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Stock Annex: Spotted ray (*Raja montagui*) in Subarea 8 (Bay of Biscay)

Stock specific documentation of standard assessment procedures used by ICES.

Stock: Spotted ray

Working Group: Working Group on Elasmobranch Fishes (WGEF)

Created:

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A. General

A.1. Stock definition

WGEF decided to consider a stock unit in the Bay of Biscay. Discontinuity in the species distribution between the Celtic Sea and the Bay of Biscay supports this stock definition (Johnston G. *et al.*, 2014).

A.2. Fishery

The Bay of Biscay landings are mainly French (99 % in 2005-19) and from division 8a. The main French gear is the fixed net in recent years.

A.3. Ecosystem aspects

The spotted ray occurs on the continental shelf, in areas with seabed composed of mud, fine sand or gravel. It is most common at depth less than 120 m. Juveniles are found in inshore areas.

B. Data

B.1. Commercial catch

The landing series available from 2005 onwards. comprised between 65 t and 222 t with a maximum in 2019. The average landing was 128 t/year although in the period from 2009-2012 the average decreased to 82 t/year.Since 2010, increasing trends are observed in both French and Spanish landings. Total international landing raised 109 t in 2012 and 172 t in 2013. However, this increase may be partly because the better

species identification in the auction halls. Furthermore, there may be issues of misidentification of this species with blonde ray (*Raja Bachyura*).

B.2. Biological

They are commercial length duistibution of the French fleet for the period 2016-2020 (Figure 1)

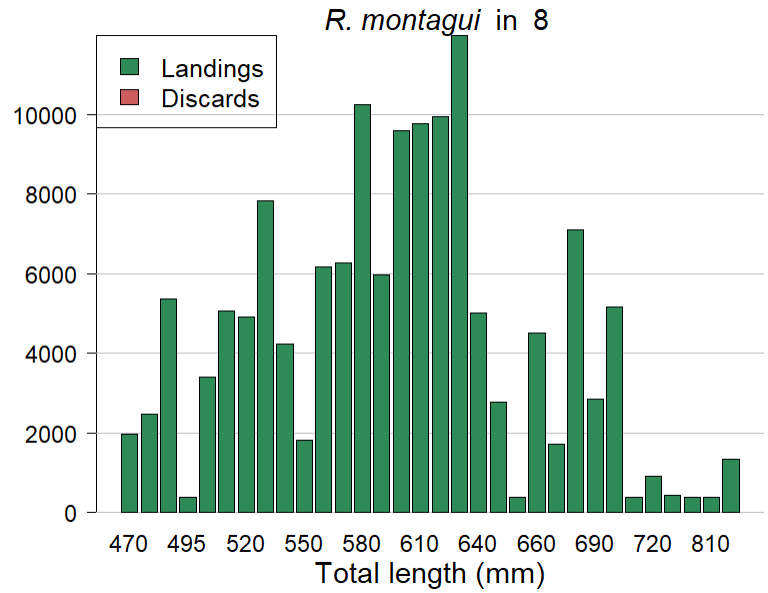

Figure 1. Length–frequency distribution of *R. montagui* by the commercial French fleet (bottom trawl and nets) for the period 2016–2020 in Subarea 8.

Length duistibution since 1983 are available form the Spanish IEO Q4-IBTS Survey in Divisions 8c and 9a (Figure 2).

