

### Village Tree Lawn Inventory 2019-2020

The Village of Gambier Shade Tree Commission undertook a tree lawn inventory in 2016 on the advice of our ODNR Urban Forester, Lisa Bowers. With the help of a Kenyon student intern, Isak Davis, we completed the inventory in early 2020.

Lisa Bowers suggested that, before we undertake any long-term planning for the management of our urban forest, we understand the specifics of what we have now. Thus, we undertook the chore of going street by street, noting each Tree Lawn member. (The Village Tree Lawn includes all trees within ten feet of any village street. The inventory does not include trees on Kenyon College property.)

For each tree, we noted species; trunk diameter at chest height; tree height; tree health; and proximity to power lines. We also tagged lat/long data for each tree.

Individual species counts are noted below. Among the species counted, we found small numbers of rare, valuable, vulnerable, or endangered native trees, including:

SLIPPERY ELM (25)  
SASSAFRAS (3)

OSAGE ORANGE (1)  
AMERICAN CHESTNUT (2)

The annual work plans for the Shade Tree Commission will include tasks for providing extra care to these trees.

The United States Forest Service (USFS) climate change models project the following species will experience a decline in habitat in Ohio:

AMERICAN BASSWOOD (2)  
AMERICAN BEECH (9)  
AMERICAN ELM (15)  
BIG TOOTH ASPEN (0)  
BLACK CHERRY (32)  
BLACK MAPLE (11)

EASTERN HEMLOCK (16)  
EASTERN HOP HORNBEAM (0)  
EASTERN WHITE PINE (19)  
QUAKING ASPEN (0)  
RED MAPLE (17)  
SUGAR MAPLE (177)

Number of trees of above 12 species inhabiting the Village Tree Lawn: 298

Number of trees of above bolded species inhabiting the Village Tree Lawn: 209

Total Number of Trees Inventoried: 654

---

## Tree Counts

American Basswood (2)	Pagoda Dogwood (1)	Burr Oak (1)
American Beech (9)	Eastern Hemlock (16)	Pin Oak (4)
Beech (7)	Cedar (1)	Scarlet Oak (5)
Sweet Beech (1)	Eastern Red Cedar (3)	Red Oak (2)
All Beech (17)	Golden Raintree (2)	All Oak (64)
American Chestnut (2)	Gray Alder (1)	Persimmon (1)
American Elm (15)	White Alder (1)	Pignut Hickory (6)
Siberian Elm (1)	Common Hackberry (19)	Mockernut Hickory (3)
Slippery Elm (25)	Japanese Yew (5)	Bitternut Hickory (16)
Chinese Elm (1)	Japanese Ivory Silk (1)	All Hickory (25)
All Elm (42)	Kentucky Coffee Tree (1)	Poplar (3)
Apple (3)	Magnolia (1)	Tulip Poplar (3)
Balsam Fir (1)	Japanese Maple (1)	Purple Willow (1)
Black Cherry (32)	Big-toothed Maple (1)	Pussy Willow (1)
Sweet Cherry (3)	Sugar Maple (177)	Redbud (6)
All Cherry (35)	Red Maple (17)	Rocky Mt. Juniper (1)
Black Locust (11)	Black Maple (11)	Sassafras (3)
Black Walnut (27)	Silver Maple (6)	Sycamore (3)
Butternut Walnut (4)	All Maple (213)	White Ash (28)
Box Elder (7)	Mountain Laurel (2)	Birch (1)
Callory Pear (8)	Northern Catalpa (3)	White Birch (4)
Cathaya (1)	Norway Spruce (32)	White Mulberry (8)
Cleveland Select Pear (3)	White Spruce (5)	Eastern White Pine (19)
Crusader Hawthorn (1)	Red Spruce (1)	Austrian Pine (1)
Cypress (1)	All Spruce (38)	Red Pine (4)
Dogwood (7)	White Oak (49)	All Pine (24)
Flowering Dogwood (2)	Black Oak (2)	Osage Orange (1)
Gray Dogwood (2)	Blackjack Oak (1)	

(With appreciation to Isak Davis, Doug Givens, Laurie Thompson, and the folks at ODNR)

## Best Native Trees to Plant, per ODNR Urban Forester, Division of Forestry

Climate change has already increased temperatures and the frequency of heavy rain events in Ohio. Over the next several decades, these trends will become more pronounced, altering the forests as we know them. With this changing climate, some tree species will thrive, while others are less likely to survive. Here are lists of tree species to plant in these changing conditions, and ones to avoid.

