LAND USE AND WATER QUALITY IN UPPER *MALWATHU OYA* STREAM K.L.A.D.S.

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Malwathu Oya is the only perennial stream, passes through Anuradhapura the main city of North Central Province, Sri Lanka. A comprehensive study on water quality of *Malwathu Oya* has not yet been conducted. Hence, an attempt was taken to assess water quality of upper *Malwathu Oya* to explore possible threats on nutrient pollution in relation to land use. Eight sampling points were selected along the upper *Malwathu Oya* stream for this study. Six (1-6) sampling points were selected within agricultural land uses and 7 and 8 sampling points were established just before and after Anuradhapura city. Soil analysis was done to assess existing soil nutrient levels in different land uses in the catchment area. The average nutrient discharge at the first sampling point established at Ritigala the upper catchment of the stream showed lowest levels (i.e. NO_3-N - 0.38 kg day^{-1}, PO_4-P - 0.09 kg day^{-1}, K - 3.89 kg day^{-1}) while the highest nutrient discharge of NO_{34}-N-151.4 kg day^{-1}, PO -P -29.7 kg day^{-1}, K-1499.3 kg day^{-1} were recorded at the 8 sampling point. The nutrient discharge at sampling point 7 was 85.6 kg day^{-1} of NO_{34}-N, 12.7 kg day^{-1} of PO -P and 830.1 kg day^{-1} of exchangeable K. A drastic increase of nutrient discharge of *Malwathu Oya* was observed from sampling point 7 and 8 (about 1.5 km distance) when it passes through Anuradhapura city compared to the change of nutrient discharge from sampling points 01 to 07 which were established at agricultural land uses (about 40 km distance). Soil analysis showed fairly low nutrient levels in all land uses indicating low risk to nutrient pollution from agriculture. Results concluded that, the impact of urban land use on nutrient pollution is more highlighted than agricultural land use and a comprehensive management plan should be implemented to prevent further pollution of *Malwathu Oya.*

Key words: Upper *Malwathu Oya* , Urban land use, Water quality