

Zooplankton Diversity in Banshelki Dam at Udgir

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Abstract

In the present Investigation the water sample was analyzed for Zooplankton diversity and its abundance in the Banshelki dam. Freshwater zooplankton is an important component of the ecological communities of inland water bodies. It acts as an important part of the food web and participates in the self-purification processes of aquatic ecosystems. Zooplanktons are at the second level in the all aquatic food chains. They also indicate the level of pollution in the water body. This investigation was done from Jan 2023-Dec-2023. Zooplankton samples were collected by vertical towing a plankton net (70 µm mesh) from the bottom to the water surface or by filtering through a net, the water being collected with a measuring bucket. The samples were concentrated to 100 ml and fixed with a final concentration of 4% formalin solution. Methodology used was the collection of sample with the plankton net and preservation of the sample by formalin and identification with the research microscope in the laboratory.

Key words: Zooplankton, Pollution, Banshelki dam.

Introduction

The zooplankton plays a role in the aquatic ecosystem. They act as food for small fishes in aquatic ecosystem and importance in fishery research. Zooplankton can also play an important role for indicating the presence or absence of certain species of fishes in a pound or in determining the population densities. 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. Pawar et. 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). (Hatchinson,1967) Zooplankton has been recommended as regional Pollution - indicators of lake in the process of eutrophication.

Study Area

The Banshelki dam is situated from Udgir at the distance of 3.5 km. it supplies water to the Udgir city. The water is used for drinking, domestic, and irrigation purpose. Around 5 lakh peoples are dependent on this dam. Area of lake is 6.0Sq.km. In this area all the people are dependent on the agriculture.

Materials And Methods

Samples with water were collected with the zooplankton net in the Morning and Evening time The sample were collected by using plankton net made up of blotting cloth (with 30 meshes/cm) the sample collected in 1 Lit 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 Battish(1992) and APHA(2005) species diversity species richness were calculated.

RESULTS AND DISCUSSION

In this study four groups of zooplankton were observed i.e. 10 species of Rotifer 07 species belongs to Cladocera 02 species Copepods and 02 species of Ostracods,

The dominant group in the dam banshelki is Rotifer and the order of dominance is as Rotifers > Cladocera> Copepods> Ostracods.

The 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 Yeshwant Sagar Reservoir. The high Rotifer densities in summer seasons may be due to reduced water volume and them by increased concentration of nutrients. The Cladocera are of commonly occurrence in almost all the fresh water bodies. They represent an important like 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. Govind (1978), Ganapati and Pathak (1979), Sharma (1993) Reported Cladocera population as second dominant from various fresh water bodies.

Table. 1

Table, 1; Zooplanktons in Banshelki dam, Udgir (M.S.) (+; Present; - Absent)

Name of Group & Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rotifera												
1 Branchious anadridentatus	-	-	+	+	+	-	-	+	+	+	+	+
2 Branchious diversicornis	+	+	+	+	+	-	-	-	-	-	+	+
3. Branchious Caudatus	+	-	+	+	+	-	-	-	-	-	+	+
4. Branchious Faocula	+	+	+	+	+	-	-	-	-	-	+	+
5. asplanchna sp	+	+	+	+	+	-	-	+	+	+	+	+
6. Testinella sp.	+	+	+	+	+	-	-	-	-	-	-	-
7. Horella sp.	+	+	+	+	-	-	+	-	-	-	+	+
8. Filina sp.	+	+	+	+	+	+	+	-	-	-	+	+
9. Hexarthra sp	+	+	+	+	+	+	+	-	-	-	+	+
10. Conochilus sp.	+	+	+	+	+	+	+	-	+	+	+	+
Cladocera												
1 Levdigia sp	+	+	+	-	+	+	-	-	-	-	+	+
2 Chydrous sphaerius	+	+	+	+	+	+	-	-	-	+	+	+
3 Bosmina sp	+	+	-	+	+	+	-	-	-	-	+	+
4 Macrothria laticoruis	+	+	-	+	+	+	-	-	-	+	+	+
5 Monia Branchiata	+	+	+	-	+	+	+	+	+	+	+	+
6 Diaphnosama sp	+	+	+	-	+	+	-	-	-	-	+	+
7 diaphnia sp	+	+	+	-	+	+	-	-	-	+	+	+
Copepod												
1 Mesocyclops byalinus	+	+	+	+	+	+	-	-	-	-	+	-
2 Mesocyclops sp	-	+	+	+	+	+	-	-	-	+	+	-
Ostracoda												
1 Cypris sp	+	+	+	+	+	+	-	-	-	+	-	+
2 Cyprinotus sp	+	+	+	+	+	+	-	-	+	-	+	+

The copepods are major links in the aquatic ecosystem. The copepod population rank 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 Ostracods also form a major link in other aquatic ecosystem. The ostracods population rank fourth in order of dominance during present study. This group showed major peak in summer and minor peak in winter.

Thus the present study deals with the abundance and dominance of zoo planktonic groups,

which revealed Rotifers as dominant group of zooplanktons.

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