

Study the Hydromorphometric Properties of Wadi Jbab in Iraqi western plateau

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Abstract

The research aims at revealing the morphometric characteristics of wadi Jbab Basin, which include areal, relief characteristics, and the shapes of cross sections of the valley. The hydrological properties of Jbab basin were studied to estimate the amount of water received by its catchment area during rain falls, thus, the appropriate places for the construction of dams and reservoirs for use in water harvesting can be determined. The area under study is located in Iraqi western plateau, between the latitudes of $33^{\circ} 55' 45''$ N to $34^{\circ} 27' 50''$ N, and longitudes $41^{\circ} 24' 30''$ E to $41^{\circ} 43' 00''$ E. Remote sensing technology (RS) and geographic information systems (GIS) were used to reach the objectives of this research, so Digital Elevation model (DEM) for the year 2009 was brought to program (Arc GIS 9.3) and detected the basin and valley of Jbab automatically by using the hydrological analysis method. The area under study is characterized by the drought with a deficit of water in all months of the year where the highest in the month of July, amounting to 324.5 mm and the lowest in January, 10.92 mm. The geological formations prevail formations limestone, with sandy soil to sand clay mixture, with lack of density in the vegetation. The average slope in basin of Wadi Jbab is 0.25 degree. There are five ranks of river, the sum of their tributaries 676 tributary within an area of 986.6 km^2 , and its perimeter is 214.3 km, it is also noticed the form of the basin tends to form a rectangle, with three places suitable for the construction of dams and reservoirs depending on the morphometric and hydrologic information that related to the area of research.