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A fuzzy approach towards determination of water quality index

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River plays a very vital role in social, cultural and economical development of any region. It has been seen that establishment of population starts from river side. The developments ultimately result to generate large amount of waste. The river is one of the acceptors to discharge any kind of waste; and hence gets polluted. These practices may result in increased contaminations in river water. The rivers flowing are getting polluted due to humans activities and industries. The water quality generally defined as its fitness for the beneficial uses for drinking by people & animals, for support of aquatic life, irrigation of land and for recreation. This process starts from surveys and systematic study of river basins, characterization of contaminants, analyzing water parameters and finalizing action plan, etc. Characterization of river water includes determination of temperature, Total Dissolved Solids (TDS), Suspended Solids (SS), Biological and Chemical Oxygen Demand (BOD and COD), Oil and Grease, pH and Chlorides, etc. According to collected database, it is essential to set stations in river stretch for the purpose of intake structures, treated wastewater discharge points, bathing points, fishing points, etc. As none of parameters influence the site selection process, it is difficult to justify the suitability of site. A water quality index provides a single number (like a grade) that expresses overall water quality at a certain location and time based on several water quality parameters. The objective of an index is to turn complex water quality data into information that is understandable and useable by the public. Fuzzy logic is based on fuzzy set theory. It is a complex mathematical method that allows solving difficult simulated problems with many inputs and output variables. In environmental engineering, it is difficult to judge the severity of pollution by layman. The present paper focuses on the determination of river water quality index by using fuzzy logic systems to identify the site suitabilty for various uitilities.

Biography

Patel N N have more than 25 years of teaching and industrial experience in the field of Environmental Engineering. He also has a good command over Fuzzy logic system approach towards environmental monitoring systems (EMS). He has more than 20 publications at national as well as international level on various Fuzzy based approaches.

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