

## **Study of Physico-Chemical Parameters of Nakane Lake in Dhule District (M.S.)**

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**Abstract:** Freshwater Biodiversity Is The Over-Riding Conservation Priority During The International Decade For Action- 'Water For Life' -2005 To 2015. Fresh Water Makes Up Only 0.01% Of The World's Water And Approximately 0.8% Of The Earth's Surface, Yet This Tiny Fraction Of Global Water Supports At Least 100000 Species Out Of Approximately 1.8 Million- Almost 6% Of All Described Species. Fresh Waters Are Experiencing Declines In Biodiversity Far Greater Than Those In The Most Affected Terrestrial Ecosystems, And If Trends In Human Demands For Water Remain Unaltered And Species Losses Continue At Current Rates, The Opportunity To Conserve Much Of The Remaining Biodiversity In Fresh Water Will Vanish Before The 'Water For Life' Decade Ends In 2015.

Atmospheric Temperature (At). The Water Temperature, Dissolved Oxygen (Do), Ph, Salinity, And Dissolved Carbon Dioxide Were Analysed On The Spot At Selected Stations One And One, Soon After Collecting The Samples At Fixed Date And During 6a.M. To 8 A.M. The Estimations Of Total Calcium, Management, Sulphates And Chlorides Were Analyzed In The Laboratory After Immediately Collecting Samples. These Parameters Were Measured In The Laboratory By Applying Respective Methods (Apha 1998)

**Keywords:** Fresh Water, Rainfall, Temp., O<sub>2</sub>, Co<sub>2</sub>

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### **I. Introduction:**

Water is the primary need for all vital life processes. Ever since the prehistoric times, man has been closely associated with water and the evidences of past civilization that all historic human settlements were around inland fresh water resources have proved it. Water itself is an environment, which support large number of organisms. However, is highly affected due to increased population, industrilization and unplanned urbanization that makes pure water scanty to human beings. Day by day, water bodies are being highly contaminated and are becoming biological deserts. At the same time, the quality of standing water is becoming more and unfit for humankind due to unwise use, negligence and mismanagement. Therefore, quality assessment of water is the most urgent need of the hour. It can be done either by monitoring the physico-chemical properties of water or by analyzing inhabiting biodata. Since the problem of water pollution in India is very critical extensive studies are required to protect the natural and manmade water sources.

The problem of pollution of water resources, due to the discharge of domestic and industrial wastes and is a great threat on the international scale. And for this, economical methods to assess water pollution are needed. Any impairment caused by pollution has its effect on the aquatic biota. Therefore, continuous effect on the aquatic biota reflects the conditions existing in the aquatic environment and the data can be utilized for the monitoring of water pollution.

### **Study Area**

The present study was carried out to investigate physicochemical parameters, zooplankton with reference to fishes of Nakane dam in Dhule District. Nakane dam is built over Panzara River near Morane village, District Dhule. Project is about 945m main (10 Meastern Saddle, 30 to 975 main dam. 60 to 70M Saddle) long earthen embarkment. Maximum height of 18.41m. top width of chasing 3m. Top width of hearting 3m. Nakane dam is situated at Latitude 20 54N; Longitude 74 40E and 52.5 above M.S.L.

### **II. Material & Methods**

In one year of study period 2007-08, rainfall data was collected from the collector office, District Dhule. Atmospheric temperature (AT) was recorded with the help of mercury thermometer. The water temperature Dissolved Oxygen (DO), pH, salinity, and dissolved carbon dioxide were recorded by using portable water analysis kit.

These above-mentioned parameters were analysed on the spot at selected stations one and one, soon after collecting the samples at fixed date and during 6A.M. to 8 A.M. The estimations of total calcium, management, sulphates and chlorides were analyzed in the laboratory after immediately collecting samples. These parameters were measured in the laboratory by applying respective methods (APHA 1998). For the

analysis of physicochemical factors, the surface water was collected from the fix spots of Nakane Dam, every month between 6A.M. to 8 A.M. on fixed date to avoid the fluctuation in the observations. The work was carried out for the period of one year 2007-08

### III. Result & Discussion

#### Rainfall:

During the present study, the total rainfall recorded during 2007-2008 was 571 mm. The annual range of rainfall was 00mm to 132.9mm during 2007-2008.

