ABSTRACT

This is the case “Ichthyofaunal Study in Bhandardara Reservoir which is commercially exploited over a integral to a wild life sanctuary. A comprehensive and systematic analysis of the physico-chemical parameters, nutrients, plankton, zooplankton density and community structure are critically examined in the thesis. Pertinent literature related to all the aspects of the problem are reviewed in the beginning. Regular monthly investigations from four permanent sampling stations for twenty four months were carried out to collect baseline data on the seasonal changes in climate, hydrology, physico-chemical water quality parameters, nutrient content, primary productivity and ichthyofauna in relation to the Lake of Bhandardara. Yearwise and seasonwise variations in total density and also density of different species of insects were observed. The significance of such variations of each particular parameter were carried out and yearly calculated. The observations regarding all parameters studied were discussed and compared with each other.

Zooplanktons occupy a present position in the food webs of aquatic ecosystem. It is in the form of an integral part of the lentic community of the fresh water ecosystem. The Zooplankton are well recognized as these have vital role in food chain and play a key role in recycling of organic matter in an aquatic ecosystem. In the present study the total Zooplankton density sudden increases in the settling of rain water return of favourable conditions in post monsoon period. In the present study total Zooplankton comprises of 4 groups: Protozoa, Rotifera, Cladocera, Copepoda.

As part of general survey of fresh water aquatic insects of lakes from Bhandardara shows some similarities with other water bodies of Maharashtra. Water bodies of Bhandardara show presence of insect like stone fly, cadisfly, mosquito larvae, water scater, lacamus, damselfly larvae, hydrophilus beetle, notonecta, belostoma, cybisterfimbriolatus specimen were collected, sorted and identified as per Tonapi (1966 -1970).

Fish production and natural water resources and there is great scope for developing fisheries in this region. The present investigation was under taken The fish
species as were studied for biochemical constituents to locate their food status as they are the commercial fishes used as a food material by the local people.

The Western Ghats is an important biogeographic zone of India and one of the thirty four global hot spots. Variation in the diversified group of phytoplanktons has been observed and depicted in the paper *Cyanophyta* species Chlorophyta species Bacillariophyta species Xanthophyta species were recorded from the region.

Water is most precious natural resource as it is soul of living things. When water is polluted by various ways that affects flora and fauna of that area. The villagers mainly used it for irrigation and pisciculture, we have selected four stagnant water bodies from Bhandardara. The water samples were collected from the stagnant water bodies namely Shendi, Koltembhe, Samrad and Panjare. The parameters like Atmospheric Temperature (AT), Water Temperature (WT), Electrical Conductivity (EC), Total Dissolve Solid (TDS), Acidity (Acid), Alkalinity (Alk), Carbon dioxide (CO$_2$), Dissolve Oxygen (DO), Total Hardness (TH) were mentioned on monthly basis for period annual cycle i.e. January, 2011 to December, 2011 and January 2012 to Dec 2012. The result revealed that the reservoir water is safe for human use.

**KEYWORDS**

Physico-chemical parameters, productivity, Ichthyofaunal, density, Bhandardara Dam, Phytoplanktons, Ahmednagar district. Atmospheric Temperature (AT), Water Temperature (WT), Electrical Conductivity (EC), Total Dissolve Solid (TDS), Acidity(Acid), Alkalinity (Alk), Carbon dioxide(CO$_2$), Dissolve Oxygen (DO), and Total Hardness(TH),