

## Undulate ray (*Raja undulata*) in divisions 8.a–b (northern and central Bay of Biscay)

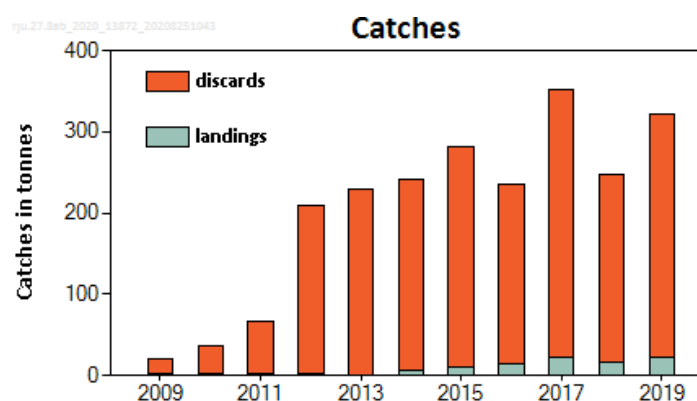
### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches should be no more than 202 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 13 tonnes.

ICES advises that the restriction in the amount of landings indicated above is due to the assumed high survival of discards and that landing a higher share of the catches would result in an increase in fishing mortality for the stock. ICES is not in a position to evaluate if such an increase in fishing mortality is sustainable.

*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** Undulate ray in divisions 8.a–b. ICES estimated landings and discards (in tonnes).

### Stock and exploitation status

**Table 1** Undulate ray in divisions 8.a–b. State of the stock and the fishery relative to reference points.

Table 1. Evaluate Fy in divisions a-d. b. 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 <sub>MSY</sub>	?	?	?	Unknown	MSY B <sub>trigger</sub>	?	?	?	Unknown
Precautionary approach	F <sub>pa</sub> , F <sub>lim</sub>	?	?	?	Unknown	B <sub>pa</sub> , B <sub>lim</sub>	?	?	?	Unknown
Management plan	F <sub>MGT</sub>	—	—	—	Not applicable	B <sub>MGT</sub>	—	—	—	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	?	?	?	Unknown

### 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.

The discard rate has been estimated at 94%, with discard survival estimates of 49% for some fleets; however, ICES cannot fully quantify the corresponding dead catch.

**Table 2** Undulate ray in divisions 8.a–b. Basis for the catch scenarios \*.

Advised catches for 2019–2020, issued in 2018	202 tonnes	
Discard rate (averaged for 2015–2019)	0.94	
Precautionary buffer	Not applied	-
Catch advice **	202 tonnes	
Landings corresponding to the catch advice ***	13 tonnes	
% advice change ^	0%	

\* 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 catches for 2019–2020.

\*\*\* [Advised catches for 2019–2020] × [1–discard rate].

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

## History of the advice, catch, and management

**Table 3** Undulate ray in divisions 8.a–b. History of ICES advice and ICES estimates of landings \* and discards \*\*. All weights are in tonnes.

Year	ICES advice	Catch corresp. to advice	Predicted landings corresp. to advice	TAC for Subarea 8	ICES discards **	ICES landings *
2011	No specific advice				65	2
2012	No specific advice				206	3
2013	No specific advice		-		229	0
2014	No specific advice		-		235	7
2015	No targeted fisheries. Any possible provision for bycatch to be landed should be part of a management plan		-		270	11
2016	No new advice, same as 2015		-	25	221	14
2017	Precautionary approach		-	30	330	22
2018	Precautionary approach	≤ 202^	≤ 13 ^	30	230	17
2019	Precautionary approach	≤ 202	≤ 13	33	299	23
2020	Precautionary approach	≤ 202	≤ 13	33		
2021	Precautionary approach	≤ 202	≤ 13			
2022	Precautionary approach	≤ 202	≤ 13			

\* Fishing opportunities are managed through an overall TAC by management unit, which includes all species of skates and rays. Since 2016, there has been a specified TAC for this species in Subarea 8.

\*\* Discards for this stock have been estimated for the first time in 2018.

^ This is the updated advice for 2018. The original advice did not contain advice on fishing opportunities (ICES, 2016).

## Summary of the assessment

There is no assessment for this stock in this area.

## Sources and references

ICES. 2016. Undulate ray (*Raja undulata*) in divisions 8.a–b (northern and central Bay of Biscay). In Report of ICES Advisory Committee, 2016. ICES Advice 2016, Book 7, Section 7.3.20. 4 pp.

