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Diversity and Seasonal Variation in Fresh Water Reservoir Khushrangi (Kosrangi) Raipur District, C.G. India (Part-1)

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ABSTRACT

The paper deals with the Zooplankton are seasonal variation in Kosrangi Dam, Arang block, Raipur District Chhattisgarh India. A total - 19 spe. Were found in this dam. An on -6 spe. Belong to Protozoa. An on - 4 spe. Belong to Rotifer,- 5 spe. Belong to Copepoda,-3 spe. Belong to Cladocera and - 1 spe. Belong to Ostracoda. We found that - Ostracoda was dominant group throughout the study period. The study of season wise Zooplankton analysis showed an average abundance to species in winter season.Lower in Manson season and maximum in Summer season, due to different environmental condition of water bodies.

Keywords : Zooplankton, Kosrangi Dam, Seasonal Variation

I. INTRODUCTION

Lake and stream are teeming with life but most of these organism can not be seen with the naked eye. Zooplankton are the microscopic animal and free floating, drift or weakly swim in the water. Zooplanktons comes next to Phytoplankton. Zooplankton are minute members of second tropic level of food chain in aquatic life. The name plankton comes from the GREEK word 'planktos' Which means 'wondered of drifter'. The planktonic forms are the producers in an aquatic Ecosystem and also primary food base nektons like fishes and other fishable organisms. Zooplanktons are important for fishes, as they are used as source of food.The productivity of an aquatic environment is directly correlated with the density of plankton. The population of plankton in any aquatic system is biological wealth of water for constitutes a vital link in the food chain and fishes.The dam has an ecosystem contain biodiversity of plankton and fishes.The fresh water zooplankton comprises Protozoan's, Rotifers, Cladocerans, Copepods and Ostracods.

A fundamental feature of the Earth is an abundance of water,witch covers 71% of its surface to an average depth of 3800m. [R.Wetzel 1982].According to Pawar et.al. (2006), the plankton study is very useful tool for the assessment of biotic potential and contributes to over all potential of water body.Food avaibility also influence the size structure of zooplankton communities by age. Specific differential mortality

under conditions of starvation respiration increases and body weigh decreases before death (Threlkeid 1976).Zooplankton are important in nutritive level temperature and pollution used to determine the health of an ecosystem (Purushothama et.al.2011).The study of zooplankton is necessary to evaluate the fresh water reservoir in respect to their ecology and fishery status (Goswami and mankodi 2012).Many works have studied the zooplanktons of fresh water bodies both in India and abroad.The biodiversity of phytoplankton and zooplankton are also rich in nature (Pandey et.al. (2004) studied the seasonal fluctuation of zooplankton community in relation to physic –chemical parameters in river Ramjan of Kishanganj,Bihar. The collection were dominated by Rotifera, followed by Cladocera and Copepoda.

Rajashekhar et.al.(2010) is studied seasonal variation zooplankton community in fresh water reservoir Gulbarga district Karnataka India in the periods of study he recorded 24 spe. Of which 10 spe. Belongs to Rotifera, 6 spe. Of Ostacoda among zooplankton particularly Rotifera was the dominant group through out the study period and highest count was recorded in the summer season while low in monsoon. Yousuf and qudri (1981) studied Manasbal lake at Srinagar for zooplankton population, they recorded a cyclic patter with lowest in winter and then rising through early part of summer and early autumn. They noted that Copepods contributed generally more than half of the total zooplankton in lake Rotifers was second to contribute to total density and Cladocera comprised generally lower as other to the total zooplankton.The objective of present study is to determine zooplankton composition and seasonal variation of Kosrangi Dam.

II. METHODS AND MATERIAL

STUDY AREA:-

Chhattisgarh, the 26th state of India, was carved out of Madhya Pradesh on November 1,2000.Located in central India it covers an area of 135,133 sq km.Raipur is the capital of Chhattisgarh.

