EXECUTIVE SUMMARY - ASSESSING URBAN TREE CANOPY IN THE CITY OF ATLANTA

WHY URBAN TREES AND FORESTS ARE IMPORTANT

The urban forest -- defined as the system of trees and other plants that grow individually, in small groups, or under forest conditions on public and private lands in cities, suburbs, and towns -- is part of the larger ecological system, and it provides many of the same benefits as natural forest systems. Current estimates indicate that 80% of the US population lives in urban areas. As more rural land becomes urbanized, the role of urban forests and urban tree canopy becomes increasingly important.

Urban trees provide a number of established aesthetic and environmental benefits.

- Trees shade and cool paved surfaces and buildings, helping mitigate the "Urban Heat Island" effect while reducing energy demands.
- Trees clean particulates from the air and soil, which helps decrease air and water pollution.
- Trees provide a stormwater management service by intercepting rainfall that would otherwise flow directly into water bodies and the drainage system, causing streambank erosion, and potentially overwhelming the stormwater system, especially in areas with combined storm and sanitary sewers.
- Trees provide habitat for native pollinators, migrating birds, and other important wildlife.
- Trees make neighborhoods and urban areas more livable by providing aesthetic, social, and psychological benefits for residents.
- For many residents and visitors, Atlanta's mature and vibrant urban tree canopy is its signature environmental feature.

PROJECT AT A GLANCE

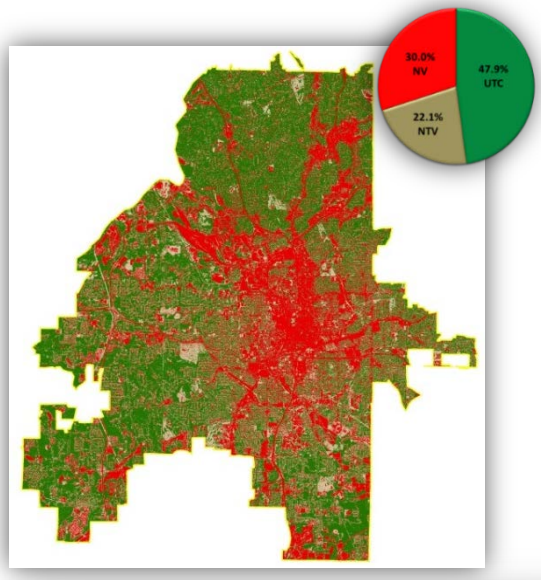
The City of Atlanta contracted researchers at the Center for Geographic Information Systems (CGIS) and the Center for Quality Growth and Regional Development (CQGRD) at Georgia Tech to quantify the existing Urban Tree Canopy in the City. Urban Tree Canopy (UTC) is defined as the layer of leaves, branches and stems of trees that cover the ground when viewed from above. The aim of the Atlanta UTC study is to help City decision-makers and stakeholders better understand and manage their forest resources.

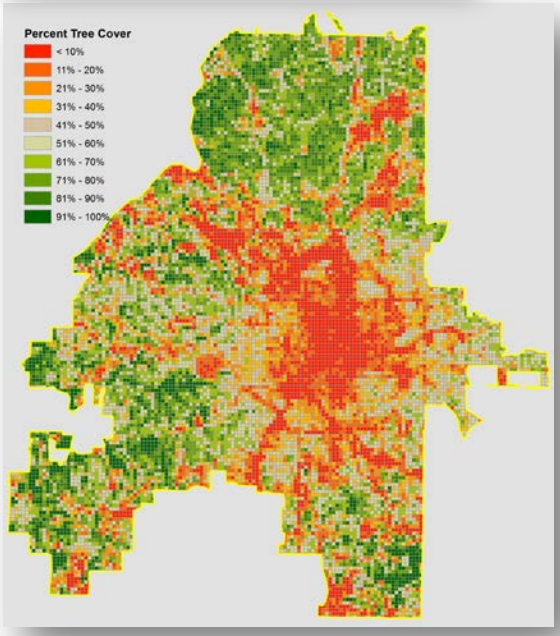
Specific goals for this assessment were to (1) map urban tree canopy and other land cover across the City; (2) quantify tree cover for various geographies within the city (neighborhoods, NPUs, council districts, parks, zoning and land use, watersheds, stream buffers); (3) establish a baseline for measuring canopy change over time; (4) identify planting sites; and (5) summarize and make recommendations based on findings.

