Effect of Heavy Metal Contamination of Water in Negombo Estuary, Sri Lanka

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Abstract

The main sources of heavy metals into the Negombo estuary are thought to be industrial effluents and domestic solid waste inputs. The present study was carried out to assess the contamination levels of heavy metals in water at Negombo estuary, with the objectives to determine spatial and temporal variations of heavy metal levels of cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), and zinc (Zn) in water. Samplings at selected sites were done during one year study period from January to December 2015. Heavy metal levels in water were analyzed employing standards methods. The results revealed that concentrations of Cd, Pb, Cr, Cu, and Zn in water were below the threshold standard levels and below the proposed tolerance limits for the discharge of industrial wastewater quality standards of Central Environmental Authority of Sri Lanka. The findings were important as the study indicates the seasonal variations of presence of heavy metals in the estuary water and which probably links to anthropogenic activities. The seasonality in the heavy metal levels of water was observed with a peak period from May/ June and October and November, which apparently coincided with the intermonsoon periods of the island.

Keywords: Heavy metals, Water quality, Anthropogenic influence