Kosrangi dam is located 46 km towards east from district head quarter Raipur,14km from Arang block.46 km from state capital Raipur.kosrangi dam pin is 493225 and postal head office is Kharora. It is situated in Area -201.259 h.and 21*22*0.672" Latitude and 81*59*39.996"Longitude. Dam is located in village boundary, Kosrangi dam is manmade reservoir, which is abounded by black soil. The dam made on Mahanadi river near kosrangi village in (1909) in British time. Total water spread area is around

1. AT MWL -- 0.10sq.km.[12.05 HACT]
2. WATER SPREAD ARE AT MWL : 2.58 sq. Km. [258.58 feet].

The water of dam is primarily utilized for irrigation, bathing and aquaculture practice. Kosrangi dam is surrounded by Tilda Tehsil towards West, Mahasamund Tehsil towards South, Palari Tehsil towards North, Dharsiwa Tehsil towards West Mahasamund, Tilda,Newra, Birgaon, Balodabazar are the near cities to kosrangi.It is not a seasonal dam contain water is heavy quantity.

COLLECTING OF SAMPLES AND BIOLOGICAL ANALYSIS

Water sample shall be collected from some sides in the prescribed season and shall be studied. The study was done from Jan.2019 to Dec. 2019. The sample was collected every month each station for a period of 12 months at the selected Kosrangi dam between 8.30 am to 11 am. The collection was done using conical shaped plankton collecting net was filtered rough the conical plankton net and the sample of the plankton collected were concentrated to 25 ml.in glass bottle.The Rutter's sample was used to collect water from surface and bottom during the morning hours

and then it was brought in 1 litre plastic container to the lab for its analysis.

The permanent preservation was done in 4% formalin.Identification and classification of planktons was done with the help of book by Sinha and Naik (1997), K0darkar (1992), Subramayan (1962), Chaurasia (1996), Lacerot and Reynolds (2002) were classified the fresh water planktons.

TABLE – 1 Monthly distribution of zooplankton at Kosrangi dam from Jan. To Dec. 2019. FEB.-MAY.(Summer), JUN-SEP. (Manson),OCT.-JAN.(Winter)

MONTH	*JAN.*	*FEB.*	*Mar.*	*Apr.*	*May.*	*Jun.*	*Jul.*	*Aug..*	*Sep.*	*Oct.*	*Nov.*	*Dec.*
PROTOZOA												
1.Euglena	+	+	++	+	+	+	+	+	+	+	+	+
2.Actinopherium	+	+	+	++	+	+	+	+	+	+	+	+
3.Dillugia	+	+	+	+	+	+	+	+	+	+	+	+
4.vorticella spe.	+	+	+	+	++	+	+	+	+	+	+	+
5.Colep spe.	+	+	+	++	+	+	+	+	+	+	+	+
6.Amoeba spe.	+	+	+	++	++	+	+	+	+	+	+	+
ROTIFERS												
1.Brachinous	+	+	+	+	++	+	+	+	-	_	+	+
2.Trichocera spe.	+	+	+	++	+	+	++	+	+	+	+	+
3.Keratella sp.	+	+	+	+	+	+	+	+	+	+	+	+
4.lecane sp.	+	+	+	++	++	+	+	+	+	+	+	+
CLADOCERA												
1.Daphnia spe.	+	+	+	++	++	+	+	+	+	+	+	+
2.Bosmina spe.	+	+	+	+	++	+	+	+	+	+	+	+
3.Alona	+	+	+	+	+	+	+	+	+	+	+	+
COPEPODS												
1.Cyclops	+	+	+	++	++	+	+	+	+	+	+	+
2.Dicyclops spe.	+	+	++	++	+	+	+	+	+	+	+	+
3.Eucyclops spe.	+	+	+	++	+	+	+	+	+	+	+	+
4.Dioptomus spe.	+	+	+	+	++	+	+	+	+	+	+	+
5.Nauplius spe.	+	+	+	+	+	+	+	+	+	+	+	+
OSTRACODS												
Cypris sp.	+	+	+	+	+	+	+	+	+	+	+	+

III.RESULTS AND DISCUSSION

Plankton is one of the most important food items of the fishes and many other aquatic organisms. All fishes in their larval stages were dependent on it. Location wise seasonal variation analysis of zooplankton in summer, rainy and winter season as given bellow. We found of the present study provide useful knowledge on the special organization of zooplankton diversity in different types of fresh water ecosystem.

IV.CONCLUSION

The planktons play important role in food chain and food web of any types of ecosystems. The dam also used for the fish cultivation by the local fisherman. Zooplanktons are major connecting link between producers and secondary consumers. The presence of

zooplanktons is important to achieving high fish production during fresh water rat in fish cultivation.

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