

25. European hornbeam. *Carpinus betulus*

This species was used to create the hedgerows of Europe during World War II. Today they are often planted as windbreaks for crops.

26. Eastern White Pine. *Pinus strobus*

A native conifer that is very site specific. It does not survive well on grass, so it must be grown on pine needles or mulch under it. It is the state tree of both Maine and Michigan.

27. Sweetgum. *Liquidambar styraciflua*

The most popular cultivar is the Moraine sweetgum, named for the Moraine Farm, which was located on a moraine. It is one of few plants with a split range, one in Southeast US, but also found in Central America.

28. Bur Oak. *Quercus macrocarpa*

Bur Oak has the largest acorn of any oak in the world, up to the size of a golf ball. Its bark can be up to 6 inches thick to protect it from natural wildfires.

29. Horsechestnut. *Aesculus hippocastanum*

A European native, it is often mistaken for the Ohio buckeye, yet it is much more arboreal, slower to grow but will become massive, and is said to be a better ornamental.

30. River Birch. *Betula nigra*

River Birch is native to Ohio, north up to Dayton, and commonly found on sandbars. It is very sensitive to iron/manganese, and it's color is reacting to the high pH of campus soil.

31. English Oak. *Quercus robur*

This tree is thought to be Jesse Owens's oak. This is the species that Owens was given after he received 4 gold medals in 1936. Purportedly, he gave one to his highschool, planted one at his home, and the other was to be planted on OSU campus.

32. Japanese Pagoda tree. *Sophora japonica*

This was originally planted as a seedling in the 1960's. It is an east Asia native that is often found in temple gardens.

i-Tree Calculator

The i-Tree software quantifies just how many ecosystem services our urban forests perform for us through storm water management, conservation of energy, improvement of air quality, and CO₂ sequestration.

Storm water

Storm water runoff washes chemicals such as oil, gasoline and salts along with dirt or litter found on road surfaces into streams, wetlands, and rivers. Not only will this affect aquatic life, but also our drinking water. Trees act as reservoirs for storm water by intercepting rain and holding it on their leaves, branches and bark, also their root systems are able to store rainwater.

Energy

Trees conserve building energy use. Their shade helps to reduce the amount of heat absorbed and stored by the building. Canopies of trees slow down wind, which reduces heat loss from a home. By placing trees strategically, they will shade the building in the summer, and slow down heat loss from winds in the winter.

Air Quality

Over 150 million people live in an area where the ozone levels violate the federal air quality standards. Urban forests absorb pollutants such as ozone, nitrogen dioxide and sulfur dioxide through leaves. Trees also release oxygen through photosynthesis, and intercept particulate such as dust, ash, and smoke.

CO₂

On average, an owner of a mid-sized car drives approximately 12,000 miles every year, generating about 11,000 pounds of CO₂. Trees can reduce atmospheric carbon by sequestering CO₂ in their roots, trunks, stems and leaves. By reducing energy use, they help to reduce emissions associated with power production. Planting trees can help to reduce our "carbon footprint".



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The mission of the Chadwick Arboretum & Learning Gardens is to honor our land-grant tradition by using plants for education and enjoyment.

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TREES OF THE OVAL — A walking tour

1. Overcup Oak. *Quercus lyrata*

This is a rare tree in Ohio. It is one of species that survived the floods of the Mississippi River best, it is capable of surviving floods even when inundated for up to 4 months.

2. Willow Oak. *Quercus phellos*

This is a common street tree. It has a native range from Philadelphia all the way south to Atlanta. It received its name because it's leaves are similar to willow leaves.

3. Hedge Maple. *Acer campestre*

This tree received its name from its association with the hedgerows of Europe in World War II.

4. Dawn Redwood. *Metasequoia glyptostroboides*

This tree had been thought to be a living fossil when it was introduced to this country in 1945, but has since then been found in Pennsylvania coal deposits.

