100 Trees Initiative

Tree Guild

February 17, 2024

AGENDA

Forum

Right Tree Right Place: Intro to Species Selection

iTree Tools

Urban Forestry Around the World.....Sponge Cities

Local Species Highlight.....Quaking Aspen

Tree Biology 101

Introduction to Young Tree Pruning

Volunteering Opportunity

Pruning New Trees on Pelham Blvd

Right Tree Right Place

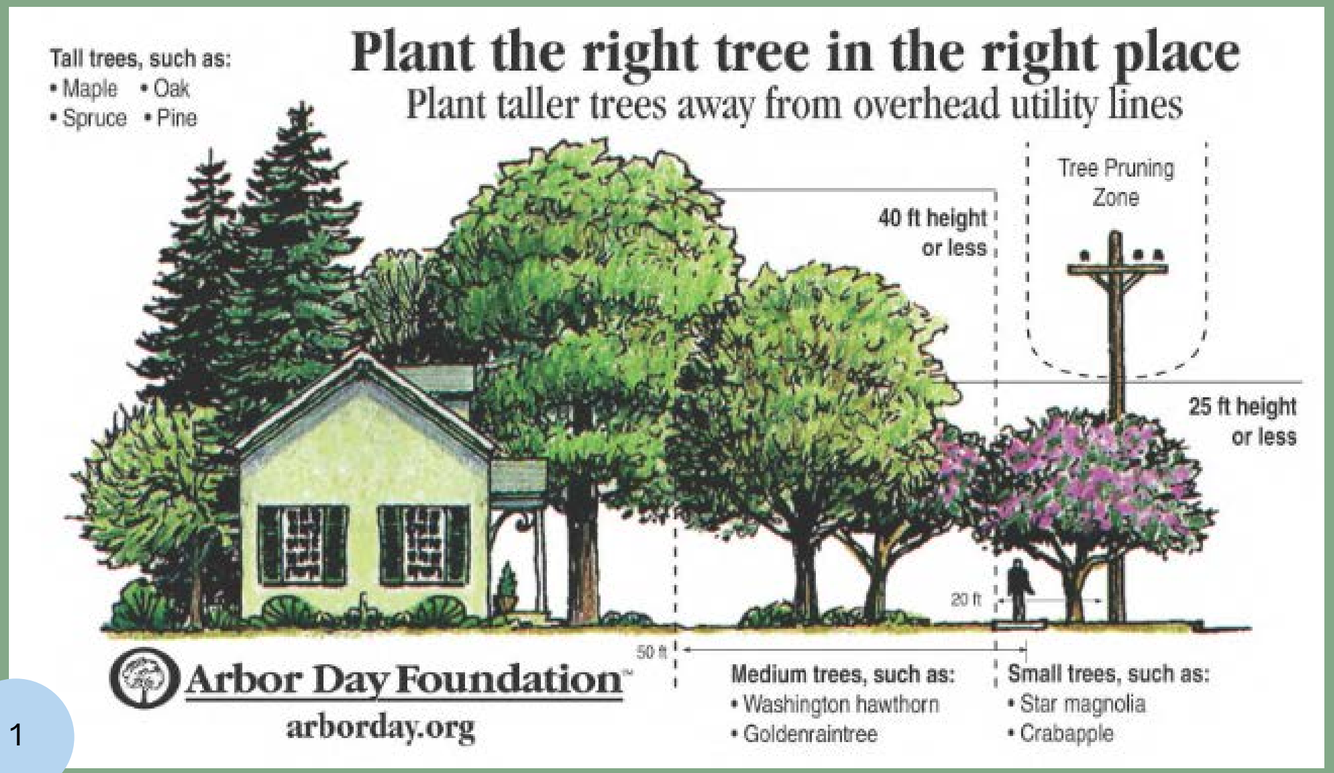
Intro to Species Selection

Identify what's nearby to Prevent later conflicts

Large Trees:
40+ ft. tall

Medium Trees:
25-40 ft. tall

Small Trees:
10-25 ft. tall



Avoid planting too close :

Property lines
Building foundations
Impermeable pavement
Underground utilities

Call Before You Dig

Tree Spacing

By mature tree width

Public Right-of-way (ROW):

Usually within 10 ft. of street
Often require a permit to plant/prune/remove

Municipal Planting Clearances:

Required distances from intersections, traffic signage, etc. in order to plant in ROW

Different city-by-city.

Right Tree Right Place

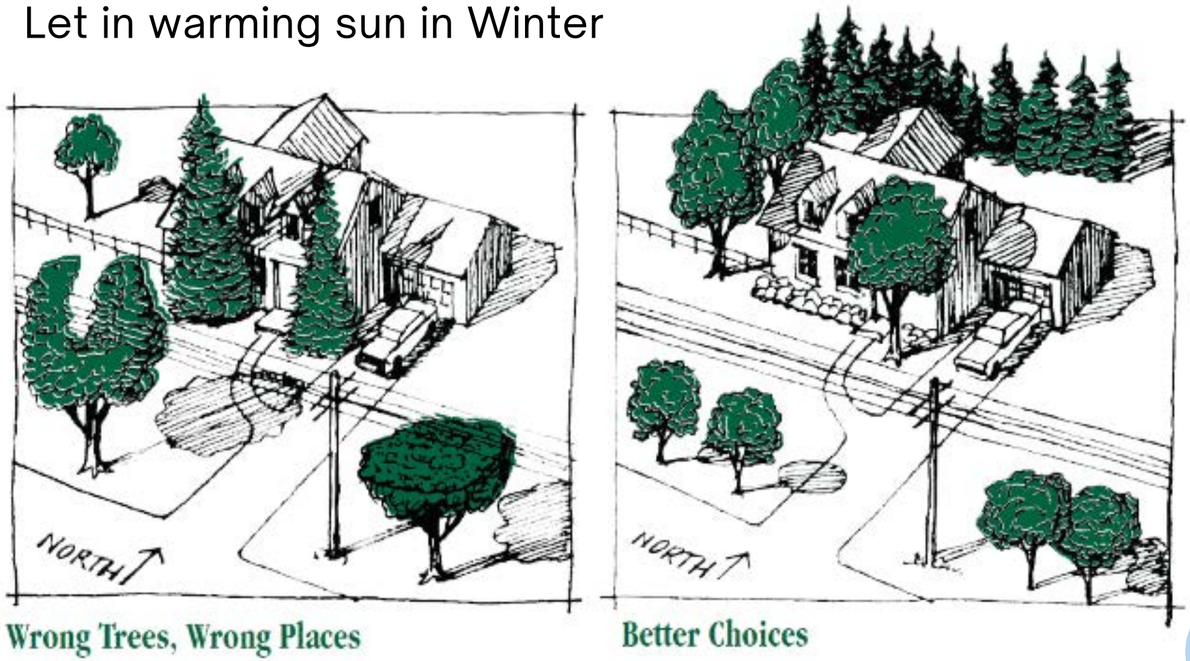
Consider site characteristics
What can't be changed?

Plant Evergreens North
Block cooling winds

Plant Deciduous South/West
Shade building in Summer,
Let in warming sun in Winter

Sun exposure

Full sun ---------- 6+ hr
Part sun/shade --- 4-6hr
Full shade ---------- <4hr



Wrong Trees, Wrong Places | Better Choices

Note the Microclimate

Heat islands/ reflected heat?

Windy?

Cold/frost pockets?

Polluted air or soil?

Road Salt Exposure

Salt Spray can cause "witches broom", but isn't typically an issue near roads with speed limits below 35 mph

Soil Salt limits nutrient uptake

Temporary spikes
Near salted sidewalks, snow piles, etc.

Right Tree Right Place

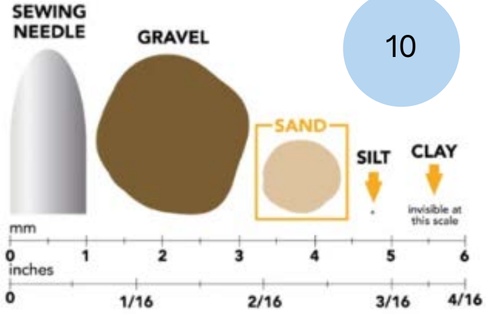
Consider site characteristics
What can't be changed?

