Gold Medal Trail

DECEMBER 2019

BENEFITS OF URBAN FORESTS

- Improvements in Air Quality
- Energy Cost Savings
- Natural Habitat
- Stormwater mitigation
- Carbon Sequestration
- Aesthetic Beauty

INSIDE THIS ISSUE:

Urban Trees in Bloomington

"Urban forestry is generally defined as the art, science and technology of managing trees and forest resources in and around urban community ecosystems for the physiological, sociological, economic, and aesthetic benefits trees provide society", as defined by Konijnendijka et al. The City of Bloomington is located in southcentral Indiana. It is listed as the fourth largest city outside of the Indianapolis Metropolitan area and it has a population of approximately 80,405 residents listed in 2010. Located in Bloomington is Indiana University which is home to approximately 48,500 students. Urban forests and street trees are a high priority for both the City of Bloomington and Indiana University. The city's

Flowering Dogwood Indiana University Campus

goal is to maintain its current inventory of 12,000+ street trees and plant a further 4000 trees on vacant and green spaces. The city also provides its residents and its employees with a Tree Care Manual which outlines planting guidelines, approved species lists, and city ordinances. This manual is available to the public and can be found on the city's website.
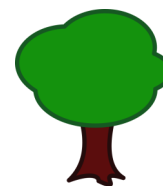
The City of Bloomington is registered as a Tree City USA which outlines four standards established by the Arbor Day Foundation and the National Association of State Foresters.

Indiana University is also registered as a Tree Campus USA, which follows the same standards and guidelines with an additional requirement for a service-learning project for students.

Benefits of Urban Forests

There are two main categories that urban tree benefits can be classified into. The first revolves around the ecosystem service benefits of these plant species. The second category of benefits is comprised of more community and aesthetic based benefits. The ecosystem services benefits of urban trees are wide ranging, but may be unknown to a majority of the community. These benefits include: overall improvement in air quality, carbon sequestration, reduction in energy costs for nearby residential and commercial buildings, stormwater runoff mitigation, soil stabilization, and habitat viability. The impact of these benefits can alter depending on the city where trees are planted, along with their size, root structure, and canopy cover. The community benefits include: aesthetic beauty of trees, connection to

nature, community connection to trees, and, in some cases, improvements in child cognitive development and reduction in crime (Wells, 2000; Troy et al, 2012). Unlike ecosystem service benefits, these community benefits are wholly unique to each individual.
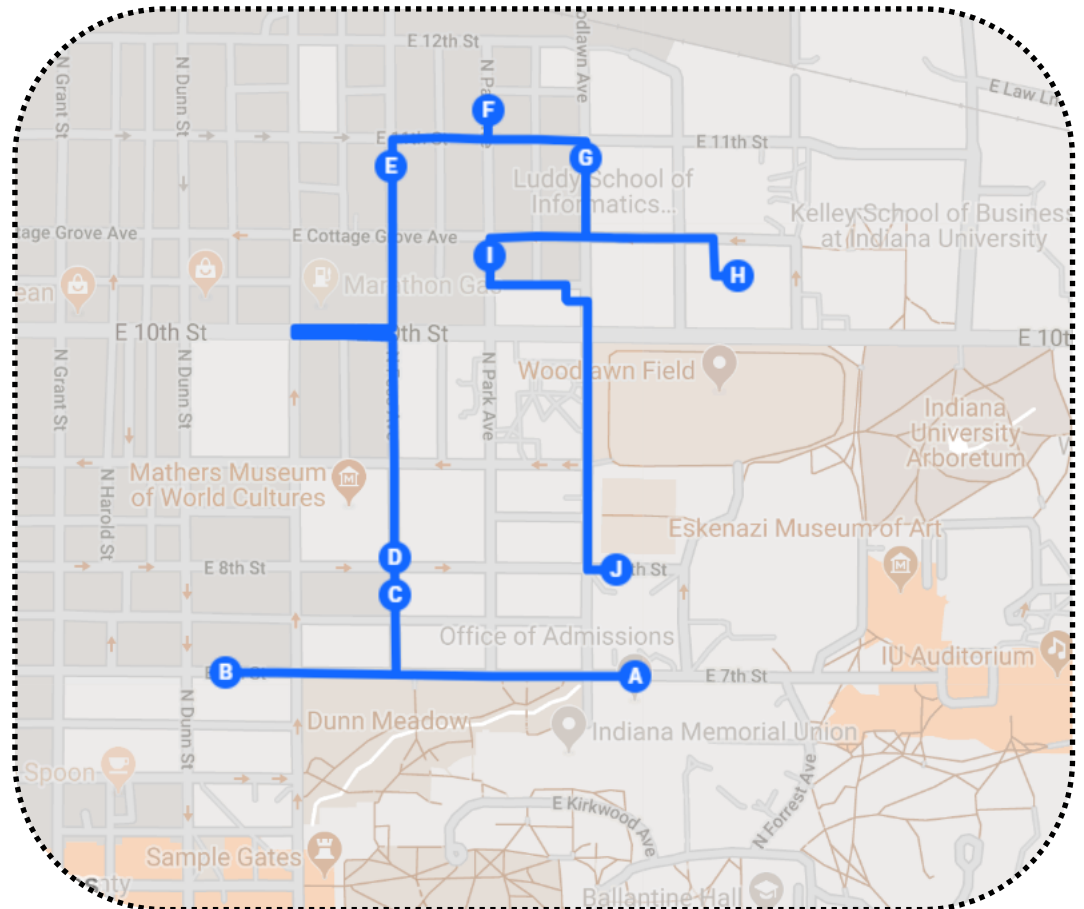
Directions and Information