5. European Beech. *Fagus sylvatica*

As its name suggests, this tree is native to Europe but used extensively as an ornamental in the U.S. It can be clipped to form attractive hedges, or let grow into a large tree.

6. Sawtooth Oak. *Quercus acutissima*

An Asian native, this tree is selected in this country for its benefit to wildlife. Unlike other oaks it produces acorns consistently, yet does not persist into natural forests, so is not invasive.

7. Oriental Oak. *Quercus variabilis*

This tree, planted in April 2010, was dedicated on Arbor Day 2010 to honor those buckeye scholars who have received the Rhodes scholarship.

8. Black Walnut. *Juglans nigra*

Noted for its valuable wood, large fruit, natural dyes, abrasive cleaner from shell & distinctive flavorful nutmeats, it also releases an antagonistic compound inhibiting the growth of some plants.



9. Ginkgo. *Ginkgo biloba*

Famous for its potent smell, the edible “nut” of a Ginkgo is considered a delicacy in China, and is believed to have health benefits. It has been suggested that it may be effective in treating dementia and Alzheimer’s disease.

10. Chinkapin Oak. *Quercus muehlenbergii*

This Chinkapin Oak was planted to honor the Ohio State University alumni who served our country in World War I.

11. Tulip tree. *Liriodendron tulipifera*

The Tulip tree is the only tree known to have been planted by Jefferson at Monticello, and George Washington at Mount Vernon. The trees at both sites are still living.

12. London Planetree. *Platanus acerifolia*

This species is a cross of American sycamore and oriental planetrees. It was named “London” because it was first identified at the Kew Gardens in London.

13. Paperbark Maple. *Acer griseum*

Paperbark maples were once thought to be sterile. They have since then been determined as self unfruitful, requiring both a male and female tree present to produce fruit.

14. American Sycamore. *Platanus occidentalis*

On OSU’s campus, the American sycamore is the only tree species capable of having been here before the creation of the university.

15. Chestnut Oak. *Quercus prinus*

Chestnut Oak, a slow growing ridge top tree with the thickest ridged, dark brown bark of eastern oaks. The fire resistant bark protects the tree from secondary trunk decay wounds.

16. Zelkova. *Zelkova serrata*

Zelkova, and Asian introduction, was selected for its V-shape because its similarity to the American elm. Ironically, this V-shape is incredibly sensitive to storm damage, and if it hit it rarely survives.

17. Honeylocust. *Gleditsia triacanthos*

Thornless honeylocust was the first plant patented by Ohio nurseries in 1949. It has since been widely planted as street tree, although it can damage sidewalks with its rooting system.

18. Gallery Pear. *Pyrus calleryana*

Introduced by the National Arboretum in the 1960’s, Callery pear is a self unfruitful tree, so similar to crabapple it can be pollinated by it. It is becoming very invasive.

19. European Ash. *Fraxinus excelsior*

This cultivar “Golden Desert” is selected for its dwarf configuration, or slower young growth, and yellow twigs.

20. Norway Spruce. *Picea abies*

Conifers are uncommon to central Ohio, yet this spruce is the best adapted exotic, coming from Northern Europe. It is very invasive in the Adirondack Mountains, wiping out native White spruce.

21. Crimean Linden. *Tilia x euchlora*

This is a European hybrid, very similar to the little-leaf linden. It is widely planted as a street tree, and usually grows to a smaller height of 60 feet.

22. Blue Spruce. *Picea pungens*

The most common seed source for Ohio of Blue spruce is in Kaibab forest, north rim of the Grand Canyon. The additional wax in that environments makes it salt resistant, which is key in Ohio.

23. Kentucky Coffeetree. *Gymnocladus dioica*

The seed of this tree was used as a “poor mans coffee” during the colonial days. Coffee came by sea and was very expensive, so seeds were roasted to caramelize sugars for flavor and color.

24. Turkish Filbert. *Corylus colurna*

Most arboreal of the filberts. The native filbert is a multi-stemmed shrub reaching only 8-10 feet. It is a popular filbert with woodworkers.