



PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland



Oliver P. Lent Elementary School Tree Walk

LEARNING LANDSCAPES



Oliver P. Lent 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) Pacific madrone has unusual red-orange branches.
- 2) The acorns of a sawtooth oak.
- 3) An Oregon ash growing in London, England.
- 4) *Ostrya virginiana* fruit clusters.
- 5) The fall color of an Autumn Applause white ash.
- 6) Brilliant deep red foliage gives the scarlet oak its name.
- 7) Swamp white oak bark breaks into square plates.
- 8) The fruit of a cornelian cherry dogwood.

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Portland Parks & Recreation

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Commissioner Amanda Fritz
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The Learning Landscapes Program



Oliver P. Lent Elementary School

The Oliver P. Lent Elementary School Learning Landscape was initiated in April 2007, and the collection now includes more than 50 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.

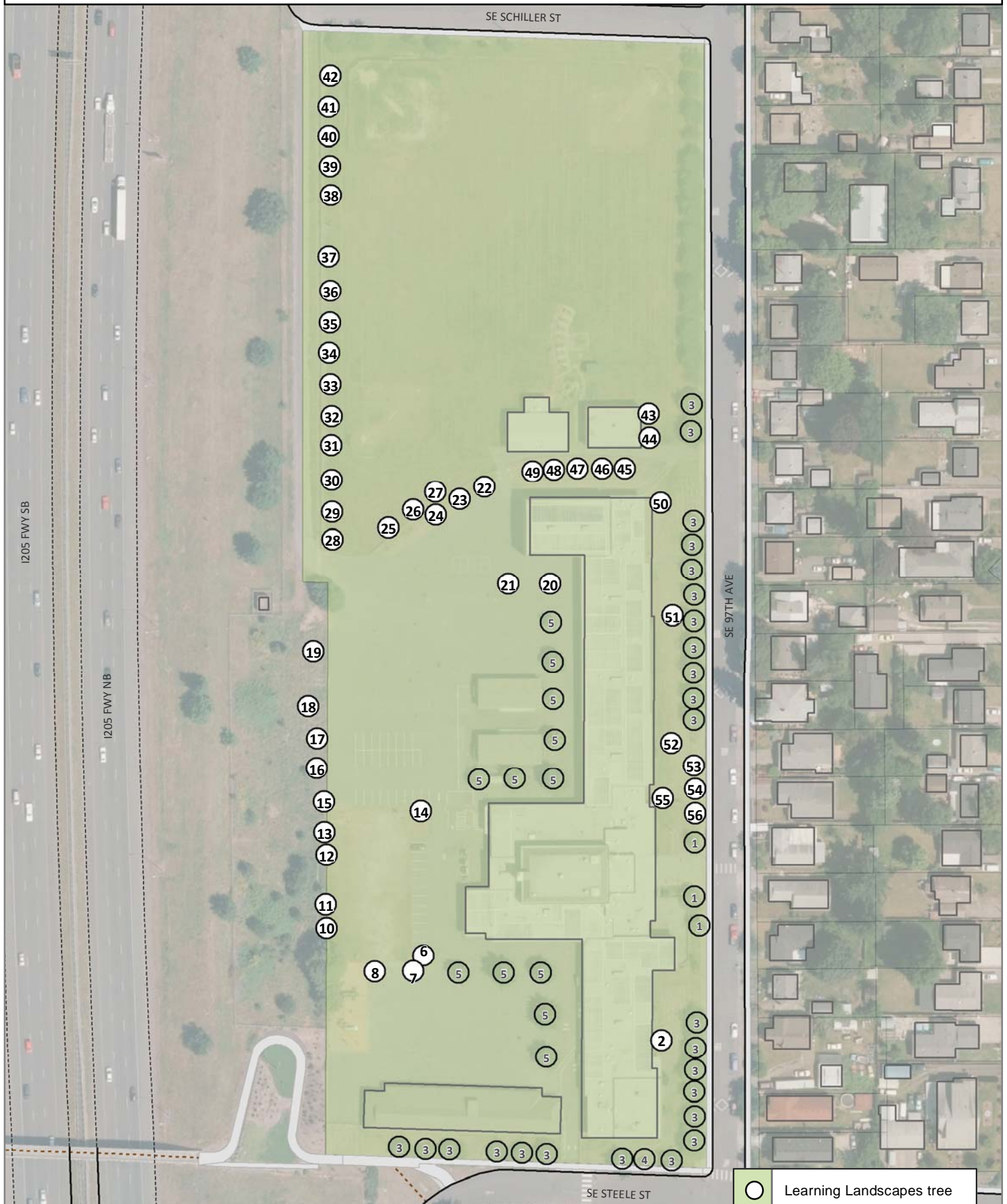
Continued Hands-on Learning Opportunities

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.

