

A Report on the Status of Forested Land of Emory University

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Summary

The objective of this report is to provide information about the location and status of natural forests on Emory University property. As Emory enters a period of rapid development, this information will be essential to administrators, who increasingly will be called upon to make wise decisions in their roles as stewards of Emory's natural resources. The forests of Emory University include unique, near-pristine hardwood forests with rare and diverse species, mature hardwood forests affected by some degree of human alteration and relatively common second growth pine stands. We believe that the nearoriginal, hardwood forests should be preserved undisturbed, because they represent a unique and valuable natural resource of scientific, educational and aesthetic value. Other mature hardwood forest lands should be given careful environmental assessment before they are considered for alteration or development.

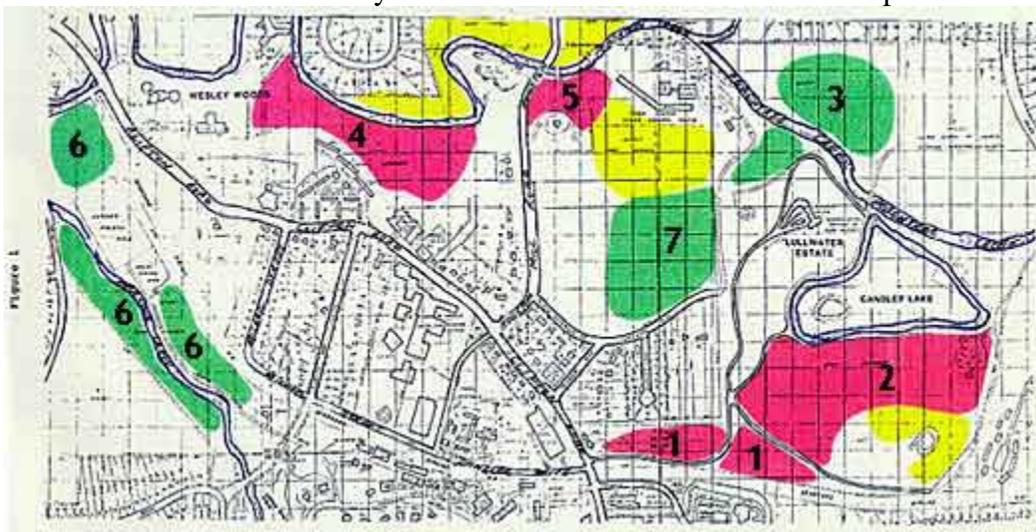


Figure 1

Introduction

Some of the best-preserved, hardwood forests in the entire Piedmont Province² of the southeastern U.S. occur on property belonging to Emory University. The very finest of Emory forests occur within the Lullwater Estate and on north-facing slopes and ravines bordered by the South Fork of Peachtree Creek. These and additional forests are described below and their locations shown in Figure 1.

Mature uncut forests are rare in Georgia south of the Appalachian mountains. Most original forests of the Piedmont region were removed and the land used for growth of cotton, corn and

other crops. After the collapse of southern agriculture in the early part of this century because of soil depletion and the boll weevil, much of the land reverted to "second growth" forests whose species composition and ecological character are very different from the original Piedmont forests.

For a number of reasons, including perhaps its rolling topography, most of the land in and around Atlanta was never given over to cropland. Residential areas of metro-Atlanta are among the most attractive in the country because of an abundance of trees that were part of an extensive primal forest. Until recently, scattered remnants of the original Piedmont forest were common in metro-Atlanta. Most of these have been destroyed in the wake of explosive urban development that has characterized the past two decades.

Mature forests like those at Emory are self-perpetuating, complex associations of living species, the products of millions of years of evolution and are virtually impossible to replace or recreate if lost. The Emory forests represent a natural resource even more valuable than the much-acclaimed Fernbank Forest in terms of the diversity of species, the presence of rare and endangered species and the absence of human disturbance. In nearby Fernbank forest, the canopy is similar in species composition to what it was centuries ago, but the herb layer on the forest floor has been greatly disturbed. Several forests on Emory property, especially the one bordered by Wesley Woods and Peachtree Creek are near-original throughout. Such intact communities are exceedingly rare!