Soil Characteristics

Composition/Texture

At-home soil testing

Link to video



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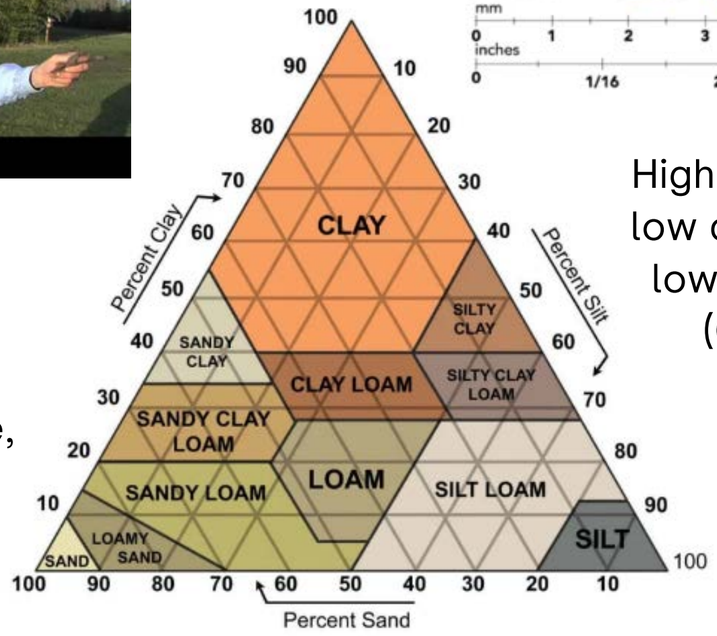
High nutrient-low drainage, low aeration (Clay/silt)

Low nutrient-high drainage, high aeration (Sandy)



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Soil Volume

Some cities have required soil volume minimums.

St. Paul Requires a boulevard to be 4ft. wide for a street tree to be planted there.

Tree growth can vary with available soil quantity.

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Research suggests trees require
1-3 cubic feet of soil per square foot of crown projection

Choose smaller trees when less soil is available

Right Tree Right Place

Consider site characteristics
What can't be changed?

Soil Characteristics

[USGS Web Soil Survey] - find local soil characteristics

[Tutorial on how to use the Web Soil Survey to find pH in your local area]

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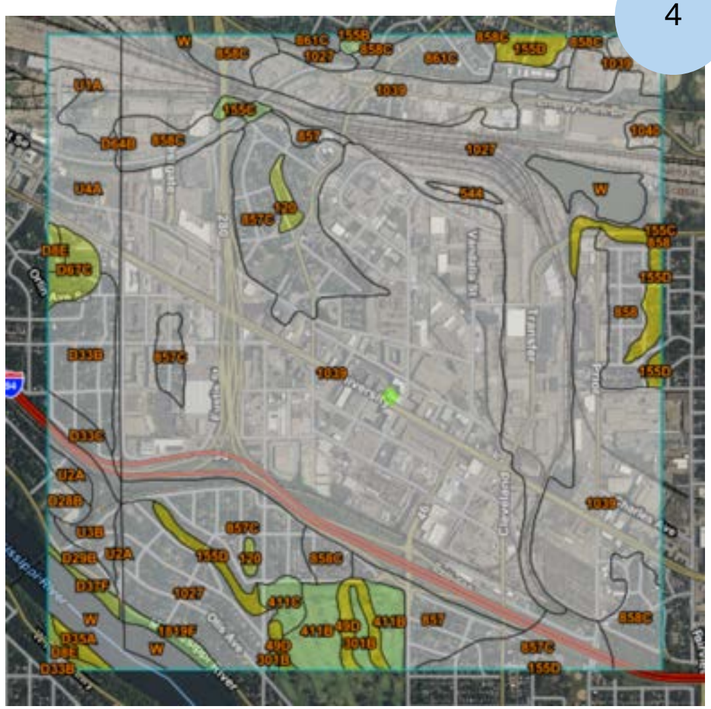


Many urban soils are Alkaline

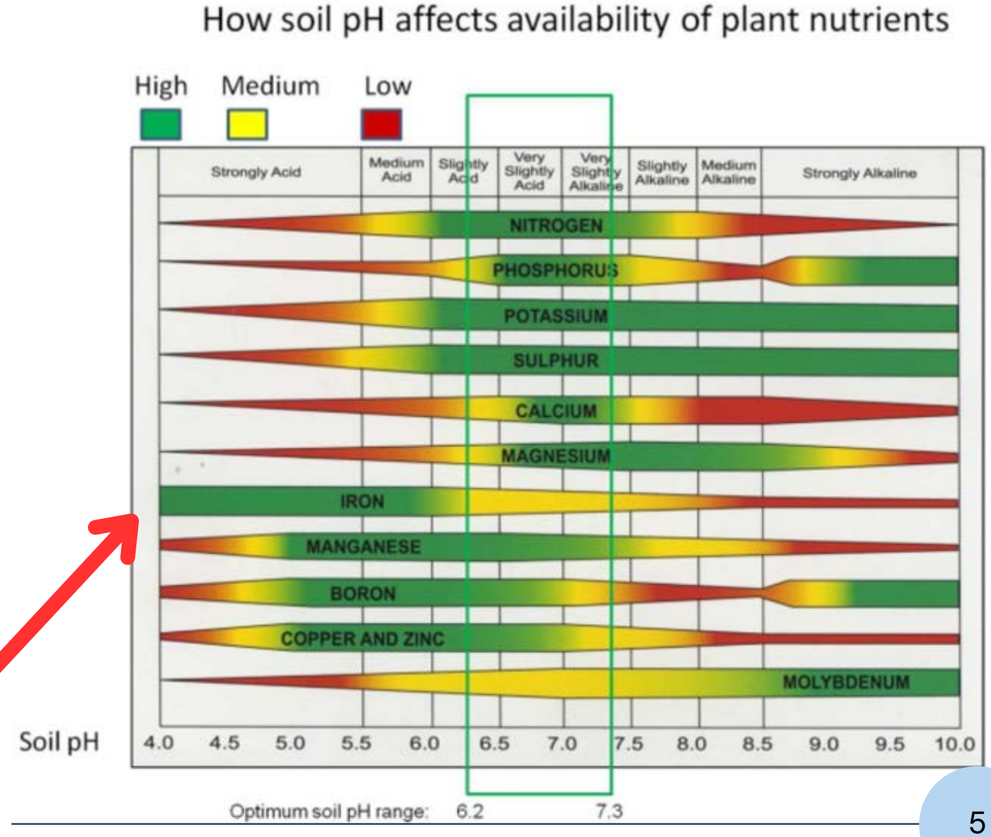
Some trees prefer alkaline (basic) soils

Some trees prefer acid soils

Some tolerate both

Alkaline soil reduces iron availability, which can lead to leaf yellowing (chlorosis)

pH



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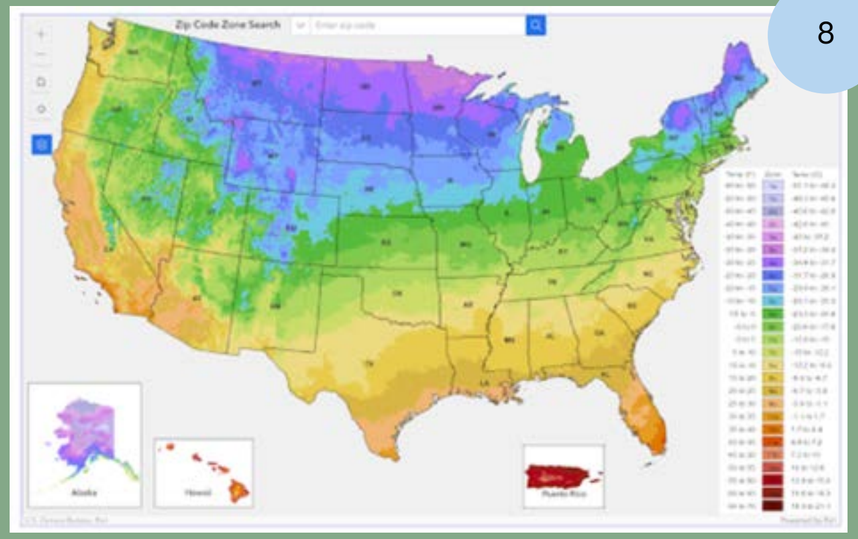
Right Tree Right Place

Consider Species Characteristics



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Plant Hardiness Zone

https://planthardiness.ars.usda.gov/

Hardiness zones are based on expected lowest temperatures for a region. Trees and plants are assigned to these zones based on what temperature conditions they are adapted to grow well under

Climate adaptability

https://forestadaptation.org/sites/default/files/2021-03/TwinCitiesMN_TreeSpeciesVulnerability.pdf

Is the tree predicted do perform well in low or high emissions climate change scenarios?

Ecological Benefits?

