

Comparison of the Ecological Risk Index of Heavy Metals in the North of Persian Gulf: Hormozgan and Bushehr Provinces

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Received Date: May 27, 2017

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Accepted Date: September 11, 2017

Abstract

The importance of the Persian Gulf and its role in economy and dynamic of the region and the development of industrial activities, refineries and residential activities in its surrounding area highlights environmental monitoring of this zone as a fundamental concern for researcher and policy makers. For this purpose, in 2012-2013, surface sediment of 58 stations in the Persian Gulf were sampled as transect from coastal line to offshore. All samples were transferred to the laboratory according to the standard procedure for heavy metal analysis. Total concentration of Cu, As, Cr, Cd, Pb, Zn, Ni, and Hg were measured by acid digestion and analyzed by ICP-MS. The grain size analyzed by Scatter analyzer and Carbonate measured using Lol Method. The results showed that general texture of the sediment was Silt-Loam and Carbonate content varied 8.5-53.72. According to the single Ecological Risk (ER), Cd, Hg, As and Ni had moderate risk. Average of ecological risk index (RI) pointed 335 which showed high risk in the studied region. Although, this index was higher in the Hormozgan province. Both provinces of Bushehr and Hormozgan were classified in the high risk class. General framework of the generated map for RI showed that RI indices decreased with increasing the distance from coastal line. This result indicated the obvious role of discharging environmental pollutant from terrestrial pollution source to the Persian Gulf.

Keywords: *Ecological risk, Heavy metals, Bushehr province, Hormozgan province, Persian Gulf.*
