



Selecting a Street Tree Guide

An overview of more than 30 species designed to help select the tree best suited for the right-of-way



**Raleigh
Parks**



CONTENTS

Small Maturing Trees – 03

Medium Maturing Trees – 14

Large Maturing Trees – 21

*Presented by the Urban Forestry Division of the
Parks, Recreation and Cultural Resources Department*

Selecting a Street Tree:

Small maturing trees



Carolina Silverbell

Features

- Can grow as large as 35 feet tall
- Can take a rounded or pyramidal crown shape as the tree matures
- Prefers light shade throughout the day, and moist, well-drained soils
- Resistant to pests when flourishing, but can be susceptible to scale insects during drought conditions

Interesting information

- Carolina silverbells have unique, bell-shaped flowers which are attractive to pollinators
- Hummingbirds and a variety of butterflies enjoy the nectar of the flowers
- The fruiting body is uniquely shaped, four-winged, and turns from light green in early autumn, to dark brown well into the winter



Chinese Fringe Tree

Features

- Reaches a mature height of 20 feet
- Can be trained into a single stem trunk, and will take a rounded crown
- Is moderately tolerant of clay soils and drought
- When stressed, can be susceptible to scale insects

Interesting information

- The flowers are fragrant, form in clusters, and bloom in late spring
- The fruits are blue-black in color, and are a food source for birds and wildlife



Mature Chinese Pistache
Photo credit: Jim Robbins CC BY-NC-ND-4.0



Chinese Pistache Flower
In the early spring, unique flowering bodies will appear

Chinese Pistache

Features

- Matures to a height of 35 feet
- Has a rounded crown when young, which spreads out as the tree matures
- Incredibly tolerant of urban conditions like drought and heat
- Does not suffer from diseases or pest problems

Interesting Information

- The berries are desirable food to birds
- In autumn, leaf color ranges from gold, to orange, to burgundy
- The leaves are aromatic when crinkled



Crape Myrtle
Crape myrtles in the right of way



Crape Myrtle Flower
Flowers can be a variety of colors

Crape Myrtle

Features

- Can reach a mature height of 25 feet
- As a single stem tree, develops a spreading, vase-like form
- Very tolerate of urban conditions, like limited soil space, full sun, and drought
- Doesn't suffer from diseases or insect infestations unless stressed

Interesting information

- Flowers bloom in mid to late summer, offering a rush of color when other trees' flowers have typically fallen
- The flowers can weigh the branches down significantly, so monitor the branches during high winds and rainstorms
- Crape myrtles grow very quickly, increasing in height by more than 24 inches per year



Eastern Redbud
Single-stem, mature redbud

Eastern Redbud and Oklahoma Redbud

Features

- Grows to a mature height 30 feet
- Has a short trunk and forms a small, rounded crown
- Relatively tolerant of high heat and compacted soils, but prefers moderate sunlight and adequate watering
- Not susceptible to many insects or fungal diseases

Interesting information

- Leaves are heart-shaped and have a bright gold fall color
- Flowers can sprout all along the tree branches, both old and new, and are seen from March to May
- The flowers are edible for humans and are said to taste like peas



Flowering Cherry
Rows of maturing flowering cherry trees



Flowering Cherry
The nectar is desirable to bees

Flowering Cherry

Features

- Tree will grow to a mature height of 25 feet
- Has a short trunk and a rounded crown
- Should be selectively planted in urban spaces
- Under stress, flowering cherry trees are susceptible to diseases, insects, and fungal infections

Interesting information

- Flowers are very showy, bloom abundantly, and appear in the early spring
- Has dark green summer leaves, which turn yellow and orange in autumn



Flowering Dogwood
Single-stem mature dogwood



Flowering Dogwood Flower
Flowers bloom in early spring, typically between March and May



Flowering Dogwood Fruit
The oval fruit is visible from August to October

Flowering Dogwood

Features

- Will reach a mature height of 25 feet
- Has a short trunk, with spreading branches that keep a rounded shape
- Not tolerant against pollution or high heat, but are a good selection for locations that experience partial shade throughout the day
- Susceptible to mildews, scale insects, and some diseases when stressed

Interesting information

- The true flower of dogwoods is often mistaken to be the four petal-like bracts that can be white or pink; the true flowers are at the center of those bracts, and are small and green
- Flowers are extremely desirable to butterflies and the fruits are eaten by songbirds and squirrels
- The bark is distinct as it forms square and rectangular blocks up the trunk of the tree as it matures



Japanese Maple
Upright, multi-stem form



Japanese Maple Summer Leaves
Photo Credit: Cathy DeWitt CC-B-4

Japanese Maple

Features

- Will reach a mature height of 25 feet
- With so many varieties, Japanese maples can take multiple forms – from a weeping, layered crown, to an upright, vase-like shape
- Relatively resistant to drought, and prefers partial, filtered shade throughout the day
- No serious pest or disease problems

Interesting information

- Very attractive summer and fall color, depending on the variety
- Attracts butterflies, moths, and songbirds



Japanese Snowbell Flower
Drooping flowers can be seen in clusters and have a lovely fragrance.

Japanese Snowbell

Features

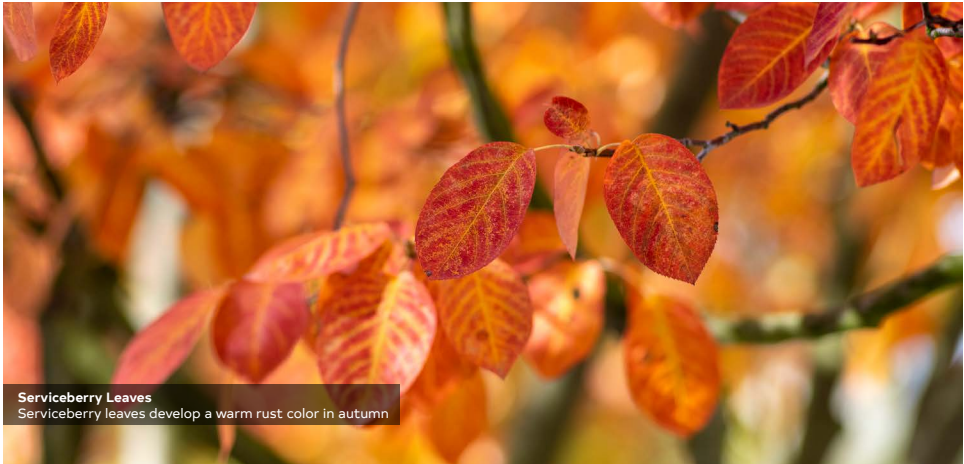
- Reaches a mature height of 30 feet
- Has a rounded crown when young, but takes an upright, vase shape as it matures
- Manages clay soils well, and prefers full sun for 6 hours or more a day
- Doesn't suffer from pests or diseases