Highest ----------> Lowest
Native -> Nativar -> Hybrid -> Foreign

Water needs

Drought tolerant?

“Messiness”

Fruit, sap, leaves, pollen...

Maintenance

Frequent pruning required?

Color/interest

Foliage, Flowers, Fruit, Bark

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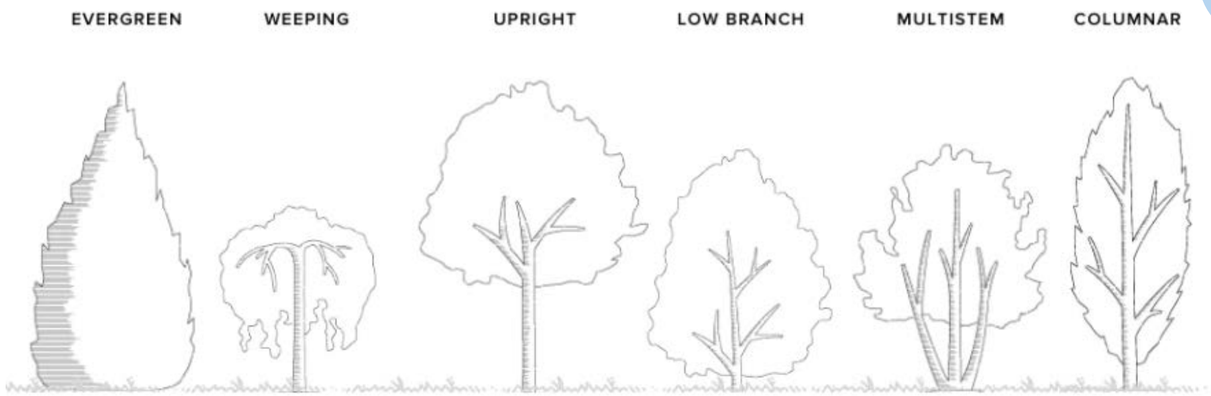


What is the mature form/width?

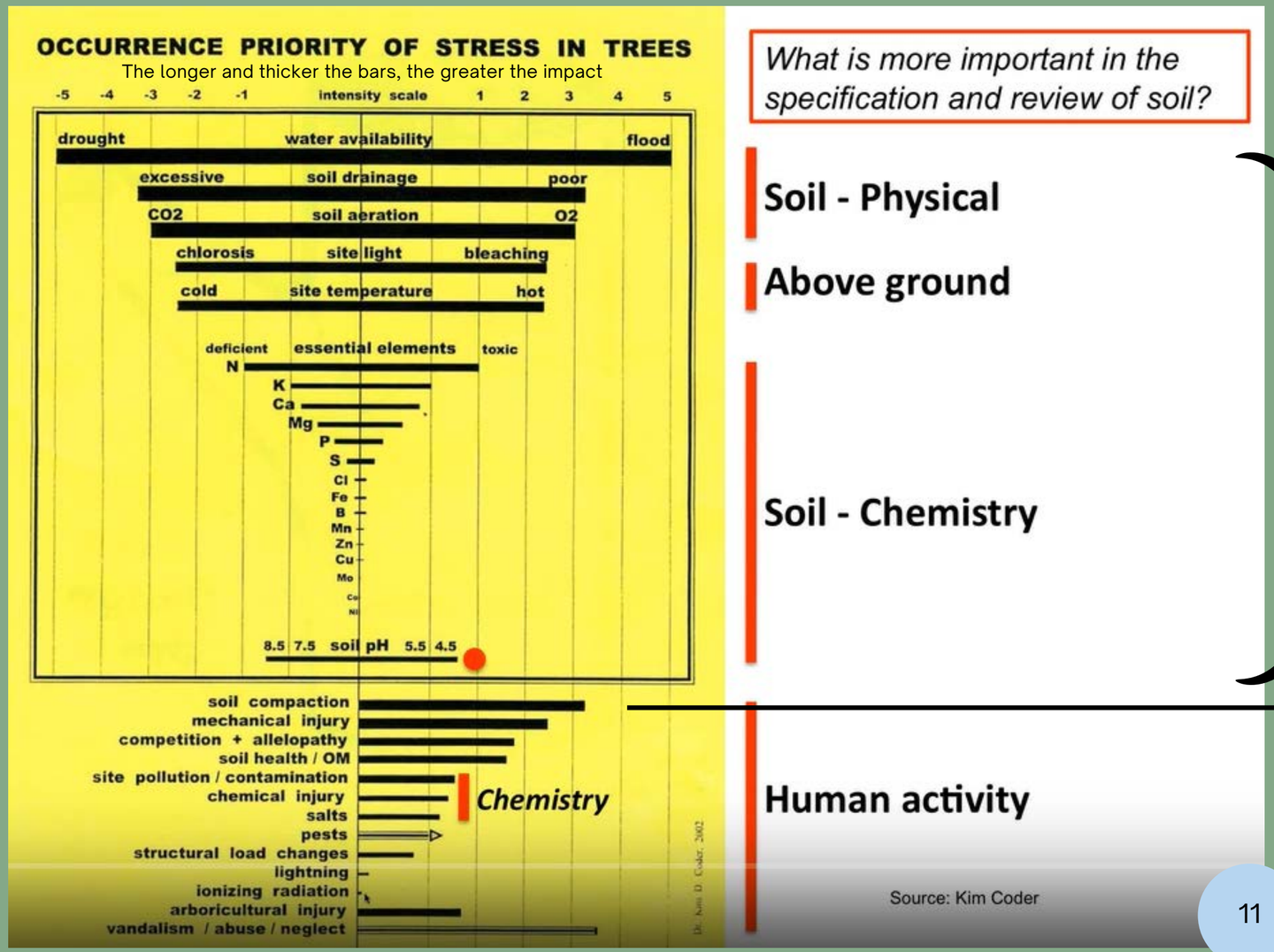
Where will it fit? Measure the available space!

Think of the width at maturity, not at planting!

Is it meant to fill tight spaces, provide a wind break or screen, or maximize shade provision?

Right Tree Right Place

Bringing it all Together



At a minimum, consider:

Site surroundings
Tree size/form

Sun exposure
Hardiness
Soil drainage
pH

Dig a wider hole at planting and mulch the site regularly to build organic matter

https://georgiaarborist.org/Resources/Educational%20articles-stuff/Dr.%20Coder%20Soil%20Compaction%20Monograph.pdf

Tree Selection Tools

Bringing it all together

[Site Assessment Checklist](https://www.bbg.org/pdf/treesite.pdf) -
https://www.bbg.org/pdf/treesite.pdf

Site Assessment and Planning Checklist for New Tree Plantings

Location _____ Date _____
Side of house (north, south, northeast, etc.) _____ Hardiness zone _____
Microclimate windy _____ frost pocket _____ reflected heat _____ other _____
Irrigation system ☐ Y ☐ N Supplemental irrigation ☐ Y ☐ N Average rainfall _____
Light levels full sun _____ partial shade _____ full shade _____
Are there existing trees or plantings? ☐ Y ☐ N
Species _____ Size _____ Condition (good, fair, poor) _____

Above-Ground Space Available
Distance from other plantings & trees _____
Distance from buildings/structures _____
Distance from neighboring properties _____
Overhead wires ☐ Y ☐ N (If so, how high?) _____

Below-Ground Space Available
Rooting space length _____ width _____ depth _____ (It is important to dig to examine soil.)
Are there stumps or roots from other trees or plantings? ☐ Y ☐ N
Are there any below-ground utility cables or pipes? ☐ Y ☐ N

Soil and Drainage
pH levels _____ Soil texture: clayey _____ loamy _____ sandy _____
Compaction levels before planting: no compaction _____ moderate _____ severe _____
Heavily used area with possible soil compaction after planting? ☐ Y ☐ N
Drainage wet _____ well drained _____ dry _____
Possible use of de-icing salts on site _____ possible soil erosion _____ flooding _____
Noxious weeds _____

Other Soil or Site Problems _____

Installation Considerations
Access to planting site: clear path _____ gates or fences _____ (If so, how big?) _____
Other _____
Vehicle access _____
Will you need to lay plywood to protect turf or soil beds? _____
How much plywood will be needed? _____
If only access is through a building, check door sizes and openings _____
Will you need to add or remove soil from planting site? (If so, how much?) _____

Reprinted from *The Tree Care Primer*, © 2007 Brooklyn Botanic Garden, www.bbg.org/treecareprimer.
Checklist courtesy of the Urban Horticulture Institute, Department of Horticulture, Cornell University.

How to find the right Tree?

