

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

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, landings should be no more than 1833 tonnes in each of the years 2023 and 2024. ICES cannot quantify the corresponding catches.

Management of the catches of skates and rays under a combined TAC prevents effective control of single-stock exploitation rates and could lead to overexploitation of some species.

Stock development over time

Stock size is above MSY B_{trigger} proxy (I_{trigger}), and the fishing pressure is below F_{MSY} proxy (Table 1).

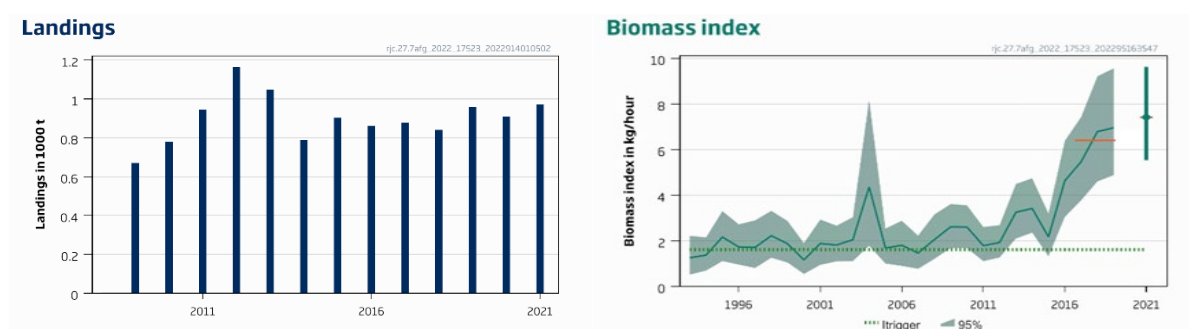


Figure 1 Thornback ray in divisions 7.a and 7.f–g. Summary of the stock assessment. ICES estimated landings (in tonnes). UK (E&W)–BTS–Q3 survey index [B6596] (kg h^{-1} , individuals of ≥ 50 cm total length). Solid horizontal lines show the mean stock-size indicators for 2021 and 2017–2019.

Catch scenarios

ICES framework for category 3 stocks was applied (rfb rule, method 2.1; ICES, 2022a). A survey biomass index was used as an indicator of stock development. The advice is based on the recent advised landings, multiplied by the ratio of the 2021 index value (index A) and the mean of the three preceding values (index B), a ratio of observed mean length in the catch relative to the target mean length, a biomass safeguard, and a precautionary multiplier. The stability clause was not applied because the advised landings have increased by less than 20%.

Discarding is known to take place, but ICES cannot estimate the quantity or the corresponding dead catch.

Table 1 Thornback ray in divisions 7.a and 7.f–g. The basis for the catch scenarios*. Landings are in tonnes.

Previous landings advice A_y	1596 tonnes	
Stock biomass trend		
Index A (2021)	7.41 kg h ⁻¹	
Index B (2017, 2018, 2019)	6.40 kg h ⁻¹	
r: stock biomass trend (index ratio A/B)	1.15	
Fishing pressure proxy		
Mean catch length ($L_{\text{mean}} = L_{2019-2021}$)	60.1 cm	
MSY proxy length ($L_{F=M}$)	54.3 cm	
f: fishing pressure proxy relative to MSY proxy ($L_{\text{mean}}/L_{F=M}$)	1.11	
Biomass safeguard		
Last index value (I_{2021})	7.41 kg h ⁻¹	
Index trigger value ($I_{\text{trigger}} = I_{\text{loss}} \times 1.4$)	1.62 kg h ⁻¹	
b: index relative to trigger value, $\min\{I_{2021}/I_{\text{trigger}}, 1\}$	1	
Precautionary multiplier to maintain biomass above B_{lim} with 95% probability		
m: multiplier (generic multiplier based on life history)	0.90	
Stability clause (+20%/-30% compared to A_y , only applied $I_{2021} \geq I_{\text{trigger}}$)	Not applied	-
Discard rate	Unquantified	
Landings advice for 2023/24 **	1833 tonnes	
% advice change ***	+15 %	

* 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.

** Formula [$A_y \times r \times f \times b \times m$], limited by stability clause if applicable.

*** Advice value for 2023/2024 relative to the advice value for 2021/2022 (1596 tonnes).

The advised landings are higher than advised for 2021 and 2022 because the biomass index has increased.

Basis of the advice

Table 2 Thornback ray in divisions 7.a and 7.f–g. The basis of the advice.

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

Quality of the assessment

In 2020 the area coverage of the UK(E&W)-BTS-Q3 survey was reduced due to COVID-19 restrictions, and Division 7.a was not sampled. Therefore, the 2020 survey data were not used in this assessment.

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

Despite improvement in recent years, some misidentification at species level is still possible, but 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 also targeted in some local, seasonal fisheries with trawls and static nets.