The future well-being of the human species will hinge on the depth of our understanding of the natural resources which provide our most basic needs, and on the depth of our commitment to responsible stewardship of these resources. Providing students with a sound ecological perspective on the world should be an essential part of any liberal arts curriculum. Emory, with its multidisciplinary program in Human and Natural Ecology and its well-funded research programs in forest ecology is in an excellent position to provide students with a solid grounding in the principles of ecology and population biology. Emory is unique among major universities and colleges by being endowed with a wealth of natural resources adjacent to the campus where students can acquire first-hand experience in the scientific study of the structure and function of ecosystems. This experience in understanding natural systems is essential to the liberal education of those citizens who will make critical societal decisions in the future.

Description of Forests

Forested land owned by Emory is shown in color in Figure 1. The color red denotes the unique forests which are best-preserved and contain rare and endangered species. The green areas are mature hardwood forests that have sustained some degree of human disturbance. The areas in yellow are second growth pine forests which have grown over abandoned pasture or cropland, and which are common in the southeastern U.S.

Lullwater Estate

The forests of Lullwater are an integral part of a complex and beautiful natural area, which includes Candler Lake. The forests surrounding the lake enhance the beauty of the whole area, but in addition, they serve as a watershed to channel clean water into the lake, prevent erosion and serve as a natural habitat for a variety of wildlife. These natural forested areas provide

Emory students, faculty, staff and friends with a quiet and beautiful place for fellowship, recreation, and a respite from the hectic pace of modern day life. In addition, the area provides birdwatchers and naturalists with enjoyment and discovery, particularly during the spring migrations of numerous bird species.

Last year Emory students used nearby forests of the Lullwater Estate in five different courses involving hundreds of students. In General Biology, 242 students had an outdoor laboratory in which they collected data to determine how species change along an environmental gradient and in the introductory course for nonmajors, (Concepts of Biology) 103 students participated in an ecology lab designed to introduce them to forest systems as an example of the diversity and unity of the natural world. Our Ecology course with 44 students used the Lullwater property in six laboratories in which they studied stream, lake and forest habitats and learned how to sample natural communities and interpret the data. Nine students in Plant Population Biology used the forests extensively throughout the spring semester to sample and analyze the structure of natural populations and to learn the identity and characteristics of its many component species. The 23 students in Vertebrate Population Biology had one formal laboratory at Lullwater, but 10 students in this course used the property throughout the spring semester for their required research projects.

The 12-15 acres of forest adjacent to the main road into Lullwater (Figure 1, no. 1) is a mature beech-oak forest traversed by two creeks that feed into Lullwater Lake. Dominant species of the towering canopy include: Beech, Tulip Poplar and Northern Red Oak. The understory includes an abundance of Dogwood, Chalk Sugar Maple and Umbrella Magnolia, and the forest floor supports a variety of shrubs and native wildflowers. Here occurs a rare and unusual vine called the Starvine. This species' closest relative is found in Southeast Asia.

In 1975, the Smithsonian Institution proposed that Starvine (*Schizandra glabra*) be included as a threatened species on the proposed federal list of endangered and threatened species. An abundance of animal life is supported in these areas because the creeks seldom run dry.

The 30-40 acres of forest on the hill immediately south of Candler Lake (Figure 1, no. 2) is an extension of the forest just described. Mature stands of Beech, Northern Red Oak, White Oak, Basswood and Umbrella Magnolia occur in the several ravines, and grade into a variety of oaks, hickories, maples and other species at the higher and drier sites. Unusual sites in this area include a major ravine, which has the Emory Woman's Club nature trail, at one end and a spring-fed pond at the other end. Between the trail and pond occur examples of unusual species including Hazelnut, Mountain Laurel, an exceedingly rare white-flowered form of the native Sweet Shrub and one of the finest populations of Yellow Lady's Slipper to be found south of the north Georgia mountains. The latter species is on Georgia's rare and endangered plant list.

Another hardwood forest of 15-20 acres occurs on a west-facing slope bordering Peachtree Creek to the east (Figure 1, no.3). It is our understanding that approximately five acres at the crest of the hill has been sold to the Southern Association of Colleges and Schools and will be the site of their new headquarters building. This forest has a well-developed canopy of Beech and Tulip Poplar near the creek, and grades into oaks, hickories and Tulip Poplar upslope. The forest stabilizes the slope and provides an important buffer between the Lullwater Estate and the commercial and residential areas associated with Clairmont Road. This forest was used by the students in General Biology as a field laboratory site.

