

## عنوان مقاله:

Identification of heavy metal contamination in lake sediments using lead isotopes: the case of Saint-Point and Grand (Maclu lakes (France

## محل انتشار:

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## خلاصه مقاله:

The production of drinking water enters a crucial phase as soon as the sources of contamination multiply and extractions increase. Numerous studies have looked at limnic reserves with a strong heritage character, often used to meet the drinking water needs of communities. They highlight the state of degradation of the water bodies and the need to restore them urgently and enhance the water productivity. Most of them focused on the trophic status of the water bodies, the excess of nutrients and chemical inputs of agricultural origin, whose origin remains local. Analyses of water quality have shown relatively high levels of heavy metals ( $40 - 100 \mu\text{g/l}$ ), casting doubt on the actions taken to collect waste on the scale of local catchment areas. Contents in the sediments fluctuate between  $50-100 \mu\text{g/g}$ , of which a significant proportion is diluted in the interstitial (pore) water. All Alpine and Jura water bodies show traces of metals since the end of the 19th century. The concentrations recorded in the waters of the Jura lakes are of the order of  $3-10 \mu\text{g/g}$  at the surface and can reach  $20-35 \mu\text{g/g}$  at depth, particularly during the stratification period, making the hypolimnion highly anoxic (oxygen content  $< 2-5\%$ ) and a pH slightly below 7. Almost all the water bodies in the Alps and the Jura are directly affected by the consequences of these malfunctions, in particular, those caused by industry (foundries, coal mining), releasing metal emissions, thus affecting the quality of the water and sediments of these fragile reserves. The levels of certain heavy metals recorded in two lakes in the French Jura (Maclu and Saint-Point) confirm the findings of numerous studies on other lakes, highlighting the remote origin of emission sources outside the catchment areas.

## کلمات کلیدی:

Eutrophication, Water Productivity, Heavy Metals, Jura, Lakes, nutrient, Sediment, Watershed

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