Catches of Skates and rays are managed under a common TAC. However, most landings are reported by species (ICES, 2022b). ICES considers that management of the catches of several stocks under a combined TAC prevents effective control of single-stock exploitation rates and could lead to overexploitation of some stocks.

Reference points

Table 3 Thornback ray in divisions 7.a and 7.f–g. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis *	Source
MSY approach	MSY $B_{\text{trigger proxy}}$	1.62	Biomass index trigger value (I_{trigger}), defined as $I_{\text{trigger}} = I_{\text{loss}} \times 1.4$, where I_{loss} is the lowest observed historical biomass index value (year 2000). In kg per hour.	(ICES, 2022c)
	$F_{\text{MSY proxy}}$	1	$L_{\text{mean}}/L_{F=M}$; Mean catch length divided by MSY proxy reference length ($L_{F=M} = 54.25$ cm).	(ICES, 2022c)
Precautionary approach	B_{lim}	Not defined		
	B_{pa}	Not defined		
	F_{lim}	Not defined		
	F_{pa}	Not defined		
Management plan	SSB_{mgt}	Not applicable		
	F_{mgt}	Not applicable		

* No reference points are defined for this stock in terms of absolute values. The LBI-estimated values the ratio $L_{\text{mean}}/L_{F=M}$ are used to estimate exploitation status relative to the proxy MSY reference point.

Basis of the assessment

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

ICES stock data category	3 (ICES, 2022a).
Assessment type	Trends from biomass index and length-based indicators (ICES, 2022b).
Input data	Survey: UK (E&W)–BTS–Q3 (B6596), length composition data from commercial fisheries.
Discards and bycatch	Discarding is known to take place but has not been quantified.
Indicators	None.
Other information	None.
Working group	Working Group on Elasmobranch Fishes (WGEF)

History of the advice, catch, and management

Table 5 Thornback ray in divisions 7.a and 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 the average of the last three years	1235	903
2016	No new advice, same as 2015	1235	861
2017	Precautionary approach	≤ 1386	878
2018	Precautionary approach (same value as advised catches for 2017)	≤ 1386	840
2019	Precautionary approach	≤ 1663	960
2020	Precautionary approach	≤ 1663	909
2021	Precautionary approach	≤ 1596	971
2022	Precautionary approach	≤ 1596	
2023	MSY approach	≤ 1833	
2024	MSY approach	≤ 1833	

* 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.

** In 2020, landings data were revised.

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 and 7.f–g. Catch distribution by fleet in 2021 as estimated by ICES.

Catch (2021)	Landings			Discards
	Beam trawl 38%	Other bottom trawls 58%	Other gears 4%	
Unknown	971 tonnes			Unquantified

Table 7 Thornback ray in divisions 7.a and 7.f–g. History of landings *. ICES estimates of landings by country (in tonnes). Blank cell = no data reported; 0 = value less than 0.5.

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	878
2018	197	324	219	101	0	840
2019	339	322	182	117	0	960
2020	314	322	192	80	0	909
2021	265	449	149	106	2	971

* The figures in the table are rounded. Total landings were calculated using unrounded inputs and computed values may not match exactly when calculated using the rounded figures in the table.

Summary of the assessment

Table 8 Thornback ray in divisions 7.a and 7.f–g. Assessment summary. Index of biomass from trawl survey UK (E&W)–BTS–Q3 in kg h⁻¹ of individuals ≥ 50 cm total length.

Year	Biomass index (kg h ⁻¹)	Upper 95% CI	Lower 95% CI
1993	1.26	2.1	0.41
1994	1.38	2.1	0.64
1995	2.2	3.3	1.02
1996	1.74	2.6	0.89
1997	1.72	2.8	0.67
1998	2.2	3.3	1.19
1999	1.87	2.8	0.96
2000	1.17	1.85	0.49
2001	1.89	2.9	0.87
2002	1.82	2.6	1.02
2003	2	3	1.09
2004	4.4	7.8	0.88
2005	1.69	2.5	0.89
2006	1.81	2.8	0.81
2007	1.47	2.2	0.74
2008	2.1	3.1	1.05
2009	2.6	3.6	1.62
2010	2.6	3.5	1.62
2011	1.79	2.5	1.05
2012	1.93	2.6	1.23
2013	3.3	4.4	2.1
2014	3.4	4.7	2.1
2015	2.2	3.1	1.26
2016	4.6	6.3	3
2017	5.5	7.2	3.7
2018	6.8	9.2	4.4
2019	7	9.2	4.8
2020 *			
2021	7.4	9.6	5.5

* 2020 survey not used in the assessment.

Sources and references

ICES. 2022a. Advice on fishing opportunities. *In* Report of the ICES Advisory Committee, 2022. ICES Advice 2022, Section 1.1.1. <https://doi.org/10.17895/ices.advice.19928060>

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[Download the stock assessment data and figures.](#)

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