

## **Impact of land-use change on groundwater quality in the Indo-Gangetic Plains, India**

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**Abstract** Rapid growth in population, urbanization, industrialization, and competition for economic development, and the associated land-use/cover change have led to an increased rate of groundwater depletion and degradation. Groundwater samples from Allahabad district, India were analysed for chemical parameters. Analysis of variance of all selected parameters of water quality showed significant differences with sources. Interaction between source and water quality was also significant. The groundwater in different parts of Allahabad district is severely affected and has also become very vulnerable to pollution by a wide range of contaminants. It is interesting to note that higher values of all the parameters were found in the agricultural areas, while lower values were recorded in settlements. This clearly shows the impact of land-use practices on the groundwater.

**Key words** Allahabad district, India; contamination; groundwater quality; anthropogenic; seasonal variation; land use/cover