

## Age and Population Structure of the Goby *Parapocryptes Serperaster* in the Mekong Delta, Vietnam, Based on Length-Frequency and Otolith Analyses

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**Abstract :** The age and population structure the dermal goby *Parapocryptes serperaster* were studied using length distributions, otolith and von Bertalanffy model in the Mekong Delta over a whole year through monthly sampling. The sex ratio of *P. serperaster* was near 1:1, and von Bertalanffy growth parameters were  $L_{\infty} = 25.2$  cm,  $K = 0.74$  yr<sup>-1</sup>, and  $t_0 = -0.22$  yr<sup>-1</sup>. Fish size at first entry to fishery was 14.6 cm, and fishing mortality (1.57 yr<sup>-1</sup>) and natural mortality (1.51 yr<sup>-1</sup>) accounted for 51% and 49% of the total mortality (3.07 yr<sup>-1</sup>), respectively. Relative yield-per-recruit and biomass-per-recruit analyses revealed the levels of maximum exploitation yield ( $E_{max} = 0.83$ ), maximum economic yield ( $E_{0.1} = 0.71$ ) and the yield at 50% reduction of exploitation ( $E_{0.5} = 0.37$ ). Otoliths from 164 female and 196 male gobies were readable, and the otolith morphometry data were used for age identification. The mean age estimated by reading otolith annual rings and by analysing length frequency distribution was consistent. This study shows that the otolith morphometry is a reliable method for aging this goby and possibly also applicable for other tropical gobies. The fishery analysis indicates that this goby stock has not been overexploited in the Mekong Delta.

**Keywords :** *Parapocryptes serperaster*, otolith, age, population structure, Vietnam

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