

Undulate ray (*Raja undulata*) in divisions 7.d–e (English Channel)

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 2020¹.

ICES advises that when the precautionary approach is applied, catches should be no more than 2127 tonnes in each of the years 2018, 2019, and 2020 of which no more than 115 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

Restrictive management measures over the time period for which there are species-specific data resulted in discards much higher than the landings. The stock size indicator has increased since 2010 and was near its highest level in 2017.

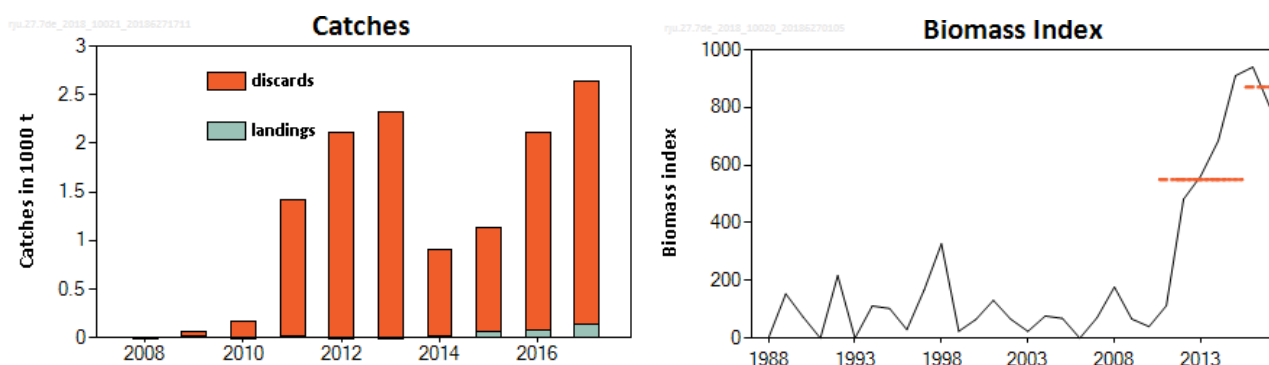


Figure 1 Undulate ray in divisions 7.d–e. Left: ICES estimated landings and discards (in tonnes). Right: Swept area biomass (tonnes) indicator from the CGFS-Q4 survey. The dotted horizontal lines indicate the mean biomass indicators for 2016–2017 and 2011–2015.

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 7.d–e. 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	-	↗	↗	↘	Decreasing

¹ 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 3 stocks was applied (ICES, 2012) using the CGFS-Q4 survey 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 average catches 2011–2017, a period when estimated catches have been higher and considered more representative of the recent fishery.

The stock size indicator is estimated to have increased by more than 20% between 2011–2015 and 2016–2017, and so the uncertainty cap was applied. The index ratio has increased by more than 50% in recent years and therefore the precautionary approach buffer was not applied.

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 7.d–e. Basis for the catch scenarios*.

Index A (2016–2017)		871
Index B (2011–2015)		550
Index ratio (A/B)		1.58
Uncertainty cap	Applied	1.2
Average catches (2011–2017)		1773 t
Discard rate (as estimated for 2017)		0.95
Precautionary buffer	Not applied	-
Catch advice **		2127 t
Landings corresponding to the catch advice ***		115 t
% Advice change^		+77%

* 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 × uncertainty cap).

*** (Average catches × uncertainty cap) × (1 - discard rate)

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

The advised landings are higher than advised for 2017 because the biomass index increased and the advice was calculated using the average catches from 2011–2017.

Basis of the advice

Table 3 Undulate ray in divisions 7.d–e. 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.

The CGFS-Q4 covers a portion of the stock area but it is considered representative for the entire stock. There is no stock size indicator for the 7.e part of the stock. Catch rates in the UK-7d-BTS survey are low and not used as a stock indicator, but this index has shown a recent increase, similar to that seen in the CGFS-Q4 (ICES, 2018a).

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, 2018b), the present advice replaces the catch advice given for 2018 in October 2016) and it provides catch advice for 2019 and 2020.

Undulate ray was designated as a prohibited species by the EU at the same time that the obligation to report species-specific landings data was introduced in 2009. Landing opportunities were only re-introduced from 2015.

