

**IMPACTS OF PHYSIOCHEMICAL PARAMETERS  
ON ZOOPLANKTON ABUNDANCE AT JAFFNA  
LAGOON DURING SOUTH WEST MONSOON**

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by

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## Abstract

Zooplanktons are tiny animals found in all aquatic ecosystems and they are the primary consumers of aquatic water bodies. They act as intermediates of food webs. The abundance of zooplanktons is governed by physiochemical parameters of the water body. These parameters can be changed according to the seasonal variations. This study aims the impacts of physiochemical parameters on zooplankton abundance.

Water samples were collected at ten locations representing whole lagoon. The study was carried out for three month from May to July, 2014. Water samples were collected for the ex situ analysis of nutrients, TSS and zooplanktons. In situ data collection on physiochemical properties (temperature, pH, salinity, and dissolved oxygen) were measured using digital multi-parameter. Visibility was measured using Secchi disk.

Mean surface temperature at sampling locations was varied from 29.05 to 30.24 °C, while salinity varied from 33-60ppt and visibility of the area was changed from 0.6-2.8 m. pH was varied from 8.02-8.24 while DO was varied from 6.9-5.9 mg l<sup>-1</sup>. The highest concentrations of nitrite, nitrate, phosphate, and silicates are recorded as 0.39 mg l<sup>-1</sup>, 0.42 mg l<sup>-1</sup>, 0.08 mg l<sup>-1</sup> and 87.63 mg l<sup>-1</sup> respectively. Mean highest zooplankton abundance was recorded near to the Sangupiddi Bridge as 137085 individuals per liter during the entire study period. Salinity, DO, visibility, nitrite, nitrate and phosphate levels have shown significant positive correlation with the zooplankton abundance of the Jaffna lagoon. It reveals that abundance of zooplanktons are related to the physiochemical parameters of the lagoon.

Keywords: Water quality, Plankton density, Abundance, Lagoon