

Environmental Impact Assessment Using Diatoms in Thamirabarani River, Tirunelveli District, Tamil Nadu, India

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Abstract

The present study provides a detailed report on the occurrence and record of diatom taxa from the Thamirabarani River. A total number of 55 diatom taxa belonging to 25 genera were identified. The result shows the abundance of diatom genera viz. *Amphora*, *Aulacoseira*, *Cyclotella*, *Cymbella*, *Eunotia*, *Gomphonema*, *Melosira* and *Ulnaria* in the study area indicated varying pollution levels and pristine conditions. The diversity of diatom taxa in Site 1 and Site 3-7 indicate that the river water is not polluted in these locations. Domestic waste input in the river at Site 2 area may responsible for the dominant occurrence of moderate pollution tolerant diatoms taxa. The abundance of pollution tolerant diatom taxa in Site 8, Site 9 and Site 10 areas of the river indicates high pollution. The Canonical Correspondence Analysis (CCA) results also show that the concentration of diatom taxa and physico-chemical parameters suggest the release of industrial effluents and anthropogenic activity. The proper waste water treatment methods need to be implemented along the catchment areas of the river to ratify pollution levels.

Keywords: Diatoms, Thamirabarani River, Pollution, Water Quality, Anthropogenic Impact

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