

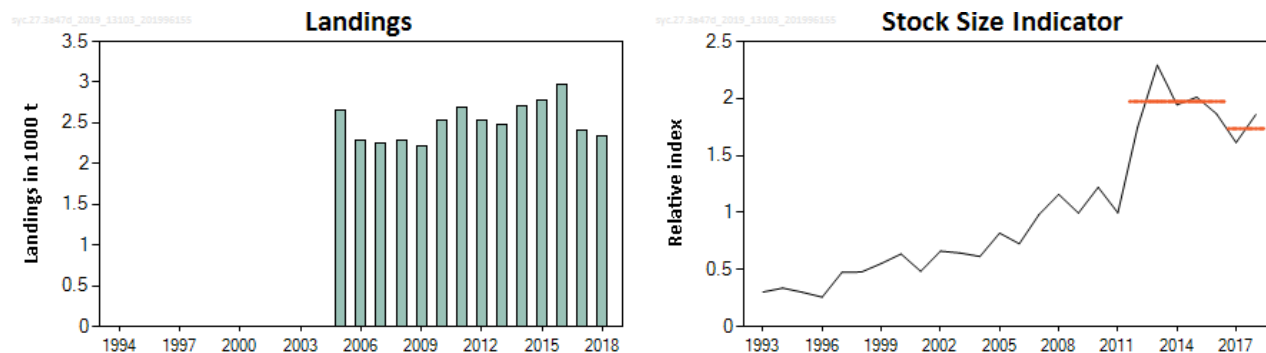
## Lesser spotted dogfish (*Scyliorhinus canicula*) in Subarea 4 and in divisions 3.a and 7.d (North Sea, Skagerrak and Kattegat, eastern English Channel)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, landings should be no more than 2380 tonnes in each of the years 2020 and 2021. ICES cannot quantify the corresponding catches.

### Stock development over time

The stock size indicator increased continuously until 2013 and has declined since.



**Figure 1** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. Summary of the stock assessment. Left: ICES estimates of landings (landings data before 2005 are incomplete and not shown). Right: Stock size indicator of exploitable biomass (individuals  $\geq 50$  cm), derived from the annual mean of four surveys (NS-IBTS-Q1, NS-IBTS-Q3, CGFS-Q4, and UK(E&W)-BTS-Q3) after results from each survey had been normalized by their long-term means. The 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** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. State of the stock and fishery relative to reference points.

		Fishing pressure			Stock size				
		2016	2017	2018	2016	2017	2018		
Maximum sustainable yield	$F_{MSY}$	?	?	?	MSY $B_{trigger}$	?	?	?	Unknown
Precautionary approach	$F_{pa}F_{lim}$	?	?	?	$B_{pa}B_{lim}$	?	?	?	Unknown
Management plan	$F_{MGT}$	—	—	—	$B_{MGT}$	—	—	—	Not applicable
Qualitative evaluation	-	?	?	?	-	↘	↘	↗	Increasing

### Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). Biomass indices derived from four surveys (NS-IBTS-Q1, NS-IBTS-Q3, CGFS-Q4, and UK(E&W)-BTS-Q3) were used to provide an overall stock size indicator. The advice is based on a comparison of the two latest index values (index A) with the five preceding values (index B). The index is estimated to have decreased by less than 20% and thus the uncertainty cap was not applied. The precautionary buffer was last applied prior to 2015. Given that the stock size indicator has declined in recent years and the stock status relative to reference points is unknown, the precautionary buffer has been applied.

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

**Table 2** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. The basis for the catch scenarios.\*

Index A (2017, 2018)		1.74
Index B (2012–2016)		1.97
Index ratio (A/B)		0.88
Uncertainty cap	Not applied	-
Advised landings for 2018 and 2019 (issued in 2017)		3380 tonnes
Discard rate		Unknown
Precautionary buffer	Applied	0.8
Landings advice**		2380 tonnes
% Advice change^		-30%

\* 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 for 2018 and 2019] × [index ratio] × [precautionary buffer].

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

The advised landings are lower than advised for 2018 and 2019 because the biomass indicator has decreased and the precautionary buffer was applied.

### Basis of the advice

**Table 3** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. The basis of the advice.

Advice basis	Precautionary 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 cover the stock area and sample mature fish effectively.

### Issues relevant for the advice

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

A discard survival of >90% has been estimated for the beam-trawl fisheries in this area (Revill *et al.*, 2005). Data are lacking for other métiers.

### Reference points

Reference points are not defined for this stock.

