



# TREE CARE PLAN 2020-2025

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**Agnes Scott College**

**Center for Sustainability**

141 E. College Ave.  
Decatur, GA 30030

404-471-6080  
[sustainability@agnesscott.edu](mailto:sustainability@agnesscott.edu)

# Campus Tree Care Plan

- I. INTRODUCTION
- II. PURPOSE
- III. HISTORICAL CONTEXT OF ARBORETUM
- IV. EDUCATION
- V. SERVICE
- VI. ECOSYSTEM SERVICES BENEFITS
- VII. SUMMARY OF INVENTORY & INVENTORY PROCESS
- VIII. RESPONSIBLE AUTHORITY/DEPARTMENT
- IX. CONTINUATION OF ARBORETUM ADVISORY COMMITTEE
- X. RELATIONSHIP OF THE COLLEGE TO THE CITY OF DECATUR
- XI. INCORPORATION OF TREE CARE PLAN INTO OVERALL CAMPUS MASTER PLAN & OTHER PLANS
- XII. GOALS AND OBJECTIVES FOR ARBORETUM
- XIII. CAMPUS TREE CARE POLICIES
- XIV. SPECIAL TREES: HERITAGE, DEDICATED, AND MEMORIAL
- XV. INVASIVE SPECIES
- XVI. CONTRACTING AND CONSTRUCTION
- XVII. CAMPUS SAFETY
- XVIII. PROTECTION AND PRESERVATION POLICIES AND PROCEDURES
- XIX. TREE DAMAGE ASSESSMENT
- XX. PROHIBITED PRACTICES
- XXI. DEFINITIONS OF TERMS RELATED TO CAMPUS TREES
- XXII. APPENDIX

## Introduction

From 1889, when Agnes Scott College was founded, to the present day, trees have been a main feature of the campus. Early photographs show students sitting, walking, and posing under large oaks and pines. Also noticeable in these photos are newly planted trees. All in all, Agnes Scott has been planting and caring for trees for more than 125 years.

Stories abound of the College's dedication to its trees. When construction plans for a new building called for removal of a beloved dogwood, the president demanded that architects redo them. A music professor dug up Southern magnolia seedlings with his pocket knife to transplant them to campus. A biology professor planted a now magnificent pair of ginkgoes outside his laboratory. A dawn redwood was donated by an alumna. Many employees welcome the opportunity to have an honorary tree planted rather than receive a silver bowl on their work anniversary of 25 or more years.

It is students, however, who have been the most significant supporters of Agnes Scott's trees. When they visit as prospects, they fall in love with the classic look of the College: red bricks set off by green lawns and stately trees. Then, as students and future alumnae, they take pride in their College's nationwide reputation for beauty.

But students have done more than admire the trees. In 2010, an intern in what is now the Center for Sustainability was assigned the task of updating an existing campus tree walk. Kimberly Reeves '12 did far more than that. She became the student leader for a project that led to creation of the award-winning Agnes Scott Arboretum, which in turn has provided the College with the impetus to strive for a still higher level of quality in the management of its trees. In addition to Reeves, other students including notably Claudia Mitchell '16, Johali Sotelo '18 and Karina T. Leung '18 have been vitally important figures in this new chapter of the Agnes Scott campus story.

The Agnes Scott Arboretum is certified by ArbNet and has won grants and awards from the National Wildlife Federation, the US Forest Service, and the Georgia Urban Forest Council. It has garnered attention for its foundational principles and for its innovative design, both of which have influenced this tree care plan.

The key idea of the Agnes Scott Arboretum is simple: the trees on this 100-acre campus, like the faculty and curriculum, should advance the mission of the College, namely, to educate women to think deeply, live honorably and engage the intellectual and social challenges of their times.

In keeping with that principle, Reeves and her team of faculty and staff asked themselves what an arboretum or public garden would look like, if it undertook to educate people in a broad range of liberal studies, including the humanities, fine arts, natural and social sciences. The answer came easily. They envisioned an arboretum that would give primacy not to the botanical identification of individual tree species, but to situating Agnes Scott's trees within a broader context of liberal arts disciplines, such as literature, psychology, biology, art and history. Put another way, the spirit infusing the enterprise would be not the furnishing of answers, "This is a pecan tree," but the eliciting of meaningful questions, "What does a pecan tree have to do with me?"

So conceived, the Agnes Scott Arboretum is a place where the professional and the amateur are equally at home, where expertise is not more valuable than a novice's curiosity, and where anyone

and everyone – student, professor, administrator, visitor – can gather and ponder, as equals, what we know and what we have yet to discover *about* and *from* trees.

Questions, context, collaboration: these are the watchwords of the Agnes Scott Arboretum, and they have served both it and the College very well. Agnes Scott College now benefits from highly productive working relationships with the Georgia Urban Forest Council and the United States Forestry Service. The College was the initial site, moreover, for a pilot application of the Urban Forest Sustainability and Management Audit, which was devised through the joint effort of the Arboretum Committee and Urban Forestry South, a section of the Forest Service Southern Research Station.

This tree care plan is a direct result of that audit process, which was itself an outgrowth of the arboretum, which would have been inconceivable if students, professors and administrators at Agnes Scott College had not committed themselves, over many decades, to protecting and replanting trees on campus. It may be noted that as a consequence of their determination, some trees in the Agnes Scott Arboretum are almost as old as the College itself. But even when all of them have died and been replaced by new trees, the legacy of those earlier tree enthusiasts will live on, as indeed it does in this tree care plan.

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*“When we plant trees, we plant the seeds of peace  
and the seeds of hope.”  
- Wangari Maathai*

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## II. Purpose

The purpose of the Arboretum was approved by the Arboretum Advisory Committee and is as follows: “Agnes Scott College aspires and endeavors to be an excellent steward of the roughly 2000 trees on its beautiful and historic 100-acre campus, in the conviction that trees have both intrinsic worth and irreplaceable value for the humans who live, study, work, and play amid them. As a college, tree-related policies, decisions, and actions can and should always further the educational mission. In keeping with these values, the college commits itself to high standards and best practices in both conservation of and education concerning its campus forest.”

In addition, the Agnes Scott College Arboretum is just one of the ways the College intends to fulfill its goal of being climate neutral by 2037. Maintaining a diverse tree canopy on campus not only accomplishes the practical purpose of improving air quality and lowering energy costs in buildings, but provides invaluable social and psychological co-benefits to create a holistic atmosphere on Agnes Scott campus. This Tree Care Plan will provide Agnes Scott College with the guidelines for best management practices and policies to ensure the Arboretum’s unique benefits to the College are protected and continued.

**HOW TO - PURPOSE:** For those starting out trying to manage an arboretum, the most important thing is to understand why your organization wants to manage one and what the significance is of the arboretum. The need for a management plan could have arisen from a need to sustainably and intelligently incorporate trees and greenery into city and community design, a need to preserve specific groups of trees, or from a poorly managed construction project resulting in tree damage. Whatever the reason, the purpose must be clearly stated and incorporate values of the community and acknowledge the worth of the community forest.

### III. Historical Context of Arboretum

#### HOW IT STARTED

The creation of the Arboretum came from both a passion for trees, and the multi-disciplinary thinking inspired by Agnes Scott's liberal arts. The project started in the spring semester of 2011 and the Arboretum was officially announced in May 2012.

#### RECOGNITION

After the announcement of the Agnes Scott Arboretum, the College applied for the following accolades:

- *Tree Campus USA*
  - Since 2012 Agnes Scott has been recognized as a Tree Campus USA. This recognition is reapplied for every year.
  - The national Tree Campus USA program was created in 2008 by the Arbor Day Foundation to honor colleges and universities for their campus forest management practices, and for engaging staff and students in reaching conservation goals.
- *Morton Arboretum*
  - Since 2013 Agnes Scott has been accredited as a Level 1 Arboretum. Every five (5) years, the College must reapply for accreditation. As of 2018, the College hopes to obtain and maintain Level 2 Arboretum accreditation.
  - The Morton Register of Arboreta is a world-wide database of all arboreta and woody botanical gardens. This Registry is coordinated by ArbNet which serves as an interactive community for arboreta and is responsible for accrediting arboreta and woody botanical gardens as a Level 1, 2, 3, or 4 arboretum.

