CARE 4BIO

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Development of observational and computational tools for the analysis of marine litter concentration in the European seas

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Topic(s) addressed:

- **HORIZON-CL6-2025-01-ZEROPOLLUTION-04: Towards a comprehensive European strategy to assess and monitor aquatic litter including plastic and microplastic pollution**
  - Knowledge on pollution sources, pathways, spatial distribution and accumulation zones.
  - Improve tools and methodologies for efficient macro litter monitoring of microplastic pollution to address policy needs.
  - Develop optimized, validated, harmonized and cost-effective monitoring strategies for marine environments and collaborative data collection across borders.
  - Enable the uptake of monitoring data in large scale homogenized datasets.

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Project idea

- The first step in any proposal that seeks to address the key topics of the call is to study the distribution and variability of marine litter concentration in the European seas.

- In this task our group offers its expertise in the development of computational and observational tools.

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Main expertise offered

- Analysis of marine litter pollution impact using both observations and computational tools:
  - Implementation of high resolution modelling systems to simulate 3D marine litter dispersion.
  - Development of combined observational-numerical tools for marine litter sources identification.
  - Marine litter pollution risk analysis.
  - Analysis of the spatiotemporal uncertainties associated to different marine litter sampling strategies by performing Observing System Simulation Experiments (OSSE).
- Currently working in the frame of a regional funded research project awarded in 2023 (OBAMARAN):
  - Cataloguing observations and analyzing their intercomparability.
  - Generating management tools combining observations and simulations.
  - Analysis and optimization of sampling strategies.
- Participation in 30+ research projects funded by European, national and regional Institutions.
  - Including Interreg Plastic Busters MPAs project on the impact of marine litter polution on Mediterranean Marine Protected Areas.
- We are looking to partner as a WP leaders.

Main expertise offered

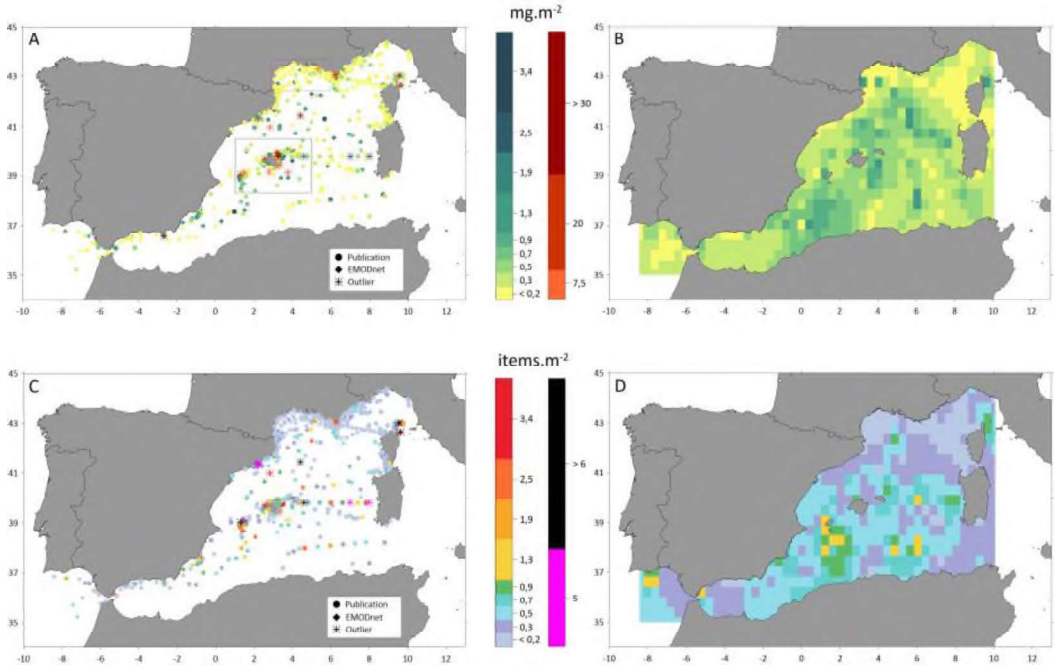

Figure 1. Surface marine litter concentration in the Western Mediterranean from a compilation of observations.

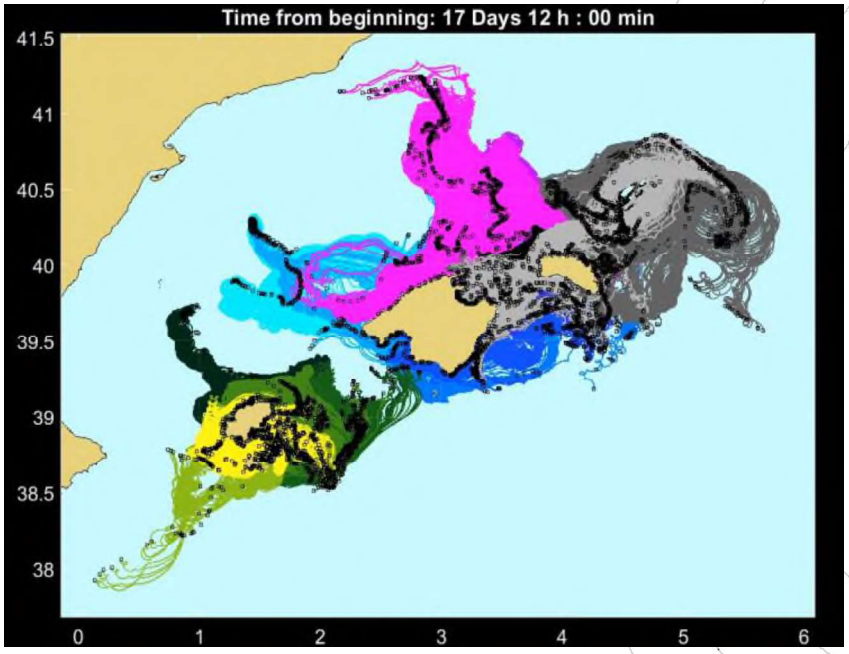

Figure 2. Marine litter transport in the Balearic Islands from a high resolution dispersion modelling system.

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