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DIVERSITY OF PHYTOPLANKTON AND THEIR MONTHLY VARIATION IN WAN RESERVOIR AT NAGAPUR TEHSIL PARLI-VAIJNATH DIST.BEED,(M.S) INDIA

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ABSTRACT:

Present study deals with the analysis the phytoplankton of diversity and their season variation in wan Reservoir at Nagpur Tehsil Parli-Vaijnath Dist.Beed (M.S) India. Phytoplankton's are important component of aquatic flora. They serve as food for many aquatic animals especially fishes and play a key role in maintaining proper equilibrium between a biotic and biotic components of the aquatic ecosystem.To study the seasonal variation of phytoplankton species in wan reservoir. Data of plankton on wan reservoir was collected seasonally during (June 2013 to May 2015) at each month every season.The present study was undertaken to observe the seasonal changes in plankton population.In this research paper of phytoplankton species diversity found in the wan reservoir.Water Samples were collected from the four different (A,B,C,&D) station sites.In wan Reservoir Identified four major group Phytoplankton species there were listed. Bacillariophyceae, Chlorophyceae, Euglenophyceae, Myxophyceae etc. These species were seasonal variation in population density.

KEYWORDS: *Phytoplankton's diversity, phytoplankton, Wan Reservoir.*

INTRODUCTION

Plankton is used for study under the observation the microscopic and free floating microorganism in the water. Plankton can be divided in to two major groups such as the Phytoplankton and zooplankton. They occupy the maintain the food web and transfer of energy from the lower to higher tropic level (Water, 1977).Biological density of ecosystem was found to be the best indicator of healthy aquatic ecosystem. Aquatic contaminates as fertilizer and detergents were helpful for excessive growth of algae (Roy, 1996).Phytoplankton is maintaining the Food quality for aquatic community. In water bodies 'seasonal quantitative and qualitative fluctuation occurs in plankton community. Phytoplankton the predominant type plants found in aquatic system.Phytoplankton food quality which depends on zooplanktons species food chain equal balance of ecosystem. They are affected physical, chemical, &biological factor on Phytoplankton community .Many workers have said the algal communities as the whole serve as reliable pollution indicator. (Patrick, 1950; Palmer 1980,Nandan and Patel (1985) .Wan reservoir is 14 km, away from Parli –Vaijnath city.This location is Latitude 18^0-53'- 0''-N Longitude 76^0 -27'-0'' E.The earthen dam of 1981 meters height and 2188.40 meters in length on Wan River. Obtained data comparatively discussed in relation to pollution status of Wan reservoir.asses plank tonic diversity from the richness and density which would be indicating the biological community.

MATERIAL AND METHODS

Wan Reservoir are located at Nagapur, Parli-Vaijnath Tehsil , District Beed, Marathwada region (M.S)India, its is 14 km, away from Parli –Vaijnath town.This is longitude 76^0.27 E. the earthen dam of 1981 meters height and 2188.40 meters in length on Wan River.Collection of water samples for phytoplankton analysis The sampling was done in first week of every month the collection of four different satiation A,B,C&D. The study period in June 2013 to May 2015.The phytoplankton samples was collected with the help of plankton net made up of blotting silk cloth no.25 with the mesh size 50µm.konw volume of sample 200 liter was used to collect surface water .The collected water samples were concentrated plankton was collected from the plankton bottle fixed at the bottom of net the samples were preserved in 4 %. Lugols Iodine. The phytoplankton samples were transported in laboratory for analysis.

For phytoplankton analysis was the simple drop method was used. An ordinary 4 ml dropper was taken and samples were sucked in the dropper and 2-3 drops were taken on the slide for observation. Organisms present in this drop were counted in high power .numbers of drop forming 1ml for the dropper was taken into consideration the following formula was used. The phytoplankton density was expressed on units/ liter.

Phytoplankton (density): N = abc /L

Where

N = No of phytoplankton /lit.

