

Spotted ray (*Raja montagui*) in divisions 7.a and 7.e–h (southern Celtic Seas and western English Channel)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, landings should be no more than 814 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 at F_{MSY} proxy (Table 1).

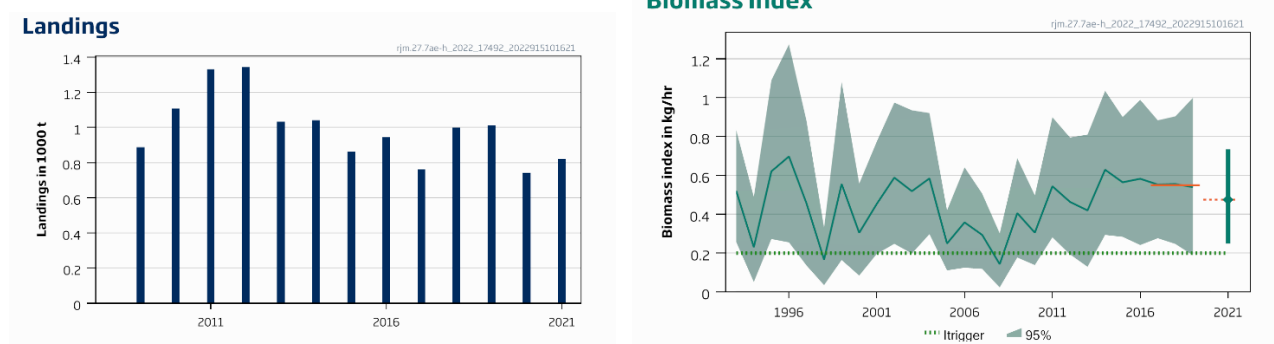


Figure 1 Spotted ray in divisions 7.a and 7.e–h. ICES estimated landings (in tonnes). UK (E&W)-BTS-Q3 [B6596] survey index (individuals ≥ 50 cm total length). The solid horizontal lines show the mean stock indicators for 2017–2019 and 2021.

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 ratio of the 2021 index value (index A) and the mean of the three preceding values (index B), multiplied by the previous advised catches, 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 decreased by less than 30%.

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

Table 1 Spotted ray in divisions 7.a and 7.e–h. The basis for the catch scenarios. Landings are in tonnes. *

Previous landings advice A_y	1041 tonnes	
Stock biomass trend		
Index A (2021) **	0.48 kg h ⁻¹	
Index B (2017, 2018, 2019)	0.55 kg h ⁻¹	
r: stock biomass trend (index ratio A/B)	0.86	
Fishing pressure proxy		
Mean catch length ($L_{\text{mean}} = L_{2019-2021}$)	60.2 cm	
MSY proxy length ($L_{F=M}$)	59.4 cm	
f: fishing pressure proxy relative to MSY proxy ($L_{\text{mean}}/L_{F=M}$)	1.01	
Biomass safeguard		
Last index value (I_{2021})	0.48 kg h ⁻¹	
Index trigger value ($I_{\text{trigger}} = I_{\text{loss}} \times 1.4$)	0.20 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 ***	814 tonnes	
% advice change ^	-22%	

* 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.

** Survey data from 2020 were excluded.

*** 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 (1041 tonnes).

The advised landings are lower than the advice for 2021 and 2022 because of a decrease in the biomass index.

Basis of the advice

Table 2 Spotted ray in divisions 7.a and 7.e–h. The basis of the advice.

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

Quality of the assessment

The UK (E&W)-BTS-Q3 covers a representative portion of the stock area and the survey gear samples the full size range of the species. In 2020, the area surveyed by UK(E&W)-BTS-Q3 was reduced due to COVID-19 restrictions (Division 7.a was not sampled). Therefore the 2020 survey data were not used in this assessment.

The Irish groundfish survey (IGFS-WIBTS-Q4) and the (UK-Q1-SWBeam) both cover a part of the stock area, and both show a similar trend to the stock size indicator used (ICES, 2022b).

Despite improvements in species-specific reporting in recent years, misidentification at species level is likely still occurring for spotted ray and blonde ray. Hence the accuracy of landings data will be uncertain.

Issues relevant for the advice

Spotted ray is a shelf species that is a bycatch in trawl and gillnet fisheries, including in mixed demersal fisheries for groundfish and fisheries targeting the overall skate complex. As one of the smaller and less valuable species in the skate complex, it is not targeted, and a relatively high proportion of the catch may be discarded.

