

WATER QUALITY ANALYSIS OF PANIYALA STATE FISH POND WITH SPECIAL REFERENCE TO LIMNOLOGICAL CHARACTERISTICS

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Received- 10.5.2009

Accepted 19.10.1009 0.1009

ABSTRACT

From ancient times ponds are one of the major source water in rural India with having availability of water throughout the year or they can be seasonal, providing water for various purposes. Many plants and animals live in the water or at the water's edge or use ponds at a stage of their life cycle, also ponds provide a source of water for live stock. State Fish Pond at Paniyala is one of the major pond of fisheries department of Roorkee city in Haridwar Distt. having such importance and it is necessary to regularly monitor and analyse the different limnological aspects. In the present study, various limnological parameters were studied and on the basis of findings it is found that the water quality of pond is suitable for the fish culture.

Key Words : Paniyala State Fish Pond, Limnology.

INTRODUCTION

Freshwater bodies are very essential for the existence of ecosystem contributing immensely in shaping and evolving the biotic and abiotic systems. Reservoirs, Ponds, Lakes and Swamps are very useful for different activities besides drinking water sources. Ponds and reservoirs containing fresh water are used for fish culture, aquaculture, navigation and transport, recreation, irrigation hydropower generation and a host of such other purposes.

From ancient times people are concerned about the water quality, as they had realized that it was one of the most absolute necessities for life. Apart from domestic and agricultural purpose, the ponds have now been used to mitigate the incre

Table: 2 Monthly variation in Chemical Parameters of Paniyala State Fish Pond, 2007-2008

