

Studies on Phytoplankton Diversity and Density at Vintage in Wular Lake of Kashmir Himalaya

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Abstract—The Wular lake at Vintage park was studied for phytoplankton community in terms of species composition, density and seasonal variation. During the present investigation, the phytoplankton community was represented by 66 taxa which belonged to five classes namely Bacillariophyceae (26), Chlorophyceae (19) Cyanophyceae (11) Euglenophyceae (9) and Chrysophyceae (1). However, on the basis of relative density Bacillariophyceae dominated with a contribution of 34 %, followed by Cyanophyceae (31 %), Chlorophyceae (30%) and Euglenophyceae (5.94 %) in a decreasing order. The dominance pattern of species in the population density were *Nitzschia gracilis* > *Navicula digitoradiata* > *Epithemia argus* > among Bacillariophyceae, *Cladophora sp.* > *Spirogyra sp.* > *Spondylosium moniliforme* among Chlorophyceae, *Anabena cylindrica* > *Merismopedia sp.* > *Phormidium molle* among Cyanophyceae and *Euglena gracilis* > *Phacus sp.* > *Phacus tortuosus* among Euglenophyceae. Seasonal variations in the phytoplankton populations revealed a unimodal growth curve with summer (July) depicting its peak stage of growth. Highest values of Shannon-Wiener Index were recorded for Bacillariophyceae (3.145) while the highest evenness (*J'*) value (0.7715) was registered for Euglenophyceae. Further, highest values for species dominance were obtained for Chlorophyceae (0.307) against the lowest for Bacillariophyceae (0.0536).

Keywords: Phytoplankton, abundance, diversity, Wular lake, Kashmir.