Oliver P. Lent Elementary School Tree Walk



Learning Landscapes

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

100 Feet



- Learning Landscapes tree
- other tree

Oliver P. Lent Elementary School Tree Walk

Tree #	Common Name	Scientific Name
1	eastern redbud	<i>Cercis canadensis</i>
2	vine maple	<i>Acer circinatum</i>
3	Japanese flowering cherry	<i>Prunus serrulata</i>
4	katsura	<i>Cercidiphyllum japonicum</i>
5	northern red oak	<i>Quercus rubra</i>
6	cornelian cherry dogwood	<i>Cornus mas</i>
7, 8	scarlet oak	<i>Quercus coccinea</i>
9	chestnut	<i>Castanea</i> spp.
10	sweetgum, liquidamber	<i>Liquidambar styraciflua</i>
11	maple	<i>Acer</i> spp.
12, 13	bigleaf maple	<i>Acer macrophyllum</i>
14	Autumn Applause white ash	<i>Fraxinus americana</i> 'Autumn Applause'
15	sugar maple	<i>Acer saccharum</i>
16, 17	Oregon ash	<i>Fraxinus latifolia</i>
18	paper birch	<i>Betula papyrifera</i>
19	ponderosa pine	<i>Pinus ponderosa</i>
20	scarlet oak	<i>Quercus coccinea</i>
21	American hophornbeam	<i>Ostrya virginiana</i>
22 - 24	American hornbeam or blue beech	<i>Carpinus caroliniana</i>
25	Douglas-fir	<i>Pseudotsuga menziesii</i>
26	Rivers' purple European beech	<i>Fagus sylvatica</i> 'Riversii'
27	ponderosa pine	<i>Pinus ponderosa</i>
28, 30	scarlet oak	<i>Quercus coccinea</i>
29	swamp white oak	<i>Quercus bicolor</i>
31-33	Oregon white oak	<i>Quercus garryana</i>

Tree #	Common Name	Scientific Name
34	sawtooth oak	<i>Quercus acutissima</i>
35	pin oak	<i>Quercus palustris</i>
36	Hungarian oak or Italian oak	<i>Quercus frainetto</i>
37	American hophornbeam	<i>Ostrya virginiana</i>
38, 40	sawtooth oak	<i>Quercus acutissima</i>
39	swamp white oak	<i>Quercus bicolor</i>
41	pin oak	<i>Quercus palustris</i>
42	oak	<i>Quercus</i> spp.
43, 44	Autumn Gold ginkgo	<i>Ginkgo biloba</i> 'Autumn Gold'
45	Village Green zelkova	<i>Zelkova serrata</i> 'Village Green'
46 - 49	Halka zelkova	<i>Zelkova serrata</i> 'Halka'
50	Pacific madrone	<i>Arbutus menziesii</i>
51	Oregon white oak	<i>Quercus garryana</i>
52	katsura	<i>Cercidiphyllum japonicum</i>
53, 54, 56	Golden Raindrops crabapple	<i>Malus transitoria</i> 'Schmidtcutleaf'
55	American yellowwood	<i>Cladrastis kentukea</i>

Tree Facts, A to Z

American hophornbeam, *Ostrya virginiana*

Origin: North America - eastern USA

Pyramidal when young, this deciduous broadleaf tree becomes more rounded as it matures. Typically grows 25-40' in cultivation. Dark green, 2-5" long leaves are serrated and have pairs of faint veins extending on each side of the leaf midrib. Yellow-brown male catkins appear in threes at the end of the branches in spring. Nutlets are held in hop-like, chartreuse-colored chains

2-3" long covered in thin hairs. Tolerates full sun if kept well watered, otherwise may scorch in summer. Grayish brown bark with age becomes rough and patchy.

