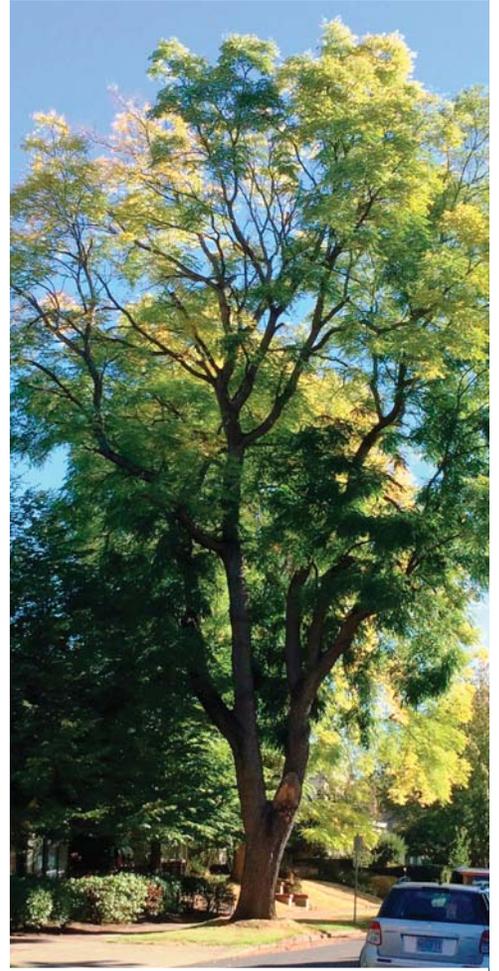




PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland



East Sylvan Middle School Tree Walk

LEARNING LANDSCAPES



East Sylvan Middle School Tree Walk 2015 Learning Landscapes

Site data collected in Summer 2014.

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Cover photos (from top left to bottom right):

- 1) Ponderosa pines have prickly cones.
- 2) The flowers of a *Liriodendron tulipifera*.
- 3) A large Kentucky coffeetree growing in Portland.
- 4) A London planetree growing at East Sylvan Middle School.
- 5) The fruit of a kousa dogwood.
- 6) Black tupelo trees have brilliant fall color.
- 7) The multicolored bark of a London planetree.
- 8) Southern magnolia flowers have a strong lemony scent.

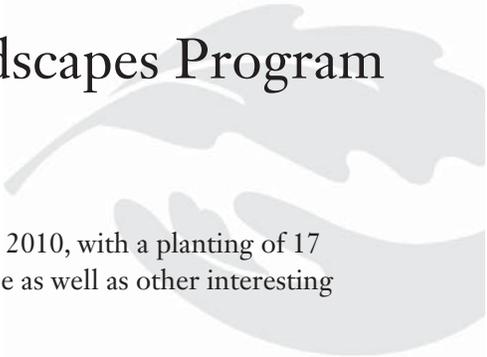
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Commissioner Amanda Fritz
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The Learning Landscapes Program



East Sylvan Middle School

The East Sylvan Middle School Learning Landscape was initiated in October 2010, with a planting of 17 trees. This tree walk identifies trees planted as part of the Learning Landscape as well as other interesting specimens at the school.

What is a Learning Landscape?

A Learning Landscape is a collection of trees planted and cared for at a school by students, volunteers, and Portland Parks & Recreation (PP&R) Urban Forestry staff. Learning Landscapes offer an outdoor educational experience for students, as well as environmental and aesthetic benefits to the school and surrounding neighborhood. Learning Landscapes contain diverse tree species. They are designed to teach students about biology and urban forestry issues, but can also be used to teach geography, writing, history and math, and to develop leadership skills.

Community Involvement

Community-building is crucial to the success of Learning Landscapes. PP&R works with Urban Forestry Neighborhood Tree Stewards, teachers, parents, students, and community members to design, plant, establish and maintain these school arboreta. PP&R facilitates this collaboration by working with the school district, neighborhood, students and teachers to create landscapes that meet the need of the individual school community.

By involving students and neighbors in the tree planting, the community has ownership of the trees and a tangible connection to their school.

Tree Planting Experience

Learning Landscapes are planted by the school's students under the mentorship of middle or high school students and volunteers. On planting day, tree planting leaders teach students the benefits of urban trees, form and function of trees, and tree planting techniques. This leadership aspect of Learning Landscapes gives older students and volunteers the opportunity to connect with their peers, build confidence, and develop public speaking skills. Involving students and neighbors in the tree planting fosters community ownership of the trees and builds a tangible connection between school and neighborhood. This helps ensure a high tree survival rate by reducing vandalism and encouraging ongoing stewardship of the school's trees.

