



Take It All Off!

The Bare-root Method of Installing Trees and Shrubs

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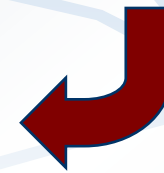
Why do so many transplants fail?

Poor quality roots

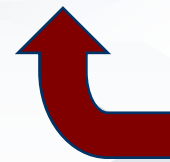


Improper soil management

Poor Root Establishment



Inadequate root preparation



Installed too deeply

Circling roots in the container...



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...will continue to circle in the landscape



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Tree
buried too
deeply in
nursery...



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...will likely
be planted
too deeply
as well

Improperly installed *Rhododendron*



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Year 2 - Declining



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Year 3 - Surviving, not thriving



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Year 4 - Now with competition!



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Close up - chronic drought



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B&B tree looks healthy...



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...but under burlap there's
another story



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Root washing reveals 10” difference in grade



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Chronically stressed street tree

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Leaves are water stressed - but why?



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Deeply buried tree has no storage or structural roots



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Site preparation

◆ *Do not dig a hole!*

◆ Do not amend soil!

You have to see the roots to dig a proper hole



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Site preparation

◆ Do not dig a hole!

◆ *Do not amend soil!*

Roots need native soil to establish - not artificial, amended conditions



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In several years amended soil subsides



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Severe subsidence suspends roots in midair



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And here it is post-windstorm



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Site and root preparation

- ◆ Be sure to have adequate water on site
- ◆ Be sure to have organic mulch on site

Work in a shaded, cool area with ready access to water



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Remove all containers and other foreign materials from the roots



Using a hose or a water bath, remove all soil from the roots



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Let root balls soak for several hours if they are too dry to work



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Work out clumps of soil from between the roots using your fingers.



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Bare-root plant is ready to install



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Media removal is especially important for pot-bound materials



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Use a cement mixing tray...



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...or a wheelbarrow...



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...or a large tub for soaking roots



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Bare-rooting trees...

- ◆...eliminates barriers
- ◆...allows for root correction
- ◆...ensures planting at grade
- ◆...enhances root growth
- ◆...improves tree survival

Prune excessively long and defective roots



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Problem roots exposed after removing B&B clay soil



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Roots correctively pruned before installation

