

Spotted ray (*Raja montagui*) in Subarea 4 and in divisions 3.a and 7.d (North Sea, Skagerrak, Kattegat, and eastern English Channel)

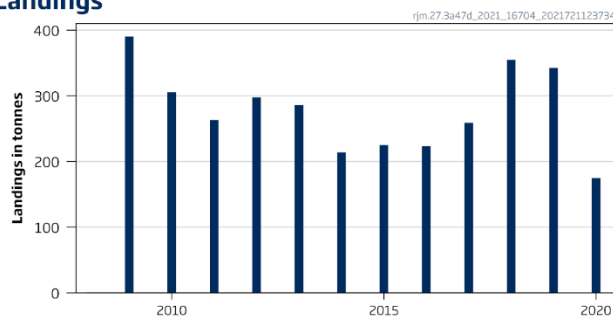
ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, landings should be no more than 232 tonnes in each of the years 2022 and 2023. ICES cannot quantify the corresponding catches.

Stock development over time

ICES cannot assess the stock and exploitation status relative to maximum sustainable yield (MSY) and precautionary approach (PA) reference points because the reference points are undefined.

Landings



Stock size indicator

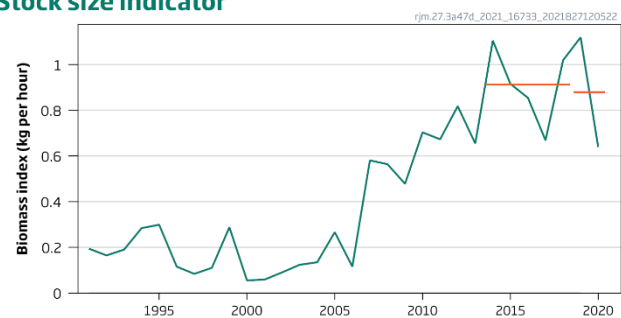


Figure 1 Spotted ray in Subarea 4 and in divisions 3.a and 7.d. Summary of the stock assessment. Left: ICES estimates of landings of spotted ray since 2009. Right: mean stock-size indicator of exploitable biomass from two surveys, NS-IBTS-Q1 (G1022) and NS-IBTS-Q3 ([G2829] kg h⁻¹, for individuals of ≥ 50 cm total length). Horizontal lines show the mean stock indicators for 2019–2020 and 2014–2018.

Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). Biomass indices derived from the NS-IBTS-Q1 [G1022] and NS-IBTS-Q3 surveys were used to provide the stock size indicator. The advice is based on the ratio of the mean of the last two index values (index A) and the mean of the five preceding values (index B), multiplied by the recent advised landings. The index is estimated to have decreased by less than 20% and thus the uncertainty cap was not applied. The precautionary buffer was applied in 2017 and has therefore, been considered in 2021. The stock status relative to reference points is unknown; therefore the precautionary buffer was applied in the advice.

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

Table 1 Spotted ray in Subarea 4 and in divisions 3.a and 7.d. The basis for the catch scenarios.*

Index A (2019–2020)		0.88
Index B (2014–2018)		0.91
Index ratio (A/B)		0.96
Uncertainty cap	Not applied	-
Advised landings for 2020 and 2021(issued in 2019)		301 tonnes
Discard rate		Unknown
Precautionary buffer	Applied	0.8
Landings advice **		232 tonnes
% Advice change ^		-23 %

* 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.

** [Advised landings for 2020 and 2021] × [index ratio] × [precautionary buffer].

^ Advice value for 2022 and 2023 relative to the advice value 2021.

The advised landings have been reduced (-23%) because the biomass indicator has decreased and the precautionary buffer was applied.

Basis of the advice

Table 2 Spotted ray in Subarea 4 and in divisions 3.a and 7.d. The basis of the advice.

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

Quality of the assessment

Species-specific landings data are incomplete prior to 2009 and therefore are not shown.

Fishery-independent trawl surveys provide the longest time-series of species-specific information and cover most of the stock area.

Data from the BTS-UK(E&W)-Q3 were excluded from the stock-size indicator, as catch rates of larger (≥ 50 cm total length) spotted ray are low. Beam trawl surveys are expected to provide more robust data on juveniles of this spotted ray stock (ICES, 2021c).

Issues relevant for the advice

Misidentification occurs between spotted ray (*Raja montagui*) and blonde ray (*Raja brachyura*).

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 3 Spotted ray in Subarea 4 and in divisions 3.a and 7.d. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2021b)
Assessment type	Survey-based trends (ICES, 2021c)
Input data	Surveys: NS-IBTS-Q1 (G1022) and NS-IBTS-Q3 (G2829)
Discards and bycatch	Unknown
Indicators	None
Other information	None
Working group	Working Group on Elasmobranch Fishes (WGEF)

History of the advice, catch, and management

Table 4 Spotted ray in Subarea 4 and in divisions 3.a and 7.d. History of ICES advice, agreed TAC, and estimates of landings. All weights are in tonnes.

