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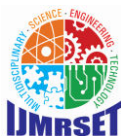
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# Studies on Zooplankton Diversity of Chandrasarovar Pond of Jhalawar (Rajasthan)

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**ABSTRACT:** Air, water, land, flora and fauna are the natural resources of the earth. Water is vitally important substance. It is the medium, which gave birth to first primitive living molecules. The role of planktonic organisms in aquatic environment is an essential link in the food chain and they are capable of affecting the entire aquatic biota. For the study of water quality, the limnological observation is needed. As the living organisms found in water are reliable indicators of water quality. Most of the organisms are being extensively used as indicators of water pollution. The biological indicators provide a direct clue and quick information of the aquatic systems. In present study, the zooplankton of the Chandrasarovar pond of Jhalawar, Rajasthan was studied for a period of one year. It deals with the total zooplankton diversity and seasonal variation of Chandrasarovar pond of Jhalawar, Rajasthan. The qualitative samples observed from the study site showed an annual species diversity of 48 species. Out of 4809 species belonged to Protozoa, 15 to Rotifera, 16 to Cladocera, 06 to Copepoda and 02 to Ostracoda. The maximum zooplankton species (45) were recorded in summer 2021 and the minimum species diversity (31) occurred in the winter season 2020-21 at the study site of Chandrasarovar pond of Jhalawar, Rajasthan. The rich diversity of plankton in Chandrasarovar pond of Jhalawar, Rajasthan may be due to sufficient nutrients present in the pond.

## I. INTRODUCTION

Air, water, land, flora and fauna are the natural resources of the earth. Water is vitally important substances. It is the medium, which gave birth to first primitive living molecules. Without water, we can't imagine lakes, ponds, wetlands and life on earth.[1,2] The availability of pure and clean water is now a glaring topic everywhere in the world. Pond constitutes a very important part of our environment. Water pollution is a serious problem for entire world. It threatens the health and well being of human, plants and animals. As the world become more industrialized and smaller due to communication and trade, accidental and purposive hazardous dumping have contributed to the problem of pond pollution. All water pollution is dangerous to the health of humans and animals.[3,4] Population all over the world use pond as primary sources of potable water. Water needs to be free of salinity, plants and animal waste, heavy metals, toxin and bacteria, to be safe of drink. Water scarcity and water pollution are becoming increasing problems in many areas of world. All over the world, the ponds in high altitude are subjected to exploitation to generate hydel energy resulting disturbance in the pond ecosystem including deterioration of water quality and affecting associate abiotic and biotic components.[5]

## II. MATERIALS AND METHODS

### Chandrasarovar pond of Jhalawar, Rajasthan study site

The Chandrasarovar pond of Jhalawar, Rajasthan study site is situated at (22° 14'N, 76° 10'E) a distance of about 1 km from Chandrasarovar lake area. This station has a depth range between 5-8m.

### General methodology

Analysis of plankton of water: It included parameters under zooplankton. Qualitative studies of the zooplanktonic population were made at the studies as per the standard methodology given in Welch (1948, 52), Ruttner (1963) and Wetzel (1983). For qualitative studies plankton samples were collected by standard plankton net made of nylon monofilament screen cloth with a mesh size of 120 $\mu$  and 60 $\mu$ . [6]

### Biological Characteristics of Chandrasarovar pond of Jhalawar

In the present study, the zooplankton of the Chandrasarovar pond of Jhalawar was studied for a period of one year. The present study deals with the total zooplankton diversity and seasonal of Chandrasarovar pond of Jhalawar.



**Zooplanktonic diversity**

The qualitative samples observed from the study site showed an annual species diversity of 48 species. Out of 48,09 species belonged to protozoa,15 to Rotifera,16 to Cladocera, 06 to Copepoda and 02 to Ostracoda. The maximum zooplanktonic species (45) were recorded in summer 2021 and the minimum species diversity (31) occurred in the winter season 2020-21 at the study site of Chandrasarovar pond of Jhalawar.

**III. RESULTS AND DISCUSSION**

In present year, the zooplanktonic of the Chandrasarovar pond of Jhalawar was studied for a period of one year. It deals with the total zooplankton diversity and seasonal variation of Chandrasarovar pond of Jhalawar. The quality sample observed from the study site showed an annual species diversity of 48 species. Out of 48, 09 species belonged to Protozoa, 15 to Rotifera, 16 to Cladocera, 06 to Copepoda and 02 Ostracoda. The maximum zooplanktonic species (45) were recorded in summer 2020 and the minimum species diversity (31) occurred in the winter season 2020-21 at the study site of pond Chandrasarovar pond of Jhalawar. The rich diversity of plankton in Chandrasarovar pond of Jhalawar may be due to sufficient nutrients present in the Chandrasarovar pond of Jhalawar.[7,8]

