

Right Plant Right Place

Or how to avoid the #1 cause of
most plant problems

Plant and Insect Clinic: cowlitzmastergardener@gmail.com OR
<https://www.cowlitzcomg.com/plant-and-insect-clinic>

FREE MULCH--Check out this community resource for [free arborist wood chips](#)



Master Gardener Program

WASHINGTON STATE UNIVERSITY
EXTENSION

What we're going to talk about

- Why it's important
- How to choose
- How to plant
- How to maintain them

You've seen this



What all plants need

AIR

Good circulation



Light

Sun exposure requirements



Soil

Well-drained



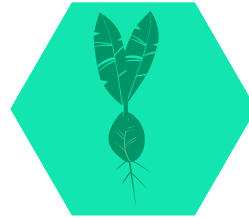
Space

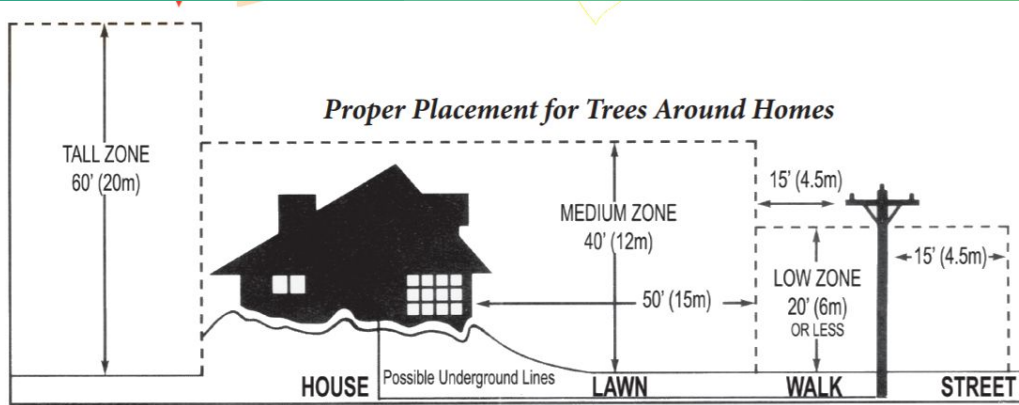
UP, down, and all around



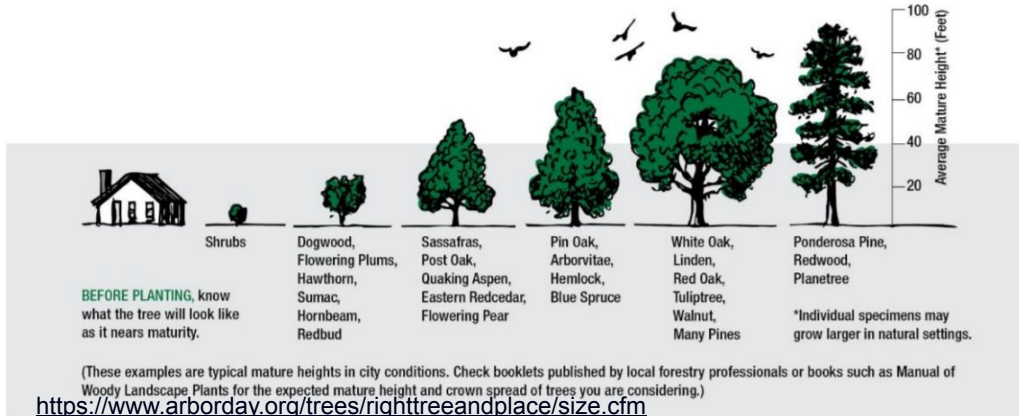
Water

Requirements, availability





https://www.treesaregood.org/portals/0/docs/treecare/Avoiding_Conflicts.pdf



What about shape?

V-Shaped



Hackberry

Columnar



Lombardy Poplar

Pyramidal



Pin Oak

Round



White Oak

Oval



Sugar Maple

How close should you plant them?

| TREE SIZE | SPACING PLANT MASSINGS | MIN. SPACING FROM WALL OF 1-STORY BUILDING | MIN. SPACING FROM CORNER OF 1-STORY BUILDING |
|---------------------------|-------------------------------|---|---|
| Small trees (30' or less) | 6-15' | 8-10' | 6-8' |
| Medium trees (30-70') | 30-40' | 15' | 12' |
| Large trees (70' or more) | 40-50' | 20' | 15' |

DO YOUR HOMEWORK!



sunburned azalea

✓ Matching the **right tree** or shrub to the **right place** in your landscape is the MOST IMPORTANT aspect of having **healthy plants and avoiding future problems!**

DO YOUR HOMEWORK!