Interesting information

- Hummingbirds and songbirds are attracted to the flowers
- Flowers are unique and have a lovely fragrance, unlike other flowering trees, such as Bradford pears



Serviceberry
Serviceberry flowers in early spring



Serviceberry Leaves
Serviceberry leaves develop a warm rust color in autumn

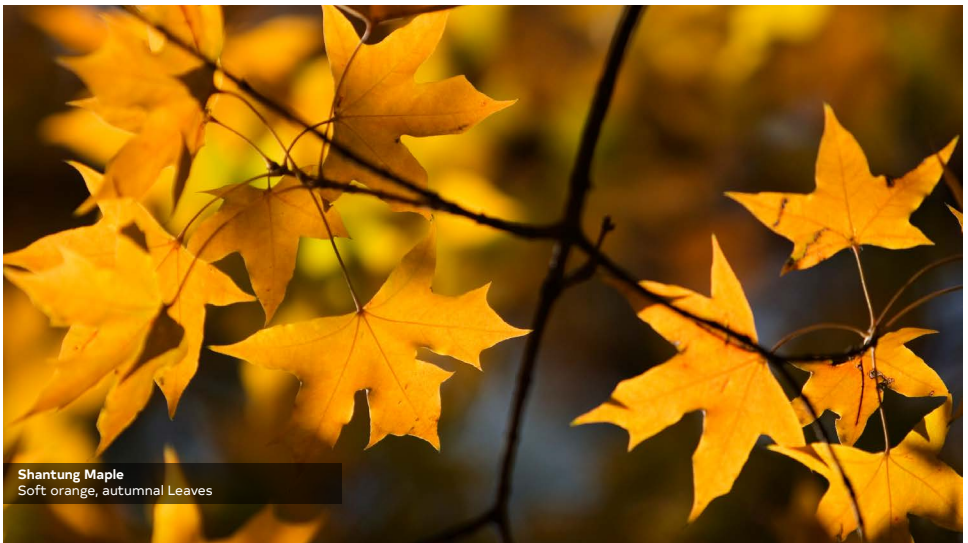
Serviceberry

Features

- Grows to a mature height of 15 feet in limited root spaces
- As a single stem tree, the tree takes a rounded crown
- A drought-tolerant tree and can manage a variety of sun patterns, like deep shade, full sun, and partial shade
- Are susceptible to fungal diseases like fire blight and leaf spot

Interesting information

- The flowers bloom in the very early spring, even earlier than dogwoods
- The fruits are desirable to animals and humans – the fruits taste like blueberries
- The flowers are lightly fragrant and stay on the tree roughly ten days before dropping



Shantung Maple
Soft orange, autumnal Leaves



Shantung Maple Summer Leaves
Photo credit: Derek Ramsey CC BY-SA-20



Shantung Maple Mature Bark
Photo credit:
April Brookside Garden Montgomery CO CD-CHE-CCO

Shantung Maple

Features

- Grows to a mature height of 25 feet
- Broad, rounded mature crown
- Very tolerant of heat and drought conditions
- Doesn't suffer from pest or disease issues

Interesting information

- Has a smaller, yellow spring flower – not incredibly showy, but attractive close-up
- Has a glossy, deep green summer leaf that takes on a bright red autumnal color
- Attracts moths and pollinators to the small flowers

Selecting a Street Tree:

Medium maturing trees



American Holly
Attractive bright red fruits visible during autumn and winter months

American Holly

Features

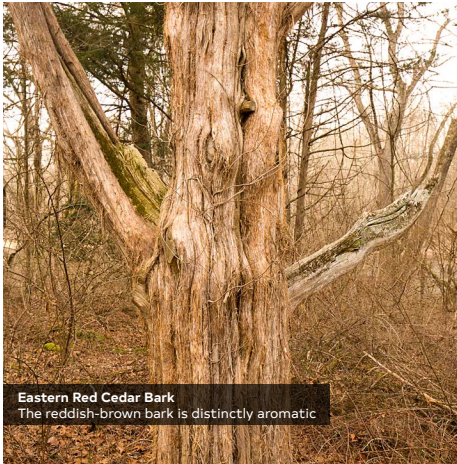
- Will be between 40 and 50 feet when fully grown
- Has a pyramidal shape throughout its life
- As an evergreen, the American holly can provide screening year-round
- Has attractive, small flowers during spring, and bright red berry-like fruits through autumn and winter

Interesting information

- Honeybees and butterflies pollinate and enjoy the flowers
- A variety of birds, like cardinals and blue jays, enjoy the bitter, berry-like fruits during the winter months
- This tree helps clean the soil from toxic materials, like pesticides and pollutants



Eastern Red Cedar Branch
A cedar waxwing on a densely fruited Eastern red cedar limb



Eastern Red Cedar Bark
The reddish-brown bark is distinctly aromatic



Eastern Red Cedar
Upper canopy of a maturing Eastern red cedar

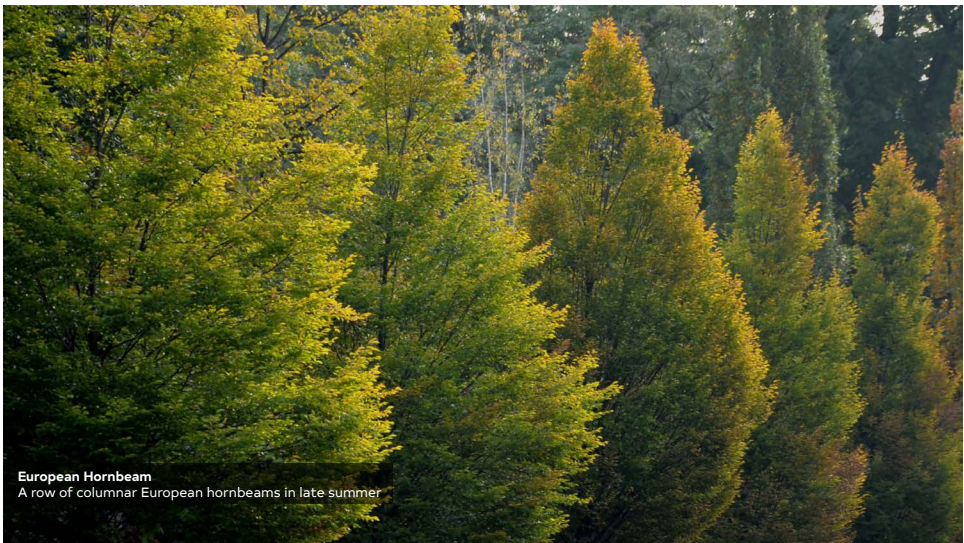
Eastern Red Cedar

Features

- Will be between 35 and 50 feet when fully grown
- Rounded, oblong shape with the branches staying relatively close to the trunk of the tree
- A very hardy tree, tolerates hot and cold temperatures and drought well
- As an evergreen, the Eastern red cedar provides year-round screening