Undulate ray has a coastal distribution, can be the predominant skate species in parts of divisions 7.d–e, and is an important species for inshore fleets. Considering the high level of discarding and chance of survival of the individuals, the fishery is encouraged to adopt measures to ensure survival of discards.

The advice on fishing opportunities that the landings should be no more than 115 tonnes is based on considerations of the survival of discarded rays. Survival of discards is considered to be potentially high (50 to 80%; STECF, 2015) 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, handling and environmental conditions among other factors. Discards have been typically high (about 95%) 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 to advise for landings of no more than 115 tonnes for 7.d–e. 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 7.d–e. Basis of assessment and advice.

ICES stock data category	3 (ICES, 2016b)
Assessment type	Survey-based trends (ICES, 2018b)
Input data	Commercial landings and estimates of discards; CGFS-Q4 survey
Discards and bycatch	DCmap on-board observation programmes used in the advice
Indicators	None
Other information	UK-7d-BTS
Working group	Working Group on Elasmobranch Fishes (WGEF)

Information from stakeholders

Fishers have reported that undulate ray can be locally common in some areas (e.g. Normano-Breton Gulf and south coast of England), and this has been confirmed by scientific observations on commercial fishing vessels.

The observed increase in surveys is consistent with the perception of fishers. A limited number of French vessels are allowed to land *R. undulata*, with TAC and landings restrictions, and providing self-sampling data.

History of the advice, catch, and management

Table 5 Undulate ray in divisions 7.d–e. 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 in 7.d	TAC in 7.e	ICES discards**	ICES landings*
2009	No targeted fishery	0			41	21
2010	No new advice, same as 2009	0			157	9
2011	No targeted fishery	0			1390	20
2012	No new advice, same as 2011	0			2099	6
2013	No targeted fishery, minimize bycatch	0			2313	3
2014	No targeted fishery, minimize bycatch	0			891	10
2015	No targeted fishery, management plan for bycatch	0			1070	54
2016	No targeted fishery, management plan for bycatch	0	12	100	1895	84
2017	Precautionary approach	≤ 65	19	161	2434	139
2018	Precautionary approach	≤ 115 ^	19	161		
2019	Precautionary approach	≤ 115				
2020	Precautionary approach	≤ 115				

* Fishing opportunities are managed through a TAC for each part of the stock within the relevant TAC for divisions 7.d–e 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.

^ This is the updated advice for 2018. The original advice value for 2018 was 65 tonnes (ICES, 2016c).

History of the catch and landings

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

Table 6 Undulate ray in divisions 7.d–e. Catch distribution by fleet in 2017 as estimated by ICES.

Catch (2017)	Landings					Discards
	Beam trawl	Bottom trawls	Nets	Lines	Other	
2573 tonnes	21.0%	55.2%	18.5%	1.2%	4.1%	2434 tonnes
	139 tonnes					

Table 7 Undulate ray in divisions 7.d–e History of landings. ICES estimates of landings by country (in tonnes).

Year	Belgium	UK	France	Total
2009		2	19	21
2010			9	9
2011			20	20
2012		0	6	6
2013			3	3
2014			10	10
2015		5	49	54
2016	5	22	58	84
2017	24	36	79	139

Table 8 Undulate ray in divisions 7.d–e History of discards. ICES estimates of discards by country (in tonnes).

Year	Belgium	UK	France	Total discards
2009			41	41
2010			157	157
2011		4	1386	1390
2012		81	2018	2099
2013		96	2217	2313
2014		47	844	891
2015		488	582	1070
2016	1	451	1443	1895
2017	72	1065	1297	2434

Summary of the assessment

Table 9 Undulate ray in divisions 7.d–e Assessment summary. The stock size indicator is the swept area biomass (tonnes) indicator from the CGFS-Q4 survey.

Year	Biomass index (tonnes)
1988	1
1989	154
1990	73
1991	0
1992	217
1993	0
1994	112
1995	103
1996	30
1997	168
1998	327
1999	24
2000	65
2001	131
2002	66
2003	24
2004	77
2005	68
2006	0
2007	71
2008	177
2009	67
2010	40
2011	112
2012	482
2013	563
2014	683
2015	910
2016	940
2017	801

Sources and references

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