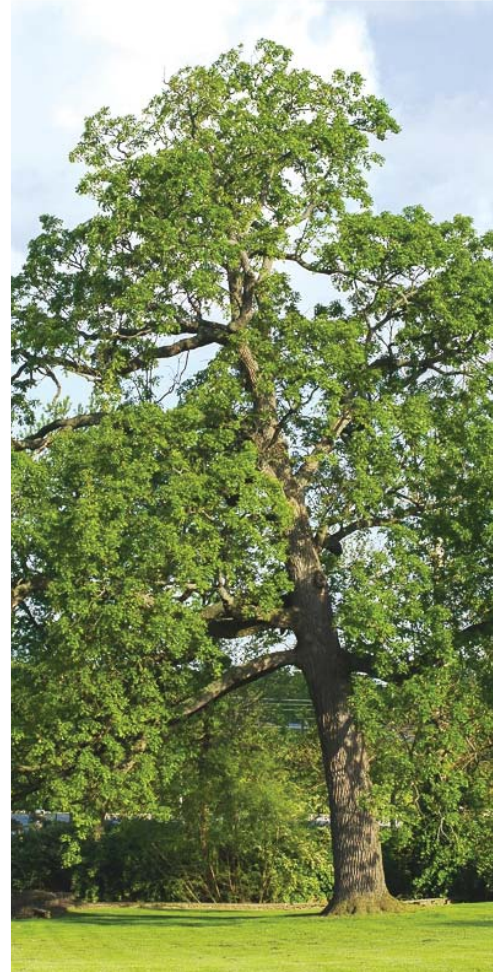




**PORTLAND PARKS & RECREATION**

Healthy Parks, Healthy Portland



# Whitman Elementary School Tree Walk

**LEARNING LANDSCAPES**



## Whitman Elementary 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 unusual bark of a *Celtis occidentalis*.
- 2) Whorled foliage on an Eastern larch twig.
- 3) A large *Quercus macrocarpa*.
- 4) Brightly colored eastern redbud flowers.
- 5) Students plant a tree at Whitman Elementary School.
- 6) The fall color that gives northern red oak its name.
- 7) Exfoliating bark on a young London planetree.
- 8) *Quercus coccinea* leaves changing color.

ver. 1/30/2015

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Commissioner Amanda Fritz  
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# The Learning Landscapes Program



## Whitman Elementary School

The Whitman Elementary School Learning Landscape was initiated in March 2007, and the collection includes more than 35 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.

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

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## 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.

# Whitman Elementary School Tree Walk



Learning Landscapes

<http://portlandoregon.gov/parks/learninglandscapes>

100 Feet

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# Whitman Elementary School Tree Walk

Tree #	Common Name	Scientific Name
1	incense cedar	<i>Calocedrus decurrens</i>
2	western redcedar	<i>Thuja plicata</i>
3-5	Douglas-fir	<i>Pseudotsuga menziesii</i>
6-8	ponderosa pine	<i>Pinus ponderosa</i>
9-11	western hemlock	<i>Tsuga heterophylla</i>
12-14	Douglas-fir	<i>Pseudotsuga menziesii</i>
15, 16	incense cedar	<i>Calocedrus decurrens</i>
17	ponderosa pine	<i>Pinus ponderosa</i>
18, 19	Oregon white oak	<i>Quercus garryana</i>
20-22	Douglas-fir	<i>Pseudotsuga menziesii</i>
23, 24	ponderosa pine	<i>Pinus ponderosa</i>
25	Oregon white oak	<i>Quercus garryana</i>
26	eastern redbud	<i>Cercis canadensis</i>
27	London planetree	<i>Platanus x acerifolia</i>
28	northern red oak	<i>Quercus rubra</i>
29	scarlet oak	<i>Quercus coccinea</i>
30	Persian ironwood	<i>Parrotia persica</i>
31	western redcedar	<i>Thuja plicata</i>
32	cherry	<i>Prunus spp.</i>
33	sweetgum or liquidamber	<i>Liquidambar styraciflua</i>
34	common hackberry	<i>Celtis occidentalis</i>
35	bur oak	<i>Quercus macrocarpa</i>
36	eastern larch	<i>Larix laricina</i>
37	Norway maple	<i>Acer platanoides</i>
38	coast redwood	<i>Sequoia sempervirens</i>
39	Scots pine	<i>Pinus sylvestris</i>
40, 41	chestnut	<i>Castanea spp.</i>
42	Oregon white oak	<i>Quercus garryana</i>

