

Cuckoo ray (*Leucoraja naevus*) in Division 8.c (Cantabrian Sea)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches should be no more than 42 tonnes in each of the years 2021 and 2022. If discard rates do not change from the average of the last five years (2015–2019), this implies landings of no more than 31 tonnes.

Note: This advice sheet is abbreviated due to the COVID-19 disruption. The previous advice issued for 2019 and 2020 is attached as Annex 1.

Stock development over time

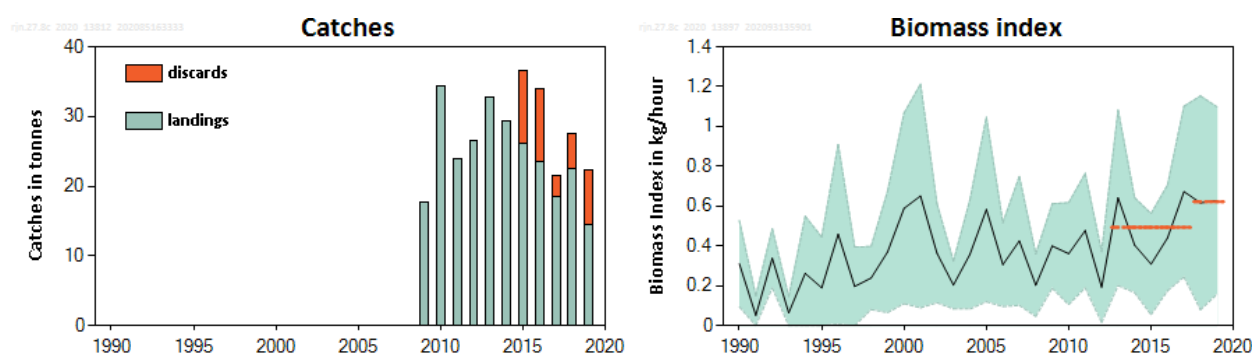


Figure 1 Cuckoo ray in Division 8.c. ICES estimated landings and discards (in tonnes). Left: Estimated landings (all fleets: 2009–2019) and discards (Spanish fleet: 2015–2019) from Division 8.c. Right: Biomass index from the Spanish demersal trawl survey (SpNGFS-WIBTS-Q4). The shaded area indicates the associated 95% confidence interval. The horizontal lines indicate the average of the biomass index values for 2013 to 2017 and for 2018 to 2019.

Stock and exploitation status

Table 1 Cuckoo ray in Division 8.c. State of the stock and the fishery relative to reference points.

Table 1. Factors that influence the state of the stock and the fishery relative to reference points.										
		Fishing pressure				Stock size				
		2017	2018	2019		2017	2018	2019		
Maximum sustainable yield	F_{MSY}	?	?	?	Unknown	$MSY B_{trigger}$?	?	?	Undefined
Precautionary approach	F_{pa}, F_{lim}	?	?	?	Unknown	B_{pa}, B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	—	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	↗	↘	→	Stable

Catch scenarios

The status of the stock size and fishing pressure relative to reference points is unknown. The precautionary buffer was last applied in 2018 and thus not applied in 2020.

Discard data are available. The discard rate is 26% of the catch, but discard survival is unquantified for this stock.

Table 2 Cuckoo ray in division 8c. The basis for the catch scenarios *.

Index A (2018–2019)		0.62
Index B (2013–2017)		0.49
Index ratio (A/B)		1.26
Uncertainty cap	Applied	1.2
Advised landings for 2020–2019 (issued in 2018)		26 tonnes
Discard rate (average estimated 2015–2019)		0.26
Precautionary buffer	Not applied	-
Catch advice **		42 tonnes
Projected landings corresponding to advice ***		31 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.

** $[\text{Landings advice for 2019–2020}] \times [\text{uncertainty cap} / (1 - \text{discard rate})]$ – where previous advice was for landings.

*** $[\text{Advised catch for 2021 and 2022}] \times [1 - \text{discard rate}]$.

^ Advised landings value for 2021 and 2022 relative to the advised landings value for 2019 and 2020.

Where previous advice was for landings, this year's advice is for catches. The projected landings corresponding to the catch advice are 20% higher than in last year's advice due to the increase in the biomass index.

