

Assessment of seabed litter in the Northern and Central Adriatic Sea (Mediterranean) over six years

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Abstract

Temporal and spatial occurrence of anthropogenic debris on the seabed is much less investigated in respect to the sea surface and shores, due to sampling difficulties and costs. However, detecting marine benthic litter is fundamental for developing policies aimed at achieving the Good Environmental Status (GES) in European Seas by 2020, as requested by the Marine Strategy Framework Directive (MSFD).

In this context, this study aimed to estimate seafloor litter abundance, composition, spatial distribution and main sources in the North-Central Adriatic Sea (FAO GSA 17) over a six-year period. It represents the longest data set available on this issue up to date in the basin.

The sampling area has a surface of 36,742 km² and extends from the Italian coast to the 12 nm limit of the Croatian national waters. Six surveys were conducted in fall from 2011 to 2016 and 67 stations were sampled each year, distributed over the area following a depth-stratified random design (0-30 m; 31-50 m; 51-100 m).

Litter items were collected using a “rapido” trawl, a modified beam trawl commonly used by the Italian fishermen to catch benthic species. Marine litter in the catches was classified in 6 major categories (plastic, metal, glass, rubber, wood, other). Plastic was dominant in terms of weight. The highest concentration of litter was found close to the coast likely due to high coastal urbanization, river inflow, extensive navigation and the morphological-hydrological features of the basin.

These data provide useful information to implement necessary measures to manage marine litter in order to minimize this type of anthropogenic pollution in the Adriatic region. The systematic monitoring of marine litter, on regional scale, may be also useful to evaluate the effectiveness of national and international regulations.

TRACK 1: MONITORING AND CITIZEN SCIENCE

Marine debris monitoring programs: Applying data to answer research questions, advise management, and inform policy

Session Chairs: Kate Bimrose, NOAA Greater Farallones National Marine Sanctuary; Caitlin Wessel, NOAA Marine Debris Program

This session will focus on real life application of marine debris monitoring data to inform management and policy, which will be of interest to a wide audience including resource managers, scientists, policy makers, and the public.