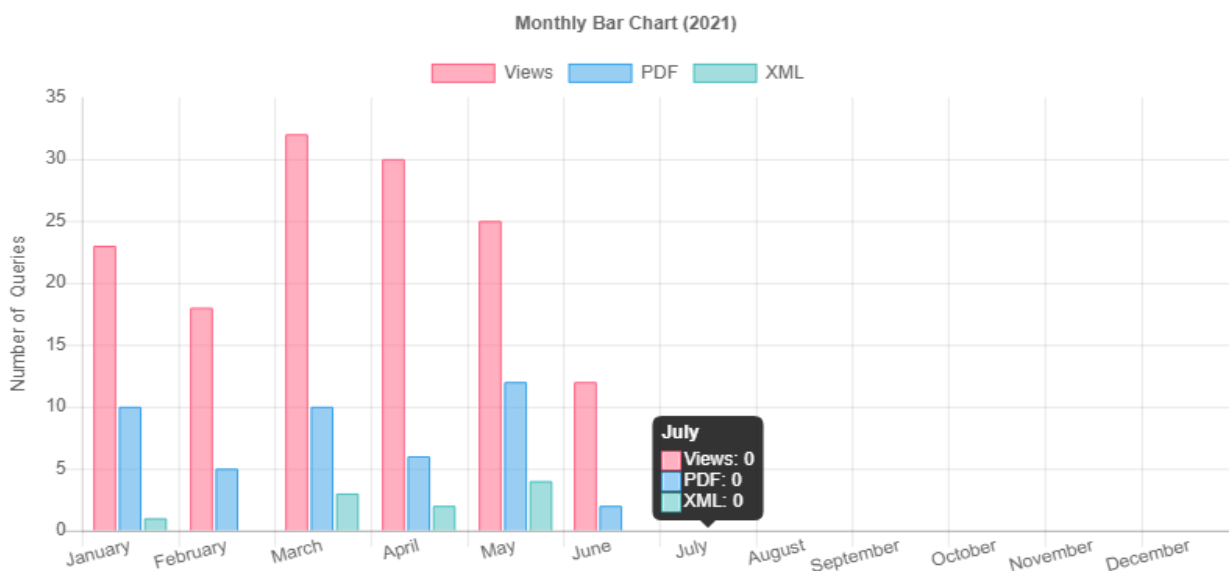


Fig.1.

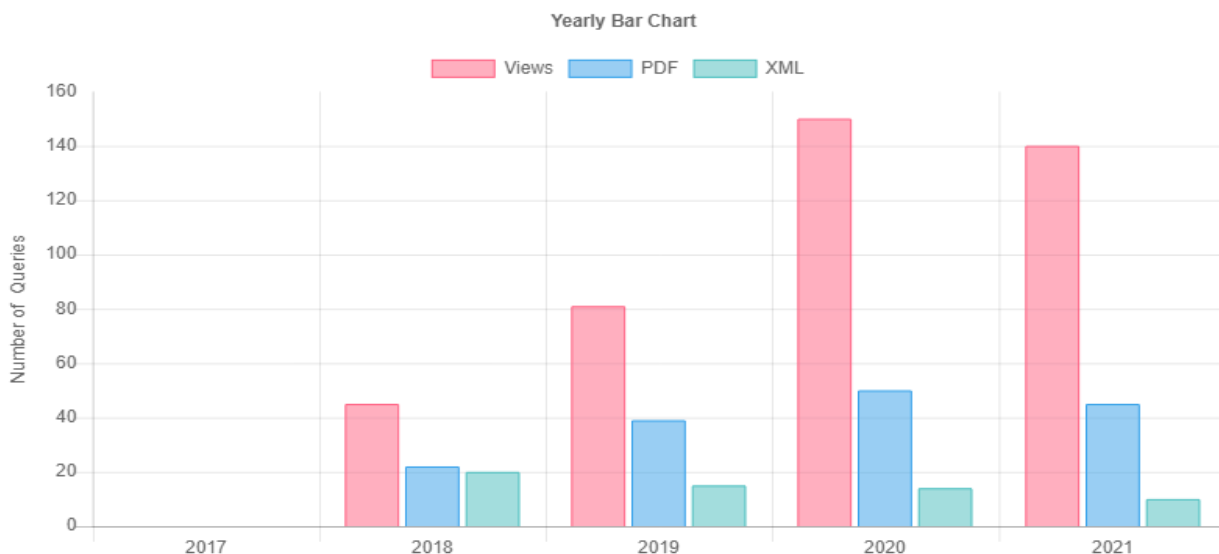


Fig.2.