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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## Undulate ray (*Raja undulata*) in divisions 8.a–b (northern and central Bay of Biscay)

### ICES advice on fishing opportunities

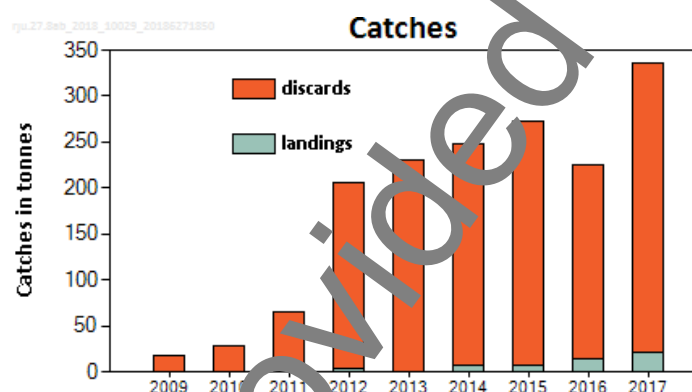
**Please note: The present advice replaces the advice given for 2018 (in October 2016) and it provides the advice for 2019 and 2020<sup>1</sup>.**

ICES advises that when the precautionary approach is applied, catches should be no more than 202 tonnes in each of the years 2018, 2019, and 2020 of which no more than 13 tonnes should be landed.

ICES advises that the restriction in the amount of landings indicated above is due to the assumed high survival of discards and that landing a higher share of the catches would result in an increase in the fishing mortality for the stock. ICES is not in a position to evaluate if such an increase in fishing mortality is sustainable.

### Stock development over time

From 2009 management regulations have included this stock on the EU prohibited species list. Limited fishing opportunities started in March 2015. There is no stock size indicator.



**Figure 1** Undulate ray in divisions 8.a–b. ICES estimated landings and discards (in tonnes).

### Stock and exploitation status

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

**Table 1** Undulate ray in divisions 8.a–b. 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	$MSY B_{trigger}$	?	?	?
Precautionary approach	$F_{pa}, F_{lim}$	?	?	?	Unknown	$B_{pa}, B_{lim}$	?	?	?
Management plan	$F_{MGT}$	—	—	—	Not applicable	$B_{MGT}$	—	—	—
Qualitative evaluation	-	?	?	?	Unknown	-	?	?	?

<sup>1</sup> In April 2018, France requested that ICES provide updated advice for this stock for 2018 in light of new information on landings and discards.

## Catch scenarios

The ICES framework for category 6 stocks was applied (ICES, 2012). For stocks without information on abundance or exploitation, ICES considers that a precautionary reduction of catches should be implemented unless there is ancillary information clearly indicating that the current level of exploitation is appropriate for the stock. The stock status relative to candidate reference points is unknown; therefore, the precautionary buffer was applied to the advice.

The advice is based on the average catches 2012–2017, a period when estimated catches have been higher and considered more representative of the recent fishery, multiplied by the precautionary buffer.

Discards estimates are available but ICES cannot quantify the corresponding dead catch because discard survival is considered to be high but is not quantified specifically for this stock.

**Table 2** Undulate ray in divisions 8.a–b. Basis for the catch scenarios\*.

Average of Catches (2012–2017)		253 t
Discard rate (as estimated for 2017)		0.94
Precautionary buffer	Applied	0.8
Catch advice **		202
Landings corresponding to the catch advice ***		13
% Advice change ^		na

\* 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 Catches × precautionary buffer).

\*\*\* [(Average Catches × precautionary buffer) × (1- discard rate)].

^ Advice value for 2018–2020 relative to advice landings value for 2017.

In 2016 ICES was not able to provide catch advice for this stock.

## Basis of the advice

**Table 3** Undulate ray in divisions 8.a–b. The basis of the advice.

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

## Quality of the assessment

In 2018, estimates of discards derived from on-board observer programmes were available for the first time. The discards are considered to be adequately estimated although there are some uncertainties due to issues of raising, similar to that for other stocks. This allowed to derive estimates of total catch.

This species has a patchy and coastal distribution, with traditionally limited data on stock status. Data from existing trawl surveys are limited, owing largely to a poor overlap between surveyed areas and the coastal habitat of this species and thus can not be used as a stock size indicator.

Preliminary analyses of the proportion of hauls from commercial trammelnet fisheries operating in French waters in 2007–2015 has indicated that undulate ray have shown a steady increase in their frequency of occurrence (ICES, 2016a), as well as an expansion in spatial distribution.

## Issues relevant for the advice

Following a request from France to provide updated advice based on an examination of new information on landings and discards (ICES, 2018a), the present advice replaces the catch advice given for 2018 in October 2016) and it provides catch advice for 2019 and 2020.

In 2018 EU regulations allow limited exploitation of this stock with a specific TAC of 30 tonnes for all of Subarea 8, which includes both stocks of undulate ray in divisions 8.c and 8.a–b. For the current stock, assuming regulations allowing for a limited bycatch are in place, there should be close monitoring of these catches.

