

Assessment of the water quality parameters in selected sites of the Meegahawatta stream, Peliyagoda

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Abstract

Meegahawatta stream in Peliyagoda is a stream that runs through rural urbanized areas and industrial areas. This stream provides water for the general uses of the residents in the area which consists of about 400 families. This study was performed to assess aquatic pollution issues to the residents who use the Meegahawatta stream as a water source and to assess the water quality of the Meegahawatta stream at selected sites.

In this study six sites were selected along the stream. The first three sites (Site A, B and C) were located in a rural area with less anthropogenic influences and Sites D and E were located in an urbanized area with comparatively higher anthropogenic impacts. Site F was located at a place where the wastewater (treated (F1) and untreated (F2)) from the Peliyagoda Fish Market are released to the stream. The pH, dissolved oxygen, total dissolved solids and electrical conductivity of the water samples were measured.

In addition to the water quality analysis, the residents of the surrounding of the stream were interviewed to identify the health and environmental impacts of the pollution of the Meegahawatta stream.

The interviews with the residents showed that they are affected with numerous health and environmental related problems due to pollution of the Meegahawatta stream. Majority of the problems mentioned were skin diseases, mosquito problems, excessive flooding in rainy season. During the field visit, the excessive growth of algae and *Eichornia* sp was also observed.

The results of the water quality analysis indicated considerably high Total Dissolved Solids and Electrical Conductivity at Site F2, which was the place where the untreated wastewater from the Peliyagoda Fish market was discharged. The pH and dissolved oxygen concentration did not show considerable variations among the study sites. According to the

results of this study, the wastewater discharges of the Peliyagoda Fish market can be identified as a major source of pollutants to this stream. This study was performed as a preliminary study to identify the causes and effects of aquatic pollution in the Meegahawatta stream. Therefore, to quantitatively assess the pollution it is recommended to improve this project by increasing the number of sampling sites, sampling frequency and the number of replicates.

Keywords: Water quality, Meegahawatta stream, Fish-market waste