{rokbox title=|Sampling zones located in the Spanish western Mediterranean Sea :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-floating-microplastics-western-mediterranean-sea-calleja-et-al-2025-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-floating-microplastics-western-mediterranean-sea-calleja-et-al-2025.jpg{/rokbox}

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Floating microplastics along the western Mediterranean Sea: Are we reaching a “Good Environmental Status” or drifting away?.
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Abstract: This study investigates the spatial and temporal distribution of sea surface microplastic in the Spanish Mediterranean Sea, assessing compliance with the Good Environmental Status (GES) criteria of the European Marine Strategy Framework Directive 2008/56/EC and Barcelona Convention. Data from 668 sea surface water samples collected from 2017 to 2023 were analysed to classify their status according to indicators of microplastic pollution. A mean abundance of 0.24 ± 1.80 items/m2 of sea surface microplastics was quantified, with significant differences between locations, zones, areas, and macro-areas (KW, p minor then 0.05). The highest abundance was observed in the protected area of the Columbretes Islands (14.26 ± 8.66 items/m2) and the lowest in Fuengirola (0.0008 ± ND items/m2). The peninsular coast showed a higher abundance of microplastic (0.41 ± 0.27 items/m2) than the Balearic Islands (0.21 ± 0.06 items/m2). Fragments and sheets accounted for 72 % and 15 % of the microplastics, respectively. The highest microplastic abundance was observed in 2017 (0.85 ± 0.5 items/m2) and the lowest in 2022 (0.07 ± 0.01 items/m2), but no temporal trend was detected (MK, p >0.05). According to GES, 98 % of the stations were classified as having “Moderate” to “Very poor” conditions, while only 2 % were in good or high environmental status. This study confirms the lack of GES achievement along the Spanish western Mediterranean coastal waters and highlights the need for action to reduce plastic waste and prevent marine pollution.

Keywords: Plastic pollution, Microplastics, Sea surface, MSFD, Barcelona convention, GES