## Tree Facts, A to Z

### bur oak, *Quercus macrocarpa*

*Origin: North America – Northernmost oak from the Canadian and U.S. prairies to New England*

This sturdy deciduous oak is often the last tree one sees before the land turns to treeless grass prairies. It is also the northernmost oak of North America, extending into Manitoba, Ontario and Quebec in Canada. Most abundant around the Great Lake states but extends into Texas and Kentucky. It is the state tree of Iowa. Bur oak has the largest leaves of any North American oak from 6-12" long and 3-6" broad at the upper half, with 5 to 7 rounded lobes. They are silvery green beneath. Yellow-green catkins are 4" to 6" long appear in spring. Acorns are from three-quarter to 2" long and more than half surrounded by a conspicuous fringe (hence the name "bur" oak). Usually not more than 80' tall, exceptional old-growth specimens have been recorded at over 150'. A long-lived member of the white oak family, capable of exceeding 300 years. French botanist Andre Michaux (1746-1802) was the first to describe this oak in a scientific journal.



### cherry, *Prunus spp.*

*Origin: Unknown*

This tree is one of many domestic and wild cherry trees, both fruiting and ornamental, although the specific type is unknown. Trees will usually have white to pink flowers in spring (some in winter) with dark bark with horizontal lenticels when young. Leaves are often oval-lanceolate, typically with a drip tip and veined. Fruits - if produced - have hard seeds inside red to yellow or purple fruit.



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**chestnut, *Castanea* spp.**

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*Origin: distributed across temperate regions of the Northern Hemisphere*

There are 8 to 9 species spread across Eurasia to North America. Leaves are long and thin with serrated edges. Trees are wind pollinated, producing cream-colored catkins in early summer, followed by spiny husks containing edible nuts.

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**coast redwood, *Sequoia sempervirens***

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*Origin: North America - from Central California coast north to Curry County in SW Oregon*

Coast redwood is the tallest tree in the world, with the largest tree standing over 370' tall - that's about one-quarter the height of the Empire State Building! The red-brown bark is spongy, papery, and fire resistant. The leaves, bright green above and pale blue-green below are made up of both scales on the shoots and needles averaging 1/2" long. The brown cones are round and about 1" long; cones need fire heat to open and disperse the seeds. Sometimes the bark grows burls that can fall off and sprout into a new tree. Redwoods typically live to a ripe old age, usually 600 years or more; however, one old stump contained about 2,200 tree rings. The trees range from southwest Oregon's Curry County to the middle of the California seacoast, where the trees are able to capture coastal mist to supplement water supply. Thin needles make the tree easily stressed by drought.

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**common hackberry, *Celtis occidentalis***

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*Origin: North America - from the Great Plains east to the Atlantic seaboard as far south as northern Georgia and east-central Texas*

Hackberry is an alternate-branching, deciduous tree growing 50–80' tall. The leaves are 2" to 4" long, pointed and toothed with three main veins branching out at an uneven base. Young bark is smooth and light gray, but it soon develops corky warts and abundant



warty ridges. It bears numerous sweet red then purple pea-sized berries that birds love and supports a wide range of galls and mites on the foliage. The hackberry is closely related to elms, but is resistant to Dutch elm disease. The canopy spreads wide like an elm, but is more "O"-shaped rather than "V"-shaped. This tree thrives in towns and cities, but is frequently referred to as "the unknown tree," because its values are understated compared to other majestic urban trees. The name "hackberry" is thought to derive from *hagberry*, a Scottish name for a cherry species.

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**Douglas-fir, *Pseudotsuga menziesii***

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*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.



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**eastern larch, *Larix laricina***

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*Origin: North America - from Alaska east across Canada to Newfoundland and in the USA in Minnesota, Wisconsin, Michigan, New York and New England*

Larches, also called tamarack, are deciduous conifers. Eastern larch grows up to 60' tall. Trees are extremely hardy and straight, with conical shapes. Needles are borne on woody pegs in clusters of 20–40. Mature bark is furrowed and flakes off in irregular shapes

leaving reddish-orange patches. In the spring, larch needles are paler than other conifers, turning yellow in the fall. Cones are small and tulip-like, occurring in small bunches and having very few scales. The native western larch (*Larix occidentalis*) is similar but grows to about three times the height and has cones that are larger and upright on the branches.