American hornbeam or blue beech,
Carpinus caroliniana

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

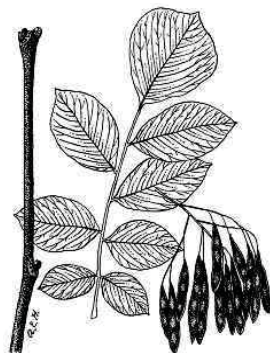
A broadly oval small deciduous tree to 20-25'. Narrow leaves 4" to 5" long have doubly toothed margins and 8-12 straight parallel veins. Fall color ranges from gold to excellent shades of orange and in some specimens fiery red. Bark is smooth, light gray or grayish-brown and often sinuous, giving rise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



American yellowwood, *Cladrastis kentukea*

Origin: North America – Appalachia, southern Missouri and north Arkansas

This deciduous broadleaf tree is one of the rarer U.S. trees in the wild. It is found most commonly along streams draining the western slopes of the Allegheny Mountains in Tennessee and Kentucky, with outlying populations in northern Arkansas and southern Missouri. Prefers fertile, well-drained soils. Usually 30-40' high with equal spread but can reach 60'. Compound leaves have 5 to 11 broad leaflets 3-4" long, turning butter yellow in fall. In late May-early June the tree blooms



spectacularly with wisteria-like white flowers in clusters 12-14" long at the ends of twigs. Trees don't flower until they are typically at least 10-12' tall, and may flower only in alternating years. Small, flat bean-like pods follow the flowers and ripen in September. Bark is smooth and gray. The heartwood is a clear yellow, hence the tree's name. The wood was occasionally used for gunstocks but has never been commercially important. Lives 100-200 years.

Autumn Applause white ash,
Fraxinus americana 'Autumn Applause'

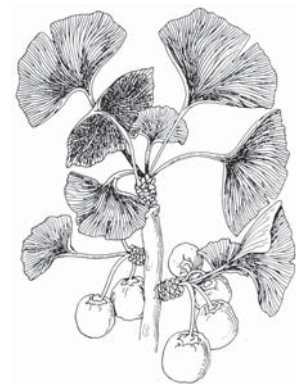
Origin: North America - a cultivar of a species native to the eastern U.S. and Ontario, Canada

This seedless male clone was introduced in 1975. Grows 40' to 50' tall and 25' to 30' wide. Clean, glossy foliage 2" to 4" long turns excellent shades of red to maroon and purple in autumn. Leaves tend to all fall off within a few days of each other. Nearly 100% of U.S. ash trees may eventually be killed by emerald ash borer, which has been spreading from Michigan toward both coasts since 2002.

Autumn Gold ginkgo, *Ginkgo biloba* 'Autumn Gold'

Origin: Asia - male cultivar of a Chinese tree

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. Male and female trees are separate, and the female tree produces edible fruit about ¾" long, which have been described as "nature's stink bomb." Only one species of ginkgo tree remains in this ancient tree family that dominated forests millions of years ago. This cultivar is a symmetrically-branched tree eventually reaching 40' x 30' wide. Nice butter yellow fall color. Leaves in autumn tend to drop all together (within a few days



of each other) making fall cleanup quick rather than drawn out over weeks. Tolerant of full sun or shade, with no pests or diseases. Best growth with summer watering the first several years until well established, then drought tolerant.

bigleaf maple, *Acer macrophyllum*

Origin: North America - Oregon and Washington west of the Cascades, northern California, and British Columbia, Canada

The largest leaves of any maple are found on this Pacific Northwest native. The species name means "big leaf", which is an apt description for the 5-lobed leaves 8" to 12" across. They turn yellow to rich gold in fall. Like Norway maples, the leaf stems exude a milky sap when cut. The greenish flowers hang in showy clusters in early spring and are insect pollinated. The tree's deep taproot helps it find water in dry summers. The tree produces prolific amounts of seed, some of which are eaten by Douglas squirrels, finches and evening grosbeaks. The many not eaten readily germinate and send up thousands of seedlings. These grow with astonishing speed, which is one reason bigleaf maple has been able to invade disturbed areas. Suppression of fire has benefitted bigleaf maples, which have encroached on formerly fire-maintained savannas at the expense of Oregon white oaks. The tree grows from southern British Columbia into northern California, from sea level to 3,000'.



chestnut, *Castanea* spp.

