

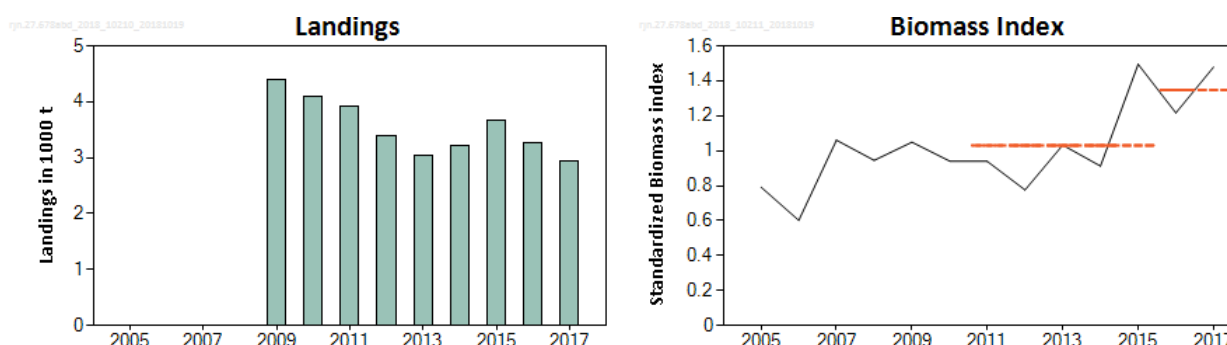
## Cuckoo ray (*Leucoraja naevus*) in subareas 6 and 7 and divisions 8.a–b and 8.d (West of Scotland, southern Celtic Seas, and western English Channel, Bay of Biscay)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, landings should be no more than 3281 tonnes in each of the years 2019 and 2020. ICES cannot quantify the corresponding catches.

### Stock development over time

The stock size indicator, based on two surveys, has increased and is at its highest level in the last few years.



**Figure 1** Cuckoo ray in subareas 6 and 7 and divisions 8.a–b and 8.d. Left: ICES landings for the period 2009–2017. Right: combined swept area biomass indices from the IGFS-WIBTS-Q4 and EVHOE-WIBTS-Q4 surveys. Dashed lines show the mean stock size indicator for 2011–2015 and 2016–2017. 2017 survey data only available for IGFS-WIBTS-Q4.

### 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 subareas 6 and 7 and divisions 8.a–b and 8.d. 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	-	?	?	?	Stable	-	↗	↘	↗	Increasing

## Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The average of the IGFS-WIBTS-Q4 and EVHOE-WIBTS-Q4 surveys biomass estimates 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 stock status relative to candidate reference points is unknown. Given the consistent increase in the 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 subareas 6 and 7 and divisions 8.a–b and 8.d. The basis for the catch scenarios\*.

Index A (2016–2017)		1.348
Index B (2011–2015)		1.031
Index ratio (A/B)		1.307
Uncertainty cap	Applied	1.2
Advised landings for 2017–2018 (issued in 2016)		2734 t
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice **		3281 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 of the increase in the survey index.

## Basis of the advice

**Table 3** Cuckoo ray in subareas 6 and 7 and Divisions 8.a–b and 8.d. 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 assessment is based on a stock indicator derived from a swept-area biomass index from two surveys (IGFS-WIBTS-Q4 [in divisions 6.a and 7.a–k] and EVHOE-WIBTS-Q4 [in divisions 7.g–k, 8.a–b, and 8.d]) that cover extensive shelf areas of the stock range. Catchability of the gears are unknown and currently assumed to be similar. The data were normalized to the long-term mean. EVHOE-WIBTS-Q4 did not take place in 2017, so only IGFS data are used for this particular year.

Since legal obligations were introduced to declare most demersal elasmobranchs to species level, a greater proportion of data are reported to this level. ICES revised estimated landings in 2016 (ICES, 2016a). Stock-specific landings data are not available before 2009.

## Issues relevant for the advice

This is a common offshore species of varying commercial value. This species is a bycatch in demersal fisheries, especially for offshore trawl and gillnet fisheries targeting gadoids, anglerfish, and megrim. As one of the smaller and less valuable species in the skate complex, it is not targeted, but total landings of the complex represent a high monetary value. There can be high levels of discarding of cuckoo rays.