### Standing Strong

Some tree species adapt better to environmental change and disturbance than others. These adaptable trees resist pests and diseases or tolerate changes in shade levels, drought and storm systems. Climate change models project the following species will thrive in Central and North-east Ohio over the next several decades:

#### BITTERNUT HICKORY

Height at maturity 80' to 100'  
Spread at maturity 60' to 80'  
Growth per year 18" to 24"

#### BUR OAK

Height at maturity 70' to 80'  
Spread at maturity 70' to 80'  
Growth per year 14" to 18"

#### BLACK OAK

Height at maturity 70' to 90'  
Spread at maturity 70' to 90'  
Growth per year 14" to 18"

#### EASTERN RED CEDAR

Height at maturity 40' to 55'  
Spread at maturity 10' to 25'  
Growth per year 9" to 12"

#### BLACK WALNUT

Height at maturity 70' to 90'  
Spread at maturity 70' to 90'  
Growth per year 18" to 24"

#### SCARLET OAK

Height at maturity 70' to 90'  
Spread at maturity 70' to 90'  
Growth per year 16" to 20"

### New Neighbors

As temperatures rise, Ohio could become a more promising habitat for southern tree species. Climate change models predict the following species should be successful in Ohio in the future:

#### AMERICAN SWEETGUM

Height at maturity 60' to 85'  
Spread at maturity 40' to 50'  
Growth per year 18" to 24"

#### COMMON PERSIMMON

Height at maturity 45' to 60'  
Spread at maturity 25' to 40'  
Growth per year 14" to 18"

#### BLACKJACK OAK

Height at maturity 35' to 50'  
Spread at maturity 35' to 60'  
Growth per year 7" to 10"

#### EASTERN REDBUD

Height at maturity 20' to 30'  
Spread at maturity 25' to 35'  
Growth per year 12" to 14"

#### CHINKAPIN OAK

Height at maturity 70' to 90'  
Spread at maturity 70' to 90'  
Growth per year 16" to 20"

#### POST OAK

Height at maturity 40' to 55'  
Spread at maturity 40' to 60'  
Growth per year 14" to 18"

## Trees in Trouble

The amount of moisture retained in a forest will likely be affected by rising temperatures and heavier rain events. Some trees will be less likely to tolerate these moisture changes, making them vulnerable to pests and diseases.

The United States Forest Service (USFS) climate change models project the following species will experience a decline in habitat in Ohio:

AMERICAN BASSWOOD  
 AMERICAN BEECH  
 AMERICAN ELM  
 BIG TOOTH ASPEN  
 BLACK CHERRY  
 BLACK MAPLE

EASTERN HEMLOCK  
 EASTERN HOP HORNBEAM  
 EASTERN WHITE PINE  
 QUAKING ASPEN  
 RED MAPLE  
 SUGAR MAPLE

## Invasives to Eradicate

Tree of heaven — *AILANTHUS ALTISSIMA*, commonly known as tree of heaven, ailanthus, or in Chinese as chouchun, is a deciduous tree in the family Simaroubaceae. It is native to both northeast and central China, as well as Taiwan. Unlike other members of the genus *Ailanthus*, it is found in temperate climates rather than the tropics. Tree-of-heaven is a hardy, fast-growing invasive species capable of out-competing native species, and thriving in inhospitable conditions.

Scientific name: *Ailanthus altissima*

Family: Simaroubaceae

Rank: Species

Higher classification: *Ailanthus*

Kingdom: Plantae



## Observations and Suggestions

Based on initial evaluation of the tree count and previous conversations with our ODNR Urban Forester, a primary goal for managing the long-term health of our village forest should be to increase the diversity of species represented. Recent trends have shown that an over-reliance on a small number of tree species can create conditions where invasive pests and changing climate conditions can quickly deteriorate the forest landscape of a village, town, or city. For example, certain communities in southern Michigan had to be clear cut when the Emerald Ash Borer infestation quickly spread to all the White Ash trees lining their streets. The visual impact was devastating, and the other benefits of tree-lined streets (shading, air filtering, lower temperatures and ozone levels, less noise, added value to homes) were suddenly diminished.

A first proposal is to submit our inventory to ODNR for analysis and feedback. ODNR will provide guidance on forward-going tree planting for the village, and those recommendations can be shared with Kenyon College. In addition to enhancing diversity, the recommendations will note specific species we can plant to build resilience and enhance the long-term forested character of our streetscapes.

We are loaded with Maples (they comprise 213 of our 654 street trees, over 32%) and significantly, Sugar Maples, Red Maples, and Black Maples appear on the United States Forest Service (USFS) climate change models projecting species decline in Ohio. Our follow-up with ODNR will focus on managing the health of these trees and identifying good alternatives to plant.