



PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland



Jackson Middle School Tree Walk

LEARNING LANDSCAPES



Jackson 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) The fall color of a Bowhall red maple.
- 2) *Ginkgo biloba* leaves beginning to turn color.
- 3) A vibrant green honey locust tree.
- 4) The prickly, resinous cones of a ponderosa pine.
- 5) Students work together to plant an Oregon white oak.
- 6) The thick, glossy foliage of an umbrella pine.
- 7) A Kentucky coffeetree growing in Portland.
- 8) Jackson Middle School students plant a tree.

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The Learning Landscapes Program



Jackson Middle School

The Jackson Middle School Learning Landscape was initiated in February 2010, and the collection includes 30 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.

Jackson Middle School Tree Walk



Learning Landscapes

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

100 Feet



Jackson Middle School Tree Walk

Tree #	Common Name	Scientific Name
1, 3	Himalayan whitebarked birch or Jacquemont birch	<i>Betula utilis</i> var. <i>jacquemontii</i>
2, 4	London planetree	<i>Platanus x acerifolia</i>
5	Bowhall red maple	<i>Acer rubrum</i> 'Bowhall'
6	umbrella pine	<i>Sciadopitys verticillata</i>
7	fernleaf European beech	<i>Fagus sylvatica</i> 'Asplenifolia'
8	European beech	<i>Fagus sylvatica</i>
9	Kentucky coffeetree	<i>Gymnocladus dioicus</i>
10	ginkgo	<i>Ginkgo biloba</i>
11, 12	Kentucky coffeetree	<i>Gymnocladus dioicus</i>

Tree #	Common Name	Scientific Name
13	ponderosa pine	<i>Pinus ponderosa</i>
14, 16, 18	Kentucky coffeetree	<i>Gymnocladus dioicus</i>
15	deodar cedar	<i>Cedrus deodara</i>
17	honey locust	<i>Gleditsia triacanthos</i> forma <i>inermis</i>
19	bald cypress	<i>Taxodium distichum</i>
20	black tupelo	<i>Nyssa sylvatica</i>
21	Kentucky coffeetree	<i>Gymnocladus dioicus</i>
22	zelkova	<i>Zelkova</i> spp.
23	Oregon white oak	<i>Quercus garryana</i>
24 - 31	Kentucky coffeetree	<i>Gymnocladus dioicus</i>
32	Oregon white oak	<i>Quercus garryana</i>

Tree Facts, A to Z

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.

Bowhall red maple, *Acer rubrum* 'Bowhall'

Origin: North America - cultivar of a U.S. species

In urban environments, red maple is a fast grower up to 40', but may reach three times that height in the wild. It has a round 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. 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. Native to areas of moist soils, red maples are not well adapted to Oregon's dry summers. Bowhall is one of the most widespread cultivars of columnar red maple. Introduced in 1951 by Scanlon Nursery from a tree found in Ohio, Bowhall will form a tree to 35' or 40' but only 15' wide. Upright branches growing parallel to the leader should be pruned out. Fall color is unreliable, ranging from a good orange-red to gold with hints of orange. Red flowers in spring. Bark may scald in direct afternoon sun. Tends to have surface roots.

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 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.

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.



fernleaf European beech, *Fagus sylvatica* 'Asplenifolia'

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

Rarely seen in Portland, this old cultivar has deeply dissected green leaves providing a ferny appearance. Leaves turn brown in fall. Broadly oval shaped tree with typical smooth, gray, "elephant-hide" bark. Grows to 50' tall by 40' wide.

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 edible fruit about ¾" long, which have 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.

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.

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 honey locusts are attacked by an aggressive canker in the genus *Thyronectria*.

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.

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.



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.

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.

zelkova, *Zelkova* spp.

Origin: Asia

The most common species of zelkova in Portland is Japanese zelkova - *Z. serrata*. However, there are a few other species - *Z. carpinifolia* from the Caucasus, and *Z. sinica* and *Z. schneideriana* from China. All have simple, serrate-edged leaves. The species from eastern Asia are more tapered at the tips, while those of *Z. carpinifolia* are somewhat blunter. The Caucasian zelkova's bark is typically smooth and gray but will flake on older trees. The tree has a dense, oval head. Japanese zelkovas tend to be more vase shaped and spreading. The small flowers of all zelkovas are greenish and lack petals. The female flowers are borne in the leaf axils while the male flowers cluster at the base of the shoots. *Z. sinica* has fewer veins and larger, smoother fruits than the other species.



