
Occurrence of microplastics in beach sediments and marine biota of the Romanian Black Sea

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Abstract

Microplastic pollution is globally recognized as a widespread *problem* nowadays. In marine environments, microplastics have affected all parts of the world's seas and oceans, being present in all marine habitats. The Black Sea does not constitute an exception from marine plastic global tendency; the microplastic pollution has been identified as a major issue affecting the environmental state of the Black Sea too. The assessments for monitoring purposes on microplastics occurrence in the sand of the Romanian Black Sea beaches started in 2018 by NIMRD and is ongoing. Diverse microplastics types are present in the top 5 cm of the marine sandy beaches of Romania, with high densities values of polystyrene (EPS). Morphologically, we can distinguish five types of microplastics in the composition of the Romanian beach sediments: polystyrene (foam), film, fragment, filament and pellet. The most dominant microplastic types found in our samples are polystyrene (foam), plastic fragments and films. *Microplastics* also have been *detected in marine biota from the Black Sea area*. The analysis of the stomach contents of two species of seabirds present in the Romanian coastal area in the period January-August 2021, respectively the seagull (*Larus* sp.) and the great cormorant (*Phalacrocorax carbo*) highlighted the presence in a proportion of 29.41% of plastic materials of different sizes (micro-, meso-, macro- and megaplastics) from the total number of tested birds, and three-color categories (white, transparent and brown). Our results support the need to continue and expand the study at the level of the entire Black Sea basin, respectively the inclusion in the national and regional programs for monitoring the state of the marine ecosystem.

Keywords: microplastics, beach sediments, seabirds, monitoring Black Sea

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