

{rokbox title=|Map of the study area showing the sampling stations of the MEDITS survey in 2023 :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-biology-ecology-population-trends-raja-miraletus-ferragut-et-al-2025-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-biology-ecology-population-trends-raja-miraletus-ferragut-et-al-2025.jpg{/rokbox}

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, 2025.

[Insight into the biology, ecology and population trends of the brown skate, *Raja miraletus* Linnaeus, 1758, in the Balearic Islands.](#)

J Fish Biol. 2025;1–14. <https://doi.org/10.1111/jfb.70051>

Abstract: We studied the life-history traits of the brown skate (*Raja miraletus*) population off the Balearic Islands, which is a species commonly caught as bycatch by the bottom trawl fishery in the Western Mediterranean. Samples and data were collected year-round from commercial catches and yearly during spring–summer from the International Bottom Trawl Survey in the Mediterranean. The maximum total length observed was 43 cm, consistent with other Mediterranean regions but smaller than in Tunisia and Egypt. Recruitment was higher in winter, aligning with the observed summer spawning peak. The smallest sexually active individuals were 34 and 32 cm for females and males, respectively; with L50 values of 35.9 and 33.4 cm for females and males, respectively. Length–weight relationships differed between sexes for total weight but not for eviscerated weight, highlighting variations in the mass of the organs rather than the sexual dimorphism of carcasses. Growth parameters indicated slower growth ($K = 0.14$) and smaller L_{∞} (49.63 cm) in the Balearic Islands compared to other Mediterranean areas. The estimated trophic level from stomach contents was 3.72 ± 0.63 , with crustaceans appearing as its main prey (accounting for 96% of Index of Relative Importance), with an ontogenetic dietary shift observed between adults and juveniles, transitioning from a diet based on a greater proportion of small crustaceans to one that includes larger crustaceans and fish. Juvenile and adult populations are not bathymetrically segregated. Both mean annual density and frequency of occurrence showed stability over two decades, potentially linked to the decrease in fishing pressure on the shelf and the implementation of protected areas. However, the historical context of overexploitation in the area emphasizes the need to consider this stability cautiously. The results presented here enhance the understanding of *R. miraletus*

in the Balearic Islands, providing critical data for potential management and conservation purposes.

Keywords: diet, growth, Rajidae, reproduction, trends, western Mediterranean