Indices from the Spanish Porcupine Bank survey (SpPGFS-WIBTS-Q4) and the English beam trawl survey (UK(E&W)-BTS-Q3) have not been used in the calculation of the stock size indicator because these surveys cover smaller parts of the stock distribution. Methods to combine these survey data into the assessment should be investigated.

Data from the French on-board observation programme (2007–2015) indicated that cuckoo ray occurs in about 80% of the hauls for twin-rig trawlers targeting demersal fish, with no apparent variation.

In 2017 a minimum landing size of 45 cm (total length) was implemented for Rajiformes in France.

## Reference points

No reference points are defined for this stock.

## Basis of the assessment

**Table 4** Cuckoo ray in subareas 6 and 7 and divisions 8.a–b and 8.d. The basis of the assessment.

ICES stock data category	3 (ICES, 2016b).
Assessment type	Survey-based trends, (ICES, 2018).
Input data	Surveys (EVHOE-WIBTS-Q4, and IGFS-WIBTS-Q4).
Discards and bycatch	Discarding is known to take place but has not been fully quantified.
Indicators	None.
Other information	The French on-board observation programme, and surveys SpPGFS-WIBTS-Q4 and UK(E&W)-BTS-Q3.
Working group	Working Group on Elasmobranch Fishes (WGEF).

## Information from stakeholders

It is considered that reductions in TAC have reduced landings of cuckoo ray. In addition, national or local management measures (e.g. individual quota, trip limits, and minimum size restrictions) have also constrained landings of the species.

## History of the advice, catch, and management

**Table 5** Cuckoo ray in subareas 6 and 7 and divisions 8.a–b and 8.d. 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**
2009	No specific advice		4408
2010	No specific advice		4096
2011	No specific advice		3916
2012	No specific advice		3388
2013	Decrease catch by at least 36%	-	3029
2014	No new advice, same as 2013	-	3209
2015	Decrease landings by 34%	1998	3675
2016	No new advice, same as 2015	1998	3270
2017	Precautionary approach	≤ 2734	2929
2018	Precautionary approach (same value as advised catches for 2017)	≤ 2734	
2019	Precautionary approach	≤ 3281	
2020	Precautionary approach	≤ 3281	

\*There is no a specific TAC for this stock. Fishing opportunities are managed through an overall TAC across each of the two management units (Subarea 6 and divisions 7.a–c and 7.e–k; and subareas 8–9), which includes all species of skates and rays.

\*\* Data revised in 2018.

## History of the catch and landings

This stock is distributed primarily in EU waters, and while catches from the NEAFC regulatory area are not quantified, they are assumed negligible.

**Table 6** Cuckoo ray in subareas 6 and 7 and divisions 8.a–b and 8.d. Catch distribution by fleet in 2017 as estimated by ICES.

Catch (2017)	Landings			Discards
	trawl	beam trawl	nets	
Unknown	91%	4%	5%	Unquantified
	2929 tonnes			

**Table 7** Cuckoo ray in subareas 6 and 7 and divisions 8.a–b and 8.d. ICES estimates of landings by country (in tonnes). Data revised in 2016 (ICES, 2016a) and 2018 (ICES, 2018).

Year	Belgium	Spain	UK	Ireland	Netherlands	France	Total
2009	81	778	321	12		3217	4408
2010	70	480	421	55	0.0	3070	4096
2011	112	387	402	106		2910	3916
2012	93	311	306	108		2571	3388
2013	97	374	269	93	0.1	2195	3029
2014	48	300	262	83	0.1	2515	3209
2015	51	659	266	79		2621	3675
2016	27	688	254	69		2233	3270
2017	26	433	259	69	0.1	2142	2929

## Summary of the assessment

**Table 8** Cuckoo ray in subareas 6–7 and divisions 8.a–b and 8.d. Time-series of normalized IGFS-WIBTS-Q4 and EVHOE-WIBTS-Q4 survey indices (biomass), and annual mean index based on the two surveys.

Year	IGFS	EVHOE	Biomass index
2005	0.923	0.661	0.792
2006	0.635	0.568	0.602
2007	1.017	1.105	1.061
2008	0.741	1.148	0.945
2009	1.387	0.711	1.049
2010	1.062	0.820	0.941
2011	0.719	1.159	0.939
2012	0.708	0.843	0.776
2013	0.861	1.204	1.032
2014	0.877	0.948	0.913
2015	1.119	1.871	1.495
2016	1.472	0.961	1.217
2017	1.479		1.479

## 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.

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