## URBAN FORESTRY AND SUSTAINABILITY REVIEW MANAGEMENT AUDIT 2014

The Agnes Scott Arboretum Advisory Committee's recognition of the College's Arboretum as an important asset to its core mission, sustainability goals, and aesthetic appeal led to a partnership with the U.S. Forest Service to audit every aspect of the campus urban forest's management ranging from policies to budget to program execution. Findings of the audit showed that even though the Arboretum was under systematic care of the recommendations of a qualified certified arborist, it demonstrated the College's need for encompassing policy codifying its intended approach to maintenance of its Arboretum. This tree care plan is a product of that need to establish a set of policies to preserve and enhance Agnes Scott College's Arboretum.

**NATIVE AMERICAN HISTORY:** Agnes Scott College, located in the City of Decatur within Dekalb County, sits on a subcontinental divide that separates two watersheds: the Chattahoochee (goes to the Gulf of Mexico) and the Ocmulgee (goes to the Atlantic). Rebekah Scott Hall and Agnes Scott (Main) Hall are campus buildings which lie on top of this divide. Prior to the founding of Agnes Scott College in 1889, the land of Dekalb County was home to indigenous peoples, which shifted and changed across the centuries. The warming climate and ending of the last glacial period led to a landscape of interconnected creeks and wetlands which provided a wide-array of game animals and edible plants in the diverse ecological environment. Abundant natural resources allowed Native Americans to use agriculture to live a sedentary lifestyle. Important trade routes enabled travel long distances; one of these routes ran from the Savannah River to the Chattahoochee River in Dekalb County. Most occupants of the region were likely Southern Siouans up until the end of the American Revolution when Muskogean immigrants began occupying major river valleys. The Muskogeans brought with them advanced cultural traditions from Mexico and the Lower Mississippi Valley, eventually forming their own provinces governed by large towns. Many of these towns were located along major rivers, such as the Chattahoochee. The success of native peoples, prior to European exploration and colonialization, was largely due to the plentiful resources provided by the river basins, which are now important features of Agnes Scott College's topography.

Source: <https://www.accessgenealogy.com/native/native-american-history-of-dekalb-county-georgia.htm>

Creating the Agnes Scott Arboretum could not have been done without the support of:

ACADEMIC DEPARTMENTS

Anthropology

Art

Biology

Classics

Environmental and Sustainability Studies

Women's Studies and Philosophy

INSTITUTIONAL DEPARTMENTS

Facilities

Information and Technology Services

Office of Communications

Office of Sustainability

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*“The spirit infusing the enterprise would not be the furnishing of answers, ‘This is a pecan tree,’ but the eliciting of meaningful questions, ‘What does a pecan tree have to do with me?’”*

*- Jim Abbot*

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## IV. Education

An arboretum, by definition, is a botanical garden that focuses on woody plants and are grown for education, research, and display. As a liberal arts institution of higher education, Agnes Scott College values these characteristics and strives to utilize this resource as a way of educating the campus community on the multi-faceted contributions of trees and environmental stewardship.

### GOALS

Agnes Scott College strives to accomplish the following goals related to Arboretum education:

- Increase interdisciplinary thinking and connectivity between information gained in the classroom and experiential learning
- Increase student, staff, faculty, alumnae, and surrounding community awareness and utilization of the natural resources on campus and their benefits
- Continue education programs and appropriate documentation to maintain Tree Campus USA status and Morton Arboretum accreditation
- Annually plan educational programming within the Arboretum Advisory Committee and other related entities

### EDUCATION EVENTS AND PLANNING

The Center for Sustainability plans and puts together events that will educate the community about trees. Most events are done in observance of Arbor Day and/or done during Honor Tree plantings. Planning for education programming will be done by the Arboretum Advisory Committee during at least one meeting a semester. A basic annual timeline for planning educational events will be established by the committee to be used for future educational program planning. Agnes Scott aims to have at least two (2) educational events/programs per semester.

### TREE TOUR

An arboretum requires a platform through which people can experience it remotely. The Agnes Scott Arboretum website includes a virtual tree walk that can be accessed with information regarding different multi-disciplinary aspects on the benefits of trees which stays true to the liberal arts. It also engages its visitors to ask those meaningful questions of, “What does this tree have to do with me?” Trees on the virtual tree tour are marked on campus with a plaque that has the Agnes Scott Arboretum logo and a QR code which allows visitors and community members to use QR readers via smartphone to access the information on the website. Agnes Scott welcomes schools that educate K-12 students to have a field trip visit to the Agnes Scott College Arboretum. Please reach out to the Center for Sustainability for visitation at [sustainability@agnesscott.edu](mailto:sustainability@agnesscott.edu).

### EDUCATION IN THE CLASSROOM

In order to engage people with education on trees, it's important to expose them to it first. Tree curriculum can be included in any course, ranging from economics to biology. For example, incorporating information surrounding trees in biology classes that teach the basics of photosynthesis is a great way to get students at least informed about what trees can do beyond producing oxygen. Applicable skills, such as GIS software can be used as part of the classroom curriculum. Professors that want to incorporate this type of curriculum into their courses can meet with the Center for Sustainability and the Campus Consulting Arborist to discuss what information and activities to include for the following semester.



## COMMUNICATION STRATEGY FOR EVENTS

Events will be communicated through the Irvine, the campus's daily event and announcements electronic information letter. Environmental Residents and work-study students will also communicate through social media, minimal use of flyers and word-of-mouth advertisement to peers. It will also be posted on the Arboretum website for people to see.

**EDUCATIONAL PROGRAM IDEAS AND POSSIBILITIES:** Some possible future events might be, but not limited to:

- *Plant Your Professor:* Students have the opportunity to assist in the picking and planting of an Honor Tree for a faculty/staff member that has served 25 or more years at the College. The students can pick these trees out based on attributes that relate to their professor and is also suitable for the College landscape, making it a fun and hands-on activity. Being a part of this process allows the students to understand the College landscape, proper tree planting, and the benefits of trees and about the particular species they've chosen.
- *Plants and Pokemon:* Merging education and popular culture is an eye-catching and fun way to engage students and off-campus guests from around the community. It's also a way to attract young minds onto campus to learn more about how plants help us in real life and the many uses they have.
- *Trees in a Global Setting:* To keep in line with the College's mission to create leaders in a global society, Arbor Day events can include "themes" that trees do in different parts of the world. Service can be tied into this if there are organizations that can fundraise for different global efforts around the world pertaining to trees. For example, certain trees can help shield communities from severe weather (hurricanes, high winds, etc.) and fundraising can coincide with hurricane relief.
- *Earth Week:* This week-long event has different daily themes (e.g. water, food, land, waste, etc.), one of which can be trees. Earth Week is an opportunity to include global environmental education and can include the "Trees in a Global Setting" topic of education.
- *Peak Week/Team Global Challenge:* This a week-long signature SUMMIT event focused on leadership development and post-Agnes success exclusively for upper-class students. Team Global Challenge is a specific program during Peak Week where students work in interdisciplinary mixed-class teams to formulate innovative, hypothetical, local solutions to a complex, real-world, global problem. Previous Team Global Challenges surrounded the topic of food waste, but there are global topics around trees that can be used such as the work of Wangari Maathai in Kenya.

## V. Service

Agnes Scott College values and takes pride in having large student participation for local and global service projects provided by the students and staff. Service involves education and allows members of the College community to engage on and off the campus.

### GOALS

Agnes Scott College strives to accomplish the following goals related to service towards the Arboretum:

- Increase student, staff, faculty, alumnae, and surrounding community participation regarding the care and maintenance of the Agnes Scott Arboretum and College landscape
- Support on and off campus efforts to increase environmental stewardship and awareness
- Continue service programs and appropriate documentation to maintain Tree Campus USA status and Morton Arboretum accreditation
- Maintain the college's landscape by removing invasive vegetation through an annual campus-wide event

### SERVICE PROJECTS AND PLANNING

Service initiatives can range from tree planting to invasive species removal, but is not limited to these activities. A work-study student or the Sustainability Fellow in the Center for Sustainability will take the lead on planning and coordinating these service events that involve students, which can be on or off campus. A basic planning schedule will be made in order to stay on track with service project planning. Agnes Scott aims to have at least two (2) service projects per semester, and at least one in observance of Arbor Day.

