Version 2025.1 **May 2025**

Friends and Neighbors of Washington Park

Denver, Colorado

[Go To List of Trees]

FANS (Friends and Neighbors of Washington Park) published a printed version of the Washington Park Tree Guide in 2010. That guide is out of print and out of date as several trees in the original guide are no longer standing. In response to interest in a revised guide, FANS has revised the Guide as an on-line (and downloadable) document that can be periodically revised as needed. In addition to moving from a printed document to an on-line document the revised Guide includes a geo-reference to facilitate locating each tree within the park. We place an immense value on the trees in the park and hope you'll enjoy reading about their amazing variety.

Most of us have experienced the shock and loss of finding that a large familiar tree has suddenly been cut down. Can you imagine if all the park trees were gone? That was once the case with the land that became Washington Park around 100 years ago. Except for narrow strips of land along a few permanent creeks and rivers, trees do not grow naturally in the high plains environment east of Colorado's Front Range because of the lack of rainfall. It's only by providing irrigation that we can induce trees to grow here, and even then, many types of trees find our climate challenging. Thus, the presence of all the trees in the park (and adjacent

neighborhoods) represents the fruits of an enormous investment in the landscape by individuals and government.

For the convenience of those learning about the trees in Washington Park, we have broken the park into north, central and south sectors, and South High School. People with limited time can visit one sector to look at twenty or so trees and return later to visit the trees in other sectors. Other people may elect to tour all the trees in one longer outing.

One example of each type of tree is identified with a white number on a red marker affixed to the trunk or hanging from a branch of each specimen. The numbers begin near the corner of Virginia Ave. and Downing St. and follow a logical route around each sector of the park. Trees can also be located by clicking on the geo-reference data that accompanies each tree description in the guide. Simply click on the 'Locate This Tree' link near the top of each tree description to locate the tree on Google Maps. You can then select walking directions to obtain directions from your current location to the tree. For full details, see the maps of each park sector and the tree descriptions in the pages that follow. It is not necessary to view the trees in the order they are listed in this guide; feel free to devise your own route to see them. We encourage you to use the

information in each tree description to try and locate another of its species.

NOTE: Some of the trees identified in the 2010 Guide have been removed due to poor health or condition. Such removals are noted in this revised version of the Guide. In some cases, new specimens within the park have been located. In these cases, the original location will be removed from the sector map and replaced with blue numbers indicating the location of the new specimen on the appropriate sector map. In this version of the guide, the following tree species (#6, 19, 24, 28, 33, 44, 47, 48 and 63) have been relocated. Future versions should include additional relocations.

Two types of tags have been used to identify trees, 4” square tags and smaller, 1.3”, circular tags.

Use of the Google Maps locator will facilitate finding tagged trees. Use of the Google Maps app is addressed in FAQ #10 below.

Use of the on-line Tree Keeper software can also be helpful in tree identification in the park and beyond (https://denverco.treekeepersoftware.com/index.cfm?deviceWidth=375).

THE NAMING OF TREES

The names that most people use to describe trees ("common names") can lead to confusion, partly because they may vary from region to region and country to country. In addition, the names themselves may be botanically confusing. For instance, a box elder tree is a type of maple, but its name gives no indication of that. Instead, the name mistakenly suggests that it is a type of elder, another group of plants entirely. Similarly, a Russian olive tree is not an olive, nor is a Douglas-fir a type of fir. In other cases, a tree may be named for its resemblance to another tree, such as willow oak or chestnut oak; however, these trees are oaks, not willows or chestnuts.

To minimize the confusion caused by common names, botanists developed a system to assign a unique scientific name to refer to each type of tree. These are two-part names used worldwide that are derived from Greek and Latin, the first part indicating the genus and the second part the species.

In everyday speech, the two names taken together are referred to as the plant's "species" and in writing the practice is for the genus and species name to be *italicized*. From the earlier example, the box elder tree's scientific name is *Acer negundo.* *Acer* is the genus name and is shared among all maples, while Acer *negundo* refers only to the box elder.

Most of the time when we talk about types of trees, we are referring to their species, though further distinctions are sometimes made, most notably regarding "cultivars." Cultivars are subtypes that have been chosen for commercial production because of their desirable characteristics, such as their growth habit, lack of thorns or excellent fall foliage color. In writing, cultivar names are not italicized and are placed in single quotes after the species name. (e.g., *Salix* x *sepulcralis* ‘Chrysocoma' or *Salix* x 'Tristis')

Don't be misled into thinking that all trees of a given species are uniform in appearance. Individual trees of a given species can exhibit differences in leaf structure, bark characteristics, etc., making identification a challenge.

ABOUT TREE IDENTIFICATION

After viewing the park trees identified in this Guide, you may be motivated to apply what you've seen to identify unmarked trees, so we include below some leaf diagrams that show a few basics of tree identification.

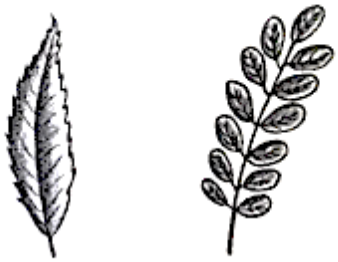
The leaves of a deciduous tree (e.g., oaks, maples, cottonwoods) are usually a reliable initial clue to its identity and are the first thing to examine during the growing season. Some major characteristics of leaves are color, shape, size, whether they are opposite or alternate on the twig and whether they are simple or compound. Simple leaves have buds for next year's growth at the base of their stems, and in the fall detach from the twig at that point. Leaflets on a compound leaf do not have buds at their bases; instead, buds are found at the base of the leaf midrib that supports all the leaflets, and the entire structure detaches during the dormant season. Note that some deciduous tree species, especially oaks) hold their old leaves through the fall and into the winter.

Coniferous trees (e.g., pines, spruce, fir) have leaves shaped as needles and hold those needles through the fall and winter; hence the common term ‘evergreens”. There are a few conifer species that drop their leaves each fall, e.g., bald cypress and European larch (#76).

The flowers of a tree are also an important diagnostic feature, but they are generally only present for a short time. However, flowers are usually followed by fruit and seeds, which often remain attached to the tree into the fall or even the winter, and it can even be possible to identify a tree by examining the remains of its fruit, seeds or even leaves lying on the ground beneath it. During the winter, tree buds and the scars left on twigs where leaves detached can furnish strong clues to a tree's identity. Finally, in some cases tree bark alone can be sufficient for identification. It's very often necessary to examine more than one feature of a tree to make a conclusive identification.

Left: Leaf entire (smooth edge); Middle: Leaf serrate (sawtooth edge); Right: Leaf lobed

Left: A simple leaf; Right: A compound leaf (composed of leaflets)



Left: Leaves alternate
Right: Leaves opposite

Left: Leaf veins pinnate (feather-like)
Right: Leaf veins palmate (hand-like)

FAQ'S ABOUT THE TREES OF WASHINGTON PARK

1. *How many trees are there in Washington Park?*

At present, the number of trees in the park approaches 2000. There were 76 or more tree species in the park and on the South High School campus when this Guide was published in 2010. Since then, some species represented by only a single specimen have been lost and not replaced. However, several new tree species have been planted in the park since 2010. We estimate the current species count now exceeds 90. We will endeavor to add new species to the Guide in future revisions.

2. *What is the most common species of tree in the park?*

Silver maple (*Acer saccharinum*) is the most common, with around 200 specimens. The most common conifer in the park is Colorado blue spruce (*Picea pungens*), with about 150 specimens.

Silver maples are seldom planted anymore in Denver parks because of their overplanting in the past and their tendency to drop limbs under snow load and strong winds. Many in the park had been planted 90

or more years ago and had been reaching the end of their life span. Today there are undoubtedly fewer than 200 of them remaining. There are also fewer Colorado blue spruce in the park than in 2010, as many mature specimens on Evergreen Hill (adjacent to Virginia Ave.) had to be removed.

3. *How many kinds of trees are there in the park?*

Botanists and others will differ in how they count the different kinds, but in our view, there are 80+ species in the park worth distinguishing. However, the number is apt to change over the years, and it should be noted that some have only one specimen in the park at present.

Over the past ten years Denver Forestry has planted a significant number of new tree species in Washington Park and a few others have been added on the South High school property as well. As the new kinds of trees get established, we hope to add them to an expanded tree guide.

4. *Are there any common Denver trees not found in the park?*

Yes. Most noticeably missing are Quaking Aspen (*Populus tremuloides*), Tree of Heaven (*Ailanthus altissima*), Box Elder (*Acer negundo*) and Weeping Birch (*Betula pendula*). Many consider these species invasive, disease-prone, or short-lived.

5. *What are "Champion Trees?"*

These are the largest individual trees of a species growing in the state of Colorado. The Colorado Tree Coalition, a non-profit group, administers the list of champion trees in the state. To qualify as a champion, measurements are taken of a tree's height, trunk circumference and average canopy spread. These numbers feed into a formula that allows comparison with others of their kind; the champion list includes the largest three of each type.

6. *How old are the trees in the park?*

It's doubtful whether many of the trees in the park exceed 120 years of age, which is the time the first parcels of land for the park were being assembled.

7. *Which is the tallest tree in the park?*

It would be one of the cottonwoods along the path that enters the park from Ohio Ave. at Downing St. Several have been measured at or just exceeding 100 ft., which is unusually tall for a Denver tree.

8. *How long can the trees live?*

Some deciduous trees have a fairly short life span, but oaks and many others can live 250 years and more. Most conifers are far longer-lived than that. However, trees are sometimes stressed by urban conditions and in cities may not approach the life span they're capable of in their native habitats.

9. *Why are trees at South High School included?*

South High has several interesting tree species that are not present in Washington Park as well as several Colorado Champions. Since the school is adjacent to the park, several of its trees are included in the Guide.

10. *How do I use Google Maps to locate trees?*

Each tree in the Guide has a link to Google Maps to assist in locating the tree. Simply click on the 'Locate This Tree' link associated with each tree described in the Guide, this will open Google Maps on your device (phone, tablet, laptop, etc.). Click on 'Directions', select 'From Current Location' and select the 'walking' icon. The map will produce a dotted-line path from your location to the tree.

NOTE: Be sure that you have 'Location' enabled in the Google Maps so the app can provide directions from your current location.

11. *How Many Trees Are in the Guide?*

The 2025 guide contains 84 tree species. The original guide listed 76 species of trees grouped into four geographic locations within the park: north sector, central sector, south sector, and the South High School Campus. The 2025 version of the guide adds eight new tree species which appear at the bottom of the Index of Trees.

Index of Trees Found in this Guide:

North Sector Trees (View North Sector Map)

Central Sector Trees (View Central Sector Map)

26. Ponderosa Pine
27. Sugar Maple
28. Scots Pine
29. Blue Ash
30. Black Walnut
31. Kentucky Coffeetree
32. Silver Maple
33. White Fir
34. Honeylocust
35. Thornless Honeylocust
36. Eastern White Pine
37. Callery Pear
38. Black Locust
39. Bur Oak
40. Russian Olive
41. American Elm
42. Pinyon Pine
43. Turkish Filbert
44. Tuliptree
45. Hackberry
46. White Ash

South Sector Trees (View South Sector Map)

47. Red Maple
48. Norway Maple
49. Swamp White Oak
50. Eastern Redbud
51. Apricot
52. Crabapple
53. Goldenrain Tree
54. Chestnut Oak
55. Lacebark Elm
56. Hedge Maple
57. Catalpa
58. Colorado Blue Spruce
59. Shingle Oak
60. European Buckthorn
61. Sawtooth Oak
62. Rocky Mountain Juniper
63. Douglas-fir
64. Littleleaf Linden

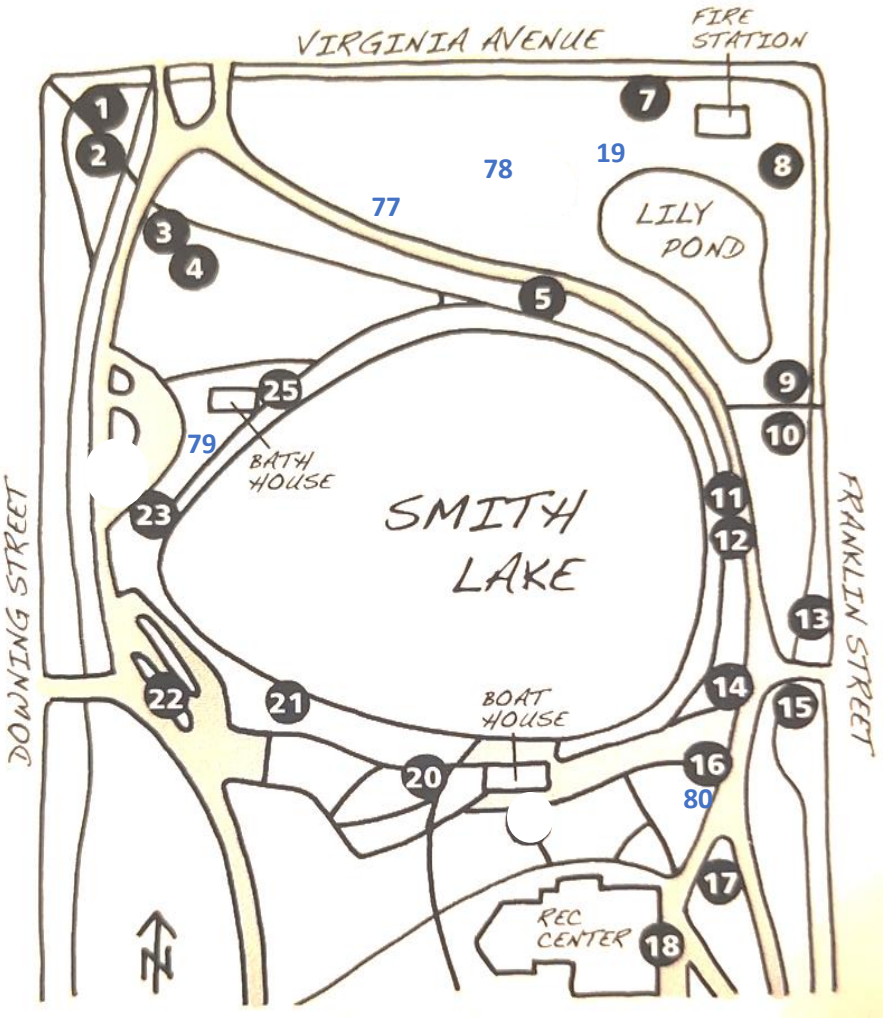
South High School Trees (View South High School Map)

65. Purple European Beech
66. English Oak
67. Spindletree
68. Pagoda Dogwood
69. Yellow Buckeye
70. Ginkgo
71. Serviceberry
72. Mountain Alder
73. Japanese Pagodatree
74. Horsechestnut
75. Yellowwood
76. European Larch

Trees Added to the Original Guide (These appear on the appropriarte Sector Maps; Use the Google Map links to locate their exact position in the park)

77. Bald Cypress	north sector
78. Bosnian Pine	north sector
79. Sweet Gum	north sector
80. Blue Atlas Cedar	north sector
81. Tricolor European Beech	central sector
82. Lacebark Pine	central sector
83. Paperbark Maple	high school
84. London Plane Tree	high school

NORTH SECTOR MAP



NORTH SECTOR

Trees 1-25

Back To North Sector Trees

This map shows the approximate location of trees. Use the 'Locate This Tree' link for each of the trees described below to access Google Maps directions to locate the tree of interest.

1. Amur Maple *(Acer tataricum ssp. ginnala)*

Locate This Tree Back To North Sector Trees

Also referred to as ginnala maple, this is a small often multi-trunk tree native to northern China and the Russian Far East (where the Amur River is located). The tree is very adaptable to urban cultivation and can be pruned to assume a shape to fit many situations. Amur maples will generally not exceed 20 feet in height; state champions are under 30 feet. Even if tightly pruned it will likely develop into an interesting and individualistic form. It has longer and narrower leaves than most maples, and its seeds, on the small side, can show a good red color by August and often remain on the tree late in the fall or even through the winter months. The fall foliage color is often very attractive with ample reds and oranges. This is one of the earliest trees to leaf out in the spring, which often exposes the tender new foliage to one or more of Denver's famous spring freezes, but the leaves seem resistant to damage down into the mid 20's F. This is the most cold-hardy maple,

tolerating winters down to -40° F. if not lower; its adaptability has caused it to end up on invasive plants lists in some northeastern states.

2. Northern Red Oak *(Quercus rubra)*

Locate This Tree Back To North Sector Trees

Northern red oak and bur oak are the oldest and largest oaks in Washington Park. Oaks in general are long-lived, with a life span more than 200 years being common in natural habitat, which for northern red oak is most of the eastern half of the U.S. The Colorado champions reach around 95 feet in height, but more often mature 15 or 20 feet shorter. The trees, given room, develop a spread comparable to their height and a round topped canopy, their rugged branching structure features strong horizontals. As a tree for urban sites, it performs well though it's not exceptionally drought-resistant or tolerant of alkaline soils. Red oak is a relatively fast-growing species, despite oaks having the opposite reputation. The wood is attractive and useful for interior cabinetry applications. This is the state tree of New Jersey.

