

ASSESSMENT OF ZOOPLANKTON COMMUNITY IN DONGARSHELKI-DAM AT DONGARSHELKI NEAR UDGIR, DISTRICT LATUR(M.S.)

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ABSTRACT:-

In the latest assessment work we provide the necessity of zooplankton in aquatic ecosystem and their quantitative information on the month wise variations of zooplankton in Dongarshelki dam near Udgir. Zooplanktons are the most fascinating group of microorganism found in an aquatic environment. They play an important role in the food chain of aquatic ecosystem. In the observation period from January to December seasonal some quantitative fluctuation are recorded in zooplankton species. Zooplanktons are the most important food for larvae of fishes so they are capable of affecting the entire aquatic biota. Its fluctuation bring out change in the natural aquatic ecosystem, hence its study is necessary for the composition and distribution.

Key words: Zooplankton, Assessment,Dongarshelki-Dam,DistrictLatur

INTRODUCTION:-

The zooplankton plays an important role in the aquatic ecosystem. They act as food for small fishes in aquatic ecosystem and importance in fishery research. The zooplankton can also play an important role for indicating the presence or absence of certain species of fishes in a pond or in determining the population densities Salve and Hiware(2010).They form a bulk food for variety of secondary consumers including commercially important groups of crustaceans, fishes and prawns. They help generation of potentially functional and dynamic aquatic community. Pawaret. al., (2006) showed that the importance of plankton study is very useful tool for the assessment of biotic potential and contributes to overall estimation of basic and general potential of water body. Excess use of chemicals in the agricultural sectors causing depletion of aquatic biota due to pollution of water bodies Romic and Romic (2003) same effect also observed by Hutchinson(1967).

Zooplankton has been recommended as regional bio-indicators of lake eutrophication zooplankton biodiversity are usually considered to be good indicators of environmental changes in aquatic ecosystem observed by Pawar S.M.(2014). These organisms have been little studied in aquatic ecosystems of Maharashtra Udgir region, therefore their potential value as indicator of alterations in the water quality of dam in these region needs to assessed.This study essential to investigate the structure and composition of the zooplankton community in teru-dam.

STUDY AREA:-

The Dongarshelki-Dam is associated at Dongarsheli near Udgirdist.Latur, it is an about 10km. away from the Udgir city. It is most situated just near hills station.It is medium sized dam in Udgirtalukaand the total area of dam is about east-west 0.5km and south-north is 0.4km occupied by water. The water is used for irrigation and it also supply for drinking purposes to the village. The maximum depth of water is 5-9 meters at the front side of dam.

MATERIALS AND METHOD:-

The water samples were collected for the investigation of zooplankton community from the four different sites of the dam. The water samples collected for zooplankton analysis for seasonal period of one year from Jan-2019 to Dec 2020.

The sample were collected by using plankton net made up of blotting cloth (with 30 meshes/cm) the sample collected in 1000 ml. bottles and preserved 5 % formaldehyde solution the formalin fixed plankton samples ever centrifuged at for 10-15 minutes the zooplankton settled at bottom were diluted to a desirable concentration in such a way that they could be easily counted individually under compound binocular microscope and zooplankton were measured (Sharma B.K.,2008 and APHA,2005) species diversity species richness were calculated.

RESULT AND DISCUSSION:-

09 species of Rotifer, 06 species belongs ofCladocera,02 species of Ostracoda and 02 species of Copepoda, these four types of species are showed in the following table.

Table: Observation of zooplankton community in Dongarshelki-Dam, Tal. Udgir, Dist. Latur (M.S.) (+; Present; - Absent)

Name of the group and species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rotifera												
1 Branchiurus adrienticus	+	+	+	+	+	+	-	+	+	+	+	+
2 Branchiurus diversicornis	+	+	+	+	+	+	-	-	-	-	+	+
3 Branchiurus caudatus	+	+	+	+	+	+	-	-	-	-	+	+
4 Branchiurus faocula	+	+	+	+	+	+	-	-	-	-	+	+
5. asplanchnasp	+	+	+	+	+	+	-	-	+	+	+	+
6. Testinella sp	+	+	+	+	+	+	-	-	-	-	-	-
7. Horella sp.	+	+	+	+	+	+	+	-	-	-	+	+
8. Filina sp.	+	+	+	+	+	+	+	-	-	-	+	+
9. Hexarthra sp	+	+	+	+	+	+	+	-	-	-	+	+
Cladocera												
1 Leydigia sp	+	+	+	+	+	+	-	-	-	-	+	+
2 Chydorus sphaerius	+	+	+	+	+	+	-	-	-	+	+	+
3 Bosmina sp	+	+	+	+	+	+	-	-	-	-	+	+
4 Macrothrix laticoruis	+	+	+	+	+	+	-	-	-	+	+	+
5 Monia branchiata	+	+	+	+	+	+	+	-	+	+	+	+
6 Diaphnia sp	+	+	+	+	+	+	-	-	-	+	+	
Copepoda												
1 Mesocyclops hyalinus	+	+	+	+	+	+	-	-	-	-	+	+
2 Mesocyclops sp	+	+	+	+	+	+	-	-	-	+	+	+
Ostracoda												
1 Cyprinus	+	+	+	+	+	+	-	-	-	+	+	+
2 Cyprinus	+	+	+	+	+	+	-	-	-	+	+	+

In the present study showed that the total zooplankton comprises of four groups they are rotifer, cladocera, ostracoda and copepoda. But out of these groups Rotifer is dominant group and is represented in the order of dominance as Rotifera>Cladocera>Copepoda>Ostracoda.

The first rotifers are microscopic soft bodied fresh water zooplanktons. They indicate trophic status of water body. In the present study the major peak in rotifer populations recorded during March and April, and minor peak in October. The same study also showed this condition in YeshwantSagarReservoir by Sharma and Diwan (1997). The high rotifer densities in summer seasons may be due to reduced water volume and their by increased concentration of nutrients. The cladocerans are of commonly occurrence in almost all the fresh water bodies. They represent an important link in the aquatic food chain. This group also showed major Peak in May and June, and minor peak in September and October. It is second dominating group of zooplankton in the present study. Ganpati and Pathak (1979), Sharma (2008), Akther et., (2007) Govind (1978), reported cladoceran population as second dominant from various fresh water bodies.

The copepods are major links in the aquatic ecosystem reported Choubey (1991) and Das (1989). The copepod population ranked third in order of dominance during present study. This group showed major peak in April and May and the minor peak in January and December. Sharma (1980) reported the bimodal pattern in copepod population as reported in the present study. The ostracoda also form a major link in other aquatic ecosystem Khan et., al., (1986) and Pathani and Upadhyay (2006). The ostracoda population ranked fourth in order of dominance during present study. This group showed major peak in summer and minor peak in winter. Protozoans are also important members in food chain in an aquatic ecosystem. In the present study the protozoan population was not observed in research period. Thus the present study deals with the abundance and dominance of zooplanktonic groups, which revealed rotifers as dominant group of zooplanktons.

CONCLUSION:-

As per present observation the rotifer zooplanktons are dominant species as compared to that of other species. The rotifers are known to be the best food for the fish larvae in an aquatic ecosystem. It is concluded that the zooplankton is an essential food in aquatic food chain so its study is necessary.

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