



## AN ASSESMENT OF ZOOPLANKTON DIVERSITY IN AMBADI RESERVIOR FROM KANNAD, DISTRICT AURANGABAD.

Sanghai P. K.<sup>1</sup>, Kshirsagar A. A.<sup>2</sup> and Ingole S. B.<sup>3</sup>

<sup>1</sup>Head, Department of Zoology, Shivaji Arts, Commerce, and Science College, Kannad, District Aurangabad (M.S.) India.

<sup>2</sup>Research centre, UG & PG Department of Botany, Arts, Commerce, and Science College Kannad, District Aurangabad (M.S.) India.

<sup>3</sup>Head, Department of Zoology, Siddheshwar Mahavidyalya, Majalgaon, District Beed.



### ABSTRACT :

The role of zooplankton in an aquatic ecosystem is well defined. They serve direct or indirectly as natural food for the primary consumers in a water body. The primary productivity of an aquatic ecosystem is directly correlated to the density of zooplanktons. The importance of zooplanktons need detail investigation in ecological view, their population, distribution and diversity. The present investigation deals with the diversity of zooplanktons from Ambadi reservoir at Kannad Dist. Aurangabad. There are different types of zooplanktons are observed from groups like Cladocera, Rotifera, and some Protozoans.

**KEYWORDS :** Zooplankton diversity, Ambadi reservoir, Cladocera, Rotifera and Protozoa etc.

### INTRODUCTION

Ambadi reservoir is located on the River Shivana of Kannad of the District Aurangabad. According to Odum (1983) planktons are the useful bioindicators for an assessment of diversity and pollution indicator factor of water reservoir. Zooplanktons plays an important role as a food for many larvae of carps and fishes Jhingran (1985).The paper is mainly deals with the study of diversity of zooplanktons. According to Altaff (2004) zooplankton plays a vital role in aquatic ecosystem. According to Piirsoo *et. al.* (2008) the species diversity of zooplankton was directly related to abundant occurrence in water bodies. The most of zooplanktons are feeders that feed algae, fine particles of water body and bacteria Thilak (2009). Sonawane *et. al.* (2012) studied the determination of water quality index of Ambadi Dam. The zooplankton also plays vital role in food chain Aarti *et. al.* (2013). According to Banerjee and Narsimha (2013) planktons plays an important role for maintaining quality of water and biological equitability. Sarwade and Kamble (2014) studied plankton diversity in Krishna River. Walujkar A.G. (2014) studies the zooplankton diversity from Pathardi Kshirsagar A.A. (2017) studied phytoplankton in Ambadi dam. Therefore by considering the diversity of zooplankton a preliminary assessment of Ambadi reservoir is carried out.

### MATERIAL AND METHODS:

To study the zooplankton diversity of Ambadi reservoir the water samples are collected from various sites and filtered with plankton net. Planktons were preserved in Lugol's Iodene and 70 % alcohol solution. The planktons were observed under microscope (100 x) and counted by using Sedge wick-Rafter chamber (Sedgwick, 1988).

**STUDY AREA:****Fig.: Satellite view of Ambadi Dam****OBSERVATION AND RESULTS:**

The collected samples are observed in laboratory and it is categorized in to three groups Viz.

a) Cladocera b) Rotifera and c) Protozoa.

- a) **Cladocera:** This type of zooplankton group is commonly known as water fleas. These types of fleas are very minute and microscopic ranging from 0.1 to 4.0 mm and belong to subphylum crustacean according to Raghunathan and Sureshkumar (2002). The present study includes the observation of *Daphnia sp.* and *Sida sp.* from this group.
- b) **Rotifera:** This is one of the important natural groups of water purifier found in aquatic bodies. There are different types of rotiferans zooplanktons were observed in this reservoir Viz. *Branchionus sp.*, *Ascomorpha sp.*, *Keratella sp.*, *Cocconeis sp.*, *Sinatheria sp.*, *Pterodina sp.*, *Philodina sp.* etc.
- c) **Protozoa:** It is one of the groups of first aquatic organism in the form of zooplankton. There are different types of protozoans were observed in this reservoir such as *Bursaria*, *Porodon*, *Metapus*, *Verticella*, *Stentor*, and *Tetrahytnema* etc.

**RESULTS:**

The water samples collected from different sites of the reservoir and to find out the following zooplanktons and counted their numbers.

Sr. No.	Group	Name of Zooplankton	No. of zooplankton counted
1)	Cladocera	<i>Daphnia sp.</i>	16
		<i>Sida sp.</i>	12
2)	Rotifera	<i>Branchionus sp.</i>	20
		<i>Ascomorpha</i>	15
		<i>Keratella sp.</i>	10
		<i>Cocconeis sp.</i>	14
		<i>Sinatheria sp.</i>	12
		<i>Pterodina</i>	15
3)	c) Protozoa	<i>Philodina sp.</i>	18
		<i>Bursaria sp.</i>	22
		<i>Prorodon sp.</i>	24
		<i>Metapus sp.</i>	20
		<i>Verticella sp.</i>	16
		<i>Stentor sp.</i>	17
		<i>Tetrahytnema</i>	14

The highest number is count in *Prorodon* (24) while the lowest count as in *Sida* and *Sinantheria* (12). Among the Cladocera *Daphnia* (16) is dominant. In Rotifer *Bronchionus* (20) is dominant and as in Protozoa *Prorodon* (24) is dominated in this reservoir.

#### DISCUSSION:

Datta and Verma (2010) reported the Cladocera from the river Chenab. Sarwade and Kamble (2014) reported Cladocera from Krishna river and the same group reported from Ambadi reservoir. Sladeczek (1983) states that the Rotifers are used as an indicator of water quality. Datta *et al* (2009), Sharma (2009) has studied the protozoans are dominant in the aquatic ecosystem. Hence the assessment of zooplanktons diversity is useful for productivity of aquatic ecosystem.

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**Sanghai P. K.**

**Head, Department of Zoology, Shivaji Arts, Commerce, and Science College, Kannad, District Aurangabad (M.S.) India.**