Zoo planktonic diversity and Physico-chemical properties of Upper Manair Reservoir in Rajanna-Sircilla district in Telangana State.

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Abstract: The analysis of Physico- chemical parameters of the Upper Manair Project which is an existing Medium Irrigation Project constructed across River Manair near Narmala village, Gambhiraopet in Rajanna-Sircilla, former Karimnagar District of Telangana State for about 2 years i.e. 2016-2018. So far seldom work has been done on this waterbody, the study area is Upper Manair dam. This work advocates habitat conservation, zoo planktonic diversity and physico-chemical properties of water. The constituents monitored include temperature, pH, turbidity, TDS, DO, BOD, COD, alkalinity and hardness were checked using APHA (2012) methodology etc. Significant variation in these parameters were observed throughout the study period. All the water quality parameters showed fair water in which salinity change to medium and higher during summer. The situation is alarming and condition continue for a long period, become ecologically inactive therefore immediate action is required for its better management. Although physico-chemical parameters have been dealt in many water bodies .The study give a comprehensive picture of what exactly is going on inside a water body. Study revealed the physico-chemical parameters of water quality of reservoir. Water quality index analysis showed that the water of reservoir is in good condition for drinking purpose. The physico-chemical data analysed in the Upper Manair Dam during the period of 2016 -2018 indicates that the reservoir is at present free from pollution and the quality of water is good. The results analysed were absolutely within the drinking water standards and permissible limits. These water can be used for drinking after proper filtration, also used for irrigation and other domestic purposes. The Various chemical and biological reactions in water depend to a great extent on temperature. The water quality index levels of the reservoir and all the four stations were clearly showed that the status of the water body is oligotrophic in nature and it is suitable for the human consumption. The reservoir is moderate and physico-chemical parameters such as pH, temp, DO, alkalinity and some others shoed favourable range to execute the fish cultivation practices. The water is an ideal for the rural population to obtain maximum possible output of fish production and maintain the good socio-economic condition. The variations in values during study period may be attributed to the water volume, as the water quality is significantly determined by the water quantity in the reservoir. The present reservoir have to be preserved for their proper use .The sustainable and holistic management planning is necessary for conservation of its biota. The Physico Chemical parameters are correlated with Zooplankton diversity. The Physico chemical Parameter like pH, Turbidity, TDS, DO, BOD, COD, Alkalinity, Hardness and others were checked using APHA(2012) methodology.

Zooplanktons are like rotifers, copepods, ostracods, cladocera and protozoa are identified under compound microscope (10X to 40X magnification) detailed microscopic examination of Zooplankton under binocular microscope was carried out. The abundance of Zooplanktons with Nitrates and Phosphates may not necessarily be directly related to Zooplanktons utilizing the nutrients, but could be attributed to the dependence of the Zooplanktons on these nutrients.

The Zooplanktons prefer soft water related both to calcium and magnesium hardness. In general, after the most intense rainstorms, the Zooplanktons abundance declined probably because of a dilution effect, as a result of the increased runoff. The whole year observed the number of zooplanktons are like

Winter: ⇒ Rotifera>Ostracoda>Copepoda>Cladocera>Protozoa

Summer: ⇒ Rotifera > Copepoda > Cladocera > Ostracoda >Protozoa

Rainy: ⇒ Rotifera> Copepoda > Cladocera >Ostracoda>Protozoa

The study observed that temperature has important role in the distribution of zooplanktons in a fresh water habitat. Finally there is a inter correlation present between physico-chemical parameters and zooplankton population. Maintenance of good water quality will enhance the structure of Zooplankton community and population dynamics. Rotifer population was positively correlated with dissolved oxygen, Ph. and transparency. There is a positive correlation between zooplanktons and physico- chemical parameters of water body, all physico-chemical parameters are permissible levels then there is no harmful to pisciculture. , irrigation and drinking water.