

Cuckoo ray (*Leucoraja naevus*) in Division 9.a (Atlantic Iberian waters)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches should be no more than 120 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 84 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

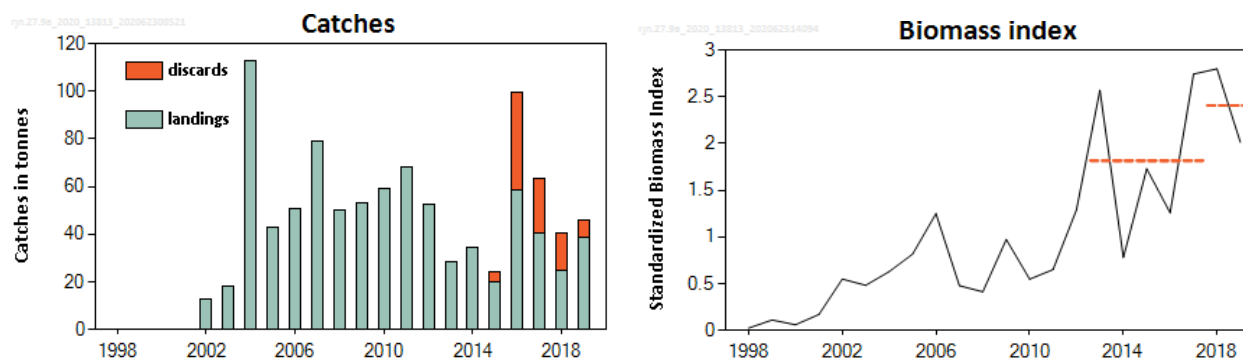


Figure 1 Cuckoo ray in Division 9.a. Left: ICES landings estimates (all fleets: 2002–2019) and discards (Spanish fleet: 2015–2019). Right: The stock-size indicator (solid line) is the combined biomass survey index (normalized) from the two Spanish groundfish surveys in the Gulf of Cadiz (SpGFS-GC-WIBTS-Q1, SpGFS-GC-WIBTS-Q4). Horizontal lines indicate the mean stock-size indicator values for 2013–2017 and 2018–2019.

Stock and exploitation status

Table 1 Cuckoo ray in Division 9.a. 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}	?	?	?	MSY $B_{trigger}$?	?
Precautionary approach	$F_{pa} F_{lim}$?	?	?	$B_{pa} B_{lim}$?	?
Management plan	F_{MGT}	—	—	—	B_{MGT}	—	—
Qualitative evaluation	—	?	?	?	—	↗	↘
				Unknown			Decreasing

Catch scenarios

The precautionary buffer was last applied in 2014. The status of the stock size and fishing pressure relative to reference points is unknown. However, because of a long-term increase in the stock-size indicator since 1998 and a significant decrease in the fishing effort over the last ten years, the precautionary buffer was not applied in 2020.

Discard data are available. The discard rate is 30% of the catch; however, discard survival is unquantified for this stock.

Table 2 Cuckoo ray in Division 9.a. The basis for the catch scenarios *.

Index A (2018–2019)		2.4
Index B (2013–2017)		1.82
Index ratio (A/B)		1.32
Uncertainty cap	Applied	1.2
Advised landings for 2019–2020 (issued in 2018)		70 tonnes
Discard rate (average estimated for 2015–2019)		0.3
Precautionary buffer	Not applied	-
Catch advice **		120 tonnes
Projected landings corresponding to advice ***		84 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.

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

^ Advice landings value for 2021 and 2022 relative to the advice landings value for 2019 and 2020.

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

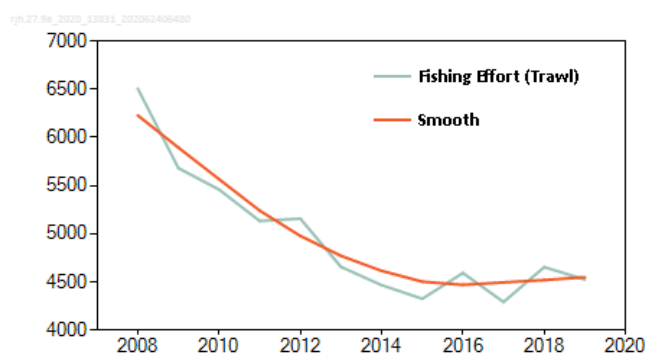


Figure 2 Cuckoo ray in Division 9.a. Fishing effort (number of trips) from the Portuguese trawl fleet for all skate and ray species in the period 2008–2019. The red line is the smoothed effort.

