



PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland



West Powellhurst Elementary School Tree Walk

LEARNING LANDSCAPES



West Powellhurst Elementary School Tree Walk 2015 Learning Landscapes

Site data collected in Summer 2014.

Written by:

Kat Davidson, Karl Dawson, Angie DiSalvo, Jim Gersbach and Jeremy Grotbo
Portland Parks & Recreation Urban Forestry
503-823-TREE trees@portlandoregon.gov
<http://portlandoregon.gov/parks/learninglandscapes>

Cover photos (from top left to bottom right):

- 1) Students plant a tree at West Powellhurst Elementary School.
- 2) The shiny winged seeds of a sugar maple.
- 3) A large European beech.
- 4) The foliage and cone of a *Sciadopitys verticillata*.
- 5) A swamp white oak acorn.
- 6) Multicolored autumn leaves from a northern red oak.
- 7) The fluted trunk and branches of an American hornbeam.
- 8) Closeup of honey locust leaflets.

ver. 1/30/2015

Portland Parks & Recreation
1120 SW Fifth Avenue, Suite 1302
Portland, Oregon 97204
(503) 823-PLAY
www.PortlandParks.org



Commissioner Amanda Fritz
Director Mike Abbaté

The Learning Landscapes Program



West Powellhurst Elementary School

The West Powellhurst Elementary School Learning Landscape was initiated in April 2010 with a planting of 25 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.

West Powellhurst Middle School Tree Walk



West Powellhurst Elementary School Tree Walk

Tree #	Common Name	Scientific Name
1-3	Oregon white oak	<i>Quercus garryana</i>
4	umbrella pine	<i>Sciadopitys verticillata</i>
5	European beech	<i>Fagus sylvatica</i>
6	western redcedar	<i>Thuja plicata</i>
7	American hornbeam or blue beech	<i>Carpinus caroliniana</i>
8, 10	Oregon white oak	<i>Quercus garryana</i>
9	honey locust	<i>Gleditsia triacanthos forma inermis</i>
11	ginkgo	<i>Ginkgo biloba</i>
12	swamp white oak	<i>Quercus bicolor</i>
13	sugar maple	<i>Acer saccharum</i>
14	northern red oak	<i>Quercus rubra</i>
15	Oregon white oak	<i>Quercus garryana</i>
16	umbrella pine	<i>Sciadopitys verticillata</i>
17	western redcedar	<i>Thuja plicata</i>
18	northern red oak	<i>Quercus rubra</i>
19	incense cedar	<i>Calocedrus decurrens</i>
20	red maple	<i>Acer rubrum</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

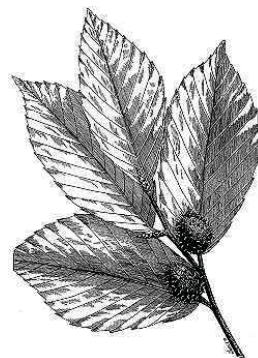
A broadly oval small deciduous tree to 20-25'. Narrow leaves 4" to 5" long have doubly toothed margins and 8-12 straight parallel veins. Fall color ranges from gold to excellent shades of orange and in some specimens fiery red. Bark is smooth, light gray or grayish-brown and often sinuous, giving rise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

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.



ginkgo, *Ginkgo biloba*

Origin: Asia - China

Ginkgo is a pyramidal to rounded deciduous tree growing 60' to 100' tall. The bark has vertical scales, becoming deeply furrowed in maturity. The branches are alternate with leaves emerging from prominent ½" long nodes along the stem. Each node displays a whorl of approximately 5-7 fan-shaped leaves that flow upwards or towards the ground. There are separate male and female trees. The female tree produces an edible fruit about ¾" long, which has been described as "nature's stink bomb," with a stench often compared to rancid butter, funky cheese, wet dog, or vomit due

to the butyric acid in the fruit. Only one species of ginkgo tree remains in this ancient tree family that dominated forests millions of years ago. The tree was at one point thought to be extinct, and it is rumored that Chinese monks saved some of the last ginkgo trees from a large fire. Ginkgos are often planted in cities for their unique beauty and hardiness to urban conditions.

honey locust, *Gleditsia triacanthos* forma *inermis*

Origin: North America - central USA from eastern Kansas and Oklahoma though Illinois, Indiana and Ohio east to Virginia and southern New England, plus southern Ontario, Canada

A thornless variety that varies in height from 30' to 70' tall with a comparable spread. The national champion thornless honey locust is 104' - taller than the 78' national species champion. Virtually every cultivar grown in cities is derived from this variety, usually from northern seed sources that have winter hardiness. The pinnately or bipinnately compound leaves are 6 to 8 inches long, with small leaflets 1/3 to 1" long. These cast a light shade, permitting grass to grow well beneath the trees. The leaflets turn yellow and drop early in the fall. Generally this form is open-spreading but most cultivars of it have a narrower form. Once considered trouble-free, the tree was often used to replace elms lost to Dutch elm disease in the 1950s through 1970s. Widespread planting has caused the emergence of serious pest issues, particularly in the Midwest where trees are attacked by the aggressive canker *Thyronectria*.



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.

northern red oak, *Quercus rubra*

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.

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 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 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.

red maple, *Acer rubrum*

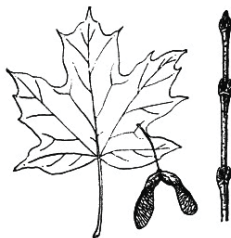
Origin: North America - eastern Canada, eastern USA from Minnesota to Maine south to Florida and east Texas

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.

sugar maple, *Acer saccharum*

Origin: North America - eastern Canada, eastern USA from Maine to northern Georgia west to Arkansas and north to Minnesota

Sugar maples grow to 70' tall with a round canopy and straight trunk. Mature trees have furrowed, plated bark. Leaves (about 5" wide) have 3 or 5 lobes, and turn yellow to crimson in fall, although color is not as pronounced in Portland as in the northeast United States and Canada. Winged seeds (about 1" wide) form a 45 degree angle. In winter, sugars stored in roots move to the buds, producing a sugary sap. Native Americans



were the first to tap this sap. Forty gallons of sap are boiled to make one gallon of syrup. Maple syrup is a valuable commodity and livelihood for rural residents. Both Vermont (1949) and New York State (1956) claim the sugar maple as their official state tree. Acid rain and global warming may push sugar maples north. Sugar maples can reach 300–400 years of age in native forests, producing strong wood. In cities, trees are more susceptible to drought and disease.

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.

umbrella pine, *Sciadopitys verticillata*

Origin: Asia - A relict species restricted to the islands of Honshu and Kyushu in Japan.

An evergreen conifer with distinctive dark green needles in whorls from the main trunk and branches. Slowly grows 30' to 40' (in the wild they can reach up to 120'). Needles can turn bronze in winter, although they remain dark green in the cultivar 'Wintergreen.' Fossil cones, needles and pollen of *Sciadopitys* dating

back more than 200 million years have been found. Studies have shown that much of the amber around the Baltic was from resin flowing from umbrella pines millions of years ago. Over time, umbrella pine became extinct in Europe and elsewhere, becoming restricted to Japan. There it is found in moist mixed forests, most abundantly in the mountains of central Honshu. The tree is considered near-threatened due to forests where it occurs being replanted to monocultures of Japanese cedar. Long cultivated in Japan where it is called *koyama*. The white wood is durable, water resistant, fragrant and often used to make serving vessels. Umbrella pine was introduced to the West in 1860.

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 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.