Oaks can be subdivided into several categories; this tree is unsurprisingly a member of the red oak group, which is characterized by having pointed leaf

lobes, usually with bristle tips, and by requiring two growing seasons to mature its fruit (the acorns). Northern red oak acorns have a flat saucer-shaped cap and are very bitter-tasting because they contain tannins. The leaves have sinuses (the spaces between the lobes) that extend about halfway or less toward the midrib. In the spring the emerging leaves are reddish, and red to russet is the fall foliage color.

The bark of northern red oak is rough and furrowed for the most part, but trunks often include sizeable smooth gray areas.

3. Black Cherry *(Prunus serotina)*

Locate This Tree Back To North Sector Trees

The black cherry tree is native to the eastern states of the U.S. and has a wide distribution from New Mexico south as far as Guatemala. It is a fast-growing and rather long-lived tree that's far larger than other cherries, plums and similar "stone fruit" trees. This tree in Washington Park is the largest of its kind in Colorado at 74 feet in height; the runner-up black cherry is in the park nearby and is 12 feet taller but has a slimmer trunk and less expansive canopy.

Black cherry has a moderately attractive spring display of white blossoms in elongated hanging clusters at the time the leaves are first expanding. The black cherry fruit, around a third of an inch in diameter, develops from these clusters and is initially green, later turning red and finally dark purple when ripe at the end of summer or start of fall. The ripe fruit direct from the tree is marginally palatable to humans, though not widely appreciated; however, it is commonly used as a concentrated flavoring. Birds are avid consumers of the ripe fruit and strip the tree bare in short order;

seed spread by birds makes this tree one of the first to colonize areas that have temporarily lost their vegetation (this may include your garden beds). The intensity and hue of this tree's fall foliage is variable and, in some years, can be striking. Black cherry wood ranks with black walnut of North American native trees for use in high quality furniture and cabinetry. The bark of mature trees is a dark gray, typically broken up into irregular patches.

2024 UPDATE: Of the several mature black cherry trees that lived only in the northwest corner of the park, all but one had to be removed, and that includes the two champion specimens. The remaining tree, large and rather narrow and not in the best condition, is located approximately straight west of the front entrance of the Bath House (VOC, Volunteers for Outdoor Colorado), just inside the Loop Road.

4. Green Ash (*Fraxinus pennsylvanica)*

Locate This Tree Back To North Sector Trees

Green ash has a very large native range, covering the eastern states of the U.S. and much of the Great Plains. It's been widely used as a street tree because of its fast growth and adaptability to drought and city conditions. Ash and maple are the main trees in Colorado whose leaves (and buds) are borne opposite on the twigs; green ash twigs are rather stout and have compound leaves with five to nine leaflets. In the fall green ash foliage usually turns a bright yellow. Ash trees are early to leaf out in the spring, but the young foliage is tender and sometimes killed off by late freezes, requiring the tree to grow a replacement set of leaves. Ash trees are either male or female, and the females often produce large quantities of winged seeds that somewhat resemble the bottom half of a canoe paddle. To avoid seed litter, male trees are often selected for urban planting. The tree generally grows to around 60 feet in height, though the Colorado champions are typically in the 90-foot range. Ash bark is usually light gray and has a typically tight and narrow ridge/furrow pattern. It's

difficult to distinguish ash species from each other and it may be necessary to examine minute features such as leaf scars to do so.

All North American ash species are under threat from a relatively new exotic pest that accidentally arrived in Michigan in the late 1990s. This pest is the Emerald Ash Borer, a native of north-eastern Asia, and it is killing all North American ash trees, which have little or no resistance to it, at a rapid pace. Since it was detected in the U.S., it has spread in all directions, sometimes with unwitting human help as firewood is moved, and it has already reached as far west as Minnesota. In the meantime, research to develop insecticides effective at controlling the borers is underway. If developed, a chemical treatment could be used to protect high value urban trees, it will be of little help to protect forest trees. As a result, there is a possibility that virtually all 7.5 billion ash trees now living in the U.S. will be killed within a generation, making this a more catastrophic tree die-off than was caused by either Chestnut Blight or Dutch Elm Disease.

2024 UPDATE: The presence of the emerald ash borer was first detected in our state in Boulder in 2023. An effective pesticide treatment is now available to keep the borer from killing ash trees.

Denver Forestry has been proactively treating high value ash trees in parks and public rights-of way.

5. Austrian Pine *(Pinus nigra)*

Locate This Tree Back To North Sector Trees

This native of central Europe is by far the most common pine in Washington Park and gives us some of our oldest and most imposing trees. It's very stiff sharp-pointed 4-to-5-inch needles grow in bundles of two and usually remain on the tree four years. The mature bark is quite attractive, with dark furrows and intervening gray and brown plates. The tree is reluctant to lose its lower branches, which often spread wide, sweeping the ground. The seed (female) cones are 2 to 3 inches long and have prickly scales. (For conifers, the male pollen cones are used much less for identification because they are much smaller and don't remain on the trees for nearly as long.) This tree is common in cold-climate areas because it's very tolerant of difficult environmental conditions, including clay and alkaline soils. It begins its life pyramid-shaped but develops into a rather dark flat topped individualistic form that generally doesn't exceed 60 feet in height here, though easily double that in its native habitat. Many of the Austrian pines in the park suffered still-visible limb breakage from snow loading in 2003. The typical life span of these

trees would be around 300 years, twice that being a reasonable maximum.

6. White Willow *(Salix alba)*

(Now in South Sector)

Locate This Tree Back To North Sector Trees

White willow is a very fast-growing but short-lived sun-loving tree native to much of Europe and Central and Western Asia. In this area it usually matures around 60 feet in height with a broad round-topped crown, often with a "brushy" look owing to its long whip-like branches. This is a tree native to wet places, especially stream banks, and it prefers growing in moist soils; its root system is aggressive in seeking out sources of water. Like many willows (and the closely related cottonwoods), this tree propagates itself very readily from branches that break off even in moderate winds and root elsewhere. In the urban forest, unfortunately, this breakage means messiness.

The leaves of this willow are typical for its genus in being long and narrow with a finely serrated edge; usually they're about six times as long as wide. They're whitish below, a feature which gives rise to the tree's name. The trees are either male or female and the flowers are borne on upright catkins. The

seeds are minute with silky hairs and are far less conspicuous when shed than is true for female cottonwoods. White willows are some of the earliest trees to show signs of life in the spring, starting with the brightening yellow of the younger twigs followed by the early emergence of the flowers and leaves; on the other hand, the trees are some of the last to drop their leaves in the fall. With maturity the trunks often develop a gnarled corky array of ridges and furrows.

The inner bark of white willow is well-known as a source of salicylic acid, which has been used since antiquity for its powers to fight inflammation, fever, and dermatological ailments. This chemical was slightly modified by a German researcher a bit over 100 years ago, with the benefit of causing less digestive upset than the original and became known as aspirin.

Several white willows can be seen on the inaccessible Monkey Island near the south end of Grasmere Lake. Their bright yellow twigs are an early sign of spring and can be seen from many locations around the south side of the lake. There are also three White Willows in a row along the west side of Grasmere Lake opposite Monkey Island.

7. Downy Hawthorn *(Crataegus mollis)*

Locate This Tree Back To North Sector Trees

This hawthorn, native to most of the eastern U.S. and Canada, is planted less today than in the past. Though it's one of the earliest hawthorns to leaf out and flower, it may drop its leaves early because of foliage diseases; however, this is less of a problem here than in wetter climates. Usually, the foliage here lasts long enough to turn an attractive medley of gold to deep red in the fall. The leaves, up to three inches across, saw-toothed and often with pronounced lobes, are rather large for the genus, and are typically downy when first emerging. The white flowers, at roughly an inch in diameter, are also large for a hawthorn. The fruit, with an apple-like form, is red and around three-quarters of an inch in diameter; it ripens in late summer and falls to the ground shortly thereafter and is later consumed by wildlife.

The form of this tree is rounded initially, but it develops a wide-spreading densely branched horizontal structure as it matures, typically reaching a height near 25 feet with an equal or greater

spread; a select few in Colorado have grown to a height of around 40 feet. Downy hawthorn is tolerant of many soils and sun exposures." The stout thorns up to 2 inches in length that occur on many trees limit this plant's usefulness in areas with much pedestrian traffic.

8. Cockspur Hawthorn *(Crataegus crus-galli)*

Locate This Tree Back To North Sector Trees

This is one of several hawthorn species that are frequently used in modern landscaping when a small tree with attractive form, fruit and fall leaf color is desired. Native to much of the eastern U.S., cockspur hawthorn can attain heights of around 30 feet with equal canopy spread. The common name of the species comes from its thorns and from its fruit (often called "haws"). There are many types of hawthorns and separating them conclusively as to species or variety is extremely difficult because of their interbreeding, but in our urban areas cockspur hawthorn is likely to be the only one with a spoon-shaped leaf. Flowering occurs in May, with numerous white half-inch flowers that have a somewhat disagreeable odor. The fruit, on the same model as the apple (to which hawthorns are closely related), is about a half-inch in diameter, a strong red and ripens in the early fall, after which it's gradually eaten by local wildlife. The fall foliage color can range from golden to red-purple. Cockspur hawthorn is tolerant of many soil types, sun

exposures and pollution in urban areas. A difficult feature of this tree is its armament of 1.5-to-3-inch thorns; however, a thornless version of this tree (variety inermis) has been developed and widely adopted, making it a much friendlier tree to passersby.

9. American Linden (*Tilia americana*)

Locate This Tree Back To North Sector Trees

Widespread through most of the north and central states, you'll also hear this tree referred to as basswood in a forestry context. It has a relatively large heart shaped serrated leaf whose two sides join unequally at the base; the shade cast by this tree is dense. At maturity the tree can reach 75 feet or more; this one is the third largest American linden in Colorado at 82 feet in height. Its profuse small pale-yellow flowers in midsummer emit a powerful fragrance which mesmerizes the bees that feast on the nectar. The flowers yield to small nutlets that dangle on the tree through the winter, usually with the bracts of the flower structure still attached. The twigs of this tree are slender and usually zigzag, with small often colorful teardrop-shaped winter buds; as with a strong minority of deciduous trees, there is no terminal bud.

This tree is less commonly planted nowadays in cities because the smaller dimensions of the European Little Leaf Linden make the latter a better

choice. In addition, American linden has a greater tendency to develop scorched leaves toward the end of summer in our hot and dry conditions. All species of lindens have historically been important for human use for a reason that's not immediately apparent: the inner bark of the tree is extremely tough and fibrous. String, cord and rope can be made from it.

10. Plains Cottonwood (*Populus sargentii*)

Locate This Tree Back To North Sector Trees

This tree is one of the few native to our area, though it would've been far more likely to be found along the few local creeks than in Washington Park. Plains cottonwood (Wyoming's state tree) grows in the wet places of dry regions, notably the river corridors crossing the Great Plains and as such it was a near constant companion to the early pioneers. It's a close relative of the eastern cottonwood (many consider it a subspecies), of the aspen (something that can be seen from the way both trees' leaves have flattened stems that cause them to flutter so readily even in the mildest winds) and of willows, another native tree that favors floodplain habitats Many of the most massive trees in Washington Park are plains cottonwoods; they've been planted here since the beginning. Though the younger stems may have smooth bark, the older trunks develop impressively thick ridges and furrows. The shapes assumed by the mature trees tend to be eccentric, partly because of the weak wood that leads to unpredictable limb breakage. The waxy-finished leaves are some of the broadest in the cottonwood/

poplar/aspen group (they're the same genus), and the fat olive yellow buds on thick winter twigs show the tree's impatience for spring. The trees are either male or female and flower on hanging catkins early in the spring. By early summer the flowers on the female trees have developed into hordes of tiny seeds attached to downy puffs that fly off and seem to float annoyingly everywhere. Like many trees in its family, this species roots freely from broken twigs, and in nature it often spreads when loose twigs float away on floodwaters and later become lodged in mud. In Denver, the typical plains cottonwood quickly grows to a height of around 75 feet. This is one of the fastest-growing tree species. The small town of Hygiene, Colorado is the home of the U.S. champion at 95 feet in height with a diameter over 11 feet. Unfortunately, these trees are not noted for their longevity, and 75 to 90 years may be an optimistic lifespan in urban conditions, but their iconic image as a tree of the high plains means we'll likely always have some in the park.

2024 UPDATE: The U.S. champion plains cottonwood in Hygeine, CO died around 2020.

11. Golden Weeping Willow *(Salix x sepulcralis 'Chrysocoma' or Salix x 'Tristis')*

Locate This Tree Back To North Sector Trees

Weeping willow is very similar to white willow except for its form, which is strongly pendulous; its long slender branches sweep the ground. This tree is one of the most popular and widely planted exotic ornamentals since its introduction into Europe and North America some 300 years ago. This is a very fast-growing but rather short-lived tree that loves moist ground. Willow species are difficult to identify because many are very similar, their native ranges overlap considerably, and to make matters even more confusing, they are notorious for hybridizing. Weeping willow is an example of the confusing lineage of a popular cultivated tree. When first introduced to Europe from the dry regions of East Asia, it was mistakenly identified as being a Babylonian tree mentioned in the Bible (which was a poplar). The original East Asian weeping willow cultivars ultimately proved ill-adapted to the wetter climates of Europe and North America, and were

therefore bred with two European willow species, white willow (*Salix alba*) and crack willow (*Salix fragilis*) to yield a more durable yet still weeping form. The most common weeping willow is the cross with white willow identified above. In our area they generally grow to 50 feet tall with a comparable spread, and the Colorado champion is 76 feet tall.

NOTE: The single weeping willow in the park was removed several years ago and there is no nearby substitute. This is a common tree in landscapes and most people can recognize one. The specimen geo-referenced above is a cultivar, Golden Weeping Willow.

12. Narrowleaf Cottonwood (*Populus angustifolia)*

Locate This Tree Back To North Sector Trees

This type of cottonwood is a Colorado native, generally found along streams at moderate elevations in the Rockies rather than on the plains. It's easy to distinguish from other cottonwoods because it has a narrow leaf (about three times as long as wide) reminiscent of the related willows. Since the leaf stems are short and not flattened, the leaves are not so apt to flutter in the slightest breeze. Unlike the plains cottonwood, this tree suckers freely from the trunk base and the roots, giving it a third method of spreading (besides seeds and discarded branches). A final notable characteristic of this tree is that it gives off a fragrant balsam odor during much of the time it's actively growing. The soothing odor can be detected at some distance from the trees and is concentrated on the gummy buds and expanding leaves in the spring. Champion narrowleaf cottonwoods can easily surpass 100 feet in height, but mostly top out around 70 feet on urban sites. However, their trunks remain relatively slender, usually failing to develop

even half the girth of a mature plains cottonwood. The trees usually have an upright symmetric form and retain their smooth off-white bark until the stems get quite thick. Like other cottonwoods, they are either male or female and flower early in the spring from hanging catkins, which indicates they rely on the wind for pollination, since pollinators are scarce at that time of year. Like most cottonwoods, this is a fast-growing tree, a fact that in the urban area should be balanced against its fairly short life span.

2024 UPDATE: The tree originally tagged was removed soon after the tree guide was published. Two remain in the park: one is approximately 250 ft. straight east of the front entrance of the Bath House (VOC, Volunteers for Outdoor Colorado) on the left side of the walking path. This is the tree that is geo-referenced above. Another is on the north bank of City Ditch about 20 feet east of where the Loop Road crosses it east of Ohio and Downing. Don’t confuse it with the much larger leaning plains cottonwood closer to the Loop Road.

13. Star Magnolia *(Magnolia stellata)*

Locate This Tree Back To North Sector Trees

This is one of the magnolias native to Asia, the center of diversity for the genus. It can develop into a small tree up to 15 or so feet in height with a spread almost as great or may remain a dense multi-stemmed shrub; judicious pruning can encourage the desired habit. Like most magnolias, this plant is best known for its flowers, which are fragrant and white, 3 to 4 inches in diameter with 12 to 18 strap-shaped petals. The flowers emerge from rather large downy terminal buds formed the preceding season; these buds are much larger than the leaf buds found farther down along the twigs. The flowers, which open before the leaves, are apt to do so in Denver sometime in April after a few weeks' warm spell. Unfortunately, the flowers are rather tender and are often damaged by April or early May frosts. When the weather cooperates, however, the floral display can be spectacular and last for several weeks.

Star magnolia is one of the hardiest of the magnolias and though it would prefer somewhat acidic soil, it can adapt to a neutral one. The plant prefers full sun

but shouldn't be given a southern exposure since that encourages early flowering. Several cultivars are available in commerce that mostly vary in flower size and color (pink is a common variation). Star magnolia has now joined the saucer magnolia (*Magnolia* x soulangiana) as a somewhat common flowering tree in Denver. Unfortunately, there is no saucer magnolia in Washington Park at the moment, but there is a fine multi-stemmed specimen, with its classic large pink dish-shaped flowers, across the street in front of 707 S. Downing.

2024 UPDATE: In 2010 there were three star magnolias near each other near Franklin St. just north of the Eugene Field House. Two have now had to be removed, including the largest of the three that for eleven years bore the #13 tag. Luckily the third specimen remains, near the running path just north of where Exposition Ave. enters the park.

