The coastline of a Marine Protected Area under study: abundance of marine debris

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Abstract

The western Mediterranean Sea suffers from numerous anthropogenic impacts of marine and land-based origin. The coastline of Cabrera Natural Park (Cabrera MPA) located in the Archipelago of the Balearic Islands, has been surveyed in four different months (February, March, May, and July) in order to assess the presence of floating and stranded marine debris. Higher abundances of marine debris were found in March in the east of the island (es Burrí), but no statistical differences in abundances between areas or between the surveyed months were detected. Plastic pieces ranging from 2.5 to 50 cm were the most commonly identified items (19%), followed by nets and pieces of nets of more than 50 cm (12%), and by bottles and containers, mainly drums (9%). Higher abundances of stranded debris were quantified compared to those of floating debris. Marine debris was classified according to categories, sources, and composition. Artificial polymer material was the most common category identified in the four surveyed months and in all the areas studied. Non-sourced debris was the most abundant item, followed by items from aquaculture and fisheries activities and from shoreline, tourism and recreational activities. Regarding composition, non-Single Use Plastics (non-SUPs) were the most common items at all four months and areas surveyed. The present study highlights the high abundance of artificial polymer materials from fisheries and aquaculture activities along the coastline of an MPA. Further mitigation measures should be taken to reduce the presence of these items in areas of special ecological interest, such as Cabrera MPA.

Keywords: marine protected area, stranded debris, floating debris, ghost fishing

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