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.

cornelian cherry dogwood, *Cornus mas*

Origin: Europe - across central and southern Europe from France to Ukraine and south into Greece, Turkey, Syria Lebanon, Georgia, Armenia, Azerbaijan and Iran

This deciduous shrub can be trained into a little tree reaching 15' to 25' with a spread 12' to 15'. Globe-shaped yellow flowers appear on bare branches in late winter.



These are eye-catching but lack the showy bracts of other dogwoods. Foliage resembles that of the kousa dogwood, and can get overtones of pink or red in fall. Bark exfoliates with age. Small, cherry-red fruits appear in late summer and are eagerly consumed by local birdlife. The red color resembles the red mineral carnelian. This gave this tree its name, which has over time become "cornelian" cherry, even though the tree is in the dogwood family and is not related to cherries. A red dye was made from this tree and used to give fezes (a Middle Eastern hat) their red color. The fruits are edible and high in vitamin C but sour if sampled right off the tree. They are usually eaten in the form of jellies or other preserves sweetened with sugar. From the 7th century B.C. on, ancient Greeks made spears and javelins from the wood.

Douglas-fir, *Pseudotsuga menziesii*

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.

eastern redbud, *Cercis canadensis*

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.



flowering cherry, *Prunus serrulata*

Origin: Asia - northern and central China, Korea and Japan

Usually seen in one of the innumerable cultivar forms, flowering cherry typically grows 20' to 35'. One of the most variable characteristics of flowering cherry is the flowers. They can be anything from white to pink, single or double, from 1/2" to 2 1/2" across. Usually they are quite showy but last only a short time in spring. Fall color is usually good - from orange to red. Surface roots tend to lift sidewalks. Foliage is susceptible to numerous blights and diseases (viruses, cankers and borers) which shorten the life of the tree. 'Kwanzan' is the hardiest and one

of the most popular cultivars grown in Portland, having deep-pink, double flowers.

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.

Halka zelkova, *Zelkova serrata* 'Halka'

Origin: Asia - throughout Japan, Taiwan and Korea, and widely distributed in China in the provinces of Fujian, Gansu, North Guangdong, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Shaanxi, Shandong, Sichuan and Zheijiang.

The most common species of zelkova in Portland is Japanese zelkova - *Z. serrata*. The tree is vase-shaped and has a dense, oval head. 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. The Halka cultivar grows rapidly to 45' tall by 35' wide, with a looser, more open branching than other cultivars like Green Vase or Village Green. Halka has yellow fall color. Like all zelkovas, the leaves are slightly toothed, oblong-elliptic. Bark flakes off to reveal new orange bark. The Chinese name for this tree is *ju shu*. Koreans call the tree *neutinamu*.



Hungarian oak or Italian oak, *Quercus frainetto*

Origin: Europe - found in the Balkans, including Serbia, Romania, and Bulgaria as well as parts of Turkey, Hungary and Italy

This deciduous broadleaf tree is most attractive in summer when the dark green, glossy leaves create a distinctive foliage effect. Tree grows upright to 50' by 25'. Fall color is a light brown to gold. Bark on mature trees is light gray and furrowed. Tolerates heat and drought. The tree was first scientifically described by Italian botanist Michele Tenore (1780-1861), who founded the botanic garden at the University of Naples. It has been in cultivation since 1838. Lifespan is generally 150 years but they can live up to 400 years.

katsura, *Cercidiphyllum japonicum*

Origin: Asia - China, Japan

Katsura is a deciduous tree growing from 30–45', and occasionally to 100' tall. This species has both opposite and alternating branching patterns, which you can see from viewing leaves on the same branch. Leaves (2–3" round) are heart shaped and smoothly toothed along the edges.

In the spring, leaves are a light pink, turning pale blue-green in summer and bright yellow to pink in the fall. When the leaves fall, some say that they smell like blackberries or cotton candy. Flowers grow on separate male and female trees. The fruit is a small green-gray pod that curves like a hockey stick at the bottom. This tree is the only one in its family. Originally from Asia, katsura was first planted in the United States in the 1800s. It continues to be a popular street tree in Portland.



maple, *Acer* spp.