Service projects can be, but are not limited to:

- *On Campus Service Projects*
  - *Agnes Beautification Day*: A day of service that would involve students and members of the Agnes Scott Community to help remove invasive vegetation from areas of the campus (this can also be extended to people outside Agnes Scott College). Depending on the number of people involved, it could focus on one specific area, or could be multiple areas. If there are areas on campus that would be suitable to become an Audubon Wildlife Sanctuary, Agnes Beautification Day would be a great opportunity to cultivate those areas to become certified.
  - *Community Day*: This is a day where Agnes Scott faculty and staff participate together in a community service activity. This is also another opportunity to remove invasive vegetation or assist in the tree inventory for the College with the help of the Campus Consulting Arborist.
  - *Arbor Day*: Agnes Scott students, faculty, and staff can participate in this Arbor Day service project which can be on or off campus. Tree planting can include new trees that replace those that have been removed or are being planted for a new space on campus.
- *Off Campus Service Projects*
  - *Planting with Trees Atlanta*: Trees Atlanta is a nationally recognized non-profit citizens' group that protects and improves Atlanta's urban forest by planting, conserving, and educating. Agnes Scott College has done tree planting with Trees Atlanta before and MLK Day of Service, as well as Arbor Day, are opportunities to participate with the non-profit.

- *Lake Claire Community Land Trust:* The Land Trust was founded by a group of neighbors in 1983 to preserve over an acre of greenspace from development. Volunteering at the Land Trust on their Community Work Days is a way to help the local Decatur community in where Agnes Scott resides.
- *Woodlands Garden:* Woodlands Garden is a seven acre mostly wooded public garden in Decatur, GA whose mission is to preserve a woodland garden as an urban sanctuary to educate and engage the community in the natural world. It is another local organization that provides many different types of volunteering activities in the garden (e.g. tool maintenance, plant record-keeping, gardening, etc.), for the organization (e.g. writing/editing, bookkeeping, etc.), or for visitors (e.g. leading tours for organizations and school groups, event planning, environmental education, etc.).
- *Concrete Jungle:* This organization is a volunteer-run, Atlanta-based organization that helps to distribute neglected fruit to the hungry. There are many fruit trees in the Atlanta area that are overlooked by people every day. Concrete Jungle takes volunteers to harvest these foods in order to food banks, shelters, and people in need. The Center for Sustainability can collaborate with the Center for Leadership and Service to gather community members to participate in their fruit-picking events to not only experience where food comes from, but provide it to those who need it.

## COMMUNICATION STRATEGY FOR EVENTS

Events will be communicated through the Irvine, the campus's daily event and announcements electronic information letter. Environmental Residents and work-study students will also communicate through social media, minimal use of flyers, and word-of-mouth advertisement to peers. It will also be posted on the Arboretum website for people to see.

## VI. Ecosystem Services Benefits

Agnes Scott is situated in the City of Decatur, just outside of Atlanta, GA. The growing population means more human development, increases in impervious surfaces, and greater heat island effects. Within the city of Atlanta, the tree canopy coverage has increased from 28% since the late 90s ('95-'96) to 47.9% in 2014 study. Atlanta's population has also been increasing in population with it reaching almost 5.8 million people as of 2018. Due to this, it is crucial the growing canopy be maintained and thoughtfully incorporated into the city landscape through innovative tree care. The College aims to lead by example through the practices dictated in this tree care plan by:

- Planting trees where they're needed and where it makes sense for our built environment,
- Preserve the tree canopy,
- Ensure minimal damage during construction,
- And carry on a harmonious co-existence between the Agnes Scott trees and its community in order to reap its practical and environmental advantages.

## TREES AND CLIMATE CHANGE

Mitigating the Effects of Climate Change - In a time where climate change is one of the biggest threats facing humanity, trees are one of the ways in which we can help mitigate the effects of urban heat islands and human carbon production in city environments.

Environmental issues are very much interconnected and interdisciplinary, requiring the thoughts and action of not one "silver bullet" problem solver, but economists, architects, city planners, environmentalists, scientists, policy makers, and the list goes on. The use of trees in a city setting to mitigate the effects of climate change is just one example of an environmental solution that encompasses all of these aspects. As cities grow and expand, so do the amount of impervious surfaces, whether it's new buildings, parking lots, streets, sidewalks, and the like. The temperature of cities are usually higher than their surrounding suburb/rural areas, but the shade provided by trees can significantly cool these areas. Trees not only provide sources of shade, but they help improve water quality by reducing stormwater runoff by funneling the water from its canopy towards the trunk and finally to its roots. Impervious surfaces, ever abundant in urban environments, lead to higher run-off during times of precipitation which then contributes to non-specific and specific run-off pollution that hurts water quality. Tree canopies and trunk bark are able to divert some of this storm water by intercepting and storing rainfall, while their root growth helps increase the capacity and rate of soil infiltration by rainfall to reduce run-off. In urban environments, trees also help sequester carbon which helps offset the amount of carbon dioxide that's produced by human beings. Currently, there are not enough trees in city environments to neutralize the effects of human carbon production, so mindfully planting trees in urban settings to ensure healthy growth is a benefit for urban environments. The benefits of trees in relation to climate change is just one solution that needs to be done in order to address this global issue.

## EFFECT OF CLIMATE CHANGE ON TREES

When it comes to the health and growth of trees, climate influences the structure and function of trees in forest ecosystems as well as in urban environments. Changes in climate can also worsen conditions for trees by leading to more wildfires, pest outbreaks, intense storms and drought. In addition, the distribution of trees in a geographical setting can be affected by changes in temperature, carbon dioxide levels, and precipitation. All of these factors can lead to certain species of trees to thriving while others may die out if there isn't a suitable climate for them to migrate. Environmental issues, as stated previously, are interconnected, so there are many ways in which a changing climate is affecting the function of forests. Human development is a huge part of this in both urban and forested landscapes. While trees provide an abundance of benefits to help mitigate climate change, the biggest obstacle is still shifting the way we, as humans, think about sustainability and climate change and altering the way we live.

## BENEFITS OF TREES

Trees have provided living organisms with the basic necessities of food and oxygen since 360 million years ago during the Carboniferous period of Earth's history. Not only that but they have provided shelter and much needed shade from the sun. As civilizations grew, people used trees for medicinal purposes by using the bark, leaves, and flowers and as a resource to create tools. Now, trees still continue to give us these amazing benefits, but also provide economic profits ranging from the produce industry to increasing property values. Trees also provide green spaces in busy urban environments which helps improve psychological health.

## PRACTICAL BENEFITS OF TREES

Aside from the important role of mitigating the effects of climate change, trees are an interdisciplinary benefit ranging from:

- Biodiversity and Nutrient Cycling
  - The roots of trees keep the soil in place, allowing the nutrients to cycle and allowing microbial communities to thrive. For example, in low-calcium soils trees recycle the calcium in its leaves by dropping them so it can circulate back into the soil and then be taken up by the tree's root tips.
  - Going up the animal kingdom, birds, insects, and other mammals utilize trees for food and shelter as well, ensuring for biodiversity and supporting wildlife.
- Social Benefits
  - In the city: In a bustling urban settings where concrete, brick, and metal can dominate, trees can provide psychological benefits to its residents. Research has shown that commuters who drive past trees instead of strip malls not only recover from the stress of driving more quickly, but also handle new stressors much better.
  - In the classroom: a study showed that lecture halls containing plants has also correlated with less distracted students.
- Increasing Property Value
  - Trees provide monetary benefits in terms of increasing property values and occupancy rates.
  - The shade provided by a well-placed tree can help save money on energy bills for homes and commercial buildings.

## SYMBOLIC AND MINDFUL VALUES OF TREES

*Mindful inspiration.* Trees have been a source of inspiration, a natural muse if you will, for artists, poets and writers. Some notable ones include:

- Esther Forbes: The first woman elected to membership in the American Antiquarian Society, and author of the Newberry Prize winning book, "Johnnie Tremain," a Weeping beech stands on her property as well as Tulip poplars, Carolina silver bells, and hundred-year-old Japanese maples which surrounded her during her writing years.
- J. Krishnamurti: An Indian philosopher, speaker and writer, Jiddu Krishnamurti is regarded globally as one of the greatest thinkers and religious teachers of all time. Under a California live oak tree in Ojai, California, he wrote his paradigm-shifting essay, "The Function of Education." A quote from his essay includes: "The function of education, then, is to help you from childhood not to imitate anybody, but to be yourself all the time." Source: [https://www.huffingtonpost.com/richard-horan/trees-inspired-authors\\_b\\_861831.html?slideshow=true#gallery/5bb63e48e4b039c2956bd03a/6](https://www.huffingtonpost.com/richard-horan/trees-inspired-authors_b_861831.html?slideshow=true#gallery/5bb63e48e4b039c2956bd03a/6)

*Lasting Symbolism.* Cultures and religions from different parts of the world have similar symbolic representations of trees. Many native groups saw themselves as a part of nature, and saw it as a place of spiritual value that calls for respect.

