

Small-eyed ray (*Raja microcellata*) in divisions 7.f and 7.g (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 86 tonnes in each of the years 2023 and 2024. ICES cannot quantify the corresponding catches.

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).

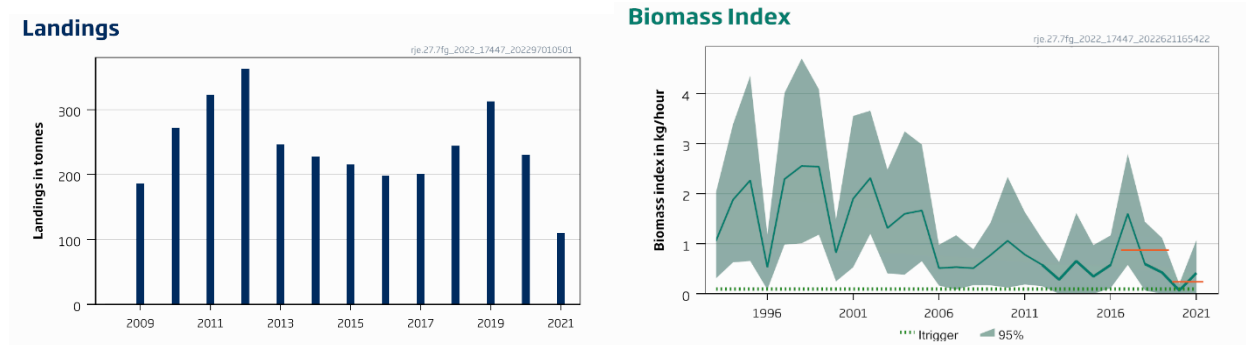


Figure 1 Small-eyed ray in divisions 7.f and 7.g. Summary of the stock assessment. ICES estimated landings since 2009. Biomass index from the UK (E&W)-BTS-Q3 survey [B6596] in divisions 7.f and 7.g (individuals ≥ 50 cm total length). Solid horizontal lines show the mean stock-size indicator for 2017–2019 and 2020–2021.

Catch scenarios

ICES framework for category 3 stocks was applied (rfb rule, method 2.1; ICES, 2022c). 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 mean of the last two index values (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 considered and applied to limit the reduction in landings advice to 30%.

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

Table 1 Small-eyed ray in divisions 7.f and 7.g. The basis for the catch scenarios. Landings are in tonnes. *

Previous landings advice A_y	123 tonnes	
Stock biomass trend		
Index A (2020, 2021)	0.24 kg.h ⁻¹	
Index B (2017, 2018, 2019)	0.87 kg.h ⁻¹	
r: stock biomass trend (index ratio A/B)	0.28	
Fishing pressure proxy		
Mean catch length ($L_{\text{mean}} = L_{2019-2020}$)	73 cm	
MSY proxy length ($L_F = M$)	71 cm	
f: fishing pressure proxy relative to MSY proxy ($L_{\text{mean}}/L_{F=M}$)	1.02	
Biomass safeguard		
Last index value (I_{2021})	0.42 kg.h ⁻¹	
Index trigger value ($I_{\text{trigger}} = I_{\text{loss}} \times 1.4$)	0.095 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)	0.95	
Stability clause (+20%/-30% compared to A_y , only applied $I_{2021} \geq I_{\text{trigger}}$)	Applied	0.7
Discard rate	Unquantified	
Landings advice for 2023/24 **	86 tonnes	
% advice change ^	-30%	

* 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 and 2024 relative to the advice value for 2021 and 2022 (123 tonnes).

The advice landings are lower than the advice for 2021 and 2022 because the biomass index has declined.

Basis of the advice

Table 2 Small-eyed ray in divisions 7.f and 7.g. The basis of the advice.

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

Quality of the assessment

The quality of landings data has improved in recent years. Reported landings of *Leucoraja circularis* are considered to refer to *Raja microocellata* in this stock area, due to confusion over the local name “sandy ray”. These landings have therefore been reallocated to this stock. While the main part of the stock occurs in Division 7.f and the eastern part of Division 7.g, the stock also extends into the southern parts of Division 7.a (with occasional vagrants in the northern Irish Sea). Reported landings from Division 7.a are therefore also allocated to this stock.

The UK (E&W)-BTS-Q3 [B6596] covers the main stock area in the Bristol Channel (ICES, 2022b).

Issues relevant for the advice

This is a coastal species, and it is a bycatch of trawl and gillnet fisheries. Although not usually targeted, it is one of the important components of the Bristol Channel skate fishery.

