

**Metallic Contamination in
Sediments: coupling experimental
approach, isotope geochemistry and
geographic information systems
(GIS)**

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This work is a multidisciplinary project whose objective was to understand the mechanisms that control the distribution of metallic contaminants between river waters and sediments from areas identified as potentially at risk on a regional scale. The experimental approach and the triple mineralogical/organic/isotopic characterization were at the heart of this project whose objectives were 1/ to characterize the organic and inorganic carrier phases of metals (Pb-Zn-Cu-Ni-Cd-Cr) in sediments; 2/ to understand the processes of remobilization of these metal contaminants due to changes in environmental conditions during the resuspension of sediments (dredging of rivers and canals for example); 3/ to characterize the isotopic fractionations (Zn, Cu) induced during these processes.

The main results of this research project are

1/ to have established vulnerability and pressure maps on the scale of the Centre-Val de Loire Region in France, which correspond to zones of strong sedimentary accumulations (vulnerability) associated with the presence of metals (pressure), and

2/ to have developed a chemical and isotopic diagnostic methodology for the characterization of sediments with anthropogenic affluence and to have constrained the mobility of these metals.