- The "Tree of Life" is a wonderful example of different cultures, religions, and philosophies across time and continents.
  - The Iroquois passed down the myth of the tree of life which existed on the world of a turtle's back.
  - Buddha is said to have achieved enlightenment under a Bodhi tree
  - Nordic mythology believed the Tree of Life to be a symbol of knowledge
  - In Judaism, the Tree of Life is believed to be the path towards God.

## VII. Summary of Inventory Process & Canopy Coverage

A tree inventory is a powerful tool for any arboretum or tree care and management plan. It provides an insightful composition of the arboretum by documenting the various species on campus, their size, and their location. Each tree in the inventory can be marked for removal, necessary maintenance, and the condition of the tree can be noted in the inventory. Trees dedicated to an individual or group of people can be marked in the inventory, making it easy to locate them for people who want to see a tree dedicated to their favorite professor, or one in memorial of a passing member of the Agnes Scott community. Maintaining an arboretum also means maintaining documentation of what comes and goes, as well as keeping track of the canopy. The Director of the Center for Sustainability and the Certified Consulting Arborist are responsible for maintaining the continuation of the tree inventory and updating the campus's tree canopy. The Campus Consulting Arborist can enlist a member of the Agnes Scott community to assist in the canopy calculations and tree inventory as a learning experience and expose the individual to the multi-faceted attributes of trees.

**HOW TO INVENTORY TREES AND CALCULATE CANOPY:** The biggest asset to any management plan is an inventory. A tree inventory tells you exactly what you have, how many, and where they are. Using GIS (Global Imaging Systems) Mapping is the best way to inventory the trees located within a landscape because it will catalog the location and it can document the type of tree and its specific measurements and qualities. It's also easy to use and can be accessed on smart devices. The institution must establish how often the tree inventory needs to be done, and how it should be organized. For example, the landscape can be strategically divided into zones which makes it easier to manage the inventory. Find the best way to manage the landscape inventory geographically and get a certified arborist to help with that process. Also, determine the goals you want for the inventory and how the tree inventory will be utilized in an overall campus tree care plan.

## TREE INVENTORY

A GIS (Geographic Imaging Systems) software will be used for the tree inventory and will be documented and maintained by the Campus Consulting Arborist. For easier update, the arboretum inventory will be done in zones that correspond with canopy management zones on campus. Each zone will be done on a rotating basis based on priority. Any time a tree is removed or planted on campus, it will be documented immediately in the GIS system.

A full inventory update will be done every five (5) years which includes:

- Tree species
- Location
- DBH (Diameter at Breast Height)
- Height
- Condition
- Size class
- Any notes (e.g. unbalanced canopy, damage at base of trunk, etc.)

According to the MOU with the City of Decatur, an updated copy of the inventory will be provided to the City every two (2) years in order to track tree removal and installation. The most recent tree inventory data can be found in the appendix of this tree care and management plan.

## CANOPY COVERAGE CALCULATION

Canopy coverage is one of the most important criteria for environmental benefits provided by trees. A tree's canopy provides most of the benefits, including shade, stormwater reduction, carbon sequestration, and photosynthesis to name a few. The College also has a long history of extensive canopy coverage on its campus, which has been a main feature of the aesthetic of the built landscape. For these reasons, it is important that Agnes Scott College track its canopy coverage. The years listed detail the College's campus canopy percentage for the following years:

- 2010: 50% canopy coverage
- 2014: 53% canopy coverage
- 2018: 54% canopy coverage

Continual updates of the canopy occur using i-Tree Canopy using 500 data points per campus zone (see appendix). The College's Canopy Coverage will be updated every four (4) years moving forward, with the next update being in 2022.

## VIII. Tree Assessments

The administration acts as the risk managers since they weigh the potential for risk within the context of the built environment and make appropriate decisions from the information determined by the risk assessor.

Assessing tree condition during tree inventory updates or damage prior to or during construction is imperative to preserving the health of any arboretum. Proper assessment of a tree includes a 360-degree inspection of the base and canopy, looking for any broken limbs, dieback in the canopy, fungal growth, deadwood, etc. on and around the tree. Damage to any tree will be photographed and documented for further evaluation. The scope of work for the Campus Consulting Arborist are all trees located on property owned by Agnes Scott College (includes the main campus and residential areas), and areas specifically identified by Agnes Scott College for a visit, or areas that have been included in

systematic evaluation. Based on the criteria, the Campus Consulting Arborist will assign a "condition" to the tree (excellent, good, fair, poor). Tree care actions necessary to restore tree health will be prioritized.

The Campus Consulting Arborist must utilize methodology of TRAQ (Tree Risk Assessment Qualification) when doing tree assessments. Best practices for prioritizing mitigation efforts should include the following in the assessment protocol:

1. Identification of likelihood of failure
2. Identification of likelihood of impacting a target and
3. An evaluation of the severity of the associated consequences of that failure
4. Timeframe for likelihood of failure

These assessments will also take into consideration typical weather patterns of the area, as well as any impending severe weather. Recommended tree care actions should be assigned to the following timelines:

- Priority 1: Within the month
- Priority 2: Within the next 6 months
- Priority 3: Within the year
- Priority 4: Within 2 years

All specific requests or assessments of identified trees, requests for systematic evaluations within a designated area, or adjustment of time frame shall be made in writing (e-mail is included) by Agnes Scott College and acknowledged by the Campus Consulting Arborist. The Director of Facilities and the Director of Sustainability can verbally reach out to the Campus Consulting Arborist requesting assessment of identified trees on campus, as well. The Campus Consulting Arborist will communicate the findings of the tree assessments and appropriate tree care recommendations to the Director of Facilities and the Director of the Center for Sustainability. Any following actions shall be made by these two entities and any other necessary parties within that College that need to be involved.

**HOW TO CONDUCT TREE ASSESSMENTS:** Assessing the overall health and stability of trees within a landscape are important to upholding the safety of the institution's community and is part of proper tree care and risk management, which requires risk assessors and risk managers. It is also important to define the scope of work and use best practice methodology for tree assessment.

#### RISK ASSESSOR

The certified arborist acts as the risk assessor by looking at the potential for risk, relaying the findings and providing guidance to the institution's administration.

#### RISK MANAGER

The administration acts as the risk managers since they weigh the potential for risk within the context of the built environment and make appropriate decisions from the information determined by the risk assessor.



## IX. Responsible Authority and Departments

The departments responsible for the oversight and management of the Agnes Scott College Arboretum and enforcing the Tree Care Plan are the Center for Sustainability and the Facilities Department. The Directors of each department alongside the Campus Consulting Arborist will oversee activities and management related to trees while gathering insight and input from the College's Arboretum Advisory Committee. During construction and renovation projects, the Directors of Facilities will work with the contracted company with guidance from the Campus Consulting Arborist and this Tree Care Plan. For any questions regarding tree management and care on Agnes Scott's campus, please contact the names listed below.

Director of Center for Sustainability: Susan Kidd, [sakidd@agnesscott.edu](mailto:sakidd@agnesscott.edu)

Director of Facilities: David Marder, [dmarder@agnesscott.edu](mailto:dmarder@agnesscott.edu)

Campus Consulting Arborist: Chris Hughes, [chughes@brookwoodtree.com](mailto:chughes@brookwoodtree.com)

## Arboretum Advisory Committee

The Agnes Scott College Arboretum Advisory Committee (AAC or Committee) came into existence May 2012 alongside the launch of the College's Arboretum. The Committee will be comprised of students, staff, faculty, and community members. Though the College's Arboretum Advisory Committee has diligently met and managed itself without a formal policy in place, the College has acknowledged a need for such moving forward for new members transitioning into the Committee. The policies listed are meant to be a guideline for the Committee to establish roles and responsibilities and communicate those to new members. These responsibilities, unless otherwise updated, will be continuously done by the Arboretum Advisory Committee and will be reviewed every two (2) years.

### TERMS OF THE COMMITTEE REPRESENTATIVES

Committee members will have established terms and have a chance for membership renewal if requested.

Student representatives will have one (1) academic year term.

Faculty and staff representatives will have two (2) academic year terms.

