

Variations in Important Water Quality Parameters and Fish Species of Thondaimanaru Lagoon, Jaffna, Sri Lanka

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Abstract

Thondaimanaru lagoon is one of the shallow coastal lagoons in Jaffna peninsula. This study was conducted to assess the present status of water quality and fish species composition of this lagoon. Water sampling was conducted from July 2016 to December 2016. Nine random samples were collected monthly in order to determine water temperature, pH, salinity, Dissolved Oxygen, Total Dissolved Solids, Electric Conductivity and turbidity. A smarTROLL Multi parameter (Insitu 458389) was used to measure all the parameters except turbidity, which was measured by turbidity meter (2100Q HACH). Random samples of fishes were collected once a month. One-way ANOVA was used for statistical analysis. Water temperature, Electric Conductivity, Total Dissolved Solids, Dissolved Oxygen, salinity and turbidity showed significant variations ($p < 0.05$) whereas pH value did not show a significant difference ($p > 0.05$) among the months. *Chanos chanos*, *Hemirhamphus* sp., *Nematalosa nasus*, *Mugil cephalus*, *Liza parsia*, *Oreochromis mossambicus*, *Arius caelatus* and *Gerres lucidus* were present throughout the study period. Results revealed that the important water quality parameters fluctuated due to seasonal environmental changes. As a result of the shallow water level, rate of evaporation as well as precipitation had a significant influence on the water quality characteristics.

Keywords - Thondaimanaru lagoon, Water quality, Chanos chanos, Nematalosa nasus, Mugil cephalus