RESEARCH PAPER:

Studies on phytoplankton diversity in Samutharam lake Tiruvannamalai district, Tamil Nadu

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SUMMARY

In the present study surface water sample of Samutharam Lake were collected in the second week of every month during October 2007 to March 2008. 97 species of phytoplankton were identified under Cyanophyceae, Chlorophyceae, Bacillariophyceae and Euglenophyceae. It accounted for a contribution of 40.02% Bacillariophyceae, 22.22% Chlorophyceae, 32.14% Cyanophyceae, and 5.62% Euglenophyceae.

Biodiversity means the wealth of life forms found on earth in the form of million of different plants, animals and microorganisms. At the world convention for biological diversity, the definition for biological diversity was recommended (UNEP, 1992). Phytoplankton which includes blue – green algae, green algae, diatoms, desmids, euglenoids etc. are important among aquatic flora. They are ecologically significant as they form the basic link in the food chain of all aquatic animals (Misra, 2001) when they are in large numbers they make the water greenish.

MATERIALS AND METHODS

Study area:

Samutharam Lake is located 76º 22'N latitude and 14º 13'E longitude. The lake receives the water by rainfall only and the total area of this water body is about 1 hectare. The temperature of this region varied form a minimum of 16.6º C in winter months to a maximum of 41º C during the summer months. The average rainfall is about 424 – 590 millimeter.

Surface water samples were collected from different spots of the lake in the second week of every month during October 2007 to March 2008. Waters samples were analyzed in the laboratory for important physico – chemical parameters like temperature, pH, DO, total alkalinity, chloride, calcium, total hardness, BOD, EC, TDS, free CO_2, nitrate and phosphate. Analysis was done according to the methods described by APHA (1998) and Trivedy and Goel (1986). A liter of water sample was collected every month separately for the qualitative and quantitative estimation of phytoplankton study. Phytoplankton was identified by referring to the standard keys of Desikachary (1959), Cox (1966) and Anand (1998). Sedimentation of water was made in Lugol's iodine and Phytoplankton was counted in 1 ml sample by Sedgewick-Rafter cell method and identified according to Fritsch (1975).

RESULTS AND DISCUSSION

The physico – chemical analysis of Samutharam Lake water has been shown in (Table 1). The phytoplankton communities of the present water body represented mainly 4 groups Chlorophyceae, Cyanophyceae, Bacillariophyceae and Euglenophyceae (Table 2).

Cyanophyceae:

It was the most significant group having a contribution of 32.14% to the total phytoplankton population. This group included *Nostoc* sp. *Oscillatoria* sp. *Anabaena* sp. *Microcystis aeruginosa, Gloeocapsa* sp. *Aphanocapsa* sp. and *Merismopedia* sp. (Table 2).

Chlorophyceae:

Chlorophyceae was encounted as the