

Landmark Based Catch Trends Assessment of Gray Eel Catfish (*Plotosus canius*) at Mangrove Estuary in Bangladesh

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Abstract : The present study emphasizing the catch trends assessment of Gray eel catfish (*Plotosus canius*) that was scrutinized on the basis of monthly length frequency data collected from mangrove estuary, Bangladesh during January 2017 to December 2018. A total amount of 1298 specimens were collected to estimate the total length (TL) and weight (W) of *P. canius* ranged from 13.3 cm to 87.4 cm and 28 g to 5200 g, respectively. The length-weight relationship was $W=0.006 L^{2.95}$ with $R^2=0.972$ for both sexes. The von Bertalanffy growth function parameters were $L_{\infty}=93.25$ cm and $K=0.28$ yr⁻¹, hypothetical age at zero length of $t_0=0.059$ years and goodness of the fit of $R_n=0.494$. The growth performances indices for L_{∞} and W_{∞} were computed as $\Phi'=3.386$ and $\Phi=1.84$, respectively. The size at first sexual maturity was estimated in TL as 48.8 cm for pool sexes. The natural mortality was 0.51 yr⁻¹ at average annual water surface temperature as 22 °C. The total instantaneous mortality was 1.24 yr⁻¹ at CI95% of 0.105-1.42 ($r^2=0.986$). While fishing mortality was 0.73 yr⁻¹ and the current exploitation ratio as 0.59. The recruitment was continued throughout the year with one major peak during May-June was 17.20-17.96%. The Beverton-Holt yield per recruit model was analyzed by FiSAT-II, when t_c was at 1.43 yr, the F_{max} was estimated as 0.6 yr⁻¹ and $F_{0.1}$ was 0.33 yr⁻¹. Current age at the first capture was approximately 0.6 year, however $F_{current} = 0.73$ yr⁻¹ which is beyond the $F_{0.1}$ indicated that the current stock of *P. canius* of Bangladesh was overexploited.

Keywords : *Plotosus canius*, mangrove estuary, asymptotic length, FiSAT-II

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