Interesting information

- The juicy, berry-like cones provide nourishment for a variety of wildlife, including the cedar waxwing, a bird whose namesake comes from the Eastern red cedar
- The leaves and bark of the tree are uniquely aromatic
- Seen throughout North Carolina's native landscapes, these trees perform well in a variety of conditions



European Hornbeam
A row of columnar European hornbeams in late summer



European Hornbeam Catkins
Catkins blooming in spring

European Hornbeam

Features

- Can reach a mature height of 50 feet
- If the tree is a "Fastigiata" cultivar the crown maintains a columnar, upright shape throughout its life
- Drought tolerant, likes part shade, but can handle full sun, and can manage a variety of soil types
- Has few to no pests or diseases which impact the health of the tree; however, severe drought in soil-limited spaces will cause crown dieback

Interesting information

- The fruit is desirable to birds and other urban wildlife
- Is a popular tree for narrow rights of way as the form doesn't spread as the tree matures



Lacebark Elm

Features

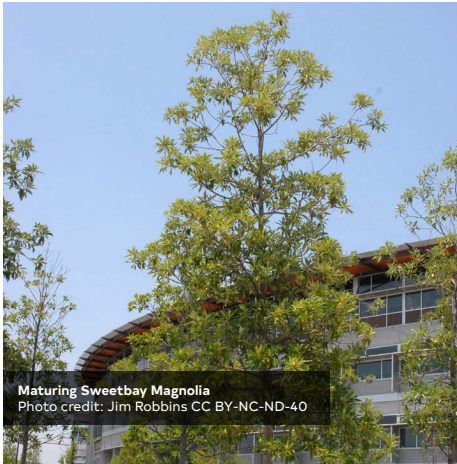
- Will be between 40 and 50 feet tall when fully grown
- Keeps a dense, rounded crown throughout its life
- Extremely tolerant of city conditions like high temperatures, drought, and pollution
- Considered a fast-growing tree, potentially growing 2 feet in height every year

Interesting information

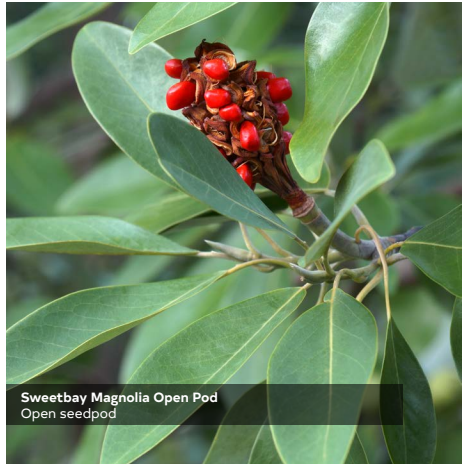
- Called a lacebark elm for its colorful, showy bark
- Resistant to Dutch Elm Disease and Japanese beetles
- Has lovely fall color, ranging from bright yellows to deep oranges



Sweetbay Magnolia Flower
Creamy, white flowers can grow up to four inches in diameter



Maturing Sweetbay Magnolia
Photo credit: Jim Robbins CC BY-NC-ND-40



Sweetbay Magnolia Open Pod
Open seedpod

Sweetbay Magnolia

Features

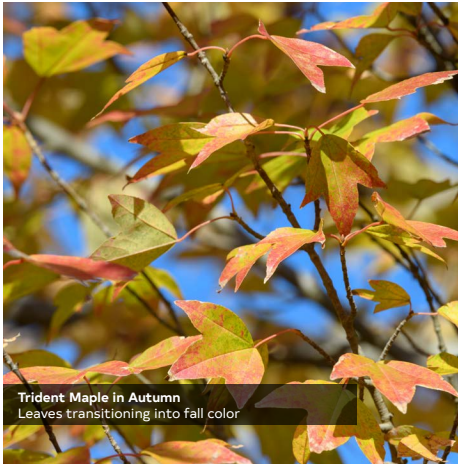
- Will be between 30 and 45 feet when fully grown
- Leaves and limbs stay close to the tree when young, but as it matures, forms a low-spreading canopy
- Handles wet and dry soils well and enjoys full sun
- Naturally resistant to pests, deer, and pollution
- This tree is semi-evergreen and will drop some of its large leaves

Interesting information

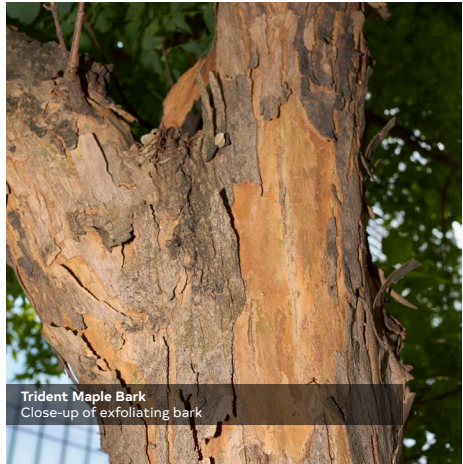
- The bark, leaves, and flowers of the sweetbay magnolia have a "spiced" aroma
- The flowers bloom in late spring/early summer, providing continued pollen for insects



Trident Maple Leaves
Bright green summer leaves



Trident Maple in Autumn
Leaves transitioning into fall color



Trident Maple Bark
Close-up of exfoliating bark

Trident Maple

Features

- Will be between 40 and 50 feet when fully grown
- Takes a round canopy form as a single-stem tree
- Tolerates compact soils, drought, and pollution, and enjoys full sun
- Doesn't suffer from serious insect infestations or diseases