History of the advice, catch, and management

Table 3 Cuckoo ray in Division 9.a. 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			68	
2012	No specific advice			53	
2013	No TAC, species-specific measures needed, catch to decrease by at least 20%		-	29	
2014	No new advice, same as 2013		-	34	
2015	4% decrease from the last 3 years' average		46	20	4
2016	No new advice, same as 2015		46	59	41
2017	Precautionary approach		≤ 58	41	22
2018	Precautionary approach (same value as advised catches for 2017)		≤ 58	25	16
2019	Precautionary approach		≤ 70	38	7
2020	Precautionary approach		≤ 70		
2021	Precautionary approach	≤ 120	≤ 84		
2022	Precautionary approach	≤ 120	≤ 84		

* 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.

Summary of the assessment

Table 4 Cuckoo ray in Division 9.a. Assessment summary. The stock-size indicator is the mean normalized biomass index (kg haul⁻¹) from the two Spanish groundfish surveys in the Gulf of Cadiz (SpGFS-GC-WIBTS-Q1 and SpGFS-GC-WIBTS-Q4). All weights are in tonnes.

Year	Biomass index	Landings	Discards
1998	0.03		
1999	0.11		
2000	0.06		
2001	0.17		
2002	0.55	13	
2003	0.48	18	
2004	0.63	113	
2005	0.82	43	
2006	1.25	51	
2007	0.48	79	
2008	0.41	50	
2009	0.97	53	
2010	0.55	59	
2011	0.65	68	
2012	1.29	53	
2013	2.6	29	
2014	0.78	34	
2015	1.73	20	4
2016	1.26	59	41
2017	2.7	41	22
2018	2.8	25	16
2019	2.0	38	7

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 9.a (Atlantic Iberian waters)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, landings should be no more than 70 tonnes in each of the years 2019 and 2020. ICES cannot quantify the corresponding catches.

Stock development over time

The stock size indicator has increased over the time-series.

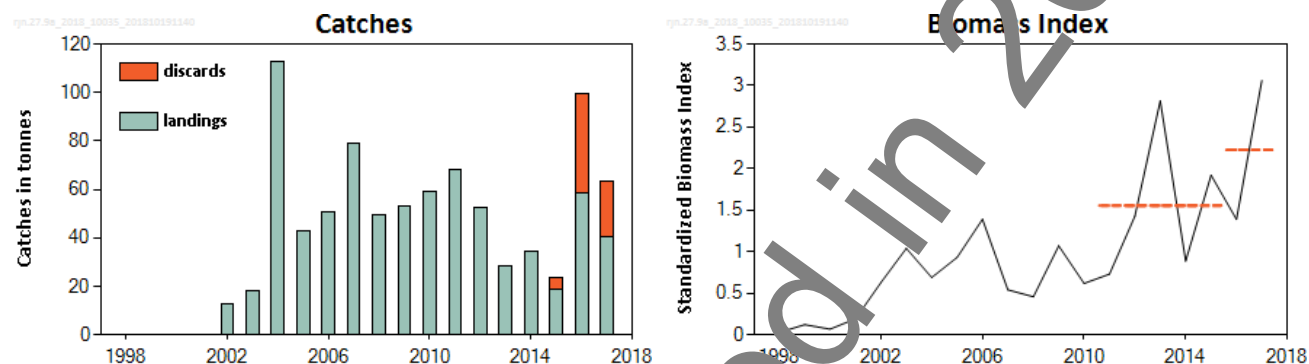





Figure 1 Cuckoo ray in Division 9.a. ICES estimated landings (in tonnes). Left: ICES landings estimates (all fleets: 2002–2017) and discards (Spanish fleet: 2015–2017). Right: Stock size indicator (solid line) is the combined biomass survey index (normalized) from the two Spanish groundfish surveys in the Gulf of Cadiz (SpGFS-GC-WIBTS-Q1, SpGFS-GC-WIBTS-Q4). 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 9.a. Status 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}	?	?	?	Unknown	B_{pa}, B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	—	Not applicable
Qualitative evaluation		?	?	?	Unknown	-				Increasing

Catch scenario

The ICES framework for category 3 stocks was applied (ICES, 2012). The average of the two Spanish surveys of the Gulf of Cadiz (SpGFS-GC-WIBTS-Q1 and 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 was last applied in 2014. Given the general increase in stock size indicator over the time-series, the precautionary buffer was not applied in 2018.

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

Table 2 Cuckoo ray in division 9a. The basis for the catch scenarios*.

Index A (2016–2017)		2.23
Index B (2011–2015)		1.56
Index ratio (A/B)		1.43
Uncertainty cap	Applied	1.2
Advised landings for 2017–2018 (issued in 2016)		58 t
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice **		70 t
% 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 2017–2018] × [uncertainty cap].

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

The landings advised for 2019 and 2020 are higher than those advised for 2017 and 2018 because the biomass index has increased.