Continued Hands-on Learning Opportunities

Once planted, Learning Landscapes are used by teachers and parents for service and leadership projects. Students and teachers continue to build projects around the trees with opportunities to water, prune, weed and mulch. These dynamic landscapes change year after year, depending on student and teacher interests, as new trees are planted and added to the collection.

How can I get involved?

Visit <http://www.portlandoregon.gov/parks/learninglandscapes> for volunteer opportunities, to view more maps, and to learn how to plan a Learning Landscape in your community.



East Sylvan Middle School Tree Walk

Tree #	Common Name	Scientific Name
1	southern magnolia	<i>Magnolia grandiflora</i>
2	black tupelo	<i>Nyssa sylvatica</i>
3, 4	kousa dogwood	<i>Cornus kousa</i>
5	ponderosa pine	<i>Pinus ponderosa</i>
6	western redcedar	<i>Thuja plicata</i>
7	arborvitae, eastern arborvitae or northern white-cedar	<i>Thuja occidentalis</i>
8	red maple	<i>Acer rubrum</i>
9, 10	Himalayan whitebarked birch or Jacquemont birch	<i>Betula utilis</i> var. <i>jacquemontii</i>
11, 12	ponderosa pine	<i>Pinus ponderosa</i>
13	tulip tree	<i>Liriodendron tulipifera</i>
14, 16	Oregon white oak	<i>Quercus garryana</i>
15	Douglas-fir	<i>Pseudotsuga menziesii</i>
17	western redcedar	<i>Thuja plicata</i>
18, 19	dawn redwood	<i>Metasequoia glyptostroboides</i>
20	London planetree	<i>Platanus x acerifolia</i>
21	Oregon white oak	<i>Quercus garryana</i>
22	pine	<i>Pinus</i> spp.
23	giant sequoia	<i>Sequoiadendron giganteum</i>
24	Kentucky coffeetree	<i>Gymnocladus dioicus</i>
25	Oregon white oak	<i>Quercus garryana</i>
26	giant sequoia	<i>Sequoiadendron giganteum</i>
27	bald cypress	<i>Taxodium distichum</i>
28	Douglas-fir	<i>Pseudotsuga menziesii</i>

Tree Facts, A to Z

arborvitae, eastern arborvitae or northern white-cedar, *Thuja occidentalis*

Origin: North America - Nova Scotia to Manitoba in Canada south to Illinois and mountains of North Carolina and Tennessee

Most often seen as a columnar hedging plant but in the wild forms a tree 20' to 30' in cultivation but can reach 40' to 50', higher in the wild. Fibrous bark is shallowly furrowed. Tree was heavily logged as the decay-resistant wood was used for fence posts, shingles, canoe frames and lodges. The bark was used to make rope. Trees are very long lived, with some individuals documented at over 1,000 years. Eastern arborvitae was the first North American tree introduced to Europe by at least 1558. Drinking a tea made from the foliage had cured French explorer Jacques Cartier's men of scurvy in the winter of 1535-36, and he bestowed the name "tree of life."

bald cypress, *Taxodium distichum*

Origin: North America - From eastern Texas to Florida, reaching north to Delaware and southern Illinois

A deciduous conifer growing upright to 100' or more. Needles are soft, emerging light green. They are ½ "to ¾" long and turn russet-orange in autumn. Spherical cones are about an inch in diameter. Bark on older trees is reddish-brown and fibrous. The official state tree of Louisiana, bald cypress is synonymous with the bayous. Its range, however, extends from east Texas into southern Illinois and along the eastern seaboard to Delaware, usually in swamps. Despite being able to survive in waterlogged soils, bald cypress also grow well in drier soils and makes a fine street tree. Because the wood is durable, bald cypress was heavily logged for water tanks, ships, flooring, greenhouses, shingles and laundry equipment. Before the Ice Ages, these trees were widespread across the Northern Hemisphere but died out everywhere except the eastern U.S. Bald cypress seeds are eaten



by wild turkeys, wood ducks, evening grosbeaks, squirrels and some waterfowl and wading birds.

black tupelo, *Nyssa sylvatica*

Origin: North America - eastern USA from eastern Texas and eastern Missouri across the South and north to New York, New England and southern Ontario, Canada

Black tupelo is an 80' tall broadleaf deciduous tree native to the eastern United States. The leaves are smooth and long (up to 6"), emerging as clusters and twisting at different angles from the ends of branches.



