

عنوان مقاله:

Use of a mathematical modeling approach to investigate interaction between groundwater and river: A case study on the north of the Dezful- Andimeshk plain, southwest of Iran

محل انتشار:

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خلاصه مقاله:

Alluvial rivers interact mostly with underlying groundwater bodies. These interactions that varies spatially and temporally, have recently received more attentions. This paper aims to evaluate the interaction between groundwater and surface water along the Dez river in the north part of the Dezful-Andimeshk district through developing a numerical simulation. For this purpose, the groundwater flow and river- groundwater interaction were simulated using a mathematical model in MODFLOW/GMS environment. The WetSpass model was used to estimate the groundwater recharge. The cluster analysis method, also, was utilized to identify the different zones of aquifer hydraulic characteristics. The results show that the Dez river has a losing connected nature and recharges groundwater. The river recharge to the aquifer was about 12 MCM during the 2013 and 2014. This recharge varies spatially and temporally and its maximum amount occurs during the 2014 March to June. Furthermore, the recharge rate was affected by the water release pattern from the Dez dam and topographic characteristics of the riverbed sediments. So that the maximum water exchanges occur in areas near the Chamgolak town and Dezful city with an average rate of 3.2 MCM per year.

کلمات کلیدی:

River-aquifer interaction, Groundwater modeling, Dezful- Andimeshk area

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