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The role of urban trees in water cycle restoration

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Urban development leads to an increment of impervious cover that drastically reduces infiltration rates and increases the risk of stormwater floods, also reinforced by the rise of extreme events due to climate change.

In this context, urban trees represent a valid system for sustainable stormwater management. They decrease the runoff discharged in the sewer network and/or in the receiving water bodies.

Trees impact the hydrological cycle through the processes of interception, evapotranspiration and infiltration strictly depending on several factors such as tree features, soils properties, climate, and storm event characteristics.

The objective of the study is to propose an analytical-probabilistic approach to model the contribution of urban trees to the restoration of the water cycle, with particular focus on the evapotranspiration component.