

STUDIES OF PHYSICAL PARAMETERS OF GHARNI RESERVOIR AT SHIVPUR, TQ. NALEGAON DIST. LATUR, MAHARASHTRA



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The Gharni reservoir was constructed across the Manjara river near Gharni village Tq. Nalegaon Dist. Latur. The basically the reservoir was constructed for the irrigation purpose but in the recent years the water of reservoir is supply to the drinking purpose for nearest villages due to the low rainfall & increase the human population. Due to increased demand of reliable supplies of electric power, irrigation & drinking purpose. The Gharni reservoir is a medium type of reservoir in Latur district of Maharashtra region, which fulfill the needs of the surrounding rural & urban areas of many ways. So the knowledge of reservoir ecosystem is of assessment of the physical characters of the reservoir water. Hence the present investigation is undertaken to analyzed the physical properties of the reservoir which is beneficial for the fish culture.

MATERIALS AND METHODS

The physical parameter of Gharni reservoir was carried out during the year of June 2006 to May 2007. The all physical parameter was assessed on field the atmospheric temperature & water temperature were carried out by thermometric method and pH was carried out by pH meter and Transprancy was carried out by secchi disc on field. The analysis of the physical parameters of Gharni reservoir was carried out by standard method suggested by kodarkar *et.al.* (1998) and Trivedy & Goel (1984).

RESULT AND DISCUSSION

The ranges of physical parameters of Gharni reservoir are represented in table No. 1. The atmospheric and water temperature both are the important parameters it play important role of the distribution, growth and migration of the animals as

well as the production of natural food in the reservoir. The atmospheric temperature ranges from 26.2 to 38.0 °C and water temperature ranges from 23.4 to 36.8 °C. The water temperature influences the aquatic life & concentration of dissolved gases like CO_2 , O_2 & chemical solute. kulshrestha, *et.al.* (1992) stated that the changes in temperature produce characteristic pattern of circulation and stratification. The atmospheric & water temperature depends upon the geographical location and metrological conditions at a particular place.

The reservoir having water temperature more than 22°C are the highly productive reservoir by Jhingran and Singran, (1990). In the present study the average water temperature was recorded in the range of 20.2 to 38°C during the period of one year, which is reval with the Gharni reservoir is mighty productive. Simillar obsesvation were made by Dhere and Gaikwaid (2006) and Thirmala, *et.al.* (2006) who mentioned karpura reservoir and Ayyanakere lake near Chikmagalore. The highest water temperature recorded in summer months can be attributed to the direct relationship between bright sunshine, it's duration and atomospheric temperature (Laxminarayana, 1965). pH is one of the most important physical parameters in water analysis. The pH of water has a significant role in the survival of aquatic plants (Sculthrope, 1967). In the present investigation the pH of water ranges from 7.8 to 9.5. Simillar observation were made by subamma and Sarma (1992) studied on temple pond, Machiliptanam. Jain and Thakur (1996) studied on Halali reservoir Vidhisha District. According to Swingle (1967) the pH range of 6.0 to 9.0 is most suitable for pond fish culture. Thus,

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the pH range of indicated that the Gharni reservoir having 7.8 to 9.5 is suitable for the survival of fish. kulshrestha, *et.al.* (1992) stated that maximum values during summer were probably due to increased photosynthesis in the algal blooms resulting into the precipitation of carbonate of calcium and magnesium from bicarbonates causing higher alkalinity. The transparency of water is a physical variable and is quite

significant for production. Transparency is inversely proportional to turbidity created by suspended inorganic and organic matter. In the present study the transparency ranges from 30.8 to 48.2 cms. The water was less transparent during monsoon as compared to winter and summer. The high transparency of water was found in summer months and less transparency of water was found in monsoon season due to mixing surface runoff water in the reservoir.

Table No.1. Range of physical parameters of Gharni reservoir during the year of 2006 to 2007.

Sr.No.	Parameters	Range
1	Atmospheric temperature (°c)	20.2 to 38.0
2	Water temperature (°c)	23.4 to 36.8
3	Transparency (cms)	30.8 to 48.2
4	pH	7.8 to 9.5

CONCLUSION

In the present investigation the all physical parameters like atmosphere and water temperature, pH & transparency was found suitable for the fish culture.

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