

Evaluation of heavy metal pollution levels in the Water of the Beheshtabad River

Mehrsa Najafi¹

Rasool Zamani-Ahmadmahmoodi^{2*}

Fardin Shaluei³

Poune Ghorbani-Dashtaki⁴

1. Master of Science Student in Aquatic Ecology, Faculty of Natural Resources and Earth Science, Shahrekord University, Iran

2,3. Assistant Professor of Fisheries and Environmental Sciences, Faculty of Natural Resources and Earth Science, Shahrekord University, Iran

4. Master of Science Student in Environmental Science, Faculty of Agriculture and Natural Resource, Ardakan University, Iran

*Corresponding author:

rasoolzamani@yahoo.com

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Abstract

Rivers are one of the main sources of water supply for uses including agriculture, drinking and industry. The purpose of present study is evaluation of heavy metal pollution levels (arsenic, cadmium, chromium, copper, lead and zinc) in the water of Beheshtabad River. Water samples were collected from 7 stations during February 2016, May 2016, August 2017, and November 2017. The concentration of total arsenic, cadmium, chromium, copper, lead and zinc elements was determined by ICP-MASS. Descriptive statistics were performed using SPSS software. Also, spearman test was used for investigation of correlation among metals. The average concentrations of arsenic, cadmium, chromium, copper, lead and zinc in water samples were 0.6 ± 0.48 , 0.08 ± 0.02 , 2.03 ± 2.27 , 2.24 ± 3.23 , 1.29 ± 1.25 and 17.08 ± 19.25 mg/kg, respectively. According to the results of the metal index, pollution load, pollution assessment, degree of pollution, no significant or severe pollution was found in the water samples of the Beheshtabad River. According to the results, the level of heavy metals in the water of the Beheshtabad River was natural, and to prevent river pollution, discharging wastes from fish farming and household sewage should be prevented.

Keywords: Heavy metals, Monitoring, Indices of water pollution, Beheshtabad River, Chaharmahal va Bakhtiari Province.