Basis of the advice

Table 3 Cuckoo ray in Division 9.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

The quality of landings data has improved in recent years, following a Portuguese Pilot Study on Skates (2010–2013) (ICES, 2018) and the WKSHARK2 workshop, where ICES revised elasmobranch landings data for the period 2005–2015 (ICES, 2016a).

The assessment is based on the biomass index obtained from the two Spanish trawl surveys (Sp-GFS-GC-WIBTS-Q1 and Q4) carried out in the Gulf of Cadiz (Division 9.a south) in spring and autumn. These surveys cover a small portion of the stock area and there is less information for the stock trends further north (ICES, 2018). Following on from intercalibration work, survey estimates for 2013, which were excluded in the 2016 assessment and advice, have been included in the present assessment.

The time-series from the Portuguese crustacean survey (Pt-CTS (FU 28-29)) and the Portuguese groundfish survey (PtGFS-WIBTS-Q4) are not suitable to estimate biomass trends of this stock, because of the low and variable catch rates.

Estimates of quantities of discards are only available for the Spanish fleet for the period 2015–2017. The number of samples to estimate discards for the Portuguese fleet were insufficient to quantify discards.

Issues relevant for the advice

This is a common offshore species of varying commercial value. This species is usually taken as a bycatch by Portuguese and Spanish polyvalent and trawl fleets targeting hake and crustaceans.

On 22 August 2014 the Portuguese government adopted a national legislation (Portaria no. 170/2014) that established a minimum landing size of 520 mm (total length) for specimens of the genus *Leucoraja* or *Raja*, covering all of the continental Portuguese EEZ.

The national legislation adopted on 29 December 2011 (Portaria no. 315/2011) was updated by the Portuguese government on 21 March 2016 (Portaria no. 47/2016). The new legislation prohibits, throughout the whole of the continental Portuguese EEZ, the catch, retention on board, and landing of any skate species belonging to Rajiformes during the months of May and June. For each fishing trip during these two months it is allowed to retain on board and to land a maximum of 5% bycatch, in weight, of the Rajiformes species.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 4 Cuckoo ray in Division 9a. The basis of the assessment.

ICES stock data category	3 (ICES, 2016b).
Assessment type	Survey-based trends (ICES, 2018).
Input data	Survey indices: SpGFS-GC-WIBTS-Q1 and SpGFS-GC-WIBTS-Q4.
Discards and bycatch	Discards have only been estimated for the Spanish fleet since 2015.
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 9a. 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		68
2012	No specific advice		53
2013	No TAC, species-specific measures needed, catch to decrease by at least 20%	-	29
2014	No new advice, same as 2013	-	35
2015	4% decrease from the last 3 years' average	46	19
2016	No new advice, same as 2015	46	59
2017	Precautionary approach	≤ 58	41
2018	Precautionary approach (same value as advised catches for 2017)	≤ 58	
2019	Precautionary approach	≤ 70	
2020	Precautionary approach	≤ 70	

* 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.

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 9.a. Catch distribution by fleet in 2017 as estimated by ICES. Portuguese official landings are not discriminated at the métier level; all polyvalent landings are assigned to "unspecified gears" (ICES, 2016a). Discard data are available only for the Spanish fleet.

Discard data are available only for the Spanish fleet.					
Catch (2017)	Landings				Discards
63 tonnes	Trawl	Longlines	Nets	Unspecified gears	22 tonnes (partial)
	42%	< 1%	1%	56%	
	41 tonnes				

Table 7 Cuckoo ray in Division 9.a. ICES estimates of landings by country (in tonnes) and available discards. Data revised in 2016 (ICES, 2016a). Species-specific landings data are only presented for Portugal between 2002 and 2008, because in this period Spanish species-specific landings were not available.

Year	Spain	Portugal	Discards	Total Catch
2002	-	13		13
2003	-	18		18
2004	-	113		113
2005	-	43		43
2006	-	51		51
2007	-	79		79
2008	-	50		50
2009	3	50		53
2010	4	55		59
2011	12	56		68
2012	13	39		53
2013	2	27		29
2014	0	35		35
2015	0	19	4	23
2016	1	57	41	99
2017	2	39	22	63

Summary of the assessment

Table 8 Cuckoo ray in Division 9.a. Assessment summary. Stock size indicator is the mean normalized biomass index (kg haul^{-1}) from the two Spanish groundfish surveys (SpGFS-GC-WIBTS-Q1 and SpGFS-GC-WIBTS-Q4).

Year	Biomass index
1998	0.03
1999	0.12
2000	0.07
2001	0.19
2002	0.63
2003	1.04
2004	0.69
2005	0.93
2006	1.39
2007	0.54
2008	0.46
2009	1.07
2010	0.62
2011	0.73
2012	1.43
2013	2.82
2014	0.89
2015	1.92
2016	1.39
2017	3.06

Sources and references

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