WATER QUALITY OF LENTIC AND LOTIC ENVIRONMENTS OF MALWATU OYA BASIN IN SRI LANKA.

by

D.S.S. Zoysa

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Environmental Studies Unit
The Open University of Sri Lanka
Sri Lanka
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ABSTRACT

This study mainly concerned with the determine the selected water quality parameters in surface water from Malwathuoya and its four basin tanks in dry Zone of Sri Lanka namely Nuwarawewa, Tissawewa, Nachchaduwawewa and MahakanadaraweWewa, Anuradhapura district is highly effect the entire water treatment system.

Eutrophication through the process of nutrient enrichment of stagnant waters due to urbanization & chemical added agricultural practices are becoming significant issues for water pollution in these areas. They cause algal blooms and release of toxic substances from species like cyanobacteria. Low Secchi Depth value and high *chlorophyll a* concentration indicate eutrophic nature of the Nuwarawewa and Tissawewa Lakes in dry condition. High nutrient loading observed through the growth of phytoplankton species namely *Cylindrospermopsis raciborskii* was most dominant species and *Microcystis aeruginosa, Microcystis incerta,, Pediastrum duplex. Merismo pediatenuissima, Melosira granulate amd Diatomaelongata* in Nuwarawewa and Tissawewa Lakes during the study period;.

With respect to Physical and chemical parameters, values are very high for Turbidity, Nitrogen compounds (Ammoinia, Nitrate, Nitrite), Phosphate, Total suspended solids, Dissolved oxygen, COD, BOD and *chloraphyll a* in Nuwarawewa and Tissawewa due to the influence of human activities such as recreational , dumping wastes and agricultural practices. However data indicate that Nachchaduwa and Mahakandarawa lakes are well isolated from above threats. At the same time Malwathuoya stream also showed the same kind of pollution pattern causing more critical situations for Water treatment and water quality aspects.

Therefore an effective Lake Management and Lake monitoring programmes with integrated catchment management have to be adopted and it is a prior necessity in planning of the management practices of the catchments to get first hand information through this kind of research of the lake.

Key words: Malwathuoya river basin, Nuwarawewa, Thissawewa, Nachcaduwa, Mahakanatharawa, water quality,