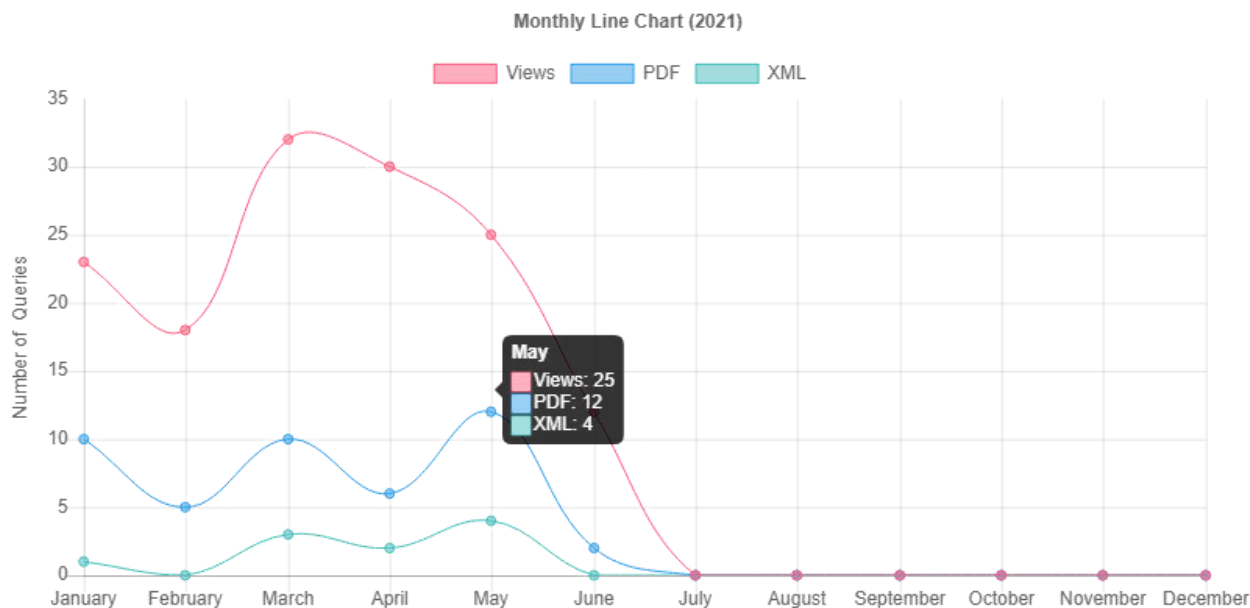


Fig.3.

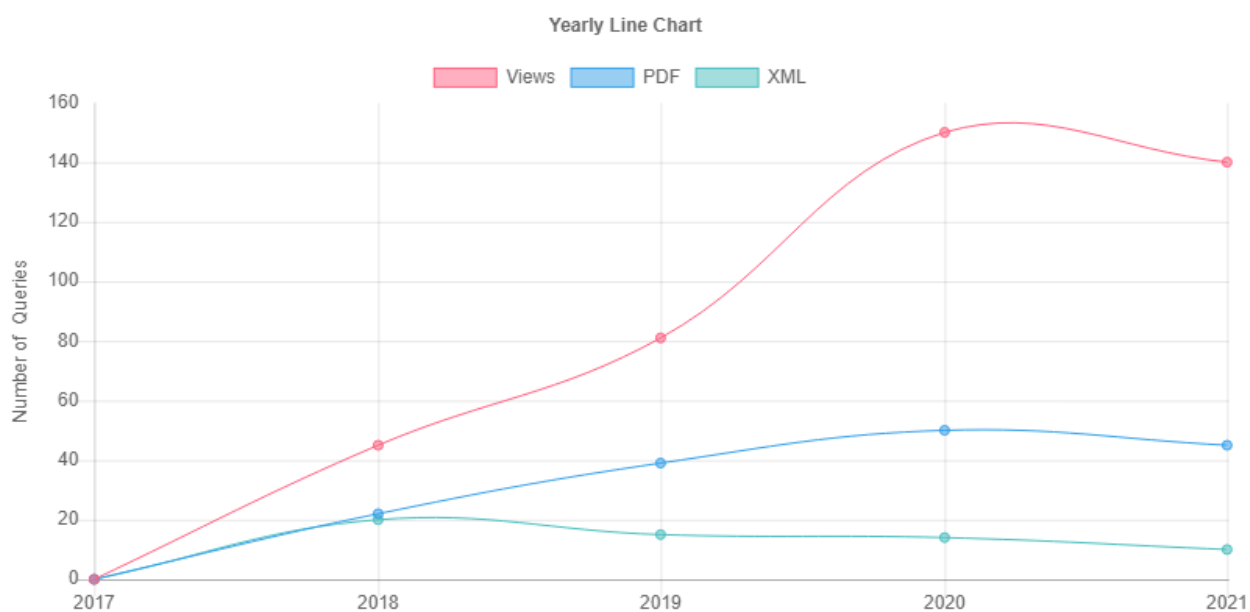


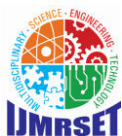
Fig.4.

#### IV. CONCLUSION

The qualitative samples observed from the study site showed an annual species diversity of 48 species. Out of 4809 species belonged to Protozoa, 15 to Rotifera, 16 to Cladocera, 06 to Copepoda and 02 to Ostracoda. [9,10] The maximum zooplankton species (45) were recorded in summer 2021 and the minimum species diversity (31) occurred in the winter season 2020-21 at the study site of Chandrasarovar pond, Jhalawar, Rajasthan. The rich diversity of plankton in Chandrasarovar pond, Jhalawar, Rajasthan may be due to sufficient nutrients present in the pond.

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