Trees are dioecious, with males and females occurring on different plants. A cluster of blue berries (smaller than ½") emerge from the end of the leaf clusters. These flowers and fruits are important food sources for bees and birds. The leaves turn from green to fiery red and yellow in autumn. The berries are said to taste bitter to humans but are an important food source for birds. This species likes wet habitats and is being planted more frequently as a street tree in Portland, especially in bioswales.

dawn redwood, *Metasequoia glyptostroboides*

Origin: Asia - central China

Dawn redwood grows to about 120' tall, smaller than both the coast redwood and giant sequoia. The deciduous stems are in an opposite branching pattern, while previous year shoots and buds are spaced spirally around the branches. New leaves (about 1" long) are lime green, turning darker green through the summer and orange in fall. The cones (about 1" round) are green earlier in the season and turn to brown before ripening. Dawn redwood flourished in North America in the Miocene age (5 to 25 million years ago) and left a fossil record embedded in rocks across the Oregon landscape. However, the tree was thought to be extinct until a small grove was discovered in China in the 1940s. Seeds were collected and sent to arboreta around the country to reintroduce the species, and Portland's Hoyt Arboretum became the first

location in North America to grow a tree to produce seeds in millions of years. Dawn redwood is Oregon's state fossil.

Douglas-fir, *Pseudotsuga menziesii*

Origin: North America - from British Columbia south to Oregon, Washington, California, Idaho and western Montana with a subspecies in the Rocky Mountain states and into northern Mexico

Not a true fir, Douglas-fir may grow up to 250' tall and 10' in diameter, although specimens have been found that are 330' tall. Young trees sometimes emit long columns of sap through the bark. The needles (about 1" long) are green above and blue-green underneath with two white lines running parallel to the length. Needles are dense and scattered around the stem. The cones are about 3½" long with distinct bracts sticking out. Some say the bracts look like a pitchfork or the hind legs and tail of a mouse. The tree also has a strong pine-like scent which can be smelled by crushing the needles or walking through a forest dominated by Douglas-fir. Douglas-fir has been the state tree of Oregon since 1939 and has been used as the main source of construction lumber for Oregon and the rest of the United States. Douglas-fir is also harvested for Christmas trees.

giant sequoia, *Sequoiadendron giganteum*

Origin: North America - California in the Sierra Nevada

Giant sequoias are the world's largest tree by volume. The tallest can reach over 250' - shorter than the world's tallest trees - their coastal redwood cousins. Long lived trees, the oldest (as determined by ring count) was 3,500 years old. Millions of years ago the trees were widespread around the planet, growing in the Arctic during warmer periods in Earth's history. The trees eventually died out everywhere but in the Sierra Nevada of California. Restricted in nature now to only a few dozen isolated groves in a narrow elevational band between 4,500 and 7,100 feet, the trees were first discovered by Western scientists in the 1850s. Bark is fibrous. Needles are in flat sprays, sometimes with a decided bluish-gray color. Cones are small (1.6 to 2.8 inches long).



Himalayan whitebarked birch or Jacquemont birch, *Betula utilis* var. *jacquemontii*

Origin: Asia - western Himalayas, including Kashmir in India and Pakistan

Most often seen in a form which has the whitest bark of any birch grown in Portland. The bark is smooth, bright white and exfoliates in horizontal strips to reveal cream underbark. It does not develop black, blocky plates like many European and American birches. Upright growth 40' to 65'. Leaves are ovate, slightly hairy and with serrate margins. They turn yellow in autumn. Once considered resistant to bronze birch borer, it has proven to be as susceptible to fatal attacks as other birches. Grows at elevations up to 14,800' in Nepal and Kashmir. Its name in Sanskrit is *bhojpatra*. First described by western scientists in 1825. The name *jacquemontii* honors French plant explorer Victor Jacquemont (1801-1832), who died tragically while plant hunting in the Himalayas. The bark has been used for over 2,000 years as writing paper, as well as bandages, umbrella covers, packing material, and roof construction. Widespread cutting for firewood has reduced the tree's numbers considerably.

