



Algal flora of Navegaon bandh, Gondia district. (Maharashtra).

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Abstract:

Navegaon bandh is a National park, located in the Gondia district of Maharashtra state, India. Phytoplankton constitutes the different basis of nutrient cycle of an aquatic ecosystem. They play a crucial role in maintaining proper equilibrium between biotic and abiotic components of an aquatic ecosystem. Algal samples were collected at monthly intervals from Jan-2014 to Dec-2014. Floating, planktonic, submerged and attached epiphytic algal samples were collected. The algal taxa were identified with the help of standard literatures. In the present study 57 species under 27 genera have been identified and recorded. They belonged to Chlorophyceae, Charophyceae, Bacillariophyceae, Cyanophyceae and Euglenophyceae. In all 57 species were found growing luxuriantly in different seasons. Out of these 8 genera were belonged to Chlorophyceae, 1 genera belonged to Charophyceae, 3 genera belonged to Bacillariophyceae, 13 genera belonged to Cyanophyceae and 2 belonged to Euglenophyceae. Since this reservoir is rich in various fresh water micro-organisms, it should be protected as a natural wealth. These variations in environmental condition have helped this region to be rich in the phytoplankton biodiversity.

Keywords: Biodiversity, fresh water algae, Navegaon bandh.

Introduction

Water is a critical issue for the survival of all living organisms. The Quality of water determines its Biological components. Biodiversity of micro-flora should be protected from further environmental degradation. Biological assessment is a useful alternative for assessing the ecological quality of aquatic water bodies since biological communities integrate the environmental effects of water chemistry, in addition to the physical and geomorphologic characteristics of Rivers and lake (Stevenson and Pan, 1999). Algal community encountered in the water body reflects the average ecological condition and therefore they may be used as indicator of water quality (Bhatt, *et.al.* 1999; Saha *et.al.* 2000). Cheriaan and Shahare, (2011) reported

18 forms of algae out of which 9 belongs to Cyanophyceae, 3 to Chlorophyceae and 6 to Bacillariophyceae were observed from Chulband River, Gondia district.

Materials and Methods

For qualitative study of algal diversity, samples were collected at monthly intervals during Jan-2014 to Dec-2014 of Navegaon bandh (Fig.I.). The different forms such as epiphytic, epilethic & floating forms of phytoplankton were collected in acid washed bottles & they were preserved in 4% formalin for further study of investigation. The algal taxa were identified with the help of relevant monographs & standard literature (Desikachary, 1959). All identified taxa were arranged taxonomically in table-1.



Fig.I Navegaon bandh

Result and Discussion:

In the present study 57 species under 27 genera have been identified and recorded. In all 57 species were found growing luxuriantly in different seasons. Out of these 8 genera were belonged to Chlorophyceae, 1 genera belonged to Charophyceae, 3 genera belonged

to Bacillariophyceae, 13 genera belonged to Cyanophyceae and 2 belonged to Euglenophyceae.

Conclusion:

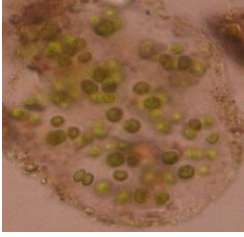
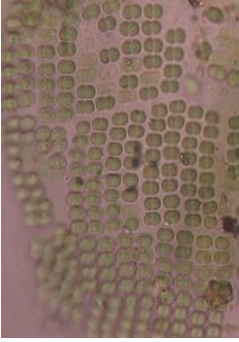



In the present investigation 24 species of Cyanophyceae, 21 species of Chlorophyceae, 7 species of Bacillariophyceae, 4 species of Euglenophyceae and alone chara sp. could be identified from Navegaon band in different season. They belong to 27 genera. Navegaon band shows a variety of Cyanophycean forms growing luxuriantly. Periodic changes in the abundance of

different forms in different seasons. 39 species were dominant in rainy season. 21 species were dominant in winter season and 34 species were dominant in summer season. Some species like *Microcystis*, *Phormidium*, *Anabaena*, *Navicula*, *Euglena* etc. indicate privileged degree of pollution. These variations in environmental condition have helped this region to be rich in the phytoplankton biodiversity.

