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Assessment of Water Quality Network in Karoon River by Dynamic Programming Approach (DPA)

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Abstract : Karoon is one of the greatest and longest rivers of Iran, which because of the existence of numerous industrial, agricultural centers and drinking usage, has a strategic situation in the west and southwest parts of Iran, and the optimal monitoring of its water quality is an essential and indispensable national issue. Due to financial constraints, water quality monitoring network design is an efficient way to manage water quality. The most crucial part is to find appropriate locations for monitoring stations. Considering the objectives of water usage, we evaluate existing water quality sampling stations of this river. There are several methods for assessment of existing monitoring stations such as Sanders method, multiple criteria decision making and dynamic programming approach (DPA) which DPA opted in this study. The results showed that due to the drinking water quality index out of 20 existing monitoring stations, nine stations should be retained on the river, that include of Gorgor-Band-Ghir of A zone, Dez-Band-Ghir of B zone, Teir, Pole Panjom and Zargan of C zone, Darkhoein, Hafar, Chobade, and Sabonsazi of D zone. In additional, stations of Dez river have the best conditions.

Keywords : DPA, karoon river, network monitoring, water quality, sampling site
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