14. American Sycamore *(Platanus occidentalis)*

Locate This Tree Back To North Sector Trees

The long-lived sycamore is one of the largest deciduous trees in the eastern U.S. forests, routinely exceeding 100 feet. Denver's champion sycamores approach this height, but most grow only to around 65 feet. Sycamore leaves resemble those of some maples, but are alternate, not opposite, on the twigs. The leaves are among the last to emerge in the spring. Sycamore fruits are quite unique and consist of a bumpy spherical aggregation of miniature dry seeds packed closely together and hanging singly from stalks. These fruits usually lie on the ground all winter before breaking up into their fluffy wind-borne constituent seeds in the spring.

Sycamore bark is very distinctive, being smooth and flaking off in irregular pieces to reveal a mottled gray to cream underlying layer. This very attractive feature is well displayed in winter toward the top of mature trees. Older and thicker bark develops a reticulated cracking pattern that reminds one of puzzle pieces. Sycamore trees emit a unique musky

smell that can be detected when humidity and temperature are right. The two blocks of Marion St. Parkway just north of Washington Park have mature sycamores lining both sides of the street. The tree nowadays is less favored for landscaping because it grows too large for many sites and has some foliar disease issues. The similar London Plane Tree, a hybrid, is sometimes planted as an alternative.

15. Ohio Buckeye *(Aesculus glabra)*

Locate This Tree Back To North Sector Trees

Ohio buckeye, along with others of its genus, is one of the minority of trees with a palmate-compound leaf, the five leaflets radiating out from a center point. The state tree of Ohio, it can easily exceed 100 ft. in height in its native habitat in the central Midwest, but it's seldom half that height in Denver as shown by this top Colorado champion at 47 feet. Like all buckeyes, this one has stout twigs with very large end buds. The branching pattern, most visible during the winter, tends to dip down and then turn up at the ends. The canopy is quite dense and often develops a rounded symmetric shape.

The flowers emerge in large clusters at the same time as the leaves and are impressive up close but don't stand out at a distance, being close in color to the new leaves. Probably the easiest way to identify this tree is through its fruit, which is familiar to most people. It has tan leathery husks with blunt spines that at maturity in the fall release one to three polished rich red-brown nuts that have a tan spot on

one side where it was attached to the plant. The nut, like all buckeyes or horsechestnuts, is inedible by humans, though deer consume it and squirrels find it marginally palatable. In the fall, Ohio buckeye foliage often turns an admirable orange-red color.

16. Rocky Mountain Bristlecone Pine *(Pinus aristata)*

Locate This Tree Back To North Sector Trees

One of the longest-lived trees at around 2000 years, Rocky Mountain bristlecone is native to high elevations (up to tree line) in the Colorado and northern New Mexico Rockies. It is similar to the Great Basin bristlecone pine, except the latter outlives it by a factor of two or more, making it arguably the longest-living tree. Our bristlecone has short (approx. 1.5 inches) needles in bundles of five. Most telling is that the needles are marked with white dots of sticky sweet-smelling resin. As the tree is long-lived, so are its needles, which remain in place for about 15 years and give the branches a thick bushy-tailed appearance. The 2- to 4-inch-long cones have prickles on each scale, giving the tree its name. Though this pine is smaller in stature than many and is very slow growing even under optimum conditions, after many years it may attain a height of as much as 63 feet like the current U.S. champion that lives in southern Colorado.

17. Freeman Maple (*Acer x freemanii*)

Locate This Tree Back To North Sector Trees

This tree is a hybrid between silver maple and red maple, and a number of cultivars of it have been introduced, the most widely known being 'Autumn Blaze,' developed in the late 1960s. The popularity of these hybrid cultivars arises from the fast growth rate of silver maple and the stronger wood and brilliant red-orange fall color of red maple. The trees have reasonable drought tolerance and can attain a height of 50 feet or more. The leaves are intermediate between the two parent species, tilting perhaps more toward silver maple. Like red maple, the young bark is thin, light gray and smooth, and sometimes experiences frost cracking injury. In recent years there has been some concern that this tree has become too high a percentage of the urban forest (as happened with silver maple) and that its wood may not be as strong as expected, leading to the idea that other trees should be given greater preference. It's also worth pointing out that successful cultivars, while offering control over the landscape by guaranteeing desirable traits, are the antithesis of diversity among and within a species

since they are clonal, i.e., genetically identical. A population made up solely of genetic clones is more vulnerable to a disease or other environmental challenge than a population with the random genetics that occur in nature.

18. Newport Plum (*Prunus cerasifera 'Newport'*)

Locate This Tree Back To North Sector Trees

This is a small decorative tree of hybrid origin that is popularly appreciated for its spring flower display and dark purple foliage. Its pale pink flowers open in mid-spring before the leaves emerge. The leaves are a medium-red color initially and gradually darken, reaching a deep purple by midsummer. The fruit, about an inch in diameter with a longitudinal groove, is also dark purple at maturity with yellowish flesh enclosing a hard seed (or "stone"); the fruit from some trees can be eaten fresh or more likely is made into jam, and squirrels and birds also find it palatable.

Numerous purple-leaved plum cultivars have been selected for flower and foliage color as well as tolerance to heat and cold; pinpointing the exact cultivar can be difficult once the original nursery tag is lost. Most of them mature as small twiggy trees not exceeding 25 feet in height, which reflects their principal genetic heritage from the Cherry Plum (Myrobalan Plum) native to western Asia. Though they can adapt to varying soils and sun exposures as

long as soil drainage is adequate, these are not long-lived trees; any over 25 years of age can be considered a senior.

There are two specimens on either side of the walkway as one exits the Recreation Center. Neither tree is in good health.

19. Lanceleaf Cottonwood (*Populus x acuminata*)

Locate This Tree Back To North Sector Trees

The prevalent view is that this tree is an intermediate form, a hybrid between plains cottonwood and narrowleaf cottonwood, and it's common and consistent enough in our region to deserve separate mention. It's especially common where the two parent species overlap (along the Front Range) and is intermediate in many characteristics, such as form, height, girth, bark, and leaf shape. Like the other cottonwoods, the pith (spongy inner material) of the twigs is star-shaped in cross section, which can be checked since there are often discarded twigs lying on the ground. The lance-shaped leaves don't grow out at right angles from their stem, but they're still almost as broad as they are long. The leaf stems are like the narrowleaf cottonwood, short and round, so they move in the breeze less than plains cottonwood or aspen. Lanceleaf cottonwoods grow at most to around 100 feet tall, but more often 65 feet in the city, but still with potentially massive trunks. It's common to see suckers growing not only from the base, but also

sprouting all along the trunk, even on mature trees. Like the other cottonwoods, this is a water loving tree adapted to streamside conditions; it may tolerate some drought but won't always look pretty in the process.

20. Siberian Elm (*Ulmus pumila)*

Locate This Tree Back To North Sector Trees

Native to areas of East Asia with extremely harsh climates, this tree is, with American elm, one of the two principal elm species found in Denver. It's often mistakenly called Chinese elm. Siberian elm was first brought to the U.S. in about 1860 and later became popular in the aftermath of the Dust Bowl to fill the role of a very fast-growing tree in far colder and dryer climates than other elms could tolerate. It played that role well and proved to be resistant to Dutch elm disease, but had some definite liabilities as a shade tree, such as a tendency for its foliage to be consumed by beetles toward the end of summer and its production of vast quantities of seeds that root tenaciously everywhere they're not wanted; this has caused it to be considered an invasive species in most of the U.S. as well as many other countries. Since the tree is also relatively short-lived and prone to limb breakage, its planting in urban areas has been discouraged for years.

Although their leaf shapes and seeds are similar, Siberian elm can be easily separated from American elm, the former having smaller (usually around two inch) leaves but slightly larger (one half inch) round seeds with shallow notches. Both elm species flower inconspicuously very early in spring when few are paying attention and drop their seeds a month or two later. Siberian elms usually mature here around 60 feet tall and can develop significant trunk buttresses, though not usually as large as American elm. Grand Junction is home to the U.S. champion of the species which is 95 feet tall with a trunk over six feet in diameter.

21. Limber Pine (*Pinus flexilis*)

Locate This Tree Back To North Sector Trees

Limber pine's native habitat is scattered throughout the higher elevations (up to tree line) of the Rocky Mountains from Canada to New Mexico. The tree's 2-to-3.5-inch slender needles grow in bunches of five and generally curve inwards toward the branches; they are much less wide-spreading than the similar-appearing needles of eastern white pine. Another difference is that limber pine needles are smooth, whereas white pine needles have minute teeth that can be felt by pulling them between the thumb and a finger. The basis of the common (and scientific) name of this tree is the great flexibility of the newer branches' growth. Limber pine tends to be shorter than other Rocky Mountain pines, usually in the mid-double digits, but one in Colorado has been measured at 110 feet.

22. Pecan (*Carya illinoinensis*)

Locate This Tree Back To North Sector Trees

Pecan, the state tree of Texas, is a very large tree of the long-lived hickory genus and is native to the states around the lower Mississippi valley, where under the right conditions it can grow to a height of as much as 200 feet. In cooler regions and urban areas, it's usually much smaller, with Colorado champions reaching 80 feet. As with other hickories and the sister walnut genus, the leaves are long and compound, in this case having 9 to 15 leaflets. Pecan is the most important native U.S. nut crop with production centered on the southeastern and southwestern states where the bulk of the world crop is grown.

Native Americans in the Midwest valued the pecan tree as a food source and artificially extended its habitat. Numerous pecan cultivars have been selected for quality nut production and disease resistance (an ongoing effort). Some may be surprised that pecan would grow in our climate, but you are looking at the proof. However, a tree here

may not ripen a nut crop every year, either because of a late freeze or the need to have a growing season of at least 150 to 160 days for the nuts to mature. Regardless of climate, pecan trees generally only produce a heavy crop every two or three years. In the fall the aromatic four ridged pecan husks can often be seen on the trees in green (later turning to brown) clusters of three. At maturity the husks will split open to release the nut, but squirrels will usually eat them before that, and you'll see the resulting litter on the ground.

2024 UPDATE: Unfortunately, a second large pecan tree next to this tree was removed about six years ago. The surviving tree has had minimal nut production since then likely due to poor flower fertilization due to a lack of pollen from companion trees.

23. Scarlet Oak (*Quercus coccinea*)

Locate This Tree Back To North Sector Trees

Scarlet oak is another member of the red oak group, which can be seen from the similarity of its leaf shape to that of northern red oak, though scarlet oak leaf sinuses are deeper. It develops into a beautiful shade tree when given adequate space. The long-lasting fall foliage color is typically a bright and sometimes spectacular red late in the fall (oaks in general are among the last trees to color) and the leaves may then dry up and remain on the tree through most of the winter. This is a characteristic displayed by many oak species, especially the younger trees and on lower branches. A tree holding its dry leaves into December in Denver is most likely an oak. However, the exception is that, as occasionally happens (such as in the fall of 2009), an especially severe first hard freeze may interfere with the normal leaf-shedding mechanism of trees other than oaks, and they too may hold their dry leaves well into winter. Scarlet oak has not been widely planted in Denver but along with some other lesser-known oaks is becoming more available in the nursery trade. Still, the largest scarlet oak in the

state, in Denver, has grown to a respectable height of 74 feet, showing that it can become a large tree here. The tree is native to the eastern third of the U.S., where its range overlaps with several similar species. Oaks can be very difficult to identify as to species, in part because they so readily hybridize with other species within their own group (e.g., the red oak group), creating trees with intermediate characteristics.

24. Japanese Tree Lilac (*Syringa reticulata*)

(Now in Central Sector)

Locate This Tree Back To North Sector Trees

This is a small to medium sized tree (the only lilac species to attain tree status) generally not exceeding 25 feet in height; Colorado champions exceed that by 5 or 10 feet. Originally from Japan, this tree is of the same genus as common lilac, and the foliage and fruit of the two are similar. The tree is noted for its bold white floral display in early June; the flowers are highly fragrant and can be almost overwhelming to some people. The bark even on young stems is reddish-brown and resembles that of cherry rather than common lilac, with prominent lenticels (thin horizontal light-colored raised marks).

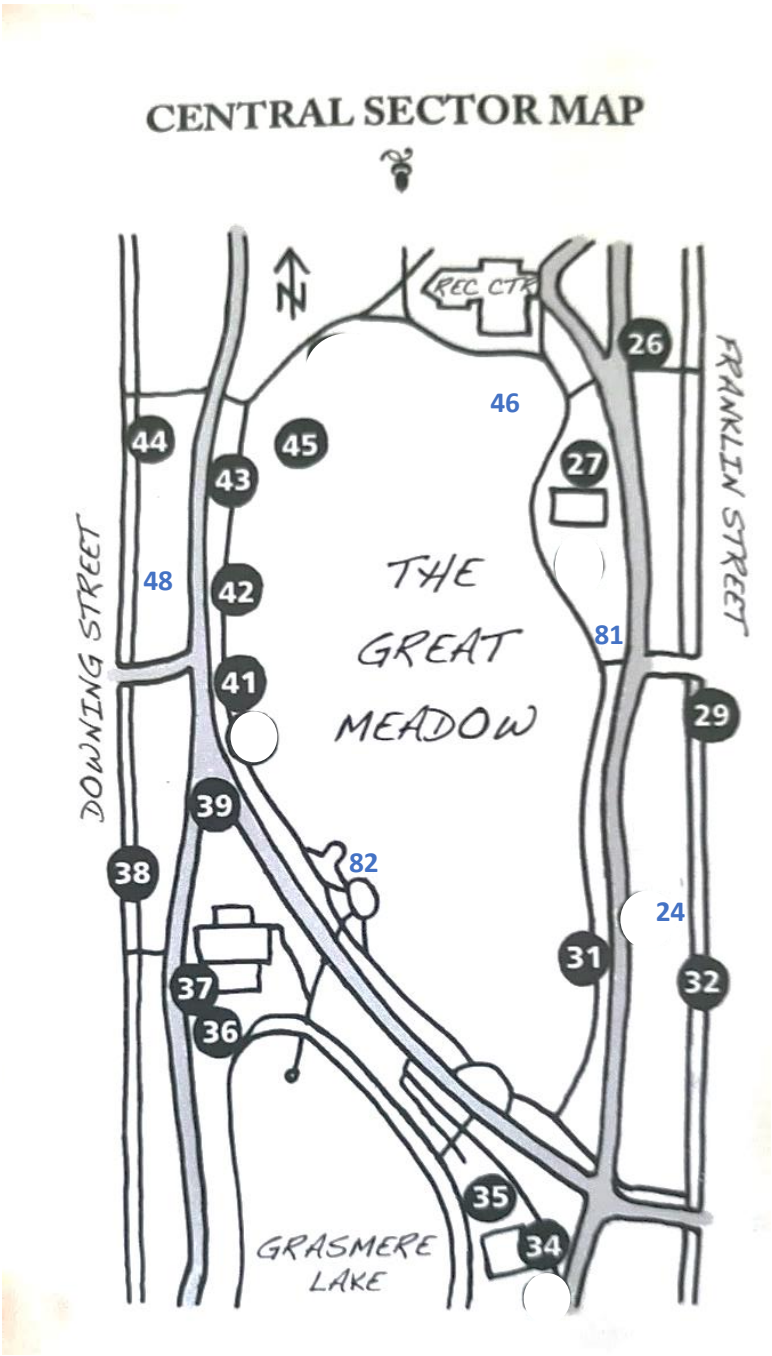
25. Washington Hawthorn (*Crataegus phaenopyrum*)

Locate This Tree Back To North Sector Trees

This is another small hawthorn tree native to the U.S. that's often used in contemporary landscaping. It can reach 25 feet in height here when mature with a spreading densely branched canopy. The leaves are generally smaller and less deeply lobed than those of downy hawthorn but are still coarsely saw toothed. The white half inch diameter flowers are the last to appear of the hawthorns and they have a relatively pleasant smell compared to others. The bright shiny red fruit is comparatively small at a quarter inch and occurs in clusters that often persist through the winter despite being palatable to birds and squirrels. Many of these trees bear hazardous thorns from one to three inches in length, though cultivars have been developed with few or no thorns.

The fruit of Washington hawthorn is edible for humans, and this is true for the other hawthorn species as well. In the southern states of the U.S. the

fruit is sometimes used to make a delectable jelly, though it's more apt to be eaten in time of famine. Some traditional herbal medicines have utilized various parts of these trees and investigation into their curative powers is continuing.



CENTRAL SECTOR

Trees 26-46

[Back to Central Sector Trees]

This map shows the approximate location of trees. Use the 'Locate This Tree' link for each of the trees described below to access Google Maps directions to locate the tree of interest.

26. Ponderosa Pine (*Pinus ponderosa*)

Locate This Tree Back to Central Sector Trees

This pine, Montana's state tree, can be easily identified because its stiff needles generally occur in bunches of three (sometimes two) and they are usually longer than those of Austrian pine. The needles tend to cluster at the ends of the branches, sometimes giving the tree a "tufted" look. The bark of mature trees develops furrows that break it into large flat plates having a cinnamon red color. Ponderosa pine has a broad natural distribution throughout much of the mountainous western U.S. (including Colorado's Front Range), growing at elevations up to about 9000 feet. Though it usually only reaches a height of 100 feet in cultivation, in the Pacific Coast portion of its natural habitat it can exceed twice that! Because of its abundance and the useful qualities of its wood, Ponderosa pine has historically been an important timber resource. In addition, it's of great importance to the wildlife (mammals and birds) that utilizes its seeds, bark, and tender new growth.

