

## Seasonal Variation of the Osumi River<sup>#</sup>

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**Abstract:** A study of the Osumi River possesses great importance because of its strategic geographical position, and for the fact that high quality water can affect aquatic flora and fauna. Determinant factors that influence quality river water quality include climatic conditions, such as temperature variation, amount of rainfall and erosion of the soil. This investigation represents the seasonal variation of different physical, chemical and bacteriological parameters, consequently to estimate the pollution status of Osumi River depending on weather conditions during the dry and rainy season. This study was carried out for a period of two years from January 2012- to December 2013. Five sampling stations were established during this investigation. The collected samples were divided into two groups. Each group depended on the weather conditions during the study period: October 2012- February 2013, during cool-cold weather (the wet season); March 2012- September 2013, during warm-hot weather (the dry season). The maximum pH value 9.04 was observed as a result of the discharge of tannery wastewaters into river water of this area. COD (Chemical Oxygen Demand) values ranged from 7.97 to 51.63 mg/L O<sub>2</sub> during the dry season and from 13.4 to 171.37 mg/L O<sub>2</sub> during the wet season. Chloride levels ranged from 17.74 to 258.27 mg/L during the dry season and from 21.27 to 685.83 mg/L during the wet season. TSS values exceeded many times the limit of the EU Directive- 50mg/L for the quality of fresh waters for aquatic life. Seasonal values of physical, chemical and bacteriological parameters of Osumi River varied according to sampling sites depending on the quantity and activity of the source of pollution into the river water. Variation according to season did not adhere to any specific trends.

**Keywords:** *Bacteriological parameter, Osumi River, physic chemical parameter, pollution, seasonal variation.*

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