SPATIAL VARIATION AND ECOLOGICAL RISK ASSESSMENT OF HEAVY METAL IN THE SURFICIAL SEDIMENTS ALONG THE EGYPTIAN RED SEA COAST.

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Abstract: The concentrations of certain heavy metals (Fe, Mn, Zn, Cr, Ni, Pb, Cu, and Cd) of sandy sediment samples collected from eight sites along the Egyptian Red Sea coast were investigated in order to evaluate the pollution status and ecological risk assessment of the study area. The results of the partitioning study showed that the average concentrations of the heavy metals analyzed in investigated sediment exhibited the following decreasing order Fe > Mn > Zn > Cr > Ni > Pb > Cu > Cd. The degree of surface sediment contamination was computed using Metal Pollution Index (MPI) and Geoaccumulation index (I geo). Metal Pollution Index showed that station 5 (Qusier Middle) suffered with metal pollutions. Association with adverse effects to marine organisms was determined using the classification of the sediments according to SQGs. Sediment quality guidelines based on the consensus approach revealed that Pb and Cu had no adverse ecological effects.