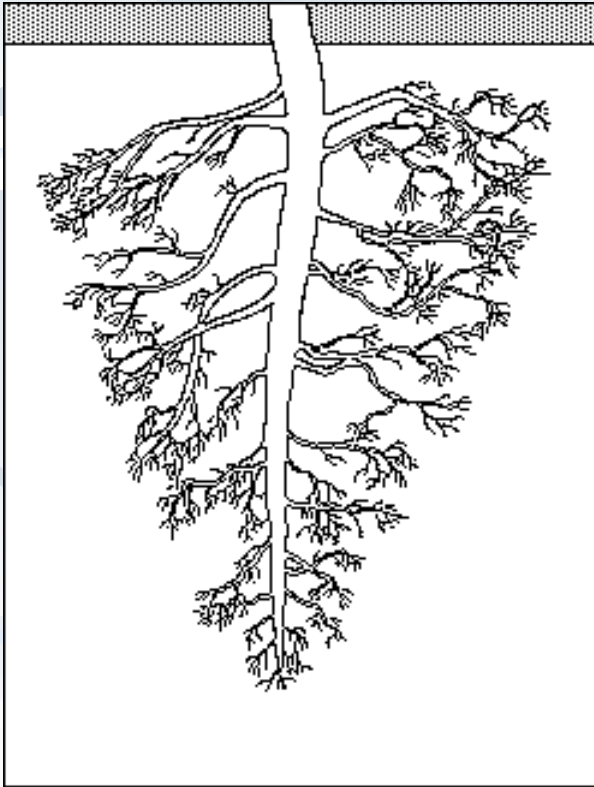


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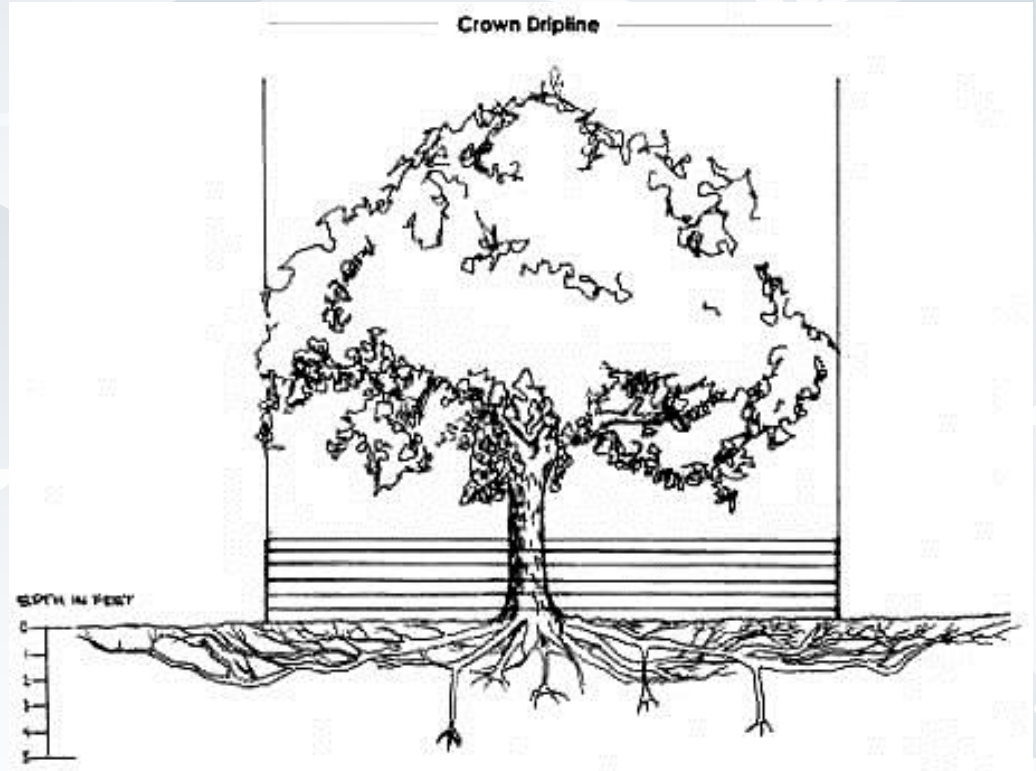
Installation

Dig a shallow hole only as deep as the root system and at least twice as wide

The reality of tree root systems



Old view



Realistic view

“Real” trees are
not carrots



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In the center, form a soil mound to support the root crown



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Installation

Arrange the roots radially over the mound and backfill with the same soil that came out of the hole.



Installation

Water in using the water from root washing, which will contain nutrients and microbes.



Installation

Add soil as holes develop. Gently firm the soil using your hands, not your feet.



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Add a nitrogen fertilizer (no phosphorus) as a top dressing



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Aftercare



Mulch all disturbed soil with 4" of coarse organic mulch up to, but not touching, the trunk.

Aftercare

If necessary, stake trees
and shrubs low and loose
for no longer than one
year

Evergreen trees often need staking, while deciduous trees may not



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High stakes:
Tightly staked
tree puts
resources into
height, not
girth

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Staking
materials left
on too long
will girdle
and kill the
tree

Trees without taper cannot stand without support



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Or their
crowns many
just snap off

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Aftercare

Water your tree well during the first year of establishment. You have removed a good portion of the root system and its ability to take up water and nutrients will be temporarily impaired.

Even drought tolerant species will die if not irrigated during root establishment



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Aftercare

Keep it simple and natural:
do not crown prune or add
expensive, but pointless,
transplant supplements

The background of the slide features a stylized, light blue and white illustration of several large, overlapping leaves. The leaves have prominent veins and are arranged in a way that creates a sense of depth and texture. The overall color palette is soft and natural, with various shades of blue and white.

