

Lesser-spotted dogfish (*Scyliorhinus canicula*) in divisions 8.c and 9.a (Cantabrian Sea and Atlantic Iberian waters)

ICES stock advice

ICES advises that when the precautionary approach is applied, landings should be no more than 1178 tonnes in each of the years 2018 and 2019. ICES cannot quantify the corresponding catches.

Stock development over time

The stock size indicator has increased since 2003.

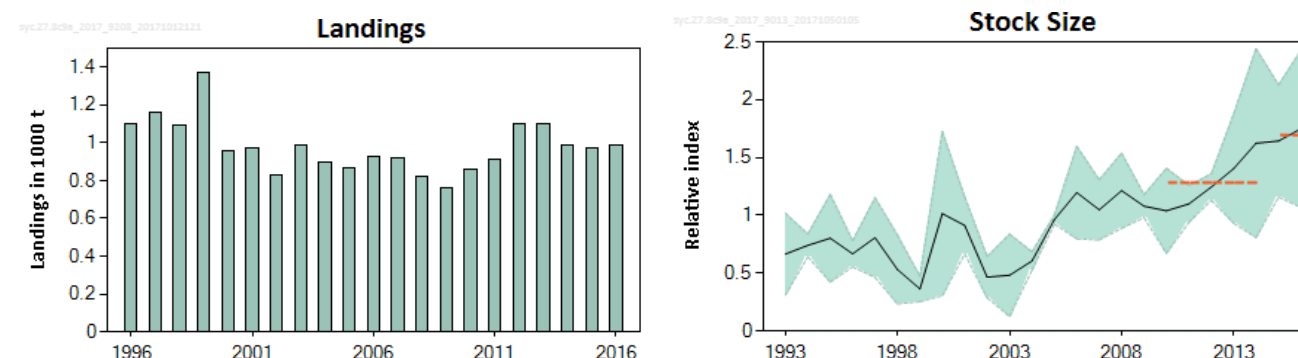


Figure 1* Lesser-spotted dogfish in divisions 8.c and 9.a. Summary of the stock assessment. Left: Recent ICES estimates of species-specific landings (landings data before 1996 are incomplete and not shown). Right: stock size indicator derived from four surveys (SP-GC-GFS Quarters 1&4, PT-PGFS-Q4, and SP-GFS-IBTS-Q4; kg h^{-1}), normalized relative to the time-series mean. The dotted horizontal lines show the mean stock indicators for 2015–2016 and 2010–2014. Confidence intervals are shaded.

Stock and exploitation status

Table 1 Lesser-spotted dogfish in divisions 8.c and 9.a. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size			
		2014	2015	2016		2014	2015	2016	
Maximum sustainable yield	F_{MSY}	?	?	?	Undefined	MSY	?	?	?
Precautionary approach	F_{pa} F_{lim}	?	?	?	Undefined	B_{pa} , B_{lim}	?	?	?
Management plan	F_{MGT}	-	-	-	Not applicable	B_{MGT}	-	-	-
Qualitative evaluation	-	?	?	?	Unknown	-	↗	↗	↗
									Increasing

Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012).

Biomass indices derived from four surveys (SP-GC-GFS Quarters 1&4, PT-PGFS-Q4, and SP-GFS-IBTS-Q4) were used to provide an overall stock size indicator.

* Version 2: Figure corrected

The advice is based on a comparison of the two latest index values (index A) with the five preceding values (index B). The stock size indicator is estimated to have increased by more than 20%, so the uncertainty cap was applied. The stock size relative to candidate reference points is unknown. However, given the longer-term increase in the stock size indicator, the precautionary buffer was not applied. Discarding is known to take place, but ICES cannot quantify the corresponding catches.

Table 2 Lesser-spotted dogfish in divisions 8.c and 9.a. The basis for the catch options.*

Index A (2015–2016)		1.70
Index B (2010–2014)		1.28
Index ratio(A/B)		1.32
Uncertainty cap	Applied	1.20
Average landings (2014–2016)		981 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice**		1178 tonnes

* 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.

** [Average landings (2014–2016)] × [uncertainty cap].

Basis of the advice

Table 3 Lesser-spotted dogfish in divisions 8.c and 9.a. 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

Discarding is known to occur and is very high and variable between fishing fleets, but it has not been fully quantified. Discard survival occurs and can be around 70% in some métiers (Rodríguez-Cabello *et al.*, 2005), but has not been estimated for all the métiers.

The trawl surveys used cover most of the stock area and sample mature fish effectively.

Issues relevant for the advice

Scyliorhinid species are generally productive in comparison to other demersal elasmobranchs and are typically either discarded or retained as low-value bycatch.

Reference points

Reference points are not defined for this stock.

Basis of the assessment

Table 4 Lesser-spotted dogfish in divisions 8.c and 9.a. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2016a).
Assessment type	Survey trends-based assessment (ICES, 2017).
Input data	Surveys: Portuguese (PT-PGFS-Q4), Spanish ARSA (SP-GC-Q1&Q4), and Spanish North (SP-GFS-IBTS-Q4)
Discards and bycatch	Unknown.
Indicators	None.
Other information	None.
Working group	Working Group on Elasmobranch Fishes (WGEE)

Information from stakeholders

There is no additional available information for this stock.