27. Sugar Maple (*Acer saccharum*)

Tree Present: No (Some specimens are along Louisiana Ave.)

Back to Central Sector Trees

The state tree of New York, West Virginia, Wisconsin and Vermont, sugar maple is famous for its major contribution to the red and orange color of its native New England fall forests. The tree has few rivals as the best of the maple species for producing maple syrup and sugar. Its leaf is also famous as the quintessential maple leaf shape, thanks in part to the Canadian flag. Sugar maple in urban areas can grow into a well-formed tree 60 or so feet tall casting rather dense shade; the current Colorado champion is 79 feet. In the past it was not planted widely here because it's slower growing and not as tolerant of the harsher aspects of our climate as other maples, but more awareness of its superb fall color and strong wood along with the arrival of several tougher new cultivars are changing that. The seeds mature in the fall and are like those of red maple, but slightly larger. Sugar maple is one of the longest-lived maples, capable of attaining 250 years in a

forest situation. The trunk of this tree normally becomes shaggy as it matures, and its wood is highly desirable for furniture making and other interior uses.

2024 UPDATE: The sugar maple marked in 2010 had to be removed. At present the best place to view a sugar maple in the park is southeast of the intersection of the park's Loop Road and the Kentucky Ave. Park entrance on the east side of the park. Here there are two new sugar maple trees. Small new trees are rather vulnerable in the first years after transplanting, so see them while you can!

28. Scots Pine (*Pinus sylvestris*)

(now in South Sector)

Locate This Tree Back to Central Sector Trees

This tree's native habitat is vast, ranging from Scotland east across Europe and most of Russia. Like Austrian pine, it is adaptable to a wide variety of harsh landscape conditions. It can usually be identified quickly because of its orange-brown bark, especially in its upper reaches, and because of the twist in its roughly two-inch-long needles that occur in bundles of two. Forming the typical conifer pyramid in youth, as Scots pine matures the lower branches tend to die off and it develops a picturesque wide spreading crown. Scots pine is often grown on plantations, both as a Christmas tree and for paper and lumber products. It's unusual for a Scots pine to grow as tall as 100 feet--60 feet would be a more likely mature height here. Like many conifers, this pine is long-lived at around 200 years, with a possible maximum of 600.

2024 UPDATE: This tree and a companion next to it had to be removed a few years ago. One of the most convenient places to see a Scots pine in the park now

is on the south border of the park, near the sidewalk approximately across the street from the alley that's between Lafayette St. and Marion St.

29. Blue Ash (*Fraxinus quadrangulata*)

(on private property at 918 S. Franklin St.)

Locate This Tree Back to Central Sector Trees

Like white ash, blue ash differs little in appearance from green ash, but has a notable affinity for limestone (alkaline) soil. This tree has a relatively small native range in the states of the central Midwest. The blue of its name comes from the tint of its foliage and of its sap when exposed to the air. The scientific name hints at another unusual trait, which is that wings on its twigs give them a square cross section (a feature not retained as the branches grow). Blue ash is a very uncommon tree in Colorado, but there is a cluster of three on private property at 918 S. Franklin St. across from Washington Park that are the largest in the state. You will see that recent construction went to extra lengths to protect one of these trees. Please respect the property rights and privacy of this home's owners.

30. Black Walnut (*Juglans nigra*)

No (no specimens are currently in the park)

Back to Central Sector Trees

Black walnut trees are native to most of the eastern half of the U.S. except for the extreme northeast and southeast. These large statuesque trees are valued especially for their timber but also for their nuts and ornamental qualities as shade trees. Their timber is one of the most beautiful cabinetmaker's woods, easy to work and taking a fine finish; the trees are often expressly planted for timber production, much of it used for veneer. The bark is rough and dark; chipping away a bit of outer bark exposes a warm chocolate color. Black walnut leaves are large (eight inches to two feet long) and compound, consisting of 15 to 23 leaflets, though a terminal leaflet is often missing. The large (1.5 to 2.5 inch) practically spherical yellowish green fruits have a finely pebbled surface that emits a distinctive fragrance when rubbed. Beneath the outer skin is a slightly spongy and juicy light-yellow material that

gradually turns almost black upon exposure to the air and can deeply stain anything it contacts (it's used as a classic natural dye). Beneath this material is the furrowed dark brown nutshell that's more difficult to crack than the more common Persian walnuts (often erroneously called English walnuts, though the tree is native to present-day Iran rather than England). Black walnut meats are also more strongly and sweetly flavored than Persian walnuts and have specialized confectionary uses. There's little waste with these nuts since the cracked shells have various uses in industry. The nuts are, of course, a favorite food of squirrels; they bury much of the fall crop and many of the black walnut trees in Denver got started from nuts the squirrels forgot.

Black walnut trees frequently grow taller than 100 feet and develop broad crowns when they have no close competition from adjacent trees. As usual, specimens in Denver seldom reach the size of trees growing in the native range. This black walnut tree in Washington Park is the largest of its species in Colorado and is 83 feet tall. The tree just to the east is also a black walnut and happens to be several feet taller, but because it's smaller in diameter and crown spread, it only rates a tie for the #3 Colorado champion. Black walnut trees at first glance can sometimes be confused with the weedy tree of

heaven (*Ailanthus altissima*) that is so common in Denver, though they have successfully been kept out of Washington Park; two key differences are that tree of heaven bark is smooth rather than rough, and its leaflets are smooth-edged rather than serrated.

Currently, a deadly threat to the black walnut trees in Denver is poised to strike. The walnut twig borer, a type of beetle, is attacking these trees and causing damage by tunneling under the bark. What's worse is that the insect carries a fungal disease that produces bark cankers that finish off the trees. It's only been during the last decade or so that the beetle has migrated to Colorado and other Rocky Mountain states from its origin in the southwest, a move possibly aided by climate change. Since this disease was unknown in black walnut until recently, there is currently a scramble to devise chemical treatments that might save these trees. However, a great many have already been lost or are irremediably infected. Will there still be black walnut trees in Washington Park when it's time to write the next version of this booklet?

2024 UPDATE: Five years ago, we were able to answer the above question in the negative. By then all fourteen black walnut trees in the park in 2010 had succumbed to 1000 cankers disease. The disease is now believed to be endemic and no

pesticides have been found to be effective in its control, thus, no new black walnut trees have been planted in the park. Some mature black walnuts continue to survive in Denver neighborhoods suggesting that some individuals may have full or partial genetic resistance to the disease.

31. Kentucky Coffeetree (*Gymnocladus dioicus*)

Locate This Tree Back to Central Sector Trees

A native of the U.S. Midwest, the seeds of this tree were once roasted by early settlers to prepare a poor substitute for coffee, a risky practice since the seeds contain poisons. The tree is notable for its large doubly-compound leaves that can exceed two feet in length, and for the seed pods that instantly mark it as a member of the legume or pea family of plants. The pods, which turn from yellow green to dark brown as they ripen, often remain hanging on the female trees throughout the winter (this is one of nine tree species in the park whose individuals are either male or female). After the pods fall, the very hard dark round seeds are released.

Kentucky coffeetree bark is unusual with narrow plates that tilt up along one side. In the winter the tree can often be spotted because it retains the central ribs of the compound leaves, giving it a "whiskery" look. In addition, without leaves one can see the picturesque branching habit and very stout

twigs with almost invisible buds that tend to make young trees look somewhat clumsy. The tree is very adaptable to Front Range conditions, and is notably tolerant of soil alkalinity. It's one of the latest of the park trees to leaf out in the spring.

This specimen of Kentucky coffeetree is Colorado's #1 champion. Washington Park is lucky to have many these trees, some of which are beginning to reach maturity, including one tied for second largest in Colorado. Many are in this section of the park, including a line of young ones just to the south. The park contains roughly an equal number of males and females. Now it's possible to purchase young male cultivars to avoid the seed pod litter.

32. Silver Maple (*Acer saccharinum*)

Locate This Tree Back to Central Sector Trees

Silver maple is aptly named because so many parts of it have a decided silver cast: the smooth young bark, the mature bark that peels off in long vertical strips, and the reverse sides of the leaves that change the look of the canopy when a breeze blows. We also know this tree because of its abundant spring seeds that many people call "helicopters." All maple species have these double-winged seeds, but those of silver maple are the largest. This tree is also one of the earliest to flower, long before the leaves appear. After the silver maples drop their leaves in the fall, it's easy to see the clusters of reddish pre-formed flower buds on the twigs, giving the impression all winter that the tree is flowering or about to flower, and in early spring (or even late winter) one can often see the remains of the small spent flowers lying on the sidewalks. Plants that flower early in the spring usually depend on the wind to spread their pollen, since there are few insects available to do the job at that time of year. Silver

maples become large trees but don't often exceed 75 to 80 feet, though the champions in Colorado surpass 100 feet. The tree is native to much of the eastern half of the U.S., where it favors wet sites, but it's also quite happy in our drought-prone climate.

Silver maple has historically been one of the most common trees in Denver, but it's rarely planted nowadays. It was popular in the past because of its fast growth rate and its adaptability to Denver's climate. However, the tree eventually proved troublesome because it was not long-lived (80 years might be an average life span in our area) and its relatively weak wood resulted in considerable damage from large limb breakage, a serious problem in our climate with its frequent wet snowfalls in spring and fall. Another potential problem with the extensive planting of silver maple was that if a catastrophic disease--comparable to Dutch Elm Disease--had attacked the species, it would have had a very serious impact on our city's urban forest. Fortunately, such a disease never materialized, but the planting of silver maple is no longer encouraged, in part to diversify the urban forest.

33. White Fir (*Abies concolor)*

(now in South Sector)

Locate This Tree Back to Central Sector Trees

White fir trees can reach or exceed 100 feet and occur in the mountains of California and the Rocky Mountain states, generally at middle elevations, though they can grow virtually up to tree line. This fir's flattened needles are around 1.5 to 2.5 inches long, often almost silvery, and usually curve outwards or upwards. The needles' tips are usually rounded but even when pointed are not sharp (pokey). The needles remain for 5 or 6 years and after dropping leave small circular scars on the twig (as opposed to tiny pegs, as is the case with spruce trees). The three- to six-inch-long seed cones are held upright on the branches, whereas the cones of all other conifers in this guide hang down. After its seeds are dispersed, a fir cone disintegrates except for its spiky central axis.

White fir, with its conical form and branches to the ground, is commonly used as an ornamental tree in the cooler states of the East and Midwest; cultivars selected for blue-green foliage are especially

popular, and the tree has above-average tolerance of dry sites with poor soil.

2024 UPDATE: The original tree marked in the guide has been lost, along with various other mature specimens on Evergreen Hill and near the lawn bowling club. There is a tagged (#33) specimen among a grouping of three that are about 20+ ft. tall around 90 ft. into the park from the intersection of Marion St. and Louisiana Avenue.

34. Honeylocust (*Gleditsia triacanthos*)

Locate This Tree Back to Central Sector Trees

Honeylocust is a tree native to the central U.S. between the Appalachians and the eastern edge of the Great Plains. This is a relatively fast-growing tree that can become large at maturity, typically reaching a height of 65 feet in our area; this tree in Washington Park at 83 feet in height is the second largest in Colorado. Honeylocust can begin flowering and fruiting at 5 years of age and is capable of living over 100 years.

Honeylocust leaves are compound or doubly compound (as shown here), with the individual leaflets being in the range of a half to 1.5 inches long. The twigs lack a terminal bud, which gives rise to a jagged branching pattern visible in the dormant season. The branches develop very stout sharp spines that are often three-pointed; these dangerous spines may also grow out of the trunk and larger branches and are probably a defense against animals that might eat the bark or twigs. The fall foliage color is often a bright yellow in the fall and the leaves are among the earlier to drop. As a

member of the legume or pea family, this species produces the typical flattened seed pods that in this case can exceed a foot in length and usually become twisted as they ripen. The pods are a food source for wildlife, as they contain a sweet edible pulp surrounding the seeds, and this has given the tree its common name. The bark on mature trees becomes separated into long rather smooth lengthwise ridges edged by deep fissures.

Honeylocust is a very adaptable tree that does well in varying soil types and easily tolerates the climates in this area. In nature it often grows in wet sites but is also tolerant of drought as well as salt. Because its foliage is lacey, the tree doesn't produce dense shade, and this allows grass to grow up to the trunk. The fineness of the foliage also means a relatively easy leaf cleanup in the fall. Like many plants in the pea family (also known as legumes), the tree forms an association with bacteria that live in its roots and that manufacture soluble nitrogen fertilizer. With all its positive attributes, honeylocust became a common tree in our urban forest, but it was not until the thornless types became widely available after WWII that the tree became truly common (or as some say, overused) here.

35. Thornless Honeylocust (*Gleditsia triacanthos v. inermis*)

Locate This Tree Back to Central Sector Trees

This tree, a sub-type of the common honeylocust, became very popular after World War II because it solved the thorniness problem of the common honeylocust and became commercially available around the time of the initial American elm mortality from Dutch elm disease. In addition, the nursery industry focused on marketing trees that produced mainly male flowers, so that the trees bore few seed pods or none, a desirable attribute for many homeowners. Though all these trees are thornless and predominantly seedless, the available cultivars vary greatly in form, foliage color, and ultimate size. Many of the cultivars don't reach the stature of their "wilder" relatives, which makes them more suitable to cramped urban sites. However, exceptions abound and champion thornless honeylocusts can be quite large, as is proved by this 81-foot-tall Washington Park tree tied with another tree just dozens of feet away for third largest of its type in Colorado. Some of the most

popular cultivars are named 'Shademaster,' 'Skyline' and 'Sunburst,' the latter featuring foliage that emerges yellow and only slowly turns green as summer progresses. There has been some concern among horticulturists that this tree has more than its fair share of disease and pest issues, and that it might be best to temper its use in the future. However, its unique combination of positive features makes it difficult to identify a fully comparable substitute.

36. Eastern White Pine (*Pinus strobus*)

(in median of Marion Parkway)

Locate This Tree Back to Central Sector Trees

This tree is native to the northeastern and north central regions of the U.S., extending south along the Appalachian Mts. The state tree of Maine (the "Pine Tree State") and Michigan, it can grow higher than 150 feet, though it seldom breaks 100 feet in urban settings; it's the tallest conifer native to the eastern U.S. It provided one of the principal sources of timber in colonial times, during which virtually all the old growth was cut; however, it's very aggressive at re-colonizing disturbed or abandoned sites. It's also grown for its timber on plantations in its former native range. The slender straight needles of this tree grow in bunches of five that are 2 to 4 inches long and are very touch friendly. The needles only remain on the tree for two seasons; replaced any more frequently, this would almost be a deciduous pine! The seed cones at 4 to 5 inches are the longest of any pine in Washington Park and have a cylindrical and sometimes curved form. Eastern white pine is a fast-growing but nonetheless long-lived species that

will easily last 250 years and possibly twice that. Its ornamental qualities make it a landscaping favorite, though it would prefer more humidity and cooler summers than are normal in Denver.

2024 UPDATE: The largest eastern white pine in Colorado used to live on Evergreen Hill but was removed a few years ago. At present there are no individuals of this species in the park, though there are a few young ones in the median of Marion St. Parkway in the first few blocks north of the park. However, some outstanding 100+ year old specimens may be viewed in the park-like open space east of Downing St. Just north of Speer Blvd. Most of the conifers here are eastern white pines, distinguishable by the feathery look of their foliage.

37. Callery Pear (*Pyrus calleryana*)

Locate This Tree Back to Central Sector Trees

Callery pear is a tree native to China and Korea that was originally exploited to breed resistance to fireblight into more valuable orchard pear varieties. An early cultivar of the species, 'Bradford,' later became a popular fast growing landscape tree that held a compact shape as it grew to a typical mature height of 35 feet. The tree is very tolerant of drought, pollution, and numerous soil types. The ornamental qualities of callery pear are significant, beginning with the often-profuse white flowers toward the end of May, though their smell may not be to everyone's taste. The foliage is attractive, being glossy and leathery and subject to few diseases. In the fall, the leaves usually turn bright colors that can range from yellow to red to purple. This is one of the last trees to show its fall color, so the display is often mounted without competition.

The fruit of callery pear is definitely pear-like, having a finely speckled brown exterior similar to the 'Bosc' pear sold in markets, though on the small scale of

one-third inch, and contains several seeds. The fruits are hard until freezing temperatures soften them, at which time the birds gladly eat them, spreading the seeds in their droppings. In regions with warmer and wetter climates than here, this has caused this species to be included on invasive plant lists. Also, the tree is not long-lived; many are in decline after 25 years. The species is susceptible to storm damage (wind, snow, ice), especially when it has not been knowledgeably pruned. Many other cultivars of this tree have been developed, some for specific outlines, some for flower color, and others for resistance to storm damage. Some of the most successful cultivars are 'Aristocrat," Chanticleer' and 'Cleveland Select.'