Success Stories

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Deeply buried B&B tree...



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...is establishing well



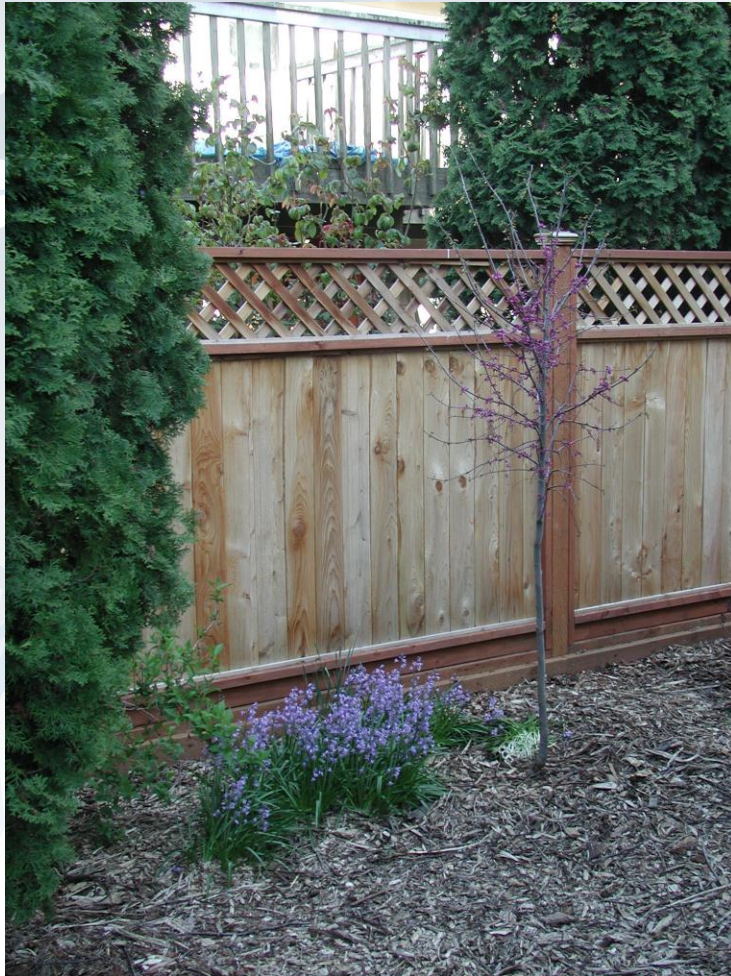
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Corrected roots...



