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| **Research Paper** | **Parameters Measured** | **Methodology** | **Water Quality Index (WQI)** | **Conclusion** |
| Debnath Palit et al., 2019 | pH, total hardness, total conductivity, alkalinity, dissolved oxygen, biological oxygen demand, chloride | Agglomerative Hierarchical Cluster (AHC) analysis used for association among the selected pit-lakes based on water quality parameters | Poor to extremely poor water quality in all pit lakes of Raniganj, India | Water quality of pit lakes is poor |
| Aladejana J. A. et al., 2013 | pH, EC, temperature, TDS, bacterial analyses | The study assessed groundwater quality by collecting water samples from 15 locations and analyzing them for physicochemical parameters and using Standard laboratory methods for analysis. | 22% good water quality, 72.2% medium water quality, 5.5% bad water quality | Groundwater is not potable but of good irrigation quality |
| Vinod Kumar Chaudhary et al., 2022 | DO, BOD, COD, pH, conductivity, suspended solids | The study calculated the WQI of the Yamuna River in Delhi during the COVID-19 lockdown by analyzing physicochemical parameters | Pre-lockdown pH levels were reduced from range 7.1-8.7 to 7.2-7.8. BOD and COD loads were lowered by 62% and 60%, respectively. | Water quality of Yamuna River improved during shutdown |
| Umair Ahmed et al., 2019 | Temperature, turbidity, pH, total dissolved solids | The study employed supervised machine learning models such as decision trees, support vector machines, artificial neural networks, classification and regression models | With MAE of 1.9642 and 2.7273, respectively, gradient boosting and polynomial regression predict the WQI most well. Multi-layer perceptron (MLP) classified WQC with accuracy of 0.8507 | Fast and less expensive alternative approach for poor water quality detection |
| M Ramchandra Mohan, 2022 | pH, BOD, EC, phosphates, TH, DO, TY, TA, TDS, nitrates, temperature, COD | The study assessed tWQI of Thorapalli lake by analyzing physicochemical parameters The water samples and analyzed using standard methods. | Some parameters exceed the WHO-recommended maximum value | The calculated WQI values indicated that the lake water was unsuitable for drinking, irrigation, and aquatic life |
| Iqbal Ahmad and Sadhana Chaurasia, 2019 | pH, turbidity, EC | The study collected water samples from six different locations along the Ganga River in Kanpur, Uttar Pradesh, India, and analyzed them for 13 water quality parameters. | The quality of the Ganga River severely degraded, with the Water Quality Index (WQI) ranging from 57.1 to 81.3. | Ganga River water quality is unfit for consumption as per the study |
| Prerna Sengar et al., 2022 | Concentrations of several parameters | The paper proposed a Marking System based Water Quality Index (MS-WQI) for Chambal River, and developed an Artificial Neural Network (ANN) model to predict water quality. | Levenberg-Marquardt method comes in second with a decent performance (RMSE = 1.89, R2 = 0.99) and is followed by Scaled Conjugate Gradient (RMSE = 1.94, R2 = 0.97). | The MS-WQI was found to be a reliable indicator of water quality, with scores ranging from 13 to 87 indicating poor to excellent water quality. |