At a minimum, consider:

- **Site surroundings**
- **Tree size/form**
- **Hardiness**
- **Sun exposure**
- **Soil drainage**
- **pH**

[Morton Arboretum Plant Search](https://mortonarb.org/plant-and-protect/search-trees-and-plants/)
https://mortonarb.org/plant-and-protect/search-trees-and-plants/

[Arbor Day Foundation Tree Wizard](https://www.arborday.org/shopping/trees/treewizard/GetZip.cfm)
https://www.arborday.org/shopping/trees/treewizard/GetZip.cfm

[Creative Enterprise Zone Urban Tree Selector](https://lookerstudio.google.com/reporting/10f3ffca-efda-462d-b9db-a16f7b02dad5)
https://lookerstudio.google.com/reporting/10f3ffca-efda-462d-b9db-a16f7b02dad5

Tree Lists

Beware the type and quality of Tree Stock

Guide 1 Guide 2

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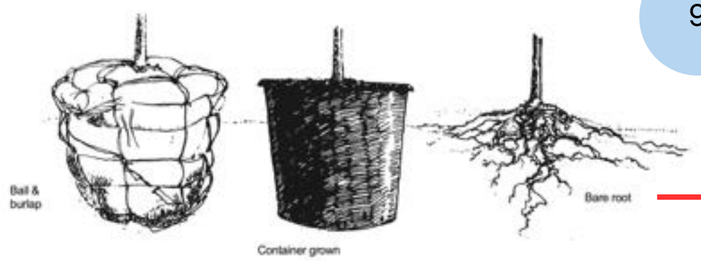

After planting, trees need weekly watering during the “establishment” period
Establishment period = 1 year per inch trunk diameter at planting

[St. Paul Recommended Street Trees (2024)](https://www.stpaul.gov/sites/default/files/2023-12/2024%20STP%20Blvd%20Tree%20Species%20List.pdf)
https://www.stpaul.gov/sites/default/files/2023-12/2024%20STP%20Blvd%20Tree%20Species%20List.pdf

[Climate Change Vulnerability (2017)](https://forestadaptation.org/sites/default/files/2021-03/TwinCitiesMN_TreeSpeciesVulnerability.pdf)
https://forestadaptation.org/sites/default/files/2021-03/TwinCitiesMN_TreeSpeciesVulnerability.pdf

[Salt Sensitivity (1995)](https://conservancy.umn.edu/bitstream/handle/11299/93996/1413.pdf?isAllowed=y&sequence=1)
https://conservancy.umn.edu/bitstream/handle/11299/93996/1413.pdf?isAllowed=y&sequence=1

[Bare root Tree Gravel Bed Suitability (2018)](https://trees.umn.edu/sites/trees.umn.edu/files/files/general/gravel_bed_suitability_ratings_for_trees_and_shrubs_-_university_of_minnesota_2006-2018.xlsx_-_sheet1-3.pdf)
https://trees.umn.edu/sites/trees.umn.edu/files/files/general/gravel_bed_suitability_ratings_for_trees_and_shrubs_-_university_of_minnesota_2006-2018.xlsx_-_sheet1-3.pdf

Sources

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3.https://kremesti.com/water/silt_clay_mud.htm
4.Screenshot from
5.https://ucanr.edu/sites/Salinity/Salinity_Management/Effect_of_salinity_on_soil_properties/Effect_of_pH_sodicity_and_salinity_on_soil_fertility_/
6. https://issuu.com/caseytrees/docs/tree_space_design_report
7.https://bowerandbranch.com/pages/size-guide
8.https://planthardiness.ars.usda.gov/
9.https://www.aces.edu/blog/topics/landscaping/planting-establishing-woody-landscape-plants/
10.https://www.substrata.us/soil-stabilization
11.Screenshot from 6:08 https://www.youtube.com/watch?v=Suae0aCcw6Y&list=UUT_qootiUJRsH6Ksa6KG8DA&t=368s

iTree Tools

itreetools.org

iTree Design

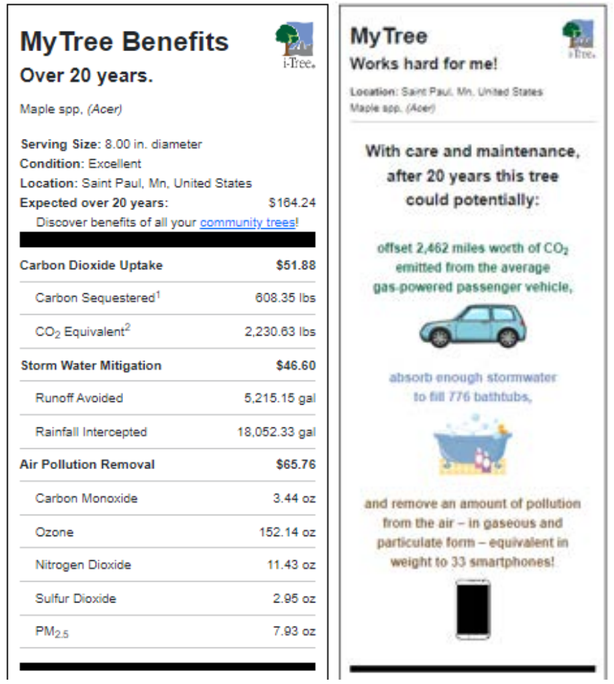
Generates projected ecosystem and energy savings benefits for an expected lifespan of the tree(s)

iTree Design

Shows $ “energy benefits” around existing buildings based on planting location and tree species

MyTree

Provides a simple overview of predicted $ benefits for an individual tree



Free Tree Canopy Analysis Tools

iTree Tools

St. Paul Public Tree Data

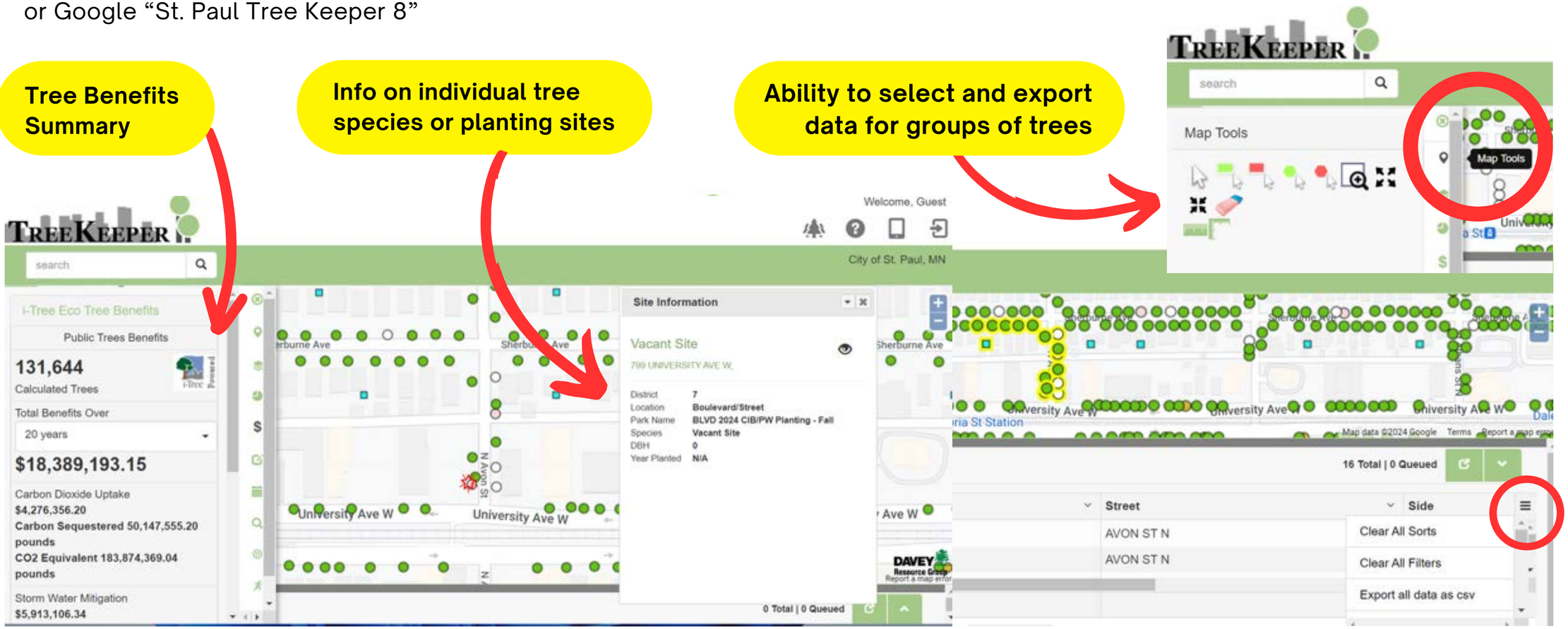
Curious about city tree species, benefits, or planting locations?

