

## Phytoplankton community and limnology of Chatla floodplain wetland of Barak valley, Assam, North-East India



Phytoplankton diversity was investigated over a period of two years (2006 to 2008) in Chatla floodplain wetland in Barak valley, Assam, North-East India. Site 1 and site 2 are two inlets and site 3 is a lentic system associated with vegetation cover of *Calamus tenuis* and *Barringtonia acutangula*. The floodplain has a unique hydrology because of the presence of different types of habitats (inlets, fisheries, beels and outlets) which maintains a network among the floodplains, rivers and streams. Phytoplankton community composition, density and diversity were studied in relation to environmental variables. All the variables were estimated by following standard methods. Phytoplankton was collected by plankton net and quantitative estimation was made by using Sedgwick Rafter counting cell. Phytoplankton community comprised 53 taxa represented by Chlorophyceae (31), Cyanophyceae (11), Bacillariophyceae (7), Euglenophyceae (1) and Dinophyceae (3). Phytoplankton taxa was dominated by *Volvox* sp., *Nostoc* sp., *Eunotia* sp., *Navicula* sp., *Euglena* spp. and density was found highest in site 3 and lowest in site 1. Shannon diversity index ( $H'$ ) for phytoplankton community varied between 2.4 to 2.65 indicating fairly high species diversity. The varying magnitude of correlation among

environmental variables and phytoplankton species density as shown by Canonical correspondence analysis (CCA) indicated that some of the environmental variables (water temperature, transparency, rainfall, nitrate and ammonia) are the driving factors for governing the phytoplankton species assemblages in Chatla floodplain wetland. Fluctuation of phytoplankton density and community composition in different habitats indicated various niche apportionment as well as anthropogenic influences.

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