

Rays and skates, mainly thornback ray (*Raja clavata*), in subareas 10 and 12 (Azores grounds and north of Azores)

ICES stock advice

ICES advises that when the precautionary approach is applied, landings should be no more than 78 tonnes in each of the years 2018 and 2019. ICES cannot quantify the corresponding catches.

Stock development over time

Existing survey data are limited for skate species in these subareas. The dominant species in Azorean waters is thornback ray. The abundance index peaked in the mid-2000s, but recent data are limited.

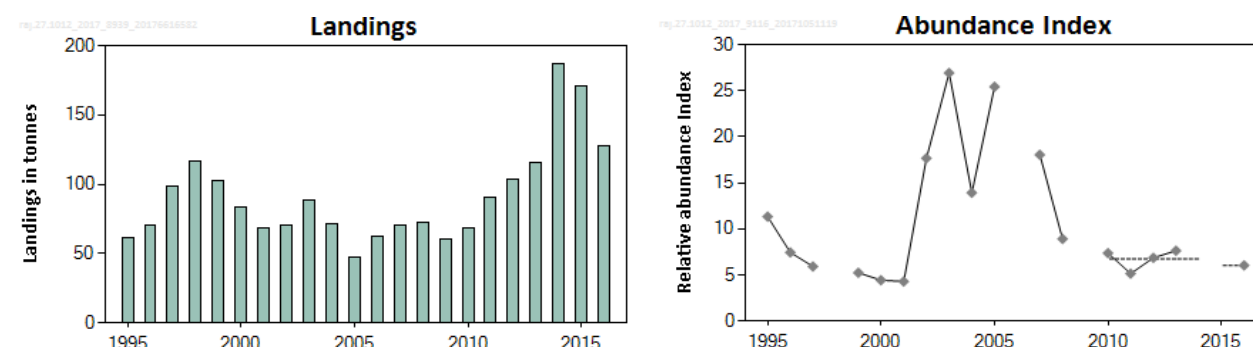


Figure 1 Rays and skates in subareas 10 and 12. Summary of the stock assessment. Left: ICES landings (in tonnes) of skates and rays for ICES subareas 10 and 12. Right: Abundance index for *Raja clavata* in the ARQDACO(P)-Q1 longline survey. The dotted horizontal lines indicate mean catch rates for the last two years (2015 and 2016) compared to the preceding five (2010–2014). Survey data for 2006, 2009, 2014, and 2015 are not available.

Stock and exploitation status

Table 1 Rays and skates in subareas 10 and 12. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size			
		2014	2015	2016		2014	2015	2016	
Maximum sustainable yield	F_{MSY}	?	?	?	Undefined	MSY	?	?	?
Precautionary approach	F_{pa} , F_{lim}	?	?	?	Undefined	B_{pa} , B_{lim}	?	?	?
Management plan	F_{MGT}	-	-	-	Not applicable	B_{MGT}	-	-	-
Qualitative evaluation	-	?	?	?	Unknown	-	?	?	?

Catch options

The ICES framework for category 3 stocks (ICES, 2012) was applied. An abundance index derived from the Azorean bottom longline survey (ARQDACO(P)-Q1) was used as the index of stock development. The advice is based on a comparison of the last two years with the five preceding years. It should be noted that the survey was not undertaken in 2006, 2009, 2014 and 2015. The abundance index has decreased by 10% and therefore the uncertainty cap was not applied. The precautionary buffer was applied in 2015 and is not applied in 2017.

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

Table 2 Rays and skates in subareas 10 and 12. The basis for the catch options.*

Index A (2015 and 2016; 2015 missing)		6.04
Index B (2010–2014; 2014 missing)		6.75
Index ratio (A/B)		0.90
Uncertainty cap	Not applied	-
Advised landings (2016, 2017)		87 tonnes
Discard rate		Unknown
Precautionary buffer	Not applied	-
Landings advice**		78 tonnes

* 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.

** [Previous advised landings (2016, 2017)] × [index ratio].

Basis of the advice

Table 3 Rays and skates in subareas 10 and 12. The basis of the advice.

