
Micro and mesoplastics pollution in beach sediments of Skikda coasts (northeast of Algeria)

Halima Grini*^{†1,2,3,4}

¹Halima Grini – Skikda, Algeria

²Sophia Metallaoui – Skikda, Algeria

³Daniel González-Fernández – Cadiz, Spain

⁴Mourad Bensouilah – Annaba, Algeria

Abstract

The Mediterranean Sea has been identified as a hotspot for plastic pollution. The present study is the first attempt to provide original data on plastics debris occurrence in beach sediments along 50 km of the Skikda Gulf in Algeria (southwestern Mediterranean Sea). Sediment samples from seven beaches along the Skikda coastline were collected to extract, quantify, and characterize plastic debris larger than 1 mm. Plastics particles were classified regarding their size into mesoplastics (particles ranging between 5 and 25 mm), and large microplastics (particles ranging from 1 to 5 mm). Overall, microplastic was the most abundant size fraction 68%. The predominant plastic types were fragments and pellets, white/transparent color, and PE (46%) polymer type. The average concentrations of plastic were 1067.19 ± 625.62 item/m², showing variability among beaches and within sampling sites. The Skikda coast presented high pollution levels compared to other areas in the Mediterranean Sea and further regions of the world. Kef Fatma was the most contaminated site, a large and open beach located on the eastern coast of Skikda with low anthropic development. The spatial differences suggest transport and accumulation of plastics far away from the urban and industrial sources because of local winds and the west-east currents, revealing the spread of the anthropic impact in the area.

Keywords: Microplastic, pollution, Beach sediments, Mediterranean Sea, Skikda

*Speaker

[†]Corresponding author: halimagrini.21@gmail.com