



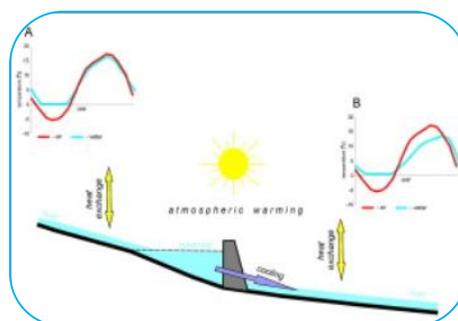
## “STUDY OF WATER TEMPERATURE AT THE BISAIDHA DAM DISTRICT - SIDHI (M.P.)”

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### ABSTRACT:

*In India ponds, dams and tanks become an integral part of human life since time immemorial, being the major source of fresh water for human use. Sidhi Distt. is known for its various water bodies, dams, tanks and ponds for many years. It is said that there were nearly twenty five ponds. These ponds have undergone characteristics changes in course of time and now hardly ten ponds are left with standing water. All these are of closed type. Although initially these ponds were oligotrophic but now have attained an entropic level, being rich in organic nutrients. Due to the increasing scarcity of fresh water, it has become very important to study the nature and changes in the existing water resources.*



**KEY-WORDS:** Temperature, water, Bisaidha dam and Sidhi Distt.

### INTRODUCTION:

Biodiversity is the variety of organisms, including their genetic diversity and the assemblage they form (Reid and Miller, 1989). The earth supports between 5-10 million species of plants and animals which have been the result of about 3 billion years of evolution, involving mutation, recombination and natural selection changing environments, such as the ice age followed by warm period and drought, exerted severe selection pressures and were responsible for evolution of new species as well as extinction of already flourishing species. Hence, natural extinction is the part of the overall evolutionary process and the evolution and extinction of species have occurred side by side in nature.

Water is one of the most important constituents of life support system. It is indeed a wonderful chemical medium which has unique properties of dissolving and carrying in suspension a huge varieties of chemicals. Thus it can get contaminated easily. Natural surface water bodies often have impurities from various sources. The impurities may be suspended particles, Colloidal materials and may also be dissolved cationic and anionic substances. Various kinds of natural and man-made activities, like industrial, domestic, agricultural and others, day by day creating water pollution problem particularly in fresh water system. Time has come to work together in war footing to combat water pollution challenges with new protections to give all our children the gift of clean and safe water in the 21st century.

## MATERIAL AND METHODS :

**STUDY AREA:** Sidhi is the Distt. of old Vindhya Pradesh. Presently it is one of the very important Distt. of Madhya Pradesh. Sidhi is situated on the North-East border of the state. The geographical location is 23°15'N - 24°15'N latitude and longitude 81°45'E- 82°45'E. The town is located on a plateau and is situated 65.7 meters above the mean sea level. The Son, Gopad, Banas and Mahan rivers surround the town from almost three sites and mark its Northern, Southern and Western boundaries. Hills mark the Eastern boundary.

It is advantageous to measure the quality of water in situ by means of sensors which is lowered into position other than by withdrawing samples. However, it is not always possible. Water samples are, therefore, collected in suitable containers. A sample container must satisfy the following requirements :

- (1) It should be free from contamination.
- (2) It should not change the relevant water characteristics on contact.

The sampling bottles were made of either glass or plastic usually polyethylene. It must be capable of being tightly sealed either by stopper or cap. The bottles should be soaked with 10% HCl for 24 hrs and then thoroughly cleaned and rinsed with distilled water.

## RESULT AND DISCUSSION :

Studies on Indian freshwater plankton have only attracted scientific interest after 1960. Various reports of zooplankton even though of scattered nature, Sreenivasan (1986) and Bhatnagar (1988) exist. Reports of Indian Porifera (Dhakad 2005) and Srivastava (1988, 89) from various rivers of western and central Madhya Pradesh were reported. Singh (1990) and Unni (1992) reported planktonic organisms from Narmada and Kshipra rivers. Despite all the available work, Indian Zooplankton and their ecological role are still incompletely known. The special Indian climatic conditions, strong seasonal impact have made the Indian F.W. zooplankton unique in their Biocoenose and ecological adaptations. So far no definite scientifically accepted keys are available, even though several limnologists are making strong efforts to produce acceptable keys.

## WATER TEMPERATURE

**Site S<sub>1</sub>** - At this research site the range of water temperature was found between 17.4°C and 36.6°C minimum temp. was recorded in December 2021 and maximum in June 2021 (Table-1).

**Site S<sub>2</sub>** - Surface water temperature ranged between 22°C and 38.8°C. It was minimum in Jan. and Feb. 2021 and maximum in Jun. 2021 (Table-1)

**Site S<sub>3</sub>** - The range of water temperature was found between 20.8°C and 38°C Temperature was minimum in the month of Feb. 2021 and maximum was recorded in Jun. 2021 (Table-1).

**Site S<sub>4</sub>** - The range of water temp. was recorded between 20°C and 38° C. Temperature was minimum in Jan. and Feb. 2021 and maximum in Jan. 2021 (Table-1).

**Site S<sub>5</sub>** - The water temperature was ranging between 19.4°C and 38.6°C. Temperature was minimum in Feb. 2021 and maximum in Jun. 2021 (Table-1).

During the course of present study it was observed that highest value of water temperature was recorded in the month of June 2021 and minimum value of temperature was observed in the month of Dec. 2021. It is also observed that lower value was found at Site S<sub>1</sub> which is already said unpolluted Site and higher value was recorded at the Site S<sub>5</sub>.

**Table-1 :Monthly values of water temperature (°C) at S<sub>1</sub>-S<sub>5</sub> sampling Sites of Bisaidha Dam during -2021**

S.No.	Months	Sampling Sites				
		S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>
1.	Jan 2021	19.6	22.0	21.0	20.0	20.2
2.	Feb 2021	19.2	22.0	20.8	20.0	19.4
3.	Mar 2021	26.0	24.4	26.0	26.0	26.0
4.	Apr 2021	35.0	31.0	33.0	36.6	33.0
5.	May 2021	36.5	35.0	34.6	35.6	36.8
6.	Jun 2021	36.6	38.8	38.0	38.0	38.6
7.	Jul 2021	35.8	35.2	35.6	37.2	38.2
8.	Aug 2021	35.6	35.0	36.0	36.5	37.0
9.	Sep 2021	29.0	29.9	31.0	30.0	29.5
10.	Oct 2021	34.2	34.0	33.0	33.0	32.0
11.	Nov 2021	18.0	24.2	28.0	30.0	28.0
12.	Dec 2021	17.4	22.0	24.1	27.8	28.0

**CONCLUSION:**

It is well known fact that water is a prime necessity of the life because all life on the earth depends on water. It constitutes about 73.90% of protoplasm and is essential for almost all the physiological and metabolic activities of flora as well as fauna. It is regarded as a universal solvent and thus easily gets mixed with variety of materials in dissolve, colloidal and suspended form. Presence of undesirable foreign matter in the external environment adversely impacts the quality of this vital resources.

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