The IU Admissions Gold Medal Tree Trail is a two-mile loop and will take approximately 45 minutes to complete, including stopping to read information about each tree. The loop runs sequentially through points A — J and highlights 10 trees that were assed, as part of a city as part of a city-wide tree survey, by the City of Bloomington in 2019. The trees have been selected for their size, historical importance, and unique features. All of the trees selected are listed as Gold Medal Trees except for the small Elm hybrid at point J, which was selected to highlight the beautiful Elm and to take special note of the species come back after Dutch Elm disease due to the hybrid variety.

Each year these 10 trees listed in this trail will save the City of Bloomington $1,225.

"Trees exhale for us so that we can inhale them to stay alive. Can we ever forget that? Let us love trees with every breath we take until we perish."
-Munia Khan

IU Admission Building Trail

Tree Facts

Chinkapin Oak - *Quercus muehlenbergii - Gold Medal Tree*
The Chinkapin Oak is often confused with the Chestnut Oak, which is also found in the Bloomington area. The Chinkapin yields a sweet, palatable acorn that is food for all sorts of small critters but can be eaten by people as well.

(A)

Hackberry - *Celtis occidentalis - Gold Medal Tree*
The common hackberry tree, also known as the American hackberry, is easily distinguishable due to its yellowish bark and the wart-like protuberances. It is particularly valued as a street tree but does not offer much value in timber production. The fruit that it produces is edible and has been reported to have a similar taste to dates.

(B)

Northern Pin Oak - *Quercus ellipsoidalis - Gold Medal Tree*
The Northern Pin Oak, often referred to as Hill's Oak, is closely related to the Pin Oak (Quercus coccinea). The Northern Pin Oak will shed its leaves during the winter whereas the Pin Oak will keep them. It has a dark gray bark and can grow to approximately 65 feet tall. In the wild, this tree provides a habitat for many bird and mammal species, including the endangered Kirtland's warbler.

(C)

Swamp White Oak - *Quercus bicolor - Gold Medal Tree*
The Swamp White Oak is a great shade tree for any environment, but particularly for an urban one. It is fast growing and can tolerate compacted soil and salty conditions like those often found in urban settings. In the wild these trees can live up to 300 years old, but have shorter lifespans in urban settings.

(D)

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(E)

Red Mulberry - *Morus rubra - Gold Medal Tree*
Mulberries were popular with the ancient Greeks and were dedicated to the goddess Minerva, the goddess of wisdom. The red mulberry is susceptible to hybridization with the white mulberry in nature, which creates extreme difficultly in identifying the tree in nature.

(F)

Hybrid Elm - *Ulmus*
Elm hybrids became necessary after the onset of Dutch Elm Disease, a pathogen from Asia, that began to totally wipe out Elm trees across the nation in the 1930s. These cultivars have similar characteristics to older Elm trees but will sometimes not have the recognizable fountain shaped crown that old Elm trees once had.

(G)

Northern Red Oak - *Quercus rubra - Gold Medal Tree*
The Northern Red Oak, which is closely related to the Southern Red Oak, can live extremely long for deciduous trees in the wild. According to a chart made by the Morton Arboretum, this red oak is approximately 250 years old!

(H)

White Oak - *Quercus alba - Gold Medal Tree*
The White Oak often has gray bark, but trees with white bark do exist! The name in fact comes from the color of the finished wood. Like other Oak species, White Oaks live a very long life. A White Oak in Maryland was estimated to be 400 years old when it finally fell in a 2002 thunderstorm.