Origin: found across Europe, northern Africa and North America, with most species concentrated in Asia

There are many species of maples and interspecific hybrids, as well as a dizzying array of cultivars. These

can be particularly difficult to identify due to the sheer number of possibilities. This tree is identifiably in the *Acer* genus but there is uncertainty as to which species it is.

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.

oak, *Quercus* spp.

Origin: distributed across North and South America, Europe, Africa and Asia, with centers of diversity in Mexico and China

Some 450 to 600 species of oaks make identification difficult, especially since they freely hybridize. There are three main types of oaks - white, red or black, and golden. California oaks in the red/black oak category are being hard hit by sudden oak death, especially *Q. kelloggii*, *Q. agrifolia* and the related genus *Lithocarpus densiflorus*. Typically thought of as deciduous trees with lobed leaves, more and more evergreen oaks are showing up in Portland, many with non-lobed

leaves. Based on molecular genetics analysis, oaks are estimated to have separated from chestnuts about 60 million years ago. Oaks first appear in the fossil record in North America 55 to 50 million years ago. Most species arose within the genus between 22 and three million years ago. During this period, oaks became the most dominant tree type in the Fagaceae family. The geographical center of oak diversity is North America. At least 220 species occur on this continent, chiefly in Mexico.

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 United States.

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.

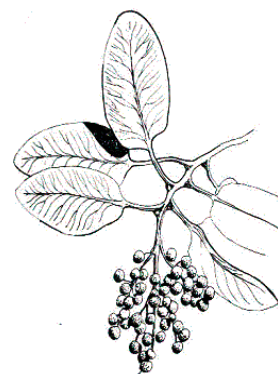
Pacific madrone, *Arbutus menziesii*

Origin: North America - Oregon and Washington west of the Cascades, northern California and British Columbia, Canada

The Pacific madrone is a native broadleaf evergreen that can grow up to 100'.

Young bark is chartreuse and smooth, while the older bark is dark brownish-red and peeling. Leaves are simple, alternate, oblong, 3–5" long, and are dark green on top and light green or golden-scaly below. Margins are smooth or finely serrated.

Stems and trunks tend to lean and twist. Flowers are white, urn-shaped, and fragrant in large drooping clusters. The fruit is orange-red, pea-sized with a pebbly surface, and appears in the fall. British plant hunter Archibald Menzies first described the species based on trees seen on the Olympic Peninsula in 1792. A Straits Salish story describes the madrone as the tree used by the survivors of the Great Flood to anchor their canoe to the top of Mount Newton (B.C.) To this day, the Saanich people do not burn madrone in their stoves because of the important service this tree provided long ago.



paper birch, *Betula papyrifera*

Origin: North America - from Nova Scotia, Canada west to Ontario and south to Pennsylvania and New Jersey with outliers in Virginia, Indiana and mountains of North Carolina

A short-lived (often only 30 years) grayish-white-barked birch. Bark exfoliates to reveal chalk-white smoothness. Quickly grows to 30' or more with an irregular, open crown of thin branches. Triangular leaves have coarsely serrated edges with a decided drip tip. They turn yellow in fall. Wind-pollinated catkins appear in spring, provoking allergy symptoms in many people. Aphids can be a problem on tender new growth, and the tree drops quite a lot of debris throughout the year. Despite their flexible appearance, paper birch wood is weak, making the limbs prone to break in wind and ice storms. Injuries usually open up pathways for rot, leading to a shortened lifespan for the tree. In its native range, paper birch is harvested for plywood, drum shells, spools and firewood.

pin oak, *Quercus palustris*

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

Commonly planted because it is easy to transplant, fast growing, and has good red to orange fall color, this deciduous broadleaf oak grows to about 80-90', although individuals up to 120' have been found in the wild. Bark is light to dark grayish-brown, with narrow, shallow fissures divided by broad ridges. Male (staminate) flowers hang in brown tassels in early spring. The leaves have 5 to 7 deep lobes with sharp tips. The reddish brown acorns are wider than they are long and sit in saucer-shaped cups. The knotty wood is difficult to work and mostly used as firewood. Lower branches droop



low enough to interfere with traffic and pedestrians, requiring frequent removal to keep passage clear beneath the tree. The tree has been in cultivation since before 1770. It was first scientifically described by German botanist Otto von Munchhausen (1716-1774).

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.



