

Contamination Level And Spatial Distribution Of Heavy Metals In Water And Sediments Of El Guájaro Reservoir, Colombia

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Abstract

Heavy metals have become a subject of special concern worldwide, mainly due to high persistence in the environment, toxicity, biogeochemical recycling and ecological risk. Therefore, the objective of this investigation was to analyze the spatial-temporal distribution of heavy metals in water and sediments to determine the environmental status of El Guájaro Reservoir, where such studies have not been developed. Two measurement campaigns (dry and wet period) were carried out and eight sampling stations were selected. A comparison of water and sediment quality parameters with existing national and international regulations was done. Also, heavy metal distribution maps were generated, and the geoaccumulation index was calculated to identify sources and sediments contamination level. Based on the obtained results, agriculture and mining activities are the main causes of the reservoir contamination. This metals levels could be a potential risk for the aquatic life and the populations that are supplied from this water body.

Keywords

El Guájaro Reservoir; Geoaccumulation Index; Heavy Metals Distribution