38. Black Locust (*Robinia pseudoacacia)*

Locate This Tree Back to Central Sector Trees

This tree, native to the Appalachian and Ozark Mts., usually grows to about 50 feet in height and our state champions are 60 to 70 feet tall. Because of black locust's fast growth, adaptability to poor soils (owing partly to its ability to create nitrogen fertilizer in cooperation with bacteria that live in its root nodules) and its tolerance of harsh climates, it has been planted widely as a city tree and for reforestation projects across the northern hemisphere. However, the same qualities have caused it to become invasive in some areas. The identity of this tree as a legume (pea family plant) is apparent from the flat seedpods it produces. The foliage is not unlike the related honeylocust except for being blue-green and singly compound with larger leaflets. An interesting trait it shares with various other pea family plants is that its leaflets fold together during the night. Be careful of the thorns that are present on vigorous young twigs. Though the foliage has little fall color, the tree puts on a very nice floral display in late spring. The densely borne flowers are white, about an inch across, and exude a

strong fragrance that is attractive to bees. A cultivar called 'Purple Robe' has dark pink flowers. The wood of this tree is one of the toughest and most durable known. As they mature, their bark becomes deeply furrowed with ropy-looking interlacing ridges.

39. Bur Oak (*Quercus macrocarpa*)

Locate This Tree Back to Central Sector Trees

Bur oak is predominantly a tree of the U.S. Midwest and its native range interestingly includes the Dakotas and southern Manitoba, hinting at the tree's toughness and adaptability. The Iowa state tree and the classic oak of the prairies, this is a somewhat slow-growing tree that's capable of a lifespan of more than 300 years. Its tolerance of drought, cold and alkaline clay soils provides an advantage in our urban areas, where it often grows to a height of 75 feet or more, with the champion in Colorado having attained 97 feet. Bur oak wood is attractive, durable and is valuable as timber. As it matures, the tree develops a rugged and majestic outline.

Bur oak is a member of the white oak group, characterized by leaves with rounded lobes that aren't bristle-tipped, and by acorns that require only one growing season to mature and that are less bitter than those of the red oak group. The leaves of bur oak vary considerably in size and shape from tree to tree; they can be as long as 13 or as short as

three inches. What they generally have in common is one pair of especially deep sinuses (a "narrow waist") and more leaf area beyond the midpoint than close to the stem. The acorns are some of the largest of any oak and have fringed caps (giving rise to the "bur" in the tree's name) that enclose at least half and sometimes almost the entire nut. As with many oak species, a year of heavy acorn production usually alternates with a year or two of light crops. An unusual aspect of this tree is that the younger twigs often have longitudinal corky wings, making them look quite rough. In addition, a gall-producing insect specializes in attacking young bur oak twigs; the resultant spherical woody galls can build up to an unsightly level but rarely cause any harm to the tree.

40. Russian Olive (*Elaeagnus angustifolia*)

No (no specimens are currently in the park)

Back to Central Sector Trees

This small to medium tree with willow-shaped leaves originally from southern Europe and Central Asia is one of the toughest tree species growing here. It can withstand extremes of climate, drought, salt and poor soil in part because it creates its own nitrogen fertilizer with the cooperation of symbiotic root bacteria; this allows it to succeed in many infertile and inhospitable areas of the Great Plains such as along rural highways. One of the best trees for silvery gray foliage effect, Russian olive trees produce fleshy red-orange fruit with a hard stone inside, superficially resembling an olive, though the two trees are unrelated botanically. Birds avidly consume the sweet but dry fruit (as do humans in some countries), later excreting the seeds and contributing to the plant's invasiveness in many ecosystems. The bark of this tree has a stringy shallowly furrowed quality. In Colorado the champion Russian olives reach 50 to 60 feet in height. The tree has acquired a reputation for

"weediness" because it can be thorny, drops a fair amount of litter through the seasons, and probably also because of its ubiquity in forlorn rural settings. It's also earned the label of "invasive" because its high degree of adaptability has allowed it to escape cultivation and crowd out native vegetation in many areas. Although it’s listed as a Colorado invasive species, in the urban areas it doesn’t compare for invasiveness with tree of heaven or Siberian elm.

2024 UPDATE: The sole Russian olive in the area was removed soon after the original tree guide was published. Though rarely planted any more, the tree is not uncommon in Denver and can be easily identified because there are so few other large plants with such striking silvery gray foliage.

41. American Elm (*Ulmus americana*)

Locate This Tree Back to Central Sector Trees

The classic and most widespread native elm of eastern North America, this tree was once often planted as a virtual monoculture along boulevards to achieve the arching vase-shaped canopies that would merge overhead. American elm, the state tree of Massachusetts and North Dakota, usually grows tall, typically attaining 70 or more feet in height; one tied for #1 Colorado Champion is located in Cheesman Park and is 100 feet tall. Some of the mature American elms in Washington Park, such as the one near Virginia and Humboldt, display a weeping habit with their outermost branches descending to nearly graze the ground. Few people notice when American Elms flower very early the spring. The litter of notched green fruits with their hairy-edged circular wings surrounding a central seed is more obvious than the inconspicuous flowers. While almost any tree with age displays some degree of trunk flare it is American elm of all tree species Washington Park that develops the most dramatic fluted buttresses.

Unfortunately, the Dutch elm disease, a deadly fungal pathogen that is carried from tree to tree by a bark beetle, arrived in the northeast U.S. in the late 1920s and over a period of decades devastated the species, slowly moving westward until it reached all the lower 48 states. (The disease is generally believed to have originated in Asia; it's named for its causative agent having been first isolated by a Dutch researcher.) Many cities rued the vulnerability they created for themselves by such heavy dependence on one tree species for street planting. Denver's elms were fortunate not to be heavily affected by the disease until some effective preventive chemical treatments were developed. As a result, we've retained many grand mature elms in our parks and along our parkways, whereas most of the old elms in our eastern cities were lost. Because few trees have elm's highly regarded arching form, much effort has been put into developing new disease-resistant elm cultivars and hybrids, with some tentative success, but it can take decades for a promising type to truly prove its worth. Until this happens, it's difficult to estimate a lifespan for this tree, which in the past routinely lived beyond 200 years.

42. Pinyon Pine (*Pinus edulis*)

Locate This Tree Back to Central Sector Trees

Pinyon pine is a relatively small tree (to 20 feet, often shrubby, though it can reach 60 feet) with stiff, sharp pointed 1-to-2-inch needles in bunches of two that tend to curve in toward the branches. Often the inner surfaces of the two needles are pressed together, making them look like one. Pinyon pine has a wide native distribution up to 7,800 feet elevation centered on the Four Corners area and is New Mexico's state tree. It's typically found growing alongside western juniper, is well-adapted to dry climates, grows slowly and can live up to a millennium.

Pinyon pine seed cones are relatively short and wide with few scales. At maturity the cone scales open to release the seeds (pine nuts, or piñones in Spanish) which are avidly sought by wildlife and humans; heavy nut crops are produced every few years. Though the nuts of all pine trees are edible and have a similar taste, those of the pinyon are the largest and sweetest of the North American pines and contain the greatest ratio of protein (31%) of any

seed or nut; they were a very important food source for Native Americans. Because of its smallish stature, pinyon is not an important timber tree, but its wood is very aromatic, memorably so when used for firewood.

43. Turkish Filbert (*Corylus colurna*)

Locate This Tree Back to Central Sector Trees

Native to Turkey and the surrounding region, this tree (also called a Hazel) is a relatively new and adaptable addition to our urban forests. While it lacks much fall color, it has an attractive flaky or scaly bark, a pleasing symmetrical pyramid shape, interesting dangling male catkins in late winter or early spring (the female flowers are inconspicuous) and clean scorch-resistant foliage that is softly hairy on both sides. The tree also produces edible nuts held three or more in each cluster, though they have much thicker shells and less meat than the commercial hazelnuts grown on a sister species. Turkish filbert, the largest of the filbert species, can typically mature at 40 to 50 feet in height but is capable of growing higher. Colorado champions are barely hitting the 40-foot mark now and we can expect more height since this species has not been growing here very long.

44. Tuliptree (*Liriodendron tulipifera*)

(now in South Sector)

Locate This Tree Back to Central Sector Trees

This is a large tree native to the eastern third of the U.S. where it can grow a very straight trunk to a height of 150 feet or more; in Colorado a height of 75 feet is more likely and in fact the tallest in Colorado is less than that. The rather large leaves are unusual in that they are indented at the end rather than coming to a point; they often turn a strong yellow in the fall. The flowers are handsome up close, but are not brightly colored, and their usual location high in the canopy means they often pass unnoticed. Despite the flowers looking very much like tulips, there's no botanic relationship between the species; rather, tuliptree is related to the magnolias, a group relatively early to evolve. The tuliptree fruit is a conical structure made up of winged seeds; the fruits may remain on the tree through the winter before the seeds disperse. Proof of tuliptree's popularity is that it's the state tree of Tennessee, Kentucky, and Indiana.

2024 UPDATE: There are a few specimens in the park. There are two west of the main (southern) tennis courts (one is this Locate This Tree specimen). There is another, younger specimen, along the north edge of the diagonal road near the rest rooms.

45. Hackberry (*Celtis occidentalis*)

Locate This Tree Back to Central Sector Trees

Hackberry trees go about their utilitarian business with an understated efficiency. Their serrated leaves are somewhat reminiscent of elms. The flowers, not showy, are followed by dark orange fruits about a half inch long that turn dark purple by early fall and are gladly eaten by birds. They're edible by humans, too, but have little flesh. Hackberry trees have a unique bark that is usually covered with very hard crusty longitudinal ridges, almost giving the impression of cast concrete. Native to the U.S. Midwest, hackberry performs well in Denver as it is quite tolerant of cold, heat and drought, alkaline soil, is relatively fast growing and in time can reach 80 feet in height (the state co-champion in Denver is about 100 feet). Hackberry is one of the earlier trees to leaf out in Denver, but its foliage is not especially resistant to sub-freezing temperatures. This often leads to the trees losing their young leaves because of a late spring freeze,

but the leaves later grow out again without much apparent damage to the tree.

Hackberry provides an example of how a tree species can sometimes be identified by the pathogens that attack it. By mid-summer in Denver, many hackberry trees will have been affected by the Hackberry Nipple Gall insect, a mite that causes blister-like bumps on the back surfaces of the leaves. Hackberry is also susceptible to "witch's broom," bushy clusters of chaotic shoots, looking almost nest-like, that occur in the upper canopy, and which are revealed along with the overall very fine branching structure after the tree's leaves fall. Witch's broom on hackberry (or on other types of trees) can be caused by a malfunction in a tree's hormonal regulation or can be initiated by injuries from insects, fungi, viruses, and even faulty pruning practices; these growths don't pose a serious threat to the tree's health.

46. White Ash (*Fraxinus americana*)

Locate This Tree Back to Central Sector Trees

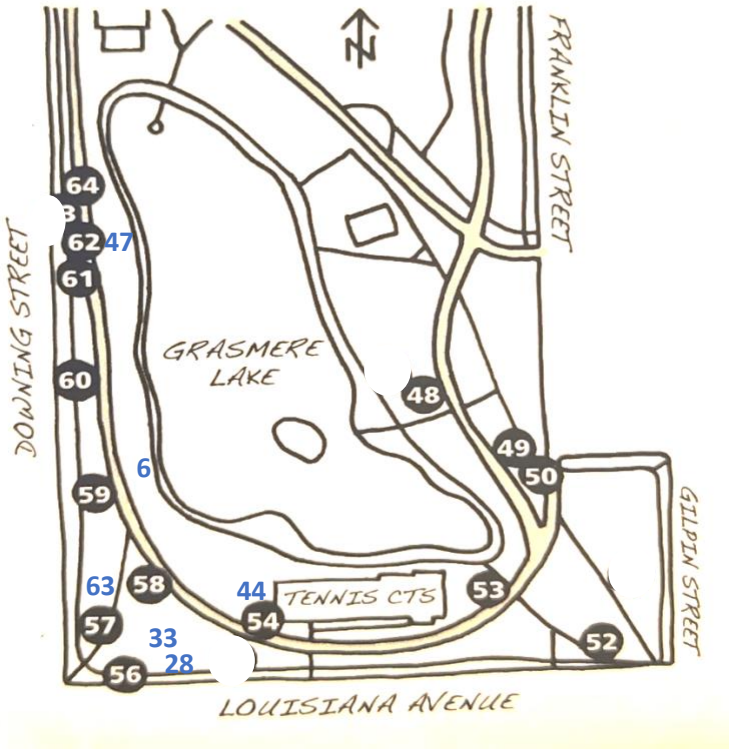
This tree is very similar to green ash and has almost as extensive a native range. The leaves are compound with five to nine leaflets, and the bark develops a tight pattern of ridges and furrows. White ash tends to develop a more symmetric form, but the main difference is the fall color, which generally includes not only some yellow but also maroon and purple tones. It's not unusual for the outer portions of the tree to show reddish tones while the interior is yellow. White ash is early to leaf out in the spring and is also one of the first trees to show its fall color. The male (seedless) cultivar 'Autumn Purple' has enjoyed great popularity and has done much to broaden Denver's autumn spectrum of foliage color. Like elms, maples and many other trees that rely on the wind rather than insects for pollination, the flowers bloom before the leaves expand and release great quantities of pollen; such trees are primarily responsible for the first peak of the allergy season.

As with all native ash species, this one lives under the looming threat of an exotic pest, the Emerald Ash Borer. Another pest that affects these trees is the ash flower gall mite, a tiny insect that commandeers the developing male flower tissue for the purpose of creating galls as part of its reproductive cycle. These globular galls remain on the twigs well into the winter but are primarily an esthetic nuisance.

2024 UPDATE: The White Ash in previous versions of this guide was removed due to its poor condition in 2024. A new White Ash specimen is located south of the rec center.

For additional information about the Emerald Ash Borer see comments for Tree #4 (Green Ash)

SOUTH SECTOR MAP



SOUTH SECTOR

Trees 47-64

Back To South Sector Trees

This map shows the approximate location of trees. Use the 'Locate This Tree' link for each of the trees described below to access Google Maps directions to locate the tree of interest.

47. Red Maple (*Acer rubrum)*

Locate This Tree Back To South Sector Trees

Prior to 25 or so years ago the fall foliage season in Denver was mostly an affair of yellow and gold, but the widespread planting of this tree (along with Freeman maples and the white ash cultivar Autumn Purple') has added ample orange, red and purple to the palette. Red maple, the state tree of Rhode Island, is a very common forest tree in the eastern half of the U.S. and is the only maple whose native range extends all the way from northernmost Maine to the tip of Florida. Along with sugar maple, this is one of the main trees that give our eastern forests their blazing fall color. In the city, it's the numerous named cultivars of this tree that provide the consistently bright red and orange foliage in the fall. The trees usually attain heights of 50 feet; anything larger flirts with championship status in Colorado. The young bark is a thin smooth light gray, somewhat subject to frost cracking in our sunny-winter climate until it develops some thickness with age. The flowers are red and quite showy in early

spring. The seeds (also red) ripen by June and have wings that spread at a relatively narrow angle. Even the leaf stalks are red and the young twigs reddish. Unfortunately, this tree, like silver maple, is not long-lived; 100 years may be a typical maximum life span.

48. Norway Maple (*Acer platanoides*)

(Now in Central Sector)

Locate This Tree Back To South Sector Trees

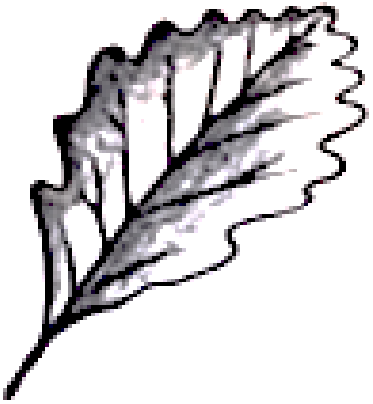
A native of continental Europe, Norway maple and its cultivars (especially red- or purple-leaf types like 'Crimson King') have enjoyed wide success in the U.S. as a street tree. It is very tolerant of poor soil, heat and pollution, and develops a symmetrical rounded crown typically around 55 feet in height (the maximum in Colorado at present is 79 feet). Because of its shallow root system and the dense shade that it casts, growing grass or gardening under one can be a challenge. The seeds, which ripen in the fall, have wide-spreading almost horizontal wings. An underappreciated aspect of this tree is its profuse spring display of yellow-green flowers before the leaves emerge; many mistake this display as being the tiny new leaves.

Though Norway maple has fewer problems than silver maple, it is still considered "overplanted" by many horticulturists and there has come to be more emphasis on planting other maple species, many

having far better fall color. In more humid climates, Norway maple has shown a tendency to become invasive, seeding itself aggressively into areas where it's not wanted, but this has not yet posed a problem in our dry climate.

49. Swamp White Oak (*Quercus bicolor*)

Locate This Tree Back To South Sector Trees



This oak has a natural range in the U.S. Midwest, in low-lying wet areas, but doesn't extend into the Great Plains. It has nevertheless proven to be very adaptable to our dry climate and a valuable addition to our urban forest during the past 20 or 30 years. Its only vulnerability here is to alkaline soils, but so far, it's performed well on many urban sites. Another long-lived oak, the largest in Colorado has grown to a height of 78 feet, but so far most are younger and smaller. That the tree is part of the white oak group is shown by the rounded leaf outline, but rather than having pronounced lobes it has an undulating margin. Its acorn, maturing in one year, is considered by some to be the sweetest of any oak, and may even be palatable raw (though this will vary from tree to tree and year to year). Native peoples made extensive use of acorns for food; even the tannin-rich bitter acorns of the red oak group could be made edible by extensive soaking, rinsing, and mashing. Swamp white oak leaves have the

attractive feature of often being dark green on top but finely felted and silvery white on the lower surface so that the trees will "change color" when a strong breeze hits them (this explains the species name bicolor). In the fall, the foliage color may be a combination of gold to red, or can as easily be a disappointing yellowish brown, depending on the tree's genetics, the weather or growing conditions.