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.

sawtooth oak, *Quercus acutissima*

Origin: Asia – Eastern China, Korea and Japan

Deciduous oak 40' to 60' tall with long (up to 7"), chestnut-like leaves with serrated edges. Dark green in summer, these turn yellow in fall and remain on the tree all winter. Upright form when young, then becoming broad and as wide as tall. Yellowish-green male and female catkins appear in spring on the same tree. One-inch long oval acorns follow. Lower branches tend to droop similarly to pin oaks and require removal near sidewalks and streets. The wood is prone to cracking and splitting, limiting its use to fencing. Sawtooth oaks were widely used in reforestation in the South in the hope that their abundant acorns would increase forage for animals. However, the acorns' bitterness limits their appeal to animals. In eastern states where it was planted in natural areas, sawtooth oak has become invasive, in part due to its faster growth rate than many natives and its ability to produce acorns as early as five years after planting. Sawtooth oak has high drought tolerance and survives in compacted soil. Requires full sun.



scarlet oak, *Quercus coccinea*

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

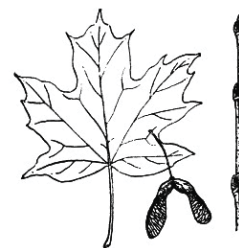
Scarlet oak is closely related to red oak, but its leaves flame scarlet in the autumn. Trees seldom exceed 80', but can live more than 150 years. Bark is dark brown, smooth and shallowly ridged with age. Male flowers are yellow-green drooping catkins; females are inconspicuous and appear separately on 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.



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.



sweetgum or liquidamber, *Liquidambar styraciflua*

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.

vine maple, *Acer circinatum*

Origin: North America – Oregon and Washington west of the Cascades, northern California, and British Columbia, Canada

Native from southern British Columbia into coastal California, vine maple is most frequently seen as a multi-stemmed shrub in the forest understory beneath taller trees. Its branches will twist and curve to reach sunlight pouring in from any break in the canopy, giving the tree the epithet of "octopus tree" for its often odd shape. If trained as a sapling to have a single trunk, vine maple can attain heights of 15' or more, and usually as wide or wider. More closely related to Japanese maples than other U.S. maples, vine maple has attractive 7 to 9-lobed leaves that are 3" to 4" across. These turn gold to orange or red in fall, but are subject to scorching if grown in full sun. Vine maple is not well adapted to urban settings and should be planted in conditions resembling moist forest. The small flowers are reddish to purple, the samaras have red wings, and the young shoot growth is red, making it easy to find something red on the tree year-round.

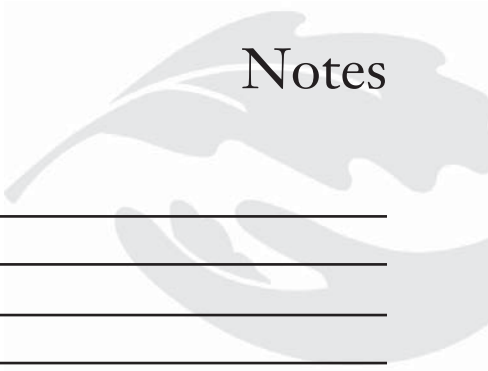


Village Green zelkova,
Zelkova serrata 'Village Green'

Origin: Asia - Japan, Korea, China, Kuril Island of Russia

The most common species of zelkova in Portland is Japanese zelkova - *Z. serrata*. All have simple, serrate-edged leaves with tapered tips. The tree is vase-shaped and has a dense, oval head. 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. Village Green is a shorter, broader cultivar than Green Vase, reaching a maximum height of around 40-60' with a 30-50' spread. Princeton Nursery patented the tree in 1964 and introduced it to commercial nurseries as a street tree with resistance to Dutch elm disease and elm leaf beetle, and rusty red to orange fall color. Spring flowers aren't showy. Wingless drupes ripen in fall but are inconspicuous. Bark is smooth when young but flakes as the tree ages to reveal jigsaw puzzle patterns of orange-brown inner bark. Puts on rapid growth in both height and caliper.

Notes



A faint, stylized illustration of a hand holding a pen, positioned behind the text. Below the word 'Notes', there are four horizontal lines for writing.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. In the top right corner, there is a faint, light gray circular logo or watermark. The rest of the page is completely blank and white.