The research team identified and measured the existing tree canopy in the City of Atlanta through the analysis of high resolution, multi-spectral, "leaf-on" Quickbird satellite imagery obtained by the city in October 2008 from Digital Globe Inc. The analysis was accomplished utilizing both established and newly developed land cover classification techniques. The project team also developed coverage area data for two other general land classes: non-tree vegetation, and non-vegetation. Accuracy assessments were conducted to validate findings.

SUMMARY OF FINDINGS

The research team estimates that in October 2008, 47.9% (40,524 acres) of the land within the city limits was covered by urban tree canopy (UTC), 22.1% (18,722 acres) was covered by non-tree vegetation (NTV) such as grass, shrubs, and other plants; and 30.0% (25,386 acres) was covered by non-vegetation (NV) such as paved surfaces and buildings.





Urban Tree Canopy in Atlanta

Urban tree canopy coverage varies significantly across Atlanta and is strongly related to zoning and land use, with the highest concentration of existing urban tree canopy located on residential property and the lowest in the downtown area and along transportation corridors. Significant concentrations of tree cover are also found along some of Atlanta's stream corridors. The accompanying graphics show the extent and distribution of canopy across the City of Atlanta.

Canopy Distribution Across the City

- The majority of tree canopy within Atlanta's city limits (77%- 31,194 acres) is on single-family residential land. Single-family land makes up 60.8% of the city's total land area.
- Multi-family residential land contains the second highest amount of the city's total canopy (8%), followed by industrial (6%); these categories make up 9.4 % and 11.8% of the city's total land area, respectively.
- Parks contain approximately 4.9% (2,070 acres) of the city's total tree canopy; park land makes up 4.5% of the city's total area.

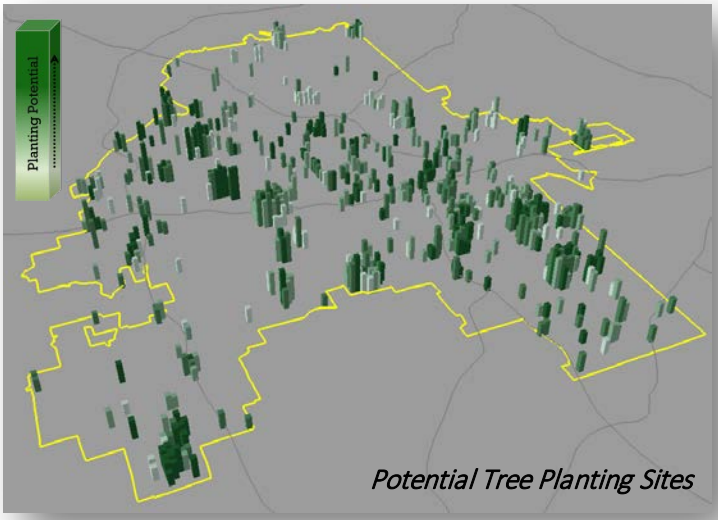
Canopy Concentration within Selected Geographies

- 61% of all single-family residential land is tree covered.
- 40% of all multi-family residential land is tree covered.
- 20% of all land zoned commercial is tree covered.
- Densely developed areas, such as downtown, surrounding neighborhoods, and former Atlanta Housing Authority developments have less than 5% tree cover.

- Several neighborhoods in the north and southwest have more than 70% canopy coverage, particularly those along Nancy Creek and Utoy Creek.
- Among parks over 50 acres in size, canopy coverage ranges from a low of 18% at Lakewood to a high of 94% at Cascade Springs Nature Preserve.
- Canopy coverage for sub-watersheds ranges from a low of 18% in Proctor Creek to a high of 72% in Long Island Creek -- canopy in 100 foot stream buffers ranges from a high of 80% along North Utoy Creek to a low of 35% along Intrenchment Creek, with a City-wide average of 65% canopy coverage within 100-ft. stream buffers.

