

## **Investigating the Impact of Land Use Changes on Groundwater Quality in Arid and Semi-Arid Regions of Central Iran**

**Khorsandi Kouhanestani, Zohreh <sup>1</sup>**

<sup>1</sup> Assistant Professor, Department of Natural Resources, Agricultural Sciences and Natural Resources University of Khuzestan, Mollasani, Khozestan, Iran

### **Abstract**

Groundwater is recognized as one of the most vital water resources in arid and semi-arid regions. The recharge and discharge rates of groundwater aquifers changes can significantly affect groundwater quality. land use is one of the key factors on groundwater recharge and discharge rates. This study investigates the impacts of land use changes on groundwater quality in Najaf Abad plain, one of the groundwater plains in central Iran. water quality data such as electrical conductivity, total dissolved solids, nitrate, and major ion concentrations, over a 20-year period were analyzed, along this time period, land use maps were provided for different times. The results showed that in the studied plain, rangeland areas decreased during the investigation period, while agricultural and residential lands increased. Consequently, groundwater quality indicators changed. This study demonstrates that land use management and controlled groundwater extraction are necessary for preserving groundwater quality in arid and semi-arid regions.

**Key Words:** *Groundwater Quality, Land use changes, Arid and semi arid area*