Interesting information

- The flowers are not incredibly noticeable, but the pollen supports honeybees
- Develops unique exfoliating bark as the tree matures



Zelkova

Photo credit: Jim Robbins CC BY-NC-ND-4.0

Zelkova

Features

- Will be between 35 and 60 feet when fully grown
- Takes a vase-like form with a short trunk and dense foliage
- Tolerates urban conditions well, like drought, extreme temperatures, and poorly draining soils

Interesting information

- While a member of the elm family, the zelkova can be a substitute for American elms
- Are resistant to Dutch Elm Disease (DED) and are less desirable to elm bark beetles which can carry DED

Selecting a Street Tree:

Large maturing trees



American Elm

Features

- Can reach mature heights between 60 and 70 feet.
- American elms are iconic for their vase-like canopy, and slender, lifted branches.
- Tolerates city conditions moderately well, and prefers full sun and consistent watering as a young tree
- American elm cultivars, like Princeton elms and New Harmony elms, are resistant against Dutch Elm Disease; however, given too much stress, other fungal infections can occur

Interesting information

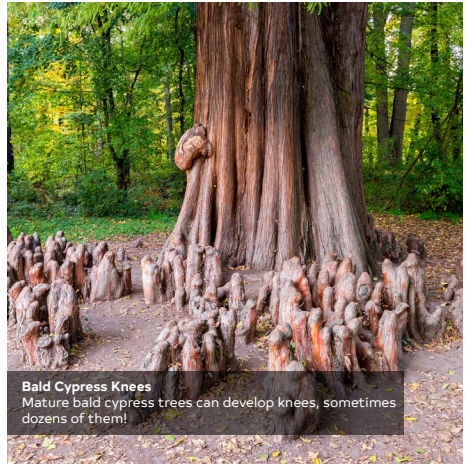
- American elms were a landscaping staple in the late 19th and early 20th century; in the 1930's, Dutch Elm Disease, a parasitic fungal disease, devastated the American elm population
- Cultivars like Princeton elm and New Harmony elm were developed to bring the beloved American elms back into the landscape; these cultivars have shown remarkable resistant to Dutch Elm Disease



Bald Cypress
Row of bald cypress trees in public park



Bald Cypress Cone
Bald cypress cones start light green in the summer and turn brown over the autumn.



Bald Cypress Knees
Mature bald cypress trees can develop knees, sometimes dozens of them!

Bald Cypress

Features

- Can reach mature heights over 70 feet
- Has a large pyramidal form
- Tolerates high winds, poorly draining soils, and a variety of soil types

Interesting information

- While the bald cypress looks like an evergreen, this conifer is deciduous, meaning it loses its leaves in the autumn; bald cypress leaves are uniquely shaped as needles, adding to its misleading "evergreen" appearance
- Bald cypress trees often put out knobby "knees," which come from the ground; while the purpose of these "knees" is unclear, scientists believe they help provide oxygen to the tree, as its native landscape consists of standing water



Black Gum
Black gums have rounded, spreading crowns

Black Gum

Features

- Can reach mature heights of 60 feet
- Has a pyramidal form when young that develops into a rounded crown
- Slow growing, growing less than a foot tall every year
- Tolerant of a wide variety of urban conditions, like dry or wet soils, drought, heat, ice, and is moderately salt tolerant

Interesting information

- Black gums are an asset to urban landscapes as they provide nectar and fruits enjoyed by bees and birds, respectively
- They have bright red fall color, making them a standout in the autumn
- Very few insects, fungi, or diseases target black gums, another reason why this tree is low maintenance



Dawn Redwood
Mature dawn redwoods providing ample shade along street



Dawn Redwood Cones
Male cones form in clusters

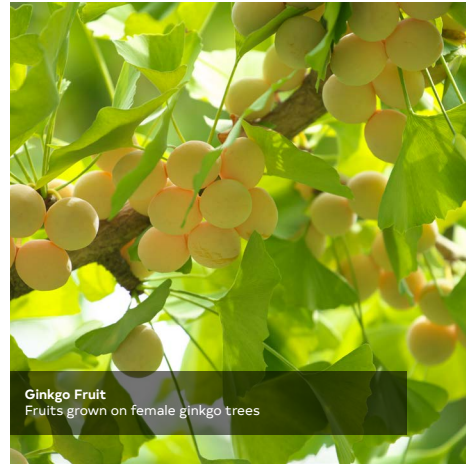
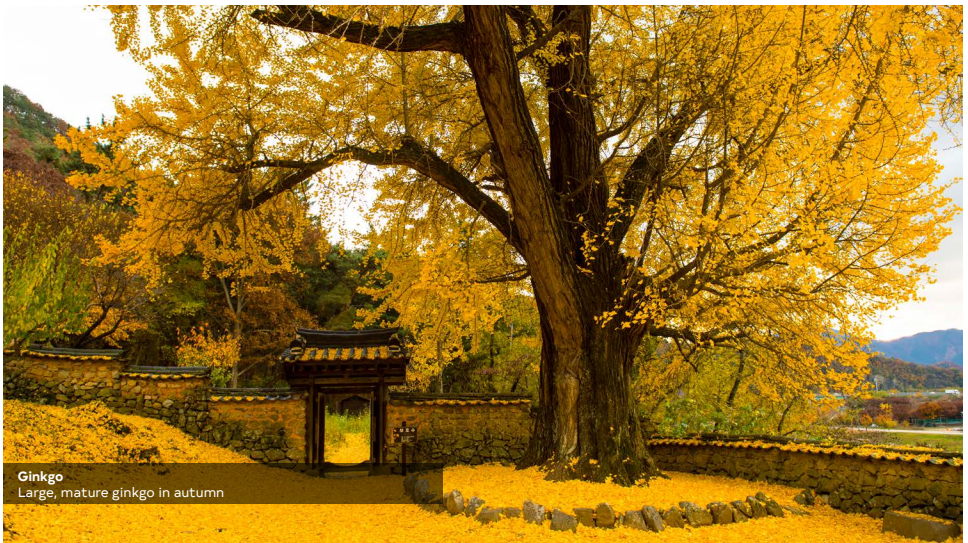
Dawn Redwood

Features

- Can achieve a mature height of 50 to 60 feet
- Has a conical form throughout its life
- Tolerates high winds, poorly drained soils, and a variety of soil types

