



## **Evaluation of the anthropogenic influx of metallic pollutants into the Oualidia lagoon, Morocco**

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Numerous studies on the impact of anthropogenic activities on coastal water quality have been carried out in the last three decades, focusing mainly on urban expansion and agricultural development in coastal areas.

In this study, we assess heavy metal pollution in the superficial and cored sediment of the Oualidia lagoon (Morocco). Superficial and cored sediment samples from the Oualidia lagoon were analyzed for Al, Fe, Cu, Zn, Pb, Mn, Ni, Cr, Hg and Cd using ICP-MS. Sediments near urban and agricultural areas are commonly contaminated with heavy metals and the concentrations found in surface sediments are significantly higher than those from 50-100 years ago. The concentrations of these elements decrease sharply with depth in the sediment column and the elements are preferentially enriched in the  $<2 \mu\text{m}$ -size fraction of the sediment. The enrichment factors (EF) and statistical analyses, demonstrated that heavy metals that might pose a risk (Pb, Cu and Hg) have become largely enriched in the lagoon sediments during the recent period of agricultural intensification. Ni and Cr are the main pollutants originating from urban sewage.

Keywords: Coastal land use, heavy metals, sediment pollution, lagoon.