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# Fate of Plastic in Hong Kong Mangrove Forest: from Macro to Micro

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## Abstract

Marine plastic pollution has been recognised as one of the top environmental issues to tackle in the recent decades. Plastic debris affect all coastal habitats and no exception for Hong Kong mangrove forests where plastic fragments can be easily observed. However, data on abundance and composition of microplastics are predominantly from sandy beaches and other coastal environment such as pebble and gravel shores. Mangrove forests, the microplastic hotspot identified recently, are still underexplored. In this study, three replicates of top 2 cm of surface sediment were collected from three western and five eastern mangrove forests in Hong Kong during wet and dry season. Microplastics larger than 300  $\mu\text{m}$  retrieved from the sediment samples were counted and classified into different categories by their shapes. Six specimen samples of three species of common mangrove crabs and two species of gastropods were also collected, and their stomachs and tissues were examined for microplastics larger than 25  $\mu\text{m}$ . By quantifying the microplastic abundance, distribution and composition at the eight designated sites, we investigate the seasonal and spatial differences across Hong Kong mangrove forests. Preliminary results have shown no significant differences between seasons and sites but a trend of increasing microplastic abundance from seaward to landward. We hope to provide more information on microplastic pollution in local coastal habitats with this study.

**Keywords:** Mangrove forest, microplastics

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