

## SPATIAL AND SEASONAL WATER QUALITY VARIATION OF *YAN OYA*IN TROPICAL SRI LANKA

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### ABSTRACT

A study was conducted to investigate spatial and seasonal variation of selected vital physicochemical parameters in *Yan Oya* of Sri Lanka. Water samples from seven locations along the *Yan Oya* were collected monthly, during 2014/15 representing pre monsoonal, monsoonal and post monsoonal rainy periods. Results revealed that pH, temperature, electrical conductivity, total dissolved solids, total suspended solids, dissolved oxygen, sodium absorption ratio, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Na<sup>+</sup>, K<sup>+</sup>, ammoniacal and nitrate nitrogen were within safe limits for aquatic life, environment and irrigation during monsoonal and post monsoonal rainy periods. Further, significant variations of physicochemical parameters within the pre, post and monsoonal rainy periods were observed. Out of the measured parameters, significant spatial variation was recorded only for ammoniacal and nitrate nitrogen, whereas it was closely related with the land uses. Total river discharge was 479 million cubic meters and huge nutrient load was drained to sea especially during the stormy flow periods. Water quality in *Yan Oya* river basin is in acceptable level and minimal impact of land uses was observed. However, with the development of agriculture and homesteads in future, it expected to be changed. Hence, more attention should be paid to maintain the low lying scrub areas, which act as a buffer zone along the river.

**KEYWORDS:** GIS, Land Use, Nutrient Load, Physicochemical Parameters, River Basin