History of the advice, catch, and management

Table 3 Cuckoo ray in Division 8.c. History of ICES advice and ICES estimates of landings and discards *. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Predicted landings corresponding to advice	ICES landings	ICES discards
2011	No specific advice			24	
2012	No specific advice			26	
2013	No TAC, species-specific measures needed, catch could increase by maximum 6%		-	33	
2014	No new advice, same as 2013		-	29	
2015	Catch could increase by maximum 1%		347 **	25	11
2016	No new advice, same as 2015		347 **	23	11
2017	Precautionary approach		27 ***	15	3
2018	Precautionary approach (same value as advised catches for 2017)		27 ***	23	5
2019	Precautionary approach		≤ 26	13	8
2020	Precautionary approach		≤ 26		
2021	Precautionary approach	≤ 42	≤ 31		
2022	Precautionary approach	≤ 42	≤ 31		

* There is no specific TAC for this stock. Fishing opportunities are managed through an overall TAC by management unit, which includes all species of skates and rays.

** This advice was based on misallocated landings data.

*** This advice was based on revised landings data.

Summary of the assessment

Table 4 Cuckoo ray in Division 8.c. Biomass index (kg hour⁻¹) from the North Spanish trawl survey (SP-NGFS-WIBTS-Q4). All weights are in tonnes.

Year	Biomass index	Upper 95% CI	Lower 95% CI	Total catch	Discards
1990	0.31	0.53	0.09		
1991	0.05	0.15	0.00		
1992	0.34	0.49	0.19		
1993	0.06	0.15	0.00		
1994	0.26	0.55	0.00		
1995	0.19	0.44	0.00		
1996	0.46	0.91	0.01		
1997	0.20	0.39	0.00		
1998	0.24	0.40	0.08		
1999	0.37	0.67	0.07		
2000	0.59	1.07	0.11		
2001	0.65	1.21	0.09		
2002	0.36	0.61	0.12		
2003	0.20	0.32	0.08		
2004	0.36	0.63	0.08		
2005	0.58	1.05	0.12		
2006	0.31	0.52	0.10		
2007	0.43	0.75	0.10		
2008	0.20	0.36	0.05		
2009	0.40	0.61	0.19	18	
2010	0.36	0.62	0.11	34	
2011	0.48	0.76	0.19	24	
2012	0.19	0.37	0.02	27	
2013	0.64	1.08	0.20	33	
2014	0.40	0.64	0.17	29	
2015	0.31	0.56	0.05	36	11
2016	0.44	0.71	0.18	34	11
2017	0.67	1.10	0.24	18	3
2018	0.62	1.15	0.08	28	5
2019	0.63	1.10	0.16	21	8

Sources and references

ICES. 2020. Working Group on Elasmobranch Fishes (WGEF). ICES Scientific Reports, 2:77. <http://doi.org/10.17895/ices.pub.7470>.

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Cuckoo ray (*Leucoraja naevus*) in Division 8.c (Cantabrian Sea)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, landings should be no more than 26 tonnes in each of the years 2019 and 2020. ICES cannot quantify the corresponding catches.

Stock development over time

The stock size indicator has been fluctuating along the time-series with an average of 0.5 kg haul⁻¹. The stock size indicator has fluctuated without trend since 2000.

