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Diversity, abundance and distribution of epifauna from southern Hong Kong waters

香港南部水域底表動物多樣性，豐度以及分佈

Although epibenthic animals are an important component of the coastal ecosystem, little is known about their diversity and abundance in Hong Kong. This knowledge gap is especially large in the southern waters where high water turbidity makes it difficult to conduct scientific surveys. To address this issue, we propose a comprehensive study of the epifauna from the southern waters. We will conduct Dropcam and diving surveys in the shallower waters and bottom trawling in the deeper waters. We expect to collect at least 100 species of epifauna, including Cnidaria (gorgonians, soft corals, hard corals), Mollusca (gastropods, bivalves, cephalopods), Crustacea (crabs, shrimp, mantis shrimp), Annelida and Pisces. We will identify the collected species by applying an integrated taxonomy approach based on morphological characters and DNA barcodes using the COI and 16S rRNA genes, determine their abundance and distribution, and evaluate the conservation statuses of these species. Overall, our study will contribute to a better understanding of the species and genetic diversity, abundance as well as conservation of epifauna in Hong Kong waters. Furthermore, the DNA barcodes generated in this study will form a basis for implementation of eDNA-based biodiversity monitoring programme in the future.

儘管底表動物是沿海生態系統的重要組成部分，我們對這類動物在香港的多樣性和豐度知之甚少。由於高濁度使得難以進行科學調查，這種知識差距在南部水域尤其明顯。為了解決這個問題，我們建議對南部水域的底表動物進行綜合研究。我們將在較淺的水體進行遙控相機和潛水調查，在較深的水體進行底層拖網調查。我們預計將至少採集100種底表動物，包括刺胞動物（海筆，軟珊瑚，硬珊瑚），軟體動物（腹足動物，雙殼類，頭足類），甲殼動物（蟹，蝦，螳螂蝦），環節動物以及魚類。我們將根據形態特徵以及基於 COI 和 16S rRNA 基因序列的 DNA 條碼技術鑒定收集到的物種，確定其豐度和分佈，並評估這些物種的保育狀況。總的來說，本研究將增進對香港水域底表動物物種和遺傳多樣性以及豐富度的瞭解，並且對它們的保育提供科學依據。此外，本課題所獲得的 DNA 條碼數據將推動實施基於 eDNA 的生物多樣性監測計畫。

