عنوان مقاله:

Determining the Changeability of Groundwater Level in the Southwestern Part of Bangladesh using Geographic Information System (GIS): A Spatio-Temporal Analysis

محل انتشار:

فصلنامه روشهای تصفیه محیط, دوره 3, شماره 4 (سال: 1394)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

Groundwater is one of the most important freshwater sources in Bangladesh which is used for drinking, household chores and irrigation. Due to high population pressure and excessive withdrawal, this important resource is under a lot of pressure. This study was designed to assess the present groundwater condition of the southwestern part of Bangladesh. Groundwater depth data of 231 wells from 20 districts were collected from Bangladesh Water Development Board (BWDB) and analyzed in ArcGIS 10.1 and Microsoft Excel 2010. Data analysis showed that all over the year, groundwater lies beneath 0 to 10 m of sediment in the southwestern part of this country. During the pre-monsoon season, groundwater level ranges from 6 to 10 m in Magura, Rajbari, Jhenaidaha and its adjacent areas, but when the monsoon starts water level varies from 4 to 7 m except some parts of Magura as the monsoon season is characterized by heavy rainfall. On the other hand, water level varies from 1-4 m in the coastal areas of the southwestern part of this country. Basically, the larger values are mostly associated with urban areas having groundwater level ranging between 6 and 12 m. During the monsoon season, there is a wide disparity of groundwater condition except the coastal zone as it shows homogeneity. So significant variation in groundwater depth was observed throughout the study area. The impact of the urbanization was seen clearly which leads to the lowering of groundwater level that can cause the catastrophic events like earthquake, subsidence and pollution in this country

کلمات کلیدی:

Groundwater, Freshwater Source, Monsoon, ArcGIS 10.1, Water Table