

RESEARCH ARTICLE

Diversity of Rotifer in Asolamendha Lake, Dist. Chandrapur, Maharashtra, India

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ABSTRACT

The Chandrapur district is located between 19.30' N to 20.45'N Latitude and 78.46'E longitude at the eastern part in Vidharbha region of the Maharashtra state. The district is more popular for the coal mines, thermal power station and Tadoba -Andhari National sanctuary. Asolamendha lake is manmade lake leased for fish culture and situated near to Pathari village of district. The qualitative and quantitative analysis of zooplankton was carried out during June 2010 to May 2012 as a part of the live food of cultured fishery of this lake. Rotifers were dominant among the zooplankton population during this two year study. The population of Rotifers was observed maximum in winter season while minimum in monsoon season, during the study period. In all 10 families belonging 14 genera and 27 species of rotifers were recorded among which family Brachionidae was dominant in Asolamendha Lake.

Keywords: - Rotifer, Chandrapur, Asolamendha, Brachionidae.

INTRODUCTION

Freshwater bodies are very essential for the existence of dynamic ecosystem contributing immensely in shaping and evolving the biotic and abiotic system. Lakes and ponds plays important role to maintain ecological balance of flora and fauna. Planktonic species like rotifers are often common denizens of the aquatic ecosystems and considered as an indicator species of inhabited water. Population of certain rotifers are sensitive indicator of aquatic ecosystem as they plays important role in trophic dynamics and in energy

transfer in any aquatic ecosystem.

Asolamendha lake (20°15'16"N, 79°49'18"E) is perennial lake and situated near Pathari village Dist. Chandrapur. The lake is useful for the fisheries, domestic activities and irrigation purpose. Present study was undertaken from the period of June 2010 to May 2012 in order to assess species composition and diversity of rotifers..

METHODOLOGY

Three sampling station Site1, Site2 and Site 3 were established on basis of morphometric features of the lake. Water samples from the lake were collected monthly for a period of two years from June 2010 to May 2012 between 7 to 9 a.m. at regular interval and filtered with the help of bolten silk (200 meshes/cm) conical net. For the qualitative and quantitative analysis of rotifer, water samples of 50 liters was filtered through a plankton net at each station and preserved in 4% formalin with a small amount of glycerine for further studies in 100 ml plastic bottle. Some live sample of rotifers were isolated and studied in living condition. The rotifer were observed for their taxonomic identification by using various keys given by Pennak [1], Battish [2], Kodarkar [3]. Quantitative analysis of plankton was done by Sedwick- Rafter cell method.

RESULT AND DISCUSSION

Total 27 species of rotifer were observed during the study period from Asolamendha Lake. Total 27 species belonging to 10 family and 14 genera were identified from phylum rotifera. Maximum species were recorded from the family Brachionidae (12 species) which followed by family Lecanidae (04 species), family Tichocercidae, Euchlanidae and Filinidae (02 species) and family Asplanchnidae, Mytilinidae, Testudinellidae, Colurellidae and Hexarthridae (01 species).

In the present study, *Brachionus sp.* shows its dominance in rotifer group [4]. *Brachionus falcatus* is mostly observed in the summer season at all sites as temperature plays a conspicuous role in the occurrence and variation of rotifers in tropical region [5]. Rotifers are bioindicators of water and it gives the information about quality of water [6].

In the present study, highest population of rotifers were recorded in winter season followed by summer while minimum in monsoon season [7] and [8]. Diversity and density of rotifer were observed maximum at site 1 probably due to favourable temperature and availability of abundant food in the form of bacteria and suspended detritus [9], [10] and [11].

Table 1:- Month wise population of Rotifer at site S1 of Asolamendha Lake.

Year	Month											
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
2010-11	19	25	48	73	152	169	157	173	71	65	46	18
2011-12	32	21	35	54	135	147	145	152	60	50	29	26

Table 2:- Month wise population of Rotifer at site S2 of Asolamendha Lake.

