

عنوان مقاله:

Evaluation of Heavy Metal Contamination and Ecological Risk Assessment in Sediments of Karun using Aquatic Pollution Indices

محل انتشار:

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خلاصه مقاله:

Background & Aims of the Study: The current study was designed to determine the quality of sediments in Karun in Ahvaz, Iran, according to aquatic pollution indices. Materials and Methods: The sediment samples were obtained from six river stations in summer and winter. The sediment samples were air-dried, sifted, homogenized, and stored in plastic bags, and the concentrations of metals were determined in the laboratory. Results: The obtained findings revealed that the mean concentrations of lead, zinc, chrome, and cadmium were 26.27, 72.36, 53.47, and 3.85 mg/kg dw in summer and 13.41, 59.54, 30.28, and 0.42 mg/kg dw in winter, respectively. According to the mean scores of the potential ecological risk index (PERI), in two seasons, the sediment enrichment with metals was observed in the order of Cd > Pb > Cr > Zn; however, according to biological toxicity test (the effects range-median quotient), the sequences of the metals during summer and winter were Cd > Cr > Zn > Pb and Zn > Cr > Pb > Cd, respectively. The comparison of indices between stations showed that in summer, stations 3 and 4 were medium-low priority side according to the mean effects range-median quotient (mERM-Q) and were reported with moderate ecological risk based on the PERI. In winter, stations 2 and 4 had a medium-low priority side and moderate ecological risk according to mERM-Q and PERI, respectively. The results of hazard quotient (HQ) and modified hazard quotient also showed that the HQ values of Pb and Zn (0.1

کلمات کلیدی:

Sediment, Heavy metals, Potential Ecological Risk Index (R), Biological Risk Index (mERM-Q), Hazard quotient (HQ), Karun River

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