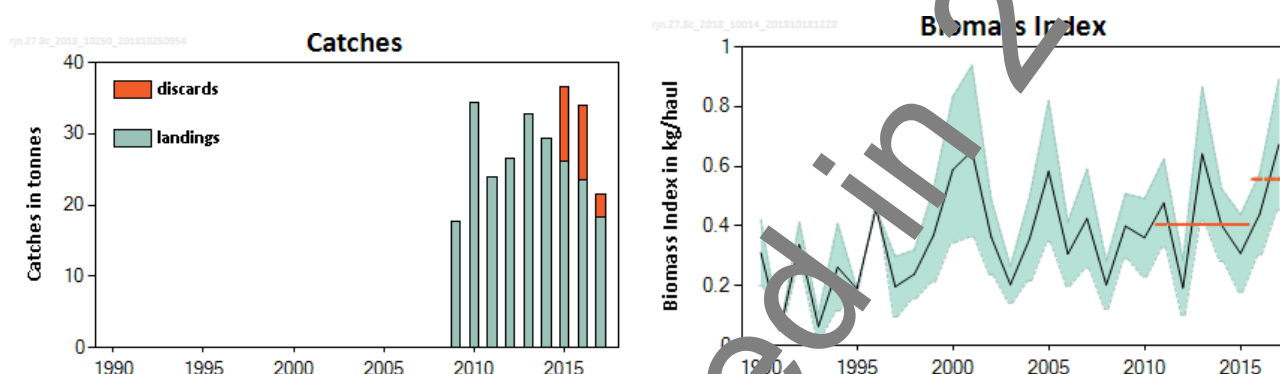





Figure 1 Cuckoo ray in Division 8.c. ICES estimated landings (in tonnes). Left: Estimated landings (all fleets: 2009–2017) and discards (Spanish fleet: 2015–2017) from Division 8.c. Right: Biomass index from the Spanish demersal trawl survey (SpGFS-WIBTS-Q4). Shaded area for the biomass index indicates the mean ± 1 standard error. The dotted horizontal lines indicate the average biomass indicator of the respective year range (last two and preceding five years) used to calculate the advice.

Stock and exploitation status

ICES cannot assess the stock and exploitation status relative to the maximum sustainable yield (MSY) and precautionary approach (PA) reference points because the reference points are undefined.

Table 1 Cuckoo ray in Division 8.c. State of the stock and fishery relative to reference points.

Cuckoo ray in Division 03: State of the stock and fishery relative to reference points.										
		Fishing pressure				Stock size				
		2015	2016	2017		2015	2016	2017		
Maximum sustainable yield	F_{MSY}	?	?	?	Unknown	$MSY B_{trigger}$?	?	?	Undefined
Precautionary approach	F_{pa}/F_{lim}	?	?	?	Unknown	B_{pa}/B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	—	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-				Increasing

Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The Spanish survey SpGFS-WIBTS-Q4 was used as the index of stock size. 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 recent advised landings.

The index is estimated to have increased by more than 20% and thus the uncertainty cap was applied. The precautionary buffer has not previously been applied. Because there is no information on stock size or fishing pressure, the precautionary buffer was applied in 2018.

Discarding is known to take place, but ICES cannot quantify the corresponding dead catch.

Table 2 Cuckoo ray in division 8c. The basis for the catch scenarios*.

Index A (2016–2017)		1.55
Index B (2011–2015)		1.13
Index ratio (A/B)		1.37
Uncertainty cap	Applied	1.2
Advised landings for 2017–2018 (issued in 2016)		27 t
Discard rate		Unknown
Precautionary buffer	Applied	0.8
Landings advice **		26 t
% Advice change ***		–4%

* 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 2017–2018] × [uncertainty cap] × [precautionary buffer]

*** Advice value for 2019 and 2020 relative to the advice value for 2018.

The landings advised for 2019 and 2020 are lower than those advised for 2016 and 2017 because the precautionary buffer was applied.

Basis of the advice

Table 3 Cuckoo ray in Division 8.c. 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

Only one survey, the north Spanish trawl survey (SpGFS-WIBTS-Q4), covering the whole stock area off Galicia and in the Cantabrian Sea, operates in the main depth range (70–500 m) of this species.

Following intercalibration work, survey estimates for 2013, which were excluded in the 2016 assessment and advice, are included in the present assessment.

The quality of landings data was improved in recent years, especially following the WKSHARK2 workshop, leading to general revisions in elasmobranch landings data for the period 2009–2015 (ICES, 2016a). For the present stock, this has resulted in a large revision of the landings data. Although some misidentification at the species level is possible, it is unlikely to occur in significant amounts for this well-known, commercial species.

Issues relevant for the advice

This species is a bycatch in demersal fisheries, especially for offshore trawl and gillnet fisheries targeting gadoids, hake, anglerfish, and megrim. As one of the smaller and less valuable species in the skate complex, it is not targeted. Discarding levels vary, depending on market value.

Estimates of quantities of discards are available for the Spanish fleet, the main fleet operating in this division, for the period 2015–2017.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 4 Cuckoo ray in Division 8.c. The basis of the assessment.