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

Framework	Reference point	Value	Technical basis*	Source
MSY approach	MSY B_{trigger} proxy	0.20	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 2008). In kg per hour.	(ICES, 2022c)
	F_{MSY} proxy	1	$L_{\text{mean}}/L_{F=M}$; Mean catch length divided by MSY proxy reference length ($L_{F=M} = 59.4$ 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 of 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 Spotted ray in divisions 7.a and 7.e–h. Basis of 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 from commercial fisheries.
Discards and bycatch	Discarding is known to take place but has not been quantified.
Indicators	None.
Other information	IGFS-WIBTS-Q4 [G7212], UK-Q1-SWBeam [B2732]
Working group	Working Group on Elasmobranch Fishes (WGEF)

History of the advice, catch, and management

Table 5 Spotted ray in divisions 7.a and 7.e–h. History of ICES advice and ICES estimates of landings *. All weights are in tonnes.

Year	ICES advice	Landings corresp. to advice	ICES estimated landings
2011	No specific advice	-	1332
2012	No specific advice	-	1344
2013	No TAC, species-specific measures needed, catch could increase by up to 20%	-	1032
2014	No new advice, same as 2013	-	1042
2015	4% decrease from the average of the last three years	1118	864
2016	No new advice, same as 2015	1118	947
2017	Precautionary approach	≤ 1197	818**
2018	Precautionary approach (same value as advised catches for 2017)	≤ 1197	1001
2019	Precautionary approach	≤ 1296	1012
2020	Precautionary approach	≤ 1296	741
2021	Precautionary approach	≤ 1041	821
2022	Precautionary approach	≤ 1041	
2023	MSY approach	≤ 814	
2024	MSY approach	≤ 814	

* 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.

** Updated in 2022.

History of the catch and landings

The distribution of this stock does not extend into the NEAFC Regulatory Area.

Table 6 Spotted ray in divisions 7.a and 7.e–h. Catch distribution by fleet in 2021 as estimated by ICES.

Catch	Landings			Discards
	Beam trawl 20%	Otter trawl 56%	Other gears 24%	
Unknown	821 tonnes			Unquantified

Table 7 Spotted ray in divisions 7.a and 7.e–h. ICES estimates of landings by country (in tonnes). Data revised in 2022. Blank cell = no data reported; 0 = value less than 0.5 tonnes.

Year	Belgium	Spain	UK	Ireland	Netherlands	France	Total
2009	63		38	0	0	785	887
2010	55	0	102	19		934	1110
2011	120		88	63	0	1062	1332
2012	70		85	53		1135	1344
2013	3		90	40	0	899	1032
2014	0	0	80	49		912	1042
2015	1	0	70	48		745	864
2016	7		80	41	0	819	947
2017	2		89	10		717	818
2018	16		93	58		834	1001
2019	15		118	64	0	814	1012
2020	44		82	41	0	576	741
2021	124	0	95	46	0	556	821

Summary of the assessment

Table 8 Spotted ray in divisions 7.a and 7.e–h. Time-series of the UK (E&W)-BTS-Q3 [B6596] survey (kg h⁻¹) (individuals ≥ 50 cm total length) used for the advice.

Year	Biomass index	High 95% CI	Low 95% CI
1993	0.52	0.83	0.26
1994	0.23	0.49	0.051
1995	0.62	1.09	0.27
1996	0.70	1.27	0.26
1997	0.46	0.88	0.136
1998	0.166	0.33	0.035
1999	0.56	1.08	0.164
2000	0.30	0.56	0.084
2001	0.45	0.77	0.196
2002	0.59	0.98	0.25
2003	0.52	0.94	0.198
2004	0.58	0.92	0.30
2005	0.25	0.42	0.111
2006	0.36	0.64	0.125
2007	0.29	0.51	0.118
2008	0.143	0.30	0.023
2009	0.41	0.69	0.177
2010	0.31	0.50	0.138
2011	0.54	0.90	0.28
2012	0.46	0.80	0.193
2013	0.42	0.81	0.129
2014	0.63	1.04	0.29
2015	0.56	0.90	0.28
2016	0.58	0.99	0.24

Year	Biomass index	High 95% CI	Low 95% CI
2017	0.55	0.88	0.28
2018	0.56	0.90	0.25
2019	0.54	1.00	0.189
2020*			
2021	0.48	0.74	0.25

* 2020 survey not used in 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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