

Spotted ray (*Raja montagui*) in Subarea 6 and divisions 7.b and 7.j (West of Scotland, west and southwest of Ireland)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, landings should be no more than 51 tonnes in each of the years 2021 and 2022. ICES cannot quantify the corresponding catches.

Note: This advice sheet is abbreviated due to the COVID-19 disruption. The previous advice issued for 2019 and 2020 is attached as Annex 1.

Stock development over time

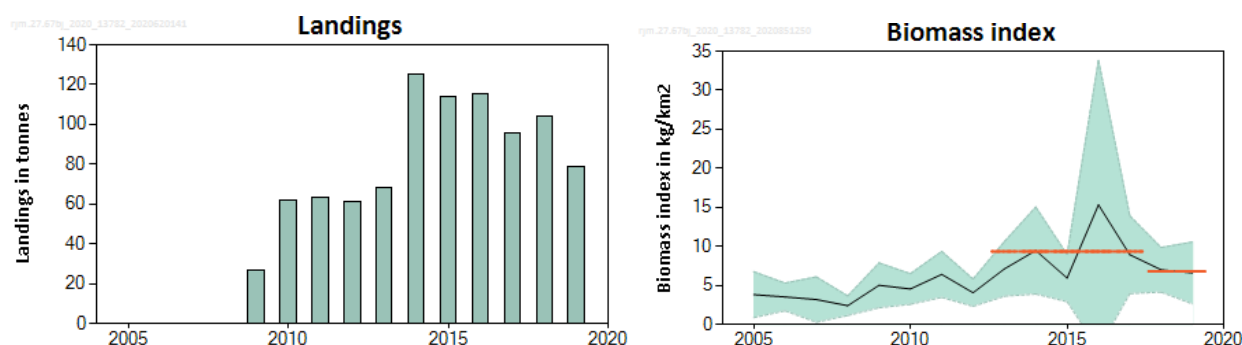


Figure 1 Spotted ray in Subarea 6 and divisions 7.b and 7.j. Left: ICES estimated landings for 2009–2019 (tonnes). Right: Biomass index (mean kg km⁻² and 95% CI as shaded area) from the IGFS-WIBTS-Q4 survey. Horizontal lines show the mean annual indicators for 2013–2017 and for 2018–2019.

Stock and exploitation status

Table 1 Spotted ray in Subarea 6 and divisions 7.b and 7.j. State of the stock and the fishery relative to reference points.

Spotted ray in Subarea 6 and divisions 7B and 7C: State of the stock and the fishery relative to reference points										
		Fishing pressure				Stock size				
		2017	2018	2019		2017	2018	2019		
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	-	↘	↘	↘	Decreasing

Catch scenarios

The precautionary buffer was last applied in 2014. The stock size and fishing pressure status relative to reference points is unknown, and the precautionary buffer is therefore applied in 2020.

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

Table 2 Spotted ray in Subarea 6 and divisions 7.b and 7.j. The basis for the catch scenario *.

Index A (2018–2019)		6.8
Index B (2013–2017)		9.4
Index ratio (A/B)		0.73
Uncertainty cap	Applied	0.8
Advised landings for 2019–2020 issued in 2018		80 tonnes
Discard rate	Unknown	
Precautionary buffer	Applied	0.8
Landings advice **		51 tonnes
% advice change ***		–36%

* 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 2019–2020] × [Uncertainty cap] × [Precautionary buffer].

*** Advice value for 2021 and 2022 relative to the advice value for 2019 and 2020.

The advised landings have decreased by more than 20% due to the decrease in biomass index and the application of the precautionary buffer.

History of the advice, catch, and management

Table 3 Spotted ray in Subarea 6 and divisions 7.b and 7.j. History of ICES advice and ICES estimates of landings *. All weights are in tonnes.

Year	ICES advice	Landings corresp. to advice	ICES landings
2011	No specific advice		63
2012	No specific advice		60
2013	No TAC, species-specific measures needed, catch to decrease by at least 23% (reduction of 4% followed by 20% PA buffer)	-	67
2014	No new advice, same as 2013	-	125
2015	Reduce catches by 10%	53	114
2016	No new advice, same as 2015	53	116
2017	Precautionary approach	≤ 67	96
2018	Precautionary approach (same value as advised catches for 2017)	≤ 67	104
2019	Precautionary approach	≤ 80	79
2020	Precautionary approach	≤ 80	
2021	Precautionary approach	≤ 51	
2022	Precautionary approach	≤ 51	

* 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.