(I)

Northern Pin Oak - *Quercus ellipsoidalis - Gold Medal Tree*
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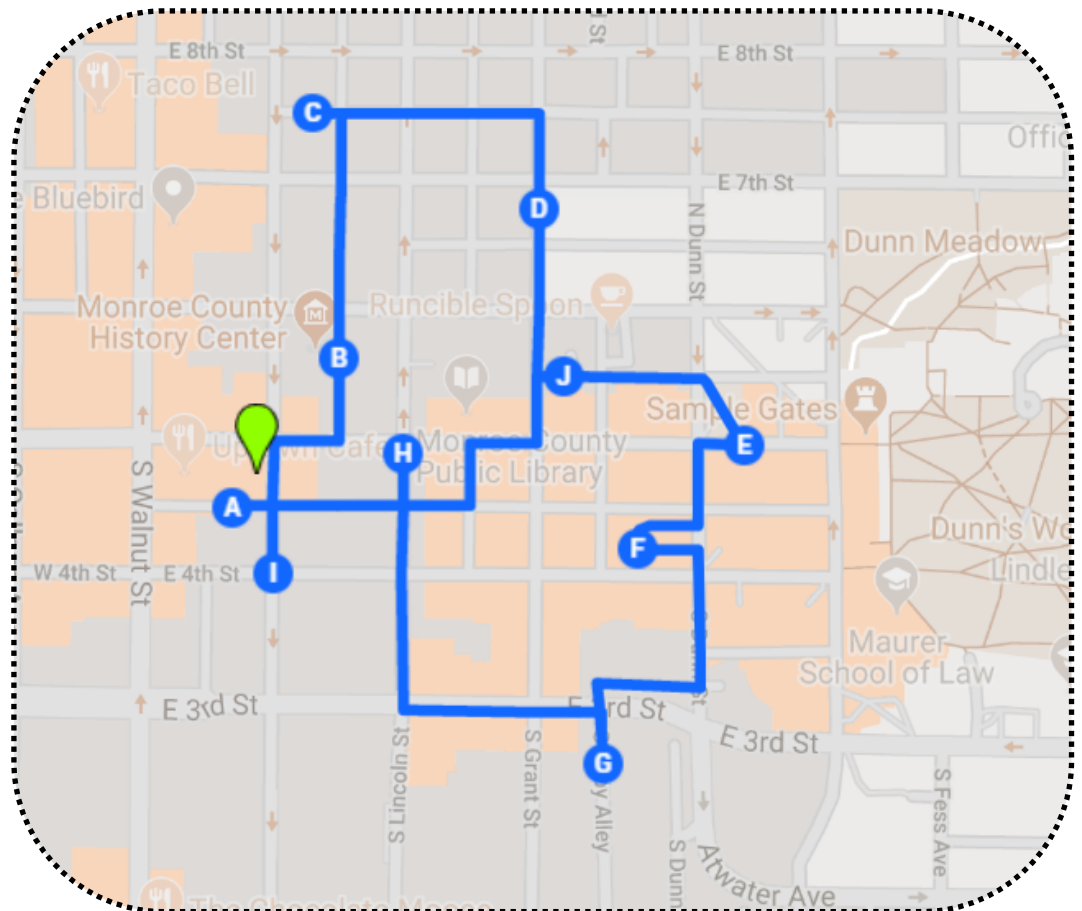**(J)**

Directions and Information

The Monroe County Public Library Trail is a 1.6 mile loop and will take approximately 45 minutes to complete, including stopping to read information about each tree. The loop runs sequentially through points A — J and highlights 10 trees that were surveyed, as part of a city wide tree surveyed, by the City of Bloomington in 2019. Trees at points A, B, and C are listed as Gold Medal Trees in the tree survey. Other trees were selected for the uniqueness of their species. Point F was specifically selected as it is an invasive species and spreads wildly—Callary/Bradford Pear. The tree can still be found on sale at local big box stores here in Indiana. Try to see if you can distinguish between the three different maple leaves—sugar, red, and silver.

Each year these 10 trees listed in this trail will save the City of Bloomington $823.

"Trees exhale for us so that we can inhale them to stay alive. Can we ever forget that? Let us love trees with every breath we take until we perish."
-Munia Khan

Monroe County Public Library Trail

Tree Facts

Swamp White Oak - *Quercus bicolor - Gold Medal Tree*
The Swamp White Oak is a great shade tree for any environment, but particularly for an urban one. It is fast growing and can tolerate compacted soil and salty conditions, those often found in urban settings. In the wild, these trees can live up to 300 years old, but have shorter lifespans in urban settings.

(A)

Northern Pin Oak - *Quercus ellipsoidalis - Gold Medal Tree*
The Northern Pin Oak, often referred to as Hill's Oak, is closely related to the Pin Oak (Quercus coccinea). The Northern Pin Oak will shed its leaves during the winter whereas the Pin Oak will keep them. In the wild, this tree provides a habitat for many bird and mammal species, including the endangered Kirtland's warbler.