Year	ICES advice	Predicted landings corresp. to advice	Agreed TAC *			ICES landings
			2.a and 4	7.d	3.a	
2009	<i>Status quo</i> catch	-	1643	1044	68	390
2010	No new advice, same as 2010	-	1397	887	58	306
2011	<i>Status quo</i> catch	-	1397	887	58	263
2012	No new advice, same as 2011	-	1395	887	58	298
2013	No TAC, species-specific measures needed, catch to decrease by at least 20%	-	1256	798	52	286
2014	No new advice, same as 2013	-	1256	798	47	214
2015	No new advice, same as 2014	-	1382	798	47	225
2016	Precautionary approach	292	1313	966	47	223
2017	Biennial advice	292	1378	1063	47	259
2018	Precautionary approach	≤ 291	1654	1276	47	355
2019	Precautionary approach (same advice as for 2018)	≤ 291	1654	1404	47	343
2020	Precautionary approach	≤ 301	1737	1474	47	175
2021	Same advice as in 2020	≤ 301	1650	1400	45	
2022	Precautionary approach	≤ 232				
2023	Precautionary approach	≤ 232				

* Combined TAC for skates and rays.

History of the catch and landings

Table 5 Spotted ray in Subarea 4 and in divisions 3.a and 7.d. Catch distribution by fleet in 2020 as estimated by ICES.

Catch (2020)	Landings			Discards
	Beam trawl	Bottom trawl	Other gears	
Unknown	71%	15%	14%	Unknown
	175 tonnes			

Table 6 Spotted ray in Subarea 4 and in divisions 3.a and 7.d. ICES estimates of landings by country (in tonnes). Blank cell = no data reported; 0 = value less than 0.5.

Year	Belgium	Germany	Denmark	France	UK	Netherlands	Total
2009	35			128	28	200	390
2010	35			32	56	182	306
2011	31			31	93	108	263
2012	10			25	82	180	298
2013	12			28	127	119	286
2014	4		1	36	107	66	214
2015	9		0	15	124	77	225
2016	10	4		16	117	76	223
2017	15	6		37	114	87	259
2018	27	11		16	189	112	355
2019	41	12	0	22	174	93	343
2020	17	10	1	25	36	87	175

Summary of the assessment

Table 7 Spotted ray in Subarea 4 and in divisions 3.a and 7.d. Assessment summary. Biomass indices were derived from two NS-IBTS surveys (NS-IBTS-Q1 and Q3; all indices are in kg h⁻¹, for individuals of ≥ 50 cm total length). The stock-size indicator is the annual mean of the two survey indices.

Year	NS-IBTS-Q1	NS-IBTS-Q3	Biomass index
1991	0.30	0.090	0.194
1992	0.185	0.144	0.165
1993	0.166	0.21	0.190
1994	0.163	0.41	0.28
1995	0.51	0.090	0.30
1996	0.141	0.090	0.116
1997	0.168	0.000	0.084
1998	0.21	0.0145	0.110
1999	0.169	0.41	0.29
2000	0.100	0.0105	0.055
2001	0.110	0.0074	0.059
2002	0.152	0.029	0.090
2003	0.22	0.026	0.123
2004	0.168	0.101	0.135
2005	0.21	0.32	0.27
2006	0.038	0.193	0.116
2007	0.54	0.62	0.58
2008	0.81	0.32	0.56
2009	0.33	0.62	0.48
2010	0.62	0.78	0.70
2011	0.46	0.89	0.67
2012	0.43	1.21	0.82
2013	0.78	0.53	0.65
2014	0.93	1.28	1.11
2015	1.26	0.57	0.92
2016	0.82	0.89	0.85
2017	0.76	0.58	0.67
2018	1.06	0.98	1.02
2019	0.87	1.37	1.12
2020	1.00	0.27	0.64

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. <https://doi.org/10.17895/ices.pub.5322>.

ICES. 2021a. Workshop on the use of surveys for stock assessment and reference points for rays and skates (WKS KATE; outputs from 2020 meeting). ICES Scientific Reports, 3:23. 177 pp. <https://doi.org/10.17895/ices.pub.7948>

ICES. 2021b. Advice on fishing opportunities. *In* Report of the ICES Advisory Committee, 2021. ICES Advice 2021, section 1.1.1. <https://doi.org/10.17895/ices.advice.7720>.

ICES. 2021c. Working Group on Elasmobranch Fishes (WGEF). ICES Scientific Reports, 3:59. <http://doi.org/10.17895/ices.pub.8199>.

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

Recommended citation: ICES. 2021. Spotted ray (*Raja montagui*) in Subarea 4 and Divisions 3.a and 7.d (North Sea, Skagerrak, Kattegat, and eastern English Channel). *In* Report of the ICES Advisory Committee, 2021. ICES Advice 2021, rjm.27.3a47d. <https://doi.org/10.17895/ices.advice.7846>.