- How much light?
- What kind of soil drainage?
 - Perc test
- Susceptible to flooding or drought?
- Can the plant live in your hardiness zone?
- Is it pest resistant?



Light--what the plant tag means

Look at the first word



- **Full sun** - minimum 6 hours.
- **Light shade** - three and five hours of direct summer sun
- **Partial shade** - two hours of direct sun each day or shaded for at least half the day
 - azaleas, rhododendrons and macrophylla hydrangeas.
- **Full shade** - less than an hour of direct sunlight each day or dappled light for most of the day
- **Deep shade**--no direct or indirect light--under your porch

Soil drainage



Soil drainage test

Ideal: around 2” per hour, with readings between 1”- 3”

Poor drainage: less than 1” per hour, your drainage is too slow- improve drainage or plant wet-tolerant plants

Too fast: More than 4” per hour--choose drought tolerant plants



Step 1: Dig Hole ... dig a hole at least 12” in diameter by 12” deep, with straight sides. If you’re testing your entire property, dig several holes scattered around your yard, since drainage can vary.



Step 2: Fill Hole with Water ... fill the hole with water, and let it sit overnight. This saturates the soil and helps give a more accurate test reading.



Step 3: Refill Hole with Water ... refill hole with water the next day.



Step 4: Measure Drainage Every Hour ... measure the water level by laying a stick, pipe, or other straight edge across the top of the hole, then use a tape measure or yardstick to determine the water level. Continue to measure the water level every hour until the hole is empty, noting the number of inches the water level drops per hour.

Pest/disease resistant



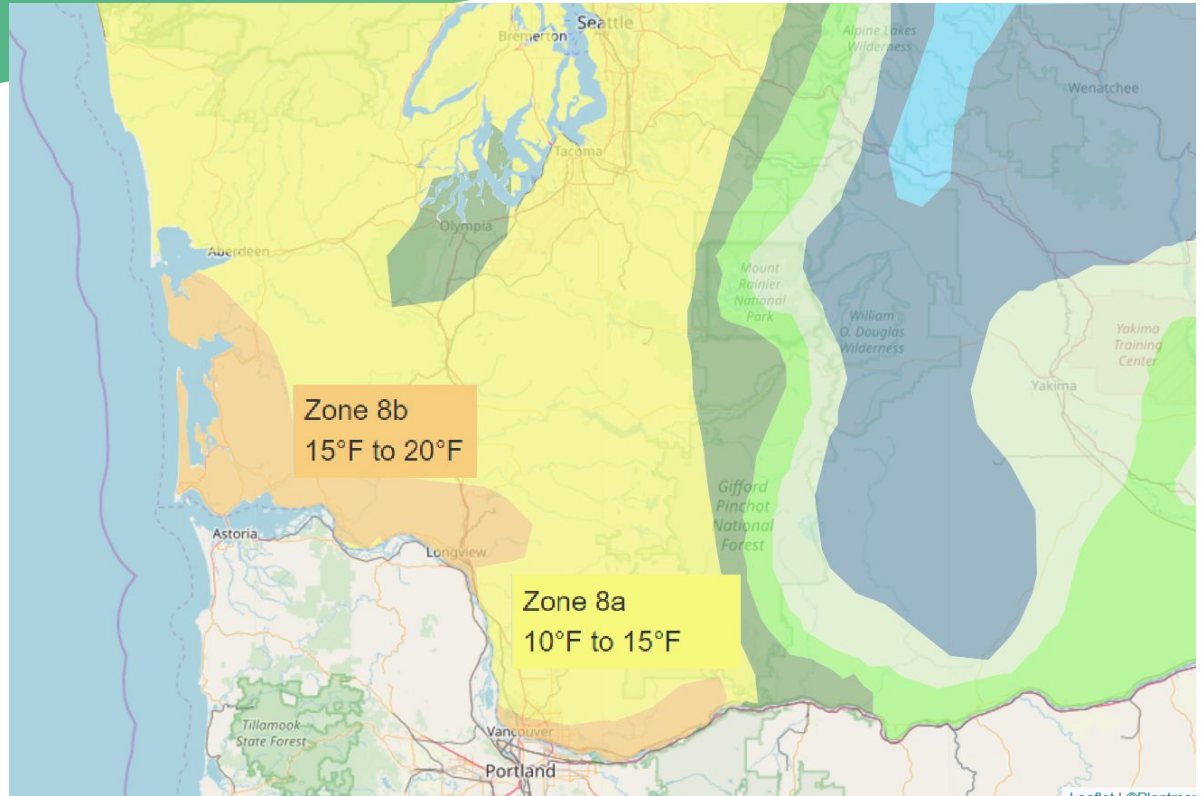
- Deer resistant plants don't mean deer proof!
- (more deer resistant plants)
- Take your phone to the nursery--read about potential problems
 - PNW Plants <http://pnwplants.wsu.edu/Search.aspx>
 - Plant Finder <https://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>

