

## **Assessment of the Physical and Chemical Characteristics of Ugbogui River, Edo State, Nigeria**

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**Abstract :** The physical, chemical parameters and some trace contents of Ugbogui in Edo State, Nigeria were investigated from August 2015 to April 2016. Four stations were studied from upstream to downstream using standard methods. A total of thirty-three (33) physical and chemical characteristics and trace metal contents were examined; Air and water temperatures, depth, transparency, colour, turbidity, flow velocity, pH, total alkalinity, conductivity and dissolved solids etc. Other includes dissolved oxygen, oxygen saturation, biochemical oxygen demand, chloride, phosphate, sodium, nitrate, sulphate, potassium, calcium, magnesium, iron, lead, copper, zinc, nickel, cadmium, vanadium and chromium. Eleven (11) parameters exhibited clear seasonal variations. However, there were high significant differences ( $p < 0.01$ ) in the values of depth, colour, total suspended solid, biochemical oxygen demand, chemical oxygen demand, chloride, bicarbonate, phosphate, sulphate, iron, manganese, zinc, copper, chromium and cadmium among the stations. The anthropogenic activities had negatively impacted at station 3 of the river, although most of the recorded values were still within permissible limits.

**Keywords :** anthropogenic activities, Nigeria, permissible limits, physical and chemical parameters, trace metal, water quality

**Conference Title :** ICMB 2019 : International Conference on Marine Biotechnology

**Conference Location :** Montreal, Canada

**Conference Dates :** May 23-24, 2019