

# **SPATIAL AND SEASONAL VARIATIONS IN COMMUNITY STRUCTURE AND TROPHIC DYNAMICS OF BENTHIC COMMUNITIES OF MARINE MOLLUSCS IN HONG KONG'S COASTAL WATERS BEFORE THE TRAWLING BAN**

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To rectify the detrimental impact of overfishing and destruction of benthic ecosystems, a territory-wide trawling ban has been imposed in Hong Kong's coastal marine waters since 31 December 2012. It is anticipated that the local benthic marine ecosystem will gradually recover after the trawl-ban. Using stable isotope analysis (SIA), this study aims to compare trophic dynamics of benthic molluscan communities of eastern, southern and western waters of Hong Kong before and after the trawling ban. The results of this study will also serve as a baseline for studying long-term ecosystem recovery. Trawling surveys were conducted using a commercial shrimp trawler in each of the three zones during wet and dry season in 2012 (pre trawl-ban) and 2014 (post trawl-ban). In total, 17 species of molluscs were collected for the SIA. They included predators (e.g. the Japanese spineless cuttlefish *Sepiella japonica*), filter feeders (e.g. the undulate clam *Paphia undulata*) and scavengers (e.g. the burned nassa *Nassarius siquijorensis*). Mantle tissues of cephalopods, and the muscular foot of bivalves and gastropods were dissected and subjected to the SIA. The results consisted of nitrogen and carbon contents, as well as isotopic ratios of nitrogen ( $\delta^{15}\text{N}$ ) and carbon ( $\delta^{13}\text{C}$ ) for the tissue sample of each species. Bases on the samples collected in 2012, the results revealed clear spatial and seasonal variations in the isotopic signatures of the molluscan species. At present, we are still running the SIA for the samples of 2014, and the results shall be available soon. In our presentation, the overall results will be discussed with reference to a more holistic picture of the benthic ecosystem by considering observed changes in diversity and abundance of other coexisting taxonomic groups such as fishes and crustaceans.