We're in Hardiness Zone 8

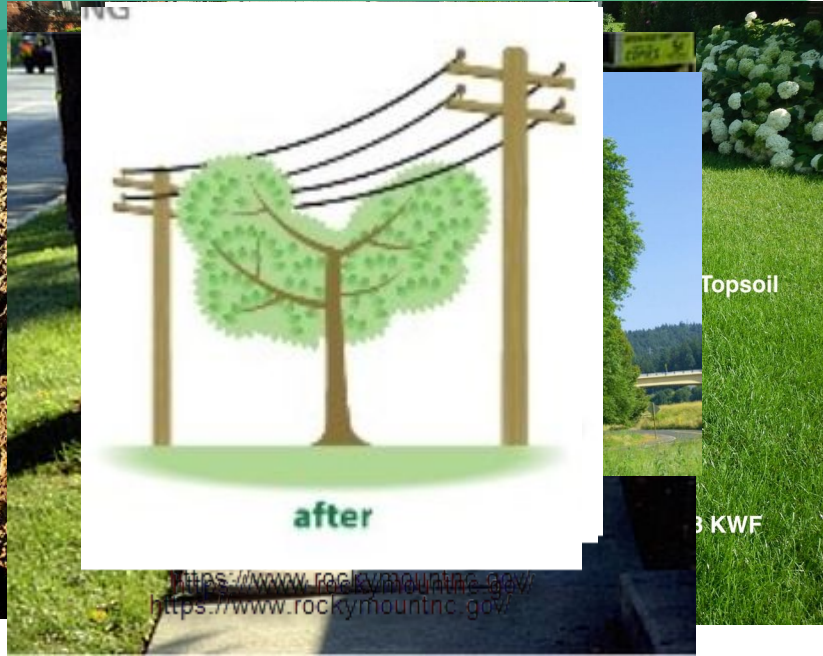
But...

- Elevation matters!
- Micro-climates matter

<https://www.plantmaps.com/interactive-washington-usda-plant-zone-hardiness-map.php>

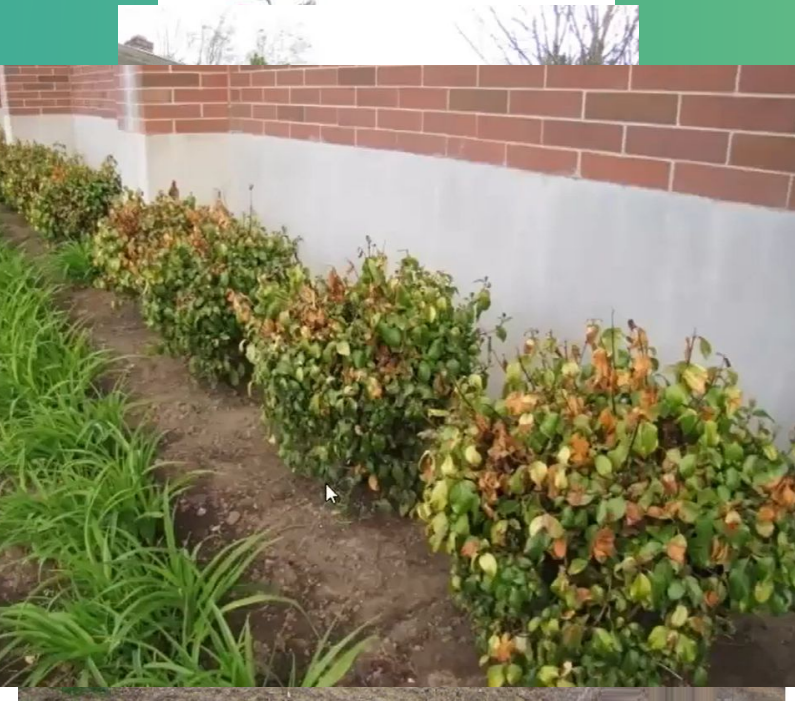


Do Your homework



- How much space is available?
- Overhead utility wires?
- Underground pipes or wires?
- Will roots affect sidewalks, driveways, structures?
- Will there be a lot of foot traffic?
- Sight lines--eventually block your view--or your neighbors?

