



Best Garden Trees

10-Minute University™

Clackamas County Master Gardener™ Association



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10-Minute University™

In collaboration with and in support of the
OSU Extension Service Master Gardener Program™



Oregon State University
Extension Service
Master Gardener

Objectives

This presentation will help you

- Know how to place, plant and care for a garden tree for it to thrive
- Become aware of excellent candidates for Pacific NW home gardens

Resources

Oregon State University Extension Publication EC1438

<https://catalog.extension.oregonstate.edu/ec1438>

Selecting, Planting, and Caring for a New Tree (Paul Ries, co-author)

Six Horticultural Experts

Paul Bonine, Co-Owner, XERA Plants, www.xeraplants.com

Nancy Buley, Marketing Director, J. Frank Schmidt & Son Co. www.jfschmidt.com

Jane Hartline, Owner, Sauvie Island Natives, <https://sauvienatives.com>

Sean Hogan, Owner, Cistus Design Nursery, www.cistus.com

Martin Nicholson, Curator, Hoyt Arboretum, www.hoytarboretum.org

Richie Steffen, Executive Director, Elizabeth C. Miller Botanical Garden & Great Plant Picks
www.greatplantpicks.org

Space Considerations for Placing a Tree

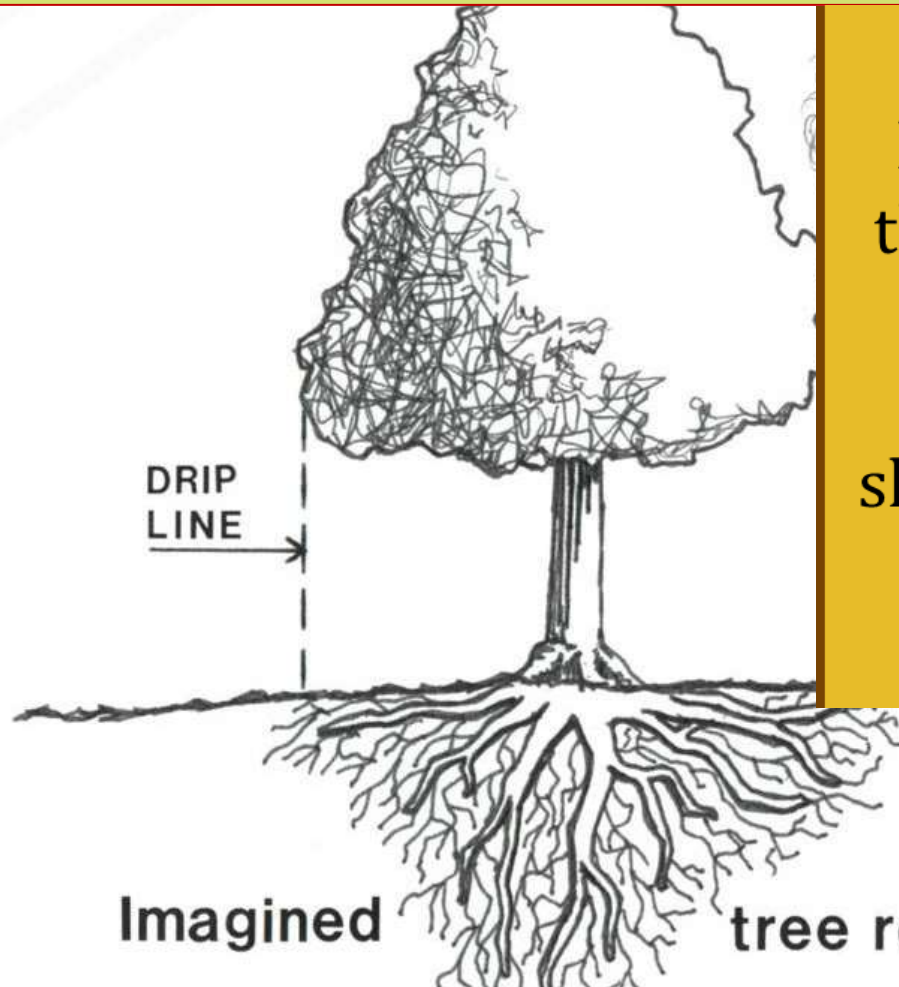
- Estimate available space above and below ground
- Estimate the future reach of roots and shoots
- Consult multiple sources for mature height and width

