

Population and Age Structure of the Goby *Stigmatogobius pleurostigma* in the Mekong Delta, Vietnam

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Abstract : *Stigmatogobius pleurostigma* is a commercial fish being caught increasingly in the Mekong Delta. Although it plays an important role for food supply, little is known about this species including morphology, distribution and growth pattern. Meanwhile, its population and age structure is unknown. The present study was conducted in the Mekong Delta to provide new data on population parameters of this goby species. The von Bertalanffy growth parameters were $L_{\infty} = 8.6$ cm, $K = 0.83$ yr⁻¹, and $t_0 = -0.07$ yr⁻¹ basing on length frequency data analysis of 601 individuals. The fish total length at first capture was 3.8 cm; and fishing, natural and total mortalities of the fish population were 2.31 yr⁻¹, 1.17 yr⁻¹, and 3.48 yr⁻¹ respectively. The maximum fish yield (E_{\max}), economic yield ($E_{0.1}$) and yield of 50% reduction of exploitation (E_{50}) rates were 0.704, 0.555 and 0.335 based on the relative yield-per-recruit and biomass-per-recruit analyses. The fish longevity was 3.61 yr, and growth performance was 1.79. Three fish age groups were recorded in this study (0+, 1+ and 2+). The species is a potential aquaculture candidate because of its high growth parameter. This goby stock was overexploited in the Mekong Delta as its exploitation rate ($E=0.34$) was higher than E_{50} (0.335). The mesh size of gillnets should be increased and avoid catching fish in June, recruitment time, for future sustainable fishery management.

Keywords : *Stigmatogobius pleurostigma*, age, population structure, Vietnam

Conference Title : ICFAM 2017 : International Conference on Fisheries and Aquaculture Management

Conference Location : Tokyo, Japan

Conference Dates : November 13-14, 2017