The Impact of the Phenomenon of Drought on Groundwater Quantity using Fuzzy Model (Case Study: Plain Gotvand- Aghili)

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Abstract

The negative balance of water reserves and reduce the size of static storage aquifers including the effects of the drought phenomenon is repeated on the status of surface and groundwater resources in Iran including Khuzestan province has had an impact. In this study, using fuzzy and ArcGIS version also better understand the effects created in the statistical period on the aquifer Gotvand – Agile plains try to influence the result of the drought on groundwater modern manne and visible as much as possible he predicted. Gotvand Plains - Aghili (with an area of approximately 370 km north Khvzstan province is the the agricultural poles) separated by Karun River is dumped. To determine the patients in the study area input and output data network with the same time step with the corresponding number, wells data was introduced as the basis of monthly data, from 1996 until the end of 2002 considered (in 2019). Studies showed that groundwater levels in the aquifer is heavily dependent on rainfall and water inputs (irrigation and drainage networks and Karun River) is the also well as the behavior of aquifers in drought fuzzy logic high accuracy and the results of the model with current realities in the region and results of studies and maps in ArcGIS environment is consistent.

Keywords: Fuzzy Model, GIS, Groundwater, Drought, Groundwater.