

Effects of Hydro-climatic Fluctuations on Catchability of Fish in a Medium Perennial Vavuniya Reservoir, Sri Lanka

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ABSTRACT: Catch assessment survey and Frame survey were performed to estimate the species wise (body weight in kg) and total catch in the Vavuniya reservoir along with hydro-climatic factors. Relationship between the hydro-climatic factors and species wise catch statistics were determined from calendar year, rainfall and water level based quarters of the annum. Irregularity in the seasonal rainfall pattern shifted the heavy rainfall quarter from October-December to February-April quarter in 2013. Significant variation ($p < 0.05$) in the species composition of the catch in all the quarters, indicates the non-uniformity of the catch distribution. The WL (Water Level) in the Vavuniya reservoir showed a strong negative correlation and significant ($p < 0.05$) relationship between catchability variables compared with RF (Rainfall). However, the correlation between WL and catch per unit effort (CPUE) with respect to gear (kg/gear/day) was insignificant ($p > 0.05$, $r = -0.327$) compared to CPUE per fisher (kg/fisher/day). There were 5 exotic, 13 indigenous and 1 endemic (*Esomus thermoicos*) species identified in this study. *Oreochromis niloticus* contributed 79% of the total catch followed by *Cirrhinus mrigala* (8.6 %). Among the indigenous species *Channa striata* was the dominant species and contributed 7.6 % to the total catch. Data obtained from this study may be used as a baseline for the sustainable management of Vavuniya reservoir and to achieve optimal fish catch.

Keywords: Catchability of fish, hydro-climatic fluctuation, species composition

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