PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland

Hayhurst School Tree Walk

LEARNING LANDSCAPES

Hayhurst 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) The variegated leaves of a Goldspot Pacific dogwood.
2) Rounded lobes differentiate the Rotundiloba from other sweetgums.
3) The foliage of a Rivers' purple European beech.
4) Students work together to plant a tree at Hayhurst School.
5) The yellow fruit of a Golden Raindrops crabapple.
6) Fall color and fruits of a black tupelo.
7) The rough bark of a western redcedar.
8) Dawn redwood is a deciduous conifer.

Photo from above:
1) Pollen cones on the branch of a deodar cedar.

ver. 1/30/2015

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The Learning Landscapes Program

Hayhurst School

The Hayhurst School Learning Landscape was initated in April 2009, with a planting of 22 trees. This tree walk identifies trees planted as part of the Learning Landscape as well as some 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.

Hayhurst School Tree Walk

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Learning Landscapes
http://portlandoregon.gov/parks/learninglandscapes

Hayhurst School Tree Walk

Tree #	Common Name	Scientific Name
1	Rivers' purple European beech	*Fagus sylvatica* 'Riversii'
2	variegated tulip tree	*Liriodendron tulipifera* 'Aureomarginata'
3	Gold Spot Pacific dogwood	*Cornus nuttalli* 'Gold Spot'
4	black tupelo	*Nyssa sylvatica*
5	Harvest Gold linden	*Tilia x* 'Harvest Gold'
6	dawn redwood	*Metasequoia glyptostroboides*
7	red maple	*Acer rubrum*
8	Rotundiloba sweetgum	*Liquidambar styraciflua* 'Rotundiloba'
9	Golden Raindrops crabapple	*Malus transitoria* 'Schmidtcutleaf'
10	incense cedar	*Calocedrus decurrens*
11	deodar cedar	*Cedrus deodara*

Tree #	Common Name	Scientific Name
12, 13, 15, 16	Oregon white oak	*Quercus garryana*
14	bitter cherry or Oregon cherry	*Prunus emarginata* var. *mollis*
17	black hawthorn	*Crataegus douglasii*
18	western red-cedar	*Thuja plicata*
19, 21	ponderosa pine	*Pinus ponderosa*
20	Oregon ash	*Fraxinus latifolia*
22, 24, 25	western red-cedar	*Thuja plicata*
23	red alder	*Alnus rubra*
26	giant sequoia	*Sequoiadendron giganteum*
27	Oregon white oak	*Quercus garryana*
28	flowering plum	*Prunus cerasifera*
29	flowering pear	*Pyrus calleryana*

Tree Facts, A to Z

bitter cherry or Oregon cherry, *Prunus emarginata* var. *mollis*

Origin: North America - California through Oregon and Washington to British Columbia and Idaho and northwestern Montana

Small, weedy native tree capable of reaching 50' but typically shorter, with a slim trunk with smooth gray to reddish-brown bark marked with horizontal lenticels. The thin, oval-shaped leaves are 0.8" to 3.15" with unevenly-sized teeth on both sides. Flowers are small, with five white petals and hairlike stamens; produced in clusters in spring, and insect pollinated. The fruit is a juicy red or purple cherry, which, as the common name suggests, are bitter. Readily spread by seed, which birds eat, and by underground stems, which then sprout above the surface to create a thicket. Has hybridized with introduced cherries. The Kwakwaka'wakw of British Columbia are known to have used the bark and other parts of the plant to make a medicinal poultice. The bark peels off in long fibrous strips which Native people used to make baskets and other implements.

black hawthorn, *Crataegus douglasii*

Origin: North America - Oregon, Washington,

A widespread little tree in moist fields and along streams at lower elevations in Oregon and Washington. Distinguished by slender thorns 1/2" to 1" long, they are one of the few native Northwest trees (the other notable example being vine maple) which have orange to red fall color. Flowers in spring are white, resembling those of apple trees. The small, black fruits are 1/2" long and contain three to five rock-hard seeds. The fruits are important food for

birds, bears and other mammals. In semi-arid country, black hawthorn is the preferred nesting tree for magpies, who weave their stick pile nests in nearly every tree as the thorns discourage intruders.

