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A SURVEY ON WATER QUALITY OF RIVER CAUVERY, KARNATAKA, INDIA

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Abstract

Cauvery basin is one of the significant areas of rice and sugarcane production in India. A stretch of river Cauvery in Karnataka, receives mainly an agricultural run-off followed by domestic and industrial sewage, apart from this recreation, ritual, sand mining practices and hydro-electric power generation cause intensive pressure on flora and faunal affluence by deteriorating the water quality of the river system. Along the steady stretch of river Cauvery in Karnataka, eight major tributaries merge to contribute towards water flow and water quality fluctuations. In the present investigation, seven sampling stations were selected through a preliminary observations on anthropogenic interferences associated with river system. Sampling was performed for pre and post-monsoon seasons. Water, sediment and bank soil samples were collected twice in each season by following an advanced standard sampling and preservation procedures to study the spatio-temporal variation and fluctuations. Further fish, macrophytes and benthic organisms were also monitored for metal accumulation once during the study period. APHA Standard analytical methods were applied to estimate physico-chemical and metal characteristics of the river water. The analytical results have been applied for appropriate statistical techniques to delineate spatio-temporal variations. As per the study of physicochemical characteristics through factor analysis, it could be revealed that conductivity, organic load and dissolved oxygen were observed to be significant parameters in seasonal fluctuation of river water quality. It was observed that iron is the major and cadmium is least concentration in the river stretch. Principal Component Analysis outcome evidently indicated both innate and anthropogenic activities are contributing factors as source of metal profusion in river Cauvery basin. In case of biological samples, Vallisnariaspinalis, Catlacatla and Mollusca showed significant accumulation potency for the metals.

Author Keywords

Heavy metal, Conservative, Non-conservative, Cauvery, Spatio-temporal, Downstream

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Intensive pressure, Deteriorating, Water quality, Anthropogenic interference

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