

Dispersion and Accumulation Trend of Heavy Metals in Coastal and Estuarine Sediments and its Textural Characteristics, a Case Study in India

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ABSTRACT This study evaluated the persistence of heavy metals, cadmium (Cd), lead (Pb) and mercury (Hg) in surficial marine sediments and their relationship with textural characteristics. Furthermore, heavy metal distribution was studied against organic carbon concentration within the sediments. Our results suggest that Cochin estuary is highly polluted in the case of all heavy metals (Pb of $29.48 \pm 4.37 \mu\text{g/g}$, Cd of $0.21 \pm 0.17 \mu\text{g/g}$ and Hg of $0.17 \pm 0.15 \mu\text{g/g}$). All the studied trace elements showed negative correlation with sand particles. However, significant positive correlations were observed between lead and mercury with silt and organic carbon ($P < 0.01$), presumably metal accumulation increases with decrease in sediment grain size. The concentrations of the trace elements reported in this work are useful as reliable baselines and can be used for comparison in future studies.