Community representatives will have two (2) academic year terms.

### NUMBER OF COMMITTEE MEMBERS

The Arboretum Advisory Committee will have a total recommended number of 12-15 members, though all those interested are welcome to join. The number of committee representatives include:

At least two (2) student representatives

At least two to three (2-3) faculty representatives

At least two to three (2-3) staff members

At least two (2) members from the surrounding community

Permanent committee members

### NEW COMMITTEE MEMBERS

New members of the Committee will be chosen at the start of the spring semester in January or February through Committee outreach and volunteer. Towards the end of the spring semester, in April, new members will go through orientation in preparation for meetings in the following academic year.

## COMMITTEE CHAIRS

Chairs of the committee (up to two chairs) will either be nominated or volunteer their services. Their responsibilities include drafting a meeting agenda alongside the Director of the Center for Sustainability and the Director of Facilities, facilitating the flow of the meeting and meeting discussion, working with the Director of the Center for Sustainability to determine next meeting dates, and facilitate orientation for new members of the Committee.

## PERMANENT COMMITTEE MEMBERS

This includes:

- Director of the Center for Sustainability
- Director of Facilities
- Campus Consulting Arborist
- Vice President for Business and Finance or an appointee within Business and Finance by the Vice President
- A member from the Georgia Forestry Commission

If any member within this category requests leave, they will be replaced immediately. The current members of the AAC will be responsible for finding and determining new members.

## RESPONSIBILITIES OF THE COMMITTEE

The purpose of the AAC is to provide interdepartmental, interdisciplinary, and collaborative input and approaches to the protection and maintenance of the campus's Arboretum. This includes, but is not limited to:

- Update and add information to the Arboretum website and manage Arboretum plaques and labels
- Update the general list of appropriate tree species to plant on campus and prohibited species every three (3) academic years
- Ensure that dedicated/honor tree plantings in late winter and early spring coincide with the observance of Georgia's Arbor Day and document these plantings with photos
- Dedicate at least one meeting a semester to plan educational programming for the following semester
- Review and update the Agnes Scott College Tree Care Plan every five (5) years
- Coordinate student involvement in the AAC every academic year
- Safeguard the Arboretum by ensuring that the appropriate entities on campus and those who come to campus are aware of the guidance outlined in the Tree Care Plan

## MEETING DATES

The Arboretum Advisory Committee will meet at least twice a semester and future meetings will be determined at the end of each academic semester. The Director of the Center for Sustainability and the Chair of the AAC can schedule additional meetings for yearly plans, events, and specific projects. They can also call for emergency meetings/communication if urgent agenda items have arisen or emergency situation occurred on/near campus that must be communicated to the Agnes Scott Community via Public Safety.

## XI. Relationship of College to City of Decatur

Agnes Scott College has a Memorandum of Understanding (MOU) with the City of Decatur as of July 2016 which lists the College's vision for the Arboretum, the purpose of the Arboretum Advisory Committee, Inventory and Canopy Goals, and a tree removal process which were all approved by the City of Decatur. Agnes Scott recognizes and supports the guidelines of the City's Tree Conservation Ordinance, and since the College exceeds the canopy coverage requirement of 45% set forth in the ordinance, the City of Decatur grants Agnes Scott College the authority to remove trees on campus and submit a "Tree Removal Permit" via email after the removal of a campus tree. Per the City of Decatur's 2014 Tree Conservation Ordinance, the MOU between the City and the College allows Agnes Scott to be exempt from the specifications of the City's Tree Conservation Ordinance. Per the MOU, every two (2) years, the College will provide a complete a tree inventory report for the City of Decatur with updates on trees that were removed and newly planted.

**ATLANTA AUDOBON WILDLIFE SANCTUARY:** The Atlanta Audubon Society is a member-supported, non-profit organization dedicated to building places where birds and people thrive. As part of their vision of a conservation-minded and fully engaged Georgia where birds prosper, habitats flourish, and understanding grows, Agnes Scott College is underway to starting an Audubon Wildlife Sanctuary on its campus. The program is part of a start-up with the Atlanta Audubon Society to expand Wildlife Sanctuary Certification from residential properties to campuses and larger areas within and around Atlanta. Currently, assessments have begun on Agnes Scott's campus by members of the Atlanta Audubon Society on potential areas that are suitable for Wildlife Sanctuary Certification. In the following year starting 2019, Agnes Scott will begin service projects to clean up the areas from any invasive vegetation and plant mid-story native trees and abide by the guidelines set forth for future Wildlife Sanctuary Certification.

## XII. Incorporation of Tree Care Plan into Overall Campus Master Plan

The Campus Master Plan is a cohesive document of all things related to buildings and landscape at Agnes Scott College. Tree care is a part of landscaping, but policies and practices regarding maintenance can exist as a stand-alone document, such as the tree care plan, outside of the Campus Master Plan. The Campus Master Plan will include broader goals on landscape management, while the tree care plan would consist of goals regarding the Arboretum. The Campus Master Plan project for Agnes Scott College is starting the 2018-2019 academic year. The Tree Care Plan can proceed the completion of the Campus Master Plan and be incorporated into the Plan when approved. Having both documents ensures that Agnes Scott College stays committed to sustainable landscaping and preservation of the Arboretum.

## XIII. Goals and Objectives for Arboretum

In order to ensure Agnes Scott College is keeping in line with its purpose of the Arboretum and sustainability initiatives, the College sets forth these goals for the Arboretum and its green spaces.

### CANOPY

At least 45% canopy coverage and a long-term goal of 50% coverage. When trees are removed on campus for any purpose, new trees will be replanted in a thoughtful manner to eventually replace the lost canopy. Using i-Tree Canopy, the College's canopy coverage will be updated every three (3) years.

### INVENTORY

The Arboretum Inventory will be fully updated every five (5) years, including data about the location, height, canopy spread, DBH, condition, and any notes about the tree. As per the MOU with the City of Decatur, the College will send the Arboretum Inventory for their records every two (2) years. The Inventory will continuously be updated using a GIS program, meaning any time a tree is removed or a tree is planted, it will be reflected in the inventory immediately by the Campus's Consulting Arborist.

### MULCH AND TURF

A unique feature of quite a few college and university campuses is the "Quad" or quadrangle, an open space of maintained grass providing a pervious surface and picturesque green space for people to admire and use. Lawn and turf do have positive benefits to the environment since they are a pervious surface that allows rainwater to permeate and a source of carbon sequestration, however, maintaining their aesthetics on Agnes Scott's campus come with high maintenance that can be almost impractical. Such maintenance includes:

- Spraying pesticides, herbicides that can become pollutants during rainfall and are harmful to pollinators and trees if sprayed directly
- Use of fertilizers which release nitrous oxide—a greenhouse gas 300 times more potent than carbon dioxide
- Weekly lawn mowing which expels carbon dioxide and is powered through fossil fuels and cost of lawn care
- Twice a day watering to keep the grass green which uses excessive amounts of water from the Agnes Scott retention pond

For all these reasons listed, Agnes Scott strives to decrease the amount of turf on campus by increasing the area of mulch around trees. While mulch also requires maintenance, such as fluffing

and spraying proactively for weeds, it is much more localized than the maintenance required for lawn and turf. As the College progresses towards climate neutrality, native plant species that require less water and are a practical benefit (i.e. natural mosquito repellants) will be added to the College's community and landscape in areas where it is suitable. The College aims to develop a plan by 2020 to reduce turf and non-native ground cover, especially under tree canopies.

## ACCREDITATION

Agnes Scott College will retain its status as a Tree Campus USA through year reapplication and as an accredited Morton Arboretum through application renewal every five (5) years. The College aims to submit its application for Level 2 Morton Arboretum accreditation in March 2019.

## ARBORETUM BEST MANAGEMENT PRACTICES

To ensure the best decisions are being made about the landscape and the trees on campus, the College will review and update its best management practices every three (3) years with the Arboretum Advisory Committee and its Campus Consulting Arborist.

## MEASURING GOALS

During each update, the College will graphically track its percent canopy growth, number of tree species and how many total trees, as well as area of mulch versus turf and compare that to the previous updates. This will be managed by the Arboretum Advisory Committee and the Campus Consulting Arborist.

# XIV. Campus Tree Care Policies

Agnes Scott's dedication to its trees means using best management practices to care for its arboretum. The following policies aim to preserve the goal and purpose of the Agnes Scott Arboretum. All specific tree care policies are listed in extensive detail in the "Standards and Practices" folder of the Arboretum Archive. For access to the details listed, please contact the Director of Sustainability.