Wesley Woods/ Peachtree Creek

This 15-20 acres of north-facing slope which borders the South Fork of Peachtree Creek (Figure 1, no. 4) was a rare forest type even when the Indians roamed the territory. Today it is one of the finest mature hardwood forests to be found anywhere in the Piedmont of Georgia. The uniqueness of this forest is due to the rich diversity of plant species which occupy the moist protected slopes along the creek. Many of these species are uncommon to the region, in part because of human disturbance which has eliminated similar habitats and in part because few of these areas ever existed in the region. This special Piedmont forest is equivalent to the magnificent, cove hardwood forest of the Appalachians.

The canopy is dominated by Beech, Northern Red Oak, White Oak, Tulip Poplar and Pignut Hickory accompanied by an abundance of Hop Hornbeam, Silver Bell and two species of magnolia, the Umbrella Magnolia and Big-leaf Magnolia. The latter species is a handsome, but rare, tree with showy fragrant flowers and huge leaves up to 30 inches in length. The area is bisected by a relatively clean creek rich with animal life and has a tremendous diversity of unusual shrubs, vines and herbs. The presence of dominant forest trees in various stages of maturity is evidence that this forest is a self-regenerating system.

Here in this relatively undisturbed forest the rare and endangered Starvine is more abundant than at any other known site in the southeastern U.S.³ Other rare plants that are members of this forest community include the Chinkapin Oak, American Bladdernut, and Turk's Cap Lily. The forest floor in Spring is ablaze with a great variety of flowering herbs including several species of Trillium, Phlox, Windflower, Bloodroot, Liverleaf, Wild Ginger, May Apple, Foam Flower, Doll's 'Eyes, a variety of violets and many other native species.

Houston Mill House Forest

A natural and cultural gem is the only way to describe the 10-12 acres of hardwood forest on the slope between the Houston Mill House and Peachtree Creek (Figure 1, no. 5). The site combines interesting natural and cultural features in a way which is unique to metro-Atlanta.

The natural setting is a ravine with a clear-running creek, and surrounded by large trees of Tulip Poplar, Beech, White Oak, Northern Red Oak, and Elm. The girth of some trees reach the impressive size of three to five feet! The understory includes the rare Big-leaf Magnolia, Hop Hornbeam, wild Azaleas, and a diversity of shrubs. The forest floor is carpeted with a rich variety of wild species.

The stream is fed from a natural spring, which was the source of water for the main house of the former Harris Estate (the present Houston Mill House). Concrete steps descend into the ravine from behind the house. In the ravine itself, stairs wrap around two huge concrete cisterns, which formerly held water for the house, and ascend to a well-preserved, beautifully-constructed, stone spring house, where spring water still bubbles forth. The concrete stairs and path return to the Houston Mill House by a circuitous route.

Currently, fallen trees and debris cover much of the concrete stairs and pathway through the forest. This area, which recalls a way of life known to most of us only in books, could be restored to its former natural and cultural state with proper interest and planning. We would be happy to assist in efforts to reclaim this site in the future so that it can be enjoyed by members of the Emory Community.

Other Forested Areas

In addition to these three unique forested areas, Emory University has a cluster of forest parcels which are remnants of a more extensive forest which was connected to Wesley Woods and Lullwater, but these areas have been disturbed in a variety of ways throughout their history. The canopy dominants are generally oaks, hickories, and pine with a few unusual species like the magnolias and Silver Bell. The herbaceous plants include among others, Trillium, May Apple, and Blood Root. These areas are shown in green in Figure 1 and include forests-in and around the lower athletic field and Peavine Creek (Figure 1, no. 6) and a large area between Yerkes and Gatewood Drive (Figure 1, no.7).

Recommendations

We believe that the near-pristine hardwood forest lands depicted in red, (Figure 1) are of irreplaceable scientific, educational and aesthetic value, and should be preserved undisturbed for use by future generations of Emory students, staff and faculty. The mature hardwood forests (green, Figure 1) should not be seriously altered without an environmental assessment and the development of an ecologically sound land-use plan. Those forests shown in yellow (Figure 1) occupy land which was drastically altered in the past and while valuable, they do not represent a rare, unusual or irreplaceable forest system.

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²The Piedmont Province is the region of gently rolling topography north of the Fall Line and south of the mountains of north Georgia.

³Ettman, David. 1980. A study of *Schizandra glabra* (Brickell) Rheder, a rare species endemic to the southeastern U.S. MS Thesis, Emory University.