Sr. No.	Name of Algae	R	W	S	Sr.No	Name of Algae	R	W	S
Cyanophyceae									
1	<i>Microcystis flos-aquae</i> (Wittr.)Kirchn.	-	+	+	27	<i>Pediastrum simplex</i> v. <i>duodenarium</i> (Bail.)	-	+	-
2	<i>Microcystis marginata</i> (Menegh.) Kutz.	-	-	+	28	<i>Pediastrum tetras</i> (Ehr.) Ralfs.	+	+	+
3	<i>Chroococcus minutus</i> (Kutz.) Nag. (after Skuja)	-	+	-	29	<i>Tetraedron trigonum</i> (Naeg.)	-	+	-
4	<i>Chroococcus montanus</i> forma Rao, C. B.	-	-	+	30	<i>Scenedesmus arcuatus</i> Lemm	+	-	-
5	<i>Chroococcus tenax</i> (Kirchn.) Hieron	-	+	-	31	<i>Scenedesmus dimorphus</i> . (Turpin)	+	+	-
6	<i>Gloeocapsa nigrescens</i> Nag.	-	-	+	32	<i>Scenedesmus obliquus</i> (Turp.) Kuetz.	-	+	+
7	<i>Aphanocapsa fonticola</i> Hansgirg	-	-	+	33	<i>Scenedesmus quadricauda</i> v. <i>longispina</i>	-	+	-
8	<i>Aphanocapsa grevillei</i> (Hass.) Rabenh.	-	+	-	34	<i>Oedogonium globosum</i> Nordstedt ex Hirn.	-	+	-
9	<i>Merismopedia glauca</i> forma (Rao, C. S.)	-	+	+	35	<i>Spirogyra ellipsospora</i> Transeau 1914.	+	-	+
10	<i>Merismopedia punctata</i> Meyen.	-	-	+	36	<i>Spirogyra hyalina</i> Cleve (Transeau f)	+	-	+
11	<i>Spirulina gigantea</i> Schmidle	+	+	-	37	<i>Spirogyra mirabilis</i> (Hassall) Kuetzing	-	+	-
12	<i>Oscillatoria chalybea</i> v. <i>insularis</i> Gardner	-	+	+	38	<i>Closterium cyanthia</i> DeNot.	+	+	-
13	<i>Oscillatoria proboscidea</i> Gom. (after Gomont)	+	+	+	39	<i>Closterium didymotocum</i> Corda.	+	+	-
14	<i>Oscillatoria subbrevis</i> Schmidle	-	+	-	40	<i>Closterium ehrenbergii</i> Menegh.	-	+	+
15	<i>Phormidium tenue</i> (Menegh.) Gom. (after Fremy).	-	-	+	41	<i>Closterium moniliferum</i> (Bory) Ehr.	+	-	+
16	<i>Lyngbya digueti</i> Gomont.	-	-	+	42	<i>Cosmarium contractum</i> Kirchner.	+	+	-
17	<i>Lyngbya hieronmusii</i> Lemm.	-	+	+	43	<i>Cosmarium impressulum</i> Elfv.	+	-	+
18	<i>Lyngbya majuscula</i> Havery ex. Gomont.	-	-	+	44	<i>Cosmarium mononazum</i> (Lund.)	+	-	+
19	<i>Nostoc calcicola</i> Breb. (after Fremy)	-	+	-	45	<i>Cosmarium subspecioum</i> Nordst.	-	+	+
20	<i>Nostoc piscinale</i> Kutz. (after Fremy)	-	-	+	Bacillariophyceae				
21	<i>Anabaena circunalis</i> Rabenhorst ex Born. et. Flah.	+	+	+	46	<i>Gyrosigma baikalensis</i> Skv.	+	-	-
22	<i>Aulosira fertilissima</i> Ghose var. <i>tenuis</i> Rao, C. B.	-	+	-	47	<i>Gyrosigma maharashtrensis</i> sp. Nov.	+	+	-
23	<i>Scytonema cincinnatum</i> Thuret (after Fremy)	-	+	+	48	<i>Navicula halophila</i> (Grun.) Cleve f. <i>robusta</i>	-	+	-
24	<i>Scytonema javanicum</i> (Kutz.) Bornet	-	+	+	49	<i>Navicula microcephala</i> Grun.	-	+	+
Chlorophyceae					50	<i>Navicula sacrophagus</i> sp. nov. Gandhi	-	-	+
25	<i>Chlorococcum humicola</i> (Naegeli) Rabenhorst	-	-	+	51	<i>Nitzschia irremissa</i> Cholnoky	+	+	-
26	<i>Pediastrum duplex</i> Meyen var. <i>asperum</i>	+	+	+	52	<i>Nitzschia obtusa</i> W. Smith v. <i>scalpelliformis</i> Grun.	+	+	-
					Charophyceae				
					53 Chara sp.				
					Euglenophyceae				
					54 <i>Euglena acus</i> Ehrenberg (Gojdics f)				
					55 <i>Euglena mutabilis</i> Schmitz. (Gojdics)				
					56 <i>Phacus acuminatus</i> Stokes. Hueb.				
					57 <i>Phacus longicaudus</i> (Her.) Duj.				
					21 39 34				

Table No. 1. Algal flora of Navegaon bandh, Gondia district.

*R-Rainy, W-Winter, S-Summer.

			
<i>Microcystis marginata</i>	<i>Chroococcus tenax</i>	<i>Gloeocapsa nigrescens</i>	<i>Aphanocapsa grevillei</i>
			
<i>Merismopedia glauca</i>	<i>Spirulina gigantea</i>	<i>Scytonema javanicum</i>	<i>Oscillatoria chalybea v. insularis</i>
			
			<i>Phormidium tenue</i>
			
			<i>Lyngbya majuscula</i>
			
			<i>Aulosira fertilissima</i>
			
<i>Nostoc calcicola</i>	<i>Anabaena circinalis</i>	<i>Chlorococcum humicola</i>	<i>Pediastrum Tetras</i>
			
<i>Tetraedron trigonum</i>	<i>Closterium cyanthia</i>	<i>Oedogonium globosum</i>	<i>Gyrosigma baikalensis</i>
			
			<i>Cosmarium contractum</i>
			
			<i>Chara. sps</i>
			
<i>Scenedesmus dimorphus</i>			<i>Euglena mutabilis</i>
			
		<i>Spirogyra mirabilis</i>	<i>Navicula halophila</i>
			
			<i>Phacus longicaudus</i>

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