

# ZONATION OF PROPER PLACES FOR ARTIFICIAL RECHARGE USING BASIN-TYPE RECHARGE (CASE STUDY: TEHRAN – KARAJ PLAIN IN IRAN)

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Identification of suitable sites for groundwater artificial recharges is very important, which is necessary to carry out with enough accuracy and in the possible minimum time. The study area is Tehran-Karaj plain that located between 51°00" to 51°39" East longitude and 35°40" to 35°47" North latitude. In this study; among different methods of artificial recharge, the flood spreading method was selected. For this purpose, four factors of the slope, the surface infiltration, alluvial thickness and water quality of sediment were selected.

The slop map was prepared from topographic maps of the study area with the scale of 1:25000. Surface infiltration was estimated from the texture of soil samples. The aquifer thickness was determined by the geoelectric method and the point-measured the thickness of aquifer. The alluvial quality was determined from the EC data of the pisometric wells.

Also the maps of the landuse and landform units of study area were extracted from landsat ETM+ images by the visual interpretation method. The suitable sites for artificial recharge are identified by overlaying of slop, surface infiltration, thickness and quality of sediment layers according to the Boolean and Fuzzy logics, DSS and Multi class maps methods in GIS.

To study the relationship between landform units and artificial recharge, two maps of the landform and suitable sites were overlaid. The results showed that "very proper zones" are located on the flood and river bed that is only 2.16% of total area.

