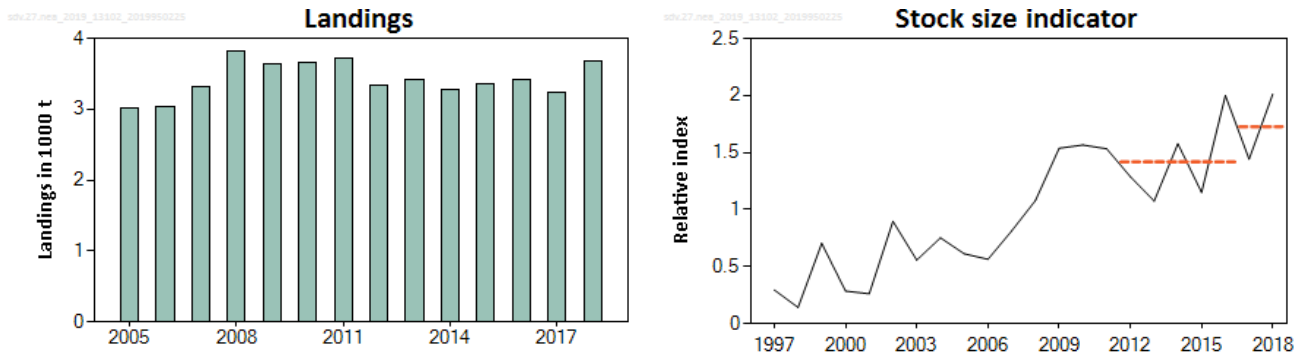


Figure 1 Smooth-hound (*Mustelus spp.*) in subareas 1–10, 12, and 14. Summary of the stock assessment. This stock consists primarily of starry smooth-hound (*Mustelus asterias*). Left: ICES estimated landings (in thousand tonnes; landings data before 2005 are incomplete and not shown). Right: Stock size indicator from three surveys (NS–IBTS–Q1, NS–IBTS–Q3, and EVHOE–WIBTS–Q4; biomass indices for individuals ≥ 50 cm) relative to the time-series mean. The dotted horizontal lines show the mean stock indicators for 2017–2018 and 2012–2016.

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 Smooth-hound in subareas 1–10, 12, and 14. 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	–	↗	↘	↗	Increasing

Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The stock size indicator was derived from exploitable biomass indices (individuals of ≥ 50 cm total length) from three surveys (NS–IBTS–Q1, NS–IBTS–Q3, and EVHOE–WIBTS–Q4) to provide an overall index for the stock development. The advice is based on the ratio of the mean of the last two values (index A) and the mean of the five preceding values (index B).

The index is estimated to have increased by more than 20% (22% increase between index A and index B), thus the uncertainty cap was applied.

The precautionary buffer was last applied in 2015. The stock status relative to reference points is unknown, but considering that the stock size indicator has generally increased over the past two decades, the precautionary buffer was not applied in 2019.

Discarding is known to take place, but ICES cannot quantify the corresponding catch.

Table 2 Smooth-hound in subareas 1–10, 12, and 14. The basis for the catch scenarios. The index is based on data for starry smooth-hound, landings data reflect all smooth-hound species.*

Index A (2017–2018)		1.73
Index B (2012–2016)		1.42
Index ratio (A/B)		1.22
Uncertainty cap	Applied	1.2
Advised landings (2018, 2019 issued in 2017)		3855 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice **		4626 tonnes
% Advice change ***		+20%

* 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 landings (2018, 2019)] × [uncertainty cap].

*** Advice value for 2020 and 2021 relative to the advice value for 2019.

The advised landings are higher than advised for 2018 and 2019 because the biomass indicator has increased.

Basis of the advice

Table 3 Smooth-hound in subareas 1–10, 12, and 14. The basis of the advice.

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

Quality of the assessment

Species-specific landings data are unreliable, and are combined at genus level. An unknown proportion of landings of smooth-hound may be reported under more generic landings codes for dogfish and sharks, so are not accounted for here; part of the inshore fleet (< 10 m) may not fully document landings of this non-quota species. Landings data prior to 2005 are uncertain, but landings appear to have been reported more consistently in recent years. There is uncertainty in both the quantities discarded and in the discard survival rate.