50. Eastern Redbud (Cercis *canadensis*)

Locate This Tree Back To South Sector Trees

Eastern redbud, a tree native to most of the eastern half of the U.S., is one of the most popular small ornamental trees in contemporary landscaping. This is due to its reliably copious display of long-lasting rose-colored flowers borne each spring on the prior year's twigs and interestingly also on much older branches. The trees mostly grow to around 20 feet tall (the Colorado champion having reached 38 feet in height) with an equal spread and can have a picturesque rounded or flat-topped crown; however, some may develop only into large multi-stemmed shrubs. Several popular cultivars varying in foliage and flower color have been developed by the nursery industry. The leaves are broadly heart-shaped with smooth edges, and the zigzag twigs are dark-colored. The fruit is the familiar seedpod of the pea family of plants. Redbud can be grown successfully in a great variety of site conditions, though it's not especially tolerant of drought or

excessively wet soils and is not long lived. Redbud is the state tree of Oklahoma.

51. Apricot (*Prunus armeniaca)*

No (no specimens currently in park)

Back To South Sector Trees

The origin of this tree is somewhat obscured by its long cultivation since ancient times, but is usually taken as being India, though it may have entered Europe via Armenia, hence the species name. As is true for many orchard trees, many apricot cultivars and hybrids have been developed for specific purposes, so identifying them in the field can be a complex task. The cultivars are often grafted on peach or plum rootstocks to have greater vigor. Apricot trees are small trees (or sometimes large multi-stemmed shrubs) with dense spreading canopies, not unlike the related cherries and plums; usually 25 feet is the top mature height here, though the largest Colorado specimens reach 44 feet. The leaves are quite round in outline, which can differentiate it from related fruit trees. Apricot trees have less ornamental appeal than the purple-foliage plums but are still often planted by homeowners hoping to harvest fruit. Fruit may not be an annual event, however, since apricots flower

even earlier than cherries and plums, and thus are subject to flower destruction by the late spring freezes so common along the Front Range. The trees also do not like to be awakened early by "false springs," but most are tolerant of our colder winters and adapt reasonably well to a variety of soil types. In commerce it's not only the fruit that is valuable, but also the seed pits which are the source of flavoring agents and alleged medicinal substances.

2024 UPDATE: This clump of trees was senescent and had to be removed. There is no other apricot tree in the park. In fact, a recent inventory of trees in Denver parks and on public right-of-way (tree lawns) found only 14 in the city.

52. Crabapple (*Malus species*)

Locate This Tree Back To South Sector Trees

There are so many varieties of crabapples offered in the nursery trade, possibly more than 500, that it makes little sense for most people to try to pin them down as to species or cultivar. There are somewhere between 30 and 50 species of crabapple trees (depending on the expert) that are native across the northern temperate zone of all continents. Apple trees (those grown for their fruit, also called "domesticated") are a special subset of the genus; in practical terms, trees with fruit larger than two inches are classified as apples, those with smaller as crabapples. Though some crabapple fruit is marginally palatable or better, and is happily consumed by wildlife, the trees' value lies mainly in the ornamental characteristics of form and especially their spectacular spring bloom, which can range in color from white to pink to a purplish red. The flowers are typically effective for a period of seven to ten days, though they emerge early enough that they can sometimes be damaged by late

freezes. In Denver, these are the principal spring-flowering trees.

The breeding of many crabapple cultivars has also been stimulated by their susceptibility to many foliage diseases. The flowers need pollen from another crabapple tree to set fruit, and the various types hybridize readily; it's rare that a seedling will much resemble its parent. Crabapple trees seldom surpass twenty-five feet in height at maturity with an equally wide densely twiggy crown, though the largest ones in Colorado exceed forty feet. The bark does not develop deep fissures, but instead tends to peel or scale off, often revealing mottled orange and reddish-brown coloration beneath. Crabapples are not difficult to grow here. They like a sunny exposure and are not overly fussy about soils if they have reasonable drainage. Unfortunately, these are not especially long-lived trees.

53. Goldenrain Tree (*Koelreuteria paniculata*)

Locate This Tree Back To South Sector Trees

This native tree of East Asia has yellow flowers so abundant during the summer that they almost obscure the tree's compound foliage. Besides its flowers, it is most readily identified by its pointed papery fruit capsules that almost seem inflated with the appearance of hanging Japanese lanterns. The fruit capsules remain on the tree well into the fall and beyond, while dispensing the small round black seeds that can be seen littering the ground if you look for them. The foliage usually turns an orange-brown color in the fall, complementing the copious fruit capsules which gradually turn from green to brown, giving the trees a warm two-tone russet effect in autumn.

Goldenrain tree often remains a relatively small tree in the range of 25 feet in height. However, this park tree at 32 feet is the third largest in Colorado, and the #1 state champion has reached 44 feet. This is a fast-growing tree that is capable of coping with a wide range of soil conditions and is also tolerant of air pollution and drought. Its only weakness might

be its sensitivity to low temperatures when young. It can withstand Denver winters but could have problems in outlying higher-altitude locations where temperatures can drop somewhat lower.

54. Chestnut Oak (*Quercus montana)*

Locate This Tree Back To South Sector Trees

Chestnut oak is native to the states centered on the Appalachian Mountains of the eastern U.S. It's a slow-growing tree that can live 400 years. As a member of the white oak group, it has relatively sweet acorns that mature in one growing season. Its leaves are a bit difficult to distinguish from those of swamp white oak, but they generally have smaller and more numerous teeth as well as much less color difference between the top and bottom surfaces. The coarse sawtooth leaf edges somewhat call to mind the leaves of American chestnut trees (related to oaks but of a different genus), which may have given rise to the tree's common name, though it's also true that the ranges of the two trees are nearly identical. Compared to other oaks with similar leaves, with maturity the bark becomes very dark. As a tree in urban areas, chestnut oak is drought-resistant after establishment and can do well in any soil that's not too alkaline. It will ordinarily grow to a height of

around 65 feet, with the standard rugged spreading oak silhouette, and will often display good fall color of yellow-orange hues. Chestnut oak, like shingle oak, is relatively uncommon thus far in our state, but the Colorado champion has reached 69 feet.

55. Lacebark Elm (*Ulmus parvifolia*)

No (no specimens currently in park)

Back To South Sector Trees

The third of the elm species found in Washington Park, this tree is sometimes- accurately--called Chinese Elm to reflect one of its countries of origin. Lacebark elm is a relatively new tree to be popularized as a promising substitute for the disease-ravaged American elm. Most notably, many cultivars and hybrids have been developed and they show good resistance to Dutch elm disease; the tree is also adaptable to difficult soil conditions in urban areas and is hardy in our climate. The foliage is like other elms but on a smaller scale even than Siberian elm. Unlike other elms, this tree flowers and fruits in late summer and early autumn, rather than the spring. Lacebark elm is also unique in that its bark doesn't develop the typical elm's rough ridges and furrows; instead, its bark remains rather smooth with irregular patches that flake off giving it a mottled (lacebark!) effect. We can expect lacebark elms to grow to about 50 or so feet in height, but few have

been planted in the metro area long enough to have matured; the champion in Colorado, in Rocky Ford, is 59 feet tall.

2024 UPDATE: All three of the lacebark elms perished because of a drastic plunge in temperature within a very short time around Veterans' Day of 2014. Many trees around the city died from this weather event, including Japanese zelkovas and Japanese maples, but lacebark elms fared especially poorly, with the result that enthusiasm for planting them cratered.

56. Hedge Maple (*Acer campestre*)

Locate This Tree Back To South Sector Trees

Also called field maple, this tree has a large native habitat ranging from England (where it's the only native maple) to as far away as Africa and the Middle East. This durable tree handles extremes of soil and climate very well and could bring needed diversity to our maple contingent. It does not grow as large as many maples so finds use on smaller sites; typically, it reaches 40 feet and the largest in Colorado so far have hit the 50-foot mark. Hedge maple leaves often turn a good yellow color in the fall, somewhat later than other maples. As is true with all maple species, its leaves are opposite on the twigs. A trait it shares with Norway maple but not with most others of its genus is that a stem of a leaf removed from the tree will exude a milky sap. Both trees also have fruit with wings that spread horizontally. The basis for the tree's common name is its tolerance of extensive pruning; in Europe a line of them is often shaped into a hedge.

57. Catalpa (*Catalpa speciosa*)

Tree Present: Yes
Tree Tag Present: Yes

Locate This Tree Back To South Sector Trees

Also called western catalpa, this tree is native to a small area where the Ohio and Mississippi Rivers meet, but it's proven adaptable to a much larger range of climates. A large tree with large smooth-edged heart-shaped leaves and a tropical appearance, it's been planted far and wide as an ornamental and years ago as a timber producer. Tolerant of very hot and dry conditions, there are many in Denver and in Washington Park, though they're not planted as frequently now as compared to the mid-20th century. Catalpa usually grows here to a height of about 50 feet, with Colorado champions reaching 60 feet and taller. Though the tree is quite late to leaf out and has little or no fall color, it puts on a great spectacle at the beginning of summer, opening masses of bell-shaped white flowers with yellow and purple spots. Catalpa is also well-known for its fruit, long thin

hanging capsules that people liken to cigars or beans. The seeds within are small and dry with hairy tufts to carry them on the wind, showing that this plant is not a member of the pea family. In winter, sunken leaf scars grouped in threes (whorled) along the stout twigs are a clue to this tree's identity.

58. Colorado Blue Spruce (*Picea pungens)*

Locate This Tree Back To South Sector Trees

This tree is native to virtually all elevations in the central Rocky Mountains, though it occurs more as scattered trees rather than in pure stands. It is the state tree of Colorado, as it also is of Utah, though our neighbors to the west not surprisingly call it simply "blue spruce." It grows as a narrow to wide pyramid with branching to the ground and can reach a height in the wild in excess of 120 feet, though in urban areas a maximum around 80 feet is far more common. At present, the national champion of this species resides in Utah, a situation that some in Colorado would like to rectify.

Colorado blue spruce has needles distributed all around the twigs, something like a bottle brush. The needles are around an inch long and are very stiff and sharp, often incurved toward the stems' tips. This tree has been widely planted as an ornamental for many decades, some would say overplanted. Many cultivars have been developed for landscaping, varying in form and color; they have excellent adaptability to growing conditions here.

The bluest types have been most popular, but silvery-white types are widely available, and some excellent trees are closer to green. The seed cones of this tree are usually 2 to 4 inches long and a little over an inch wide and are soft with papery overlapping wavy edged scales.

59. Shingle Oak (*Quercus imbricaria*)

Locate This Tree Back To South Sector Trees

Shingle oak is native to a swath of the U.S. Midwest from roughly Pittsburgh to Kansas City. Though this species is quite well adapted to life in our urban area, its addition to our urban forest is somewhat recent and most specimens are still young; the largest in Colorado at present is 59 feet tall, a typical height we can expect this tree to attain. Shingle oak has a moderate growth rate but lacks the longevity of many other oak species, though as trees go this only means it has an average life span. This tree has a leaf that's not very oak-like, resembling laurel in being narrow (three or four times longer than wide) with a smooth edge. As a slight concession to being part of the red oak group, the leaves may have a single bristle tip at their ends. The bitter acorns have caps that cover about a third of the nut. If a particular tree is too young to have acorns, the leaf shape alone may make it difficult to identify as an oak, since other diagnostic features are rather subtle. The wood of shingle oak is easy to split by hand into shingles, which explains the origin of its name.

60. European Buckthorn (*Rhamnus cathartica)*

Locate This Tree Back To South Sector Trees

This is a small tree native to Europe that has escaped cultivation and aggressively colonized many areas of the U.S. The plant may either take the form of a large shrub of that of a small tree to 20 feet with a rounded spreading crown. The leaves are "subopposite," meaning they are close to growing from the twigs in opposite pairs, but many are slightly offset from each other. As you'd expect, the twigs and branches carry thorns around an inch long, though they're less dangerous than those on many hawthorns. Buckthorn is seldom planted, and it doesn't need to be, because birds spread the seeds everywhere. The fruit is a quarter-inch berry that matures to a shiny black color in the fall on the female trees. Birds eat the fruit gradually throughout the winter but can't crack or digest the seeds. Other than its ability to thrive in difficult situations (poor soil, drought, compaction) the tree has few outstanding characteristics, so combined with its invasiveness in

most climates, it ends up on most "do not plant" lists. The buckthorn on this tour is the largest in Colorado; also note a second buckthorn nearby that has been on the champion list in the past but has had some problems and lost some trunks. This second buckthorn exhibits a great many burls, which are bulbous protrusions from a tree's trunk or branches that can be seen on numerous other park trees. Burls, which are tree tissues growing in a deformed manner, may be caused by injury from insects, pathogens, or human activities; they're not especially detrimental to a tree's health. The wood contained inside tree burls usually presents an irregular "figured" grain that is often highly valued by artists and woodworkers.

61. Sawtooth Oak (*Quercus acutissima*)

Locate This Tree Back To South Sector Trees

This is the only type of oak in Washington Park that is native to Asia. While it usually has a pyramidal shape in youth, its mature form is wide spreading. It hasn't been very long since this tree began to be planted in this region, so its ultimate size here can only be estimated at around 60 feet tall with an equal canopy, though it's capable of growing larger in climates with more moisture. This sawtooth oak at 27 feet in height is one of two in Washington Park; the two are tied for third largest in Colorado. This tree is faster growing than most oaks and adaptable to most sites except those with high alkalinity.

Sawtooth oak leaves are unusual for an oak, being long, relatively thin and without lobes and sinuses; instead, they have fine saw teeth tipped with sharp bristles. The leaves are quite yellow when emerging in the spring, and color golden in the fall; they dry brown and usually persist on the tree until the following spring. The bitter acorns require two growing seasons to mature and have an interesting ruffly scaled cap that covers around two-thirds of

the nut. Denver seems to be near the limit of this tree's cold hardiness so care should be taken in planting it in colder areas outside the city; young trees are more vulnerable to extreme temperatures than older established ones. Sawtooth oak has been widely planted in some rural areas of the eastern U.S. as a food source for wildlife because it bears relatively heavy acorn crops less cyclically than other oaks. However, it has become naturalized in some areas to the point of being seen as invasive, though that's unlikely to be a problem in our cold and dry climate.

62. Rocky Mountain Juniper (*Juniperus scopulorum)*

Locate This Tree Back To South Sector Trees

This tree is native to most of the state of Colorado as well as the other Rocky Mountain states and is valued in landscaping for its tolerance of drought, poor soils and extremes of temperature. Like several other juniper species, it is available in a wide variety of cultivars, and all are sometimes mistakenly called cedars. The variety of cultivars makes it difficult to generalize about the appearance of the tree, but the foliage tends to bluish green and the form to a narrow pyramid. The foliage takes the form of small overlapping scales, tightly pressed together. A larger cultivar can grow eventually to around 40 feet and is capable of living for as much as 300 years. This is the only conifer on this list whose individuals are either male or female. The seed (female) cones of this tree develop into small (1/4 inch) berries and are blue with a whitish bloom; the male cones are much smaller (1/10 inch) and rarely noticed. Juniper bark can be either gray or reddish brown and exfoliates in tough ropy strips.

63. Douglas-fir (*Pseudotsuga menziesii*)

Locate This Tree Back To South Sector Trees

Douglas-fir, the state tree of Oregon, has a wide native distribution throughout the western mountains of North America, including the Colorado Rockies, where it can grow to a height of over 120 feet. However, that size is dwarfed by the type of Douglas-fir that grows in the Cascade Mts., which can exceed 300 feet and ranks it among the world's tallest trees. In any case, in Colorado urban settings, anything over 80 feet is considered tall. In nature these trees can reach a substantial age, as much as 1000 years. The name of this tree comes from David Douglas, a Scottish plant explorer who introduced it to Europe. Over the years the tree was classified with other conifer genera including the true firs but was finally accorded its own genus along with several sibling species that share its unique cones.

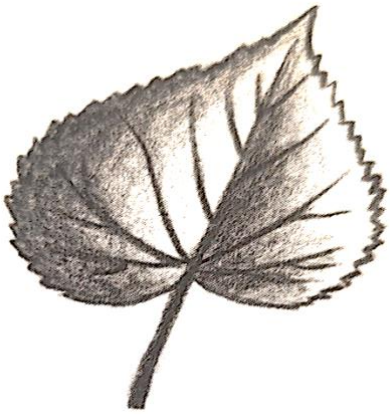
Feel this tree's foliage--it may look superficially like that of spruce but is much softer and the needle tips are usually blunt. Though the needles grow out from all around the twigs, they twist to give the effect of being two-ranked. The foliage of most trees here,

derived from hardier Rocky Mountain sources, tends toward blue green, a color favored by many high-altitude species. The 3- to 4-inch-long papery seed cones are an excellent identifier of the species because they have three-pronged (trident) bracts that protrude from underneath the cone scales and look a bit like the rear half of a mouse trying to hide in the cone. Maturing trees typically lose their lower branches, revealing relatively slender trunks. Douglas-fir wood is of high quality, and the tree's abundance has made it historically a prime timber resource.