OSU Landscape Plant Database @ <https://landscapeplants.oregonstate.edu>

The Tree Book, Michael Dirr & Keith Warren, Timber Press, 2019

Trees to Know in Oregon and Washington, Edward Jensen, OSU Extension Publication
EC1450 <https://catalog.extension.oregonstate.edu>

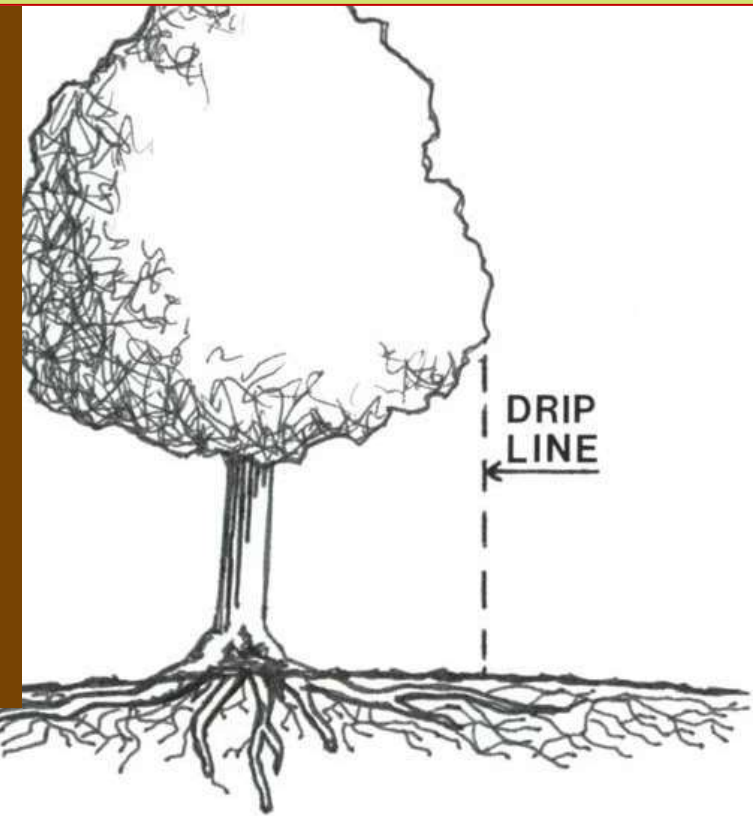
- Keep in mind that size varies depending on soil and location



Imagined tree roots

Roots are wider
than the drip line

Tree roots are
shallower than we
thought



Real tree roots

Places to See Trees

Hoyt Arboretum, Portland, OR

<https://hoytarboretum.gardenexplorer.org/>

Oregon State University campus, Corvallis, OR

<https://landscapeplants.oregonstate.edu/>

Portland streets & parks

<https://www.portland.gov/trees/get-involved/treeinventory>

Cistus Nursery display garden, Sauvie Island, OR

Iseli Nursery, Boring, OR

J Frank Schmidt Arboretum, Boring, OR

Tree Forms @ Maturity

Tree shape can change with maturity



Do Tree Roots Attack Sewer Pipes?

- Choose smaller trees if conflict with sewer pipe is of concern
- Larger trees have more extensive roots -- trees named as having 'aggressive' roots -- Willow, Ash, Poplar, Cottonwood, Sweet Gum, Sycamore, some Maple (Norway, Silver, Boxelder, Red)
- Roots go where there is water and air -- penetrate cracks or weak joints in sewer pipes
- Concrete borders forces roots to go above ground or deeper



Landscaping and Utilities1: Problems, Prevention, and Plant Selection

<https://www.extension.uidaho.edu/publishing/pdf/CIS/CIS0991.pdf>

Wire & Structure Issues for Placing a Tree

USDA Tree Owners Manual www.treeownersmanual.info

- Keep trees at least 3 feet from pavement, 15 feet from buildings and other trees
- If the tree will grow taller than 30 feet, plant it 25 feet away from overhead wires
- Tall trees that reach 60 feet or more should be at least 35 feet away from the house for proper root development

International Society of Arboriculture www.isa-arbor.com

- Trees placed within 15 feet of utility wires should not exceed 20 feet high at maturity