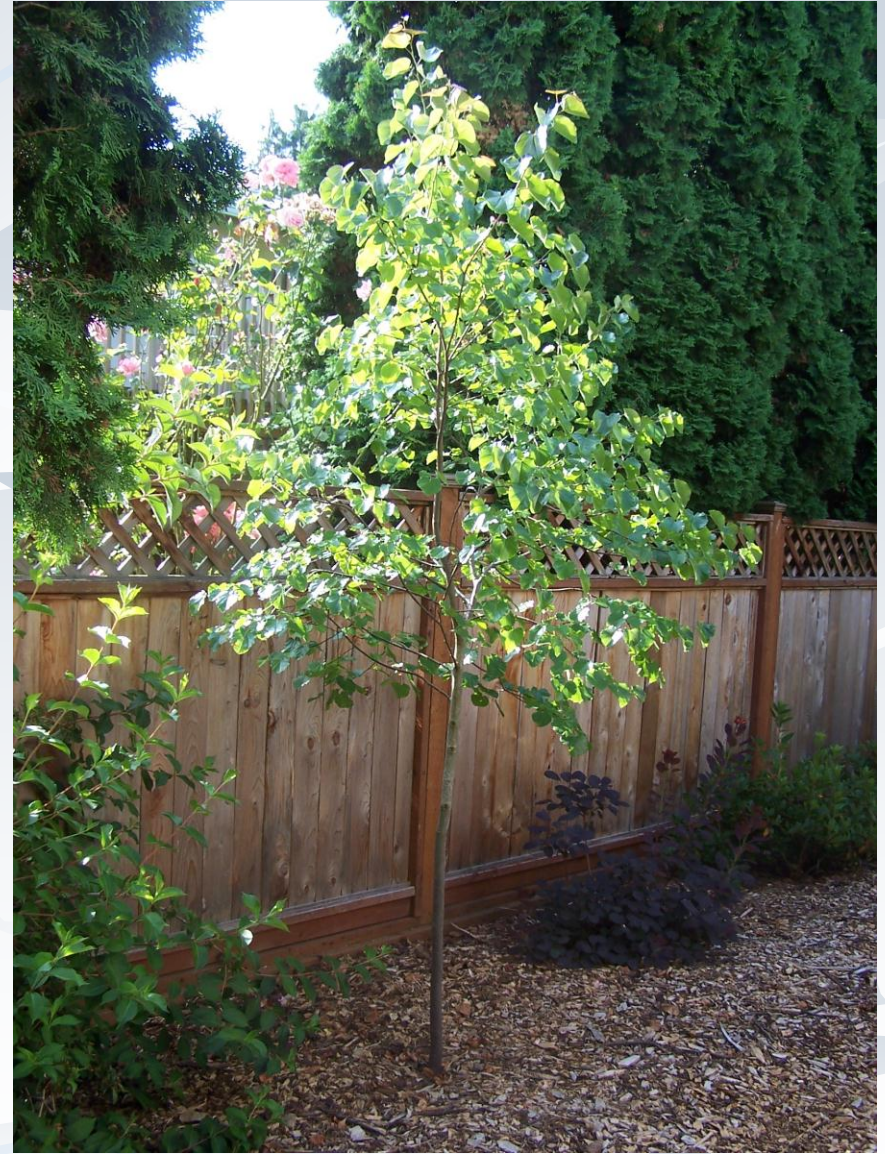
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...allow for successful tree establishment in 3 months



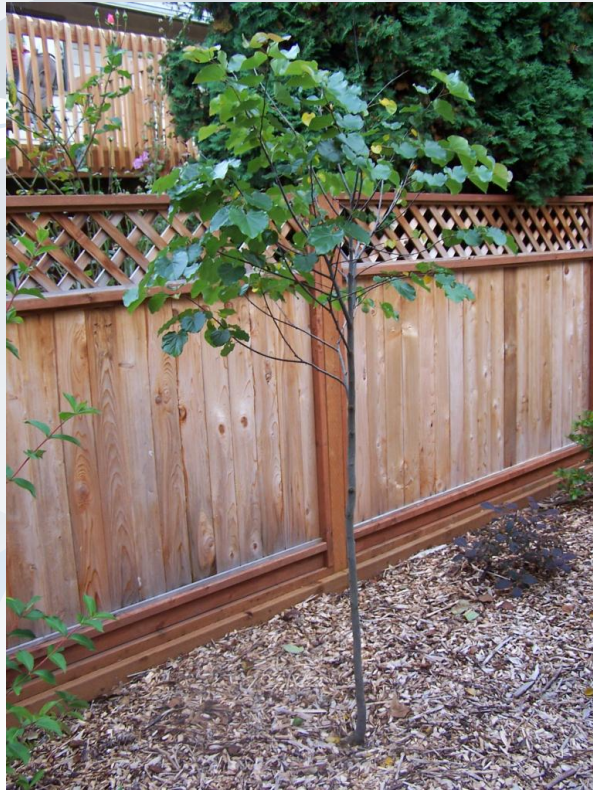
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Same tree 2 years later



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Same tree 3 years later



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Bare root Douglas fir...



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...has successfully established 4
years later



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