The present assessment refers mainly to starry smooth-hound *Mustelus asterias* (which occurs primarily in subareas 4 and 6–8). Multiple surveys indicate longer-term increases in stock size.

Data for other smooth-hound species are limited, and these species extend outside the ICES area.

The current assessment and time-series uses exploitable biomass data (individuals of ≥ 50 cm total length) from three surveys (NS–IBTS–Q1, NS–IBTS–Q3, and EVHOE–WIBTS–Q4; these all sample larger specimens), compared to total biomass used in earlier assessments. EVHOE–WIBTS–Q4 did not take place in 2017, so only NS–IBTS–Q1 and NS–IBTS–Q3 data are used for that particular year.

Data for NS–IBTS–Q3 do not include the Danish data, as preliminary analyses suggest that DATRAS data for smooth-hound and tope may be confounded, with further investigations required (ICES, 2017).

Issues relevant for the advice

Three species of smooth-hound occur in the Northeast Atlantic, and mainly in subareas 4 and 6–9. Starry smooth-hound is the main species occurring in subareas 4 and 6–8, and this is the species assessed. Common smooth-hound (*Mustelus mustelus*) and, to a lesser extent, blackspotted smooth-hound (*Mustelus punctulatus*) occur in Subarea 9. Data for these species are limited, and both species extend to the Mediterranean Sea and off Northwest Africa (CECAF area). ICES has

been unable to provide an assessment for these two stocks. The assessment was based on survey trends for starry smooth-hound, and landings data from the overall Northeast Atlantic.

Improved information on species composition and distribution is needed for ICES Subarea 9.

There is evidence of increased numbers of juveniles in beam-trawl surveys, which are carried out only in part of the stock distribution area (divisions 7.a and 7.d–f; ICES, 2019). These data are currently not used in the assessment.

Starry smooth-hound is also taken by recreational fishers and, although they may often be released, post-release survival is unquantified.

Discarding and discard survival have not been fully quantified.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 4 Smooth-hound in subareas 1–10, 12, and 14. Basis of assessment and advice.

ICES stock data category	Category 3 (ICES, 2018).
Assessment type	Landings, survey-based trends (ICES, 2019).
Input data	Surveys: NS-IBTS-Q1, NS-IBTS-Q3, and EVHOE-WIBTS-Q4.
Discards and bycatch	Unknown.
Indicators	None.
Other information	Additional surveys: UK(E&W)-BTS-Q3 and IGFS-WIBTS-Q4 (ICES, 2019).
Working group	Working Group on Elasmobranch Fishes (WGEE)

Information from stakeholders

The observed increase in the stock size indicator in the northern part of the stock range is consistent with the perception of commercial and recreational fishers in the area. Starry smooth-hound has become increasingly important for some inshore fishers.

History of the advice, catch and management

Table 5 Smooth-hound in subareas 1–10, 12, and 14. History of ICES advice, the agreed TAC, and ICES genus-specific estimates of landings. All weights are in tonnes.

Year	ICES advice	Landings corresp. to advice	Agreed TAC	ICES genus-specific estimated landings *
2005	No specific advice		No TAC	3013
2006	No specific advice		No TAC	3043
2007	No specific advice		No TAC	3308
2008	No specific advice		No TAC	3816
2009	No expansion in fisheries		No TAC	3628
2010	No new advice, same as for 2009		No TAC	3655
2011	Status quo catch (2006–2009)	2514	No TAC	3709
2012	No new advice, same as for 2011	2514	No TAC	3345
2013	Catch reduction of 4% (20% increase followed by 20% PA buffer)	-	No TAC	3415
2014	No new advice, same as for 2013	-	No TAC	3280
2015	No new advice, same as for 2013	-	No TAC	3349
2016	Precautionary approach	3272	No TAC	3407
2017	Biennial advice	3272	No TAC	3228
2018	Precautionary approach	≤ 3855	No TAC	3684

Year	ICES advice	Landings corresp. to advice	Agreed TAC	ICES genus-specific estimated landings *
2019	Precautionary approach (same advice as for 2018)	≤ 3855	No TAC	
2020	Precautionary approach	≤ 4626		
2021	Same advice as for 2020	≤ 4626		

* The data do not include generic “dogfishes and hounds”.

