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Rotifer Diversity of Gondsawari Lake of Chandrapur District (M.S.), India

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Abstract: *Rotifer are small living things mainly habituating all water bodies worldwide. These are making up a phylum of microscopic and near-microscopic pseudocoelomate animals. They predominately present in thin water film. Rotifer eats dead bacteria, algae and protozoa and contribute in nutrient recycling. There are about 2200 species of rotifer present all over the world. This paper document the seasonal variation in the Rotifer species from the Gondsawari lake of Chandrapur district of Maharashtra from February 2024 to January 2026 in which 15 species were identified.*

Keywords: Rotiferdiversity, Gondsawari lake

I. INTRODUCTION

Rotifers are soft bodied microscopic freshwater invertebrates distributed in water bodies, such as in lakes, dam, ponds and riversand most important component of an aquatic ecosystemand have fast reproductive rates and dispersal capabilities to form colony in new habitat.According to Dhanpathi, M.V.S.S.S. and D.V. Rama Sarma (2000) "The short life cycle of Rotifers depends on favorable conditions of temperature, food and photoperiod and have short reproductive stages which depend on favorable environmental conditions."Rotifer were studied by many researchers like Sampaio, E.V, *et. al.*, (2002)", Kudari, V.A. *et.al.*, (2005), Moitra, S. K. and Bhowmik, M. L. (1968), Choubey Usha, (1991), and Sharma, R. and Capoor A. and so on.

II. MATERIAL AND METHODS

Gondsawari lake is 34 km away from Chandrapur in Maharashtra State, India. It is 618 m. above MSL and is at 20˚00' 55.85" N latitude and 79˚ 31' 35.86" E longitude. The depth of water is 18 feet during monsoon season and 6 feet during summer seasons.

For study purpose, in the morning hours between 8:00 to 10:00 a.m. monthly sample were collected from each site of lakeand 30 to 40 liter of samples were filtered by plankton net. In collected samples add Lugols iodine for settle down for 24 hours and preserve in 5 % formalin for further investigations. By taking one drop of sample on a micro slide and covered by cover glass and observed under microscope. For planktonic study use the various keys by Prescott (1954)

Plankton study was done by Sedgwick – Rafter cell method for quantitative analysisas plankton/lit.

Plankton (units/lit)= n x c/v

Where, n= number of plankton in 1 ml, c= Volume of concentrate, v = volume of sample in lit

III. RESULT AND DISCUSSION

In the present study 15 species were identified in all sampling sites of lake and similar finding were noted by Kamble B. B. and Meshram, C. B. (2005) "identifies 5 species of rotifers in Khatijapur tank of Achalpur, Amravati (M.S.)", Jayabhaye, U.M. and Madlapure, V.R. (2006) "reported 14 species in Parola dam of Hingoli (M.S.)",Jeelani, M.I. and H. Kaur (2014)"recorded27 species in Dal lake, Kashmir", In the present study among the different species of Rotifers, *Brachionusfalcatus,* and *Bronchionusbiedentata*was dominant followed by *Cephalodellagibba and Filiniaopoloensis, Cephlodellagibba*indicates eutrophic nature of lake. During study maximum rotifers were recorded during summer season and minimum during the monsoon season. Similar finding was record by Kedar, G. T.*et.al* (2007) "noted

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maximum rotifers during the March and minimum during July", Jadhav, S.*et al.,* (2012) "reported 13 genera of Zooplankton from Sina kolegoan Dam, Osmanabad District, Maharashtra", Mahajan, V.S. and Harney, N.V. (2016) "recorded rotifers maximum during summer season and minimum during the monsoon season in Mohabala lake, Bhadrawati, District Chandrapur (M.S.), India".Abbai, & Shivashankar, S. A.(2017) "studied the Zooplankton diversity of Sogal pond in Belagavi District, North Karnataka", Kaur, S., & Sidhu, H. K. (2019) "explored the diversity of river Ghaggar of Punjab",Patel, P., & Laharia, R. (2021) "studied zooplankton diversity of a freshwater perennial Singada Lake in Wani city of Yavatmal", and V. D. Dorlikar, et.al (2023) "studied zooplankton diversity of Kapileshwar (Ashti) Lake District Wardha (Maharashtra), India".

IV. CONCLUSION

During summer season rotifers were in abundance due to food and favorable temperature while minimum in monsoon because of rainfall.

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		Summer			Monsoon			Winter		
Sr. No.	Components									
	A) Rotifera	Avg		Sd	Avg		Sd	Avg		Sd
1	Brachionus angularis	7	±	6.7	2	±	0.8	2	±	0.8
2	Brachionus bidentata	4	±	2.2	2.75	±	1.0	3.75	±	1.0
3	Brachionus calyciflorus	3.5	±	4.4	2	±	1.4	2.25	±	1.3
4	Brachionus falcatus	9.25	±	5.4	5.75	±	4.5	11	±	2.9
5	Brachionus forficula	5	±	2.4	3	±	0.8	4	±	3.2
6	Brachionus plictalis	7.25	±	4.3	2.75	±	1.7	3.75	±	2.4
7	Branchinus quadridentatus	3.25	±	2.5	1.75	±	0.5	4.5	±	1.7
8	Cephalodella gibba	3	±	2.7	3	±	2.3	6.5	±	3.1
9	Filinia longiseta	7.5	±	6.2	4	±	4.7	1.75	±	0.5
10	Filinia opoliensis	3.75	±	2.5	2	±	1.4	4.75	±	2.1
11	Keratella valga	5.75	±	4.9	5.5	±	4.4	2.5	±	1.3
12	Lecane luna	10.5	±	3.0	5.5	±	3.1	9.75	±	2.2
13	Monostyala bulla	3.25	±	2.5	1.75	±	0.5	4.5	±	1.7
14	Rotaria citrina	5	±	2.4	3	±	0.8	4	±	3.2
15	Rotaria rotatoria	4.75	±	2.2	3.5	±	1.3	4.25	±	3.6

