Lesser-spotted dogfish (*Scyliorhinus canicula*) in Subarea 6 and divisions 7.a–c and 7.e–j (West of Scotland, Irish Sea, southern Celtic Seas)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, landings should be no more than 3984 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 at $F_{MSY\ proxy}$, and the stock-size indicator is above $I_{trigger}$.
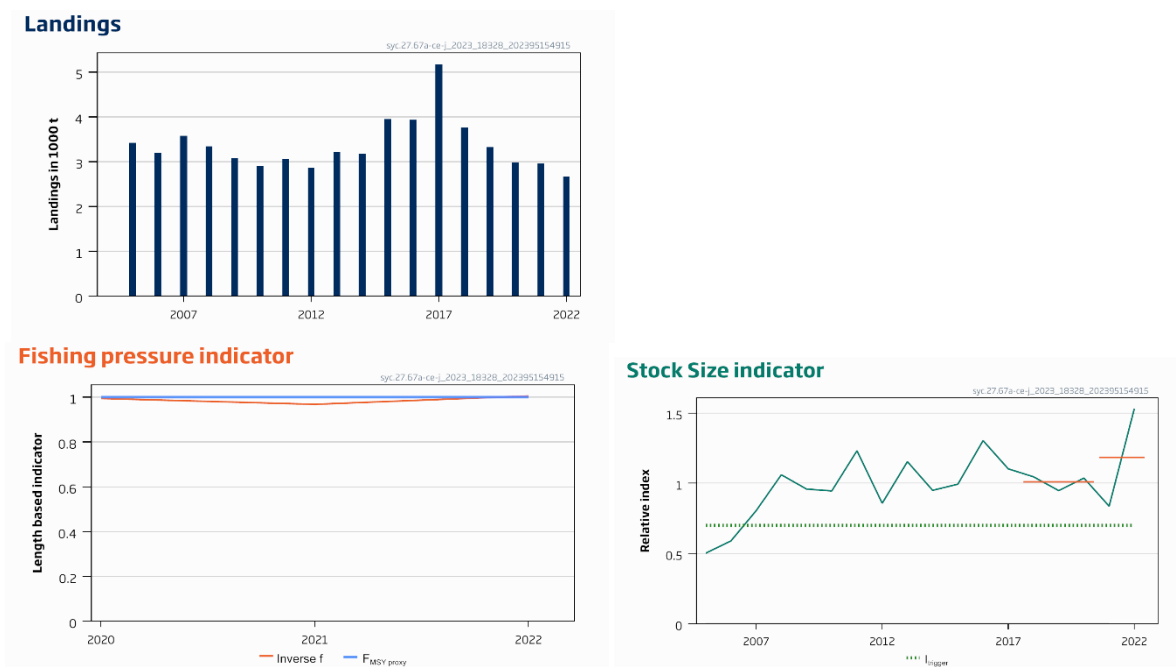

Figure 1   Lesser-spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. Summary of the stock assessment. Top left: ICES estimates of species-specific landings. Bottom Left: fishing pressure proxy (inverse f, $L_{F=M}/L_{mean}$) from the length-based indicator (LBI) method is used for the evaluation of the exploitation status. The proxy fishing pressure is less than that corresponding to $F_{MSY\ proxy}$ when the value is lower than 1 (shown by the horizontal blue line) Bottom right: stock-size indicator of the total biomass combined from four surveys (EVHOE-WIBTS-Q4 [G9527], IE-IGFS-WIBTS-Q4 [G7212], SP-PORC-WIBTS-Q3 [G5768], and UK(E&W)-BTS-Q3 [B6596]), with results from each survey being normalized by their long-term mean relative to the time-series mean. The orange horizontal 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, 2023a). A combined stock biomass index from the EVHOE WIBTS Q4, IE-IGFS WIBTS Q4, SP-PORC WIBTS Q3, and UK(E&W) BTS Q3 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 advised landings (2022, 2023), a ratio of observed mean length in the catch relative to the target mean length, a biomass safeguard, and a precautionary multiplier.

Table 1   Lesser-spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. The basis for the catch scenarios*.

Previous landings advice A_y (2022, 2023)		3596 tonnes
Stock biomass trend		
Index A (2021, 2022)		1.18
Index B (2018, 2019, 2020)		1.01
r: index ratio (A/B)		1.17
Fishing pressure proxy		
Mean catch length ($L_{mean} = L_{2022}$)		52 cm
MSY proxy length ($L_{F = M}$)		53 cm
f: multiplier for relative mean length in catches ($L_{mean}/L_{F = M}$)		0.99
Biomass safeguard		
Last index value (I_{2022})		1.53
Index trigger value ($I_{trigger} = I_{loss} \times 1.4$)		0.70
b: multiplier for index relative to trigger $\min\{I_{2022}/I_{trigger}, 1\}$		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: $A_{y+1} = A_y \times r \times f \times b \times m$		3984 tonnes
Stability clause (+20%/−30% compared to A_y, only applied if b ≥ 1)	Not applied	
Discard rate		Unquantified
Landings advice for 2024 and 2025		3984 tonnes
% advice change**		10.8 %

* 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 10.8% because of an increase in the biomass index and the application of a new assessment method based on the MSY approach (rfb rule).

Basis of the advice

Table 2   Lesser-spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. The basis of the advice.

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

Quality of the assessment

The four trawl surveys used as input data to the assessment, cover most of the stock area distribution and sample mature fish effectively. The area covered by the UK(E&W)-BTS-Q3 survey was reduced due to COVID-19 restrictions (Division 7.a was not sampled) in 2020, and those data were excluded (ICES, 2023a).

There were minor changes to the biomass index derived for EVHOE-WIBTS-Q4, as this has now been based on DATRAS data instead of the national survey data used in previous advice (ICES, 2023a). This also applies to the UK(E&W)-BTS-Q3 survey values used in 2023.