Soil & Water Issues in Placing a Tree

- Roots need both air and water
- Healthy soil allows air and water to flow through, compacted soil does not
- Locate trees where roots won't be covered by pavement or concrete
- Have a source of irrigation
- Water the root zone during establishment (first 3 years)
- Some mature trees need water during drought
- Lawn and tree seldom have the same watering need
- Some trees, such as cypress & native oaks, don't like summer water

Using Trees as Windbreak or for Shade

- Consider using conifer or broadleaf evergreen trees to block prevailing wind
- Use tree canopies to shade summer sun
- Use a deciduous tree for summer shade if you wish sunlight to shine through in the winter

Best Small Trees

Deciduous

Fernleaf Fullmoon Maple
Chinese Fringetree
Sparkling Sprite® Crabapple
Persian Ironwood
Crapemyrtle
Gold Spire™ Ginkgo
Vine Maple (OR native)
Cascara (OR native)
Western Crabapple (OR native)

Evergreen

Tree Mock Orange
Loquat
Magnolia 'Largess'
New Zealand Lacebark
Noble Fir 'Rick's Foxtail'

Fernleaf Fullmoon Maple

Acer japonicum 'Aconitifolium'

- Broadleaf deciduous tree perfect for small gardens, 15 -20 feet high, 10 feet wide
- Sun to part shade, summer water
- USDA Zone 5
- Native to Japan
- A four-season tree with beautiful branching, interesting deeply cut leaves, small but showy red flowers in early spring, and brilliant reliable fall foliage color



Steffen

Photos from OSU Landscape Plants database at <https://landscapeplants.oregonstate.edu/>

Photo by Richie Steffen, Great Plant Picks

Chinese Fringetree

Chionanthus retusus

- Broadleaf deciduous tree, 20-25 feet high, 15 feet wide
- Sun (for best flowers) or part shade, summer water
- USDA Zone 6
- Native to China, Korea, Japan
- Tough, slow growing, lacy white flowers in late spring, interesting branching, beauty increases with age, an excellent choice for small urban gardens



Sparkling Sprite® Crabapple

Malus 'JFS-KW207' PP27954

- Deciduous tree with compact form to 12 feet high and wide, top grafted dwarf
- Full sun to part sun, summer water
- USDA Zone 4
- Developed by J. Frank Schmidt & Son Co., Boring, OR
- Pink buds, white flowers, yellow to golden orange fruits, bright green foliage, disease resistant



Photos from J. Frank Schmidt & Son Co. website <https://jfschmidt.com/>

Persian Ironwood 'Vanessa'

Parrotia persica 'Vanessa'

- Deciduous tree, cultivar 'Vanessa' is a more upright form, slow growing, to 28 feet high, 14 feet wide
- Sun to light shade, summer water, drought-tolerant after establishment
- USDA Zone 6
- Native to Iran, Iraq
- Exfoliating bark, fall foliage color, showy flowers with red stamens



Steffen

Crapemyrtle

Lagerstroemia x fauriei

- Deciduous tree or multi-stemmed shrub, 14-30 feet high depending on cultivar, smaller shrub forms also
- Full sun, summer water for best flowers
- USDA Zone 6
- Native to Japan
- Mildew resistant, cultivars 'Natchez'- white flowers, 'Hopi' - bubble gum pink, 'Pecos' clear pink & great brown bark



Photos from OSU Landscape Plants database at <https://landscapeplants.oregonstate.edu/>

Gold Spire™ Ginkgo

Ginkgo biloba 'Blagon' Gold Spire™

- Deciduous tree with columnar shape -- up to 30 feet high and 6 feet wide
- Sun to part sun, summer water, drought tolerant once established
- USDA Zone 4a
- Native to China
- Great for areas of limited space, male plants only, branches compact, green foliage turns golden in the fall



Photo J. Frank Schmidt & Son Co.

Photo of Rotary Botanic Gardens, Janesville, WI



Photo of Hale & Hines Nursery

Vine Maple

Acer circinatum

- Deciduous tree or multi-stem shrub, 15 feet high, 12 feet wide
- Sun to deep shade, prefer moist, shaded locations, summer water
- USDA Zone 5
- Native to Oregon
- Fall color yellow & orange, colors more vibrant with sun



Photos from OSU Landscape Plants database at <https://landscapeplants.oregonstate.edu/>

Cascara

Frangula purshiana

- Deciduous tree (up to 30 feet tall & 25'wide) or shrub (to 15 feet)
- Sun or shade, best in moist, acidic soil, summer water
- USDA Zone 3b
- Native to Oregon
- Great wildlife benefits -- flowers feed bees and berries feed many bird species