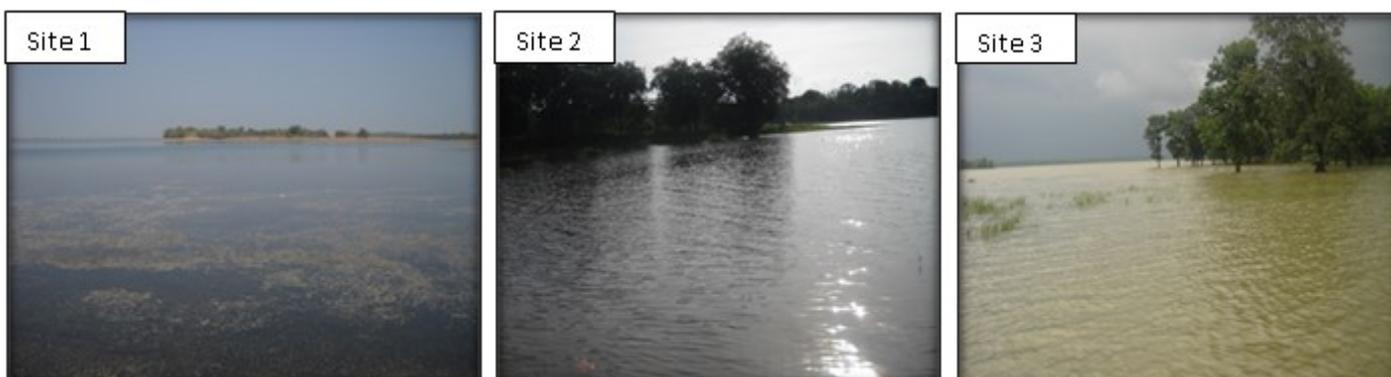
Year	Month											
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
2010-11	24	31	44	61	133	138	136	160	77	59	38	26
2011-12	35	49	45	60	119	144	142	145	84	75	40	35

Table 3:- Month wise population of Rotifer at site S3 of Asolamendha Lake.