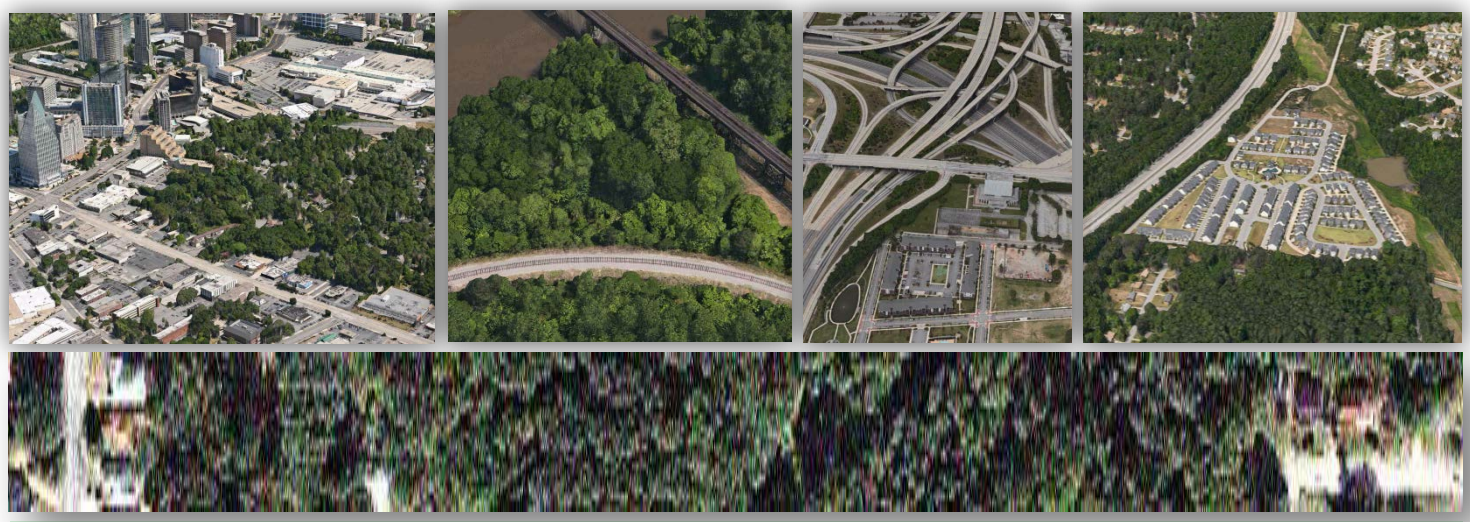
RECOMMENDATIONS

The results of the Georgia Tech Urban Tree Canopy Assessment will benefit the City of Atlanta in multiple ways. The City can immediately use the findings to:



- Refine policies and set canopy goals to ensure that each area of the City receives the benefits of a healthy canopy and that the overall tree canopy is maintained and increased over time.
- Establish baseline tree cover information from which the City can measure and track progress.
- Establish an Urban Forestry Master Plan for achieving canopy goals.
- Educate the public about tree canopy in Atlanta through an online, interactive map accessible from the City's website.
- Streamline the identification of potential planting locations based on derived ratios of UTC to Non-Tree Vegetation.
- Inform sustainability efforts and policy decisions related to climate, water and air quality, tree preservation and watershed protection.
- Establish a methodology to ensure comparability against results from future UTC studies.

The data generated by this research project will serve as a guide to Atlanta's policy makers, a resource for its citizens, and a tool for planners and others concerned about Atlanta's urban forest.



How Does Atlanta Compare To Other Cities?

At 47.9 %, Atlanta has the highest percentage of overall urban tree canopy in the nation when compared to other cities that have conducted UTC Assessments. While many variables affect the presence of tree canopy - ranging from geography and climate to development patterns, tree protection and planting policies - at the turn of the 21st century, Atlanta remains a "City in the Forest."