Interesting information

- Redwoods provide winter cover for birds and small mammals
- Redwoods are not evergreens, but they are conifers and as such produce cones, not fruit



Ginkgo

Features

- Can achieve a mature height of over 60 feet
- Takes a pyramidal shape when young, and develops a horizontal shape as it ages
- Tolerant of urban conditions, like drought, pollution, and heat

Interesting information

- Ginkgo leaves are a unique fan shape that turn bright yellow in autumn
- While the fruits have a strong odor, the seed inside it can be boiled or roasted and eaten
- Be careful to avoid touching the pulp of the fruit, the juice is known to cause irritation



Littleleaf Linden
Young, maturing tree in a park



Littleleaf Linden Flowers
Flowers develop on little leaf lindens in late spring

Littleleaf Linden

Features

- Can reach mature heights of over 70 feet
- Develops an oval-shaped canopy over time
- Requires diligent watering as a young tree during periods of drought
- Susceptible to infestations of Japanese beetles, leaf miners, spider mites, and powdery mildew

Interesting information

- The nectar found in the small, springtime flowers is desirable to hummingbirds and pollinators
- Littleleaf lindens can be a replacement for Bradford pears as they take a similar form, have dark green leaves in the summer, and white (odorless for the littleleaf linden) flowers in spring
- Their dense canopy provides shade during hot summer months



Cherrybark Oak

Features

- Can achieve a mature height of at least 60 feet
- Typically has a straight trunk and a rounded form
- Likes moist, well-drained soils and more than 6 hours of full sun a day
- Is susceptible to wood-boring insects and oak-tree galls

Interesting information

- The acorns are eaten by a wide variety of animals, from woodpeckers to ducks to white-tailed deer
- While the flowers are not vibrant, they do attract butterflies, moths, and pollinators
- The wood is highly desirable as timber for furniture



Laurel Oak Form

Photo credit: Douglas Goldman USDA CC BY-NC-40



Laurel Oak Acorn

Photo credit: Douglas Goldman USDA CC BY-NC-40

Laurel Oak

Features

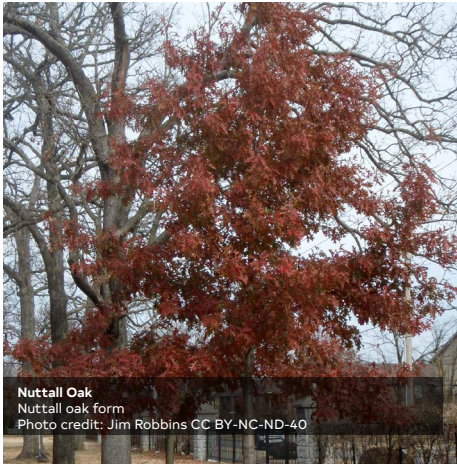
- Can achieve a mature height of 40 to 60 feet
- Considered a fast-growing oak that forms a dense, round crown
- Adapts well in a variety of soil types, including poorly drained, clay soils
- Generally resistant to pests and fungal infections

Interesting information

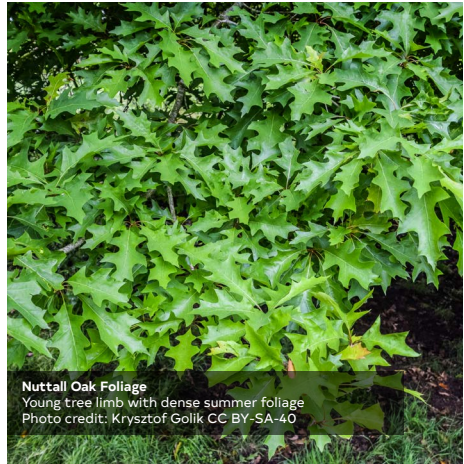
- These trees are semi-evergreen, meaning leaves may persist through mild winters or could fall during harsher temperatures
- The acorns are a valuable food source for birds and small mammals
- The crown also provides nesting opportunities for birds and small mammals



Nuttall Oak Leaf
Typical leaf shape
Photo credit: Krysztof Golik CC BY-SA-40



Nuttall Oak
Nuttall oak form
Photo credit: Jim Robbins CC BY-NC-ND-4.0



Nuttall Oak Foliage
Young tree limb with dense summer foliage
Photo credit: Krysztof Golik CC BY-SA-40

Nuttall Oak

Features

- Can achieve a mature height of 80 feet
- Narrowly spread young crown matures into a round, more open developed crown
- Manages urban conditions well, adapting well to a variety of soil types and drought tolerant, when established
- No pests, diseases, or fungal infections of concern present

Interesting information

- Has very attractive bright red fall color
- The acorns are a valuable food source for birds and mammals
- Shown to be mildly resistant to deer browsing



Overcup Oak Form
Mature overcup oak
Photo credit: Douglas Goldman USDA CC BY-NC-40



Overcup Oak Leaf
Typical leaf shape
Photo credit: Katherine Wagner-Reiss CC BY-SA-40



Overcup Oak Acorn
Unique acorn cap covers the nut almost entirely
Photo credit: Douglas Goldman USDA CC BY-NC-40

Overcup Oak

Features

- Can achieve a mature height of 80 feet
- Takes a wide, rounded spreading form as the tree matures, given ample soil space
- Can manage poorly draining soils
- No issues specific to the species but is susceptible to insects and diseases that commonly affect other oaks, like oak wilt, leaf spot, scale insects, and galls

Interesting information

- A valuable source of food for birds, caterpillars, and small mammals
- While the flowers aren't showy, the catkins attract pollinators like butterflies
- The acorn's cap can completely cover the acorn nut, which can be a useful identification tool



Pin Oak Form
Young, maturing tree form
Photo credit: Willow CC BY-SA-30

Pin Oak, also known as Swamp Spanish Oak

Features

- Can achieve a mature height of 70 feet
- Takes an oval shape as the tree matures, with limbs pointing towards the ground, directly out from the middle, and angled up to the sky
- Tolerates poorly drained soils, heat, drought, and some soil compaction
- Generally hardy against pests and diseases, but spongy moth, galls, and oak wilt, pin oak blight, and cankers can occur

Interesting information

- Another valuable native oak that provides food and habitat for a variety of animal and insect species
- Manages urban environments well and can be placed in a wide planting strip, lawns, or parks



