

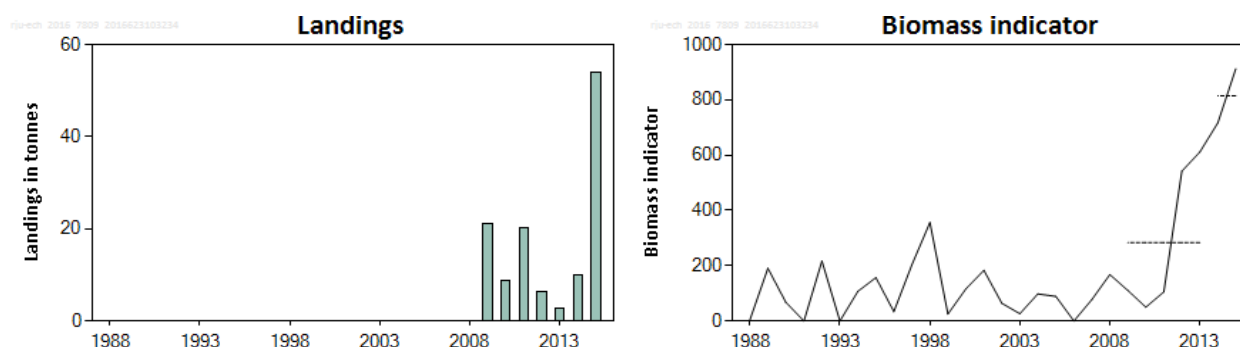
### 5.3.27 Undulate ray (*Raja undulata*) in divisions 7.d and 7.e (English Channel)

#### ICES stock advice

ICES advises that when the precautionary approach is applied, landings should be no more than 65 tonnes in each of the years 2017 and 2018. ICES cannot quantify the corresponding catches.

#### Stock development over time

Restrictive management measures over the time period for which there are species-specific landings data means that reported landings are not informative of either stock dynamics or catch. The stock size indicator has increased since 2009.



**Figure 5.3.27.1** Undulate ray (*Raja undulata*) in divisions 7.d and 7.e (Channel) Left: ICES estimated landings (in tonnes). Right: Swept area biomass (tonnes) indicator from the CGFS-Q4 survey. The dotted horizontal lines indicate the average biomass indicator of the respective year range (last two and preceding three years) used to calculate the advice.

#### Stock and exploitation status

**Table 5.3.27.1** Undulate ray in divisions 7.d and 7.e. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size			
		2013	2014	2015		2013	2014	2015	
Maximum sustainable yield	$F_{MSY}$	?	?	?	Undefined	MSY	?	?	?
Precautionary approach	$F_{pa}$ , $F_{lim}$	?	?	?	Undefined	$B_{trigger}$	?	?	?
Management plan	$F_{MGT}$	-	-	-	Not applicable	$B_{pa}$ , $B_{lim}$	?	?	?
Qualitative evaluation	-	?	?	?	Unknown	$SSB_{MGT}$	-	-	-
									Not applicable
									Increasing

#### Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012), using 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 landings in 2015. The choice of using only 2015 reflects the fact that fishing opportunities only resumed in 2015.

The stock size indicator is estimated to have increased by more than 20% between 2009–2013 and 2014–2015, and so the uncertainty cap was applied. The index ratio has increased by more than 50% in recent years and therefore the precautionary approach (PA) buffer was not applied.

Discarding is known to take place, but ICES cannot quantify the corresponding catch. In addition, discard survival, which is likely to occur, has not been estimated.

**Table 5.3.27.2** Undulate ray in divisions 7.d and 7.e. For stocks in ICES data categories 3–6, one catch option is provided.

Index A (2014 - 2015)		815
Index B (2009 - 2013)		284
Index ratio (A/B)		2.87
Uncertainty cap	Applied	1.2
Recent landings (2015)		54 t
Discard rate		Unknown
Precautionary buffer	Not applied	
Landings advice*		65 t

\* (2015 landings × uncertainty cap).

