

## ABSTRACT

The present study was carried out on "Zooplankton assemblage in flood plains of River Ravi near Balloki Headworks, Pakistan." throughout the year 2012 i.e., from January 2012 to December 2012. The aim of the study was to estimate the temporal and spatial variations of zooplankton composition with respect to seasonal flooding. The fluviometric conditions of floodplain alter the structure and dynamics of whole aquatic communities. Zooplankton population belonged to four different groups namely protozoan's, rotifers, copepods and ostracods. Zooplankton dynamics revealed a total of 157 zooplankton species belonging to 61 genera, 31 families, 14 orders and 8 classes. Highest number of species (82) was present in August while lowest (57) in January, with an overall mean of 70.5 species/month. The species diversity data revealed that a total of 157 species (protozoan's 27, rotifers 101, copepods 27, and ostracods 2) were identified. Relative species contribution of different groups is protozoans (17.19%), rotifers (64.33%), copepods (17.19%) and ostracods (1.27%) respectively. The population density data revealed that cumulative mean density ranged from 206.09 to 491.38 Ind. /L, with an overall mean of 320.81 Ind. /L. Mean density data of one year indicated a major peak of 491.38 Ind. /L in June, with 70 and 21 % contribution from rotifers and copepods, respectively. Spatial variations (horizontal and vertical) and temporal variations were also investigated. Spatial variations (horizontal) of zooplanktons were early littoral (493.70Ind./L), late littoral (330.71 Ind. /L) and limnetic (257.36 Ind. /L), while spatial variations (vertical) of zooplanktons were surface (257.36 Ind. /L), middle (251.86 Ind. /L) and bottom (270.44 Ind. /L). On the other hand temporal variations of zooplanktons were found morning (354.63 Ind. /L), noon (309.91 Ind. /L) and evening (298.03 Ind. /L). Zooplankton densities were positively correlated with temperature, pH, conductivity, total dissolved solids, turbidity, total hardness and total alkalinities. On the other hand zooplankton density was negatively correlated with dissolved oxygen, visibility and chloride contents. The variation of zooplanktons was found significantly correlated with time and sites. Agglomerative Hierarchical Clustering Analysis constituted three major groups of variations of zooplanktons, noticeable in summer, cold/winter and intermediate. Diversity indices indicated highest diversity of zooplanktons in summer as compared to winter.