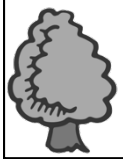
Woody Landscape Plants

Tree Planting



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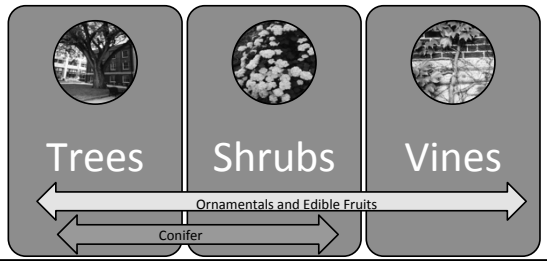
Woody Plants



Woody Landscape Plants Chapter

This Lecture

- About woody plants
- Purchasing…
- Planting…
- Care of…
- Pruning…

On Your Own

- Selection factors
- Growth habits
- Function
- Designing for mntce.
- Care of established…
- Woody vines
- Disease, insects and other…

Woody Landscape Plants Module

- http://blogs.ces.uwex.edu/mgvlevel1/
  - More resources including:
    - Planting
    - Pruning
    - Selection
    - And more!

WHAT IS A TREE?

What is a tree?

Woody tissues
Primary & Secondary Growth
Perennial
Large in size
Able to compartmentalize

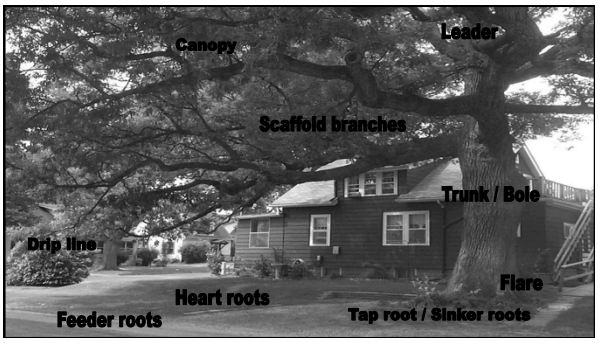
Where do trees normally grow?

Forests
Savannahs
Other environments

What's the difference between a tree and a shrub?

Tree: typically single stemmed
Shrub: typically multi stemmed
Both are woody plants

TREE BIOLOGY OVERVIEW



Anatomy

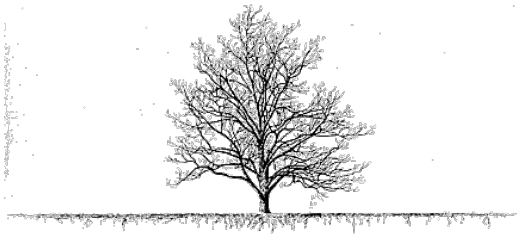
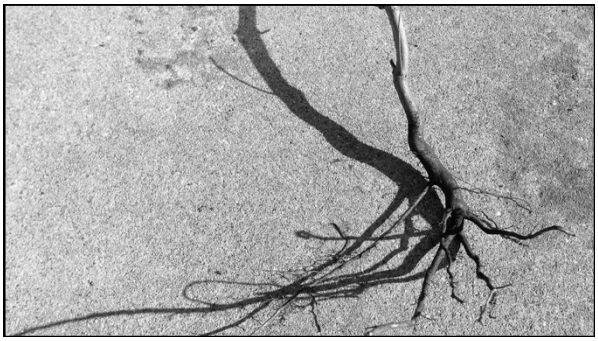
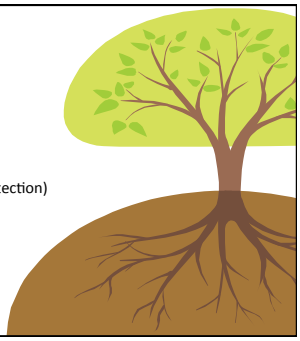


Image originally from Morton Arboretum http://www.mortonarb.org/



Physiology

- Canopy (leaves)
  - Photosynthesis (leaves)
  - Needs $CO_2 + O_2$
- Trunk (and branches)
  - Structural support / bark (protection)
  - Move H_2O + Nutrients
  - Store CHO
- Roots
  - Anchor
  - Absorb H_2O + Nutrients
  - Needs O_2



BENEFITS OF TREES

Benefits of Trees

Environmental
- Energy savings
- Storm water mitigation
- Carbon sequestration
- Wildlife habitat

Social
- Decrease crime

Health
- Reduced physical and mental stress

Economic
- Increased property values
- Benefit to business

TREE PROBLEMS

Average Urban Tree Age

"Urban trees reach maximum potential for environmental benefits after age 30, but the average life-span of a downtown urban tree is less than 10 years."

