

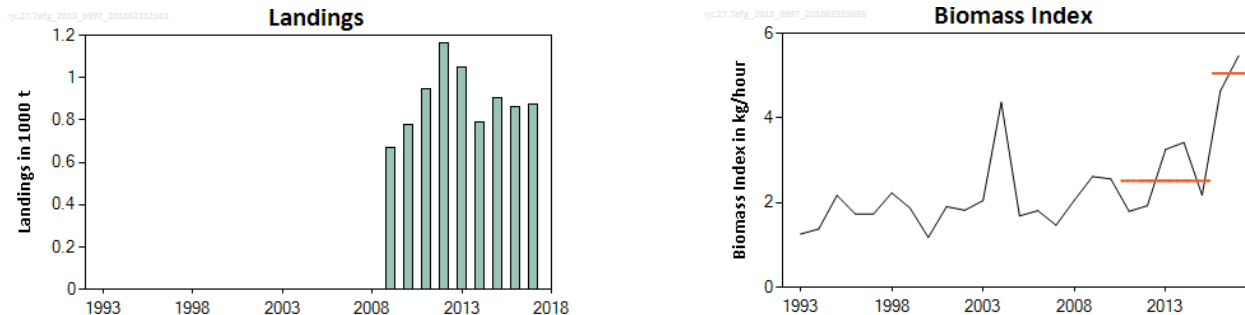
## Thornback ray (*Raja clavata*) in divisions 7.a, 7.f–g (Irish Sea, Bristol Channel, Celtic Sea North)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, landings should be no more than 1663 tonnes in each of the years 2019 and 2020. ICES cannot quantify the corresponding catches.

### Stock development over time

The stock size indicator shows an overall increasing trend since 2007. The current level is the highest observed.



**Figure 1** Thornback ray in divisions 7.a, 7.f–g. ICES estimated landings (in tonnes). Right: UK (E&W)–BTS–Q3 survey index (kg hr<sup>-1</sup>, individuals of ≥50 cm total length). The dotted horizontal lines show the mean stock indicators for 2016–2017 and 2011–2015.

### 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** Thornback ray in divisions 7.a, 7.f–g. 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	–	↘	↗	↗	Increasing

### Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The UK (E&W)–BTS–Q3 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 is applied. For this stock, the biomass index is estimated to have increased by 101% between 2011–2015 (Index B) and 2016–2017 (Index A). The precautionary buffer was never applied for this stock. As there has been an increase in the biomass index of more than 50% in recent years, the precautionary buffer was not applied in 2018.

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

**Table 2** Thornback ray in divisions 7.a, 7.f–g. The basis for the catch scenarios\*.

Index A (2016–2017)		5.05
Index B (2011–2015)		2.51
Index ratio (A/B)		2.01
Uncertainty cap	Applied	1.2
Advised landings for 2017–2018 issued in 2016		1386 t
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice**		1663 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.

\*\* [Advice for 2017–2018] × [uncertainty cap].

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

The advised landings are higher than advised for 2016 and 2017 because the biomass index has increased.

### Basis of the advice

**Table 3** Thornback ray in divisions 7.a, 7.f–g. The basis of the advice.

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

### Quality of the assessment

The survey used in the assessment covers a large proportion of the stock area, but the gear has a low catchability for larger fish (above ~75 cm).

The quality of landings data has improved in recent years, especially following the Workshop to compile and refine catch and landings of elasmobranchs (WKSHARK2) in which ICES revised elasmobranch landings data for the period 2009–2015 (ICES, 2016a). Although some misidentification at the species level is still possible, it is unlikely to occur in significant amounts for this well-known and commercially important species. Stock-specific landings data prior to 2009 are not available.

### Issues relevant for the advice

Thornback ray is a coastal and shelf species that is a bycatch of trawl and gillnet fisheries. It is one of the most commercially important skate species in this ecoregion. It is mainly caught close to the eastern side of the Irish Sea by beam and otter trawlers, and in the Bristol Channel. Other landings come from inshore fisheries on the southern coast of Ireland. As one of the larger species in the skate complex, it is targeted in some local, seasonal fisheries by trawl and nets.

### Reference points

No reference points are defined for this stock.

## Basis of the assessment

**Table 4** Thornback ray in divisions 7.a, 7.f–g. Basis of the assessment and advice.

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

## Information from stakeholders

There is no additional available information.

## History of the advice, catch, and management

**Table 5** Thornback ray in divisions 7.a, 7.f–g. 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		944
2012	No specific advice		1165
2013	No TAC, species-specific measures needed, catch could be increased by up to 20%	-	1048
2014	No new advice, same as 2013		790
2015	increase by up to 20% from last 3 years' average	1235	903
2016	No new advice, same as 2015	1235	861
2017	Precautionary approach	≤ 1386	876
2018	Precautionary approach (same value as advised catches for 2017)	≤ 1386	
2019	Precautionary approach	≤ 1663	
2020	Precautionary approach	≤ 1663	

\* 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** Thornback ray in divisions 7.a, 7.f–g. Catch distribution by fleet in 2017 as estimated by ICES.

Catch (2017)	Landings				Discards
	beam trawl	bottom trawls	fixed nets	other gear	
Unknown	27%	51%	6%	16%	Unquantified
	876 tonnes				

**Table 7** Thornback ray in divisions 7.a, 7.f–g. History of landings. ICES estimates of landings by country (in tonnes). Data revised in 2016 (ICES, 2016a).

Year	Belgium	UK	Ireland	France	Spain	Total landings
2009	216	300	8	147		671
2010	197	371	80	131		780
2011	302	384	126	133		944
2012	441	483	134	106		1165
2013	391	416	146	95		1048
2014	240	252	191	107		790
2015	350	309	169	70	5	903
2016	241	274	220	121	6	861
2017	212	276	232	147	9	876

### Summary of the assessment

**Table 8** Thornback ray in divisions 7.a, 7.f–g. Assessment summary. Index of abundance from trawl survey UK (E&W)–BTS–Q3 in kg hr<sup>-1</sup>.

Year	Biomass index (kg hr <sup>-1</sup> of fish ≥ 50 cm)
1993	1.26
1994	1.38
1995	2.17
1996	1.74
1997	1.73
1998	2.23
1999	1.87
2000	1.18
2001	1.91
2002	1.82
2003	2.05
2004	4.37
2005	1.69
2006	1.81
2007	1.47
2008	2.06
2009	2.62
2010	2.56
2011	1.80
2012	1.93
2013	3.26
2014	3.42
2015	2.18
2016	4.64
2017	5.47

### 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 Workshop to compile and refine catch and landings of elasmobranchs (WKSHARK2), 19–22 January 2016, Lisbon, Portugal. ICES CM 2016/ACOM:40. 69 pp.

ICES 2016b. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.

ICES. 2018. Report of the Working Group on Elasmobranch Fishes (WGEF), 19–28 June 2018, Lisbon, Portugal. ICES CM 2018/ACOM:16.