



PHYTOPLANKTON BIODIVERSITY OF ADHALA DAM AT DEVTHAN FROM AKOLE TALUKA MAHARASHTRA

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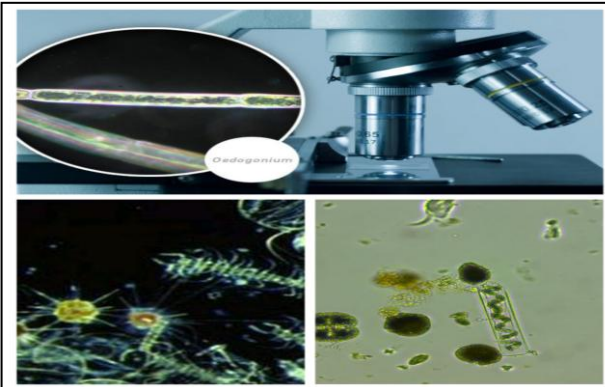
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ABSTRACT

Algae are considered as primary producers of an ecosystem. They have major role in gaseous balance in the environment. They have symbiotic relationship with other members of ecosystem. Most of the toxic substances can be purified in the environment by algae. Fresh water reservoirs are main source of detoxification sink in the terrestrial ecosystem. Biodiversity of Devthan dam from Akole tehsil of Maharashtra during year 2016 has been discussed in the present paper. Members of chlorophyceae, cyanophyceae, Bacillariophyceae and Euglenophyceae are noticed at present study site.

KEY

WORDS: Biodiversity, Adhala River, Devthan Dam



INTRODUCTION

The biggest ecosystem is the aquatic ecosystem of the biosphere which is formed by water. Hence the most important and essential abiotic factor of all kinds of ecosystem is water as it also forms the habitat for variety of organism. The water sources like rivers, lakes, ponds, dams etc. provide a good and sensitive ecosystem for study of its functional aspects and at the same time provide us an indication to assess the distribution of algae and diversity as well. Devthandam is constructed on Adhalariver at Devthan, Taluka Akole in Ahmednagar district of

Maharashtra state. The geographical location of the dam is 19°38'23"N 74°1'37"E. The height of the dam above lowest foundation is 40 m (130 ft) while the length is 623 m (2,044 ft). The volume content is 1,437 km³ (345 cu mi). Its storage capacity is recorded in TMC 1.06. Primary production and limnology of tropical lakes has been studied by (Hussainy, 1967). Many other limnologists such as (Ganpati and Sreenivasan, 1970, Nasar, and Munshi, 1975, Pandey and Singh, 1978, Verma et al 2011, Zutshi and Vass 1977) made similar type of studies in different lakes of India. Algae are

considered as keystone in the ecosystem (Lande et. al 2015).

Algae play important role in the fuel production by fossilization (Lande and Pingle, 2013).

MATERIALS AND METHODS

Algal samples from described site of the Devthan dam were collected during the period June 2015-June 2016. The samples were observed fresh by preparing wet mounts within 48 hrs. Then the samples were further preserved in Lugol's solution and 4% formaldehyde solution separately for detailed study. Chlorophycean algae were stained with iodine and mounted in glycerin. The collected algal forms were observed under microscope, and identified them by referring to the standard literature on algae (Anand, 1998; Desikacharya, 1959; Fritch 1935; Prescott, 1970; Randhawa,

1959; Sarode and Kamat, 1984; Smith 1920).

RESULTS AND DISCUSSION

Diversity of phytoplankton: Detailed microscopic examination of phytoplanktons revealed 4 families consisting of 31 genera having 39 species of phytoplankton in the order: Chlorophyceae (12 genera and 15 species), Bacillariophyceae (8 genera and 9 species), Cyanophyceae (9 genera and 10 species) and Euglenophyceae (2 genera and 5 species) (Table -1).

Members of Chrysophyceae are unnoticed however periodic visits are in the ongoing process.

Group Chlorophyta has been found dominant in the study area followed by Cyanophyta. The water found suitable for drinking and overall use however the physicochemical studies are in process. The dam is away from human disturbance.

Table-1 : Algal biodiversity of Adhala dam from Devthan Akole Maharashtra

Sr. No.	Family	Genus	Species
	Chlorophyceae	<i>Ankistrodesmus</i>	<i>spairalis</i>
		<i>Chlamydomonas</i>	<i>globosa</i>
		<i>Cosmarium</i>	<i>hexagonum</i>
		<i>Cosmarium</i>	<i>contractum</i>
		<i>Euastrum</i>	<i>ansatum V. didelitifforme</i>
		<i>Coelastrum</i>	<i>proboscideum</i>
		<i>Coelastrum</i>	<i>reticulatum</i>
		<i>Pediastrum</i>	<i>angulosum</i>
		<i>Scenedesmus</i>	<i>dimorphus</i>
		<i>Scenedesmus</i>	<i>acutus</i>
		<i>Staurastrum</i>	<i>ophiura</i>
		<i>Hydrodictyon</i>	<i>reticulatum</i>
		<i>Spirogyra</i>	<i>aequinoctialis</i>
		<i>Zygnema</i>	<i>pectinatum</i>
		<i>Nitella</i>	<i>flexilis</i>
	Cyanophyceae	<i>Anabaena</i>	<i>circinalis</i>
		<i>Nostoc</i>	<i>commune</i>
		<i>Lyngbya</i>	<i>digueti</i>
		<i>Lyngbya</i>	sp.
		<i>Scytonema</i>	<i>geitleri</i>
		<i>Arthrospira</i>	<i>jeneri</i>
		<i>Gleoeotrichia</i>	<i>indica</i>
		<i>Oscillatoria</i>	<i>annae</i>
		<i>Spirulina</i>	<i>major</i>
		<i>Microcystis</i>	<i>orrisica</i>
		Bacillariophyceae	<i>Pinnularia</i>
	<i>Fragillaria</i>		<i>ungeriana</i>
	<i>Gyrosigma</i>		<i>acuminatum</i>
	<i>Synedra</i>		<i>minuscula</i>
	<i>Gomphonema</i>		<i>parvulum</i>
	<i>Melosira</i>		<i>juergensii</i>

		<i>Cymbella</i>	<i>tumida</i>
		<i>Navicula</i>	<i>cryptocephala</i>
		<i>Navicula</i>	<i>gramii</i>
	<i>Euglenophyceae</i>	<i>Euglena</i>	<i>viridis</i>
		<i>Euglena</i>	<i>polymorpha</i>
		<i>Euglena</i>	<i>gracilis</i>
		<i>Phacus</i>	<i>swirenkoi</i>
		<i>Phacus</i>	<i>curvicuda</i>

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