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**eastern redbud, *Cercis canadensis***

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*Origin: North America - eastern USA from southern Wisconsin south to eastern Texas and from Florida north to Pennsylvania and extreme southern Ontario in Canada*

Eastern redbud is a small tree growing up to 30' tall. The gray bark furrows and flakes with age revealing a light brown underbark. The leaves (3-4" long) are heart shaped with some varieties exhibiting a purple-brown hue. The tree gets its names for its fantastic spring display of bright pink flowers and emerging pinkish-green leaflets. The fruits are a green pea shaped pod about 2-3" long. Redbud is native to North America and northeast Mexico. Trees are highly tolerant of different soils as well as drought. Some say that the flowers can be eaten fresh in a salad or fried.



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**incense cedar, *Calocedrus decurrens***

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*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). Needles are held in flattened sprays. Golden-yellow pollen is shed in winter and early spring. Oblong cones have three 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 *Calocedrus* species are known, both in Asia.

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**London planetree, *Platanus x acerifolia***

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*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.



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**northern red oak, *Quercus rubra***

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*Origin: North America - eastern Canada and eastern USA from the eastern edge of the Great Plains east to the Atlantic and south to Alabama, Georgia and Arkansas*

Northern red oaks are a tall (up to 150') tree native to eastern North America. Their bark has narrow fissures. The branches and canopy often begin high up on the tree, making it easy to walk beneath them. The branch arrangement is alternate.

The leaves (up to 8" long) are thick and waxy. They are light lime green in spring, turning dark green in summer, and gold to crimson red in fall. Each leaf is deeply lobed, with each lobe ending in a fine, almost prickly point. The acorns are round and robust with a



thin cap. The acorns, which take two years to mature, are an important food source for wildlife, especially squirrels that like to bury and store acorns in the fall. The wood is fast growing and hardy, and is used in cabinetry, furniture and flooring. Northern red oak is often planted in parks and urban areas as a large shade tree. It is the state tree of New Jersey and the provincial tree of Canada's Prince Edward Island.

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### Norway maple, *Acer platanoides*

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*Origin: Europe - from Scandinavia and western Europe (but not the British Isles) east to Ukraine, Russia, Georgia, Armenia, Turkey and Iran*

Norway maple is a deciduous tree with a spherical to oval crown growing 40-70' tall. Like other maples, branching is opposite. Gray bark develops shallow vertical crevices, the coarse texture providing a place for moss to take hold. Leaves range from 4-7" wide with 5 to 7 lobes spreading from the center like fingers from a hand and each lobe coming to a point. Fruit is a winged seed, about 2" straight across. If you pull a leaf off the tree, a milky white sap emits from the leaf stem, unique to this species and bigleaf maple. There are many cultivars of Norway maple, with colors ranging from green (yellow in autumn) to reddish purple. Norway maple's hardy nature and strong shading capacity make it one of the most prevalent trees planted in urban environments. The tree's robust nature causes it to occasionally escape into natural habitats, shading out native woody species.



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### Oregon white oak, *Quercus garryana*

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*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 to 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 developing land 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.

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### Persian ironwood, *Parrotia persica*

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*Origin: Asia - Alborz Mountains of Iran, Talish Mountains of Azerbaijan and the Caucasus*

Native to Iran's Alborz Mountains, where it forms part of the lush Caspian-Hyrcanian forest, and the Caucasus. A deciduous tree, Persian ironwood grows 20' to 45' high and often spreads as wide. Leaves are dark green in color and veined. Fall color varies from pure yellow to shades of orange, red or purple; multiple colors are often on the same tree. Small red shaving-brush flowers without petals appear in late winter but aren't showy. Slow growing, Persian ironwoods have strong wood; their branches rarely break in wind or ice storms. With age, patches of bark flake off, giving their trunks a lovely cream and gray mottling. Generally free from pests and diseases. Persian ironwood is in the same family as witch hazels. Rare in Portland before the 1990s, it has become a widely planted this century due to its drought tolerance, strong wood, lack of messy fruits and good fall color.



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### ponderosa pine, *Pinus ponderosa*

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*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. The seeds are consumed by a wide range of wildlife.

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**scarlet oak, *Quercus coccinea***

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*Origin: North America - southern Ontario Canada and eastern USA from New England to Appalachia, west to Indiana with a disjunct population in southern Missouri*

Scarlet oak is closely related to red oak, but its leaves flame scarlet in the autumn. Trees seldom exceed 80', but can live more than 150 years.



