

Some physicochemical characteristics of River Bakulahi within Rratapgarh District

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Received: 15.06.2012

Revised:25.08.2012

Accepted: 28.10.2012

Abstract

The rivers of India play an important role in the lives of the Indian people. The river systems provide irrigation, potable water, cheap transportation, electricity, and the livelihoods for a large number of people all over the country. This easily explains why nearly all the major cities of India are located by the banks of rivers. The rivers also have an important role in Hindu mythology and are considered holy by all Hindus in the country. The water-rich areas of the world are truly the richest place on Earth. Bakulahi River originates from Bharatpur Lake of Rae Bareilly district of Uttar Pradesh. The Bakulahi river flows through Rai Bareilly district and Pratapgarh district of Uttar Pradesh. Bakulahi river falls down in Sai river (Tributary of Gomti river) in Kajurni village of Mandhata block. Water samples have been collected from a part of Bakulahi River along different points and analyzed for various water quality parameters. This study involves determination of physical, biological and chemical parameters of surface water at different point. A systematic study has been carried out to assess the water quality index of River Bakulahi in Pratapgarh District. Water samples from five sampling stations were collected and analysed for physico-chemical parameters (Temp, pH, dissolved oxygen, C.O.D., B.O.D., Carbonate, Bicarbonate, total alkalinity, hardness, turbidity, calcium, magnesium, sodium, potassium, nitrate, phosphate, chloride, sulphate, electrical conductivity, total dissolved solids and total suspended solids.) The study area experiences a seasonal climate and broadly divided into three seasons as winter (November to February), Summer (March to June) and rainy (July to October). The samples were collected and analysed for two consecutive years 2009 and 2010. Each parameter was compared with the standard desirable limit of that parameter in river water as prescribed by different agencies. The analytical data of various physicochemical parameters indicates that some parameters like pH, electrical conductivity, total dissolved solids, total suspended solids, turbidity and sodium are found to be in excess than the prescribed limit in some water samples of the study areas. The WQI value indicates that water samples of some sampling stations are quite unfit for drinking purpose because of high value of dissolved solids and

sodium. It was also observed that the water in the year 2009 was of a better quality than in the year 2010. Suitable suggestions were made to improve the quality of river water.

Keywords: *Water pollution, Bakulahi river water, physicochemical analysis, Water quality index, potability.*