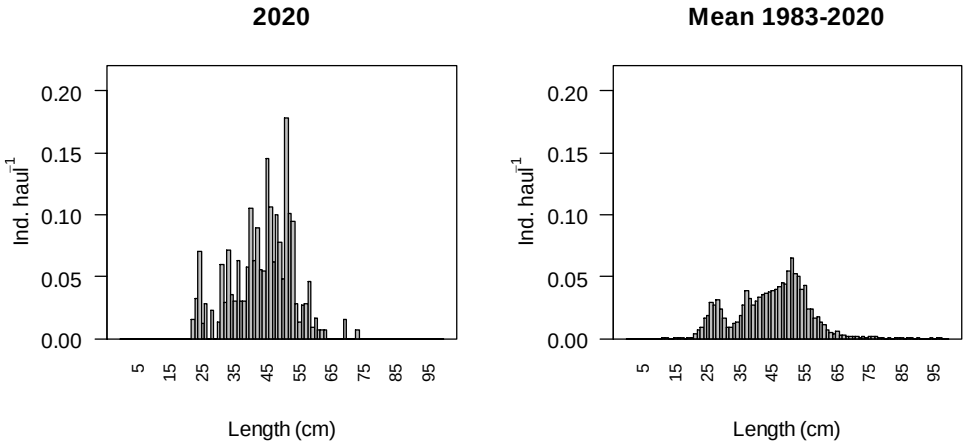

Figure 2. Mean stratified length distribution of *R. montagui* in the last survey and in the period 1983–2020 (right) in Division 8.c of the North Spanish Shelf.

Maturity length and growth parameter (Von Bertalanffy) are been estimated for the Portuguese spotted ray population (Pina-Rodrigues M.T., 2012)

B.3. Surveys

The spotted ray is sporadically present in the EVHOE catches (Figures 3 and 4). The occurrence of this ray in the EVHOE catches does not suggest any recent change in abundance. In 2019 the biomass index for R. montagui in the Spanish IEO Q4-IBTS survey (1.63 kg/haul) is one the highest recorded in Division 8.c since 2002 (Figure 5). Although in the survey *R. montagui* is very scarce in 9a Division in the time series, in 8c has been frequent, specifically in the central area of the Cantabrian Sea.

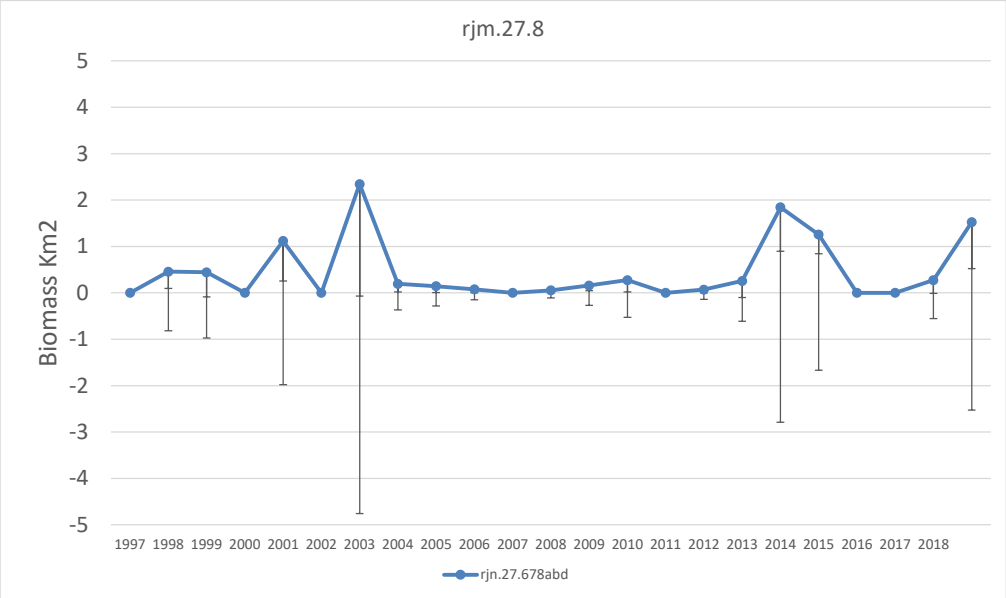

Figure 3: EVHOE survey indices 1987–2019 of the spotted ray in the Bay of Biscay (8.a,b,c). Abundance and biomass are raised to the total area surveyed (swept area method) but should be considered relative and in way absolute estimates.