St. Paul Tree Inventory is publicly available HERE
or Google “St. Paul Tree Keeper 8”

Tree Benefits Summary

Info on individual tree species or planting sites

Ability to select and export data for groups of trees



Quick note Regarding City Forestry

Forestry Office Contact: 651-266-6400, forestry@ci.stpaul.mn.us

City of Saint Paul Forestry Website

Boulevard Tree Work Permit

Required to Prune, Plant, or Remove
any tree in the public right of way

Ash Tree Removal Map

Shows right of way Ash trees
designated for removal

Unless you are pruning suckers, a permit is required to prune a ROW tree
The work will need to be done by a city-licensed contractor

Trees aren't pruned:

- **To improve a view**
- **Because the canopy blocks a commercial sign or advertisement**
- **To allow more sunlight to reach a solar panel, the ground or gardens, or a TV satellite**
- **Because it interferes with Xcel Energy owned utility lines (call Xcel at 1-800-895-4999 to request pruning)**

Beginning in January 2024, Forestry will begin pruning boulevard trees on a cycle-basis with the assistance of city-hired contractors.

This will mean the discontinuation of most
complaint-based pruning requests with the exception of trees that are blocking a stop sign/stop light, touching a building/structure or which have a structural defect that, based on a professional assessment by Forestry staff, needs immediate attention.

Local Species Highlight

Quaking Aspen (Populus tremuloides)

40-50 ft. Height
20-30 ft. Spread

Green-grey bark with distinct, dark, eye-shaped colorations at branch attachments

Tree can spread aggressively under right conditions

Susceptible to disease in urban environments

Part Shade - Full Sun

Bright yelllow fall foliage

Fuzzy, cotton-like catkins

Bark becomes white with black striations as tree matures

Uses both sides of its leaves for photosynthesis!

Minnesota Native

http://klynnurseries.com/product/populus-tremuloides/
http://ifmlab.for.unb.ca/People/Kershaw/Courses/For1001/Trees/TreeInfo/Bark/tremblingaspenbark.htm
https://trees.umn.edu/quaking-aspen-populus-tremuloides

Sponge Cities

Creating More Resilient Urban Landscapes

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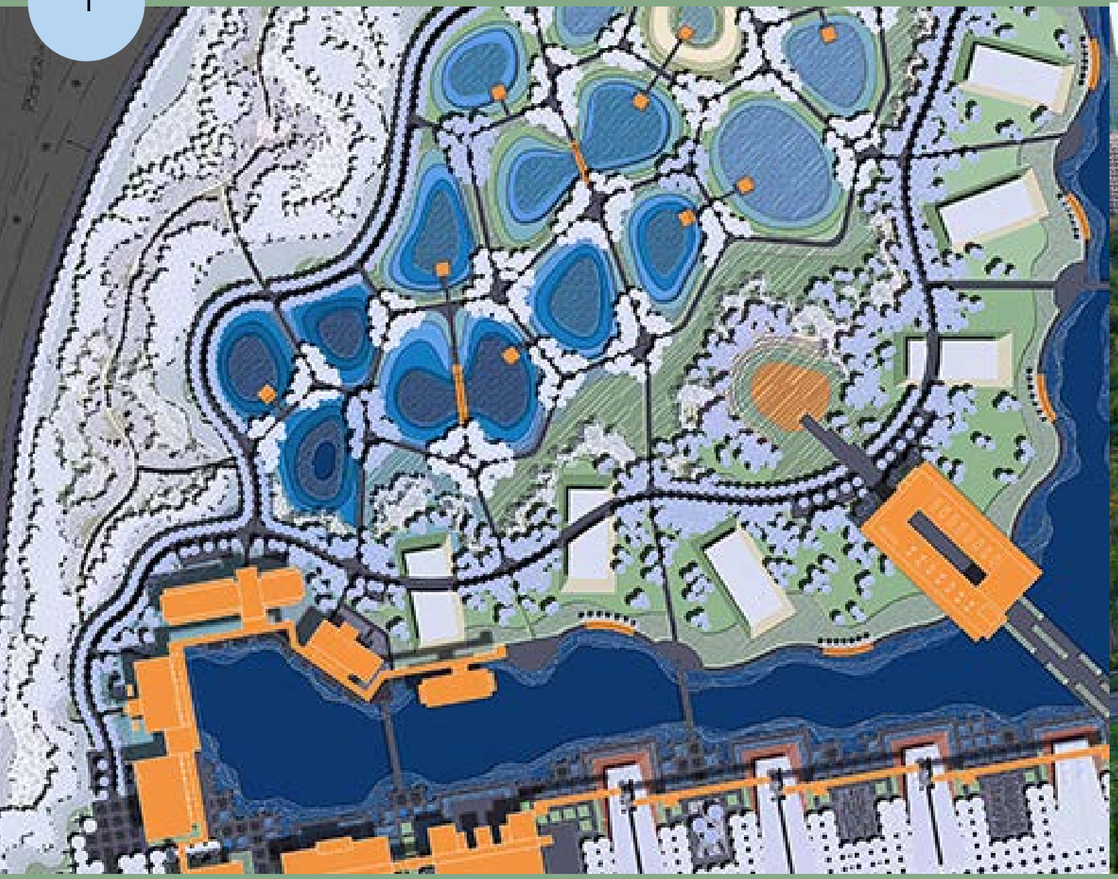

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Sponge Cities

What are they?

Concept coined by
architect Yu Kongjian

Inspired by City Planner
Frederick Law Olmstead and
historic monsoon climate terrace farming

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Yu Kongjian

Monsoon climate
terrace farming

3

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Zhengzhou Dongfengqu
Ecological Cultural Park

https://www.youtube.com/watch?v=nf-Yy3EuZi0

Intended as the opposite of
“gray infrastructure”
which is destined to fail

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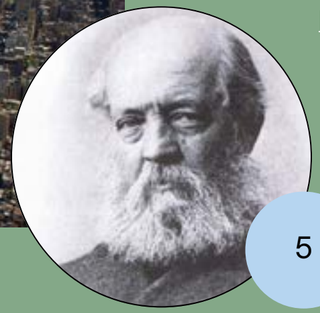

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Central Park, NYC: Frederick Law Olmsted

Uses green space and landscape modification,
(terracing, ponding, islanding)
to slow down and absorb stormwater

Sponge Cities

A matter of scale

Sponge City--> Sponge Country --> Sponge Planet?

City-wide policy

Parks development

Waterfront redevelopment

Popularized in 2015 when Chinese Government Initiated a 30 city pilot program

Expensive, large scale city planning

Climate resiliency in cities worldwide;

