{rokbox title=|Map of the sampling area located in the Port of Palma in the Island of Mallorca (Spain), western Mediterranean Sea :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-mussels-accumulating-trace-metals-microplastics-port-alomar-et-al-2025-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-mussels-accumulating-trace-metals-microplastics-port-alomar-et-al-2025.jpg{/rokbox}

Carme Alomar, **Xavier Capó**, Beatriz Rios-Fuster, Patricia Bernárdez, Juan Santos-Echeandía, **Salud Deudero**, 2025. **Are mussels accumulating trace metals and microplastics in port facilities?** Marine Environmental Research. Volume 210, September 2025, 107263. https://doi.org/10.1016/j.marenvres.2025.107263

Abstract: Mediterranean port areas have an important economic and societal role and are a key sector within Europe's Blue Economy framework. Amongst these activities, the shipping industry has a direct effect on local communities but also has an impact on these coastal areas through routinely activities related to repairment and maintenance of ships and dispensing stations, amongst others. Mussels have a large filtering capacity and can intake simultaneously trace metals and microplastics derived from these activities. In these areas Nature-Based Solutions (NbS), based on mussels, could be applied supporting environmental restoration and improving water and environmental quality of these degraded zones. The aim of this research is to study the accumulation of trace metals in soft tissues of mussels (copper (Cu), zinc (Zn), arsenic (As), nickel (Ni), cadmium (Cd), lead (Pb) and mercury (Hg)) and microplastics (MPs). Results from this study indicate that Zn, Cu and As predominant in soft tissues of mussels deployed in a port area and concentrations of Zn and As in mussels from this study are higher than in other studies suggesting that the study area is especially affected by the presence of these two trace metals. Regarding MPs, 88 % of the individuals ingested MPs and this percentage is in line with previous results from the same sampling area. Results from this research can provide a baseline for the use of mussels as potential natural bioremediation tools which could be considered in future management plans of coastal areas in order to quantify and reduce anthropogenic pressures upon these.

Keywords: Sustainability, Biorremediation, Blue growth, Bivalves, Pollution, Coastal areas