

The status of heavy metal levels in a Ramsar Site, Kuala Gula Bird Sanctuary: the impact of the anthropogenic inputs.

ABSTRACT

Distributions of Cd, Cu, Pb, and Zn in the surface sediments from two sites of the Kuala Gula Bird Sanctuary, Malaysia were monitored for a period of 6 months from October 2006 to March 2007. In December 2006, the concentration of Zn in one location was significantly ($p < 0.05$) higher (3.91.3 mg/kg) than the other metals at both sites, but in the oxidizable organic fraction it was highest at both sites during October; with mean concentrations of 18mg/kg at both locations. In the acid-reducible fraction, high concentrations of Pb (2.3 mg/kg) were detected at station 2 in February 2007, being highest among all four metals at both stations. The acid-reducible fraction found in Pb ranged from 0.10% to 3.1% in both stations. Percentages ranging from 51% to 96% were observed for all four metals in the resistant fraction throughout the sampling period. These results indicate low contributions from anthropogenic sources. The findings constitute a baseline data archive for future reference.

Keyword: Geochemical fractionation; Metals; Intertidal mudflat; Sediments; Ramsar site, Kuala Gula.