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Presenter: Daniel González-Fernández (University of Cádiz)

Description:

Rivers and coastal runoff are key pathways of plastics transport from land-based sources to the ocean. Despite increasing efforts to characterize plastic fluxes from rivers to the ocean, existing data cannot fully explain the dynamics of plastics in estuarine systems, and thus large uncertainties remain when attempting to provide large scale assessments through modelled estimates. Estuaries are indeed complex environments in which fluvial processes interact with the tidal regime, affecting residence time, net transport, and plastic distribution in the water column. Here, we studied concentrations of microplastics (>250 μm) in surface and water column samples at the estuary of the Guadalquivir River (SW Spain). Bimonthly monitoring during spring and neap tides showed differences in the concentration and characteristics of microplastics. We observed that, on average, microplastic concentrations could be an order of magnitude higher in the surface layer than in the water column. These results provide new insights to address uncertainties in the extrapolation of litter fluxes using modelled estimates. The use of manta trawl samples may overestimate the quantification of microplastic loading to the ocean. At the same time, a mayor portion of the microplastic input from rivers to the marine environment may be transported as suspended load.

More Information: <https://marinelitterlab.eu/>

Full list of Authors

- Sandra Manzano-Medina (University of Cádiz)
- Manuel González-Duarte (IEO-CSIC)
- Andrés Cózar (University of Cádiz)

Microplastics in estuarine waters: surface layer vs. water column

Category

Scientific Session > OS - Ocean Sustainability and the UN Decade > OS10 Marine Litter and Microplastic Monitoring and Understanding

Presentation Preference: Oral

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