Months	pH	DO (mg/l)	BOD (mg/l)	COD (mg/l)	Free CO ₂ (mg/l)	Total Alkalinity (mg/l)	Total Hardness (mg/l)		Chlorides (mg/l)
							Ca	Mg	
January,2007	8.21±2.81	8.13 ±3.30	3.08 ±0.90	9.97 ±3.19	1.398 ±0.17	322.00 ±6.42	27.63 ±2.41	14.70 ±4.06	14.90 ± 2.36
February,2007	8.22 ±2.76	7.60 ±3.50	3.33 ±0.98	10.43 ±3.27	1.643 ±0.28	338.00 ±8.64	28.50 ±2.65	15.76 ±4.50	17.90 ± 4.28
March,2007	8.24 ±0.32	6.70 ±0.57	3.75 ±0.55	10.65 ±0.47	2.253 ±0.19	339.00 ±7.57	31.40 ±2.4	16.79 ±1.08	19.50 ± 1.84
April,2007	8.27 ±0.36	5.58 ±0.45	3.93 ±0.19	10.98 ±0.40	2.765 ±0.47	330.00 ±4.78	33.70 ±3.62	17.60 ±1.41	24.16 ± 2.46
May,2007	8.31 ±1.90	5.13 ±2.39	4.28 ±1.82	11.23 ±1.06	3.245 ±1.30	306.00 ±6.24	36.03 ±1.88	23.90 ±6.35	26.98 ± 2.11
June,2007	8.28 ±1.11	5.38 ±2.70	4.70 ±1.88	11.68 ±1.25	2.603 ±1.02	262.00 ±4.73	37.33 ±1.15	26.03 ±5.07	29.45 ± 1.98
July,2007	7.88 ±1.16	5.50 ±1.01	4.48 ±1.20	11.10 ±2.07	2.463 ±0.99	253.00 ±6.68	29.45 ±1.69	11.23 ±5.85	29.60 ± 1.99
August,2007	7.80 ±2.02	5.53 ±1.47	4.20 ±1.38	10.38 ±1.98	2.59 ±0.79	341.00 ±8.89	27.58 ±1.37	11.30 ±5.09	19.45 ± 2.03
September,2007	8.17 ±2.18	6.13 ±2.30	3.90 ±1.64	9.82 ±2.68	2.055 ±0.71	352.00 ±8.20	27.83 ±1.62	11.60 ±3.88	17.80 ± 2.53
October,2007	8.26 ±2.60	6.15 ±2.11	3.08 ±1.41	9.75 ±3.56	2.258 ±0.82	425.00 ±5.40	29.08 ±1.88	12.18 ±2.73	17.40 ± 1.45
November,2007	8.23 ±2.68	8.35 ±1.96	2.98 ±1.16	9.42 ±2.93	1.280 ±0.55	347.00 ±3.10	28.00 ±2.09	13.05 ±5.35	16.00 ± 3.02
December,2007	8.23 ±2.43	8.93 ±2.16	2.83 ±0.80	9.65 ±3.06	1.178 ±0.49	341.00 ±4.14	27.83 ±1.56	14.20 ±5.24	15.40 ± 2.14
Average±Sd	8.17±0.16	6.59±1.33	3.71±0.64	10.42±0.72	2.144±0.65	329.00±9.20	30.36±3.47	15.69±4.84	20.71±5.40
January,2008	8.20 ±0.75	8.25 ±1.10	3.18 ±0.21	9.82 ±0.76	2.915 ±0.68	324.00 ±5.79	27.43 ±0.87	14.53 ±1.40	14.60 ± 1.86
February,2008	8.22 ±0.82	7.70 ±0.29	3.45 ±0.14	10.43 ±0.30	2.788 ±0.61	338.00 ±4.04	26.90 ±1.72	16.28 ±1.53	18.60 ± 2.43
March,2008	8.32 ±1.14	6.63 ±1.08	3.73 ±1.16	10.90 ±2.47	2.813 ±1.43	338.00 ± 5.44	29.55 ±3.20	16.79 ±1.09	19.80 ± 2.12
April,2008	8.37 ±1.08	5.55 ±3.85	4.05 ±1.34	1.18 ±2.82	3.630 ±1.24	335.00 ±7.20	32.98 ±2.46	18.05 ±4.81	24.54 ± 2.06
May,2008	8.34 ±1.42	4.98 ±3.16	4.28 ±1.75	1.40 ±1.16	3.225 ±1.75	309.00 ±6.28	36.10 ±2.67	24.98 ±6.62	27.20 ± 3.02
June,2008	8.28 ±1.85	5.13 ±2.80	4.73 ±1.91	11.73 ±2.20	2.588 ±1.46	273.00 ±5.03	37.25 ±2.27	26.05 ±7.35	29.40 ± 2.86
July,2008	7.84 ±1.49	5.50 ±2.53	4.50 ±2.07	11.48 ±2.02	1.915 ±1.20	264.00 ±4.59	29.35 ±1.88	12.30 ±6.75	29.80 ± 2.34
August,2008	7.73 ±0.25	5.70 ±1.15	4.18 ±0.30	10.65 ±1.50	2.738 ±0.77	291.00 ±8.19	27.43 ±1.50	11.93 ±3.05	19.20 ± 2.50
September,2008	8.12 ±0.39	6.43 ±1.26	3.85 ±0.67	10.18 ±1.57	1.375 ±0.66	328.00 ±3.72	27.88 ±1.66	12.03 ±1.74	18.00 ± 2.09
October,2008	8.27 ±0.77	6.48 ±1.81	3.28 ±0.85	9.47 ±1.85	1.218 ±0.23	385.00 ±9.74	28.78 ±1.10	12.73 ±2.58	16.70 ± 189
November,2008	8.24 ±0.57	8.43 ±0.94	3.13 ±0.8	8.72 ±1.75	1.365 ±0.09	364.00 ±3.56	28.33 ±2.20	11.08 ±2.73	15.60 ± 2.10
December,2008	8.23 ±0.52	8.90 ±0.47	2.93 ±0.21	8.97 ±1.55	2.215 ±0.23	351.00 ±6.65	27.50 ±1.41	14.25 ±1.59	15.00 ± 1.79
Average±Sd	8.18±0.20	6.64±0.37	3.77±0.59	10.41±1.00	2.399±0.98	325.00±8.73	29.95±3.53	15.91±4.98	20.70±5.58

Sd ± : Standard Deviation

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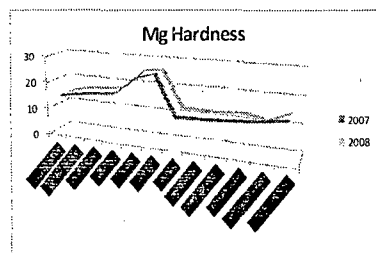


Fig.: 12

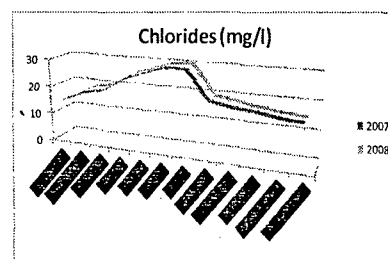


Fig.: 13

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