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Status of physico-chemical parameters and pollution loads washed into the Maduganga lagoon from catchment areas

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The physico-chemical parameters of all major fresh water streams in the catchments, which feed the Maduganga lagoon was studied. The lagoon is located in the Southern Coast, approximately 34 km North-West to the city of Galle within the Galle District. The surface areas of the lake cover 915 hectares; 770.3 hectares is open water. The aim of this study is to assess the pollution status and the contribution of land-based pollutants from catchments. Monthly variations in the water quality parameters were investigated in 12 sampling locations namely Arwavilla Bridge, Mahawela Ela, Magala North Ela, Kerawa Bridge, Bogaha Ela, Malakunawa Ela, Heen ela, Horadu Ela, Lenagala Ela, Nelligoda ela, Mudali Ela, and Pathiraja Ela from May 2006 to December 2006. Water samples were analyzed for some physico-chemical and biological parameters such as water temperature, pH, electrical conductivity, dissolved oxygen levels, total suspended solids, turbidity, ammonia, phosphate, nitrate, nitrite, biochemical oxygen demand, oil and grease concentration, chemical oxygen demand, salinity, chloride, chlorophyll -a and alkalinity. Water flow rate was also measured to calculate the load. Based on the analysis, certain parameters such as salinity (2.2 ± 1.7 ppt), oil and grease (8.5 ± 6.5 mg/l), total suspended solids (16.1 ± 12.3 mg/l), turbidity (20.1 ± 12.5 NTU), and pH (5.6 ± 0.6) were recorded in deviated levels compared The study revealed that average of 122 lb / day nutrients are transported through the Lenagala Ela to Maduganga.

Keywords: physico-chemical parameters, Madu Ganga, water pollution, nutrient load,