## FUNDING FOR ARBORETUM

The Director of Facilities oversees the budget for landscape management, which includes the Agnes Scott Arboretum. An annual budget of \$70,000 will be put aside to be specifically used to help manage, sustain, and grow the Arboretum as well as fund the campus's consulting arborist.

## CAMPUS CONSULTING ARBORIST

The assessor of the campus's trees and the risks associated, a large part of the arboretum's care and maintenance is reliant upon the Campus Consulting Arborist.

- *Qualifications*
  1. Five (5) years of experience, preferably including some campus level experience
  2. Specific training or experience with the following:
    - ANSI A300
    - Best Management Practices
    - Tree Risk Assessment Qualified (TRAQ) - Risk Assessments
    - Written specifications (Planting, pruning, risk assessment)
  3. Certified by International Society of Arboriculture (ISA) or state arborist society
  4. Provide the hours equivalent to 1-3 days a month and available to travel to the Agnes Scott campus as needed.

- *Responsibilities*
  1. Tree Risk Assessments
    - Write and maintain current ANSI A300 Tree Risk Specification
    - Write and maintain Agnes Scott Campus Tree Risk Policy
  2. Tree Inventory
    - Manage the process of updating the college tree inventory
    - Supervise students/faculty/staff to assist with tree inventory
    - Maintain spatial tree inventory (ESRI compatible)
  3. Develop reports and complete permits for City of Decatur Tree Ordinance and archive
  4. Prepare bid packages for tree planning, including:
    - Planting specifications
    - Species selection
    - Site selection and evaluation
    - Tree selection
    - On-site contract and monitoring
  5. Prepare bid packages for tree pruning, including:
    - Tree pruning specifications
    - On-site contract monitoring
  6. Assist the work of the Arboretum Advisory Committee, including:
    - Guidance statements
    - Urban tree management planning
    - Tree maintenance recommendations
    - Advice on Standards & Practices
    - Records maintenance
  7. Provide assistance for Agnes Scott College Community Day volunteer project for faculty & staff
  8. Provide at least one activity a year to engage students and others during the school year
  9. Annual reapplication for Tree Campus USA recognition
  10. Ensuring the College is maintaining the requirements for its Level 2 Arboretum Accreditation from ArbNet and renewing this status every five (5) years.

## **NEW PLANTINGS**

New tree plantings shall occur annually in the spring semester (January or February) prior to Georgia's Arbor Day. Efforts will be made to follow this schedule, however construction projects may require that some plantings happen outside of this period. These cases will be detailed in the planning portion of the construction project by the Campus Consulting Arborist and the Director of Facilities. Tree plantings will be thoughtfully done with succession planning.

1. All new tree holes must be excavated at least two times the diameter of and 1-2 inches shallower than the root ball. In poorly drained soils, additional provisions should be made to increase the size of the hole and plant the tree 2-4" above the surrounding finished grade. Auguring planting holes is not permitted.
2. Trees should be backfilled with native soil and care should be utilized to ensure backfill soil is free of air pockets. Any non-soil components that are exposed or located in excavating planting hole should be removed and disposed of appropriately.
3. Post planting staking should occur only as necessary and per ISA best management practices. All staking and guying systems should be checked monthly by the Campus Consulting Arborist to ensure girdling of tree trunks or branches does not take place. All systems should be removed after one growing season.

4. Species should be selected to be long lived, not require excessive maintenance, and meet the environmental and aesthetic vision of the campus.

## CARE

All young, maturing, and mature trees should be managed utilizing ISA best management practices and according to the following guidelines:

- *Pruning* - Agnes Scott College's pruning will be done zone by zone for ease of maintenance (see Appendix for photo). Tree pruning outside the current scope of work will be discussed with the Director of Facilities and the Campus Consulting Arborist.
  1. Trees less than 8" DBH should be pruned biannually, at minimum, to develop long-term structure, increase clearance, and maintain aesthetic.
  2. Trees 8-18" DBH should be pruned every two to five (2-5) years to develop or maintain long-term structure, increase clearance, and maintain aesthetic.
  3. Trees greater than 24" DBH should be pruned every five to seven (5-7) years to develop or maintain long-term structure, increase clearance, and maintain aesthetic.
  4. Additional, non-scheduling pruning may be required in response to service requests, atypical tree growth, or to maintain campus safety and will be discussed with the Campus Consulting Arborist.
- *Nutrition*
  1. Trees will receive routine fertilizer at least annually through turf related applications.
  2. Additional development of the soil profile may be warranted and will be determined through regular assessments. Additional treatments will primarily be implemented through vertical mulching.
  3. Leaf material will be collected each fall and composted with other plant material waste to be utilized as a source of organic matter incorporated in vertical mulching.
- *Mulching* - Young and maturing trees are mulched twice per year to maintain a healthy 2-3 inch layer of hardwood mulch or pine straw within the drip line.
- *Pest Management* - Scouting for pests is a part of the responsibilities of the Campus Consulting Arborist and the Department of Facilities. Trees will be treated locally and as needed to prevent spreading of problems. Pesticides that are harmful to pollinators on campus will not be used on Agnes Scott's campus. Approval of such pesticide use will be done by the Director of Sustainability, the Campus Consulting Arborist, and the Director of Facilities.
- *Supplemental Watering* - Soil moisture is monitored through the growing season on all newly installed trees for the first growing season. Supplemental water will be applied as needed. This schedule is evaluated at the beginning of each growing season for trees and adjust as needed in order to avoid a reliance on supplemental watering and function independently as soon as possible.

## REMOVALS

Trees are removed on campus when they present a hazard to the safety and operations of the academic environment or if they are in a position that limits the growth and maturing of more desirable or long-lived trees surrounding it. Assessments are made by the Campus Consulting Arborist in these cases to ensure trees are removed only when absolutely necessary. Agnes Scott College will notify the City of Decatur as detailed in the MOU (see "Relationship to the City of Decatur"). Trees that are

removed from the campus will be salvaged when possible and used at local companies, such as the Jack Ellis Company, or in renovation/construction projects on campus. Trees that are failing, but are not a danger to the Agnes Scott or its surrounding community will be left to naturally degrade as a snag to benefit the surrounding ecosystem.

The MOU states the following regarding Agnes Scott tree removals:

1. The college arborist will be contacted by either the Director of Facilities or the Executive Director of the Center for Sustainability to make a site visit to assess the tree utilizing all current best management practices, then provide both parties with a report detailing the assessment and any options for recommended tree care.
2. Trees recommended for removal in the arborist's assessment report that present an immediate hazard to the safe function of campus, and agreed upon by the Director of Facilities or the Executive Director of the Center for Sustainability, shall be removed in a timely fashion and coordinated by the college's arborist.
3. If not agreed upon, and not an immediate hazard, the recommendation in the arborist's assessment report will be reviewed by the Arboretum Advisory Committee and the Vice President for Business & Finance.
4. In emergency situations, or when dealing with trees that have failed, cleanup can commence immediately as needed to return campus to safely functional status. All efforts should be made to allow for college arborist to assess the tree prior to or during cleanup to determine cause of failure and how other trees may be affected.
5. A summary of all arborist's reports and subsequent actions will be reviewed by the Arboretum Advisory Committee at their next meeting, with any open recommendations discussed as needed. If a faster review is required, the committee will review a report summary with any open recommendations via email.
6. After each removal, the arborist will complete the "Tree Removal Permit" for submittal to the City of Decatur. As requested by the City, the permit form will be submitted attached to an email that documents the removal decision. The arborist will also document the removal in the tree inventory.

## **CONTRACTING**

Work done on Agnes Scott's Arboretum will be assessed by the Campus Consulting Arborist and contracted through the Director of Facilities. Both entities will ensure the scope of work is understood by the contracted company, monitor the progress of work is staying within the policies of the tree care plan and the goal of the Arboretum, and discuss further work, if any, that must be done on the campus's arboretum following the contract completion. Any chemicals/pesticides/herbicides and the like that are used are subject to pre-approval by the Director of Sustainability and the Director of Facilities. Contracted companies that damage trees within Agnes Scott's Arboretum during their work are subject to financial compensation that will go to the "Fund for the Arboretum."