DO YOUR HOMEWORK!

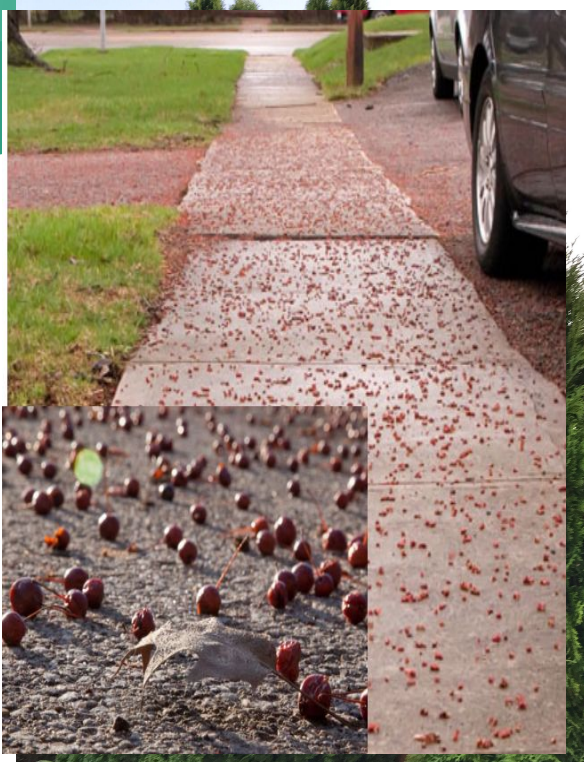


- “Hot spots” on the south or west sides of walls or fences, or next to pavement
- Areas with rocky or compacted soil that need improvement
- Runoff or draining downspouts
- Slopes that may erode or are difficult to mow
- Dry spots under roof eaves or evergreens



Wilted plants in hot, sunny corner

DO YOUR HOMEWORK!



- Consider maintenance issues - Messy fruits Fall leaf drop
 - Your tree mess in your neighbor's yard!
- What is the desired Function of your tree? Shade, Screen, Windbreak Ornamental / Accent, Flower, Fruit, Foliage
 - Read about your options PNW Plants
<http://pnwplants.wsu.edu/Search.aspx>
- Be sure to consider the Mature size of your tree
 - Height, width, planting distance
 - MEASURE CAREFULLY, and make sketches!
 - Don't believe the plant tag regarding size!

Common mistakes



Boxwood (*Buxus sempervirens*), with Hebe (*Hebe* sp.)

after very harsh winter

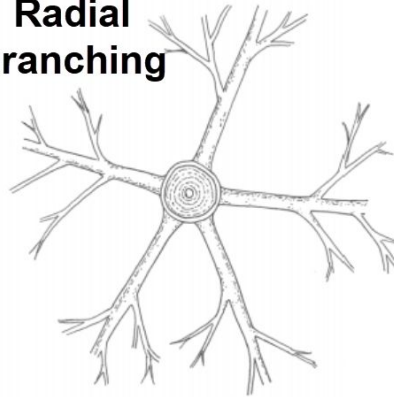


- Putting plants in the wrong spot
- Planting too much, too close together
- Underestimating a plant's mature height/width
- Installing one type of plant in a row
- Planting a "bully"
- Picking problem-prone plants.

