

Smooth-hound (*Mustelus spp.*) in subareas 1–10, 12, and 14 (Northeast Atlantic and adjacent waters)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, landings should be no more than 5 329 tonnes in each of the years 2024 and 2025. ICES cannot quantify the corresponding catches.

ICES advice on conservation aspects

Management measures to account for conservation aspects may exist at a national or regional level.

Stock development over time

Fishing pressure on the stock is below $F_{MSY\ proxy}$, and the stock-size indicator is above $I_{trigger}$.

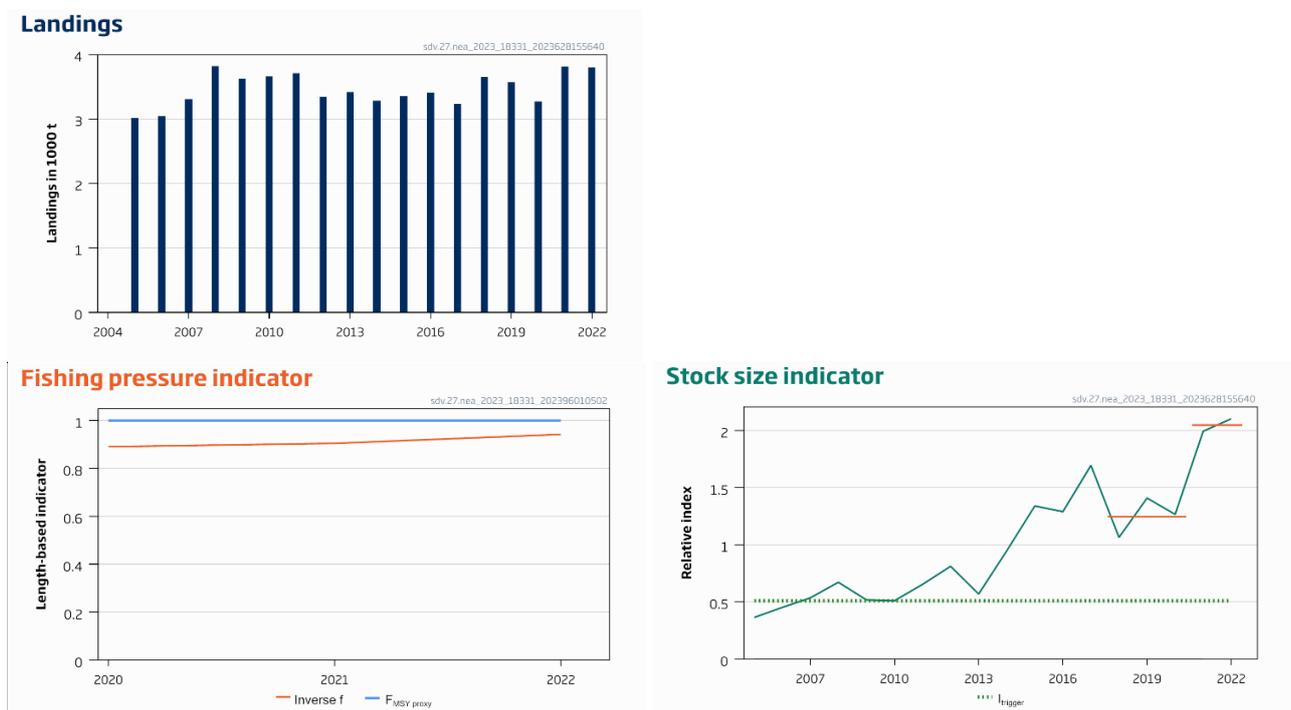


Figure 1 Smooth-hound (*Mustelus spp.*) in subareas 1–10, 12, and 14. Summary of the stock assessment. This stock consists primarily of starry smooth-hound (*Mustelus asterias*). Top left: ICES estimated landings (in thousand tonnes; landings data before 2005 are incomplete and not shown). Bottom left: Fishing pressure proxy (inverse f , $L_{F=M}/L_{mean}$) from the length-based indicator (LBI) method is used for the evaluation of the exploitation status. The proxy fishing pressure is less than that corresponding to the $F_{MSY\ proxy}$ when the value is lower than 1 (shown by the horizontal blue line). Bottom right: stock-size indicator is the mean normalized exploitable biomass index (individuals of ≥ 50 cm total length) of starry smooth-hound from the average of the two NS-IBTS surveys (NS-IBTS-Q1 [G1022] and NS-IBTS-Q3 [G2829]), EVHOE-WIBTS-Q4 [G9527], FR-CGFS-Q4 [G3425], and IE-IGFS-WIBTS-Q4 [G7212]. The horizontal orange lines show the mean stock indicators for 2021–2022 and 2018–2020.

Conservation status

ICES has not reviewed any information on stock-specific conservation status.

