

# PLANKTON DIVERSITY AND LIMNOLOGICAL ASSESSMENT OF A TROPICAL RESERVOIR

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**Abstract:** Planktonic diversity is an indicator tool to evaluate the health of aquatic ecosystems. A healthy ecosystem harbours well nourished flora and fauna. Limnological evaluation of a water resource illustrates the habitat suitability for the existence of certain types of flora & fauna. The present study is an attempt to assess the diversity of plankton in a tropical reservoir in India. Following the objective of the study, a hydrobiological investigation was carried out for two years in Barna reservoir; a reservoir built across the river Barna; a well-known tributary of river Narmada in central India. Investigative attempt was made in accordance with standard methods of evaluation of diversity and water quality as mentioned in manual of American Public Health Association (APHA) and described by other authors. Certain limnological parameters especially pH, Electrical Conductivity, TDS, Dissolved Oxygen, B.O.D., Nitrate-nitrogen and Ortho-phosphate were evaluated and found suitable for good growth of planktons. A total of 75 species of phytoplankton belonging to 7 classes *viz.* Chlorophyceae, Bacillariophyceae, Cyanophyceae, Dinophyceae, Euglenophyceae, Xanthophyceae and Chrysophyceae were recorded whereas 47 species of zooplankton belonging to five groups *viz.* Rotifera, Cladocera, Copepoda, Protozoa and Ostracoda were identified in Barna reservoir. Chlorophyceae the class of phytoplankton and Rotifera group of zooplankton found as dominant during the study period. The dominance of class Chlorophyceae indicates nutrient enriched water quality whereas dominance of Rotifers showed healthy limnological regime in Barna reservoir. The study reveals that availability of healthy ecosystem is required for all life forms in a tropical reservoir.

**Keywords:** Barna reservoir; Central India; Chlorophyceae; Narmada river; Rotifera