Volume-4, Issue-12, Dec-2015 • ISSN No 2277 - 8160

Research Paper Zoology

Zooplankton Diversity First Year-2012 at Tale Pimpalgaon Dam Tq-Patoda Dist-Beed (M.s.)

PRAMOD.P.GAIKE DEPARTMENT OF ZOOLOGY

ABSTRACT

The study of availability of zooplankton in Tale Pimpalgaon dam was not worked out earlier. Similarly, no studies were carried out on the water quality of the dam and therefore, it was thought to study the primary productivity, species composition, distribution and abundance of zooplankton and diversity in relation to various physico-chemical parameters in different stations of the dam. So that it would help in future planning for the reclamation of such dam and its utilization.

KEYWORDS : Tale Pimpalgaon, Zooplankton, Diversity, Physico-chemical parameters.

Introduction:-

The present and absence of certain organisms can also be used to determine the condition of water and the efficiency of water treatment plants. Thus the subject of fresh water biology or limnology is of great importance, not only in the branch of pure science, but also for its practical applications. Aquatic organisms contain a vital link in food chain in the aquatic ecosystem in and its productivity directly depends on physico-chemical features of water. Hence, knowledge on abundance composition and seasonal variation of aquatic communities helps in planning and successful management of water bodies. The fishery scientist needs to understand fish fresh-water ecosystems as a functioning interacting system.

The distribution of aquatic organisms, and particularly plankton, has long been known to be heterogeneous. Spatial heterogeneity is common feature in all ecosystems and is the result of many interacting physical and biological process (Pinel-Alloul 1995). The study of freshwater fauna especially zooplankton, even of a particular area is extensive and complicated due to environmental, physical, geographical and chemical variations involving ecological, extrinsic and intrinsic factors. Although the distribution of biodiversity across the earth can be described in terms of the relatively small number of spatial patterns such as latitude, altitude, or habitat size, understanding how these extrinsic drivers influence diversity remains one of the most significant intellectual challenges to ecologist and biogeography's (Gaston 2000). A large number of studies covering a wide variety of ecosystems and organisms suggest that species richness tends to vary strongly with ecosystem production and habitat heterogeneity (Rosenzweig 1995). This is particularly so with freshwater fauna (zooplankton), which plays a key role in preservation and maintenance of ecological balance and its basic study is wanting and is absolutely necessary (P.P.Gaike.et.al 2012). The seasonal fluctuations of the zooplankton population are a well known phenomenon and zooplankton exhibits a bimodal oscillation with a spring and autumn in the temperate lakes and reservoirs Wetzel (2001).

MATERIALS AND METHODS

Zooplankton collection:

Water was collected from the surface with minimal disturbance and filtered in a No. 25 bolting silk cloth net of mesh size 63 Lm and 30 cm diameter. The final volume of the filtered sample was 125ml, which was transferred to another 125ml plastic bottle and labeled mentioning the time, date and place of sampling. Preservation: The samples collected in 125ml plastic bottles were preserved by adding 2ml of 4% formalin.

Concentration:

The preserved samples were kept for 24 hours undisturbed to allow the sedimentation of plankton suspended in the water. After 24 hours, the supernatant was discarded carefully without disturbing the sediments and the final volume of concentrated sample was 50ml. The zooplankton were identified up to a taxonomic precision of species level in Rotifers, genus level in both Cladocera and Copepoda using self made keys given in standard identification keys (Murugan et al., 1998; Edmondson, 1959; Battish, 1992; Dhanapathi, 2000).

RESULTS AND DISCUSSION

In the present investigation the number of zooplanktons was found after the beginning of post monsoon to rich maximum in winter season. Monthly diversity in zooplanktons four classes these are from (Jan 2012 to Dec 2012) Cladocera 248 (mg/l) , Copepods 247 (mg/l), Rotifers 228 (mg/l), Ostracoda 84 (mg/l). In the cladocera group Ceriodaphnia cornulata,Alona pulchella,were found highest in this group and Chydrorus barroisi were absent in March,May,July and December 2012. Among copepods Heliodiptamous viddus,Paracyclops fimbriatus were dominant. During May and June Mesocyclopes Leukarti and Mesocyclopes Hyalinus in June, were absent. In the present study the population of this group exhibit distinct peaks during winter season in particular in the month of November and December 2012. While during summer Jan, Feb, March and April copepoda were lowest.

The composition of rotifer population showed higher population during post monsoon and winter, while, lower population observed in the month of March and April, May same month of Dec 2012. This may be due higher population of bacteria, organic matter of dead and decaying vegetation. The lowest population noticed in summer season.

Ostracoda occupied fourth position of zooplankton and represented very low population diversity compared to other groups. Three species were identifies liyocypris gibba, Hemicypris fossiluta and Stenocypris hislopi.During summer season lowest population was observed. Stenocypris hislopi was not observed in April,May and Hemicypris fossulata in the month of June. Higher population was observed during winter 2012 years.

REFERENCES

Battish, S.K.(1992): Freshwater Zooplankton of India. Oxford and IBM Publications. Dhanapathi, M.V.S.S.S. (2000): Taxonomic notes on the rotifers from India (from 1889-2000). Indian Association of Aquatic Biologists (IAAB), Hyderabad. Edmondson, W.T. (1959): Freshwater Biology, 2 nd edition. John Wiley & Sons, Inc., New York. Gaston, K. J. (2000): Global patterns in biodiversity. Nature, 405, 220–227. Murugan, N., Murugavel, P., and Kodarkar, M.S. (1998): Cladocera: The biology, classification, identification and ecology. Indian Association of Aquatic Biologists (IAAB), Hyderabad. P.P.Gaike, K.B.Shejule (2012): Limnological analysis of Nagrats ,Dist.Jalana (M.S.) Bioinfolet 9 (2):198. Pinel-Alloul, B. (1995): Spatial hetrogenisity is a multiscale characteristic of zooplankton community. Hydrobiologia, 301, 17–42. Rosenzweig, M. L. (1995): Species diversity in space and time. Cambridge: Cambridge University Press. Wetzel, R. G. (2001): Limnology; Lakes and reservoir ecosystem (p. 1006, 3rd edn.). Burlington: Academic.