## XV. Special Trees: Heritage, Dedicated, and Memorial

### SPECIAL TREE CATEGORIES AND DESCRIPTIONS

Among Agnes Scott's 2,000 trees there are some that have important significant to the campus. The College intends to take extra care into these special trees which fall into one of four categories:

1. *Heritage/Historical tree*: Designation shall be made by the Arboretum Advisory Committee if there is a tree on campus that has significant historical value that the College wants to acknowledge and preserve. Trees with a significance to the campus and/or the Arboretum are eligible to become an "historic tree". The AAC will review requests from the Agnes Scott community for an existing tree to be labeled as "historic".
2. *Honor tree*: Agnes Scott College values its employees so to show appreciation to our dedicated staff and faculty of twenty (20) years, employees of the College are given three options to choose from as a gift. One of these options is a tree the employee can have planted in their name and every five (5) years after their twenty (20) years of service, these employees are eligible to choose a gift, which can be another honor tree. An honor tree shall be marked with a plaque indicating the employee's name, their service years, and when the honor tree was planted.
  - Process - The Honor Tree Program is largely managed by the Office of Human Resources with help from the Center for Sustainability and the Campus Consulting Arborist. The Office of Human Resources manages a list of employee names that have requested a tree to be planted in their name. The Campus Consulting Arborist will select locations for planting on campus that maintain the long-term needs of the campus canopy and goals of the Arboretum. Once a location is selected, the Campus Consulting Arborist will provide a "catalog" of trees that are fitting for the location and the College's current landscape. Once the tree is selected, the arborist handles all logistics regarding placement and planting. All dedicated trees will be planted during the appropriate planting season as documented in the "Planting" section of this tree care plan. The Office of Human Resources will have the responsibility of handling the logistics of the plaques from getting them ordered and installing each plaque with the appropriate tree. A minimum donation of \$5,000 is requested to plant an honor tree or memorial tree.
3. *Memorial tree*: These trees are donated by a group or individual in memory of those who have touched Agnes Scott's campus whether that be student, faculty, or staff. These trees honor those that have passed on and whose time is celebrated through a living tree on campus. Memorial trees are also marked with a plaque including the group or individual's name and when the tree was planted.
4. *Arboretum Tour trees*: Trees on the Arboretum Tour that have been identified and marked with a QR code on a plaque. These trees and its surrounding counterparts are photographed on the online Tree Walk and have been chosen as a proper example to use in the various topics on the College's Arboretum website.
  - Management of Special Trees - Special trees on campus should be preserved during times of construction on campus or other events that would put trees at risk (for

example, movie filming on campus using large machinery and set up equipment). If a special tree needs to be removed, a replacement shall be chosen and planted immediately. All plantings shall have the guidance of the Campus Consulting Arborist and any plaque that must be removed will be stored in the Center for Sustainability until its replacement is planted or when construction has ended. Any special tree that is given by donation, the donor cannot dictate species or location of a tree on campus. These criteria will be determined by the Campus Consulting Arborist.

## **XVI. Invasive Species**

In order to maintain a thriving Arboretum, invasive species--which hinder the growth and development of surrounding plants--will be removed as is feasible on Agnes Scott's campus.

### **INVASIVE TREE SPECIES**

Invasive tree species that have been cataloged on the Main Campus will be removed in order to prolong the life of non-invasive trees surrounding it. Invasive trees are cataloged into the Arboretum's inventory and do count on the species list. However, once the tree is removed, the inventory will be updated and a new non-invasive tree species that will be planted on campus instead to replace the lost species and increase the campus's tree diversity. The Campus Consulting Arborist will determine if removing an invasive tree will disturb or damage the surrounding trees in any way (e.g. root system, trunks) and decide with the Director of Sustainability and Director of Facilities the appropriate measures to take regarding the invasive tree species. If an invasive tree cannot be fully removed, then it will be pruned down to a manageable size. The invasive tree's growth will be monitored to ensure that it does not take over the non-invasive plants in the area.

### **INVASIVE VEGETATION**

The Campus Consulting Arborist, the Director of Facilities, and the Director of Sustainability will determine areas on campus that have overgrown invasive vegetation (e.g. kudzu, English ivy, etc.) and prioritize invasive vegetation removal based on what makes sense for the campus. Invasive vegetation pruning/removal will happen at least once a year using goats/sheep as the method for removal. Cleaning up areas with invasive vegetation can also be used as a project for the College's Community Day. The areas that have invasive vegetation removed will be proactively monitored so the area is well managed and invasive overgrowth is less likely to occur.

## **XVII. Tree Protection and Preservation Policies and Procedures**

The following policies are meant to preserve and protect the College's Arboretum and ensure the trees remain healthy following and campus projects.

### **CONSTRUCTION**

During the planning phase of any new construction on campus (including buildings, streets, parking lots, and sidewalks), trees within the area will be assessed for condition and anticipated remaining

useful lifespan. For further specifications, the College references ANSI A300 Part 5: Tree, Shrub, and Other Woody Plant Management—Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction).

For all construction projects on Agnes Scott's campus, the default is that trees will be preserved using tree protection measures during all phases of the project, unless the tree hinders the long-term design of the project. The Director of Facilities, Director of Sustainability, and the Certified Consulting Arborist will ensure that the contracted company is adhering to policies set forth for the planning, design, pre-construction, construction, and post-construction phases of the project. The Certified Consulting Arborist will be heavily involved in all stages of the construction project.

The critical root zone (CRZ) will be identified with a baseline area of a circle with a radius equivalent to 1 foot for every inch of trunk diameter (DBH). Adjustments will be made based on field observation of the trees where root system distribution may be irregular in shape due to proximity to buildings, roads, utilities, or other infrastructure or topographical variations.

The CRZ will be marked with 4' fencing that must be checked weekly through the construction process by the Department of Facilities and Campus Consulting Arborist. The outer perimeter of the fencing will be trenched to prune roots prior to land disturbance. The area within the CRZ shall be mulched 6" depth through the duration of construction. The storage of materials or other entrances within the protected CRZ is prohibited.

Post construction measures to promote tree health will include soil improvements, such as vertical mulching, and any required pruning to ensure healthy canopy development. Any trees that cannot be preserved during construction shall be replaced with a tree of similar maturing stature within the same area of campus.

Damages to any tree by the contracted company will be discussed with the Campus Consulting Arborist, the Director of Facilities, and the Director of Sustainability and compensated towards a Fund for the Arboretum.

## FILMING

Agnes Scott is no stranger to movie and television show filming on its campus. Large equipment and tents cannot be placed underneath a tree canopy or on/near the tree mulch to protect the CRZ and tree canopy. Any need to use these spaces will require discussion with the Campus Consulting Arborist, Director of Facilities, and Special Events Manager.

## XVIII. Campus Safety Policies

While trees are a beautiful and functional part of our campus ecosystem, we recognize that there are times when trees can become a hazard to the community. In times of natural disasters, or tree growth blocking safety lights, Agnes Scott College will take the following measures:

### PRECAUTIONARY STEPS BEFORE EMERGENCY/CATASTROPHIC EVENTS

The College aims to be proactive about its campus safety. Part of this proactivity is keeping constant pruning maintenance of trees near high traffic areas, so in the case of an emergency/catastrophic event there is less potential risk towards the community.

## IN EMERGENCY/CATASTROPHIC EVENTS

Immediately after a catastrophic event on campus, actions are focused to restore the safety and operations of the campus. This process includes clearing trees that have failed or present a risk for failure and a hazard to the safety of the campus and its operations. Once this has been accomplished, a comprehensive plan is developed to address the overall loss of canopy through a practical and well-balanced planting plan that takes into account a healthy species and age distribution.

## LIGHTS ON EMERGENCY CALL BOXES AND LAMP POSTS

Agnes Scott is an open campus, so to ensure community safety, Public Safety officers do nightly rounds and emergency call boxes and lamp posts are spread throughout campus. If a Public Safety officer doing their nightly rounds or member of the Agnes Scott community notices the lights are blocked, or are not visible from sidewalks, they will notify the Director of Facilities by submitting a work-order. Tree branches blocking lamp posts and emergency lights will be evaluated by the Campus Consulting Arborist for pruning to improve clearance and visibility.

## NIGHT SKY CONSIDERATIONS

Campus safety is of utmost importance for Agnes Scott, and it is important that light fixtures be seen for those walking at night. The campus also wants to consider how light pollution from lamp posts would affect the ability of faculty and students using the telescope located in Agnes Scott's observatory for research in the night sky. Pruning will allow for nighttime light dispersion for pedestrian safety, but the overhead branches will remain to cushion the amount of light given off above the trees.