Summary of the assessment

Table 4 Spotted ray in Subarea 6 and divisions 7.b and 7.j. Assessment summary. Time-series of survey indices used for the advice. Series are the annual mean kg km⁻² from the Irish Groundfish Survey (IGFS-WIBTS-Q4).

Year	Biomass index kg km ⁻²	High 95% CI	Low 95% CI	Landings tonnes
2005	3.8	6.8	0.88	
2006	3.5	5.3	1.76	
2007	3.2	6.1	0.29	
2008	2.4	3.7	1.15	
2009	5.0	7.9	2.2	27
2010	4.6	6.5	2.6	62
2011	6.4	9.4	3.5	63
2012	4.1	5.8	2.3	60
2013	7.1	10.6	3.6	67
2014	9.5	15.0	3.9	125
2015	5.9	9.0	2.9	114
2016	15.3	34	0	116
2017	8.9	13.9	4.0	96
2018	7.0	9.9	4.2	104
2019	6.6	10.6	2.6	79

Sources and references

ICES. 2020. Working Group on Elasmobranch Fishes (WGEF). ICES Scientific Reports, 2:77. <https://doi.org/10.17895/ices.pub.7470>.

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Spotted ray (*Raja montagui*) in Subarea 6 and divisions 7.b and 7.j (West of Scotland, west and southwest of Ireland)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, landings should be no more than 80 tonnes in each of the years 2019 and 2020. ICES cannot quantify the corresponding catches.

Stock development over time

The stock size indicator has been increasing since 2008.

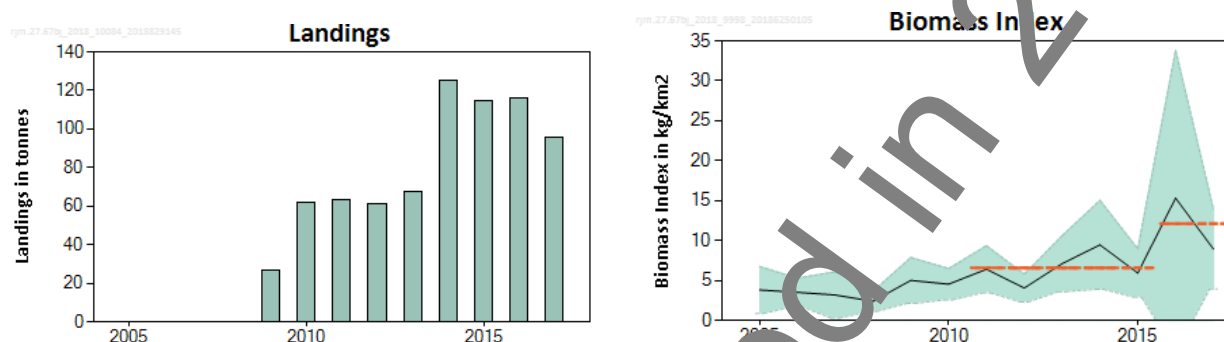


Figure 1 Spotted ray in Subarea 6 and divisions 7.b and 7.j. Left: ICE estimated landings for 2009–2017 (tonnes). Right: Biomass index (mean kg/km² and 95% CI as shaded area) from the IGFS-WIBTS-Q4 survey. Dashed lines indicate the mean annual indicator for 2011–2015 and the mean annual indicator for 2016–2017.

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 Spotted ray in Subarea 6 and division 7.b and 7.j. 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	-				Decreasing

Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The IGFS-WIBTS-Q4 survey 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 advice.

The index is estimated to have increased by more than 20% and thus the uncertainty cap was applied. The precautionary buffer was last applied in 2014. However, as the survey index has increased by more than 50% over this time period, the precautionary buffer has not been applied again.

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

Table 2 Spotted ray in Subarea 6 and divisions 7.b and 7.j. The basis for the catch scenario*.

