IDENTIFYING KEY URBAN AREAS TO REDUCE STORMWATER RUNOFF AND MAXIMIZE CONSERVATION EFFORTS IN METROPOLITAN ATLANTA

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Residents of metropolitan Atlanta pay the highest rates in the nation for municipal water and sewer, due to massive recent investments in infrastructure to manage stormwater runoff. As development continues at a rapid pace in Atlanta and its suburbs, expanding areas of impervious surface will continue to exacerbate this problem. Forested land is known to slow runoff during storms, allowing water to infiltrate, and the soil to absorb particles and contaminants before entering the surface water. Protecting existing green infrastructure and strategically planting more trees to intercept stormwater runoff will help reduce sediment and nutrient-laden stormwater runoff in local watersheds and, ultimately, limit the need for future city infrastructure. The DEVELOP team at the UGA partnered with The Nature Conservancy to identify conservation targets in the Atlanta region to improve existing green infrastructure and locate additional areas suitable for expansion of reforestation efforts using NASA data from Landsat 8 and Terra satellites. This was accomplished through a combined, watershed-scale assessment of metropolitan Atlanta using the Land-Use Conflict Identification Strategy (LUCIS) and Soil and Water Assessment Tool (SWAT) models. The LUCIS model was employed in this project to identify areas of land use prioritization as it relates to existing and future conservation areas in Atlanta. The SWAT model produced an analysis of streamflow and runoff within the study area. Together, these model results provided project partners with an integrated understanding of water resource issues in metropolitan Atlanta that emphasized land use scenarios.

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