

---

## GROUNDWATER FORMATION IN URBAN AREAS REGARDING PERIPHERAL PARTS OF PRAGUE

**DATEL, J. V.; HRABANKOVA, A.; STROUHAL, L.**

T. G. Masaryk Water Research Institute, p. r. i.

**Keywords:** groundwater – infiltration – Prague – urbanization

Groundwater is an integral part of the hydrosphere and hydrological cycle in a healthy landscape, which is better able to withstand hydrological extremes such as floods or prolonged drought. The main source of groundwater is precipitation. There are a number of barriers for infiltration in urban areas – urban and industrial buildings, as well as increasing areas with impermeable surfaces. The aim of the paper is to draw attention to the importance of groundwater in the urban landscape and to possible measures to support the infiltration of precipitation.

The research took place in the territory of outer Prague, where there is an intensive expansion of the built-up area, which is accompanied by a lower infiltration of precipitation, compared to the open landscape. Based on the evaluation of pedological, geological and hydrogeological conditions of the area, a methodology for evaluating the suitability of the area for infiltration was developed. Based on it, two types of maps were created: an infiltration potential map evaluating primarily the permeability of the soil and rock environment, and an infiltration capacity map, in addition emphasizing the size of the free storage volume for infiltrated water. Maps are available for viewing in the map application on the project website [heis.vuv.cz/projekty/praha-adaptacniopatreni](https://heis.vuv.cz/projekty/praha-adaptacniopatreni).

It is advisable to work with these maps in combination with the current development map or the map of complex land use, in order to choose the optimal measure to support the infiltration in each area. These measures include protection of areas with increased suitability for infiltration before construction, reduction of water drainage by rain sewers, differentiated support of rainwater infiltration (e.g. from roofs) according to the infiltration suitability of different areas, etc.