2024 UPDATE: Several of the mature Douglas-fir trees in the park have had to be removed over the past ten years. The best locations for viewing specimens are the two tall trees on the west side of the Eugene Field House (Franklin St. and Exposition Ave.) and two on the south side of the tennis courts near Downing St. And Tennessee Ave.

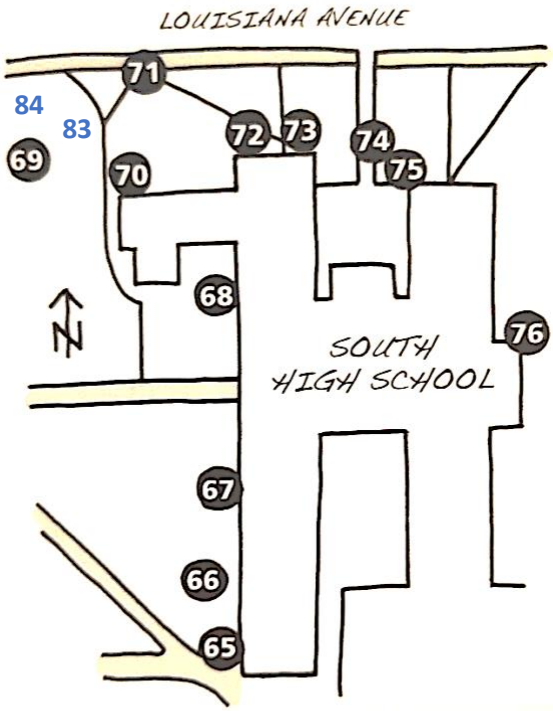
64. Littleleaf Linden (*Tilia cordata*)

Locate This Tree Back To South Sector Trees



This is a European tree related to the American linden, but with smaller leaves and a somewhat smaller stature, and is one of the most used trees in urban landscaping. There are many in Washington Park, young and old. The linden's somewhat late to emerge heart-shaped leaves with serrated edges are a strong clue to its identity, as are its very sweet-smelling midsummer flowers much loved by bees. The flowers give rise to small dry round tan fruits ("nutlets") suspended from an elongated structure which some people mistake as a second type of leaf growing on the same tree. During the winter the fine graceful structure of branch and twig growth is revealed, including many branches that arch upward and down, and then up again. This linden is tolerant of drought, varying soil pH and clay. Popular cultivars are available that develop a predictable pyramidal form that usually reach a height of around 55 feet, with the largest in Colorado approaching 100 feet.

SOUTH HIGH SCHOOL MAP



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SOUTH HIGH SCHOOL

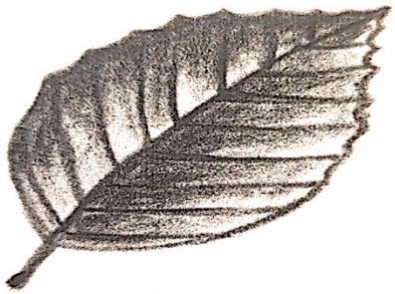
Trees 65-76

Back To South High School Trees

This map shows the approximate location of trees. Use the 'Locate This Tree' link for each of the trees described below to access Google Maps directions to locate the tree of interest.

65. Purple European Beech (*Fagus sylvatica f. purpurea)*

Locate This Tree Back To South HS Trees



Beech is one of the great and common forest trees of northern Europe. There is an American beech native to the eastern U.S., but it's the European species that is almost always encountered as a landscape ornamental, because it's more adaptable and is offered in a great number of cultivars that vary in form, leaf color and shape, etc. This type of beech has been selected for purplish foliage color, though the color generally will change a bit as the growing season progresses. Beech is a tree that will typically grow here to a height of around 60 feet with a spread almost as great; the tallest one in Colorado is 70 feet. Like many of the closely related oaks, this tree is relatively slow growing but very long-lived, and it makes its mark on the landscape.

Two of the most notable features of beech trees are their smooth gray trunks, even on mature trees, and the very pointy conical buds with numerous overlapping scales. The twigs have a slightly zigzag alignment and the lower branches, if not pruned,

will angle out and down to sweep the ground. Because of this characteristic, the dense shade of the foliage and the development of large surface roots, very little can grow underneath a beech tree. The fruit of European beech is a bristly husk that contains two nuts and can be of major value to wildlife. In the fall beech foliage is among the last to turn color; its deep blue-green leathery leaves will usually go to a golden yellow, then coppery-orange and finally brown. Like the oaks, beech trees often retain their foliage well into the winter, especially on the lower parts of the trees.

66. English Oak (*Quercus robur*)

Locate This Tree Back To South HS Trees

English oak, a member of the white oak group, is the European counterpart of the majestic native American white oak which sadly is lacking in Washington Park at present, though there are many English oaks. The tree's native range extends into northern Africa and western Asia, and it's a classic producer of quality hardwood timber used historically for heavy construction and shipbuilding. This is another long-lived oak with a modest rate of growth; it can easily attain 300 years of age and specimens upwards of 700 years are not uncommon. English oak typically matures here at 65 or so feet in height, and this South High School tree at 82 feet is tied for third largest in Colorado (the largest approach 100 feet). English oak leaves are normally smaller than those of bur oak, and have a moderate amount of lobing; key to identifying them is their very short stem and earlobe-like base. The acorns are far more elongated than those of other trees in the park and grow on long thin stems. The tree is hardy and adaptable to most conditions encountered in the Denver area.

One disadvantage of English oak is its lack of fall color. Weighed against that is the availability of far more cultivars than exist for other oaks, serving various landscaping needs such as for columnar, compact, or weeping forms. In addition, it's easier to transplant than most oaks.

67. Spindletree (*Euonymus europaeus*)

Locate This Tree Back To South HS Trees

This plant becomes a large bush or small tree rarely above twenty feet tall. A European native, its similar North American sister tree species the eastern wahoo is also occasionally seen in cultivation, but it's the shrubs of the Euonymus genus that are far more utilized in the landscape. Spindletree is very tolerant of different soil types and moisture regimes, its only real preference being for well-drained soil. It has two basic ornamental features, one of which is colorful fall foliage, though it's unremarkable in some years. More consistent is the attractive fruit that's a bright strong rose-colored four-parted capsule opening in the fall to expose the equally bright-colored orange fruit, the fleshy outer layer of which birds avidly consume, subsequently dispersing the hard seeds inside. Because of this efficient bird-assisted seed dispersal, in wetter environments this species can become invasive; it's also subject to severe scale infestations in moist climates.

68. Pagoda Dogwood (*Cornus alternifolia*)

Locate This Tree Back To South HS Trees

Other than the shrubby red osier (red twig), dogwoods aren't common in Colorado; though many dogwoods don't mind our winters, they can fail to thrive without well-drained acidic soils. This species, native to the northeastern states broadly from Iowa across to Maine, is more adaptable than most and can be grown as a multi stemmed shrub or a small tree up to about 25 feet. The terminal buds on the twigs are precursors only of flowers, so new growth takes place at an angle to old growth, and this is ultimately reflected in the overall architecture of the tree, with horizontal branches forming stratified tiers.

The leaves of this plant are typical for a dogwood (the leaf veins tending to curve back inward, toward the tips) except that the leaves are alternate on the stem instead of opposite like most dogwoods, and they cluster tightly on the ends of the new branches. In the fall the foliage may develop an attractive red-purple color but not always to the striking degree of other dogwoods. The whitish flowers, which though smaller and less showy than the flowering and

Chinese dogwoods, still occur in large enough clusters to give a worthwhile display in late spring. The fruit, a small berry-like affair that eventually turns from red to very dark blue, is a favorite food of many birds. This tree near South High School may not be doing as well as it could if it'd been planted in a somewhat shadier location. The plant is considered adaptable to "full sun," but such prescriptions often refer to cloudier climates in the east or midwest, where a plant in a full southern exposure might receive two-thirds or less of the sunshine it would in a similar spot in Denver. However, diagnosing the reasons for a plant failing to thrive can be difficult and many factors are in play, among other things in the case of this dogwood, soil pH and drainage could play a part.

69. Yellow Buckeye (*Aesculus flava)*

Locate This Tree Back To South HS Trees

The differences between this tree and Ohio buckeye are rather minor. Yellow buckeye, with a native range centered in West Virginia and eastern Kentucky and Tennessee, has been planted less frequently in spite of its greater resistance to leaf scorch during our hot dry summers. As with others of its genus, its leaves are palmate compound with five leaflets. The twigs are stout, with large end buds. The flowers are numerous but not ostentatious since individually they're small and not greatly different from the color of the leaves that emerge at the same time in the spring. The fruits are smooth leathery husks containing one to three nuts of a rich chestnut color with a tan spot on one side. Yellow buckeye usually grows to a larger size here than Ohio buckeye. The South High specimen at 66 feet in height is tied for second place on the Colorado champions list.

70. Ginkgo (*Ginkgo biloba)*

Locate This Tree Back To South HS Trees

Almost everything about this "living fossil" of a tree is unique, including its often-misspelled Chinese derived name. More like a conifer than a flowering tree, ginkgo has few living relatives other than the cycads. At one time in the geologic past, it was a widespread tree on all the northern continents, but it gradually declined until in modern times it was only found near temples in Asia. Had it not been for the tradition of monks cultivating it, it might have gone extinct centuries ago. Although not yet conclusive, there is some evidence for remnant ginkgo populations still extant in isolated areas of China, Korea and Japan.

Ginkgo trees grow slowly to heights around 60 feet in urban conditions but are capable of 100 ft. or more. At approximately 55 feet, this tree at South High is the third largest ginkgo in Colorado. Ginkgos are extremely long-lived trees; some have been documented at over 1500 years. They are very adaptable to varied site conditions and experience few disease or pest problems. Shaped something

like a duck footprint, the ginkgo leaf is like no other; many of the leaves have a deep notch dividing them into two lobes (hence the name "biloba"). In the fall the leaves usually turn a striking clear yellow. Leaves occur on lengthening twigs, as with most trees, but also on knobby lateral "spur shoots" which give a strong winter clue to this tree's identity.

Ginkgo trees are either male or female. The fruit produced by the female ginkgo is usually considered objectionable because the fleshy ripening outer layer emits a strong rancid odor. The inner seed, however, is a delicacy in many Asian cuisines and is often quickly harvested from the female trees. Even so, in the U.S. efforts are made to only plant male trees, which is accomplished by nurseries that graft cuttings from known male trees on top of seedlings of indeterminate sex.

2024 UPDATE: Several ginkgo trees were planted in 2023 on the perimeter of the children's playground located near the Smith Lake Boathouse.

71. Serviceberry (*Amelanchier arborea)*

Locate This Tree Back To South HS Trees

Though serviceberries occur naturally in Europe and Asia, most species are found on the North American continent, where they're native to every state of the U.S. except Hawaii. However, because of the similarity of many types and their easy hybridization, the number of serviceberry species is hotly debated by botanists, so it's better not to become fixated on identifying trees to the species level, especially with the large number of cultivars offered in the nursery trade.

Serviceberry has become popular in landscaping over the past several decades since it fills the need for an adaptable small (15 to 25 feet in height) ornamental tree that does well in full sun. Its principal ornamental attributes are the white flowers in mid-spring that are effective for about a week, and the attractive fall foliage coloration (variable in hue, ranging from orange to deep red). The fruit, apple-like on a small scale, ripens over a period of several weeks in June, turning from green to red and dark purple. Birds are very fond of the

fruit, but they sometimes must compete with humans for them (they make good pies and jams). The fruit can range in taste from insipid to delectably sweet. As yet we've not taste-tested the fruit from this line of trees on Louisiana Avenue.

72. Mountain Alder (*Alnus tenuifolia*)

(no specimens currently in park)

Back To South HS Trees

Sometimes considered a sub-species of Gray Alder (*Alnus incana*), this small shrubby tree is native to a large swath of the Rocky Mountains from the Yukon south to New Mexico, including Colorado; it usually doesn't exceed 25 feet in height, though the largest in Colorado has reached 46 feet. Mountain alder is one of the classic fast-growing but not very long-lived "pioneer trees" that are among the first to colonize land that's been disturbed; its spread is helped along by its propensity to sucker from the roots. It's capable of establishing itself on very poor soils, partly because of the symbiotic relationship it has with bacteria that live in nodules on its roots. The bacteria can create water soluble nitrogen compounds (i.e., fertilizer) from nitrogen in the air, which is of benefit not only to the alder but to adjacent vegetation even after the death of the tree.

Alders are relatives of birches and generally are trees of moist cool climates, though they're

adaptable to dry hot conditions, and the different species' leaves bear a resemblance to each other. The alder's male flowering structures are conspicuous, being rather long dangling catkins that form in the fall, hang on the tree through the winter and then open early in the spring. The female flowers are much smaller catkins, but they mature into interesting clusters of cone-like fruits by the fall, around the time the leaves fall without changing much in color.

2024 UPDATE: The sole mountain alder in the park or at South High was blown down by a windstorm barely a week after the tree guide was initially published in 2010.

73. Japanese Pagodatree *(Styphnolobium japonicum*)

Locate This Tree Back To South HS Trees

This tree (also called Chinese Scholartree) is named because it was often planted near Buddhist temples in its east Asia native range. It typically grows to a mature height of around 55 feet here; this 63-foot-high specimen at South High is tied for third largest in Colorado. The foliage, alternate on the branches, is compound with small leaflets; the bases of the leaf midribs are large and totally conceal the buds. A good clue to its identity is that this tree produces prolific quantities of white flowers later than the bloom of most other trees (in late July and August). Other clues are its twigs and fruit: the twigs are smooth and an unusually dark yet bright green, a color they retain for 4 or 5 years; the fruits are pods (another pea family plant) with a row of seeds inside. As the pods mature, their outer shells shrink around the seeds, giving the pods a kind of "string of beads" look. Pagodatree has proved to be a useful tree in cold climate urban areas and is adaptable to poor soils as well as drought and heat. This is one of the six trees on the list of the "50 fundamental herbs" in

traditional Chinese medicine, and the only one that grows in Washington Park or at South High (ginkgo, by the way, is not one of the 50).

74. Horsechestnut (*Aesculus hippocastanum)*

(no specimens currently in park)

Back To South HS Trees

This tree is the Old-World counterpart of our buckeyes and has a small native range in Greece and the Balkans. Because of its ornamental virtues it became a favorite park tree throughout Europe (where it's the classic beer garden tree) and then in the U.S., but it's far less often planted nowadays. This is the type of tree that Anne Frank wrote about being able to see from her family's redoubt in the occupied Netherlands during World War II; that tree still exists but in a precarious condition.

Like the buckeyes, horsechestnut has palmate compound leaves, more often with seven leaflets, with the added difference that the leaflets are widest toward their tips. The twigs are stout and feature large terminal buds that are noticeably sticky. As with our buckeyes, the seeds of this tree are inedible, unlike those of true chestnut trees, which are of an entirely different genus. Horsechestnut’s size is similar to yellow buckeye, the

tallest in Colorado reaching 72 feet. The flower clusters are showy as their white color contrasts effectively with the young foliage. The shiny dark seeds are borne one or two at a time inside a prickly capsule. Horsechestnuts often experience leaf scorching by late summer, one problem this tree has in our hot and dry summers.

2024 UPDATE: This tree and one on the north end of Washington Park were the only horsechestnut trees in the area and both had been removed by 2015. It's becoming increasingly difficult to find these trees in Denver, but some large specimens still exist in older parts of the city. Ohio buckeye and yellow buckeye have similar ornamental attributes and are now far more commonly planted.

75. Yellowwood *(Cladrastis kentukea)*

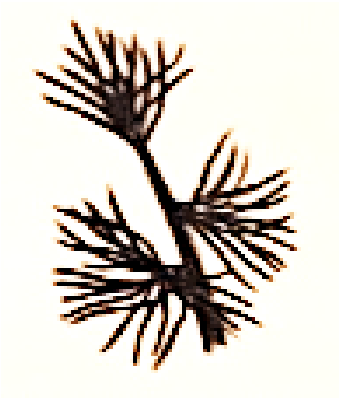
Locate This Tree Back To South HS Trees

This is another tree from the large pea family of plants, this species is native to a fairly small and scattered range mostly in Kentucky, Tennessee and Arkansas. Though it has some very good attributes as a shade tree, it's only recently started to be planted in Colorado and large older ones such as this South High specimen, at 57 feet tall tied for the #1 Colorado champion, are uncommon. The tree is generally moderate in size and is adaptable to acid or alkaline soils. The leaves of yellowwood are compound and about 8 to 12 inches long, the leaflets being relatively broad and slightly offset from each other on the midribs, the bases of which surround and hide the buds. The typical pod-shaped fruits are flat and not unlike those of redbud trees. The most ornamental feature of yellowwood is the fragrant white flower display in late spring (there is also a pink-flowered cultivar) and that can be spectacular in alternate years. Secondary ornamental attributes are its smooth light gray bark reminiscent of beech, and yellow or

golden fall foliage color. The name of this tree comes from the color of the heartwood.

76. European Larch *(Larix decidua)*

Locate This Tree Back To South HS Trees



Larches are one of a small number of deciduous conifers, i.e., they lose all their foliage in the fall and re-grow it the next spring. The European larch, native to the Alps and Carpathian Mountains of central Europe, is like the Tamarack, a very hardy (can tolerate -50 F. or lower) North American larch species that has an enormous native territory in our northern states and especially in Canada, where it can grow successfully farther north than just about any other tree. The European species is a prime timber tree and is plantation-grown for this purpose on its native continent.