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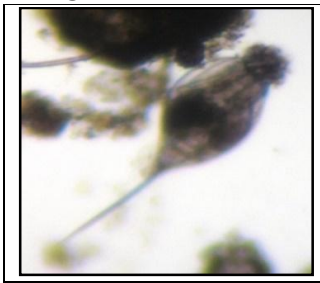
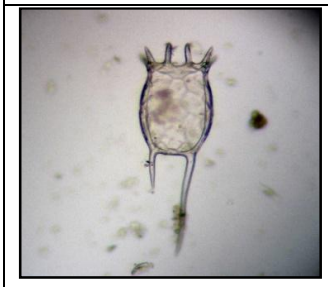
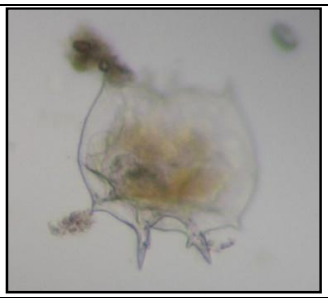
Plate No. 1–Showing seasonal variation of Rotifer in Gondsawari lake during the year 2024-2026.

	
Monostyla bulla	*Lecane luna*
	
Brachionus falcatus	*Brachionus calciflorus*
	
Keratella valga	

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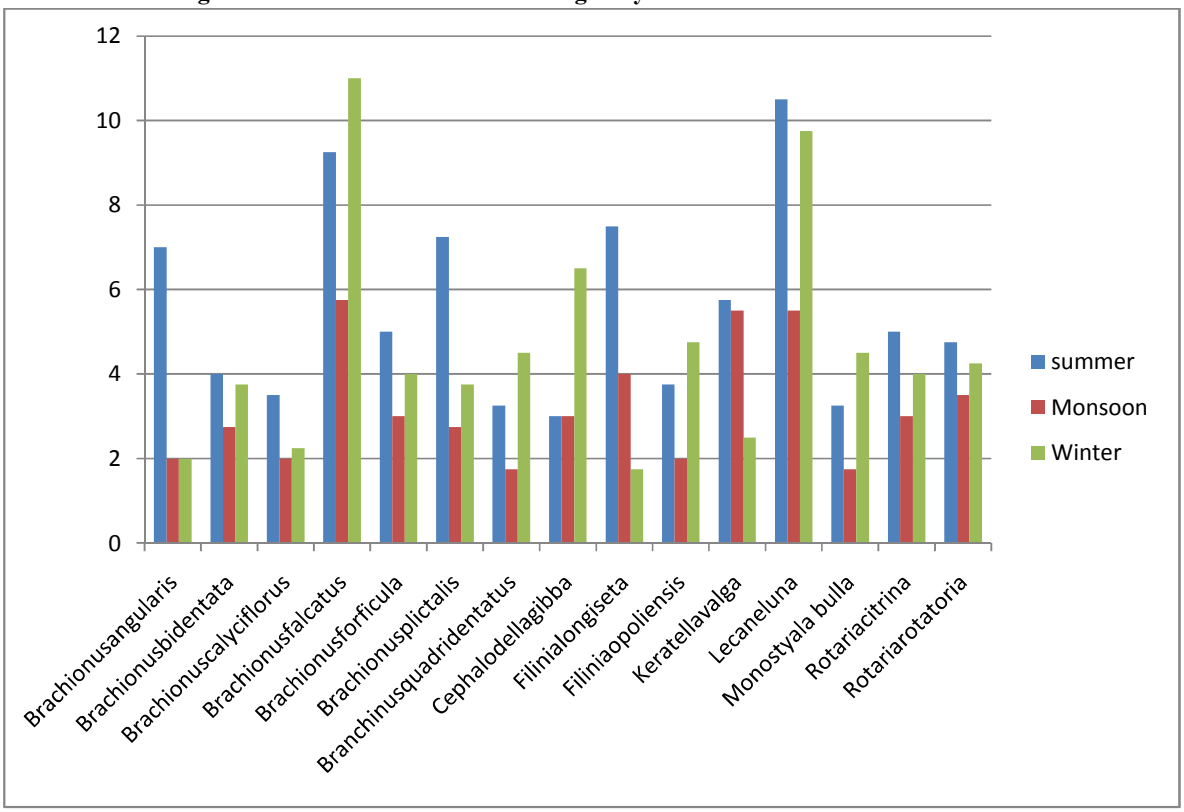

Plate No. 4–Showing Graphical representation of Rotifer in Gondsawari lake during the year 2024-2026.