Index A (2016–2017)		12.13
Index B (2011–2015)		6.60
Index ratio (A/B)		1.84
Uncertainty cap	Applied	1.2
Advised landings for 2017–2018 issued in 2016.		67 t
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice **		80 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 2017 and 2018 because the biomass index has increased.

Basis of the advice

Table 3 Spotted ray in Subarea 6 and divisions 7.b and 7.j. 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

Previous advice was based on an abundance stock indicator but is now based on a biomass index.

The Irish groundfish survey (IGFS-WIBTS-Q4) is considered to have appropriate coverage of the stock area and is the main input to the assessment. The survey started in 2003; however, index values for 2003 and 2004 are not presented because of catchability issues.

The quality of landings data has improved in recent years, especially following the Workshop to compile and refine catch and landings of elasmobranch (WKSHARK2) when ICES revised elasmobranch landings data for the period (2009–2015) (ICES, 2016a) and with increased species-specific reporting. However, commercial landings data may not be entirely accurate as *Raja montagui* can be confounded with the larger-bodied but morphologically similar *Raja brachyura*.

The increase in landings from 2009 to 2015 might have also been influenced by the introduction of mandatory species-specific reporting of skate landings.

Issues relevant for the advice

Raja montagui 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.

Reference points

No reference points are defined for this stock

Basis of the assessment

Table 4 Spotted ray in Subarea 6 and divisions 7.b and 7.j. Basis of assessment and advice.

ICES stock data category	3 (ICES, 2016b)
Assessment type	Survey-based trends (ICES, 2018).
Input data	IGFS-WIBTS-Q4 survey.
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

No additional information is available.

History of the advice, catch, and management

Table 5 Spotted ray in Subarea 6 and divisions 7.b and 7.j. History of ICES advice and ICES estimates of landings*. All weights are in tonnes.

Year	ICES advice	Landings corresponding to advice	ICES species-specific landings: minimum estimate based on reported landings
2011	No specific advice		63
2012	No specific advice		60
2013	No TAC, species-specific measures needed, catch to decrease by at least 23% (reduction of 4% followed by 20% PA buffer)	-	67
2014	No new advice, same as 2013	-	125
2015	Reduce catches by 10 %.	53	114
2016	No new advice, same as 2015	53	116
2017	Precautionary approach	≤ 67	96
2018	Precautionary approach (same value as advised catches for 2017)	≤ 67	
2019	Precautionary approach	≤ 80	
2020	Precautionary approach	≤ 80	

* 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

This stock is distributed primarily in EU waters, and whilst catches from the NEAFC area are not quantified, they are assumed negligible.

Table 6 Spotted ray in Subarea 6 and divisions 7.b and 7.j. Catch distribution by fleet in 2017 as estimated by ICES.

Catch (2017)	Landings		Discards
Unknown	bottom trawl	other	Unquantified
	95%	5%	
	96 tonnes		

Table 7 Spotted ray in Subarea 6 and divisions 7.b and 7.j. History of landings. ICES estimates of landings by country (in tonnes).

Year	Spain	UK	Ireland	France	Total Landings
2009	7	16	2	2	27
2010	10	27	20	4	62
2011	5	32	18	7	63
2012	0	30	25	5	61
2013	0	27	24	17	68
2014	0	29	43	5	125
2015	1	43	28	42	114
2016		49	20	47	116
2017		44	12	40	96

Summary of the assessment

Table 8 Spotted ray in Subarea 6 and divisions 7.b and 7.j. Assessment summary. Time-series of survey indices used for the advice. Series are the annual mean kg/km² from the Irish Groundfish Survey (IGFS-WIBTS-Q4).

Year	Biomass index (Kg/km ²)	Upper 95% CI	Lower 95% CI
2005	3.82	7.76	0.88
2006	3.53	5.29	1.76
2007	3.2	1.1	0.29
2008	2.41	3.66	1.15
2009	5.02	7.89	2.15
2010	4.55	6.51	2.59
2011	6.42	9.37	3.47
2012	4.07	5.82	2.33
2013	7.12	10.62	3.62
2014	9.47	15.04	3.9
2015	5.94	8.97	2.92
2016	15.32	33.82	0
2017	8.94	13.92	3.95

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.