

Where Go the Plastics? And Whence Do They Come? From Diagnosis to Participatory Community-Based Observatory Network

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Plastics: wonder products facilitating our daily lives thanks to their usefulness. From the point of view of producers, plastics are the material for the twenty-first century; from the point of view of sea turtles, plastics cause 30% of their deaths. Plastics are a crossroads where the complexity of multiple rationality, power, and ethics intersect and can be better understood.

Since our first microplastics sampling diagnosis campaign in 2008 to the implementation of the participatory community-based observatory network, we have developed two main work processes that feed further actions along protected shores contaminated with plastic in the Atlantic and Mediterranean systems. Working from the perspective of the EU Marine Strategy Framework Directive and complementary legislative frameworks, the two main processes are:

- **Diagnosis:** From the majority of the 1000 studied samples, we established a microplastic pollution vulnerability baseline of studied beaches, we improved the sampling methodology, and we identified the need for long-term data series.
- **Long-term observation:** Through the participatory community-based observatory network pilot sites of Lanzarote, Barcelona, Lugo, Finistère and Maine, we started long-term data collection that allows us to identify and better understand the seasonal variability of microplastic pollution and establish pollution-level references to track changes over time and space. The validation of the data from these five pilot sites allows us to move to the next step of working with local stakeholders to construct a more robust network of sites along all identified vulnerable shores.