Regulations for fishing opportunities have a TAC for *R. microocellata* in divisions 7.f and 7.g within the overall TAC for skates and rays in divisions 6.a, 6.b, 7.a–c, and 7.e–k. Juvenile small-eyed ray occur in the shallower waters of

Carmarthen Bay (Division 7.f). These grounds are often fished by whelk potters, and the presence of such static gear may limit the impacts of trawling on the nursery grounds.

A Belgian fisheries producer organization established a measure to exclude landings of this species, from 1 January 2021, which will have increased discarding.

The biomass index in the last three years has been at a very low level with 2020 being the lowest observed. The ability of the stock to recover from such a low level is unknown.

Reference points

Table 3 Small-eyed ray in divisions 7.f and 7.g. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis *	Source
MSY approach	MSY $B_{\text{trigger proxy}}$	0.095	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 for 2020.	(ICES, 2022c)
	$F_{\text{MSY proxy}}$	1	$L_{\text{mean}}/L_{F=M}$; Mean catch length divided by MSY proxy reference length ($L_{F=M} = 71$ 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 Small-eyed ray in divisions 7.f and 7.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 Small-eyed ray in divisions 7.f and 7.g. History of ICES advice and ICES estimates of landings. All weights are in tonnes.

Year	ICES advice	Landings corresp. to advice	TAC *	ICES species-specific landings: minimum estimate based on reported landings
2011	No specific advice			323
2012	No specific advice			362
2013	No TAC, species-specific measures needed, catch to decrease by at least 36% (reduction of 20% followed by 20% PA buffer).	-		247
2014	No new advice, same as 2013.	-		227
2015	Reduce catches by 36%.	188		216
2016	No new advice, same as 2015.	188	188	198
2017	Precautionary approach	≤ 154	154	201
2018	Precautionary approach (same value as advised catches for 2017)	≤ 154	154	245
2019	Precautionary approach	≤ 192	192	313
2020	Precautionary approach	≤ 192	192	230

Year	ICES advice	Landings corresp. to advice	TAC *	ICES species-specific landings: minimum estimate based on reported landings
2021	Precautionary approach	≤ 123	123	110
2022	Precautionary approach	≤ 123	123	
2023	MSY approach	≤ 86		
2024	MSY approach	≤ 86		

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

History of the catch and landings

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

Table 5 Small-eyed ray in divisions 7.f and 7.g. Catch distribution by fleet in 2021 as estimated by ICES. Landings data for Division 7.a also allocated to this stock.

Catch	Landings			Discards
Unknown	Beam trawl 3%	Other trawl 87%	Nets 10%	Unquantified
	110 tonnes			

Table 6 Small-eyed ray in divisions 7.f and 7.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	Total landings
2009		157		29	187
2010	37	214	0	21	272
2011	117	189	0	16	323
2012	124	208	0	30	362
2013	99	117	0	30	247
2014	83	79	0	65	227
2015	106	78	0	31	216
2016	123	69	0	5	198
2017	116	30		56	201
2018	121	55		69	245
2019	137	83	0	92	313
2020	94	67		69	230
2021		68	0	42	110

* 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 7 Small-eyed ray in divisions 7.f and 7.g. Time-series of survey index used for the advice. Series are the mean biomass per hour (individuals ≥ 50 cm total length) from the UK (E&W)–BTS–Q3 (B6596).

Year	Biomass index kg.hr ⁻¹	High 95% CI	Low 95% CI
1993	1.05	2.0	0.31
1994	1.88	3.4	0.63
1995	2.3	4.4	0.66
1996	0.53	1.19	0.084
1997	2.3	4.0	0.98
1998	2.6	4.7	1.01
1999	2.5	4.1	1.18
2000	0.82	1.49	0.25
2001	1.90	3.6	0.53
2002	2.3	3.7	1.20
2003	1.32	2.5	0.41
2004	1.60	3.2	0.38

Year	Biomass index kg.hr ⁻¹	High 95% CI	Low 95% CI
2005	1.67	3.0	0.65
2006	0.51	0.98	0.165
2007	0.54	1.17	0.084
2008	0.51	0.89	0.174
2009	0.77	1.42	0.170
2010	1.06	2.3	0.124
2011	0.79	1.64	0.187
2012	0.58	1.11	0.154
2013	0.28	0.64	0.00
2014	0.66	1.62	0.00
2015	0.35	0.98	0.00
2016	0.58	1.17	0.113
2017	1.60	2.8	0.58
2018	0.60	1.44	0.066
2019	0.43	1.12	0.00
2020	0.068	0.20	0.00
2021	0.42	1.08	0.00

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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