

Environmental Research, Technology Demonstration and Conference Project

ECF Project:	ECF 129-2022
Project Title:	Environment and Conservation Fund - Applicability of eDNA metabarcoding in fish community monitoring: Case study in Hoi Ha Wan Marine Park
Principal Investigator:	Professor Qiu Jianwen, Department of Biology, Hong Kong Baptist University
Total Approved Grant:	\$1,339,500
Duration:	1/9/2023 to 31/8/2025
Project Status/Remarks:	On-going
Project Scope:	<p>Environmental DNA (eDNA) metabarcoding has been proposed as a powerful tool in biological conservation, but its applicability to a specific group of organisms or a specific environment requires empirical studies to optimise the protocol. Using Hoi Ha Wan Marine Park in a case study, this project aims to streamline an eDNA metabarcoding protocol for monitoring fish fauna in Hong Kong's marine protected areas, which will complement the existing fish community monitoring using visual or capture-based surveys. It will determine the gap in the DNA sequencing database for fishes that have been recorded from Hoi Ha Wan; enrich this database by collecting samples and conducting DNA sequencing; conduct eDNA sequencing and traditional surveys simultaneously and compare the efficacy of the two approaches in detecting fish; for the eDNA approach, it will explore the number of samples required to detect the common species and the influence of day/night on eDNA data; apply eDNA approach to compare fish fauna in different habitats (i.e., coral, mangrove, rocky shore), as well as inside and outside the marine park. Overall, the study will provide valuable data to enhance the biomonitoring of local marine parks.</p>
Summary of the Findings/ Outcomes:	To be available upon completion of the project