

## **Analysing Spatio-Temporal Distribution Of Water Quality In River Ganga**

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### **Abstract**

The water quality of a river depends on the season and the location surrounding it. The objective of this research is to perform visual analysis of the approximate distribution of water quality using measurements taken at sampling stations of river Ganga.

The water quality indexing is done based on the nine physio-chemical properties of water like Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), etc. and this index can only be measured at certain points in a river. As it is practically impossible to estimate the index at all points we can analyse the water quality at other locations where the index is not measured using the estimated data and GIS techniques.

We have two techniques in GIS to visualise water quality at the non-sampled points. Firstly, the linear referencing tool is used to analyse water quality along a river when it is digitised as a line. For this, we are considering data from 13 measured sites along the Gangetic belt from Gangotri to Ghazipur.

The other technique called the interpolation is used to analyse non measured locations in a polygon. The river area along the town Rishikesh is considered as the study area for interpolating water quality parameters. Similar process is carried out for the Ganga canal along the Haridwar city to verify the impact of city growth on the canal.

Ssxx With the above described techniques a viewer can perform visual analysis about how the pollution is spread over in river Ganga within the defined study area.