Bark is dark brown, smooth and shallowly ridged with age. Male flowers are yellow-green drooping catkins; females are inconspicuous and appear separately on the same plant in late spring. While foliage is green, the leaves may be distinguished by their extra bristled teeth flaring out from the lobes—noticeably more than the pin and red oaks'—and deep O-shaped notches between the lobes. Acorn cups shaped like tops enclose about half of the ¾" nut. If it transplanted as well as its relatives, it would be much more popular in urban environments. It must be grown from seed or pampered, but will eventually thrive in gardens or parks. The scarlet oak is the official tree of the District of Columbia, where the twenty-third president, Benjamin Harrison, planted one at the White House. The scarlet oak has been cultivated since 1691.

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**Scots pine, *Pinus sylvestris***

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*Origin: Europe - from Scotland across northern Europe, Russia and Siberia to the Pacific*

Scots pine is a broadly spreading evergreen growing to 115' or more by 30' wide. Needles are blue-green to blue-gray, stout, twisted and up to 3" long in pairs. The bark is purple-gray, peeling in irregular plates, orange and flaking towards the top of the tree.

Flowers grow in separate clusters on young shoots in late spring to early summer. Yellow male flowers develop at the base of the shoots, and red female flowers develop at the tips. The cones are egg-shaped, growing to 3" long. Scots Pine is among the most common urban evergreens throughout much of North America. This species was introduced for its hardiness and good looks. Older trees are ruggedly picturesque. They are grown as tidy Christmas trees, representing about a third of sales. Scots pines are the world's most widely naturally distributed pines, stretching across 145 degrees of longitude. They thrive in a variety of conditions, including dry sandy sites and wet, acidic soils. A number of pests attack pine trees.

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**sweetgum or liquidamber, *Liquidambar styraciflua***

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*Origin: North America - eastern USA from eastern Texas and Oklahoma across the Southern states to Long Island, New York and west across southern Ohio, Indiana, Illinois and southeast Missouri*

Sweetgum is an oval-shaped deciduous tree reaching 100' or taller at maturity. The bark is brown gray and vertically fissured with age. Branches on trees can develop winged-cork along the sides. The star-shaped leaves consist of five distinct lobes all coming to points. Leaves are sometimes confused with maple leaves, but leaf arrangement is alternate and not opposite like maples. Leaves turn bright yellow to burgundy in autumn and persist into early winter, making this a popular street tree. The female fruits are spiky, spherical balls about 1" in diameter (“gumballs”). The name sweetgum comes from the sticky sap resin that was used in ointments and syrups or for treating skin wounds. Sweetgum is an aggressive surface rooter. Because it so often damages sidewalks and streets, it is no longer recommended as a street tree in Portland.




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**western hemlock, *Tsuga heterophylla***

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*Origin: North America - Alaska to California*

Narrow, pyramidal conifer growing slowly to 100'. Some trees in Olympic National Park are over 200' tall. Short needles give a soft, fine effect. Branches

tend to hang down, giving a weeping appearance. Gray bark. Western hemlock grows from Alaska's Kenai Peninsula through coastal British Columbia, Washington and Oregon to the coastal redwood forests of northern California. It can be found as far east as northwest Montana and northern Idaho in valleys receiving at least 32" of rain a year. It grows from sea level to 5,000'. The tree is similar to mountain hemlock but has smaller cones, less than an inch long versus 1.5" to 3" long for its mountain relative. Western hemlock occurs at lower elevation and does not range as far south in the Cascades as mountain hemlock. Being shade tolerant, western hemlock eventually becomes the dominant tree in undisturbed forests. The wood is used in construction, pilings, poles, gym floors and wood pulp. Washington's state tree since 1947.

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**western redcedar, *Thuja plicata***

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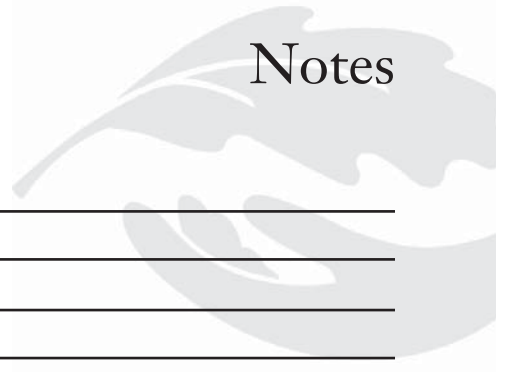
*Origin: North America - British Columbia, Canada south through Washington, Oregon, northern Idaho and northwest Montana south to northern California; also in the Alaska Panhandle*

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 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



Lined area for notes, consisting of multiple horizontal lines.