### Basis of the assessment

**Table 4** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. Basis of the assessment and advice.

ICES stock data category	3 ( <a href="#">ICES, 2018</a> ).
Assessment type	Survey-based trends (ICES, 2019).
Input data	Surveys: NS-IBTS-Q1, NS-IBTS-Q3, CGFS-Q4, and UK(E&W)-BTS-Q3.
Discards and bycatch	Unknown.
Indicators	None.
Other information	None.
Working group	Working Group on Elasmobranch Fishes ( <a href="#">WGEF</a> ).

### Information from stakeholders

There is no additional available information for this stock.

## History of the advice, catch, and management

**Table 5** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. History of ICES advice 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	2652
2006	No advice		No TAC	2293
2007	No advice		No TAC	2243
2008	No advice		No TAC	2282
2009	Status quo catch	1800	No TAC	2223
2010	No new advice, same as for 2009	1800	No TAC	2528
2011	Maintain catch at recent level	1800	No TAC	2693
2012	No new advice, same as for 2011	1800	No TAC	2526
2013	Increase catch at most by 20% + no species-specific TAC		No TAC	2472
2014	No new advice, same as for 2013		No TAC	2705
2015	No new advice, same as for 2014		No TAC	2776
2016	Precautionary approach	Increase by no more than 20% compared to the average catches in 2012–2014	No TAC	2968
2017	Biennial advice	Same catch value as advised for 2016	No TAC	2407
2018	Precautionary approach	≤ 3380	No TAC	2340
2019	Precautionary approach (same advice as for 2018)	≤ 3380	No TAC	
2020	Precautionary approach	≤ 2380		
2021	Same advice as in 2020	≤ 2380		

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

## History of the catch and landings

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

**Table 6** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. Catch distribution by fleet in 2018 as estimated by ICES.

Catch (2018)	Landings			Discards
	Bottom trawl	Beam trawl	Other gears	
Unknown	54%	20%	26%	Unknown
	2340 tonnes			

**Table 7** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. ICES estimates of landings by country (in tonnes). Blank = no data reported; + = data less than 0.5 t.\*

Year	Belgium	Denmark	France	Netherlands	UK	Total
2005	238		2265	56	92	2652
2006	267		1857	48	121	2293
2007	264		1843	32	104	2243
2008	337		1822	29	94	2282
2009	309		1758	37	118	2223
2010	290		2055	37	146	2528
2011	311		2150	47	185	2693
2012	249		2061	35	181	2526
2013	231		2021	36	184	2472
2014	325		2189	45	146	2705
2015	416	+	2090	85	185	2776
2016	343	+	2173	122	330	2968
2017	338		1641	141	287	2407
2018	305		1580	180	275	2340

\* 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.

### Summary of the assessment

**Table 8** Lesser spotted dogfish in Subarea 4 and in divisions 3.a and 7.d. Assessment summary. Biomass indices for exploitable biomass (individuals  $\geq 50$  cm) derived from four trawl surveys (NS-IBTS-Q1, NS-IBTS-Q3, CGFS-Q4, and UK(E&W)-BTS-Q3); the indices for NS-IBTS and UK(E&W)-BTS are in  $\text{kg h}^{-1}$ , for CGFS in  $\text{kg km}^{-2}$ , normalized by their long-term means. The stock size indicator is the annual mean of the normalized survey indices.

Year	NS-IBTS-Q1	NS-IBTS-Q3	CGFS-Q4	UK(E&W)-BTS-Q3	Stock size indicator
1993	0.062	0.173	0.61	0.37	0.30
1994	0.108	0.21	0.57	0.46	0.34
1995	0.134	0.098	0.46	0.52	0.30
1996	0.154	0.22	0.23	0.43	0.26
1997	0.129	0.155	1.17	0.45	0.47
1998	0.122	0.25	1.00	0.55	0.48
1999	0.27	0.29	1.05	0.61	0.55
2000	0.41	0.26	1.33	0.54	0.64
2001	0.24	0.22	0.94	0.54	0.48
2002	0.44	0.44	0.90	0.88	0.66
2003	0.45	0.34	1.28	0.51	0.64
2004	0.45	0.5	0.71	0.81	0.61
2005	0.34	0.42	1.38	1.14	0.82
2006	0.39	0.65	1.35	0.52	0.73
2007	0.85	0.39	1.73	0.96	0.98
2008	0.91	1.20	1.00	1.52	1.16
2009	0.91	0.93	1.05	1.10	0.99
2010	0.77	1.41	1.10	1.61	1.22
2011	0.61	1.24	1.06	1.08	1.00
2012	3.0	1.35	1.12	1.53	1.75
2013	3.1	3.0	1.16	1.91	2.3
2014	3.0	2.3	0.80	1.67	1.94
2015	2.6	2.3	1.11	1.98	2.0
2016	2.8	2.2	0.93	1.55	1.87
2017	1.74	2.6	0.90	1.18	1.61
2018	1.95	2.8	1.09	1.56	1.86

## Sources and references

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