

Abstract

The lack of a permanent and secure river in the desert areas of the country, especially in the South Khorasan Province, has made all agricultural, industrial and drinking activities dependent on groundwater resources. On the other hand, increasing number of wells and irregular harvests along with severe and continuous droughts in recent years have put the situation of aquifer in South Khorasan province in unstable and critical condition. The plain is one of the lowlands in critical and forbidden conditions, according to statistics released by the provincial regional water company. Predicting aquifer status for managers to make timely and appropriate decisions is inevitable, which can be determined by different simulation models. Artificial neural network is one of the models of hydrology cycle simulation that has been developed and welcomed in recent years. In this study, in order to simulate the effects of climate change on the aquifer, the artificial neural network model and the optimistic, pessimistic, and moderate climate scenarios will be used and the aquifer hydrograph will be reconstructed in all three states. For this purpose, climate change models are simulated using GCM climate change models and at different probability levels of rainfall and temperature. Also, in order to study and predict groundwater level in Sarayan aquifer after introducing and identifying effective parameters by using neural network toolbox in Matlab software, modeling and simulation are performed using climate change data and the results are statistically analyzed.

Keywords: Climate Change, Aquifer, Groundwater Level, Simulation, ANN model.



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**Evaluation of Climate Change in Groundwater Level By ANN
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