Photos from OSU Landscape Plants database at <https://landscapeplants.oregonstate.edu/>

Western Crabapple

Malus fusca

- Deciduous thicket-forming shrub or small tree to 30 feet high
- Sun to part shade, summer water, generally found in moist sites in nature
- USDA Zone 5
- Native to OR
- Wildlife benefits include pink-tinged white flowers for bees, little red apples for birds and other wildlife, fall foliage color



Photos from OSU Landscape Plants database at <https://landscapeplants.oregonstate.edu/>

Tree Mock Orange

Pittosporum adaphniphyllioides

- Small evergreen tree with round crown, to 15'
- Full sun to part sun, summer water
- USDA Zone 7
- Native to China
- Oval leaves 6", light yellow fragrant flowers appear mid - spring



Photo of www.promessedefleurs.com



Photo of U C Berkeley

New Zealand Lacebark

Hoheria 'Borde Hill'

- Erect evergreen shrub/small tree to 15' high
- Sun to part shade, summer water
- USDA Zone 8
- Native to New Zealand
- Narrow, glossy foliage, fragrant flowers mid- to late-summer, may lose leaves in cold winter, protect from wind



Magnolia 'Largess'

Magnolia laevifolia 'Largess'

- Evergreen shrubby tree, 12 – 18 feet high, 6-8 feet wide, prune to shape after flowering
- Full to partial sun, summer water
- USDA Zone 7
- Oval glossy leaves to 3" long, leaves and stems adorned with a coppery fuzz, fragrant, white flowers appear Feb or March into June



Photos from Cistus Design Nursery www.cistus.com

Loquat

Eriobotrya japonica

- Evergreen tree, vase shaped with flattened crown, 15-25 feet high & wide
- Sun to part shade, summer water
- USDA Zone 7b
- Native to China & Japan
- Silvery bark, 6" leathery leaves, fragrant flowers Nov – Jan, fruit mid- to late- summer tasting of tangerines and pineapple, freezing wind in colder zones can eliminate fruit



Noble Fir

Abies procera 'Rick's Foxtail'

- Evergreen Noble fir of narrow/upright form
- Sun, summer water
- USDA Zone 6
- Found at Hopper Brothers Nursery in Woodburn, OR
- Reach 6-ft tall and 2-ft wide in 10 years



Photo by Joni Hopper, Hopper Brothers Nursery, Inc.



Photos coniferkingdom.com

Best Windbreak or Shade Trees

Windbreak

Incense Cedar (OR native)

Evergreen Shade Tree

Silver Leaf Oak

Deciduous Shade Tree

‘Pink Dawn’ Chitalpa

Redpoint[®] Maple

Firestarter[®] Tupelo

Pink Flair[®] Cherry

City Sprite[®] Zelkova

Japanese Stewartia

Incense Cedar

Calocedrus decurrens

- Evergreen conifer tree, 60 feet high, 15 feet wide
- Sun or part shade, drought adapted, tolerates poor soils and hot & dry sites
- USDA Zone 5
- Native to Oregon
- Not prone to disease, fastigate selections make good large hedges



Silver Leaf Oak

Quercus hypoleucoides

- Broadleaf evergreen tree up to 33 feet high or multi-stem shrub up to 10 feet
- Full sun, drought resistant, little to no summer water
- USDA Zone 7
- Native to mountains in AZ, NM, TX
- Leaves have a silver cast, provides lots of shade, accepts cold, heat, drought



Pink Dawn Chitalpa

x Chitalpa tashkentensis 'Pink Dawn'

- Broadleaf deciduous tree, 20-25 feet tall & wide
- Full sun, well-drained soil, summer water
- USDA Zone 6
- Tough, drought-tolerant, foxglove-like pink blooms last several month in summer, willowy foliage
- Hybrid of two genera -- *Catalpa*, the cigar tree, and *Chilopsis*, desert willow



Photos from OSU Landscape Plants database at <https://landscapeplants.oregonstate.edu/>

Redpoint® Maple

Acer rubrum Redpointe®

- Broadleaf deciduous tree with upright form, 50 feet high, 30 feet wide
- Sun, summer water
- USDA Zone 5
- Developed by J. Frank Schmidt & Son Co., Boring, Oregon
- Brilliant red fall foliage on strong central leader, highly adaptable to a variety of soil pH



