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Some aspects of water quality in three river systems in Sri Lanka: Maha Oya, *Deduru Oya and Mi Oya*

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Maha Oya, Deduru Oya and Mi Oya are three river systems draining wet, wet-intermediate and dry zones respectively in the northwestern segment of Sri Lanka. The watersheds of these three river systems are located in different agro-ecological zones with variable land use. Some aspects physicochemical and bacteriological characteristics of three river systems were examined from headwaters to downstream using standard methods during the year 2002 to determine their variations in temporal and spatial dimensions and present status of water quality.

Physicochemical parameters vary from headwaters to downstream with significant seasonal changes bound to rainfall pattern. Three rivers carry a fair amount of total suspended solids during the rainy season (Maha Oya, 133 mg L^{-1}; Deduru Oya, 74 mg L^{-1}; and Mi Oya, 68.5 mg L^{-1}) and the results indicate intensive land use in the Maha Oya watershed. The ionic concentration in terms of electrical conductivity is significantly high in Mi Oya ($p= 0.001$) according to one-way ANOVA, which drains only the dry zone. A marked depletion in dissolved silica is apparent in Deduru Oya and Mi Oya from headwaters to downstream, which have been subjected to flow regulation by construction of reservoirs across the rivers. Total phosphorus and nitrate-N increase from headwaters to downstream in all three-river systems and above the standard levels recommended for natural river systems. Biochemical oxygen demand is also more than 3.0 mg L^{-1} in many instances in Deduru and MI Oya indicating organic waste loading. This is confirmed by faecal contamination of two river systems from headwaters to downstream.

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