

عنوان مقاله:

River water quality assessment using WRASTIC and organizing methods: A case study in three sub-watersheds of
(Karaj River (Varangeh Rud, Doab, and Varian

محل انتشار:

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خلاصه مقاله:

Water as an inevitable human need has encountered many problems during last decades. One of these problems is water pollution. In recent years, water quality has been reduced in Karaj watershed as the most important source of drinking water in Tehran and surrounding areas. In the present study, three sub-watersheds were selected at the upper, middle and lower section of the main river of Karaj watershed called Varangeh Rud, Doab and Varian. In order to estimate and compare their pollution potential, two different methods including risk assessment (as a scientific method) and organizing (as an experimental-practical method) methods were applied. Out of the several risk assessment methods, only the WRASTIC Index method was used to estimate the risk of surface water sources pollution, particularly dams, and to weight the 7 main parameters of water pollution. Organizing method, in turn, involves several methods including ecological capacity assessment using GIS to determine the proportion between existing uses, analyzing the 10-year average of water pollution parameters for identifying the river water quality and SWOT analysis to determine threats and opportunities in the watershed water quality. Results showed little pollutant potential in all the three sub-watersheds, but based on the organizing method, there is little, average and very little pollution in Varangeh Rud, Doab and Varian sub-watersheds, respectively. Similar results were obtained using both methods. Hence, the organizing method, as an experimental method, can also be used for zoning the potential of .water pollution in Karaj Dam watershed

کلمات کلیدی:

Risk, WRASTIC, Ecological Capacity Assessment, SWOT

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