



PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland



Woodmere Elementary School Tree Walk

LEARNING LANDSCAPES



Woodmere 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) Open cones on an incense cedar.
- 2) The leathery, deep green leaves of an Oregon white oak.
- 3) Incense cedar growing in Yosemite National Park.
- 4) The brilliant autumn foliage of an American ash.
- 5) Students plant a tree at Woodmere Elementary School.
- 6) Deep veins and serrate edges on a European hornbeam leaf.
- 7) The fluted trunk of an American hornbeam.
- 8) Western larches stand out from evergreen conifers in autumn.

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The Learning Landscapes Program



Woodmere Elementary School

The Woodmere Elementary School Learning Landscape was initiated in April 2012 with a planting of 25 trees. This tree walk identifies trees planted as part of the Learning Landscape and includes detailed information on each species.

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.

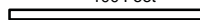
Woodmere Elementary School Tree Walk



Learning Landscapes



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

100 Feet



N



-  Learning Landscapes tree
-  other tree

Woodmere Elementary School Tree Walk

Tree #	Common Name	Scientific Name
1-3	Emerald Avenue European hornbeam	<i>Carpinus betulus</i> 'Emerald Avenue'
4-14	American hornbeam or blue beech	<i>Carpinus caroliniana</i>
15	dawn redwood	<i>Metasequoia glyptostroboides</i>
16, 18	swamp white oak	<i>Quercus bicolor</i>
17	Oregon white oak	<i>Quercus garryana</i>
19, 20	Purple Fountain weeping European beech	<i>Fagus sylvatica</i> 'Purple Fountain'
21	white ash	<i>Fraxinus americana</i>
22	European beech	<i>Fagus sylvatica</i>
23	red maple	<i>Acer rubrum</i>
24	incense cedar	<i>Calocedrus decurrens</i>
25	dawn redwood	<i>Metasequoia glyptostroboides</i>
26	western larch	<i>Larix occidentalis</i>

Tree Facts, A to Z

American hornbeam or blue beech,

Carpinus caroliniana

Origin: North America - Ontario, Canada south through the eastern USA to Florida

A broadly oval small deciduous tree to 20-25'. Narrow leaves 4" to 5" long have doubly toothed margins and 8-12 straight parallel veins. Fall color ranges from gold to excellent shades of orange and in some specimens fiery red. Bark is smooth, light gray or grayish-brown and often sinuous, giving rise to its other common names of blue beech or muscledwood. American hornbeam grows



along streams in its native habitat, so it appreciates summer watering in Portland to look its best. In cultivation since 1812 but much rarer in Portland than the fastigate European hornbeams.

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.



Emerald Avenue European hornbeam, *Carpinus betulus* 'Emerald Avenue'

Origin: Europe

European hornbeam is a broadly spreading, deciduous tree, with a dense, oval crown growing to 100' tall. It is easily recognized by its shape: from a distance, trees are dense, bark is pale gray, fluted, and becomes fissured with age. Leaves are ovate and oblong, up to 4" long and 2½" wide. Dark green leaves are pointed, double-toothed with conspicuous, parallel veins. Male catkins are 2" long, yellowish, and droop; female catkins are small, green, and grow from the tips of the shoots. Fruit is a nut with three-lobed bracts turning yellowish brown and clustered in pendulous catkins

up to 3" long. Hornbeam is native from southeast England to the Caucasus and is commonly planted in Europe along roadsides and for hedges. This cultivar was introduced in 2011 by J. Frank Schmidt Nursery in Boring, OR. It has sturdy, upright branching on a vigorous deciduous tree to 40' tall by 30' wide. Golden yellow fall color. Neat and tidy, with strong wood that holds up well in snow and ice.

European beech, *Fagus sylvatica*

Origin: Europe - England, western and central Europe to Scandinavia

One of the largest and most stately deciduous trees, European beech can easily reach several hundred years of age and grow to 100' tall. Trees grow out and upward, creating a full, oblong shape. The bark is smooth and gray; older trees have prominent folding in the bark around branches, knots, or wounds, resembling elephant legs. Carving into the smooth bark of beech trees can harm the active growing layers and make it more susceptible to disease. Branching is opposite, with thick, prominently margined leaves. Leaf edges are generally toothed and wavy. The nuts, enclosed in hairy husks about ½" long, are an important wildlife food and have been harvested by people as well. European beech has been cultivated for particular shapes and colors, including weeping, slender, and purple varieties. Beeches are also subject to infestation by the beech wooly aphid, which appear as hairy white patches, usually on the underside of leaves. These rarely cause serious harm.