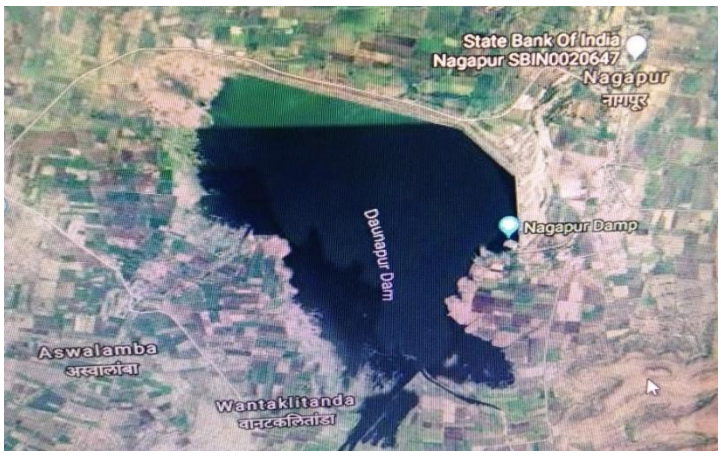
a = average number of individuals in one drop

b=Number of drops forming 1ml

c = Volume of concentrated

L = original water sample (liter)

During the year June 2013 to May 2015 phytoplankton analyzed were Euglenophyceae, chlorophyceae and Bacililliariphyceae and Myxophyceae was recorded .From Wan Reservoir The samples for phytoplankton study were collected from all the four station in separate clean plastic bottles .Water samples were collected separately for the study of all the general phytoplankton and benthos. For the study of phytoplankton 1 litter samples were collected from the surface water at all the station in clean plastic Jars and were fixed immediately using Lugholes iodine solution (1ml: 10) (Tragedy and Goel, 1986).



Study Area:

The Wan Reservoir is medium sized reservoir. Government of Maharashtra construction across Wan River in 20th November 196 .Wan Reservoir are located at Nagapur, Parli-Vaijanth Thasil , District Beed ,Marathwada region(M.S),India, its is 14 km, away from Parli-Vaijnath. This project used by irrigation, fishery purpose ,The drinking water supply to Parli-Vaijnath city and some amount to Parli-Vaijnath co-operative sugar factory and supply to the Thermal power station.

Phytoplankton these species founded in wan reservoir, Monthly water samples collected from a four different sites of Wan reservoiver, Water samples were collected to for study of phytoplankton biodiversity of the wan reservoir. Phytoplankton identification of during study period that was June 2013 to May 2015.Phytoplankton species occurring in wan reservoir were listed were.

RESULT AND DISCUSSION:

Here two years study of phytoplankton species these show in which season phytoplankton Present, absent and more.

Table no.1 Monthly Variation of the member of Bacillariophyceae, chlorophyceae Euglenophyceae, Myxophyceae, in Wan Reservoir from June 2013 to May 2015.

Year		June	July	August	September	October	November	December	January	February	March	April	May
2013 To 2014	**Bacillariophyceae:** 1) Molosira Granulata	+	+	_	_	++	+	+	++	+	++	++	++
	2) Naviacula placenta	+	_	+	+	_	+	+	+	+	++	+	++
2014 To 2015	1) Molosira Granulata	++	_	_	+	+	_	+	+	++	+	++	++
	2) Naviacula placenta	_	_	+	_	_	+	++	+	++	++	+	++
2013 To 2014	**Chlorophyceae:** **1)** Sceaneadesmus Arcuatus	_	_	_	_	+	++	++	+	+	+	+	+
2014 To 2015	**1)** Sceaneadesmus Arcuatus	_	_	_	+	_	+	++	++	+	+	+	+
2013 To 2014	**Euglenophyceae**, 1)Euglena Eherenbergii	+	_ _	_	+	_	_	+	+	++	++	+	_
	2) Euglena spirogyra	_	+	_	+	_	+	_	+	+	+	++	+
2014 To 2015	1)Euglena Eherenbergii	_	+	_	_	_	_	+	+	++	+	++	_
	2) Euglena spirogyra	+	_	_	+	+	+	_	+	++	++	+	++
2013 To	**Myxophyceae:** 1)Merismopedia elegans	_	_	+	_	+	+	_	++	++	_	_	_

2014	2) Chroococus sminos	_	+	+	+	_	_	_	+	+	++	+	+
	3) Oscillatory Brevis	_	_	_	+	_	+	_	++	+	_	++	_
2014 To 2015	1) Merismoped ia elegans	_	+	_	_	+	_	++	+	_	++	_	+
	2) Chroococus sminos	_	_	+	+	+	_	+	_	_	+	_	+
	3) Oscillatory Brevis	_	_	+	_	+	+	_	++	++	_	+	+

+ Present, ++ More Present, - Absents.

