

## Subsurface hydrology and ecological effect in arid and semi-arid regions

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There is about 1/3 of the land in the world is arid and semi-arid, and about half of the world's countries are affected by drought to varying degrees. The arid and semi-arid area of China accounts for about 25% of the land area, while it's short of water due to drought. The water resources are short supply, which causes the ecological environment fragile. The groundwater resources are widely distributed in arid and semi-arid areas. Therefore, groundwater plays an important role in maintaining industrial and agricultural production. However, the scientific problems of the subsurface hydrological and ecological effects in arid areas are still unclear. To better understand the Subsurface hydrology and ecological effect in arid and semi-arid regions, we analyzed the formations and evolution mechanisms of groundwater. Then, the functions of groundwater resources, including economy, ecology, landscape, material migration and transformation, in arid area were proposed. On this basis, the research status, existing problems, and development trend of domestic and abroad are proposed.

Keywords: Subsurface hydrology , ecological effect, arid and semi-arid regions