Kentucky coffeetree, *Gymnocladus dioica*

Origin: North America - Western New York and Ontario, Canada across the Midwest to the edge of the prairies

Gymnocladus is Greek for "naked branch," which describes the Kentucky coffee tree's habit of not leafing out until late spring (often mid-May). Twigs are often thick and blunt-tipped. The ascending branches form a high, irregularly-rounded crown. Trees are usually 40-80' but in good conditions some have reached 110'. In June, clusters of whitish-purple flowers hang inconspicuously among the leaves. Male and female flowers are on separate trees. Female trees will produce castanet-like brown pods 6" to 10" long. The six or more reddish-brown seeds inside contain alkaloid compounds that early European-American settlers would grind to

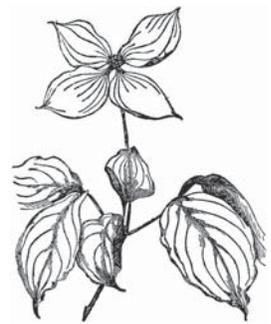


make a coffee-like beverage. Compound leaves can be 2' long, with bipinnate, pointy leaflets 2" to 2 1/2" long that are green on top and lighter underneath. They turn yellow in fall. Although in the bean family, Kentucky coffee trees are not nitrogen fixers. There are only two species in this genus (the other is in China). Seldom lives more than 100 years.

kousa dogwood, *Cornus kousa*

Origin: Asia - Japan, Korea

A deciduous broadleaf tree growing 20-30' with equal spread. Less prone to anthracnose than the native Pacific dogwood (*Cornus nuttallii*) or eastern dogwood (*C. florida*). The species' true flowers are small and yellow-green, but are surrounded by four showy white bracts that sit above the leaves and appear in May after the leaves come out (American dogwoods flower before or as the leaves come out). There are many hybrids, cultivars and a Chinese subspecies, and some of these have pink-tinged bracts around their flowers. Gumbball-sized, deep pink, puckered fruits appear in fall. These are eaten by monkeys in Japan and Korea. Bark on older trees flakes in patches to create a nice mottled cream and gray effect. Fall color is usually orange to red. Trees do not tolerate drought very well and need summer irrigation to thrive.



London planetree, *Platanus x acerifolia*

Origin: Europe - a hybrid between the North American Platanus occidentalis and European Platanus orientalis

London planetree is a deciduous tree growing to 115' tall. The bark peels back in plates, revealing light gray, yellow, and even orange hues of underlying bark. Shedding bark is a way for the tree to shed pollutants and breathe with new bark again. Older trees develop bumps that make the bark look like dripping candle wax. The thick leaves (about 5-8" long) are fuzzy beneath when young and have a similar shape as maple leaves. There are three to five main lobes radiating out from the center of the stem. The edges of leaves are toothed, tapered, and pointy. The spiky

round fruits (about 1" diameter) are also unique, spaced out along a stem like beads on a necklace. London planetree may be the most popular urban street and park tree planted across the United States and Europe. Tree populations that are clones tend to become diseased easily. London planetree also grows quickly and has been grown for timber, especially for a particular expensive type of wood called lacewood.

Oregon white oak, *Quercus garryana*

Origin: North America - southern British Columbia, Canada through Washington and Oregon west of the Cascades and northern California

Oregon white oak is a deciduous tree growing up to 90' tall. Branches are dense and wide, with limbs of solitary trees reaching to the ground. The leaves (3–6" long) are thick and shiny with rounded lobes. A distinguishing feature is the presence of galls on the underside of leaves or small twigs. The galls are the home of little wasps that lay their eggs inside oak leaves. The fruit of the Oregon white oak is an acorn about 1" long that protrudes from a narrow cap. These trees prefer open grassland habitats where they cannot be shaded out by other species. Oregon white oak was once one of the predominant trees in the Willamette Valley, but has declined to only 1% of its original range due to land development for farms and cities, and a reduction in wildfires. The tree's nickname, Garry oak, is after Nicholas Garry, the secretary of Hudson's Bay Company who helped botanist David Douglas.



pine, *Pinus* spp.

Origin: dispersed widely across four continents

There are about 100 species of pine, native to every continent except Antarctica, Australia and South America. A quarter of the world's pine species are found in the Western USA. Pines are successful because of their ability to survive and endure in harsh environments, from sandy soils to rocky areas, and from cold, mountainous lands to regions with frequent fires. Pines vary widely in bark texture and color, cone shape and color and length of needles, as

well as in the number of needles held in each bundle. They are economically important trees, providing softwood timber for paper pulp, and construction. Seeds of some 29 species (especially *P. pinea* in the Mediterranean region) are collected as food, in some cases preventing natural regeneration. Other pines provide commercially important resins and turpentine. The German word for pine is *kiefer*. The French call pines *pin*. The Chinese name for pine is *song*. The Japanese call pines *matsu*. Greeks call pine *pitys*.

ponderosa pine, *Pinus ponderosa*

Origin: North America - from British Columbia, Canada south through the Northwest and other Western states east to Nebraska and south to northern Durango and Tamaulipas states in Mexico.