This tree is relatively rare in Colorado, but it develops into an attractive pyramid shape and could be used more where room for it is adequate. Its soft foliage is short (from 0.5 to 1.25 inches) and is an especially attractive bright green in the spring upon emergence; in the fall the needles turn yellow before dropping. The needles occur on long shoots at the ends of the twigs as well as on shorter side

shoots. Larch seed cones are papery (as opposed to the far woodier cones of pine trees) and consist of around 50 overlapping scales; they often remain on the tree for many years, gradually turning dark gray. This European larch is Colorado's third largest at around 80 feet tall, an excellent size for a mature specimen, though they can attain as much as 140 feet.

Trees Added to the Original Guide

77. Bald Cypress *(Taxodium distichum)*:

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Bald cypress is one of a minority of conifer species that is deciduous, dropping its needles every fall and growing a new set each spring. The prevailing popular image of this tree is of one with a highly fluted buttressed trunk growing straight and tall with very few lower branches, having an upper canopy festooned with Spanish moss and found standing in a swamp somewhere along the humid coasts of our southern states. Although this does describe many of its native habitats, we are fortunate that it also can grow when planted much farther north. Since bald cypress trees can tolerate winter temperatures as low as -25 F., we have no problems growing it in our region. What's more, though it would prefer to be planted where there is more rain and humidity, it is not bothered by dry soils, either acid or alkaline, and it handily tolerates salty soils which are often found in areas irrigated with recycled water.

Bald cypress trees in native habitat can reach heights above 100 ft. and trunk diameters more than 7 feet. In our region thus far, the largest state champion in Greeley is a bit over 60 ft. tall with a trunk approximately 30 inches in diameter. The foliage, often a bit late to emerge in the spring, is bright green with a lacey/feathery appearance and is very soft to the touch. The bark can be reddish or gray and is fibrous and stringy. The male reproductive structures are hanging catkins 4 to 5" long, visible in the winter, and the female fruits are segmented globular cones about one inch in diameter, somewhat resembling on a much larger scale the small berries produced by most junipers. In the fall, the foliage turns anywhere from yellow to a rich rusty copper color before being shed. Bald cypress trees are slower growing than many, but are among the longest living, with the oldest known specimens dating back over 2500 years.

FANS donated the pair of Bald Cypress located on the north side of the loop road a bit west of the Colorado miner statue.

78. Bosnian Pine (*Pinus heldreichii)*:

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This tree, sometimes referred to alternatively as *Pinus leucodermis*, has a scattered native distribution mainly in mountainous areas of the Balkan countries (Bosnia, Albania, Macedonia, etc.) along with some small, isolated parts of southern Italy, but is not presently considered endangered in the wild. As with many tree species, in urban plantings they will never attain the 100+ heights they can achieve in nature but are more likely to mature at 40 or so feet tall. Most planted here are relatively new still; the state champions--all in Denver--are around 12 inches in diameter with heights of 30 ft. and crown spreads of 20 feet. Bosnian pines are among the longer-lived conifers, with life spans exceeding 1000 years having been verified.

Bosnian pine needles grow two to a bundle, are around 2 to 4 inches long and remain on the branches for around six years. The foliage even on young plants is very dense and bushy, making it an attractive tree from the start. The developing seed (female) cones have a blue-purple color that matures to a medium brown. This pine has a slow to

medium growth rate but on the positive side it's extremely strong and cold hardy and would hardly ever be damaged by cold temperatures or snow loads in our region. Also, Bosnian pine is highly resistant to all kinds of urban air pollution and most importantly is capable of tolerating soils with high salt levels, which is a tremendous advantage in parks where recycled irrigation water is used.

Quite a few Bosnian Pines can be found on evergreen hill (the area between the loop road and Virginia Ave) on the north end of the park. Additionally, two specimens border the South High School sign on the northwest corner of the campus.

79. Sweet Gum *(Liquidambar styraciflua):*

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A common tree in the southeast quadrant of the U.S., sweet gum is admired for its glossy five-pointed star-shaped foliage and its often-striking fall color than can range from yellow to crimson or combinations of those shades. It's found naturally as far north as New Jersey and southern Illinois and as far west as Texas, as well as on mountain slopes in Central America where it can avoid the excessive tropical lowland heat. Sweet gum has long been widely planted as an ornamental tree on the U.S. west coast where it's one of the few deciduous trees that provides fall color, but it's a relative newcomer in Colorado because until recently it was not considered hardy enough to withstand the winters here. However, with a somewhat warmer climate--especially in the more built-up urban areas of our region--and because the nursery industry has developed some cold-resistant strains, we are seeing that this tree can add to our canopy diversity.

Sweet gum trees in Denver are likely capable of reaching 50 feet in height, with varying silhouettes depending on the cultivar; some have been selected to remain relatively

narrow. Their leaves have veins radiating from a central point and so can be confused with many maple species but are arranged alternately on the twigs whereas maple leaves occur in opposing pairs. Oftentimes the twigs sport longitudinal corky ridges reminiscent of bur oak twigs. The fruits of sweet gum trees are spiky balls (typically called "gum balls") that remain woody long after they fall from the trees, which makes them a nuisance especially for barefoot passersby. The other negative aspect of this tree is that they usually develop heavy surface roots which can damage sidewalks and pavements, so they are best planted in open areas. The gum for which these trees were named is not often encountered unless it exudes from the trunks or larger branches when they're wounded; the resinous substance does have a sweet smell and has found medicinal applications. Sweet gum wood is also an important resource that principally finds utilitarian uses such as for plywood, crating, etc.

Denver has the state champion with a trunk diameter of 24", a height of 48" and a crown spread of 33 ft.:
however, it is not in Wash Park.

80. Blue Atlas Cedar (*Cedrus atlantica* 'Glauca'):

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This is a large highly ornamental conifer sometimes indistinguishable from the fabled Cedar of Lebanon although it is instead native only to the Atlas Mountains of Algeria and Morocco. As such, it is one of the few trees of African origin that can be grown as far north as Denver with our cold winters. However, that is less surprising considering that the Atlas Mts. reach heights of over 13,000 ft and are found at about 35 degrees north latitude, i.e., as far north as Albuquerque, NM. In native haunts these trees can surpass 100 ft. in height and can develop trunks over six feet in diameter. Though they can grow quite large in U.S. cities with more amenable climates than Denver, here they have so far only just broken the 40 ft. height level, which is the stature of the Colorado champions in Westminster and on the Regis University campus. These cedars are very adapted to hot and dry conditions that mark our summers. However, they have a major vulnerability in not having quite the cold hardiness they need here, and they may be seriously injured if temperatures drop below -10 F. or when there are extremely rapid fluctuations in

temperature, so their use in all but the warmest parts of our region involves risk.

The foliage of these cedars consists of short needles that occur singly on new growth and in tufted clusters that angle slightly upward on older growth. The designation 'Glauca' refers to the light blue-gray needle color on most trees available in commerce, in contrast to the more conventional green of trees in native habitat, a color that is also typical of the other cedar species. Young Atlas cedars usually have a gaunt appearance but fill out well as they develop. While they will maintain a roughly pyramidal form for many years, eventually with maturity they tend to develop a flat to layered canopy structure. Their small upright finger-shaped pollen (male) cones concentrated on the lower parts of the tree release clouds of pollen in the fall, which is unlike the pollen release timing of most other conifers. The thicker female seed cones, also upright, are usually found in the upper canopy. After the seeds are released, the female cones disintegrate and there will be little trace of them remaining.

True cedar trees (genus Cedrus) are only native to Asia and Africa. The term "cedar" is in common usage to refer to several North American native conifers that botanically are junipers, arbor vitae, etc.

81. Tricolor European Beech (*Fagus sylvatica* 'Tricolor'):

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European beech is one of the most common deciduous forest trees of temperate continental Europe and the cooler mountainous regions of the adjacent Mediterranean countries. Over many years, horticulturists in Europe have discovered and propagated many beech cultivars that differ from the norm in terms of foliage color, leaf shape and overall growth habit. One of these variations is the 'Tricolor' beech and it's become a favorite because of the brilliant rose red (or sometimes pink and white) margins of the leaves. Although the leaf centers have a dark green color, the overall impression of the tree from a distance during the first months of foliage growth is a magenta rose color. However, by late July a few weeks of our hottest summer weather saps the intensity of the rose color which then fades to tan and the tree then recedes into the background. Even so, the spring foliage display that can last for two full months has more eye-catching impact than many other ornamental trees can provide.

Aside from the spectacular foliage, the tricolor beech doesn't differ materially from the common European beech found in its native habitats. The leaves are oval with

a pointed tip and have edges that are slightly scalloped. The dry dead leaves often remain attached to the tree well into the winter months, especially on the lower branches and on the younger specimens; this is a trait it shares with some oak trees that are close beech relatives. The winter buds are unique in being unusually long, slender and pointed, and this is a reliable key to identifying beech trees during the winter. The thin bark of beech trees is a very attractive smooth gray even on very old trunks, is often compared to elephant hide, and shows fine concentric wrinkles where branches and trunks meet. The fruit of beech trees is a small triangular-shaped nut (a beechnut) that is edible for humans and animals, although the trees usually need to be upwards of 30 years old before they begin producing them.

European beech trees cultivated here generally don't exceed 70 ft. in height with a comparable canopy spread, though the tricolor cultivar may not reach a comparable stature. However, in native habitat heights well over 100 ft. can be found along with trunks measuring 5 ft. in diameter. If not in competition with other trees, beech trees generally produce branches that sweep low to the ground and the canopy casts a very dense summer shade that makes it quite difficult to garden beneath it. Further complicating the picture is beeches' habit over time of growing many large shallow roots that radiate in all directions. A life span of 300 years for a carefully tended beech tree is not uncommon and some have been determined to have reached 500 years of age. Although

this species prefers a more humid atmosphere than ours, it still grows here with no obvious trouble and has good tolerance of our winter climate. It does tend to have a slower rate of growth than many other trees in our urban forest, though. For the tricolor beech cultivar, our three state champions, all located in Denver, have trunk diameters around 14", heights around 36 ft. and crown spreads around 29 ft. but as they are still relatively young, they have ample room to grow.

82. Lacebark pine *(Pinus bungeana):*

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The lacebark pine is undoubtedly one of the most ornamental species of its genus but has only slowly found a small niche in urban horticulture. This may partly be due to it being somewhat slow-growing and the fact that we've long had a preference in the region for the larger-growing native Ponderosa pine and the introduced European species Austrian pine, both of which have usually been much more available in commerce. Still, the spectacular bark of the lacebark pine positions it as an up-and-comer in landscape horticulture. As a lacebark pine's branches grow and some develop into trunks, although remaining smooth, the bark begins to flake away in scales to reveal multi-colored patches of green, beige and brown resembling a traditional military camouflage pattern. In the case of some trees, the patches can even develop yellow, red or purple hues.

The lacebark pine is a native to relatively upper elevations in northeast and central China and thus has no problem tolerating the winter climates along the Front Range of the Rockies. Denver Botanic Gardens pioneered the planting

of this species years ago and today has some noteworthy specimens. These trees can likely reach a height of 50 feet in our region but are typically shorter; they may develop with a single trunk but are more apt to have multiple branching from the base, in which case they will become wider than tall as they mature. Unlike most pine trees that we're likely to encounter in our area that have either two or five needles per bundle, these pines have three stiff and sharp-to-the-touch needles growing in each bundle. As of this writing the champion Colorado lacebark pines are in Denver and Colorado Springs where they have trunk diameters around 10" and heights around 33 feet.

83. Paperbark Maple (*Acer griseum)*:

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This is a member of the trifoliate group of maples, meaning that instead of a single leaves arising from each bud which is the case for most maple species, they have a three-part compound leaf. This is unusual because ordinarily all the members of a tree genus will have either simple or compound leaves. China, which is the country with the greatest diversity of maple species, is the point of origin for most of the trifoliate maples including this one, which comes from the central part of that country where the climate is cold enough to have given it the hardiness it needs to do well in Denver. (There is only one maple species native to North America that has a compound leaf--the box elder.)

The outstanding ornamental attribute of paperbark maple is its copper/cinnamon-colored peeling bark that begins to form even on young branches. Older trunks are most noticeable for retaining the somewhat transparent curls for a long time. The leaflets of the paperbark maple are bluntly toothed, are a dark green on the top and a dull grayish green below. In the fall the foliage on some trees will turn a bright red to orange color. The fruit is a hanging

double-seeded structure called a samara, typifying all maple species, and that has a thin wing on each seed arrayed at an angle of about 45 degrees to each other. Paperbark maples are relatively small trees that usually don't exceed 25 ft. in height with a somewhat lesser canopy spread, although the trunks can become rather stout with age. One of the Colorado champions of this species is 27 ft. tall with a trunk diameter of about 12” and is located on the Regis University campus. Denver Botanic Gardens also has several paperbark maples of smaller dimensions.

The paperbark maple was first brought from China to England by the famous British plant explorer E. H. "China" Wilson in 1899 and reached the Arnold Arboretum in Boston a couple years later. Very few additional germplasm collections of the species were subsequently made until the current century when it was realized that most trees in cultivation were offspring of the original Wilson plants, thus of too little genetic diversity. The paperbark maple growing on the South High School campus was donated by Friends and Neighbors of Washington Park in approximately 2011 and later suffered from some vandalism but has continued growing with two separate leaders to replace the one that was broken.

84. London Plane Tree (*Platanus x acerifolia)*:

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This large deciduous shade tree, growing to around 75 ft. tall and equally wide (roughly the dimensions of the Colorado champion found in Longmont), is a hybrid of two Platanus species, the American sycamore and the Oriental plane tree that's native to southern Europe and southwestern Asia. The former contributes cold hardiness, and the latter provides resistance to the disfiguring fungal disease anthracnose, which often afflicts the American sycamore during wet spring weather. The hybrid most likely arose from the proximity of the two species in Spain, after American plantings were introduced there, which is why it is sometimes called *Platanus x hispanica* by botanists. As a hybrid, it has no "native habitat" but has become very common in urban landscapes in temperate climates all around the world. It was recognized very early as a tree unbothered by compacted soil and the severe pollution of the cities in the early decades of the industrial revolution, becoming especially popular in London, hence the common name it acquired.

The leaves of the London plane resemble those of the American sycamore but are generally not as wide and their lobes may be more prominent. The leaves do somewhat resemble those of many maple trees but are arranged alternately on the twigs rather than in opposite pairs; this resemblance explains the other botanical name "acerifolia" which is Latin for maple leafed. The bark of London plane is one of its most attractive features, remaining quite smooth even on older trees and exfoliating to create a mosaic of tan, light green and gray patches, which distinguishes it from American sycamore with its normally blockier reticulated bark on its mature trunks. Another distinct feature of London plane is that its pebbly-surfaced globular dangling fruits mostly occur in pairs rather than singly. These approximately 1" diameter spherical fruits ripen to a tan color, fall from the tree in the autumn, and disintegrate gradually over the winter into a fluffy mass of individual seeds that can be carried away by the wind.

London plane trees have often been the subjects--or victims as some might say--of a pruning technique called "pollarding" which involves severely removing most of each season's growth every fall after the tree has reached a certain height, eventually resulting in trees smaller than they would otherwise develop and that have stout trunks but a restricted lollipop canopy in the summer. In the winter when not in leaf, the trees reveal a quite stumpy and gnarly silhouette. This type of pruning is more

common Europe than in the U.S. and is often found in formal landscape situations such as civic plazas, promenades, etc. We aren't aware of any examples of this kind of pruning in Denver, although London plane trees did not begin being planted in the region until relatively recently. Prior to the 1950's American sycamore trees were more commonly used in our region, partly because they were considered more cold hardy.

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Additional On-Line Resources:

- Friends and Neighbors of Washington Park (FANS)
  - A volunteer neighborhood group dedicated to the stewardship of Washington Park. FANS holds open meetings monthly at the Washington Park Bathhouse
  - www.fanswashingtonpark.org

- The Colorado Tree Coalition
  - A statewide group consisting of arborists, foresters, etc. It publishes an annual calendar with color photos of notable Colorado trees and is responsible for keeping the list of Colorado Champion Trees. The list can be accessed through the CTC website.
  - www.coloradotrees.org

- The Park People
  - A city-wide citizen group whose goal is the improvement of Denver's parks. It operates the Denver Digs Trees program to increase the planting of street trees.
  - www.theparkpeople.org

- Tree Keeper
  - Map-based software supported by the City and County of Denver that inventories trees in the Denver area and provides the location, scientific name and common name of all trees in the database.
  - https://denverco.treekeepersoftware.com/index.cfm?deviceWidth=375

- Dendrology at Virginia Tech
  - An easy-to-use tree identification key and information about each tree species. To utilize the website's tree identification feature, answer the series of questions based of your tree's leaf, twigs and other characteristics.
  - https://dendro.cnre.vt.edu/dendrology/idit.htm

- City Forester, Denver Department of Parks and Recreation
    - This office provides information about the Denver's Urban Forest Strategic Plan, tree resources for property owners, licensed tree contractors and more.
    - https://www.denvergov.org/Government/Agencies-Departments-Offices/Agencies-Departments-Offices-Directory/Parks-Recreation/Trees-Natural-Resources/Office-of-the-City-Forester