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WATER QUALITY IN SELECTED RURAL TANKS IN MATARA DISTRICT IN RELATION TO ANTHROPOGENIC ACTIVITIES

A PROJECT REPORT PRESENTED BY

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Matara district has a number of rural tanks classified under major or minor tanks according to their surface area. Most of these tanks are currently under the threat of human activities. This study investigated the water quality in two major tanks and two minor tanks in the Matara district in relation to the anthropogenic activities. The selected tanks were Haliela tank, Kekanadura tank, Sulthanagoda tank and Maluwarala tank. Water quality parameters were analyzed in three replicate samples from three selected sites within each tank, and the sites were identified with reference to ongoing human activities. Selected biological aspects including phytoplankton types, fish and other faunal groups and faecal coliform counts were also studied. The effects of various human activities on these tanks were reflected in some water quality parameters indicating that those activities are the causative factors. In Haliela tank, the two sites where the effluent from the nearby hotel discharges and where the runoff from the forest reserve village reached the tank had significantly greater nitrate and phosphate ion concentrations compared to the middle of the tank. This indicates an accelerated input of inorganic nutrients to the tank. In Kekanadura tank, enhanced nitrate ion concentration was found from the site where bathing and washing was carried out by pilgrims. In Sulthanagoda tank, evidence for eutrophication was observed at the site where large scale laundering was going on, and very high amounts of nitrate and phosphate ions were found. There, the phytoplankton was dominated by the blue green alga *Microcystis*. In Maluwarala tank, significantly higher amounts of sulphate ions were noticed at the site where a stream from the nearby forest opens to the tank. This may be attributed to the accumulation of pinus leaves close to the tank area. In conclusion, adverse human activities have caused the water in the selected tanks affected considerably, and these activities may be considered as threats to the existence of these rural tanks.