



Lake 2016: Conference on Conservation and Sustainable Management of Ecologically Sensitive Regions in Western Ghats

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Fluoride concentration in the surface waters of Pulicat lake, south east coast of India

Nirmala. K¹, S. Srinivasalu¹ and N. K. Ambujam²

¹*Institute for Ocean Management, Anna University, Chennai, India-600 025.*

²*Center for Water Resources, Anna University, Chennai, India-600 025.*

nimkes@gmail.com

Abstract

Recent days, lakes are facing threats of various domestic and industrial pollution. Contamination due to excess fluoride to industrial and domestic source is one such. Naturally fluoride is present in waters and a concentration of $<1.5\text{mgL}^{-1}$, Fluoride is needed for humans and animals. Living beings including humans need certain fluoride concentration. Fluoride concentration in the surface waters of Pulicat lake was determined with Zirconyl-SPADNS method by analysing 20 water samples and was compared with other physico chemical parameters such as pH, salinity and nutrients like orthophosphate-P, Nitrate-N, Nitrite-N and Ammoniacal-N etc. Statistical analysis of the physico chemical parameters with fluoride was carried out. The statistical analysis done with IBM SPSS analysis showed strong positive correlation of fluoride concentration with chloride ($r=0.75$), Mg($r=0.48$) and nitrate-N ($r=0.59$). This correlations, indirectly suggests the probable water contamination of the lake with domestic discharges from the nearby main land. Though the Fluoride source can be from marine source especially in the case of a negative estuary like Pulicat the strong correlation indicate its riverine source.