Good quality tree



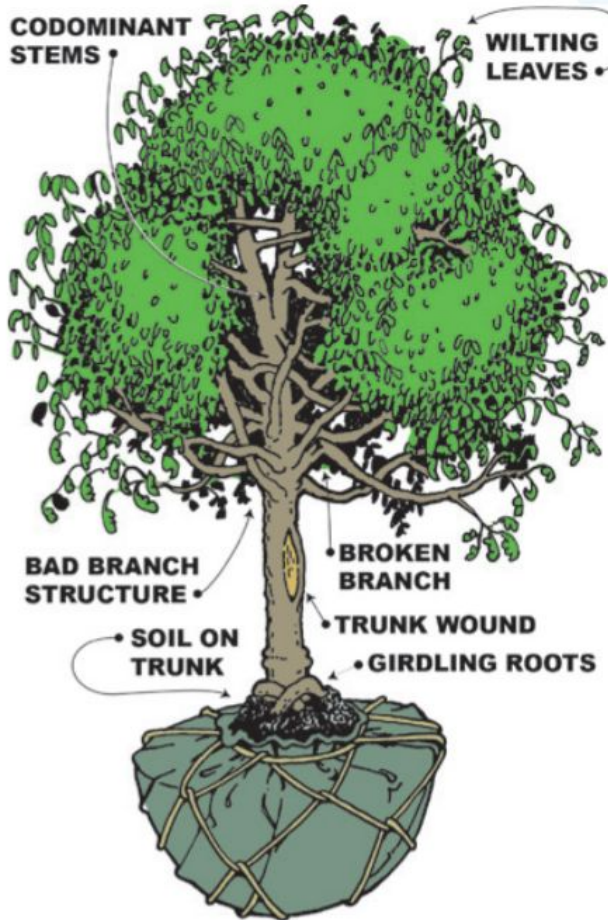
Radial
branching



<https://extension.unh.edu/resource/pruning-deciduous-trees-fact-sheet>

- Evenly spaced branches around trunk.
- Strong firm attachment to tree
- No wounds or damage to trunk
- Good root system appropriate size for tree crown
- Trunk flair visible above soil line.

What to look for at the nursery



- Inspect Trees and Shrubs for Quality and Health
 - Strong form-good structure
 - No uneven gaps or asymmetry
 - Single stem trees should have one main trunk
 - Evenly distributed, healthy foliage with uniform color and shape
 - No major damage from insects, leaf discoloration or spots
 - Healthy trunks with no dents or broken branches

How to buy a plant

Rootstock suckers permitted to grow-- should have been removed!

Lace-leaf maple tree grafted onto rootstock



- Healthy roots
 - Lots of roots, white or off white in color
 - AVOID Soft, brown or black non-woody roots
- Avoid girdled, circling, or kinked roots
- Grafted trees--no root stock suckers
- Solid, moist root ball

Ready, set, PLANT!

Best during dormant season

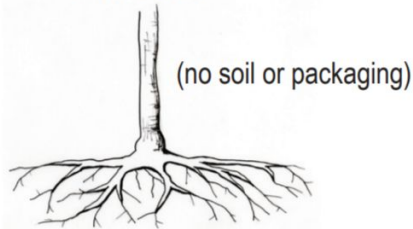
Balled and burlapped



Containerized



Bare root



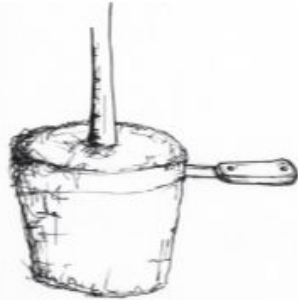
- Containerized
- Balled and Burlapped (B & B)
- Bare Root-small trees, no soil

Always transport your plant by its root container, NOT the trunk. Pull it on a tarp, wheel it in a wagon or dolly. Remove all wires, tags, trunk wraps.

Check out the roots



TIP: A saw works well to remove the top layer of soil. Be careful not to cut into the trunk.



- **Remove the containers or cut away the wire basket.**
- **Find the main root system, and remove excess soil.** Remove soil from the top of the root ball until the top of the main root system is exposed.

Why do so many transplants fail?

- Poor quality roots
- Poor soil management
- Installed too deeply
- Inadequate root preparation

Poor root establishment: The root of many tree and shrub problems



When completed the main flare roots will be visible as shown above. The pink line was at the original soil level. All these circling and crossing roots should be removed.

Remove tree from container or burlap and wire basket

Inspect container tree root balls for circling roots. Straighten, cut, or remove them.

- Roots circle the container as they outgrow it.
- Can force large roots to dive deep-preventing outward growth.
- Circling roots may be unwound and spread out in all directions.
- Too much? Use a pruning saw (or serrated kitchen knife) to shave 1-2" from the sides and bottom of the root ball to remove any encircling roots.

Problem roots exposed after removing B&B clay soil



Linda Chalker-Scott
WSU Extension Urban Horticulturist

Roots correctively pruned before installation

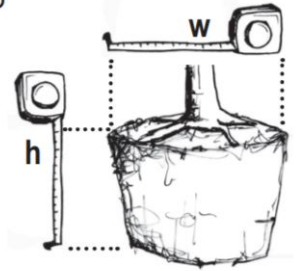
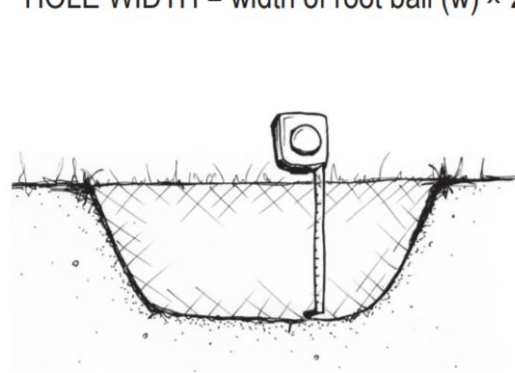


Linda Chalker-Scott
WSU Extension Urban Horticulturist

Don't put a \$100 tree in a "\$10" hole

Dig the hole ONLY as deep as the root system--NO DEEPER!