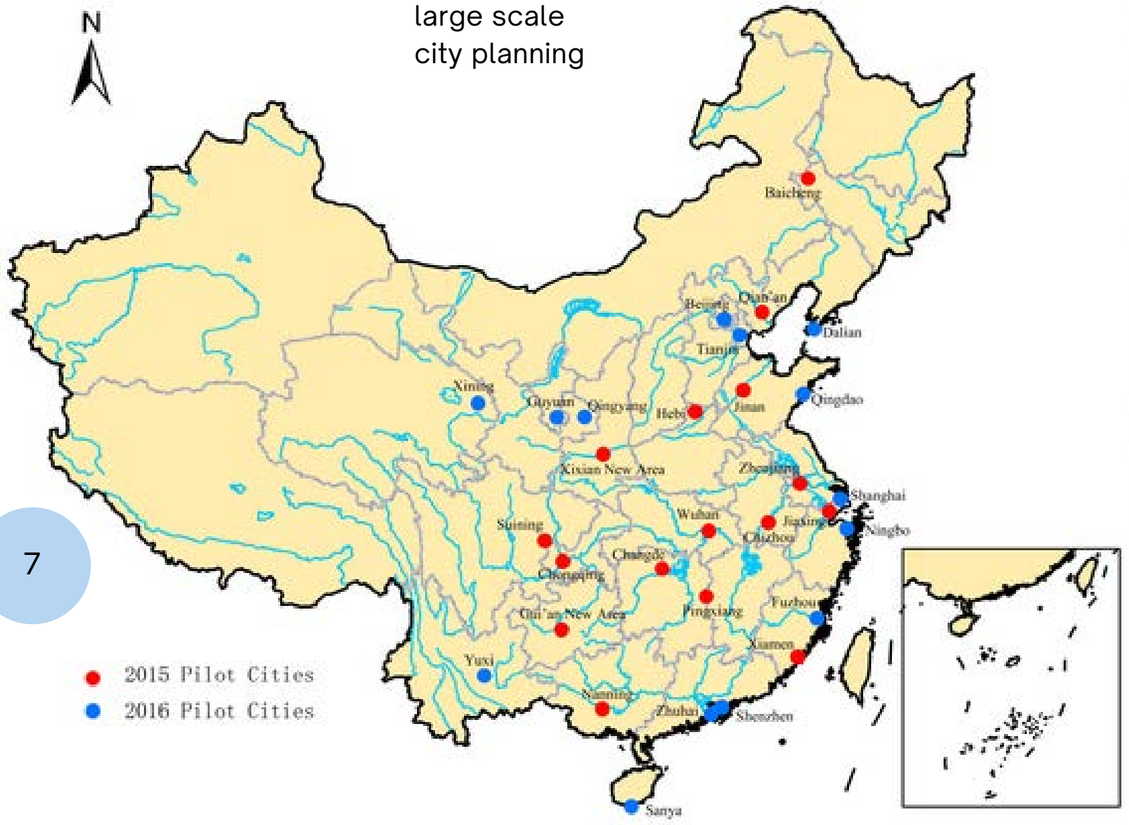
Enhanced protection for natural areas

“Sponge City” is just one call to action for more resilient urban spaces

Habitat/watershed restoration

Green Infrastructure

Nature-based Solutions



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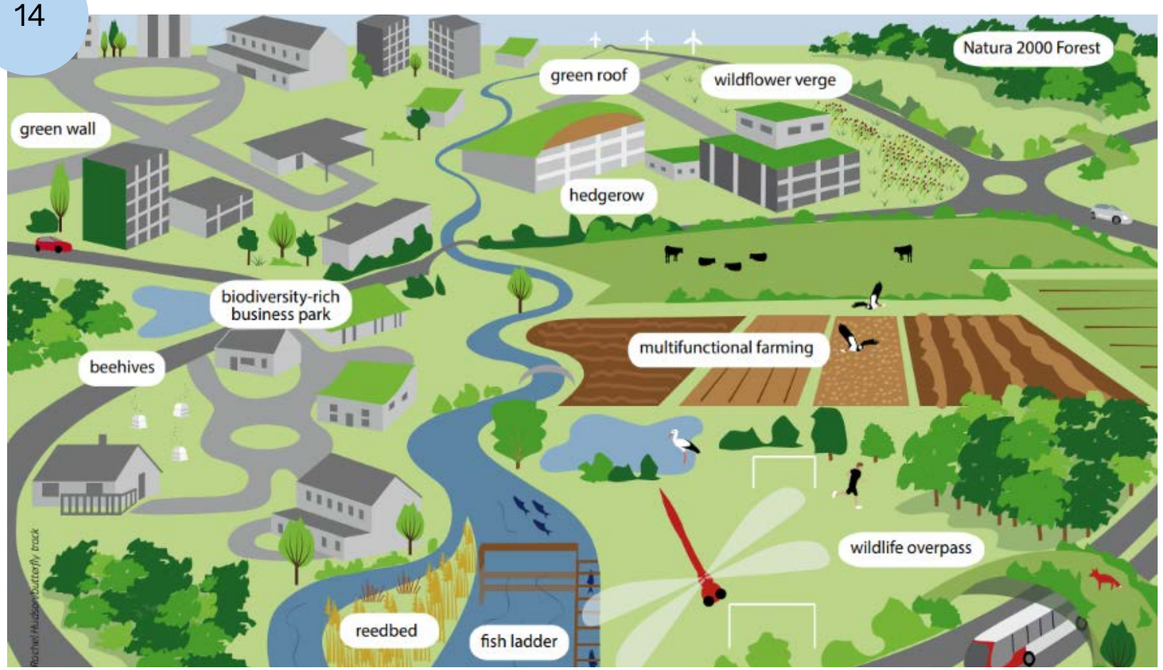

Sponge Cities

Trees intercept, slow down, and absorb stormwater

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River Birch

12

Black Willow

Native, water-hungry trees can be planted to provide with dual ecosystem benefits of water absorption and habitat creation

Where do trees fit in? Designing friendly streetscapes

Urban sites can be difficult for trees that need moist, well aerated soil.

Some solutions include:

Permeable/pervious pavement

Structural soils

Under-pavement soil cells

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Under-pavement Soil Cells

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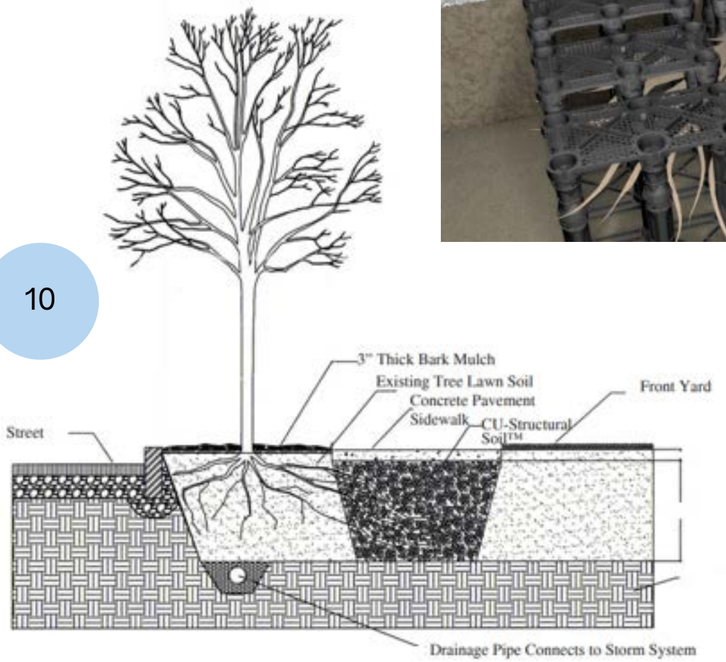


Structural Soils

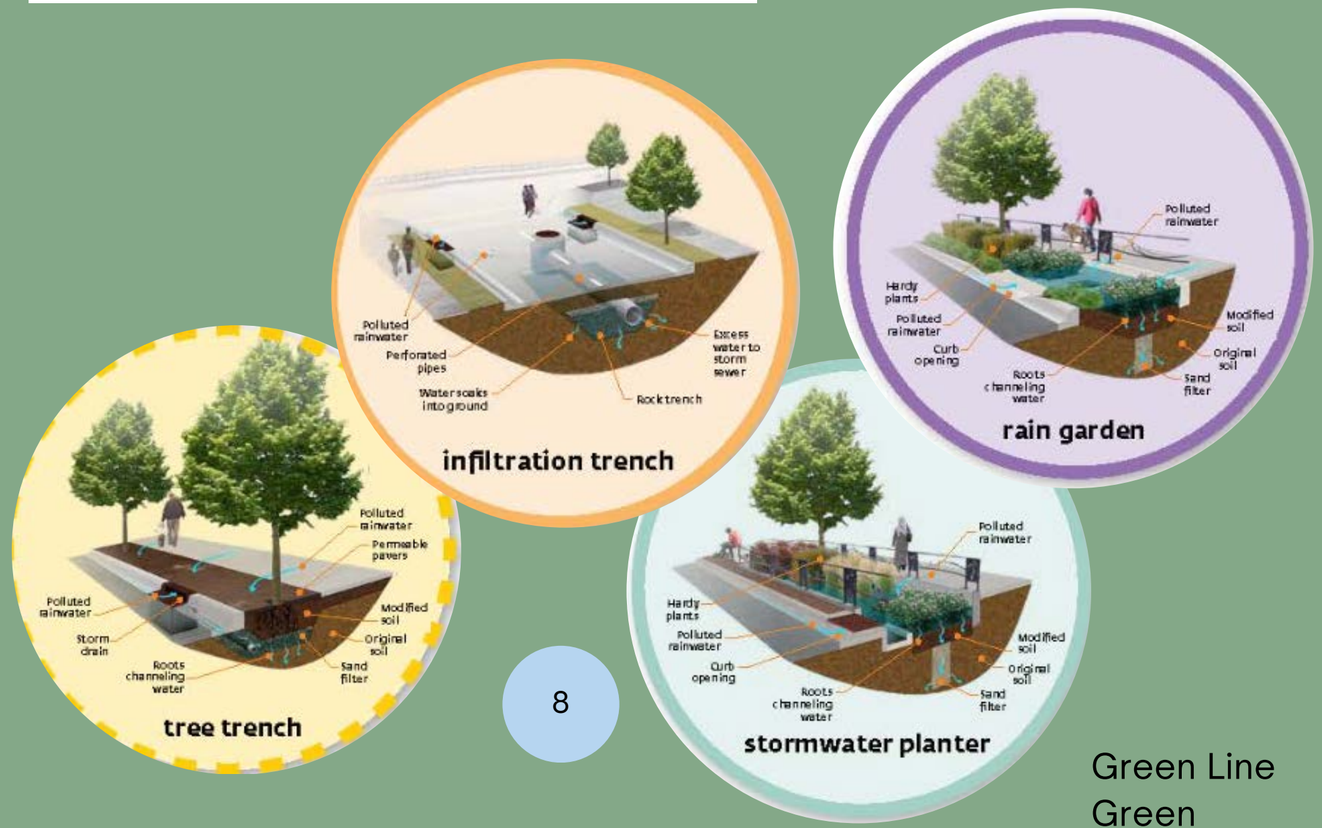
Sponge Cities

Local Flood Risks & Resources

Change on a local scale:

