

Urbanization on Green Cover and Groundwater Relationships in Delhi, India

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Abstract : Recent decades have witnessed rapid increase in urbanization, for which, rural-urban migration is stated to be the principal reason. Urban growth throughout the world has already outstripped the capacities of most of the cities to provide basic amenities to the citizens, including clean drinking water and consequently, they are struggling to get fresh and clean water to meet water demands. Delhi, the capital of India, is one of the rapid fast growing metropolitan cities of the country. As a result, there has been large influx of population during the last few decades and pressure exerted to the limited available water resources, mainly on groundwater. Considering this important aspect, the present research has been designed to study the effects of urbanization on the green cover and groundwater and their relationships of Delhi. For the purpose, four different land uses of the study area have been considered, viz., protected forest area, trees outside forest, maintained park and settlement area. Samples for groundwater and vegetation were collected seasonally in post-monsoon (October), winter (February) and summer (June) at each study site for two years during 2012 and 2014. The results were integrated into GIS platform. The spatial distribution of groundwater showed that the concentration of most of the ions is decreasing from northern to southern parts of Delhi, thus groundwater shows an improving trend from north to south. The depth was found to be improving from south to north Delhi, i.e., opposite to the water quality. The study concludes the groundwater properties in Delhi vary spatially with depending on the types of land cover.

Keywords : groundwater, urbanization, GIS, green cover, Delhi

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