Catch scenarios

ICES framework for category 3 stocks was applied (rfb rule, ICES, 2022). A combined stock-size indicator from the average of the two NS-IBTS surveys (NS-IBTS-Q1 and NS-IBTS-Q3), EVHOE-WIBTS-Q4, FR-CGFS-Q4, and IE-IGFS-WIBTS-Q4 was used as an index of stock size. The advice is based on the ratio of the mean of the last two index values (index A) and the mean of the three preceding values (index B), multiplied by the recent landings advice, a ratio of observed mean length in the catch relative to the target mean length, a biomass safeguard, and a precautionary multiplier. The stability clause was considered and applied to limit the increase in landings advice to 20%.

Table 1 Smooth-hound in subareas 1–10, 12, and 14. The basis for the catch scenarios*.

Previous landings advice A_y (2022, 2023)	4441 tonnes	
Stock biomass trend		
Index A (2021, 2022)	2.0	
Index B (2018, 2019, 2020)	1.25	
r: index ratio (A/B)	1.64	
Fishing pressure proxy		
Mean catch length ($L_{\text{mean}} = L_{2022}$)	66 cm	
MSY proxy length ($L_F = M$)	63 cm	
f: multiplier for relative mean length in catches ($L_{\text{mean}}/L_F = M$)	1.06	
Biomass safeguard		
Last index value (I_{2022})	2.1	
Index trigger value ($I_{\text{trigger}} = I_{\text{loss}} \times 1.4$)	0.51	
b: multiplier for index relative to trigger $\min\{I_{2022}/I_{\text{trigger}}, 1\}$	1.00	
Precautionary multiplier to maintain biomass above B_{lim} with 95% probability		
m: multiplier (generic multiplier based on life history)	0.95	
RFB calculation: $A_{y+1} = A_y \times r \times f \times b \times m$	7360 tonnes	
Stability clause (+20%/-30% compared to A_y , only applied if $b \geq 1$)	Applied	1.2
Discard rate	Unquantified	
Landings advice for 2024 and 2025 ($A_y \times$ stability clause)	5329 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.

**Advice value for each of the years 2024 and 2025 relative to the advice value for each of the years 2022 and 2023

The advice has increased by 20% because of the increase in the stock-size indicator and the application of the stability clause in the new assessment method based on the MSY approach (rfb rule).

Basis of the advice

Table 2 Smooth-hound in subareas 1–10, 12, and 14. The basis of the advice.

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

Quality of the assessment

The assessment is based on survey trends for starry smooth-hound (*Mustelus asterias*) and commercial data for the smooth-hound genus from the overall Northeast Atlantic.

Species-specific landings data are unreliable. An unknown proportion of landings of smooth-hound may be reported under more generic landings codes for dogfish and sharks, which are not included in the assessment. Reported landings for the inshore fleet (< 10 m) are thought to be incomplete. Landings data prior to 2005 are uncertain but have been reported more consistently in recent years.

The stock-size indicator relates to starry smooth-hound, which occurs primarily in subareas 4 and 6–8. Five fishery-independent trawl survey indices were combined (ICES, 2021), that covers the main part of the stock unit.

The survey time-series for FR-CGFS-Q4 and EHVOE-WIBTS-Q4 were revised in 2023, and the DATRAS CPUE calculation for NS-IBTS-Q3 was also updated (ICES, 2023b). Danish data from the NS-IBTS-Q3 survey were excluded as analyses suggest data for smooth-hound and tope may be confounded.

Issues relevant for the advice

Three species of smooth-hound occur in the Northeast Atlantic, 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 two species are limited, and both species' ranges extend to the Mediterranean Sea and off Northwest Africa (CECAF area) with negligible species-specific landings reported in FAO areas 37 and 34 (ca. 0–1.7% and ca. 0–0.8%, respectively). ICES is unable to assess these two other species.

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

Smooth-hounds are also taken by recreational fishers and, although they may often be released, post-release survival is unquantified.

Reference points

Table 3 Smooth-hound in subareas 1–10, 12, and 14. Reference points, values, and their technical basis.

Framework	Reference point*	Value	Technical basis	Source
MSY approach	I_{trigger}	0.51	$I_{\text{loss}} \times 1.4$, where I_{loss} is the lowest observed historical biomass index value (2005)	ICES (2023b)
	$F_{\text{MSY proxy}}$	$\frac{L_{\text{mean}}}{L_{F=M}} = 1$	Relative value from LBI analysis, assuming $M/k = 1.5$. $L_{F=M}$ is based on L_c (length at 50% of modal abundance), which is taken from pooled data (2020–2022)	ICES (2023b)
Precautionary approach	B_{lim}	Not defined		
	B_{pa}	Not defined		
	F_{lim}	Not defined		
	F_{pa}	Not defined		
Management plan	SSB_{mgt}	Not defined		
	F_{mgt}	Not defined		

* No reference points are defined for this stock in terms of absolute values. The LBI-estimated values of the ratio $L_{\text{mean}}/L_{F=M}$ is used to estimate exploitation status relative to the proxy MSY reference point.