Capitol Region Watershed District Projects

Saint Paul Climate Action Plan



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Green Line Green Infrastructure

Metropolitan Council Localized Flood Risk Map

9

Sources

Images
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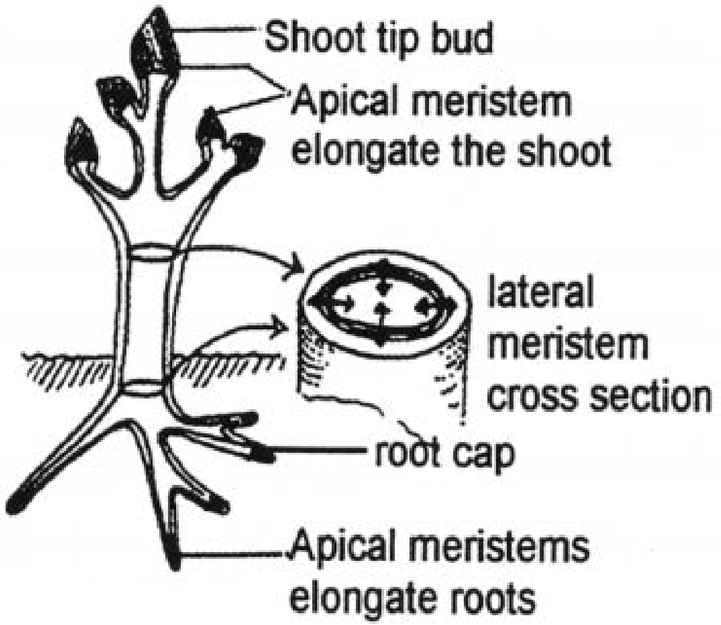
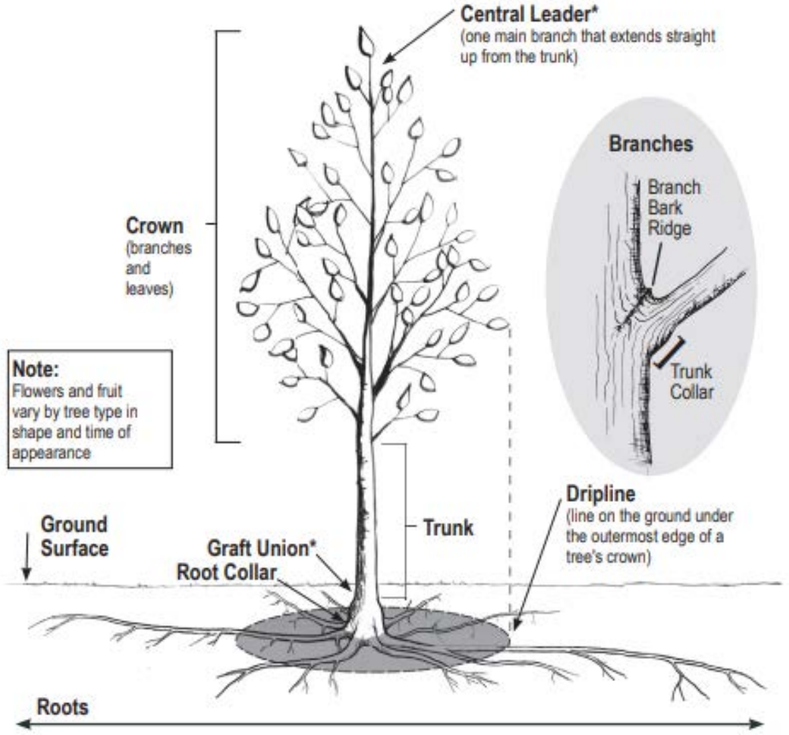
Tree Biology 101:

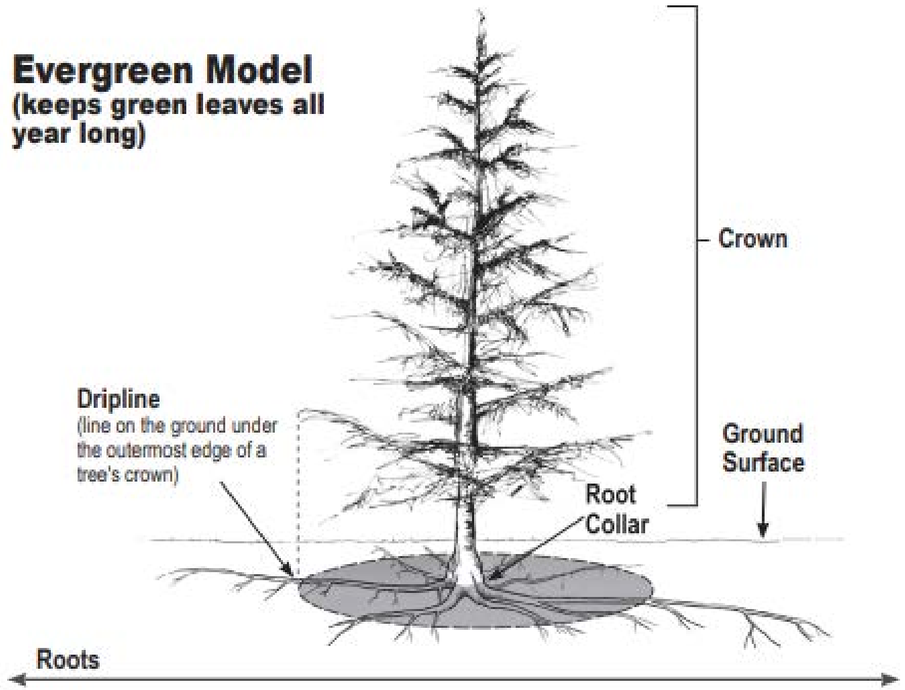
What is a tree?

Trees are ***Angiosperms*** (flowering) or ***Gymnosperms*** (non-flowering)

MERISTEM TISSUES







Trees are ***"woody" plants*** (producing secondary growth) and distinct from shrubs due to their height
Some plants are inclined to be "multi-stemmed shrubs" but can be pruned to be small trees

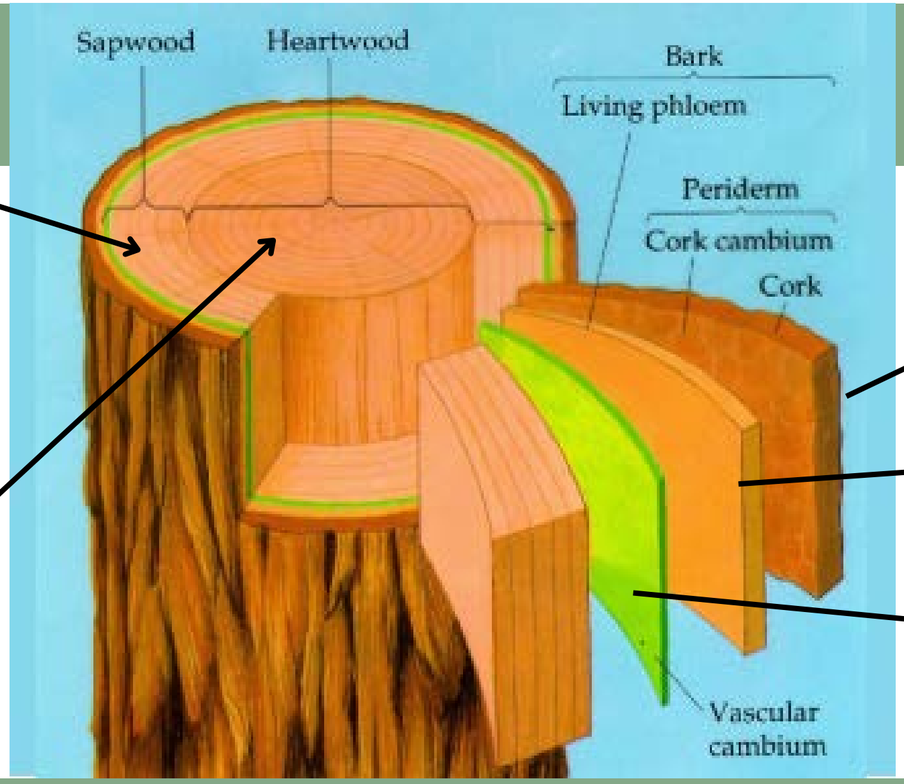
Growth occurs at the tips (shoots and roots) and laterally in the cambial zone

