

Cuckoo ray (*Leucoraja naevus*) in Subarea 4 and Division 3.a (North Sea, Skagerrak, and Kattegat)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches should be no more than 139 tonnes in each of the years 2020 and 2021.

Stock development over time

The stock size indicator has increased after 2003 and has been above the long-term average since 2015.

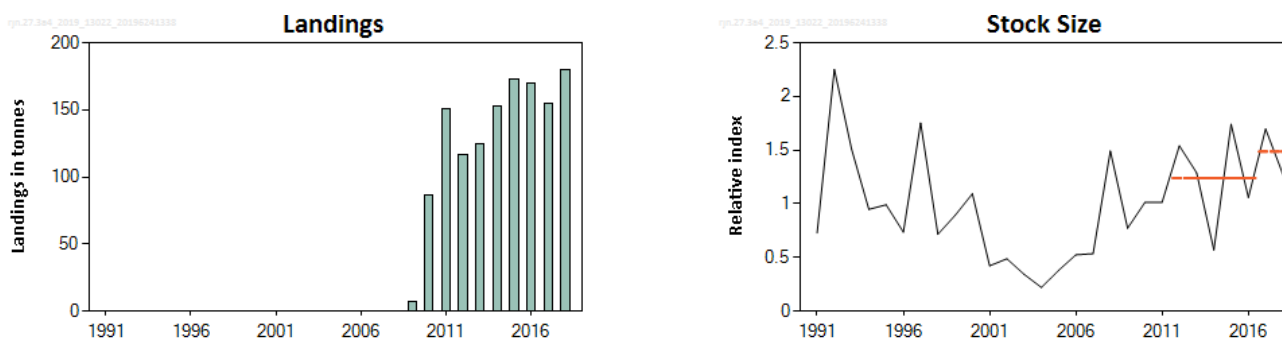


Figure 1 Cuckoo ray in Subarea 4 and Division 3.a. Summary of the stock assessment. Left: ICES estimates of landings of cuckoo ray since 2009. Right: stock size indicator of exploitable biomass from two trawl surveys (NS-IBTS-Q1 and NS-IBTS-Q3 for individuals of ≥ 50 cm total length) relative to the time-series mean.

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 Cuckoo ray in Subarea 4 and Division 3.a. 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	-	↘	↗	↘	Decreasing

Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). Biomass indices derived from two surveys (NS-IBTS-Q1 and NS-IBTS-Q3) were used to provide the 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), multiplied by the advised landings for 2018 and 2019. The index is estimated to have increased by 20% and thus the uncertainty cap was not applied. The stock status relative to reference points is unknown, however the precautionary buffer was last applied in 2017 and therefore its application was not considered in 2019.

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 Cuckoo ray in Subarea 4 and Division 3.a. The basis for the catch scenarios.*

Index A (2017–2018)		1.49
Index B (2012–2016)		1.24
Index ratio (A/B)		1.20
Uncertainty cap	Not applied	-
Advised landings for 2018 and 2019 (issued in 2017)		116 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice **		139 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 for 2018 and 2019] × [index ratio].

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

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

Basis of the advice

Table 3 Cuckoo ray in Subarea 4 and Division 3.a. The basis of the advice.

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

Quality of the assessment

Species-specific landings data are incomplete prior to 2009.

Fishery-independent trawl surveys provide the longest time-series of species-specific information.

Issues relevant for the advice

No issues relevant for the advice.

Reference points

Reference points are not defined for this stock.

Basis of the assessment

Table 4 Cuckoo ray in Subarea 4 and Division 3.a. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2018).
Assessment type	Survey-based trends (ICES, 2019).
Input data	Surveys NS-IBTS-Q1 and NS-IBTS-Q3.
Discards and bycatch	Unknown.
Indicators	None.
Other information	None.
Working group	Working Group on Elasmobranch Fishes (WGEF).

Information from stakeholders

There is no additional available information for this stock.

History of the advice, catch, and management

Table 5 Cuckoo ray in Subarea 4 and Division 3.a. History of ICES advice, agreed TAC, and species-specific estimates of landings. All weights are in tonnes.

Year	ICES advice	Landings corresp. to advice	Agreed TAC*		ICES landings
			2.a and 4	3.a	
2009	<i>Status quo</i> catch	-	1643	68	7
2010	No new advice, same as 2009	-	1397	58	86
2011	<i>Status quo</i> catch	-	1397	58	151
2012	No new advice, same as 2011	-	1395	58	117
2013	No TAC, species-specific measures needed, catch could increase by max. 20%	-	1256	52	124
2014	No new advice, same as 2013	-	1256	47	153
2015	No new advice, same as 2014	-	1382	47	172
2016	Precautionary approach	128	1313	47	170
2017	Same advice as 2016	128	1378	47	155
2018	Precautionary approach	≤ 116	1654	47	180
2019	Precautionary approach (same advice as 2018)	≤ 116	1654	47	
2020	Precautionary approach	≤ 139			
2021	Same advice as in 2020	≤ 139			

* EU combined TAC for skates and rays.

History of the catch and landings

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

Table 6 Cuckoo ray in Subarea 4 and Division 3.a. Catch distribution by fleet in 2018 as estimated by ICES.

Catch (2018)	Landings		Discards
	Bottom trawls 95%	Other 5%	
Unknown	180 tonnes		Unknown

Table 7 Cuckoo ray in Subarea 4 and Division 3.a. ICES estimates of landings by country (in tonnes). Blank = no data reported; + = data less than 0.5 t.

Year	Belgium	Denmark	France	UK	Netherlands	Total*
2009	1		1	5	+	7
2010	4		1	81	+	86
2011	5	2	1	143		151
2012	1		+	115		117
2013	1	1	+	123	+	124
2014	+		+	152	+	153
2015	3	+	+	169		172
2016	+	1	+	168	+	170
2017	+		+	154		155
2018	+		+	180		180

* 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 Cuckoo ray in Subarea 4 and Division 3.a. Assessment summary. Biomass indices were derived from two trawl surveys (NS-IBTS-Q1 and NS-IBTS-Q3; all indices are in kg h⁻¹ and based on individuals of ≥ 50 cm total length, 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	Stock size Indicator
1991	1.06	0.40	0.73
1992	2.7	1.84	2.3
1993	2.7	0.37	1.51
1994	1.12	0.77	0.95
1995	1.49	0.49	0.99
1996	1.32	0.153	0.74
1997	0.65	2.9	1.75
1998	1.14	0.30	0.72
1999	0.91	0.87	0.89
2000	1.01	1.18	1.09
2001	0.43	0.42	0.42
2002	0.41	0.56	0.49
2003	0.29	0.39	0.34
2004	0.26	0.183	0.22
2005	0.24	0.52	0.38
2006	0.51	0.54	0.52
2007	0.56	0.51	0.54
2008	0.43	2.6	1.49
2009	0.32	1.23	0.77
2010	0.69	1.34	1.01
2011	0.60	1.43	1.01
2012	1.30	1.78	1.54
2013	1.42	1.16	1.29
2014	0.56	0.58	0.57
2015	2.1	1.34	1.74
2016	1.06	1.06	1.06
2017	1.82	1.57	1.70
2018	0.95	1.60	1.28

Sources and references

ICES. 2012. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM:68. 42 pp. <https://doi.org/10.17895/ices.pub.5322>.

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