# XIX. Prohibited Practices

Because Agnes Scott College strives to always implement best management practices for its Arboretum, any practice that hinders or goes against this policy is prohibited. The following are procedural prohibited practices:

- No tree will be removed without prior evaluation and consent of the Campus Consulting Arborist, with approval from the Director of Facilities and the Director of Sustainability
- No items will be affixed to trees without approval from the Director of Facilities.

# XX. Definitions

- Critical Root Zone (CRZ): most commonly a circle on the ground corresponding to the dripline of a tree, but can extend 2-3 feet beyond that.
- Damage: harmful injury done to the tree or any of its parts that could lead to degradation of the tree.
- Diameter at Breast Height (DBH): the diameter of a tree 4.5 feet or 54 inches from the ground
- Dripline: area defined by the outermost circumference of a tree canopy where water would drip down to the ground.
- Geographic Imaging Systems (GIS): system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data.
- Snag: a standing, dead, or dying tree, often missing a top or most of the smaller branches

- Topping: the removal of whole tops of trees, or of large branches or trunks from the top of a tree, leaving only the stubs which are too small to form leading stems.

## XXI. Acknowledgements

- Chris Hughes, Campus Consulting Arborist
- Susan Kidd, Director of the Center for Sustainability
- David Marder, Director of Facilities
- Members of the Arboretum Advisory Committee
- Kimberly Reeves '12
- Jim Abbot, Professor of Classics
- Susan Granbery, Georgia Forestry Commission

Signature proves that the Agnes Scott Tree Care Plan has been reviewed by the Arboretum Advisory Committee.

X \_\_\_\_\_ Date \_\_\_\_\_  
Amy Lovell, Chair of the Arboretum Advisory Committee

## XXII. Appendix

A. List of Tree species and distribution.

<b>Acer barbatum</b>	Southern sugar maple	5	1%
<b>Acer beugerianum</b>	Trident maple	5	1%
<b>Acer palmatum</b>	Japanese maple	2	0%
<b>Acer rubrum</b>	Red maple	39	6%
<b>Acer saccharinum</b>	Silver maple	3	0%
<b>Acer saccharum</b>	Sugar maple	23	4%
<b>Albizzia julibressins</b>	Mimosa	1	0%
<b>Amelanchier x grandiflora</b>	Serviceberry	2	0%

<b>Betula nigra</b>	River birch	1	0%
<b>Broussanitia papifyra</b>	Paper mulberry	1	0%
<b>Carpinus Caroliniana</b>	American hornbeam	7	1%
<b>Carya glabra</b>	Pignut hickory	3	0%
<b>Carya aquatica</b>	Water hickory	1	0%
<b>Carya cordiformis</b>	Butternut hickory	2	0%
<b>Carya illinoensis</b>	Pecan	11	2%
<b>Carya tomentosa</b>	Mockernut hickory	4	1%
<b>Catalpa bignonioides</b>	Southern catalpa	1	0%
<b>Cedrus decurrens</b>	Incense cedar	1	0%
<b>Cercis canadensis</b>	Redbud	11	2%
<b>Cladrastris kentuckea</b>	Yellowwood	4	1%
<b>Cornus florida</b>	Flowering dogwood	38	6%
<b>Cornus kousa</b>	Kousa dogwood	16	2%
<b>Crataegus viridis Winter King</b>	Winter King Hawthorn	3	0%
<b>Cunninghamia lanceolata</b>	Chinafir	1	0%
<b>Cryptomeria japonica</b>	Japanese cryptomeria	7	1%
<b>Fagus grandifolia</b>	American beech	5	1%
<b>Fraxinus americana</b>	White ash	3	0%
<b>Fraxinus pennsylvanica</b>	Green ash	1	0%
<b>Ginkgo biloba</b>	Ginkgo	7	1%
<b>Gleditsia triacanthos</b>	Honeylocust	1	0%
<b>Ilex Americana</b>	American holly	9	1%
<b>Ilex sp.</b>	Other hollies	9	1%
<b>Ilex vomitoria</b>	Yaupon holly	3	0%

<b>Ilex x Nellie Stevens</b>	Nellie Stevens holly	9	1%
<b>Ilex x attenuata</b>		1	0%
<b>Juglans nigra</b>	Black walnut	1	0%
<b>Juniperus virginiana</b>	Red cedar	1	0%
<b>Lagerstroemia sp.</b>	Crepe myrtle	19	3%
<b>Ligustrum lucidum</b>	Privet	3	0%
<b>Liquidambar styraciflua</b>	Sweetgum	22	3%
<b>Liriodendron tulipifera</b>	Tulip poplar	8	1%
<b>Magnolia grandiflora</b>	Southern magnolia	74	11%
<b>Magnolia macrophylla</b>	Bigleaf magnolia	1	0%
<b>Magnolia virginiana</b>	Sweetbay magnolia	4	1%
<b>Magnolia x soulangiana</b>	Flowering magnolia	2	0%
<b>Malus sp.</b>	Crabapple	6	1%
<b>Metasequoia glyptostroboides</b>	Dawn redwood	1	0%
<b>Morus alba</b>	Mulberry	2	0%
<b>Nyssa sylvatica</b>	Blackgum	15	2%
<b>Ostrya virginiana</b>	Hophornbeam	1	0%
<b>Parrotia persica</b>	Persian parrotia	2	0%
<b>Pinus palustris</b>	Longleaf pine	2	0%
<b>Pinus strobus</b>	White pine	5	1%
<b>Pinus taeda</b>	Loblolly pine	9	1%
<b>Pinus virginiana</b>	Virginia pine	2	0%
<b>Pistachia chinensis</b>	Chinese pistache	4	1%
<b>Platanus occidentalis</b>	Sycamore	1	0%
<b>Prunus caroliniana</b>	Cherry laurel (tree-form)	6	1%

<b>Prunus persica</b>	Peach	1	0%
<b>Prunus serotina</b>	Black cherry	1	0%
<b>Prunus sp.</b>	Flowering cherry	8	1%
<b>Ptelea trifoliata</b>	Hoptree	1	0%
<b>Quercus accutissima</b>	Sawtooth oak	7	1%
<b>Quercus alba</b>	White oak	17	3%
<b>Quercus bicolor</b>	Swamp white oak	3	0%
<b>Quercus coccinea</b>	Scarlet oak	4	1%
<b>Quercus falcata</b>	Southern red oak	8	1%
<b>Quercus georgiana</b>	Georgia oak	5	1%
<b>Quercus hemisphearica</b>	Laurel oak	1	0%
<b>Quercus imbricarria</b>	Shingle oak	1	0%
<b>Quercus lyrata</b>	Overcup oak	24	4%
<b>Quercus macrocarpa</b>	Bur oak	2	0%
<b>Quercus marilandica</b>	Blackjack oak	1	0%
<b>Quercus michauxii</b>	Swamp chestnut oak	5	1%
<b>Quercus nigra</b>	Water oak	44	7%
<b>Quercus nuttallii</b>	Nuttall oak	29	4%
<b>Quercus palustris</b>	Pin oak	2	0%
<b>Quercus phellos</b>	Willow oak	13	2%
<b>Quercus rubra</b>	Northern red oak	2	0%
<b>Quercus shumardii</b>	Shumard oak	2	0%
<b>Quercus stellata</b>	Post oak	4	1%
<b>Quercus velutina</b>	Black oak	3	0%
<b>Quercus virginiana</b>	Live oak	1	0%
<b>Taxodium ascendens</b>	Pond cypress	1	0%



<b>Taxodium distichum</b>	Bald cypress	4	1%
<b>Thuja occidentalis</b>	Western red cedar	1	0%
<b>Tilia americana</b>	Basswood	3	0%
<b>Tilia cordata</b>	Littleleaf linden	1	0%
<b>Tsuga canadensis</b>	Hemlock	12	2%
<b>Ulmus alata</b>	Winged elm	2	0%
<b>Ulmus Americana</b>	American elm	5	1%
<b>Ulmus parvifolia</b>	Lacebark elm	9	1%
<b>Vitebsk angustatus</b>	Chastetree	1	0%
<b>Zelkova serrata</b>	Zelkova	1	0%

- B. List of trees appropriate for campus environment
- C. Campus Zones



D. Pie Chart of category distributions in i-Tree Canopy (mulch, impervious, building, canopy, etc.)