Shumard Oak Form
Maturing shumard oak
Photo credit: Jim Robbins CC BY-NC-ND-40

Shumard Oak

Features

- Can achieve a mature height of 70 feet
- Starts as a pyramidal form when young, and matures into an open, round crown
- Typically adaptable to urban conditions, and can manage drought and pollution
- Susceptible to pests like galls and leaf miners, and can become chlorotic in more basic soils

Interesting information

- Commonly used as right-of-way plantings given their adaptable nature to difficult urban conditions
- Provides habitat for birds, small mammals, and insects



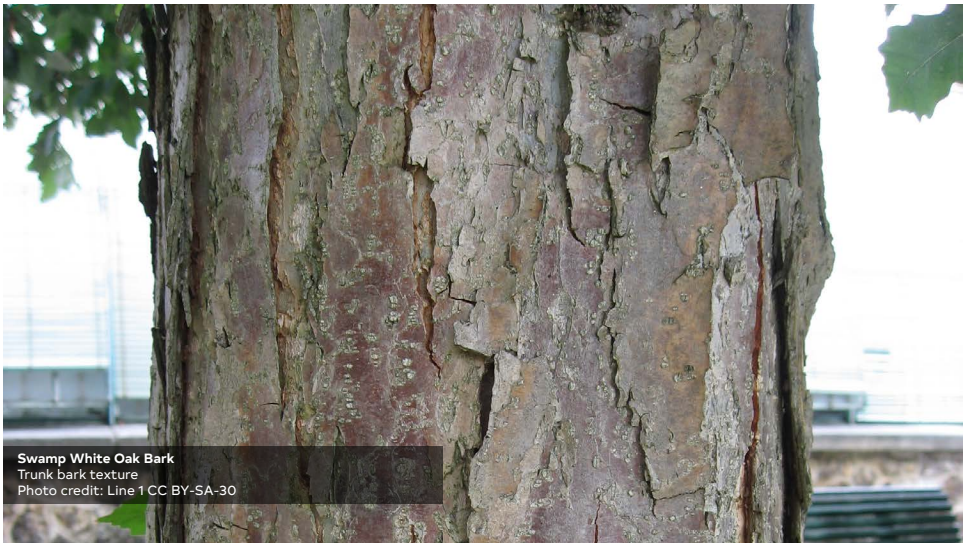
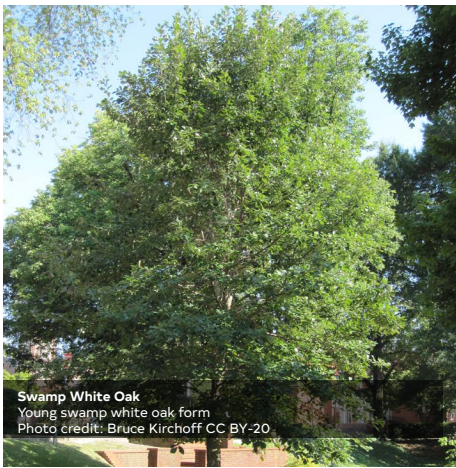
Southern Red Oak

Features

- Can achieve a mature height of over 60 feet
- Forms a broad, rounded crown when mature
- Drought tolerant, manages occasional flooding, and adapts to poor soils
- Susceptible to oak wilt, and a variety of caterpillar species eat the tree leaves and can cause defoliation

Interesting information

- A variety of birds enjoy the acorns, including woodpeckers, wild turkeys, as well as squirrels and white-tailed deer
- Wildlife like to nest and use these trees for habitat
- The underside of the leaves is a light brown color, which provides a colorful difference between the dark green, shiny tops



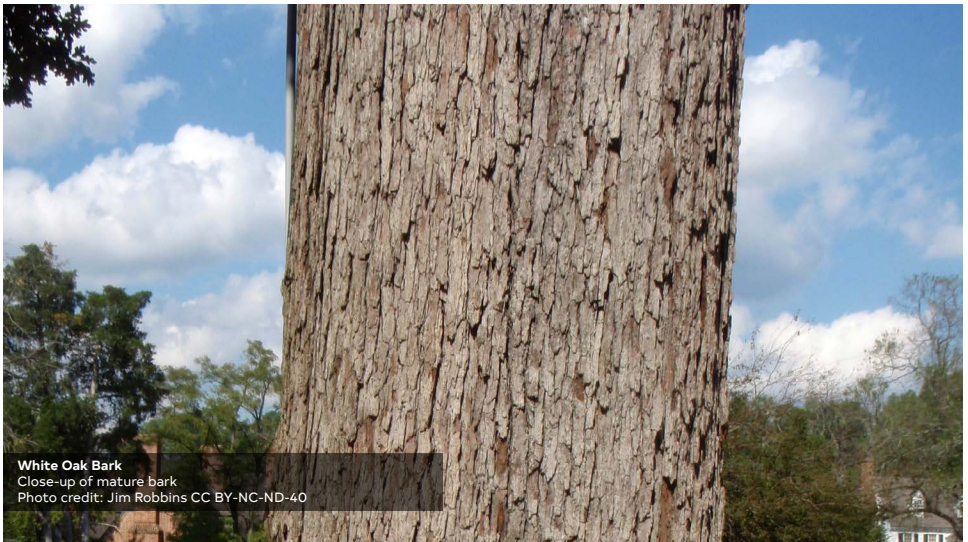
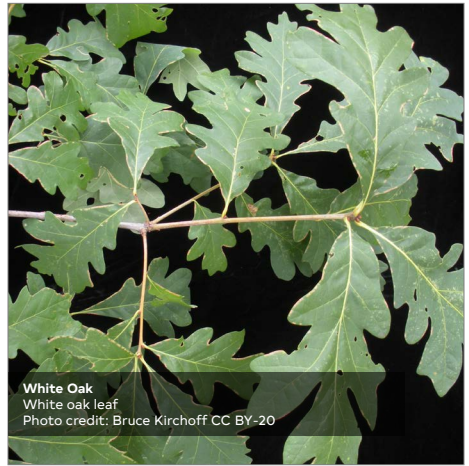
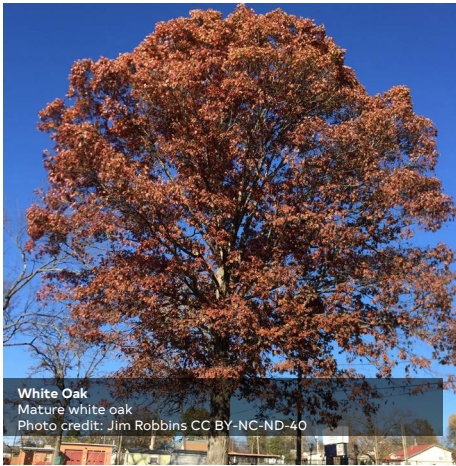
Swamp White Oak

