

Population dynamics of *Gerres abbreviatus* Bleeker, 1850 from the Parangipettai waters, Southeast coast of India

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Abstract

The population dynamics of *Gerres abbreviatus* from the Parangipettai waters, Southeast coast of India was investigated based on length frequency data, using FiSAT software. Growth parameters of *G. abbreviatus* were estimated using ELEFAN I method. The theoretical ages at length zero (t_0) were estimated by substituting the asymptotic length (L_∞) and growth coefficient (K) in Pauly's equation. The fitted von Bertalanffy's growth equations for male and female *G. abbreviatus* were $L_t=27.8 [1 - \exp \{-1.30(t+0.1236)\}]$ and $L_t=28.2 [1 - \exp \{-1.36 (t+ 0.1175)\}]$ where L_∞ values are in cm, K values are on annual basis and t_0 values are in years. The estimated growth performance index (ϕ) for male and female *G. abbreviatus* were 3.002 and 3.034 respectively while the estimated life spans of male and female *G. abbreviatus* were 2.18 and 2.08 years. Instantaneous rates of total mortality (Z) estimated by length converted catch curve for male and female *G. abbreviatus* were 3.06 and 2.99 yr⁻¹ respectively. Natural mortality (M) estimated by Pauly's empirical equation for male and female *G. abbreviatus* were 2.24 and 2.29 yr⁻¹ and the estimated fishing mortality for male and female *G. abbreviatus* were 0.82 and 0.70 yr⁻¹ respectively. Relative yield per recruit analysis incorporating probabilities of capture indicates that *G. abbreviatus* in the Parangipettai waters is exploited below the optimum level indicating scope for increase in fishing efforts without leading to overexploitation.