(B)

Northern Red Oak - *Quercus rubra - Gold Medal Tree*
The Northern Red Oak, which is closely related to the Southern Red Oak, can live extremely long for deciduous trees in the wild, up to 400 years according to the USDA. It is highly prized for its timber and veneer.

(C)

Sugar Maple - *Acer saccharum*
Known for its brilliant red fall foliage and its sap, the Sugar Maple tree is beloved across America. One mature tree can produce 10-20 gallons of sap but it takes approximately 40 gallons of sap to make just one delicious gallon of syrup!

(D)

Black Locust - *Robinia pseudoacacia*
Black Locust nails held ships together in the War of 1812 were thought to be a key factor in the American victory at the Battle of Lake Champlain, the tree was highly prized in ship building in early American history. The Black Locust is part of the Fabaceae family, which also claims beans and peas. You can see the similarity in the locust pods given off by the tree.

(E)

Callery Pear - *Pyrus calleryana*
The callery pear, also known as the Bradford pear, was highly prized as a street tree due to it uniform look and white blooms in the spring. However, it is now widely regarded as an invasive species due to it ability to spread and dominate forested landscapes. The tree itself has a brittle structure and can lead to liability issues.

(F)

Star Magnolia - *Magnolia stellata*
The Star Magnolia, native to Japan, was introduced to the U.S. in 1862. Fossil records indicate that the magnolia tree species has been on the planet for nearly 100 million years! It is known for its bright white "star" shaped blooms in the spring.

(G)

Shumard Oak - *Quercus shumardi*
The Shumard Oak, a member of the red oak group of oak species, is one of the largest known oak species. It provides shelter and food for many birds and animals including songbirds, wild turkey, waterfowl and feral hogs.

(H)

Silver Maple - *Acer saccharinum*
After World War II, the tree found favor in urban landscaping after the onset of Dutch Elm Disease wiped out a majority of Elm trees in urban settings. The Silver Maple is an excellent street tree because of its accelerated growth and large canopy for shade.

(I)

Red Maple - *Acer rubrum*
The Red Maple is perhaps one of the most famous street trees here in Bloomington. The maple leaf was in fact the inspiration for the Bloomington city seal. This tree provides many benefits but is highly prized due to its brilliant red color in the fall. Maple wood is also a great commodity. The wood is used for bowling pins and billiard cues, making it a key component to a night of family entertainment!

(J)

Tree Survey: City of Bloomington

Urban trees in the City of Bloomington can be found across private and public properties, with a diverse range of vegetative species. A majority of these species can be grouped into the hardwood ecosystem category, but there is still a range grass, shrub, and flowering plant diversity. Urban trees in the city are managed by the Tree Commission, an 8 member group, which consists mostly of retired university professors and meets once a month. The Tree Commission of Bloomington recently hired an outside consultant, Davey Resource Group, to do a full inventory on the street trees of the city.

This inventory combined bottom up and top down approach using LiDAR and physical tree surveys. The field survey included trees, stumps, and vacant planting sites, which included 237 miles of streets and 11 parks. The survey was conducted by 4 arborists and included DBH, species, maintenance needs, defects, risks, tree grade information and relation to utilities. Overall, the arborist identified 19,013 trees, 4,417 planting sites and 741 stumps. Of the trees identified, a select few that meet certain size and health characteristics are classified as "Gold Medal Trees." These trees represent the best that the City of Bloomington has to offer regarding size, aesthetic, and ecosystem service benefits. For anyone looking to appreciate the benefits provided by urban forests, these trees are a great place to start.

Get Involved

There are many avenues for someone looking to get involved with urban forest management within their community. If you live in Bloomington, attending the Tree Commission meetings and participating in their discussion of Bloomington tree management is a good place to start. If you do not live in Bloomington, then you should check to see if your local municipal government has a tree commission. If not, you can try to form a tree commission with other members of your community.

Outside of this, there are nonprofits, like Keep Indianapolis Beautiful, who focus on planting and maintaining trees in an urban setting. These organizations are always looking for volunteers and will educate anybody about proper tree planting and maintenance techniques. If your neighborhood is noticeably lacking in healthy trees, you and your neighbors can apply to these different organizations to have a large scale planting event in your neighborhood.

Even if these types of organizations are not readily available in your community, anyone can learn about the visual cues that identify a tree in poor condition. Davey, the parent company of the Davey Resource Group who performed the Bloomington Street Tree Survey, has many useful guides on how to identify if a tree is sick or dying, measure DBH, or to properly identify which species of tree is on your property. This information can be found through their Davey Blog. If you see a tree that is in poor condition, be sure to contact your local community arborist or natural resources manager and inform them about the tree if they are not already aware of the situation.

Tree lined Kirkwood Avenue looking downtown in Bloomington Indiana.

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