USDA Forest Service
http://na.fs.fed.us/spfo/pubs/uf/briefs98/ufassess.htm

Tree Problems

Insects

Eastern tent caterpillar on crabapple

Diseases

Anthracnose on green ash

Wrong tree for this location

Silver maple tree outgrowing space between sidewalk and street

Wrong tree for this location

These willows conflict with overhead power lines

A few common signs and symptoms of tree problems

Early fall coloration, canopy thinning

A few common signs and symptoms of tree problems

Frost crack and sucker sprouts

A few common signs and symptoms of tree problems

Girdling roots

A few common signs and symptoms of tree problems

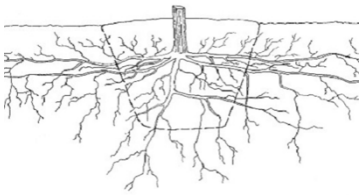
Increased likelihood of blowover

There can be many, MANY more problems, signs and symptoms with our trees…

PLANTING

'Old Way'

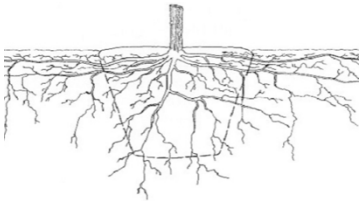
Research has shown this method of planting will lead to tree health problems.



'Old Way'

Trunk tissue below ground
Root system lacks oxygen
Tree will die or adapt

Thinning canopies and dieback



'New Way'

Align root flare of tree with natural soil grade
Trunk will be above ground
Roots have necessary oxygen

Root flare

Bell shaped part of trunk transitioning from trunk to root tissue

Planting materials

- Bareroot
- Ball & Burlapped (B&B)
- Container grown

Bareroot

- PRO:
  - Lightweight
  - easy to find root flare
  - assess root system health
- CON:
  - tree must be dormant
  - reduced planting time
  - limited selection

Ball & Burlapped

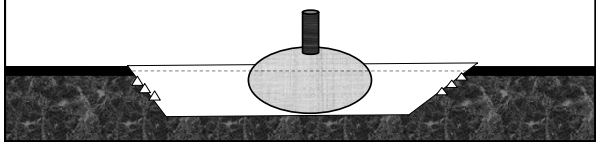
- PRO:
  - Wide selection
  - Large trees
  - large window to plant
- CON:
  - HEAVY
  - Expensive
  - Difficult to find root flare

Containerized

- PRO:
  - Wide selection
  - Relatively cheaper
  - Large window to plant
- CON:
  - Circling roots
  - Difficult to get to root flare

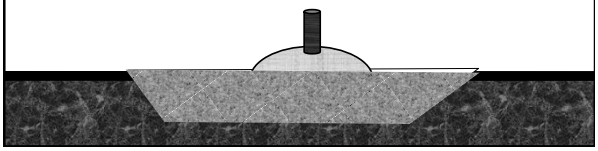
How to dig a hole

- Dig hole 3-5x bigger than root system
- Dig hole deep enough to put root flare at the natural soil grade or 1-2" higher
- Slope & roughen sides of planting hole
- Leave bottom of hole undisturbed

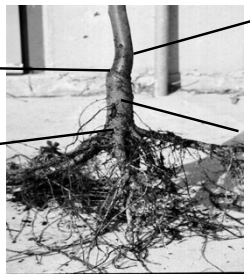


How to fill a hole

- Back fill with soil native to the site
- Do not add amendments or fertilizer
- Gently firm in soil with hands
- Water to remove large air pockets