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.

deodar cedar, *Cedrus deodara*

Origin: Asia - the Himalayas, including Pakistan, northern India, Nepal and Afghanistan

Deodar cedar is one of the true cedars and is often planted as an ornamental tree in parks and private properties. This evergreen tree averages between 40–70' in height with a straight trunk and swooping horizontal branches. The needles are green to blue-green and are singular or form in clusters that spiral along the shoots. Needles are about 1½" long and very sharp. The resinous cones are 3–5" long and sit on top of the branches like little nests. Ancient cultures have regarded deodar cedar as sacred. All of the true cedars come from areas of ancient civilization everywhere from Africa to Nepal. In North America, deodar cedar continues to be planted widely as an ornamental. It is the national tree of Pakistan.

flowering pear, *Pyrus calleryana*

Origin: Asia

Flowering pears grow about 25–40' tall in cities. These trees have a dense, oval canopy. The bark contains small, rectangular plates. The leaves grow in clusters at the end of branch nodes. Each leaf is glossy, oval shaped, twisty and wavy along the edges, finely toothed, and pointy at the tip. Some varieties of flowering pears have yellow to orange foliage in the fall. The fruits are light brown and small, no bigger than 1" around, with darker-colored dots. Flowering pears originated in Asia and are now popular street trees due to their size and showy spring flowers. The flowering pear, also known as the common pear, is fairly hardy in cities. However, the cultivation of some varieties has resulted in trees that easily split (where branches begin) during high winds and storms. The most widely planted cultivars are the narrowly conical 'Chanticleer,' with deep red fall color. 'Bradford' is another common cultivar that is rounded, with profuse white flowers in spring.

flowering plum, *Prunus cerasifera*

Origin: Asia - western Asia

The cherry plum, or flowering plum, is a small, deciduous tree. The species name *cerasifera* means that it bears cherry-like fruit, which happen to be edible. They usually cannot be recognized until their incredibly early flowers appear before winter is over, or until fruit of some sort appears. Some varieties bear red fruit, while others bear yellow or purple. Leaves are broad and boat-shaped with long, tapering points and fine saw-toothed edges. Depending upon the variety, leaves may be green or purple. Young plants are often used as understocks for grafting other ornamental 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).

Gold Spot Pacific dogwood,
Cornus nuttalli 'Gold Spot'

Origin: North America - Oregon, Washington, northern California and British Columbia

A native deciduous tree in the wild to 65' tall. The bark is thin, gray, and smooth, later becoming an alligator hide of small squarish blocks. Leaves are simple, opposite, ovate, 3–5" long with smooth, wavy margins and curved veins. Foliage turns bright red in autumn. The white “petals” are actually bracts that surround a button-like cluster of a dozen or more true flowers. The berries soaked in brandy were prescribed for acid stomach and dogwood extracts served as colic and diarrhea treatments. Piano keys and thread spindles were more recent common uses for the wood. Goldspot is a variegated selection, with green leaves splashed with gold (hence the name). This selection has an upright, oval shape and grows 30' to 40'. Flowers are white like the species and followed by small orange fruits relished by birds. Pacific dogwoods should be planted where they get good air circulation to avoid the disease anthracnose, to which they are highly susceptible.

Golden Raindrops crabapple,
Malus transitoria 'Schmidtcutleaf'

Origin: Asia

As the name implies, the fruit on this crabapple is a bright yellow - one of the only yellow-fruiting crabapples typically planted in Portland. A Schmidt Nursery introduction, this deciduous tree reaches 20' tall by about 15' wide. The branching pattern is fairly horizontal. The leaves are bright green, fine textured and deeply incised, with two "wings" at the base of the leaf - narrow leaf parts which project outward. Leaves are usually slightly curled rather than lying flat. Round fruit appears in fall and is 1/4 inch in size. Fall color is a nice gold. Golden Raindrops is the crabapple cultivar in western Oregon most resistant to scab, cedar-apple rust and powdery mildew.

Harvest Gold linden, *Tilia x* 'Harvest Gold'

Origin: Asia - hybrid linden of Tilia mongolica *and* T. cordata

This hybrid between *Tilia mongolica* and *T. cordata* was selected in Manitoba, Canada for its hardiness to extreme cold, its resistance to leaf spot and sun scald, its strong central leader and more uniform (and therefore more effective) golden yellow fall color. More compact than many lindens, Harvest Gold reaches 30-40' tall and 25-30' wide but the species can reach 100' or higher. The oval-shaped leaves have

toothed margins, drip points at the tips, and are up to 3" long. Yellow flowers hang in clusters attached to a leaf bract in June. Highly fragrant, they also attract bees in large numbers. Small round, pale-colored nutlets appear in autumn. Fall color is pale yellow but not especially showy. Like all lindens, prone to suckering from the base of the trunk. These should be removed promptly.

incense cedar, *Calocedrus decurrens*

Origin: North America – from Oregon south into California and northern Baja California in Mexico.

Evergreen conifer with single straight trunk and capable of reaching 185'. Usually densely branched, columnar in form (broader in nature but with narrow forms common). The needles are held in flattened sprays. Golden-yellow pollen is shed in winter and early spring. Oblong cones have 3 alternating pairs of scales with a bump just below the tip. Bark is smooth on young trees but becomes fibrous and reddish-brown with age. Highly decay-resistant wood is light, soft and fragrant, giving rise to the tree's common name in English. Primarily used to make pencils but also used in the Far West to make fenceposts or shingles. Trees can live 350 to 500 years. Only two other species in Calocedrus are known – both in Asia.

