River to Resource: A Study of Mahi river for its Best Designated use using WQI and CPCB Framework

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Abstract:

This research sought to thoroughly assess the existing pollution levels in the Mahi river and determine the suitability of the river water for various applications. Water quality monitoring was conducted monthly at three different sampling locations (S1–S3), ranging from upstream to midstream of the river stretch, throughout the entire year (2023), assessing ten water quality parameters. The weighted arithmetic Water Quality Index (WQI) method was integrated with CPCB standards to evaluate overall water quality. WQI assessment classified water quality at every location as "Good." Nevertheless, according to CPCB standards, the evaluated water quality parameters indicate that, the water quality at S1 is suitable for drinking, whereas the quality at S2 and S3 is appropriate for bathing. Therefore, WQI based on CPCB criteria offers empirical information that assists local authorities and policymakers in managing water resources and ensuring their sustainable use.

Keywords:

Mahi River, Water Quality Index (WQI), CPCB criteria, River Pollution, Water resource management.