MICRO AND NANOPLASTICS IN THE BIOTA AND THE AQUATIC ENVIRONMENT

World production of plastics has strongly expanded, from 1.7 million tonnes in 1950 to 322 million tonnes in 2015 . Discarded "end-of-life" plastic accumulates particularly in marine habitats. Marine plastic litter results from both land and sea-based sources and once at sea, larger items tend to either fragment or sink, and then accumulate on the coastline or on the seafloor, harming wild life and marine food chains. The assessment of marine microplastic pollution is relatively recent, and extensive areas of seas remain yet poorly explored. This is the case of the Mediterranean Sea, whose shores house around 10% of the global coastal population, while the basin constitutes one of world´s busiest shipping routes, and receives waters from densely populated river catchments (e.g. Nile, Ebro, Po, Rhone). Contamination by small plastic debris in the Mediterranean is a problem whose extent is only recently been recognized.

GOALS

- Development of methods for the separation and recognition of micro and nanoplastics in environmental (water and sediment) and biological (invertebrates and vertebrates) matrices
- Study and monitoring of plastics in continental, marine coastal and offshore water bodies, both in the water column and in sediments
- Study and monitoring of the accumulation and distribution of micro and nano-plastics in the marine food web (invertebrates and vertebrates) with particular emphasis on species of commercial interest

INSTRUMENTS AND METHODS

To achieve the objectives of this research we use different instrumental techniques such as optical and electronic microscopy, FTIR and Ramane spectrometry

SUBJECTS

Ecology, Analytical and Environmental Chemistry

WORKING GROUP

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COLLABORATIONS

The research group has internal collaborations in the Department and at the University (Physical and Earth Sciences), has numerous national collaborations (Cà Foscari University of Venice, Marche Polytechnic University, APM Ferrara, Euromark Padova) and international (National Institute of Biology , Slovenia)