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Kathryn A. Evans

City of Atlanta, kaevans@atlantaga.gov

Anthony J. Giarrusso

Georgia Institute of Technology, tonyg@gatech.edu

David Zaparanick

City of Atlanta, dzaparanick@atlantaga.gov

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Perpetual Protection for Atlanta's High-Quality Forested Land in the City

Unlike most major U.S. cities, developed and industrialized decades earlier, Atlanta retains a large portion of its native and originally forested land with a high diversity of species, rare plants, and even old-growth trees. A 2008 baseline canopy analysis found that while the city's tree canopy cover was among the highest in the country (47.9%), its canopy and high-quality forests were vulnerable to loss and fragmentation since only 4.9% of the canopy was on public land. In 2016, the city authorized the use of its Tree Trust Fund to purchase high-quality forested land for perpetual protection and established criteria for evaluating, prioritizing, and selecting these natural areas for purchase. The first acquisition occurred in 2020, resulting in the protection of Lake Charlotte Nature Preserve, a 216-acre oak-hickory forest, one of the largest remaining mature forests in the city, which was under major threat of industrial development. This case study discusses this innovative funding mechanism and the selection criteria for identifying high-quality urban forests.

Keywords

urban forest protection, forested land selection criteria, forested natural areas

CONTEXT

Numerous lush forests throughout the Atlanta area feature mature and old-growth trees, such as the original Piedmont Forest. Many of Atlanta's backyards and neighborhoods feature mature forests in addition to parks and nature preserves. The national Old Growth Forest Network recognizes several parks and private lands, which estimates that these original forest remnants make up less than 1% of the original eastern forests.

A 2008 baseline canopy analysis found that Atlanta's tree canopy cover was among the highest in the country (47.9%). The majority of this canopy is made up of forested natural areas. Still, the tree canopy and high-quality forests are vulnerable to loss and fragmentation since well over 90% of the city's acreage is privately owned. The city is experiencing a record rate of development. Subsequent analyses show that the canopy loss exceeds canopy growth.

Atlanta's tree protection ordinance aims to have no net loss of trees. In 2003, it established a Tree Trust Fund to receive payment from residents and developers to compensate for loss when healthy trees are removed, but there is insufficient space for on-site replanting. The purpose of the Trust is the "protection, maintenance, and regeneration of trees and other forest resources in Atlanta." It has primarily been used for planting new trees, but mature trees and forests provide benefits new plantings cannot offer, and the complex ecosystems of mature forests cannot be replicated. Recognizing that procuring already forested land is an effective method of protecting the city's urban forest, in November 2016, the Atlanta City Council unanimously approved the use of the Tree Trust Fund for the purchase of forested land, meeting certain criteria.

GOALS

The goal of the ordinance authorizing Tree Trust Funds for purchasing forest land is to ensure that Atlanta's high-quality forests are preserved in perpetuity.

APPROACH

The legislation authorizing Tree Trust Funds for purchasing forested land requires that each parcel meet minimum canopy requirements: 80% or greater canopy coverage; 1,000 inches diameter-at-breast-height (dbh) per acre; or 50 mature trees per acre. The ordinance also required the creation of screening criteria for evaluating parcels suitable for acquisition.

To prioritize parcels with the highest environmental value, the following criteria were established:

- Minimum of 5 acres
- Qualitative factors such as the ecological impact of preservation, connectivity, and community benefits (See Qualitative Factors table)
- Forest value based upon successional stage and characteristics such as history of land disturbance, plant communities, soils, and infrastructure and ecosystem services (See Urban Forest Value Grid)
- Practical and logistical factors such as cost per acre, market availability, development pressure, and community support (See Practical and Logistical Factors table)

Before the Tree Trust Fund purchases land, it must be approved by the council, authorizing legislation must: 1) explicitly dedicate and preserve the property in perpetuity as forested land; 2) restrict use to passive recreation with minimal environmental impacts; 3) remain available for public use without cost; and 4) include a maintenance plan which estimates annual maintenance costs and identifies the source of funding for annual maintenance.

RESOURCES

The contributions of community partners were extensive. The Mayor's Office of Sustainability proposed the amendment to the Tree Protection Ordinance to utilize Tree Trust Funds for procurement and protection of forested land – with support from the Department of City Planning, the Department of Parks and Recreation, and the Atlanta Canopy Alliance (an urban conservation coalition made up of The Conservation Fund, Georgia Conservancy, The Nature Conservancy, Park Pride, Atlanta Audubon Society, West Atlanta Watershed Alliance, The Trust for Public Land, and Trees Atlanta).

The determination of canopy coverage to identify and rank qualifying parcels was possible because of the baseline tree canopy analysis conducted for the city by the Center for Spatial Planning Analytics and Visualization at the Georgia Tech Institute of Technology. The Urban Forest Value Grid for assessing the quality of forest land was developed by the local non-profit EcoAddendum.

The City's first Tree Trust Fund procurement of forested land was made possible by The Conservation Fund, which facilitated the land purchase with the support of the Robert W. Woodruff Foundation and The Arthur M. Blank Family Foundation revolving fund dedicated to acquiring greenspaces across Atlanta.

KEY RESULTS

After assessing all undeveloped land throughout the city with 80% or more canopy coverage, the top-ranked choice was a 216-acre forest in south Atlanta known as Lake Charlotte. The oak-hickory forest was one of the largest remaining forests in the city and was under threat of industrial development. In August 2020, the city made its first land purchase utilizing Tree Trust Funds, and Lake Charlotte gained permanent protection.

The property has ninety-eight percent canopy cover and contains approximately 60,000 predominantly native tree species, including one of the city's only known strands of shagbark hickory. The green space includes a portion of an archaeologically significant ridge known for its Native American soapstone quarries and workshops, dating back to 3000 B.C. The Lake Charlotte Nature Preserve will be open to the community in an area with historically heavy industrial usage where residents have had little access to green space.



Photo 1: Sourwood tree in Lake Charlotte



Photo 2: Shagbark hickory tree at Lake Charlotte. Photo credit: Kathryn Kolb



Photo 3: The green forest at Lake Charlotte. Photo credit: Stacy Funderburke