

The impact of the suspended sediment variation on aquatic invertebrates in Gin Ganga basin

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Understanding of the suspended sediment and its impact to aquatic invertebrates with the long term in-situ investigation is crucial to the management of aquatic fauna and flora. Therefore, this study focused on the impact to aquatic invertebrates from suspended sediment concentration (SSC). The study was conducted from February 2009 to December 2010 and 16 sampling locations were selected in the entire Gin Ganga basin. Water analysis was done using portable instruments and laboratory analysis was done using an APHA standard method. Collected aquatic invertebrates were identified in the laboratory. Highest suspended sediment concentration of 63.6 mg/l was recorded on Kahaduwa sampling location in the month of April 2009 and lowest suspended sediment concentration of 8.2 mg/l was recorded with Duli Ella sampling location in the April month 2009. In addition, highest suspended sediment load 242.8 ton/day is recorded in Baddegama in the month of December 2010. Fifteen different invertebrate taxa were recorded at the study sites in the Gin Ganga river basin during the entire study period. Dellawa, Duli Ella, ITN, Gongala mountain sampling locations recorded the highest diversity of aquatic invertebrates and the lowest diversity was recorded in Neluwa, Baddegama and Paranathotupala sampling locations. According to the results, some places in the basin showed higher SSC concentration because of the higher anthropogenic activities in the micro catchments. Dissolved oxygen (DO) concentration varied between 4.2 mg/l and 9.56 mg/l and the highest value was recorded in the Gongala sampling location. In addition, upstream sampling locations showed higher DO concentrations and low turbidity values. Based on the results, high diversity of aquatic invertebrates were recorded with low SSC in upper catchment and low diversity of aquatic invertebrates with SSC in the lower part of the catchment. Therefore, the study reveals that high SSC has an impact on aquatic invertebrate diversity in the basin.

Keywords: Gin Ganga, suspended sediment, water quality, aquatic invertebrate

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