#### Atmospheric Temperature (A.T.):

The atmospheric temperature ranged between 17.20°C to 34.15°C during 2007-2008.

#### Water Temperature (W.T.):

The Water temperature ranged between 20°C 31°C during 2007-2008.

#### Hydrogen ion concentration ( PH):

During the present study the annual range of pH varied from 7.0 to 7.6 and 7.1 to 7.7 during 2007-2008 At station- I it was maximum during monsoon (7.6) and minimum in summer (6.8) during 2007-2008.

#### Dissolved oxygen (D.O.)

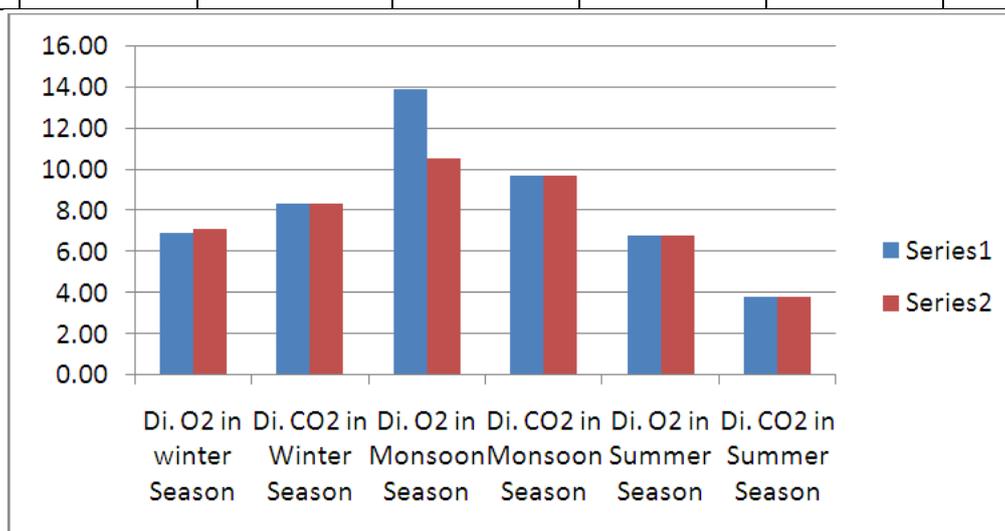
The annual range of dissolved oxygen varied from 6.90 mg/l to 13.90 mg/l during the year 2007-2008. In winter its was 6.90 mg/l recorded as a minimus DO during the season wise analysis showed that Dissolved Oxygen was high in monsoon (13.90 mg/l) in the month of July and lowest in summer (06.90 mg/l) in winter it was recorded as 6.90 mg/l)

#### Dissolved carbon dioxide :-

The season wise analysis showed that highest Carbon Dioxide was recorded in summer (09.70 mg/l) in the month of April and lowest 02.30 mg/l in the month os September for the year 2007-2008. The range varied from 08.30 mg/l to 09.70 mg/l during summer and 02.30 mg/l to 03.80 mg/l during monsoon. The range varied from 05.90 mg/l to 08.30 mg/l during winter for the year 2007-08.

Table : Dissolved O<sub>2</sub> & CO<sub>2</sub> In Given Water Sample (Monsson & Winter Season)

Sr. No.	Dissolved O <sub>2</sub> in Winter (mg/lit.)	Dissolved CO <sub>2</sub> in Winter (mg/lit.)	Dissolved O <sub>2</sub> in Monsoon (mg/lit.)	Dissolved CO <sub>2</sub> in Monsoon (mg/lit.)	Dissolved O <sub>2</sub> in Summer (mg/lit.)	Dissolved CO <sub>2</sub> in Summer (mg/lit.)
1	6.90	8.30	13.90	9.70	6.90	3.80
2	7.10	8.30	10.50	9.70	6.90	3.80



Graph:

#### IV. Conclusion

The present study on Nakane Dam from Dhule District, Maharashtra State, India, was carried out to find out their physico-chemical parameters, biological characteristics and Fish fauna. It is important to understand the water quality, fauna their dynamics and functioning of these ecosystems as well as the impact of increasing human activities on them for management of freshwaters and keep them in healthy state to changing environment sustain the future of the region.

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