Bareroot



Bareroot

How to dig a hole: bareroot

Image via WI DNR

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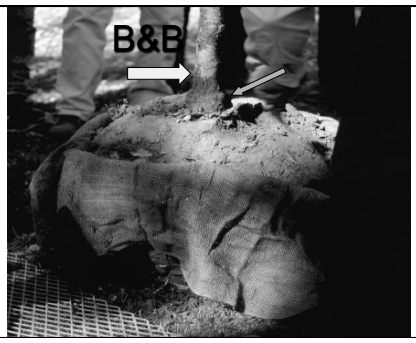

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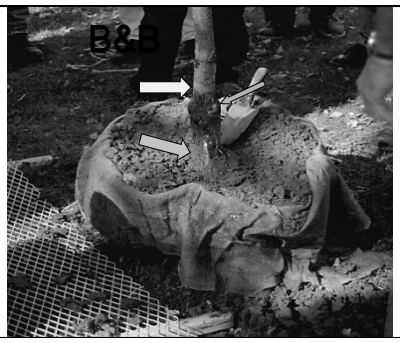

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How to dig a hole: b&b

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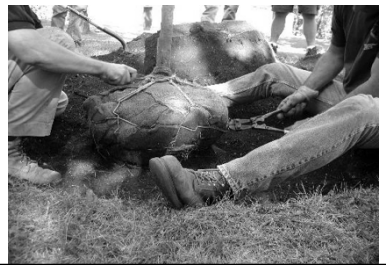
How to dig a hole: b&b



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How to dig a hole: b&b

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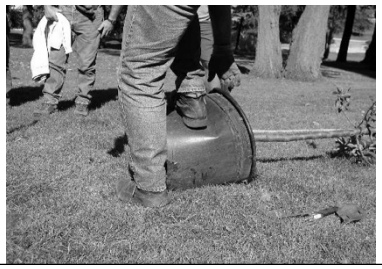
How to dig a hole: containerized



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Containerized

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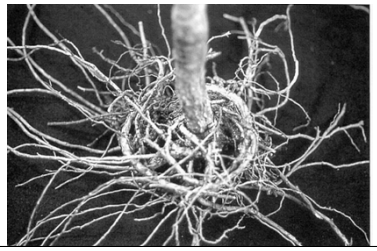
How to dig a hole: containerized



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Intro to Woody Plants

SHRUBS

Shrubs

POST-PLANTING

Post Planting Care

- Water
  - Provide trees with 1-2" of water per week for first growing season
  - Drip hose, lawn sprinkler…
  - Transplant Shock
    - 1" = 1 Season
    - 2" = 2 Seasons
    - And so on…

Post Planting Care

- Staking
  - Especially important for bareroot
  - Secure tree loosely
  - Drive stakes outside root system
  - Wide straps best
  - <u>Remove after one growing season</u>

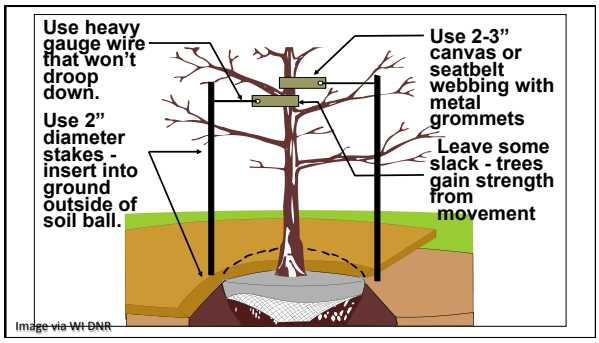

Image via WI DNR

Mulching Trees & Shrubs

- Mulch Material: What make a good mulch?
  - Texture (medium textured best)
  - Nutrient value (organic)
  - Availability
  - Aesthetics

Post Planting Care

- Tree Wrap
  - Used to protect trees during transportation
  - Sometimes useful to protect against animal damage
  - REMOVE!

Post Planting Care

- Pruning
  - Only remove damaged branches at time of planting
  - Designate 'temporary branches' for eventual removal
- Fertilization
  - Not necessary

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TREE PLANTING SUMMARY

Tree Planting Summary

- Right plant, right place.
- Take the time to plant it correctly.
- Be mindful of the roots.
- Stake if necessary.
- Water. Water. Water.
- Prune only broken, diseased branches.
- Forget the fertilizer.