ICES stock data category	3 (ICES, 2016b).
Assessment type	Survey-based trends (ICES, 2018).
Input data	Survey: SpGFS-WIBTS-Q4.
Discards and bycatch	Discards have been estimated for the main fleet.
Indicators	None.
Other information	None.
Working group	Working Group on Elasmobranch Fishes (WGEF)

Information from stakeholders

No additional information is available.

History of the advice, catch, and management

Table 5 Cuckoo ray in Division 8.c. History of ICES advice and ICES estimates of landings*. All weights are in tonnes.

Year	ICES advice	Landings corresp. to advice	ICES species-specific landings: minimum estimate based on reported landings **
2011	No specific advice		24
2012	No specific advice		26
2013	No TAC, species-specific measures needed, catch could increase by maximum 6%	-	33
2014	No new advice, same as 2013	-	29
2015	Catch could increase by maximum 2%	347***	26
2016	No new advice, same as 2015	347***	23
2017	Precautionary approach	27^	18
2018	Precautionary approach (same value as advised catches for 2017)	27^	
2019	Precautionary approach	≤ 26	
2020	Precautionary approach	≤ 26	

* There is no specific TAC for this stock. Fishing opportunities are managed through an overall TAC by management unit, which includes all species of skates and rays.

** Data revised in 2018.

*** This advice was based on misallocated landings data.

^ This advice was based on revised landings data.

History of the catch and landings

The distribution of this stock does not extend into the NEAFC regulatory area.

Table 6 Cuckoo ray in Division 8.c. Catch distribution by fleet in 2017 as estimated by ICES. Official discards for the Spanish fleet, French discards are unknown.

Catch (2017)	Landings			Discards
22 tonnes	demersal trawl	gillnet	hooks and lines	2 tonnes (partial)
	84%	13%	3%	
	18 tonnes			

Table 7 Cuckoo ray in Division 8.c. Historical landings. ICES estimates of landings by country in tonnes. Spanish landings in the table are rounded. Calculations were done with unrounded inputs and the total landings values do not match exactly.

Year	Spain	France	Total
2009	18	0.2	18
2010	34	0.0	35
2011	24	0.3	24
2012	26	0.4	27
2013	33	0.1	33
2014	27	2.3	29
2015	26	0.0	26
2016	23	0.2	24
2017	18	0.0	18

Summary of the assessment

Table 8 Cuckoo ray in Division 8.c. Normalized indices of biomass from trawl survey (SP-GFS-WIBTS-Q4, kg haul⁻¹).

Year	Biomass index	High	Low	Total catch	Discards
	kg haul ⁻¹			tonnes	
1990	0.31	0.42	0.2		
1991	0.05	0.05	0.05		
1992	0.34	0.41	0.26		
1993	0.06	0.11	0.02		
1994	0.26	0.41	0.12		
1995	0.19	0.19	0.19		
1996	0.46	0.46	0.46		
1997	0.4	0.3	0.1		
1998	0.24	0.32	0.16		
1999	0.37	0.53	0.21		
2000	0.59	0.83	0.34		
2001	0.6	0.94	0.36		
2002	0.6	0.49	0.24		
2003	0.2	0.27	0.14		
2004	0.36	0.5	0.22		
2005	0.58	0.82	0.35		
2006	0.31	0.41	0.2		
2007	0.43	0.59	0.26		
2008	0.2	0.28	0.12		
2009	0.4	0.51	0.29	18	
2010	0.36	0.49	0.23	34	
2011	0.48	0.62	0.33	24	
2012	0.19	0.28	0.1	27	
2013	0.64	0.87	0.42	33	
2014	0.4	0.53	0.28	29	
2015	0.31	0.44	0.18	37	11
2016	0.44	0.58	0.31	34	11
2017	0.67	0.89	0.45	22	3

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.

ICES. 2016a. Report of the Workshop to compile and refine catch and landings of elasmobranchs (VKSF-APK2), 19–22 January 2016, Lisbon, Portugal. ICES CM 2016/ACOM:40. 69 pp.

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

ICES. 2018. Report of the Working Group on Elasmobranch Fishes (WGEF), 19–28 June 2018 – Lisbon, Portugal. ICES CM 2018/ACOM:16. 1306 pp.

Advice provided in 2018