

Environmental Research, Technology Demonstration and Conference Project

ECF Project:	ECF 2020-134
Project Title:	Monitoring the seasonal distribution and levels of microplastics in Mai Po Natural Reserve
Principal Investigator:	Dr Lo Hoi Shing, School of Science and Technology, The Open University of Hong Kong. With effect from 1 August 2021, replaced by Dr Fang Kar Hei, James, Department of Applied Biology & Chemical Technology, The Hong Kong Polytechnic University.
Total Approved Grant:	\$499,067
Duration:	1/4/2021 to 31/03/2023
Project Status/Remarks:	Completed
Project Scope:	<p>Many monitoring surveys of microplastic have been conducted in Hong Kong, but the status of pollution in ecologically important wetland, Mai Po Nature Reserve, is largely disregarded.</p> <p>This study aims to monitor the seasonal distribution and levels of microplastic in the tidal shrimp ponds ('gei wais') and mangroves. On a bimonthly basis, sediment and surface water will be collected, meanwhile submerged aquatic vegetation will also be sampled since recent advances showed that it is able to contain large amount of micro plastic. Considering the need of processing a large number of samples, a fast and semi-automatic extraction device will be developed. This project will provide very useful information for establishing better management plan and basis for future scientific study of micro plastic in the Nature Reserve.</p>
Summary of the Findings/Outcomes:	The aim of this project was to monitor the contamination of microplastics in both sediment and surface water of the Mai Po Nature Reserve in Hong Kong seasonally from 2020 to 2022. While no spatial differences in the quantity of microplastics were detected among the seven Biodiversity Management Zones, our findings suggest that sediment plays a significant role in the accumulation of microplastics in the Mai Po Nature Reserve, with an increase in contamination observed over the study period. Further investigation is necessary to monitor this increasing trend and identify the sources of microplastic contamination.