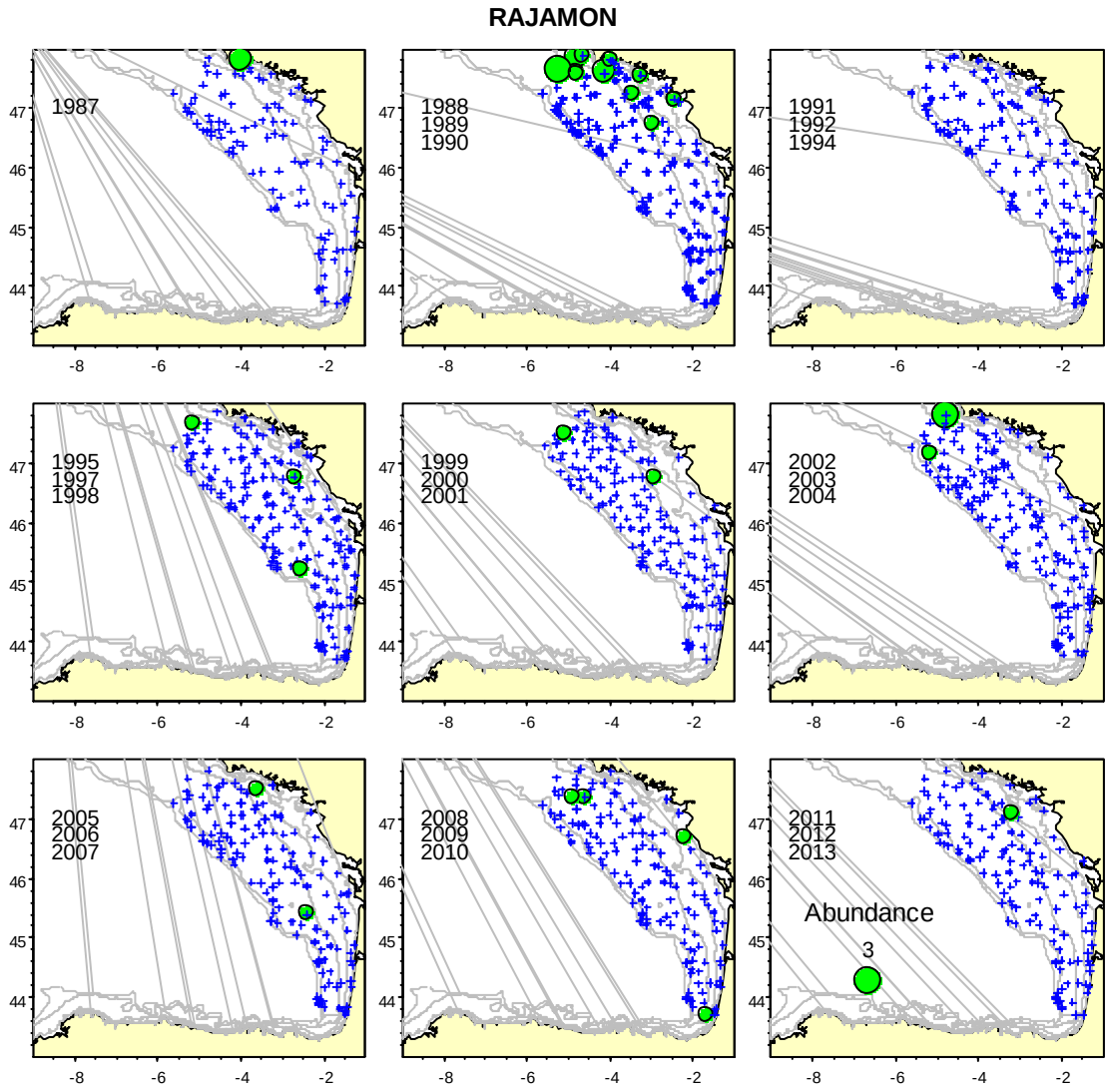

Figure 4: Spatial distribution of catches of spotted ray in the Bay of Biscay from EVHOE survey 1987–2013 by 3 years (except 1987).