History of the catch and landings

The three smooth-hound species in the Northeast Atlantic occur on the continental shelf, and do not extend into the NEAFC Regulatory Area.

Table 6 Smooth-hound in subareas 1–10, 12, and 14. Catch distribution by fleet in 2018 as estimated by ICES.

Catch (2018)	Landings			Discards
Unknown	Otter trawl 66%	Gillnets 19%	Other gears 15%	Unknown
	3684 tonnes			

Table 7 Smooth-hound in subareas 1–10, 12, and 14. History of ICES genus-specific estimates of landings inside and outside of the NEAFC regulatory area. All weights are in tonnes.

Year	Inside the NEAFC regulatory area	Outside the NEAFC regulatory area *	ICES genus-specific estimates of landings *
2014	0	3280	3280
2015	0	3349	3349
2016	0	3407	3407
2017	0	3228	3228
2018	0	3684	3684

* Includes negligible landings reported to Fishing Area 34 and 37.

Table 8 Smooth-hound in subareas 1–10, 12, and 14. ICES estimates of landings by country (in tonnes) *.

Year	Belgium**	Denmark**	France***	Ireland**	Netherlands**	Portugal***	Spain***	UK**	Total [^]
2005			2685			44	112	171	3013
2006			2722			57	134	130	3043
2007			2958	0		57	138	155	3308
2008			3403	1		41	200	171	3816
2009			3082	0	4	45	297	199	3628
2010			3204	0	9	38	129	275	3655
2011			3241	0	3	43	106	315	3709
2012			2821		23	42	120	339	3345
2013	1		2942		26	41	80	325	3415
2014	1		2836	0	24	17	70	331	3280
2015	1		2963	0	24	15	42	303	3349
2016	3	0	2855		22	18	40	469	3407
2017	2		2730		22	55	43	376	3228
2018	1		3136		70	51	36	390	3684

* 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.

** Starry smooth-hound.

*** All smooth-hound species.

[^] Includes negligible landings reported to Fishing Areas 34 and 37.

Summary of the assessment

Table 9 Smooth-hound in subareas 1–10, 12, and 14. Assessment summary. Biomass indices of starry smooth-hound from three surveys (NS-IBTS-Q1, NS-IBTS-Q3, and EVHOE-WIBTS-Q4, normalized by their long-term means) and the stock size indicator (the annual mean of the normalized surveys).

Year	NS-IBTS-Q1	NS-IBTS-Q3	EHVOE-WIBTS-Q4	Stock size indicator
1997	0.132	0.74	0.0177	0.30
1998	0.200	0.029	0.197	0.142
1999	1.41	0.0121	0.69	0.70
2000	0.195	0.52	0.147	0.29
2001	0.54	0.00	0.25	0.26
2002	0.62	1.67	0.40	0.90
2003	0.47	0.86	0.34	0.56
2004	0.41	0.74	1.11	0.75
2005	0.32	0.87	0.64	0.61
2006	0.63	0.82	0.24	0.56
2007	0.78	0.58	1.08	0.81
2008	0.31	1.37	1.56	1.08
2009	2.5	1.25	0.86	1.54
2010	1.60	0.95	2.1	1.57
2011	0.97	2.4	1.18	1.53
2012	1.36	1.03	1.47	1.29
2013	1.07	1.84	0.31	1.07
2014	2.4	1.16	1.20	1.58
2015	0.70	0.34	2.4	1.15
2016	2.7	0.79	2.5	2.00
2017	1.60	1.29	NA*	1.44*
2018	1.15	2.7	2.2	2.0

* Based on the mean between NS-IBTS-Q1 and NS-IBTS-Q3, since EHVOE-WIBTS-Q4 did not occur in 2017 (Data not available).

Sources and references

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