

{rokbox title=|Graphical abstract :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-map
ping-microplastic-mediterranean-marine-protected-area-compa-et-al-2023-thumb.jpg|}images/st
ories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-mapping-microplastic-
mediterranean-marine-protected-area-compa-et-al-2023.jpg{/rokbox}

Montserrat Compa, Carme Alomar, Salud Deudero, 2023. [Mapping microplastic overlap between marine compartments and biodiversity in a Mediterranean marine protected area](#)

. Science of The Total

Environment. Volume 892, 20 September 2023, 164584.

<https://doi.org/10.1016/j.scitotenv.2023.164584>

Abstract: The Mediterranean Sea is adversely affected by human activities, of which the release of mismanaged waste into the marine environment, primarily plastic pollution, is one of the most omnipresent. The primary goal of this study is to link microplastic ingestion in several bioindicator species and creating hazard maps from microplastics sampled along the seafloor, in the hyperbenthos and along the sea surface layer in a Marine Protected Area (MPA). Considering the connectivity between these layers, the findings of this study identify areas of concern, especially within bay areas, where marine diversity is exposed to microplastic debris ingestion. In terms of exposure to plastic debris, our findings indicate that areas with high species diversity are particularly vulnerable to plastic exposure. The best model integrated the mean exposure of each species to plastic debris across each layer and the nekto-benthic species inhabiting the hyperbenthos layer were found to be the most at risk. Furthermore, the cumulative model's scenario indicated a higher risk to plastic ingestion when all habitats were considered jointly. Overall, the findings of this research highlight marine diversity in a Mediterranean MPA are vulnerable to microplastic pollution, and this study's proposed exposure methodology is applicable to other MPAs.

Keywords: Plastic ingestion, Marine diversity, Risk assessments, Marine reserves