Photos from OSU Landscape Plants database at <https://landscapeplants.oregonstate.edu/>

Firestarter® Tupelo

Nyssa sylvatica 'JFS-red' PP26975

- Deciduous tree with uniform upright form, 35 feet high, 18 feet wide
- Full sun, summer water
- USDA Zone 5
- Developed by J. Frank Schmidt & Son Co., Boring, OR
- Bright fall color



Photos from J. Frank Schmidt & Son Co. website <https://jfschmidt.com/>

Pink Flair® Cherry

Prunus sargentii 'JFS-KW58'

- Deciduous tree with upright, vase form, to 25 feet tall and 15 feet wide
- Full sun, summer water
- USDA Zone 3b
- Developed by J. Frank Schmidt & Son Co., Boring, OR
- Single pink flowers in spring, dark bark & fall foliage color, disease free



Photos from J. Frank Schmidt & Son Co. website <https://jfschmidt.com/>

City Sprite[®] Zelkova

Zelkova serrata 'JFS-KW1' PP20996

- Deciduous tree with compact & dense form, oval to vase shape, 24 feet high, 18 feet wide
- Full sun, summer water
- USDA Zone 5
- Developed by J. Frank Schmidt & Son Co., Boring, OR
- Fine textured foliage and a tidy growth habit



Photos from J. Frank Schmidt & Son Co. website <https://jfschmidt.com/>

Japanese Stewartia

Stewartia pseudocamellia

- Deciduous tree, 20-40 feet
- Part shade to sun, summer water
- USDA Zone 5
- Native to Japan
- Narrow, glossy foliage and fragrant flowers early summer, fall color, exfoliating bark



Best Trees for Sunny & Dry Sites

Native to Oregon

California Lilac

Macnab's Cypress

Canyon Live Oak

Oregon White Oak

Non-Natives

Cork Oak

Channel Island Oak

Olive

Jounama Snow Gum

California Lilac

Ceanothus thyrsiflorus 'Hunter Creek'

- Evergreen large shrub easily shaped into a small tree to 15 – 20 feet high
- Sun, best in lean soil (low organic matter) & good drainage, fast growing when young and with water, stop or reduce summer water when desired size is reached
- USDA Zone 7
- Native to Oregon & CA
- One-inch long oval, deep green and shiny leaves, lavender blue flowers early to mid spring, roots fix nitrogen



Photos from Cistus Design Nursery www.cistus.com

Macnab's Cypress

Cupressus macnabiana

- Small tree to 15-20' high
- Full sun, lean soil with low organic matter, extra water while young speeds growth, stop when it reaches desirable size
- USDA Zone 8
- Native to SW Oregon & CA
- Feathery, aromatic silver/green foliage, silvery bark, excellent with Ceanothus, Manzanitas and other dry-summer plants



Photo of Hoyt Arboretum



Photo from www.Forestfarm.com

Canyon Live Oak

Quercus chrysolepis

- Evergreen tree to 30-50' depending on selection
- Sun to dappled light, good in rocky or poor urban soil conditions, does not like summer water
- USDA Zone 7
- Native to Oregon, CA, NV, AZ
- Deep green glossy leaves golden beneath, silvery bark becoming furrowed with age, deep rooted and excellent garden or street tree



Oregon White Oak

Quercus garryana

- Deciduous tree, slow growing to 75 feet high & 50 feet wide
- Sun, little to no summer water
- USDA Zone 6
- Native to Oregon, once dominated the Willamette Valley oak savannah
- Thick leaves, light brown acorns, iconic form, benefit more than 200 species of wildlife



Olive

Olea europea 'Frantoio'

- Evergreen tree, silvery leaves and silver bark, rounded crown to about 15-20 feet high & wide
- Sun and well-drained soil, some summer water, cut off in late summer to be ready for winter
- USDA zone 8
- Scented small spring flowers produce olives for curing in autumn, best with another cultivar for good production
- Cultivars suitable for the Willamette Valley – 'Frantoio', 'Arbequina'



Cork Oak

Quercus suber

- Broadleaf evergreen tree to 30-60 feet high & wide
- Full sun, lean soil, no summer water
- USDA Zone 8
- Deep rooted, shape when young, bark is used for cork, forest green leaves paler beneath and tan/orange bark
- Native to the Mediterranean, plant with rosemary, Phlomis, lavenders and manzanitas