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, 2023a)
Assessment type	Trends from combined biomass index and length-based indicator (ICES, 2023b)
Input data	Commercial landings. Surveys: combined total standardized biomass index: NS-IBTS-Q1 [G1022], NS-IBTS-Q3 [G2829], EVHOE-WIBTS-Q4 [G9527], FR-CGFS-Q4 [G3425] and IE-IGFS-WIBTS-Q4 [G7212]. Length composition from commercial catches. Life history parameters ($k = 0.13 \text{ year}^{-1}$ and $L_{\text{inf}} = 130.5 \text{ cm}$)
Discards and bycatch	Discarding is known to take place but cannot be quantified
Indicators	Length-based indicator
Other information	Additional surveys: UK(E&W)-BTS-Q3 [B6596], BTS-ENG-Q3 [B2453] and UK-Q1-SWBeam [B2732] (ICES, 2023b)
Working group	Working Group on Elasmobranch Fishes (WGEF)

History of the advice, catch and management

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

Year	ICES advice	Landings corresp. to advice	ICES genus-specific estimated landings
2005	No specific advice		3013
2006	No specific advice		3043
2007	No specific advice		3308
2008	No specific advice		3816
2009	No expansion in fisheries		3628
2010	No new advice, same as for 2009		3655
2011	Status quo catch (2006–2009)	2514	3709
2012	No new advice, same as for 2011	2514	3345
2013	Catch reduction of 4% (20% increase followed by 20% PA buffer)	-	3415
2014	No new advice, same as for 2013	-	3280
2015	No new advice, same as for 2013	-	3349
2016	Precautionary approach	3272	3407
2017	Biennial advice	3272	3228
2018	Precautionary approach	≤ 3855	3651
2019	Precautionary approach (same advice as for 2018)	≤ 3855	3567
2020	Precautionary approach	≤ 4626	3268
2021	Same advice as for 2020	≤ 4626	3813
2022	Precautionary approach	≤ 4441	3800
2023	Precautionary approach	≤ 4441	
2024	MSY approach	≤ 5329	
2025	MSY approach	≤ 5329	

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 areas.

Table 6 Smooth-hound in subareas 1–10, 12, and 14. Catch distribution by fleet in 2022 as estimated by ICES.

Catch (2022)	Landings			Discards
	All bottom trawls	Set nets	Other gears	
Unquantified	76%	11%	13%	Unquantified
	3800 tonnes			

Table 7 Smooth-hound in subareas 1–10, 12, and 14. ICES estimates of landings by country (in tonnes). Blank cell = no data reported; 0 = value ≤ 0.5.

Year	Belgium*	Denmark*	France**	Germany*	Ireland*	Netherlands*	Portugal**	Spain**	UK*	Slovenia	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	0	2730			22	55	43	376		3228
2018	1	1	3136			34	51	38	390		3651
2019	1	0	2934	1		74	53	30	474		3567
2020	3	0	2665			91	64	41	405		3268
2021	4		3195		0	62	54	28	470		3813
2022	5		3141		10	83	47	29	483	1	3800

* Starry smooth-hound.

** All smooth-hound species.

*** Includes negligible landings reported in FAO areas 34 and 37

Summary of the assessment

Table 8 Smooth-hound in subareas 1–10, 12, and 14. Assessment summary. All weights are in tonnes.

Year	Stock-size indicator*	Landings	Fishing pressure indicator	
	Combined biomass index (ratio)	(tonnes)	Inverse f**	Length-based fishing pressure proxy (f, $L_{mean}/L_{F=M}$)
2005	0.36	3013		
2006	0.45	3043		
2007	0.53	3308		
2008	0.67	3816		
2009	0.52	3628		
2010	0.51	3655		
2011	0.65	3709		
2012	0.81	3345		
2013	0.57	3415		
2014	0.95	3280		
2015	1.34	3349		
2016	1.29	3407		
2017	1.69	3228		
2018	1.06	3651		
2019	1.41	3567		
2020	1.26	3268	0.89	1.12
2021	1.99	3813	0.90	1.11
2022	2.1	3800	0.94	1.06

* Combined biomass index (individuals of ≥ 50 cm total length) as the mean normalized from the average of the two NS-IBTS surveys (NS-IBTS-Q1 and NS-IBTS-Q3), EVHOE-WIBTS-Q4, FR-CGFS-Q4, and IE-IGFS-WIBTS-Q4 is used as a stock-size indicator.

** $L_{F=M}/L_{mean}$.

Sources and references

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