

國立臺灣海洋大學 海洋環境與生態研究所  
海洋生物地球化學與生態系統整合研究

題 : Characterization of microplastics in mangrove sediment of Muara Angke Wildlife Reserve, Indonesia

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Abstract

An investigation of microplastic abundance and its characteristics was conducted in Muara Angke Wildlife Reserve, a relic mangrove forest in the Jakarta metropolitan, to contribute to marine microplastics' national data inventory. Microplastics were found in all the stations, with an average of  $28.09 \pm 10.28$  particles per kg of dry sediment ( $n \text{ kg}^{-1}$ ). Sediments in the outside mangrove area contained more microplastics than the inside area. Foam form was the most dominant in all the samples and was found more abundant on the outside. More than half of microplastics were of size  $<1000 \mu\text{m}$ , and nearly 50% were polystyrenes. This polymer is widely used for food packaging, which is prone to be fragmented. Polypropylene and polyethylene form another 50% of microplastics, which are widely used for textiles and fishing gears. As Jakarta is the largest city in Indonesia, this microplastic dataset may be the benchmark for other mangroves around the country.

Reference:

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題 目：印度尼西亞 Muara Angke 野生動物保護區紅樹林沉積物中微塑料的特徵  
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抽象的

在雅加達大都市 Muara Angke 野生動物保護區開展了微塑料豐度及其特徵調查，以促進海洋微塑料國家數據清查。所有站點均發現微塑料，平均每千克乾沉積物 ( $n \text{ kg}^{-1}$ ) 有  $28.09 \pm 10.28$  個顆粒。紅樹林外部區域的沉積物比內部區域含有更多的微塑料。泡沫形式是所有樣品中最主要的，並且在外部發現更多。超過一半的微塑料尺寸小於 1000 微米，近 50% 是聚苯乙烯。這種聚合物廣泛用於食品包裝，容易碎裂。聚丙烯和聚乙烯構成另外 50% 的微塑料，廣泛用於紡織品和漁具。由於雅加達是印度尼西亞最大的城市，這個微塑料數據集可能是全國其他紅樹林的基準