

Groundwater Pollution in Urban Areas of the Danube River Catchment, Serbia

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The large towns and the smaller municipal corporations in the Sava River and the Danube River catchment areas rely on groundwater for water supply and only the capital city Beograd uses groundwater and surface water (from the Sava River) conjunctively. The alluvium water table is shallow and mostly about 3-5 m and shows seasonal variations controlled by precipitation and river water infiltration and evaporation as well as exploitation. The infiltration of precipitation-groundwater depth relation curve and the evaporation-groundwater depth relation curve were used to determine an optimum groundwater level to maximize infiltration of rainfall and to minimize evaporation by well-pumping.

Moreover, anthropogenic activities cause the steady decline of water quality in the catchment area. Based on the data of groundwater quality monitoring for the last decade and using methods such as correlation and regression analysis, trend extrapolation, probability statistics and hydrodynamic dispersion, the trends of total hardness and mineralisation and pollutants such as nitrates, COD, heavy metals, organic substances in groundwater in urban areas up to the year 2005 have been predicted. The tremendous changes in the water environment by human activity and NATO bombing have affected the ecologic system of the Danube River catchment area.

Some of urban wastewater reclamation schemes are planned for implementation in the region in the near future.