The advice on fishing opportunities that the landings should be no more than 13 tonnes is based on considerations of the survival of discarded rays. Survival of discards is considered to be potentially high (50 to 80%; STECF, 2011) for many species of skates and rays but there are no specific survival estimates for undulate ray that would be applicable to the entire fishery for each of these stocks. In addition, survival can be expected to vary depending on the gear, with handling and environmental conditions among other factors. Discards have been typically high (about 94%) in these stocks because of the restrictive management measures. The high potential survival of discarded rays implies that the total catches are not indicative of the mortality inflicted on the stock because a portion of the discards actually survive. At one extreme, 100% survival would imply that all of the discards survive and that the actual mortality inflicted by the fishery on the stock is only caused by the landings. Conversely with zero survival, the mortality inflicted by the fishery on the stock would be equivalent to the total catches (landings and discards). Therefore, in the absence of a reliable estimate of survival but with information suggesting that the survival can be high, landing all the catches (zero discards) would likely pose an unsustainable increase in the mortality of the stock. In this situation of likely high survival, the precautionary approach advice is to assume that the landings represent the bulk of the fishery mortality and for these landings to be no more than 13 tonnes for divisions 8.a–b. This assumes that all discards survive.

### Reference points

No reference points are defined for this stock

### Basis of the assessment

**Table 4** Undulate ray in divisions 8.a–b. Basis of assessment and advice.

ICES stock data category	6 ( <a href="#">ICES, 2016b</a> )
Assessment type	No assessment (ICES, 2018a)
Input data	Commercial landings and estimates of discards
Discards and bycatch	DCmap on-board observation programme used in the advice
Indicators	None
Other information	None
Working group	Working Group on Baseline and Fishes ( <a href="#">WGEF</a> )

### Information from stakeholders

Fishers have reported that undulate ray can be locally common in some areas, which has been confirmed by on-board observations on commercial fishing vessels. A limited number of French vessels are allowed to land undulate ray, with TAC and landings restrictions, and providing self-sampling data.

## History of the advice, catch, and management

**Table 5** Undulate ray in divisions 8.a–b. History of ICES advice and ICES estimates of landings\* and discards\*\*. All weights are in tonnes.

Year	ICES advice	Predicted landings corresp. to advice	TAC for subarea 8	ICES discards**	ICES landings*
2011	No specific advice			63	2
2012	No specific advice			203	3
2013	No specific advice	-		23	0
2014	No specific advice	-		241	7
2015	No targeted fisheries. Any possible provision for bycatch to be landed should be part of a management plan	-		264	8
2016	No new advice, same as 2015	-	25	11	14
2017	Precautionary approach	-	30	314	22
2018	Precautionary approach	≤ 13 <sup>^</sup>	30		
2019	Precautionary approach	≤ 13			
2020	Precautionary approach	≤ 13			

\* Fishing opportunities are managed through an overall TAC by management unit, which includes all species of skates and rays. Since 2016, there has been a specified TAC for this species in the management unit.

\*\* Discards for this stock have been estimated for the first time in 2018.

<sup>^</sup> This is the updated advice for 2018. The original advice did not contain advice on fishing opportunities (ICES, 2016).

## History of the catch and landings

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

**Table 6** Undulate ray in divisions 8.a and 8.b. Catch distribution by fleet in 2017 as estimated by ICES.

Table 6: Landings and discards of fish in divisions 8.A and 8.B: Catch distribution by gear in 2017 as estimated by ICES.					
Catch (2017)	Landings				Discards
336	Bottom trawls	Hooks and lines	Nets	Other gears	314
	16%	29%	54%	1%	
	22 tonnes				

**Table 7** Undulate ray in divisions 8.a–b. Catch, landings and discards as estimated by ICES (in tonnes). The fishery is entirely conducted by France.

Year	Catch	Landings	Discards
2009	20	3	17
2010	31	2	29
2011	65	2	63
2012	206	3	203
2013	23	0	230
2014	248	7	241
2015	272	8	264
2016	225	14	211
2017	336	22	314

## Summary of the assessment

There is no assessment for this stock in this area.

## 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 Working Group on Elasmobranch Fishes (WGEF), 15–24 June 2016, Lisbon, Portugal. ICES CM 2016/ACOM:20. 684 pp.
- ICES. 2016b. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.
- ICES 2016c. Undulate ray (*Raja undulata*) in divisions 8.a–b (northern and central Bay of Biscay). *In* Report of ICES Advisory Committee 2016. Section 7.3.20.
- ICES 2018a. French request for updated advice on Undulate ray (*Raja undulata*) in divisions 7.d-e and 8.a–b for 2018. 13 July 2018. *In* Report of the ICES Advisory Committee, 2018. ICES Advice 2018, sr.2018.13.
- ICES. 2018b. Report on the French request for updated advice on Undulate ray (*Raja undulata*) in Divisions 7.d-e and 8.a-b. Annex 8 *in* Report of the Working Group on Elasmobranch Fishes, 19-28 June 2018, Lisbon, Portugal. ICES CM 2018/ACOM:16. Available separately in the [ICES library](#).
- STECF. 2015. Scientific, Technical and Economic Committee for Fisheries (STECF). 2015. Possible by-catch provisions for undulate ray in ICES areas VIIde, VIIIab and IX (STECF-15-03). Publications Office of the European Union, Luxembourg, EUR 27154 EN, JRC 95199, 17 pp.