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thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-distribution-microplastics-marine-protected-area-rios-et-al-2023-thumb.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-distribution-microplastics-marine-protected-area-rios-et-al-2023.jpg{/rokbox}

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[**Are seafloor habitats influencing the distribution of microplastics in coastal sediments of a Marine Protected Area?**](#)

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Abstract: The marine environment is affected by the increasing presence of microplastics (MPs; minor than 5 mm), and the seafloor acts as a sink for these particles. Locations with different predominant seafloor habitat and protection level applied were selected from Cabrera Marine-Terrestrial National Park (henceforth, Cabrera MPA) (western Mediterranean Sea) with the aim to assess the distribution of MPs along the sediments of this Mediterranean MPA. A total of 37 samples were collected. A high diversity of sediment between locations was detected according to the Udden-Wentworth classification and locations were clustered into two main groups according to the predominance of different particle size fractions. The identification of MPs was carried out according to the sediment particle size classification. A total of 1431 MPs and a mean value ($\pm$ SD) of 314.53 ± 409.94 items kg^{-1} D.W. were identified, and 70% of the particles were fibers. Statistically higher abundances of MPs were found in sediments collected from sandy habitats, with a mean value of 630.80 ± 636.87 items kg^{-1} D.W., compared to the abundances of MPs found in locations with different predominant seafloor habitats, that ranged from 136.79 ± 156.33 items kg^{-1} D.W. in habitats with similar predominance of seagrass and sand to 223.02 ± 113.35 items kg^{-1} D.W. in habitats with similar predominance of rocks and sand. The abundance of MPs regarding each sediment particle size fraction differed between years and locations, and the abundance of MPs according to each identified shape differed between sampling years, particle size fraction, and predominant seafloor habitat. The present study highlights the ubiquitous presence of MPs in seafloor sediments from a MPA. Furthermore, the results suggest that the predominant seafloor habitat can modulate the presence of MPs in marine environments in both general abundances and shape of items.

Keywords: Anthropogenic particles, Marine Protected Area, Seafloor