



AN ASSESSMENT OF PLANKTON OF TIGHRA RESERVOIR GWALIOR (M.P.)

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ABSTRACT

Studies on Plankton of fresh water reservoir Gwalior (M.P.) was made to assess the population of plankton's one year study period Jan. 2007 and Dec. 2007. The populations density of Plankton varies from month to month. The qualitative and quantitative evaluation of variation of Tighra reservoir showed high quantity of zooplankton & phytoplankton population during the study periods. The population of zooplanktons observed 38 species of the following 5 group Rotifera, Copepoda, Cladocera, Ostracoda and protozoa. The population of phytoplankton 44 species of the following 4 group namely Bacillariophyceae, Myxophyceae, Chlorophyceae and Euglenophyceae. Rotifera and myxophyceae formed dominating group of organism. The present study revealed that the water of Tighra reservoir useful for fish culture, irrigation and for drinking purpose.

INTRODUCTION:

The Plankton occurs in all natural water as well as in artificial impoundment like ponds, tanks, reservoir, irrigation channels etc. plankton are floating forms drifting into currents. Now-a-day the distribution and composition of planktonic species are considered as remarkable measure to study and determined the status of pollution in water. The studies of phytoplankton are the subject of great interest because of their role as Primary producers in an aquatic ecosystem. Zooplankton are the major mode of energy transfer between phytoplankton and fish and important for fish population. The present investigation of planktonic group of the Tighra fresh water reservoir carried out one year study periods. A number of worker such as Ayyappan & Gupta (1980), Balkhi et al. (1987) Choudhry & Singh (1999) Verma Dinesh, Kanhere R.R. (2004 & 2005) Mahazan Anjana & Kanhere R.R (1966) have reported on different aspect of zooplankton inhabiting

DESCRIPTION OF STUDY AREA:

The Tighra freshwater reservoir situated about 20km west of Gwalior city at an altitude of 218-58 in near SADA magnet city. The Tighra reservoir lies on 26-12'0" E Longitude. The reservoir was surrounded by hills from three sides. There water spread area of 2112 hectares. The average depth of the reservoir 24 meter. The reservoir is rain fed during monsoon periods. The reservoir is also fed by

river. Tighra reservoir is used to fish culture and also used irrigation, drinking & domestic purpose.

MATERIAL AND METHODS:

Plankton samples were collected at monthly intervals from January to December 2007. The sample were preserved in 5% formalin. The quantitative analysis were done with the help of sedge wick Rafter plankton counting cell and the results were expressed as organism per liter. The identification of Zooplankton & phytoplankton was done with the help of standard texts and monograph Edmondson (1959), Battish (1992), Philips M.T. (1967) and Gandhi (1995).

RESULTS & DISCUSSION:

Phytoplankton were collected from the reservoir water during the study period. The quantitative and qualitative monthly occurrence of phytoplankton species are given in the table No. 1 phytoplankton population in Tighra reservoir is composed of four major group namely chlorophyceae, bacillariophyceae, myxophyceae, euglenophyceae of which 20 species belong to chlorophyceae, 10 belong to myxophyceae 7 species to bacillariophyceae and 5 species belong to euglenophyceae. The total phytoplankton population density ranged from 225x10³/l in April and minimum density 27x3/l in August 2007. Show in table-3. The gradual increase in the total density of phytoplankton population was observed January to April 2007. the annual mean % composition of different group of phytoplankton

revealed to constitute about (27.08) of chlorophyceae (27.96%) myxophyceae (40.55%) bacillorophyceae, 4.43% eglephae zooplanktons population of Tighra reservoir composed of five major group namely rotifera, copepoda, cladocera, ostracoda, protozoa, the zooplankton species encountered and their months wise distribution show in table-2. A total 38 species were recorded from the remove of which 13 species belong rotifera, 7 species belong to cladocera

9, copepoda 4, ostracoda 5, protozoa. The maximum population density (328 unit/l) observed in June and minimum (96 unit/l) in September. The annual mean % composition of differten group of zooplankton showed that rotifera contributed (37.82%) Copepoda(25.18%), Cladocera(21.76%) and ostracoda (11.87%) and protoza (3.38%) fig No. 2.

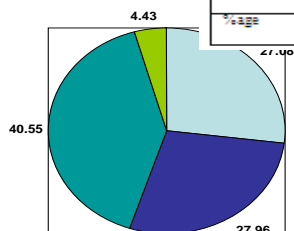
Table-2
DATA OF VARIOUS GROUP OF ZOOPLANKTON (UNIT/L) AT TIGHRA RESERVOIR, GWALIOR

Month	Rotifera	Copepoda	Cladocera	Ostracoda	Protozoa	Total
January	35	34	27	10	9	115
February	18	41	22	11	6	98
March	43	41	21	7	4	116
April	24	31	37	13	30	135
May	54	52	67	14	48	235
June	130	63	92	0	43	328
July	51	29	28	4	31	143
August	41	55	23	0	3	122
September	31	20	31	5	9	96
October	64	47	9	6	16	142
November	156	62	41	0	27	286
December	137	47	53	0	20	257
TOTAL	784	522	451	70	246	2077
%age	37.82	25.18	21.76	3.38	11.87	

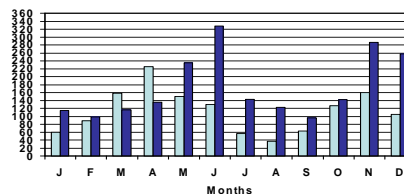
Table-1
DATA OF VARIOUS GROUP OF PHYTOPLANKTON (UNIT 10x³/L) AT TIGHRA RESERVOIR, GWALIOR

Month	Chlorophyceae	Myxophyceae	Bacillorophyceae	Euglenophyceae	Total
January	10	14	34	2	60
February	25	10	46	8	89
March	55	13	78	12	158
April	73	25	115	12	225
May	56	12	76	6	150
June	40	16	65	9	130
July	28	9	14	5	56
August	16	7	11	3	37
September	14	39	10	-	63
October	21	94	11	-	126
November	16	110	34	-	160
December	14	31	57	3	105
TOTAL	368	380	551	60	1359
%age	27.08	27.96	40.55	4.43	

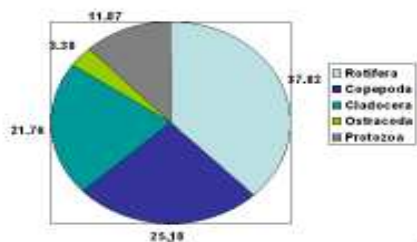
DATA OF VARIOUS GROUP OF PHYTOPLANKTON AT TIGHRA RESERVOIR, GWALIOR



DATA OF TOTAL PHYTOPLANKTON & ZOOPLANKTON AT TIGHRA RESERVOIR ON MONTHLY BASIS-2007



DATA OF VARIOUS GROUP OF ZOOPLANKTON (UNIT/L) AT TIGHRA RESERVOIR, GWALIOR



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