Features

- Can achieve a mature height of 80 feet
- Takes an open, rounded crown as the tree matures
- Tolerant of urban conditions like heat and drought
- Sensitive to air pollution and oak wilt

Interesting information

- Has immense summer foliage providing dense shade
- Bark texture moves onto the branches as well, helping winter identification



White Oak

Features

- Can achieve a mature height of 80 feet
- The upper portion of the tree's mature canopy takes a spreading form
- These trees are resilient against drought conditions and heat
- Pests and diseases can be an issue, but construction-related disturbances are more impactful

Interesting information

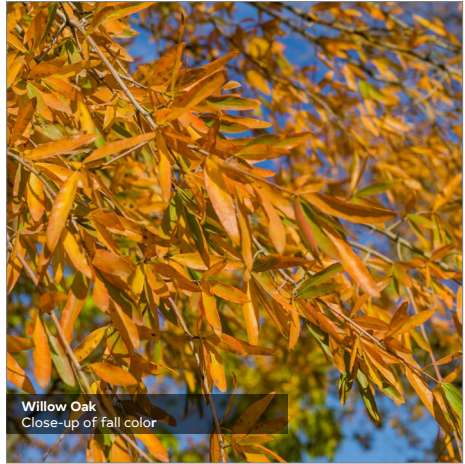
- Habitat for a variety of moths, birds, and small mammals
- Fall color ranges from a deep red to a light brown
- Doesn't manage construction damage well – be sure to provide adequate protections from soil disturbance



Willow Oak
Summertime leaves



Willow Oak
Mature willow oak in autumn



Willow Oak
Close-up of fall color

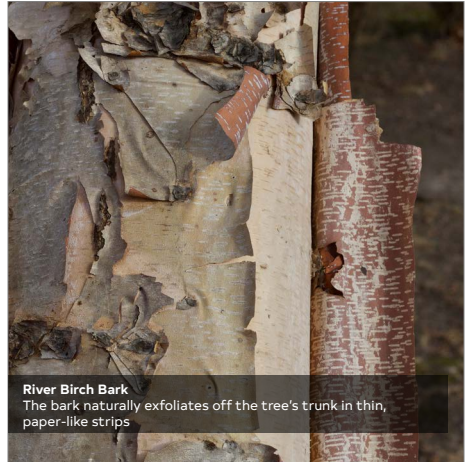
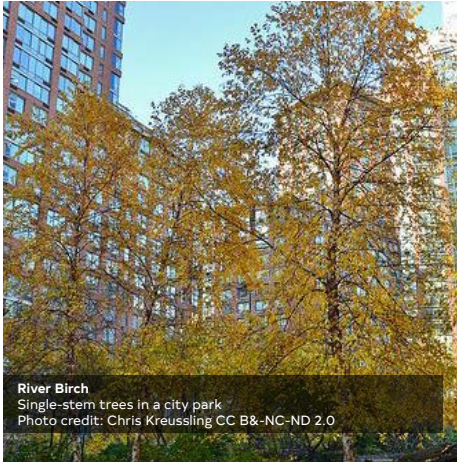
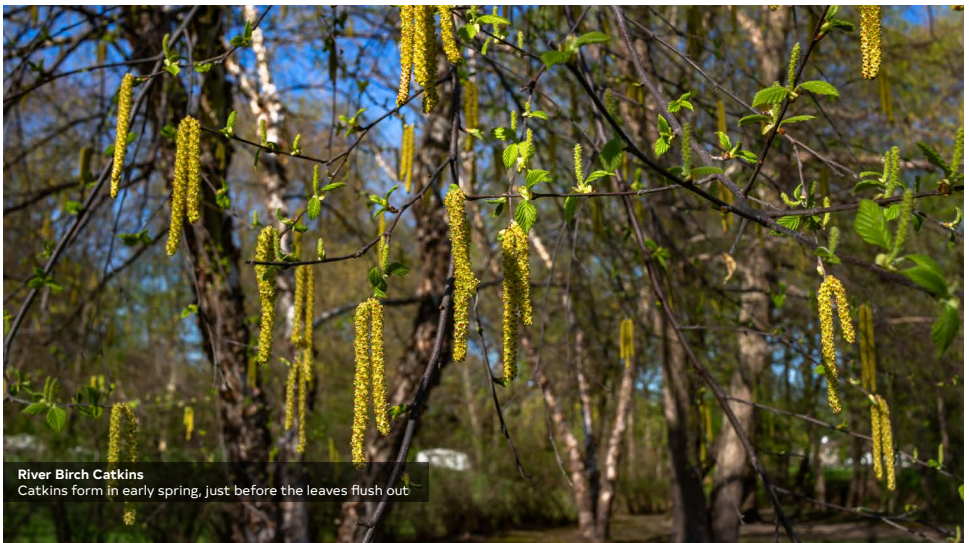
Willow Oak

Features

- Can achieve a mature height of 80 feet
- Takes a rounded form when mature
- Resilient against tough urban conditions, like poorly drained soils and pollution
- Can suffer from root rot and cankers, but is generally resistant to pests and diseases

Interesting information

- Widely used as street trees, lawn trees, and commercial trees
- Compared to other oaks, the willow oak is a relatively fast-growing tree
- The acorns are popular for a variety of birds, small mammals, and even white-tailed deer