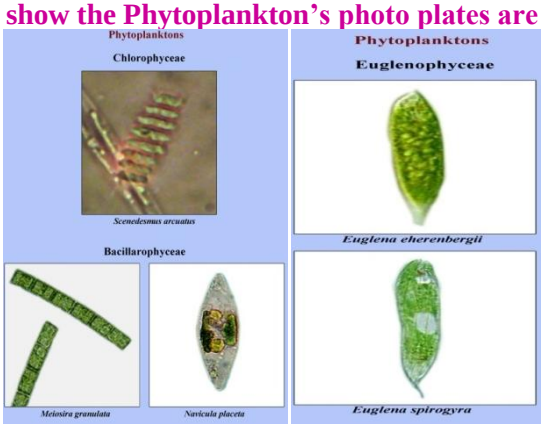
1)Bacillariophyceae : Bacillariophyceae group identification of two species i.e Melosira Granulate, Navicula placentaetc. It show in above table. During study period that was June 2013 to May 2015.Bacillariophyceae species dominated in winter season and summer season .and lowest in rainy season .Zafaralla. M.T,et,al.(1999).

2). Chlorophyceae: Monthly identification in water sample of Wan Reservoir .Chlorophyceae group of identification one species i.e *scenedesmus Arcuatus*. It show in above table .During study period that was June 2013 to May 2015.Chlorophyceae species dominated in winter season and slightly present in summer and absent in rainy season.Wetzel R. G.,(1983),Unna, K.S.et,al (2000).

3) Euglenophyceae : Monthly identification of water sample of Wan Reservoir .Euglenophyceae group of identification two Species i.e Euglena Etherenbergli, Euglena spirogyra ,it show in above table. During study period that i.e June 2013 to May 2015 .The Euglenophyceae species dominated in summer season and slightly lowest in rainy season and winter season .Singh.R.et,al (1987).Reynolds, C.S.(1980).

4) Myxophyceae : Monthly identification of water sample of Wan Reservoir .Myxophyceae group of identification 3 species i.e Merismopedia elegans, chroococcus Minor, oscillatory Breuis.Which shown in above table.During study period that was June 2013 to May 2015,The Myxophyceae species dominated id summer season and slightly lowest in rainy season and winter. Reddy P.Monika (2007), Nasally-Flores.L (2000).

Fig No.1 It show the Phytoplankton's photo plates are following .



CONCLUSION:

As per study of phytoplankton in Wan reservoir there were phytoplankton Maximum in the summer season but the low in the rainy season and middle found in the winter season. Phytoplankton abundance and biomass greatly increase during the summer months in higher latitudes because of the increased amount of light. Phytoplankton low amount because there was rainy season the light should not penetration in turbidly water. After that lightly found in winter season in increasing latitudes phytoplankton species present in Wan reservoir.

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REFERANCES:

1) Waters, T. F., (1991) Trans. Amer. Fish Soc. **86:** 329.
2) Ray,J.G.,(1992),The influence of anthrop genial factors on the stability of steppe Biogecoenoes on the mid–Dnieper watersheds in Ukraine (Ph.d Thesis Dnepropetrovsk state niversity, Ukraine),p.155.
3) **Palmer ,C.M.(1980),** Algae and water pollution, Caste House Publications Ltd.pp:1-119.
4)Trivedy R.K.Goel, P.K(1988),Quality of lentic water resources in south western Maharashtra,Indian perspectives in Aqua, Biol.215-235.
5) **Zafaralla, M. T. and Orozco, R. P.(1999).** Phytoplankton community characteristics And some limnological features of mapanuepe lakes in San Marceline , Zimbalist (Philippinies). Philippine's. of Biotechnology.8(1**):** 53-54.
6) **Wetzel, R.G., (1983).** Recommendations for future research on periphyton: Wetzel, R.G.(Ed), Periphyton of freshwater ecosystems, Dr.W. Junk, The Hague, pp. 339-346.
7) **Unna, K. S. & S. Pawar, (2000),** The phytoplankton along a pollution gradient in the river Mahanadi (M.P.) India-a multivariable approach, Hydrobiology 430, pp.87-96.
8) **Singh R. and I. Mahakam.(1987),** Phytoplankton and water chemistry of Rawalsar and Renuka lake. H. P. India. J. ecol. 14(2):273-277.
9) **Reynolds ,C. S., (1980),** Phytoplankton assemblages and their periodicity in stratifying lake systems, Holarctic Ecol. 3, pp.141-159.
10) **Reddy P. Monika (2007),** Algae as ecological indicator in assessing the river water Quality. Poll. Res. 26 (1): 33-37.
11) **Nasally-FloresL.(2000).**Phytoplankton assemblages in twenty one Sicilian reservoirs relationships between species composition and environmental factors, Hydrobiology 424, pp. 1-11.