Issues relevant for the advice

Scyliorhinids are considered to be productive species in comparison to other demersal elasmobranchs (McCully Phillips *et al.*, 2015).

Discarding is variable between fishing fleets and has not been fully quantified for all the time series. It is considered that discards are generally several times higher than landed quantities (ICES, 2023a). Discard survival of > 90% in beam trawl fisheries has been estimated (Revill *et al.*, 2005). Data are lacking for other métiers, notably gillnets.

Reference points

Table 3   Lesser-spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. Reference points, values, and their technical basis.

Framework	Reference point*	Value	Technical basis	Source
MSY approach	$I_{trigger}$	0.7	I_{loss} × 1.4, where I_{loss} is the lowest observed historical biomass index value (2005)	ICES (2023b)
	$F_{MSY proxy}$	$\dfrac{L_{mean}}{L_{F=M}} = 1$	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 varies each year.	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 $L_{mean}/L_{F=M}$ are used to estimate exploitation status relative to the proxy MSY reference point.

Basis of the assessment

Table 4   Lesser-spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2023a)
Assessment type	Trends from combined biomass index and length-based indicator (ICES, 2023b)
Input data	Commercial landings, four surveys combined to produce a total biomass index: EVHOE-WIBTS-Q4 [G9527], IE-IGFS-WIBTS-Q4 [G7212], SP-PORC-WIBTS-Q3 [G5768], UK(E&W)-BTS-Q3 [B6596]. Length composition from commercial catches. Life history parameters (k = 0.1 year^{-1} and L_{inf} = 87.4 cm)
Discards and bycatch	Discarding is known to take place but cannot be quantified
Indicators	Length-based indicator
Other information	None
Working group	Working Group on Elasmobranch Fishes (WGEF)

History of the advice, catch, and management

Table 5   Lesser-spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. History of ICES advice, agreed TAC and estimates of landings. All weights are in tonnes.

Year	ICES advice	Landings corresp. to advice	Agreed TAC	ICES landings
2005	No advice		No TAC	3426
2006	No advice		No TAC	3195
2007	No advice		No TAC	3579
2008	No advice		No TAC	3344
2009	*Status quo* catch		No TAC	3080
2010	No new advice, same as for 2009		No TAC	2909
2011	Maintain catch at recent level		No TAC	3064
2012	No new advice, same as for 2011		No TAC	2868
2013	Increase catch by maximum 20% + no species-specific TAC		No TAC	3219
2014	No new advice, same as for 2013		No TAC	3176
2015	No new advice, same as for 2014		No TAC	3948

Year	ICES advice		Landings corresp. to advice	Agreed TAC	ICES landings
2016	Precautionary approach		Increase by no more than 18% compared to the average catches in 2012–2014	No TAC	3932
2017	Biennial advice		Same catch value as advised for 2016	No TAC	5175
2018	Precautionary approach		≤ 4296	No TAC	3762
2019	Precautionary approach (same advice as for 2018)		≤ 4296	No TAC	3325
2020	Precautionary approach		≤ 3540	No TAC	2981
2021	Same advice as in 2020		≤ 3540	No TAC	2956
2022	Precautionary approach		≤ 3596	No TAC	2678
2023	Precautionary approach		≤ 3596	No TAC	
2024	MSY approach		≤ 3984		
2025	MSY approach		≤ 3984		

History of the catch and landings

The distribution of this species may extend into the NEAFC regulatory areas, but the main component of the stock occurs in shelf seas and catches from the NEAFC regulatory areas are considered to be negligible with no reported landings.

Table 6   Lesser-spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. Catch distribution by fleet in 2022 as estimated by ICES.

Catch (2022)	Landings			Discards
Unquantified	All other bottom trawls 82%	Beam trawls 12%	Other gears 6%	Unquantified
	2678 tonnes			

Table 7   Lesser spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. ICES estimates of landings by country (in tonnes).

Year	Belgium	Spain	France	UK	Ireland	Netherlands	Total*
2005	240	34	2936	123	92	0	3426
2006	225	33	2873	22	42	0	3195
2007	199	37	3101	115	128	0	3579
2008	165	12	2728	191	248	0	3344
2009	168	17	2479	226	190	0	3080
2010	165	28	2368	111	232	6	2909
2011	227	48	2359	111	317	1	3064
2012	236	109	2060	241	221	1	2868
2013	216	26	2284	380	310	4	3219
2014	141	18	2292	389	336	0	3176
2015	252	20	2024	1282	367	3	3948
2016	194	9	1969	1333	425	1	3932
2017	209	12	3355	1075	524	0	5175
2018	181	25	1518	1628	411	0	3762
2019	194	7	1376	1510	235	4	3325
2020	176	6	1210	1364	224	2	2981
2021	175	3	1305	1250	222	1	2956
2022	192	6	1277	1058	144	0	2678

*Includes landings from Division 7.k, which are usually < 0.5 tonnes per year.

Summary of the assessment

Table 8   Lesser-spotted dogfish in Subarea 6 and divisions 7.a–c and 7.e–j. 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	0.50	3426		
2006	0.58	3195		
2007	0.80	3579		
2008	1.06	3344		
2009	0.96	3080		
2010	0.95	2909		
2011	1.23	3064		
2012	0.86	2868		
2013	1.15	3219		
2014	0.94	3176		
2015	1.99	3948		
2016	1.30	3932		
2017	1.10	5175		
2018	1.05	3762		
2019	0.95	3325		
2020	1.037	2981	0.99	1.01
2021	0.83	2956	0.97	1.03
2022	1.53	2678	1.00	1.00

*Inverse f is calculated as $L_{F=M}/L_{mean}$

Sources and references

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