Advice basis	Precautionary approach.
Management plan	ICES is not aware of any agreed precautionary management plan for skates and rays in this area

Quality of the assessment

There is no legal requirement for EU Member States to report species-specific landings for skates in subareas 10 and 12. The species composition in commercial landings is unknown, but thornback ray is the main species landed.

The Azorean longline survey is not designed specifically to catch skates and rays and so does not provide appropriate quantitative data for most of these species. The survey is considered indicative of changes in stock size for thornback ray, which constitutes around 90% of the skates and rays caught in the survey.

Issues relevant for the advice

Thornback ray is the dominant skate species on the main Azorean fishing grounds (Subdivision 10.a.2), but there is no target fishery for this species.

Reduced fishing opportunities for the target species (red (=blackspot) seabream, *Pagellus bogaraveo*) in the longline fishery might lead to an increased retention of skates in Subarea 10. Discard rates and discard survival have not been quantified.

Reference points

Reference points are not defined for this stock.

Basis of the assessment

Table 4 Rays and skates in subareas 10 and 12. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2016).
Assessment type	Survey-based trends (ICES, 2017).
Input data	Annual landings for skates and rays. Portuguese bottom longline survey for thornback ray (ARQDACO(P)-Q1).
Discards and bycatch	Unknown.
Indicators	None.
Other information	None.
Working group	Working Group on Elasmobranch Fishes (WGEF)

Information from stakeholders

There is no additional available information for this stock.

History of the advice, catch, and management

Table 5 Rays and skates in subareas 10 and 12. ICES advice and ICES estimated landings. All weights are in tonnes.

Year	ICES advice	Predicted landings corresp. to advice	ICES landings
2008	No advice	-	72
2009	No advice	-	60
2010	No advice	-	68
2011	No advice	-	91
2012	No advice	-	103
2013	No TAC for this stock, additional measures needed + catch should decrease by 36% (20% reduction followed by 20% PA buffer)	-	115
2014	No new advice, same catch value as for 2013	-	187
2015	No new advice, same catch value as for 2014	-	171
2016	Precautionary approach	≤ 87	127
2017	Biennial advice	≤ 87	
2018	Precautionary approach	≤ 78	
2019	Precautionary approach (Same advice as for 2018)	≤ 78	

History of the catch and landings

Table 6 Rays and skates in subareas 10 and 12. Catch distribution by fleet in 2016 as estimated by ICES.

Total catch (2016)	Landings	Discards
Unknown	127 tonnes (proportion by fleet is unquantified)	Unknown

Table 7 Rays and skates in subareas 10 and 12. History of ICES species-specific estimates of landings inside and outside of the NEAFC regulatory area. All weights are in tonnes.

Year	Inside the NEAFC regulatory area	Outside the NEAFC regulatory area	ICES species-specific estimates of landings
2014	2	187	190
2015	0	171	171
2016	0	127	127

Table 8 Rays and skates in subareas 10 and 12. ICES estimates of landings by country (in tonnes).

Country	ICES Fishing area	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Spain	12.b	0	0	0	0	1	1	1	0	0	0	0	0
Spain	10.a	1	0	0	0	0	0	0	0	0	0	0	0
France	12.a	1	0	0	0	1	0	0	0	0	0	0	0
Portugal	10.a.2	47	62	71	72	60	68	91	103	115	187	171	127
Total		49	62	71	72	62	69	92	103	115	187	171	127

Summary of the assessment

Table 9 Rays and skates in subareas 10 and 12. Assessment summary. Abundance index (catch per unit effort relative abundance index) weighted by the size of the strata) of thornback ray (*Raja clavata*) from the Azores (ICES Subarea 10) from the Portuguese bottom longline survey (ARQDACO(P)-Q1).

Year	Abundance index
1995	11.328
1996	7.437
1997	5.910
1998	NA
1999	5.239
2000	4.426
2001	4.288
2002	17.664
2003	26.914
2004	13.920
2005	25.419
2006	NA
2007	18.039
2008	8.908
2009	NA
2010	7.365
2011	5.140
2012	6.854
2013	7.632
2014	NA
2015	NA
2016	6.042

NA = not available.

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. 2016. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.
- ICES. 2017. Report of the Working Group on Elasmobranch Fishes (WGEF), 31 May–7 June 2017, Lisbon, Portugal. ICES CM 2017/ACOM:16. 1018 pp.