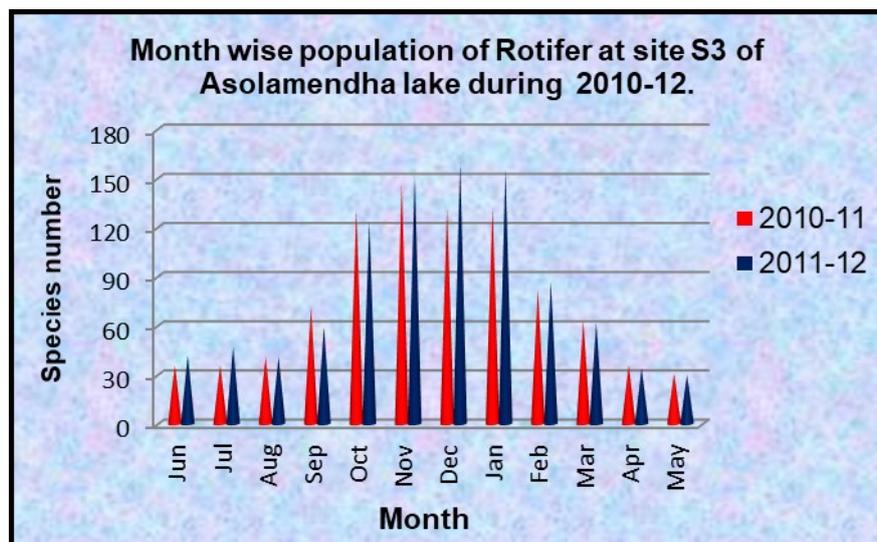
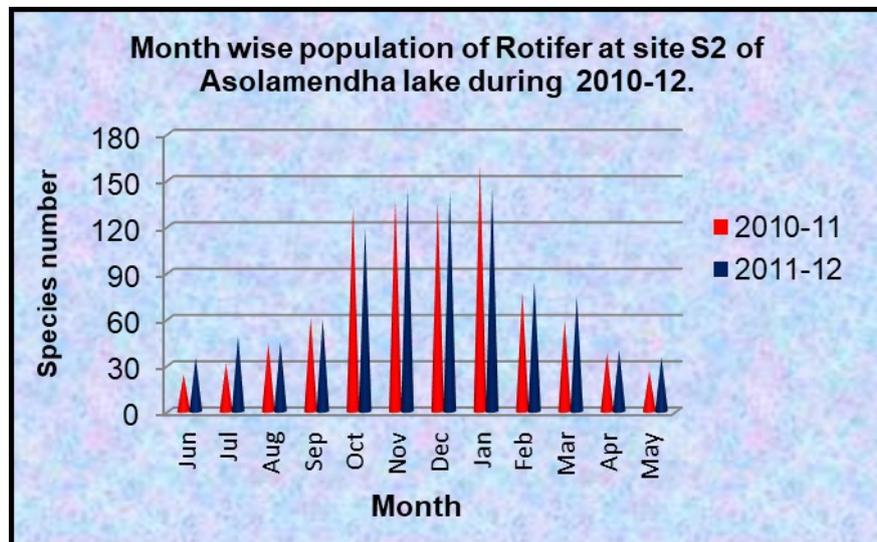
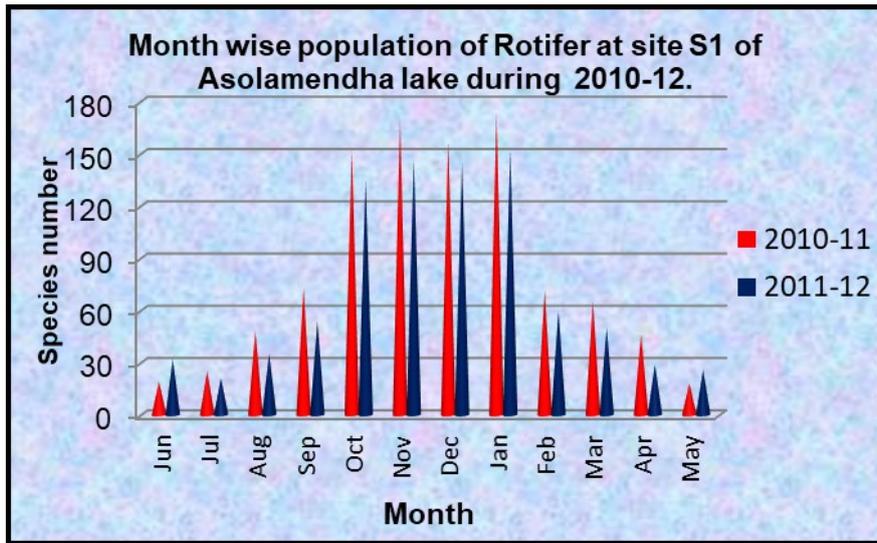
Year	Month											
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
2010-11	36	36	41	71	131	147	132	132	82	63	36	31
2011-12	42	47	41	59	124	152	160	156	87	62	34	30

Table 4: Diversity of Rotifer at three selected sites of Asolamendha Lake during 2010-12

Sr. No.	Phylum / Class	Family	Species
1.	Rotifera Class: Monogonata	1) Brachionodae	<i>Brachionus calciflorus</i>
			<i>B. falcatus</i>
			<i>B. caudatus</i>
			<i>B. angularis</i>
			<i>B. forficula</i>
			<i>B. diversicornis</i>
			<i>B. quadridentatus</i>
			<i>Keratella tropica</i>
			<i>K. cochlearis</i>
			<i>K. ticinensis</i>
			<i>Platulus platulus</i>
<i>Anuraopsis fissa</i>			
2.	Class: Eurotatoria	2) Lecanidae	<i>Lecane bulla</i>
			<i>L. curvicornis</i>
			<i>L. decipiens</i>
			<i>L. tessellata</i>
		3) Trichocercidae	<i>Trichocera similis</i>
			<i>T. rattus</i>
		4) Filinidae	<i>Filinia longiseta</i>
			<i>F. apoloensis</i>
		5) Euchlanidae	<i>Euchlanis dialatata</i>
			<i>Pseudoeuchlanis longipedis</i>
		6) Asplanchnidae	<i>Asplanchna sp.</i>
		7) Mytilinidae	<i>Mytilina ventralis</i>
		8) Testudinellidae	<i>Testudinella sp.</i>
		9) Colourellidae	<i>Lepadella sp.</i>
10) Hexarthridae	<i>Hexarthra sp.</i>		



Photographs of the Asolamendha lake showing thre different sites.



Population graph of Rotifers from three different sites

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