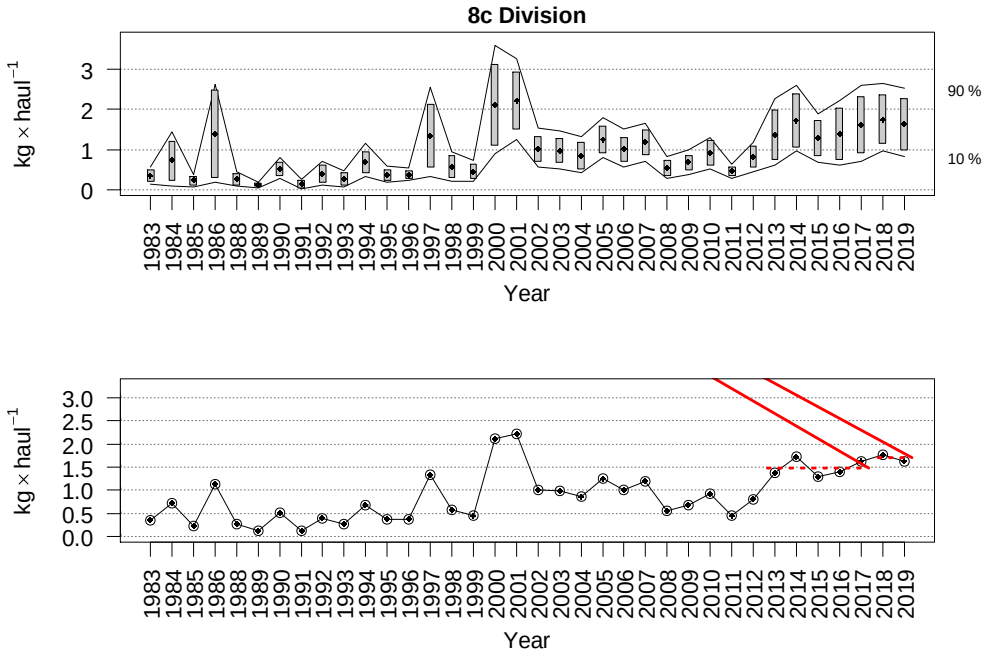

Figure 5. Evolution of Raja montagui biomass index during the North Spanish shelf bottom trawl survey time series in 8c Division covered by the survey. Boxes mark parametric standard error of the stratified biomass index and black lines mark bootstrap confidence intervals (α= 0.80, bootstrap iterations = 1000). Red lines mark a comparative between last two years and the five previous.

B.4. Commercial CPUE

No available commercial CPUE.

B.5. Other relevant data

C. Assessment: data and method

The ICES framework for category 3 stocks was applied (ICES, 2012). The SpGFS-WIBTS-Q4 survey was used as the index (kg/haul) 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 advised landings.

The EVHOE -WIBTS-Q4 surveys is not used in the advice because their catches are not representative for this species.

Some estimates of discards are available but considered to be incomplete and discard rate is unknown. ICES cannot quantify the corresponding dead catch.

D. Short-Term Projection

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E. Medium-Term Projections

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F. Long-Term Projections

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G. Biological Reference Points

No reference points have been adopted by ICES for this stock

H. Other Issues

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I. References

Johnston G., A. Tetard, A. Ribeiro Santos, E. Kelly and M. Clarke, 2014. Spawning and nursery areas of selected rays and skate species in the Celtic Seas. Working Document to WGEF 2014

Pina-Rodrigues, M.T. 2012. Age, growth and maturity of two skate species (Raja brachyura and Raja montagui) from the continental Portuguese coast. (Master thesis) Gent University. (49pp)