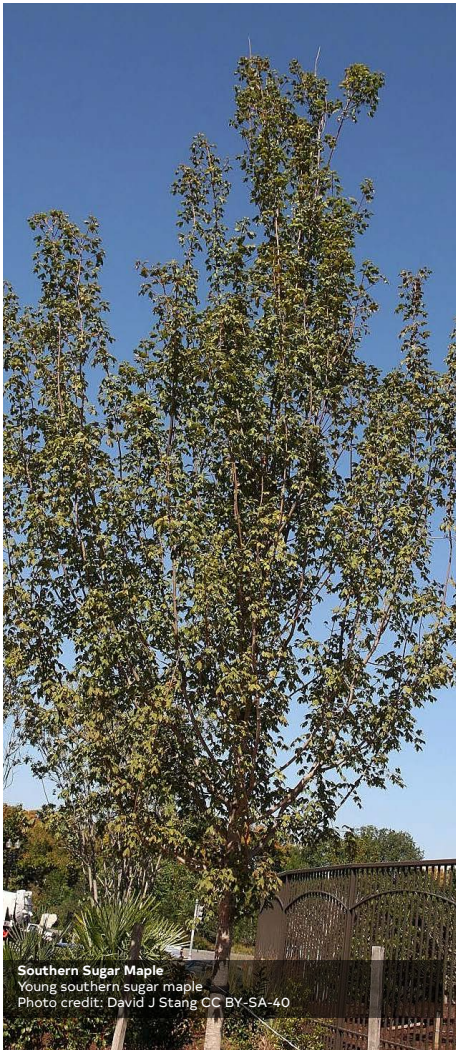
River Birch

Features

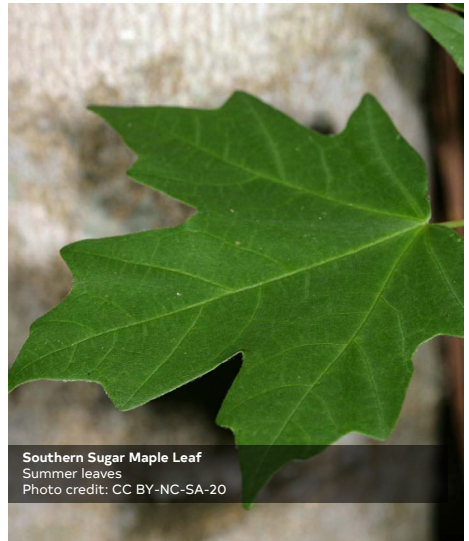
- Can achieve a mature height 60 feet
- Can be single-stem or take a spreading form
- Tolerant of hot conditions and can tolerate flooded conditions, but prefers well-drained soils
- Resistant to bronze birch borers, but aphids, leaf miners, and leaf spot might target the tree during long, hot periods

Interesting information

- The bark naturally exfoliates with brown, golden, and white layers
- The seeds and catkins are edible to birds and some small mammals
- While these trees can be grown as multi-stem, single-stem trees are the preferred form when growing in a planting strip



Southern Sugar Maple
Young southern sugar maple.
Photo credit: David J Stang CC BY-SA-40



Southern Sugar Maple Leaf
Summer leaves
Photo credit: CC BY-NC-SA-20



Southern Sugar Maple Bark
Young bark is light gray and very smooth
Photo credit: David J Stang CC BY-SA-40

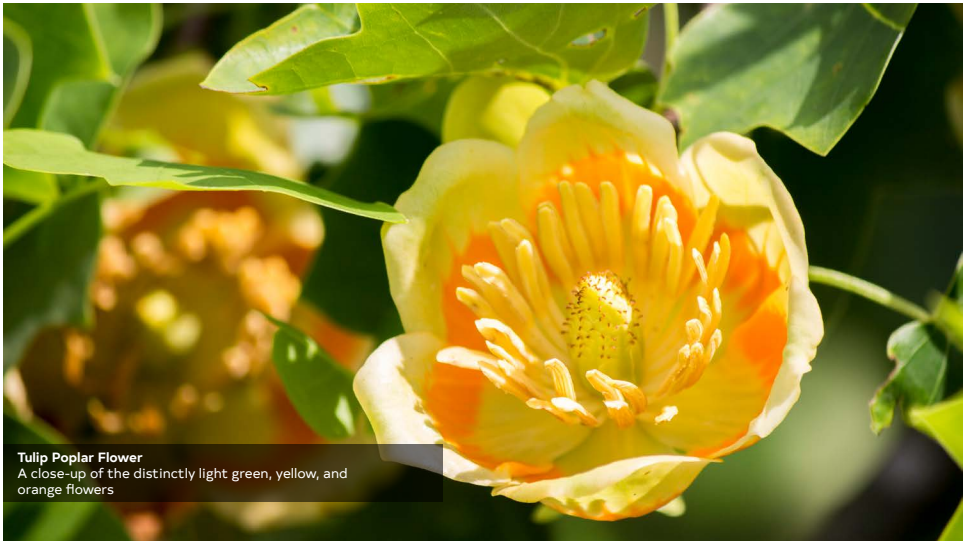
Southern Sugar Maple

Features

- Can achieve a mature height of 70 feet
- Develops a spreading crown as it matures
- Relatively tolerant of urban conditions like heat and drought
- When stressed, trees may experience leaf scorch, leaf spot, and scale insects

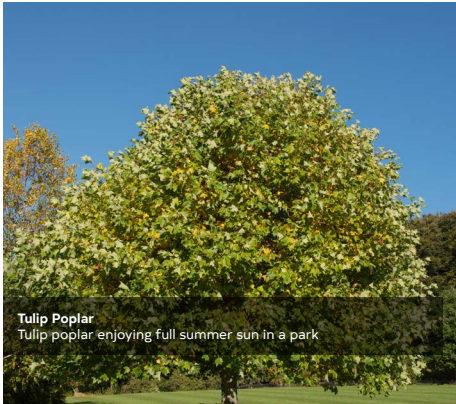
Interesting information

- While the flowers are not showy, they are a valuable source of nectar for pollinators
- Birds and small mammals eat the seeds which mature in late summer
- Fall color changes throughout the season, going from a golden yellow, to a deep burgundy



Tulip Poplar Flower

A close-up of the distinctly light green, yellow, and orange flowers



Tulip Poplar

Tulip poplar enjoying full summer sun in a park



Tulip Poplar in Autumn

Close-up of golden leaves

Tulip Poplar

Features

- Can achieve a mature height of 80 feet, up to 120 feet tall in nature
- Typically has a strong central trunk, that maintains a pyramidal shape through its life
- Sensitive to drought, heat, and soil compaction
- Stressed trees are more susceptible to pests and diseases – stressed tulip poplars are vulnerable to scale insect infestations, sooty mold, and verticillium wilt

Interesting information

- Called a "tulip" or "yellow" poplar as the spring flowers resemble tulips, and the mature heartwood has a unique yellow hue
- Tulip poplars are fast growing in natural areas, often growing over 18 inches in one growing season
- The uniquely shaped leaves turn bright gold in the early autumn and are some of the first to fall

*Thank you to the North Carolina
Extension Gardner Plant Toolbox for
providing photographs throughout this document.
More information about these trees and other vegetative
species can be found at plants.ces.ncsu.edu.*

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