History of the catch and landings

Table 5 Lesser-spotted dogfish in divisions 8.c and 9.a. ICES advice and ICES species-specific estimated landings. All weights are in tonnes.

Year	ICES advice	Predicted landings corresp. to advice	Agreed TAC	ICES species-specific estimates of landings*
2005	No advice		No TAC	866.2
2006	No advice		No TAC	924.0
2007	No advice		No TAC	922.9
2008	No advice		No TAC	819.6
2009	Maintain catch at recent level		No TAC	764.7
2010	Maintain catch at recent level		No TAC	857.6
2011	Maintain catch at recent level		No TAC	915.6
2012	No new advice, same as for 2011		No TAC	1099.5
2013	Decrease catch by 9% + no species-specific TAC		No TAC	1097.2
2014	No new advice, same as for 2013		No TAC	984.9
2015	No new advice, same as for 2014		No TAC	972.0
2016	Increase by no more than 20% compared to the average catches in 2012–2014			987.5
2017	Same catch value as advised for 2016			
2018	Precautionary approach	≤ 1178		
2019	Precautionary approach (Same advice as for 2018)	≤ 1178		

* Data were revised in 2016 (ICES, 2016b), but do not include generic “dogfishes & hounds”.

Table 6 Lesser-spotted dogfish in divisions 8.c and 9.a. Catch distribution by fleet in 2016 as estimated by ICES.

Catch (2016)	Landings			Discards
Unknown	Bottom trawl 67%	Nets 3%	Various other gears 30%	Unknown
	988 tonnes			

Table 7 Lesser-spotted dogfish in divisions 8.c and 9.a. ICES estimates of landings by country (in tonnes). Data were revised in 2016 (ICES, 2016b).

Year	France	Spain	Portugal	Total
1996	0.0	431.2	667.0	1098.2
1997	0.0	471.5	691.0	1162.5
1998	0.6	403.1	689.0	1092.8
1999	0.7	491.1	882.0	1373.8
2000	0.7	202.4	757.0	960.0
2001	4.0	236.4	734.0	974.3
2002	3.3	155.1	673.0	831.4
2003	3.5	248.5	735.0	987.0
2004	5.4	237.2	657.0	899.6
2005	1.3	296.9	568.0	866.2
2006	0.5	332.5	591.0	924.0
2007	0.9	327.0	595.0	922.9
2008	1.0	272.6	546.0	819.6
2009	1.0	228.7	535.0	764.7
2010	0.0	335.6	522.0	857.6
2011	0.3	364.2	551.0	915.6
2012	0.4	555.1	544.0	1099.5
2013	0.0	577.1	520.0	1097.2
2014	0.0	464.2	520.7	984.9
2015	0.6	417.5	554.0	972.0
2016	0.2	397.9	589.5	987.5

Summary of the assessment

Table 8 Lesser-spotted dogfish in divisions 8.c and 9.a. Assessment summary. Biomass indices from four trawl surveys (SP-CG-GFFS Quarters 1&4, PT-PGFS-Q4, and SP-IBTS-GFS-Q4; kg h⁻¹); ARSA IBTS-GC-Q1 and ARSA IBTS-GC-Q4 were previously averaged) and the stock size indicator (the annual mean of the normalized surveys).

Year	SPAIN			PORTUGAL	Stock size indicator
	SP-GC-GFS-Q1	SP-GC-GFS-Q4	SP-GFS-Q4	PT-PGFS Q4	
1993	1.2		4.40	0.53	0.67
1994	3.0		4.32	0.42	0.74
1995	3.2		2.82	0.6	0.80
1996	2.9		4.03		0.67
1997	1.4	7.2	4.11	0.62	0.81
1998	1.6	0.5	3.56	0.43	0.53
1999	0.9	2.7	3.04		0.36
2000	3.7	0.5	4.83	0.94	1.02
2001	4.4	1.0	6.83	0.57	0.91
2002	1.4	1.6	4.35	0.25	0.47
2003	0.0	3.8	5.04		0.48
2004	1.7	5.4	4.55		0.61
2005	3.3	9.5	6.52	0.48	0.96
2006	6.0	14.0	7.53	0.44	1.20
2007	4.3	8.4	8.90	0.4	1.05
2008	6.7	11.5	6.45	0.58	1.21
2009	3.9	7.5	7.73	0.59	1.08
2010	7.6	7.1	7.02	0.35	1.04
2011	5.2	10.0	6.65	0.54	1.10
2012	4.5	9.6	9.10		1.25
2013	5.4	17.2		0.55	1.40
2014	6.5	13.3	16.68	0.41	1.62
2015	6.3	15.5	14.11	0.57	1.64
2016	6.9	18.9	15.3	0.5	1.75

Sources and references

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- ICES. 2016a. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.
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