HOLE DEPTH = height of root ball (h)
HOLE WIDTH = width of root ball (w) x 2 or 3



Planting your new tree

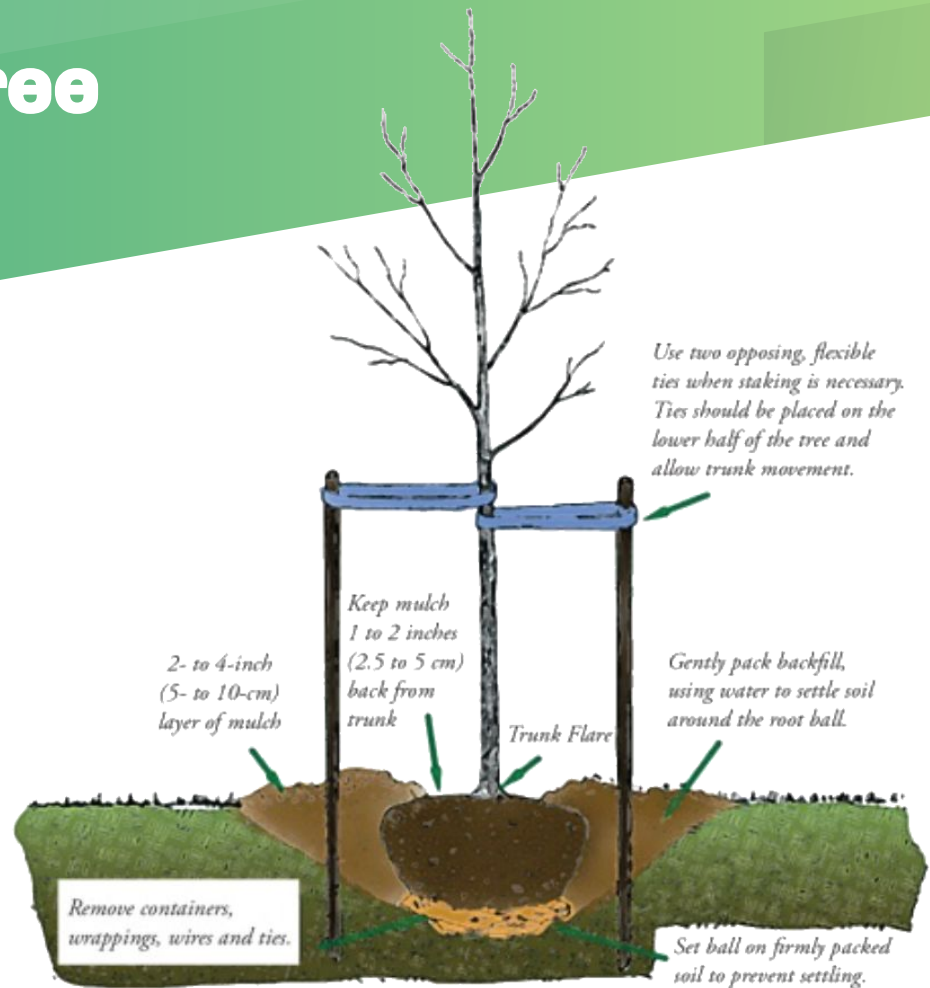
- After correcting root problems, identify the root flair.
- Remove tags and stakes.
- Remove broken or damaged branches.
- Dig a saucer shaped hole **ONLY AS DEEP AS THE ROOT BALL** and 2-3 times as wide.
- Place the tree at the proper height, lifting by the root ball!



The plant has been gently placed in the hole. Lay a flat board across the top to ensure that you are not planting it too deep.

