

Publication MIO : Natascha Schmidt (MIO) , Delphine Thibault (MIO/MARBEC), François Galgani, Andrea Paluselli (MIO), Richard Sempéré (MIO) - Occurrence of microplastics in surface waters of the Gulf of Lion (NW Mediterranean Sea) in Progress in Oceanography



Dans le cadre des programmes MERMEX/MISTRALS, JPI Oceans PLASTOX, et Blue-Polut-agence de l'eau, Natascha Schmidt (doctorante au M I O) et al. ont étudié la concentration des microplastiques et leur distribution de taille dans le Rhône et son embouchure, dans la baie de Marseille et au large de Toulon, afin de (1) mieux comprendre l'ampleur de la présence des microplastiques dans la zone d'étude, (2) d'identifier des sources potentielles et (3) de faire des estimations sur le transport des microplastiques par le Rhône et le Courant Nord Méditerranéen. Les résultats sont publiés dans le volume special MERMEX de Progress In Oceanography.

Abstract

Between 2014 and 2016 a total of 43 microplastic samples were collected at six sampling stations in the eastern section of the Gulf of Lion (located in the northwestern Mediterranean Sea), as well as upstream of the Rhône River. Microplastics were found in every sample with highly variable concentrations and masses. Concentrations ranged from $6 \cdot 10^3$ items km^2 to $1 \cdot 10^6$ items km^2 (with an average of $112 \cdot 10^3$ items km^2), and mass ranged from $0.30 \text{ g} \cdot \text{km}^2$ to $1018 \text{ g} \cdot \text{km}^2$ DW (mean $61.92 \pm 178.03 \text{ g} \cdot \text{km}^2$). The samples with the highest and lowest microplastic count originate both from the Bay of Marseille. For the Bay of Marseille, it is estimated that the total microplastic load consist of $519 \cdot 10^3 - 101 \cdot 10^6$ items weighing $0.07 - 118 \text{ kg}$. Estimations for daily microplastic transport by the Northern Current and the Rhône River, two important hydrologic features of the northwestern Mediterranean Sea, range from 0.18 to 86.46 t and from 0.20 to 21.32 kg , respectively. Particles?

Keywords :

Marine litter
Microplastic
Mediterranean Sea
Gulf of Lion
Marseille Bay

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