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Investigation of the pollution extent of Attanagalu Oya

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Abstract

Attanagalu Oya basin is located in Gampaha district. The river flows across Gampaha, Katunayake and Negambo. The Longest length of the river course is about 76 km. Previous work conducted on this river revealed considerable socio-economic activities at riverbanks resulting in indiscriminate disposal of waste. This study is intended to evaluate pollution extend of Attanagalu Oya along the main stem of the river. Water samples were collected from ten selected sampling locations along the main river stem including the origin of the river, near the river outfall and from the NWS&DB intakes of the river. Samples were tested for major physical, chemical and microbiological parameters monthly for two consecutive years. Turbidity, Conductivity, pH, NO₃⁻, PO₄³⁻, BOD, COD, DO, selected metals, total and faecal coliform were analysed. DO, BOD, COD, NO₃⁻, PO₄³⁻ and heavy metals variation of the river is significantly different among sampling locations. WQI of the river decreases towards the downstream both in dry and rainy seasons of the river

Water quality of upstream is mainly influenced by domestic sewage and drainages from cultivated lands. In the latter stretch, except the aforementioned pollution sources, industrial effluents and salt water intrusion are the main factors influencing water pollution.

Water quality at some sites signified that the water is not suitable for human consumption without treatment. The study showed that the river is fairly polluted, and the pollution increases towards the later stretch, the effects being significant in the urban areas. The results obtained from this study would further facilitate water quality protection and water resources management of the river.

Key words: water quality, WQI, river, pollution, industrial discharges