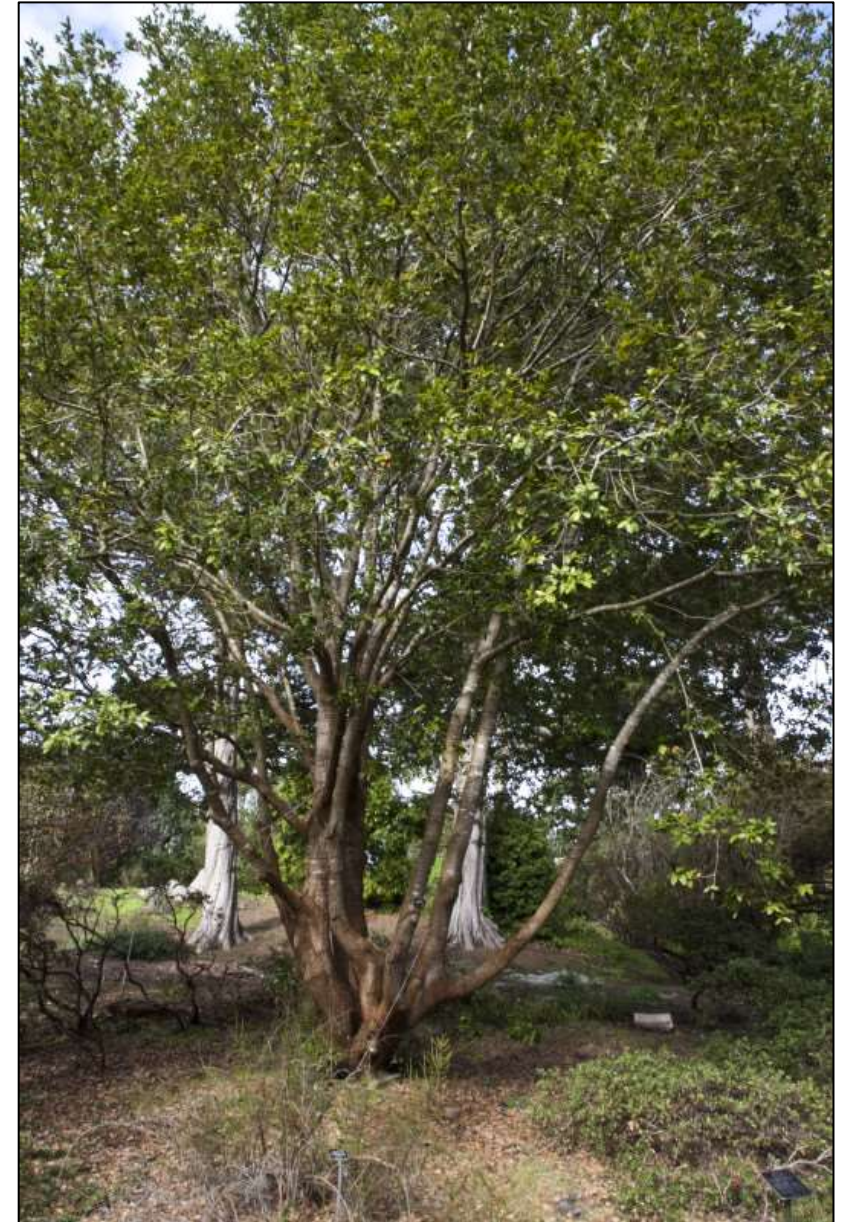


Channel Island Oak

Quercus tomentella

- Evergreen tree to 60' tall
- Sun, summer water during establishment
- Adapted to dry, lean soil
- USDA Zone 7
- Native to Channel Island, CA
- Narrow, glossy foliage and fragrant flowers
- Wildlife values – host tree for butterflies & moths, attractive to birds, insects, mammals, reptiles

Photo by Dr. Roy Winkelman
Etc.usf.edu



Jounama Snow Gum

Eucalyptus pauciflora spp
debeuzevillei

- Evergreen tree, fast, healthy, easy to grow
- Sun, drought tolerant
- USDA Zone 7
- Native to Australia
- By far the best gum tree for the PNW. Very cold tolerant. Large leaves held sideways with red petioles. Exfoliating bark. Give it room - can reach 35' in 7 years.