### Basis of the advice

**Table 5.3.27.3** Undulate ray in divisions 7.d and 7.e. The basis of the advice.

Advice basis	Precautionary approach.
Management plan	There is no management plan for this stock.

### Quality of the assessment

The CGFS-Q4 covers a representative portion of the stock area.

### Issues relevant for the advice

Undulate ray was listed as a prohibited species when the obligation to report species-specific landings data was introduced. Landing opportunities were only re-introduced from 2015.

Catch rates in the UK-7d-BTS survey are low and not used as a stock indicator, but this survey shows a recent increase, similar to that seen in the CGFS-Q4 (ICES, 2016a).

Undulate ray has a coastal distribution, can be the predominant skate species in parts of divisions 7.d and 7.e and is an important species for inshore fleets.

### Reference points

No reference points are defined for this stock.

### Basis of the assessment

**Table 5.3.27.4** Undulate ray in divisions 7.d and 7.e. The basis of the assessment.

ICES stock data category	3 (ICES, 2016b)
Assessment type	Survey-based trends (ICES, 2016a).
Input data	Commercial landings (2015 only); CGFS-Q4 survey
Discards and bycatch	Discarding is known to take place but cannot be quantified.
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.

### History of advice, catch, and management

**Table 5.3.27.5** Undulate ray in divisions 7.d and 7.e. History of ICES advice and ICES estimates of landings\*. All weights are in tonnes.

Year	ICES advice	Predicted landings corresp. to advice	TAC in 7.d	TAC in 7.e	ICES species-specific landings: minimum estimate based on reported landings**
2009	No targeted fishery	0			21.1
2010	No new advice, same as 2009	0			8.7
2011	No targeted fishery	0			20.1
2012	No new advice, same as 2011	0			6.3
2013	No targeted fishery, minimize bycatch	0			2.7
2014	No targeted fishery, minimize bycatch	0			10.1
2015	No targeted fishery, management plan for bycatch	0			54.1
2016	No targeted fishery, management plan for bycatch	0	12	100	
2017	Precautionary approach	≤ 65			
2018	Precautionary approach (same value as advised catches for 2017)	≤ 65			

\*Fishing opportunities are managed through an overall TAC by management unit, which includes all species of skates and rays. Since 2015-2016, there has been a specified TAC for this species in the management unit.

\*\* Data revised in 2016 (ICES, 2016c).

### History of catch and landings

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

**Table 5.3.27.6** Undulate ray in divisions 7.d and 7.e. Catch distribution by fleet in 2015 as estimated by ICES.

Table 2: 2015 discards by divisions A4 and A5: Catch discards and, next in 2015 as estimated by 1020.						
Catch (2015)	Landings					Discards
Unknown	beam trawl	bottom trawls	nets	lines	Other	Discarding is known to take place but cannot be quantified
	2%	74%	11%	11%	2%	
	54 tonnes					

**Table 5.3.27.7** Undulate ray in divisions 7.d and 7.e. History of Landings. ICES estimates of landings by country (in tonnes). Data revised in 2016 (ICES, 2016c).

Year	UK	France	Total
2009	1.7	19.4	21.1
2010		8.7	8.7
2011		20.1	20.1
2012	0.0	6.3	6.3
2013		2.7	2.7
2014		10.1	10.1
2015	5.0	49.1	54.1

## Summary of the assessment

**Table 5.3.27.8** Undulate ray in divisions 7.d and 7.e. Assessment summary. The stock size indicator is the swept area biomass (tonnes) indicator from the CGFS-Q4 survey.

Year	Stock Size Indicator
1988	4.1
1989	190.7
1990	67.6
1991	0.0
1992	216.7
1993	0.0
1994	107.4
1995	156.9
1996	34.0
1997	203.2
1998	356.2
1999	25.2
2000	116.3
2001	183.2
2002	64.3
2003	26.3
2004	98.1
2005	89.0
2006	0.0
2007	77.6
2008	168.1
2009	110.5
2010	50.1
2011	105.2
2012	542.1
2013	611.5
2014	716.7
2015	912.4

## 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.

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