Heavy metal concentrations in natural and human-impacted sediments of Segara Anakan Lagoon, Indonesia

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Abstract	The concentrations of eight elements (Cr, Cu, Fe, Mn, Ni, Ti, V, and Zn) in surface sediments from Segara Anakan Nature Reserve (SARN), Indonesia, were determined using inductively coupled plasma-atomic emission spectroscopy following microwave-assisted acid digestion. In general, the heavy metal concentrations of the sediments were found to decrease in the sequence Fe>Ti>Mn>Zn>V>Cu>Cr>Ni. Sediment pollution assessment was carried out using a pollution status index contamination factor, pollution load index, geoaccumulation index, and enrichment factor as well as by comparing the measured values with two sediment quality guidelines, i.e., threshold effect level and probable effect level. The evaluation showed that in the refinery site stations, Cr, Ni, and Zn concentrations found in the SANR sediments may cause the adverse effect to occur over a wider range of organisms and can contribute to a more serious harmful effect.
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