{rokbox title=|Maps of the studied area :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-sponge-assemblages-fishing-grounds-seamounts-balearic-ilands-diaz-et-al-2023-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-sponge-assemblages-fishing-grounds-seamounts-balearic-ilands-diaz-et-al-2023.jpg{/rokbox}

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Sponge assemblages in fishing grounds and seamounts of the Balearic Islands (western Mediterranean)

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Abstract: The Balearic Archipelago (western Mediterranean) is an area of great ecological interest due to the combination of complex geomorphology, highly oligotrophic waters and low fishing pressure. Sponges play a key role in benthic habitats, providing structural complexity and significantly contributing to their diversity and biomass. Here, we present an insight into the sponge communities of this archipelago from the analysis of samples collected during several scientific research surveys carried out on bottom trawl fishing grounds around the Balearic Islands and on sedimentary and rocky bottoms of the Mallorca Channel seamounts. Sampling was carried out with experimental bottom trawl, beam trawl, rock dredge and remotely operated vehicle (ROV). We analyzed species presence/absence data using multivariate methods in order to identify assemblages. Once identified, we characterized their biodiversity, biomass and taxonomic composition. A dbRDA analysis was conducted to test the influence of environmental variables and fishing pressure on the sponge communities. Up to 350 species are reported: 220 at bottom trawl fishing grounds and 189 at seamounts. Communities were structured by depth, temperature, currents, substrate and fishing pressure with sponge presence/absense, biomass and diversity also linked to the presence of deep algae beds. Taxonomic composition differed between bottom trawl fishing grounds and the seamounts, where this fishing activity is almost negligible, pointing to different sensitivity to this fishing impact among the different orders, particularly for Tetractinellida, which was much more diverse and abundant at seamounts.

Keywords: Biodiversity, Sponge grounds, Porifera, Fishing pressure, Sponge communities