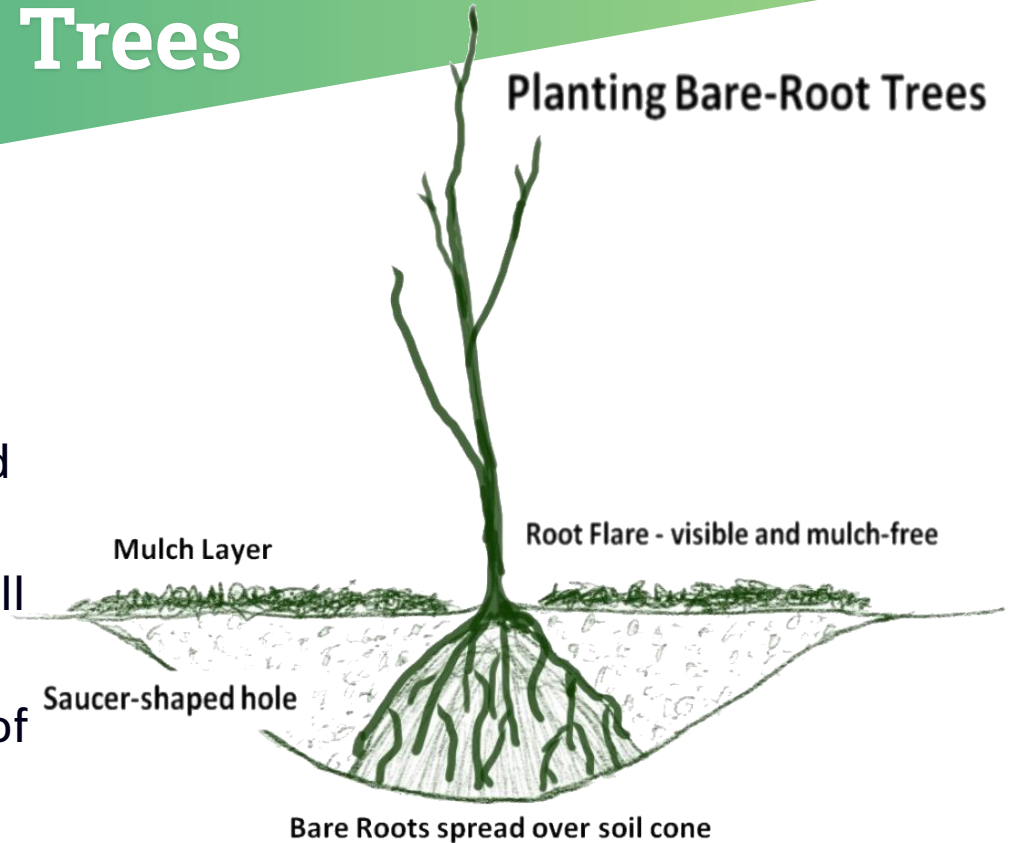
Planting your new tree

- Firmly mound up soil at bottom to prevent settling.
- Be sure root flare is partially visible.
- Spread out roots radially.
- Straighten the tree.
- Fill the hole gently, firmly, mudding it in as you go.



Planting Bare Root Trees

- Keep roots moist until planting
- Dig a hole a little larger than the root system
- Mound of soil at bottom, and spread the roots over it.
- Back-fill with soil, water, back fill water
- Top roots should have 2 inches of soil cover.
- 30 ■ Mulch, keep soil moist



Planting Bare-Root Trees

Protect young trunks

Sunscald

- Cold winter sunny day. Sun from the SW warms the trunk. When it gets cold at night, the tissue can't adjust to the change, and the tissue freezes and dies.
- Young trees susceptible, along with certain other tree species.
- Position tree graft so “bump” is facing north.
- Whitewash trunk with 50/50 solution of water and interior white paint to reflect the sun.



To stake or not to stake

- **Trees develop strong trunks when they are unstaked.**
- **ONLY stake if the root ball is unstable or the trunk is bending.**
- **Use a soft, flexible material (nylon stocking) LOW and loosely on trunk.**
- **Remove after the tree roots are firmly anchoring it--one year at most**



Soft flexible tie that is low on the trunk



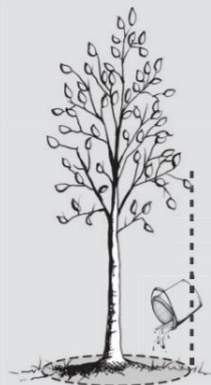
Maintenance

Proper watering is essential, especially in the first 3 years.

Check your soil at 6 inch depth. If dry, provide about 1-1/2 gallons of water per diameter inch of the trunk.

Consider mulching to dripline--grass competes for moisture!

First 3 years after planting:



- Check every other day in fast-draining soils, weekly in slow-draining soils

Water within the dripline

All other years:



- Check weekly

Water within the dripline or, for large trees, at the base and at the dripline

Coming at it from a different angle...

