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Seasonal Fluctuation of Phytoplankton diversity of Nira left Bank canal Taluka BaramatiDist Pune

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Many minute microscopic plants and animals spend their life in the floating manner in water. These suspended organisms form the plankton. Phytoplankton is the single cell plants are the bases of all other life forms on planet earth and are responsible for making up to 90% of earth oxygen. It is believed that most of the world oxygen comes from tiny oceans plants Phytoplankton are important influence upon the earth climate because they consume CO2. In 2010 group of marine scientists based in Canada reported that phytoplankton has declined globally by 40% since 1950 These scientists suggested that warming of ocean surface due to climate change might have reduced the vertical mixing of the water column reducing the supply of nutrients from deeper water. Nutrients that are essential for phytoplankton growth.
Phytoplankton's are more abundant in areas with high intensity of light as they convert light energy into chemical energy. Phytoplankton growth depends on the availability of co2 sunlight and nutrients. phytoplankton like land plants require nutrients such as nitrates phosphates, silicates and calcium at various levels depending on the species. The tiny organism is able to convert sunlight warmth water and minerals into proteins, Carbohydrates, Vitamins and Amino acid marked the beginning of life. So, the study was carried out on thefresh waters of Nira left bank canal diversity with relations to seasonal fluctuations.
Key words: *Phytoplankton diversity, Atmospheric Temp, light intensity*

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I. Introduction

Phytoplankton is the single cell plants are the bases of all other life forms on planet earth and are responsible for making up to 90% of earth oxygen. It is believed that most of the world oxygen comes from tiny oceans plants. In 2010 group of marine scientists based inCanada reported that phytoplankton has declined globally by 40% since1950 These scientists suggested thatwarming ofocean surface due to climate change might be the reason. Algae are microscopic fastest plants and mostly widely distributed organism in nature. The tiny organism is able to convert sunlight warmth water and minerals into proteins, Carbohydrates, Vitamins and Amino acid marked the beginning of life. These Microscopic plants spend their life in floating manner in water. They are the primary producers of energy and transmit to other organism of the ecosystem .The flow of energy from Autotroph (Phytoplankton) to Primary consumers (Zooplankton) Secondary Consumers (Fishes) Tertiary consumers (Bird ,Man etc) proteins, Carbohydrates, Vitamins and Amino acid marked the beginning of life bright sunshine and Temperature transparency plays imp role in the seasonal increase in phytoplankton density and diversity .Therefore variation in temperature leads Fluctuation of phytoplankton .

Topography

Nira left bankcanal isbuilt up during the year 1882 water from veer dam flows through the canal covering large area of irrigation . As the canal flows through fields through rotation .Baramati experiences rainy during the month of sept .Minimum temp ranges from 10-12 and Maximum temp ranges from 39-40 during summer season .

II. Material Method

Water samples were collected from two different sites of Nira left bank canal for a period of year considering the season. Samples were collected with the help of planktonic net attached with plastic bottles .Water samples were preserved in dark bottles .the collected samples was inserted in beaker Preserved with lougl sol .

1ml of sample were taken in sedwig rafter cell slide and observed under Binocular microscope. Atmospheric temperature was also taken into consideration.

Table No 1 Diversity of species

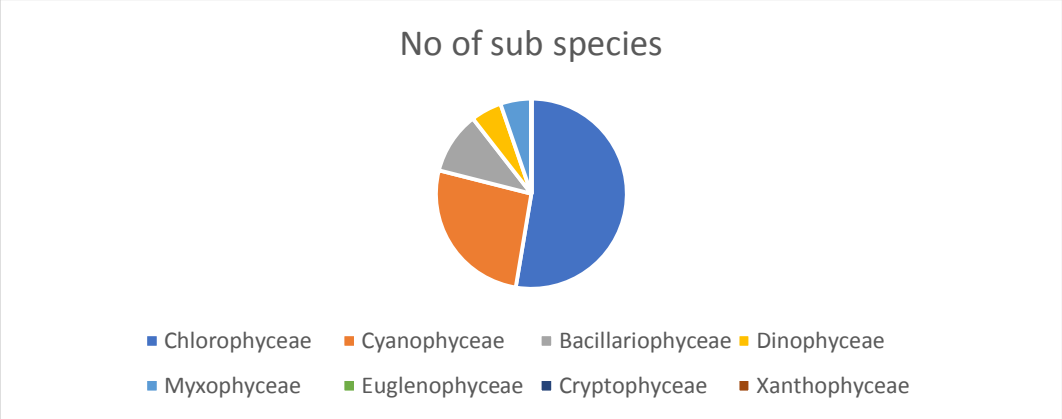
Sr.no	**Species**	**Common Name**
1	Chlorophyceae	Green Algae
2	Bacillariophyte's	Diatoms
3	Cyanophycean	Blue Green Algae
4	Dinophyceae	
5	Euglenophyceae	Euglena
6	Cryptophyceae	
7	Xanthophyceae	
8	Myxophyceae	

Table no: 2 species were found in summer season

Sr.no	**Species**	
1	Chlorophyceae	1)*Chlorococcum* *2)Closterium* *3)Cosmarium* *4)Crucigenia* *5)Gloeocystis* *6)Pedia strum* *7)Pedia strum duplex* *8)Pedia strum boryanum* *9)Spirogyra* *10)Scenedesmus*
2	Bacillarophytes	*1)Diatom-Pennates, Centric* *2)Navicula*
3	Cyanophyceae	*1)Anabaena* *2)Gloeocapsa* *3)Merismopedia* *4)Microcystis* *5)Nostoc*
4	Dinophyceae	*1)Peridinium*
5	Euglenophyceae	----
6	Cryptophyceae	---
7	Xanthophyceae	----
8	Myxophyceae	*2)Dinoflagellates*

Table no : 3 Diversity of species Table no : Seasonal Fluctuations

Sr.no	**Species**	**No of sub species**
1	Chlorophyceae	**10**
2	Cyanophyceae	**05**
3	Bacillarophytes	**02**
4	Dinophyceae	**01**
5	Myxophyceae	**01**
6	Euglenophyceae	**00**
7	Cryptophyceae	**00**
8	Xanthophyceae	**00**



Graph showing the Diversity of species

III. Results and Discussion

Diversity of Phytoplankton in the Nira left bank canal showed dominant species were Chlorophyceae > Cyanophycean >Bacillariophytes >Myxophyceae>Dinophyceae seasonal fluctuations. Rotation of the canal in rainy season the diversity is very less due to muddy running water. Rotation of the canal in winter season as the ecosystem formation takes place by the primary producer's primary consumers, Secondary consumers. In summer season there is maximum density& diversity found in the canal due to bright sunlight and light intensity High Temperature plays important role in density and diversity of the species

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