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 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 species in *Calocedrus* are known – both in Asia.

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.



Purple Fountain weeping European beech, *Fagus sylvatica* 'Purple Fountain'

Origin: Europe - a weeping cultivar of the purple-leaved European beech

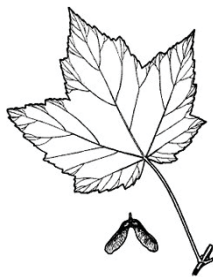
A weeping cultivar of the purple-leaved European beech. This beech has a columnar and cascading shape. At maturity it can reach 25' but be only 15' wide. Slower growing than the species and many other cultivars, it doesn't require staking to become upright. Bears alternate, simple leaves which are 2" to

4" long, with wavy margins. The leaves start out a rich purple and then fade to purple-green as the summer progresses. They turn gold to caramel in fall. This cultivar is somewhat late to leaf out in the spring. It rarely needs pruning to maintain its naturally graceful and majestic form. Because the thin, delicate bark can be easily injured, be cautious around it with sharp tools. Woolly aphids can be a minor problem, but sprays are not required since they don't affect the tree's vigor or health. Avoid planting near driveways or patios where the sticky "honeydew" from the aphids can mar surfaces.

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.



swamp white oak, *Quercus bicolor*

Origin: North America - from Missouri to New England and southern Ontario in Canada

Usually a 60-70' tree in open situations, swamp white oak can reach 100' when grown close to other trees. Leaf margins are toothed or wavy. Leaves are usually wider toward the end than at the stem. Scaly bark is distinctive, especially in young trees. It peels back

in ragged curls to reveal green inner bark. Bark on older trees is irregularly grooved with flat ridges. A member of the white oak family. Deer, ducks, geese, and other animals are attracted to this tree's 1" long acorns. Acorns are a light chestnut-brown color and occur in pairs at the end of stems. Most abundant in western New York, Pennsylvania and Ohio but exists in small groves as far west as Missouri and as far south as Kentucky. Wood was used for barrels, flooring, interior finish and mine timbers. It is one of the more important white oaks for lumber production. The swamp white oak has become a popular landscaping tree. Over 400 were planted in the new September 11 Memorial Plaza in Manhattan.

western larch, *Larix occidentalis*

Origin: North America - Oregon and Washington east of the Cascades into British Columbia, Alberta, northern Idaho and NW Montana

Native to the east slopes of the Cascades and the Blue and Wallowa mountains in NE Oregon, this narrowly cylindrical conifer sheds its needles in fall. Noted for having short, horizontal branches from a straight central trunk. Needles are soft, pale green, turning gold in fall. Oblong seed cones are 1 to 2 1/2" long with 30-60 seed scales, green with a reddish tinge before turning reddish brown when mature. They are held by a gently curved stalk. Seed scales are roundly triangular with slightly notched tips. Bracts often curve back. Can grow 100' to 150'. Typical lifespan in the wild is about 400 years but can reach 900. The largest of the world's larches and the most important as a timber tree. Native Americans tapped the sweet sap of these trees, making a kind of larch syrup. A water-soluble gum from this larch is used in commercial printing, ink, paint, drugs, food and other industrial uses.



white ash, *Fraxinus americana*

Origin: North America - wide distribution in the eastern USA and Ontario, Canada

A tall, upright, oval tree 50-80' becoming more rounded with age. Most commonly seen in Portland in the form of seedless male clones, such as 'Autumn Purple' and 'Autumn Applause.' Both have reliable

red to purple fall color. Ash wood's strength and flexibility make it the number one choice for baseball bats. However, future Louisville sluggers might have to be made from something else. Since the turn of the 21st century, an invasive insect from Asia - the emerald ash borer - has been devastating American ash trees. Landing first in the Midwest, this borer has killed tens of millions of ash trees. So far, no American ash species has shown resistance. Emerald ash borer has already spread as far east as the Atlantic and as far west as the Rocky Mountains. Everywhere it has shown up, its arrival has proved catastrophic to ash trees, akin to the ravages Dutch elm disease wrought on elms and the loss of most American chestnuts to chestnut blight .