Top tree planting mistakes

- Poor Selection
- Inadequate Root System
- Poor Planting Site
- Pot Bound / Girdling Root
- Planting Hole is Too Small
- Planted Too Deep
- Improperly or Not Mulched
- Not Staked or improperly staked
- Improper Watering
- Failure to Monitor

Choosing the right plant

PNW Plants <http://pnwplants.wsu.edu/Search.aspx>

Plant Finder <https://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>

Look up detailed tree information <https://www.arboday.org/trees/treeGuide/browsetrees.cfm>

Groundcovers <http://pnwplants.wsu.edu/Groundcovers.aspx>

Great Plant Picks: <https://www.greatplantpicks.org/searchnav>

Advanced search for custom choices: <https://www.greatplantpicks.org/search/advanced>

OSU Landscape Plants <https://landscapeplants.oregonstate.edu/>

Choosing the right plant

Landscape Your Drainfield <https://www.co.thurston.wa.us/health/ehoss/landscp.html>

Landscaping your drainfield http://www.clallam.net/hhs/EnvironmentalHealth/onsite_landscaping.html

Plants for erosion control <https://wmswcd.org/wp-content/uploads/2015/12/Native-Plants-for-Erosion-Control.pdf>

Native alternatives for invasive plants <https://www.nwcb.wa.gov/groundcover-alternatives-for-western-wa>

WA Native plant society Groundcovers <https://www.wnps.org/blog/tags/ground-covers>

Native perennials ferns groundcovers: <https://soundnativeplants.com/nursery/species-descriptions/groundcovers-herbaceous/>

Landscaping in The pacific northwest Native plants <https://s3.wp.wsu.edu/uploads/sites/2079/2014/02/native-plants-2008.pdf>

Deer Resistant Ornamental Plants OSU <https://emswcd.org/wp-content/uploads/2013/10/OSU-Deer-Resistant-Plants.pdf>

Choosing the right plant

Are Native Trees and Shrubs Better Choices for Wildlife in Home Landscapes

<https://pubs.extension.wsu.edu/are-native-trees-and-shrubs-better-choices-for-wildlife-in-home-landscapes>

Drought Tolerant Landscaping For Washington State

<https://pubs.extension.wsu.edu/drought-tolerant-landscaping-for-washington-state-home-garden-series>

Ornamental Trees for Narrow Spaces (Home Garden Series)

<https://pubs.extension.wsu.edu/ornamental-trees-for-narrow-spaces-home-garden-series>

Planting Trees and Shrubs in the Home Landscape

<https://pubs.extension.wsu.edu/planting-trees-and-shrubs-in-the-landscape-home-garden-series>

Small Trees for the Home Landscape

<https://pubs.extension.wsu.edu/small-trees-for-the-home-landscape-home-garden-series>

Planting and caring for your tree or shrub

(Excellent!) Tree Owner's Manual https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5368392.pdf

Selecting, Planting, and Caring for a New Tree <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/ec1438.pdf>

Planting your tree <https://www.treesaregood.org/treeowner/plantingatree>

International Society of arboriculture-How to Plant Trees https://www.treesaregood.org/portals/0/docs/treecare/New_TreePlanting.pdf

Good summary of everything we talked about--and more!

<https://cmg.extension.colostate.edu/wp-content/uploads/sites/59/2020/01/GN-630-Tree-Planting.pdf>

Tree Myths Debunked https://www.treesaregood.org/portals/0/docs/newsroom/SevenMythsDebunked_Feb13.pdf

Sunscald injury <http://pubs.cahnrs.wsu.edu/publications/pubs/fs197e/>

24 ways to kill a tree <https://asdevelop.org/wp-content/uploads/2018/03/24-Ways-to-Kill-a-Tree.pdf>

Caring for your tree or shrub

Choosing the right tree <https://www.treesaregood.org/treeowner/choosingtherighttree>

Tree selection and placement <https://www.treesaregood.org/portals/0/docs/treecare/TreeSelection.pdf>

New Tree Planting https://www.treesaregood.org/portals/0/docs/treecare/New_TreePlanting.pdf

Why topping hurts trees <https://www.treesaregood.org/portals/0/docs/treecare/WhyToppingHurts.pdf>

Trees and your lawn https://www.treesaregood.org/portals/0/docs/treecare/Trees_Turf.pdf

Pruning young trees https://www.treesaregood.org/portals/0/docs/treecare/Pruning_YoungTrees.pdf

Pruning older trees https://www.treesaregood.org/portals/0/docs/treecare/Pruning_MatureTrees.pdf

Avoiding tree/utility conflicts https://www.treesaregood.org/portals/0/docs/treecare/Avoiding_Conflicts.pdf

Proper mulching techniques <https://www.treesaregood.org/portals/0/docs/treecare/ProperMulching.pdf>

Plant health care <https://www.treesaregood.org/portals/0/docs/treecare/PlantHealthCare.pdf>