

RESEARCH PAPER

## Studies on physical parameters of reservoir Purna district, Parbhani, M.S.

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### ABSTRACT

Water is one of the most fundamental elements in the environment. It is considered as an essence of life. The use of water for various purposes including domestic, industrial and agricultural has no doubt increased in our life, which is vitally important abiotic component of the environment. Water exists in various forms in nature such as cloud, rain, snow, ice and fog. However, strictly speaking chemically pure water does not exist for any appreciable length of time in nature. By the time, it gets polluted severely and easily as it reaches us. It cannot escape pure while raining. It picks up small amount of gases, ions, dust and particular matter from the atmosphere. Present communication deals with the investigation of physical parameters of reservoir Purna, district Parbhani, (M.S.) India

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Environment consists of five elements, air, water, land, flora and fauna that inextricably is inter-linked. This tend to interact with each other continuously. Change in one of them may affect other elements, and this disturbs the environmental balance.

Out of total volume of water (approximately 1.4 billion km<sup>3</sup>) more than 97% is ocean water unsuitable for human use, 3% of the earth's water is fresh. An estimated 77.2% of this is in frozen in the form of ice caps and glaciers. Most of the remaining freshwater (22.4%) is ground water and soil moisture. Rest of the freshwater is a very small amount of surface water. Out of this 0.35% is present in lakes and swamps and less than 0.01% in rivers and streams. The amount of total water available for use in India is estimated to 1990 billion m<sup>3</sup> per year. About 86% of this comes from the surface runoff in river, streams, lakes and ponds, excluding ground water resources that still need to be tapped.

The study of freshwaters in all their aspects physical, chemical, and biological is termed Limnology (Odom 1971) or it is the study of freshwater or saline water which are contained within continental boundaries (Goldman and Horn 1983). Limnology is also described as "Hydrobiology or aquatic biology. According to Edgar do Baldi a prominent Italian ecologist, limnology is the science dealing with internal action of processes and methods whereby matter and energy are transformed within the lake or pond. Welch (1952) stated it as the science dealing with biological productivity of water together with all casual influences on the qualitative and quantitative features along with its actual potential aspects. Wetzel (1975) defined limnology as "Study of the functional relationship of

freshwater biotic environmental factors."

Ever since the spread of environmental awareness all over world, monitoring of water resources through regular analysis has become crucially important feature. It is essential for exploration, exploitation and conservation of the potentials of the water bodies. Keeping this in view, we have made an attempt to evaluate the importance of physicochemical and biological parameter

### MATERIALS AND METHODS

The methods used for the analysis of various physico-chemical parameters are used from *standard methods for the examination of water* (APHA 1980, Goel *et al.*, 1984).

#### pH:

The pH of most of the natural waterfalls is within the range of 4 to 9. pH is the negative logarithm of hydrogen ion concentration, or more precisely hydrogen ion-activity. Portable digital pH meter was used for the measurement of pH values. Standard buffer solutions of pH 4.0 and 9.2 were used for calibration.

#### Transparency:

Transparency is a water quality characteristic of lake and can be measured quickly and easily using Secchi disc. The Secchi disc was lowered down with the help of a graduated rope till it disappeared from the view and then lifted till it reappeared. The average reading of these two depths (in cm) was considered the limit of visibility and was taken as Secchi disc transparency.