Oregon ash, *Fraxinus latifolia*

Origin: North America - Oregon and Washington to northern California

Oregon ash is a native, medium-sized deciduous tree growing to 80' tall. Bark becomes grayish-brown with vertical fissures. Leaves are opposite, pinnately compound with 5–7 leaflets that have nearly no petiole. They are olive-green above and paler and wooly beneath. Male and female flowers appear on separate trees. The fruit is a single samara, 1-2" long, hanging in dense clusters. Heavy crops are produced at 3 to 5 year intervals. Fall color is a non-descript yellow to brown. Oregon ash is the only ash native to the Pacific Northwest. Although it can grow at elevations up to 5,000', it is more typically seen as a lowland tree along rivers and seasonally flooded areas. Trees growing under favorable conditions may reach 200 to 250 years of age. The wood has a high heat value when burned, making it good firewood. Oregon ash is susceptible to the emerald ash borer, an insect pest which may wipe out native stands of this tree as it has been doing to other ash species in the U.S.

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.

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 alder, *Alnus rubra*

Origin: North America - Oregon, Washington northern California, northern Idaho, SE Alaska and British Columbia, Canada

The largest, most common Pacific Northwest alder is the red alder. This deciduous, broadleaf tree is typically 60' to 80' tall. The largest on record was over 140'. Fast growers, they are very short-lived trees, often declining rapidly after just 60 years. The smooth bark is often covered with a light-colored lichen. The leaves are 4-6" long with rounded teeth on the edges. They grow from sea level to 3,000 feet, mostly west of the Cascades, with a few groves in wet areas as far east as northern Idaho. They prefer moist soils and are common along streams, where they form pure stands. Native Americans valued the bark as a medicine (it contains salicin, the pain-relieveing ingredient in aspirin) as well as a red dye, which they used to dye fish nets to make them harder for fish to see. They also made wooden utensils from the wood. Once considered a trash tree by loggers, the wood is now valued for cabinetry. Alder wood is preferred for smoking salmon.

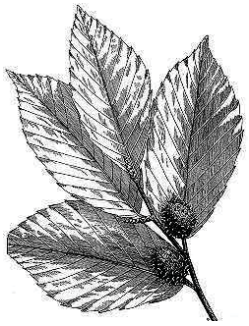
red maple, *Acer rubrum*

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.

Rivers' purple European beech, *Fagus sylvatica* 'Riversii'

Origin: Europe – England, western, central and eastern Europe, from Scandinavia south to Italy and the Balkans



More commonly grown than the species, purple-leaved varieties of the European beech have been known since the 1700s. This selection from England has especially dark purple leaves to 5" long. These turn honey-brown in fall and may cling to the tree into winter. Rivers' purple beech grows to 50-60' compared to the species, which can easily attain 100' or more. Like the species, the bark is elephant-like – smooth and gray. Yellowish-green flowers are inconspicuous. Beechnuts are small, and covered in spiny purplish-red bracts. They are the climax tree in European forests, where their nuts were an important source of food to fatten pigs in autumn. The English word for "book" comes from the old Anglo-Saxon name for the tree, whose smooth bark was used to write on before paper. Beeches can tolerate shade. Morels and truffles are commonly found in beech forests. Trees can live 150 years or more.

Rotundiloba sweetgum, *Liquidambar styraciflua* 'Rotundiloba'

Origin: North America

Sweetgum is an oval-shaped deciduous tree with bark that is brown gray and vertically fissured with age. Branches can develop winged-cork along the

sides. Leaves are sometimes confused with maple leaves, but arrangement is not opposite like maples. The name sweetgum comes from the sticky sap resin. Sweetgum is an aggressive surface rooter, and because it so often causes damage to sidewalks and streets, it is no longer recommended as a street tree in Portland. This cultivar is a fruitless variety found in North Carolina in 1930 and popularized in the 1980s and 90s. Rotundiloba can grow 70' tall by 35-50' wide. Leaves are rounded at the tips instead of sharply pointed like the species, hence the cultivar name. Main attraction is the lack of the spiky gumballs that most sweetgums produce in profusion. Fall color is variable but in good years is a reddish-purple. The tree tends to branch irregularly, making it difficult to predict the form of a young tree.

variegated tulip tree,
Liriodendron tulipifera 'Aureomarginata'

Origin: North America

This cultivar is a variegated form of the typical tulip poplar from the southeastern USA. The leaves have an attractive pale yellow to chartreuese border with darker green centers. Monrovia Nurseries introduced this cultivar in 1986. It reportedly reaches 70' to 80' tall by 30' to 50' wide (the species can be 90' to 150' tall or more). It is somewhat slower growing than the species. All tulip trees do best with even moisture, especially in Portland's dry summers. They prefer rich, loamy soils. Flowers are 3" across and shaped like tulips. They are chartreuse with orange stamens and appear in late spring. Fall color is yellow. Aphids can be a problem, especially in summer when trees experience drought stress.

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 red-cedar 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 ½" 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.

Notes