Photos from XERA.com



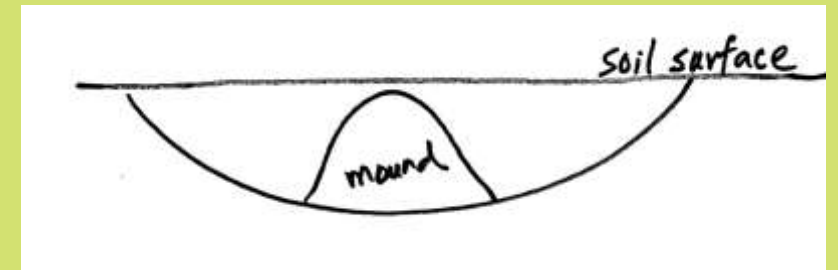
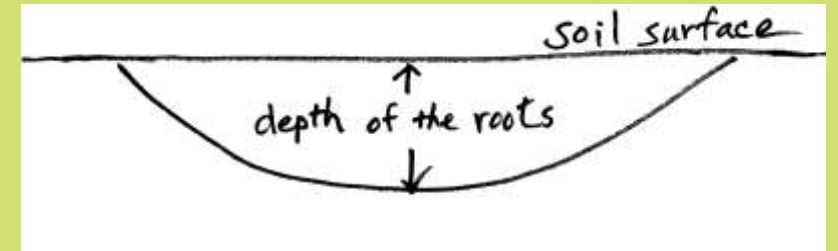
Buying a Tree: Larger \neq Faster

- Normal growth resumes when a transplanted tree reaches a shoot/root ratio that is comparable to non-transplanted trees
- Smaller transplanted trees resume growth sooner
- Larger transplanted trees require much longer
- After transplant, trees grow slowly for many years during which time roots slowly reach non-transplanted tree size

Influence of Tree Size on Transplant Establishment and Growth, HortTechnology
<https://journals.ashs.org/horttech/view/journals/horttech/15/1/article-p118.xml>

Planting

- Size of the hole – same depth as the root system, at least twice its width, shaped like a shallow bowl or with straight sides
- Remove roots and large rocks from this hole
- Break up the excavated soil
- Mound native soil in the center
- Place roots over the mound and spread outward like a starfish
- Check the crown to ensure it is ABOVE the soil level
- Fill the hole with soil and water well



Planting Tips Based on Horticultural Research

<https://cmastergardeners.files.wordpress.com/2022/02/planting-tips.pdf>

Don't Plant Too Deep



Root Flare



Don't Stake Too Long / Too Tight / Too High

Stake only if necessary

Top-heavy plant

Windy location

Drive a pair of stakes into ground before planting to avoid damaging roots

Tie low (lower one-third of trunk)

Loose enough to allow 'wiggle'

Use materials that will not damage bark

Stake no longer than one year



Do Water Well

- Water frequently if planting in warm season
- Fall planting needs less supplemental watering
- Hydrate before freeze
- Evergreen conifers use water even in winter



- Water the root zone during establishment (first 3 years)
- Per week, 2 gallons per inch of trunk caliper
- Roots reach wider than the span of the crown
- Moisten the root zone w a slow trickle of water

Drip line / soaker hose OR

Drill holes in the bottom of a 5-gallon bucket, place over root zone then fill



Do Use Mulch

4" arborist's wood chips on top of soil (research shows up to 12" is OK)

Fresh is better than composted -- feeds fungi and enriches soil microbiology

Do not mix into soil

Cover the entire root zone

Feathered to trunk



Using Arborist Wood Chips as a Landscape Mulch, Washington State University FS160E

<https://pubs.extension.wsu.edu/search?q=FS160E>

Free Wood Chips

<https://portlandgeneral.com/outages-safety/safety/tree-maintenance/free-wood-chips>

Resources

Selecting, Planting, and Caring for a New Tree, Oregon State University Extension
Publication EC1438, free download at <https://catalog.extension.oregonstate.edu>

The Sibley Guide to Trees, David Allen Sibley, Knopf, 2009

The Tree Book: Superior Selections for Landscapes, Streetscapes, and Gardens
Michael A. Dirr & Keith S. Warren, Timber Press, 2019

Trees to Know in Oregon and Washington, Edward C. Jensen, Oregon State University
Extension Service, EC1450

i-Tree, <https://www.itreetools.org/>