Ponderosa pine is the most widely distributed pine in North America after lodgepole pine. In 1826 David Douglas first named the tree *ponderosa* after the ponderous, or heavy, wood. These evergreen trees grow up to 180' tall and may live 500 years or more in the wild. Needles are 5–10" long and grow in bundles of three.

Cones are egg-shaped and 3–5" long. As ponderosa pines age, their bark turns from a dark brown to a yellow or orange hue, giving older trees the nickname "yellow bellies" or "punkins." For a sweet surprise, cuddle up with a yellow belly and smell the cracks in the bark—it's reminiscent of baking cookies with sweet tones of vanilla and butterscotch. Lumber is valued for light construction and millwork. Native Americans who lived near ponderosa pines had many medicinal uses for the tree, and some also used the roots to make a blue dye. The seeds are consumed by a wide range of wildlife.



red maple, *Acer rubrum*

Origin: North America - eastern Canada, eastern USA from Minnesota to Maine south to Florida and east Texas

In urban environments, red maple is a fast grower up to 40', but in the wild it may reach three times that height. It has a roundish to diamond-shaped crown.

Bark is smooth, luminous gray with patterned lines, and furrowed when old. New twigs are shiny, reddish, and have white flecks. Leaves are opposite, 3–5" long with three major lobes, turning brilliant red, orange-red or yellow in the fall. The tree explodes into deep red flowers before the leaves emerge in spring. Fruit is a double-winged samara, joined at an angle usually larger than 45 degrees with bulbous seeds which are reddish at first and brown when ripe in the summer. Red maple is toxic to horses, and the alluring scarlet leaves cause massive destruction of horses' red blood cells when ingested. Trees adapt to local conditions and over generations, northern trees have become more cold-tolerant while southern trees have become more heat-tolerant. Neither is very drought tolerant.

southern magnolia, *Magnolia grandiflora*

Origin: North America - from eastern Texas across the coastal southern states to North Carolina

Southern magnolia grows to about 80' tall. The leaves have a dark green waxy surface and a fuzzy red-brown underside. This species is native to the southeastern United States and has been cultivated as an urban or yard tree for 250 years. The oldest specimen in Portland was planted in the 1890s on SW 2nd Ave. Flowers don't appear until the tree is at least twenty years old. However, some would say the flowers are worth waiting for. Each milky white and strongly fragrant flower can be up to a foot in diameter, which some people have said is akin to the size of a dinner plate. The large petals fall off leaving a large green fruit (up to 4" long) which some people say looks like a pickle. In the southern United States, evergreen magnolias have been planted in hurricane regions because of their wind-resistance.



tulip tree, *Liriodendron tulipifera*

Origin: North America - eastern USA across all the southern states and north to Michigan, New York and southern Ontario, Canada

The tulip tree is the tallest broadleaf native tree in eastern North America, ranging from Florida to

Nova Scotia. It has a pyramidal form and grows 100-150' tall but can reach 200' tall! Bark is light gray and corky, with older specimens demonstrating an intricate lattice pattern of vertical ridges. It is a valuable timber tree that is easy to spot by its nearly square leaves, which grow to 6" or longer. The leaves are dark green above and bluish-white beneath, turning yellow to gold in autumn. The flowers are 2.5" long and consist of six pale-green tepals (sepals that look like petals) arranged like a tulip surrounded by three horizontally-spread, green tepals. The beautiful flowers are frequently overlooked because their greenish color blends with the foliage. The fruit is a conical, pale brown cluster. It is the state tree of Kentucky, Tennessee and Indiana.

western redcedar, *Thuja plicata*

Origin: North America - British Columbia, Canada south through Washington, Oregon, northern Idaho and northwest Montana south to northern California; also in the Alaska Panhandle

Western redcedar can grow up to 200' tall and greater than 10' in diameter. This evergreen has flat, waxy, scale-like leaves that resemble the pattern of ferns. On the underside of the leaves is a white chalk-colored pattern of "X" shaped marks. The branches usually hang down from the trunk in a hook-like fashion. The bark is dark brown, fibrous, and peels off easily in small strips. The cones (about 1/2" long) form at the tips of the scale-like leaves and open upon maturity. Western redcedar has been used for outbuildings and sheds because the wood is resistant to rot. Native Americans used the wood for canoes and totem poles. The bark can be harvested and was used for blankets, clothing, ropes, nets and even baby diapers. Western redcedar is the official provincial tree of British Columbia.



