

POPULATION DYNAMICS OF THE MANTIS SHRIMP *ORATOSQUILLA ORATORIA* BEFORE AND AFTER THE TRAWLING BAN IN HONG KONG'S COASTAL WATERS

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Through studying population dynamics of marine benthic species, we can reveal the changes of their population size and structure in relation to environmental changes due to management intervention such as prohibition of trawling based fisheries. The results of population dynamics studies can also provide baseline information for stock assessment and sustainable management of the species. Due to the overexploitation of fishery resources, a territory-wide trawling ban has been implemented in Hong Kong waters since 31 December 2012. This study, therefore, aimed to test a hypothesis that the abundance, biomass, asymptotic lengths, growth rate and reproductivity of the predatory mantis shrimp species *Oratosquilla oratoria* increases after the trawl-ban. We investigated the temporal and spatial variation of the population structure, growth, reproductive cycle and recruitment pattern of *Oratosquilla oratoria* in the eastern and western waters of Hong Kong before and after the trawl-ban. Our results showed that *O. oratoria* appeared to have a life span of less than one year in eastern and western waters as the cohort disappeared one year after recruitment. Time of recruitment of this species differed between eastern and western waters, although recruitments were consistently found at least once during wet and dry season, respectively. During the post trawl-ban period, asymptotic lengths (L_{∞}) of *O. oratoria* in eastern waters were similar to that of those in western waters (average $L_{\infty} = 37.80$ mm). But this average value was considerably higher than that of those collected during 2003–2005 before the trawl-ban ($L_{\infty} = 32.03$ mm). Such an increase of their asymptotic length may be due to the reduction of fishing mortality brought by the trawl-ban. Further analyses will be conducted in the other three Stomatopoda species: *Oratosquillina interrupta*, *Miyakea nepa* and *Harpisquilla harpax* to verify whether a similar trend could be observed.