Tree Biology 101:

Wood (Trunk)

The ***sapwood (xylem)*** contains living (10%) and dead cells which conduct water and nutrients to crown

Sapwood becomes ***heartwood*** which is composed of strengthened dead cells of lignin and cellulose



The living and conductive tissues of sapwood, cambium, and phloem are protected by the ***outer bark (periderm)***

The soft ***inner bark (phloem)*** transports sugars from the crown to the roots

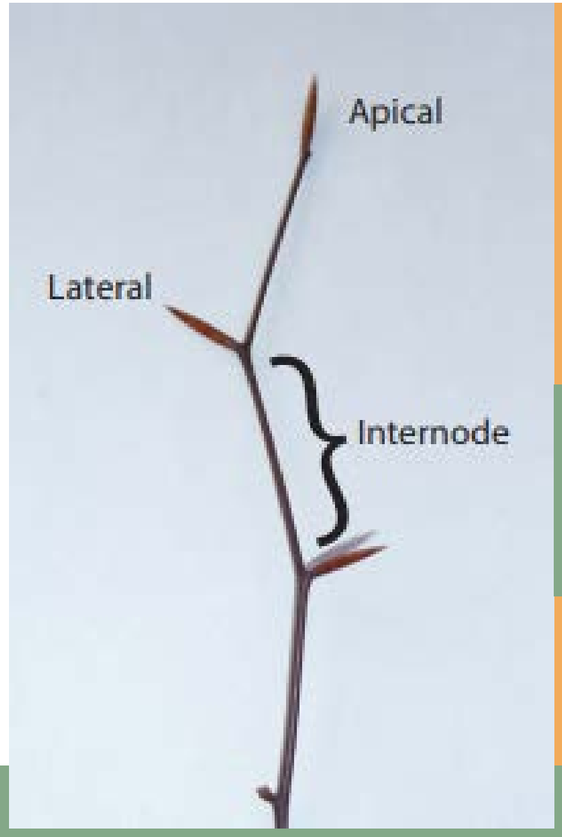
The ***vascular cambium*** produces new sapwood and bark

***Common misconception: A message carved in a tree will not move upward over time.

Tree Biology 101:

Nodes, Shoots, Branches, & Leaves (Crown)

Leaves photosynthesize creating sugars from sunlight, oxygen, and water



Tree twig with apical/lateral buds

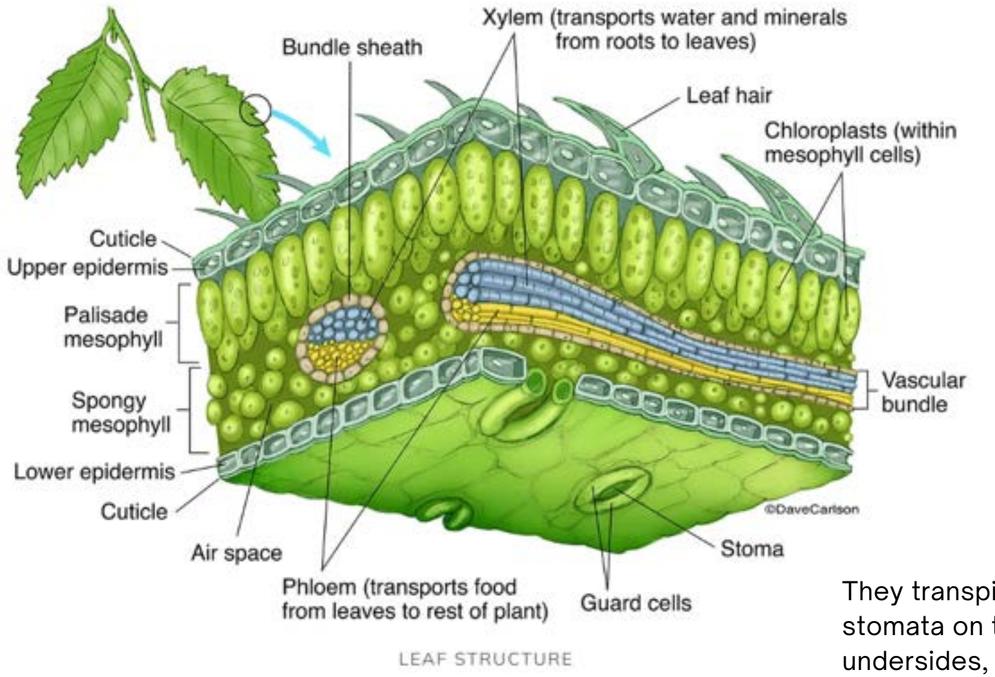
Buds, leaves, and flowers emerge from **nodes** on twigs.

Shoots are young stems will become branches.

Shoot growth is typically fastest from Apical (terminal) buds

Growth from Lateral (axillary) buds is typically surpressed by growth hormones until the apical bud is removed

Dormant buds exist along the stem and trunk and may be activated when damage occurs



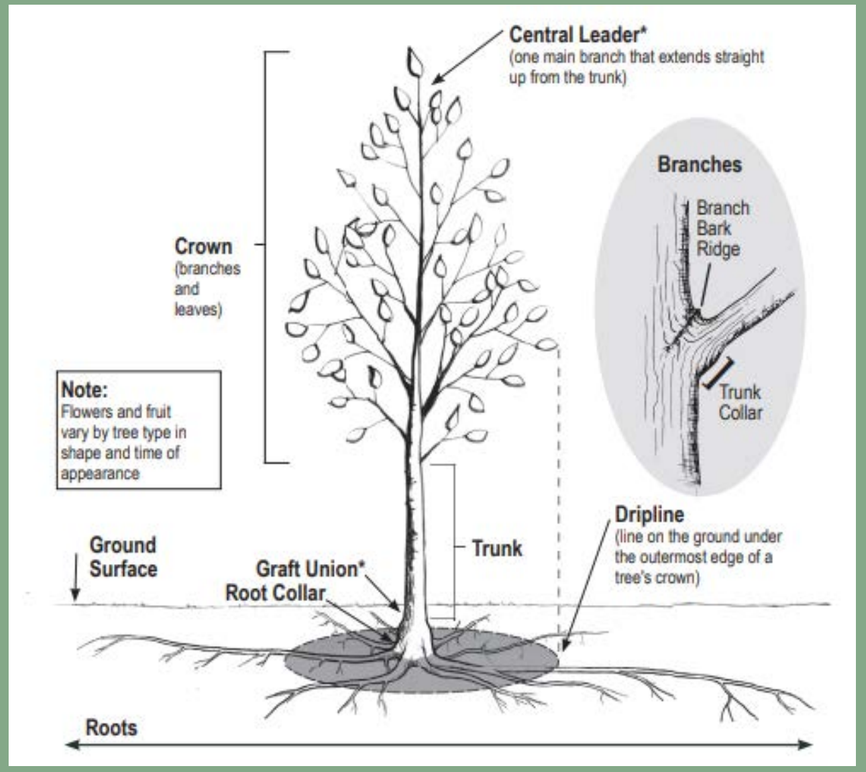
They transpirate through stomata on their undersides, releasing water vapor and oxygen

They produce a waxy coating called the cuticle in order to retain moisture.

PC: https://www.carlsonstockart.com/photo/leaf-structure-anatomy-illustration/

Tree Biology 101:

Roots



Roots grow mostly within the top 18 inches of soil

There are ***woody (structural)*** and ***non-woody (Fine absorbing)*** roots.

Root networks are often partner with ***mycorrhizal (fungal) networks*** to expand their nutrient uptake

Roots provide structural support & water/ nutrient uptake

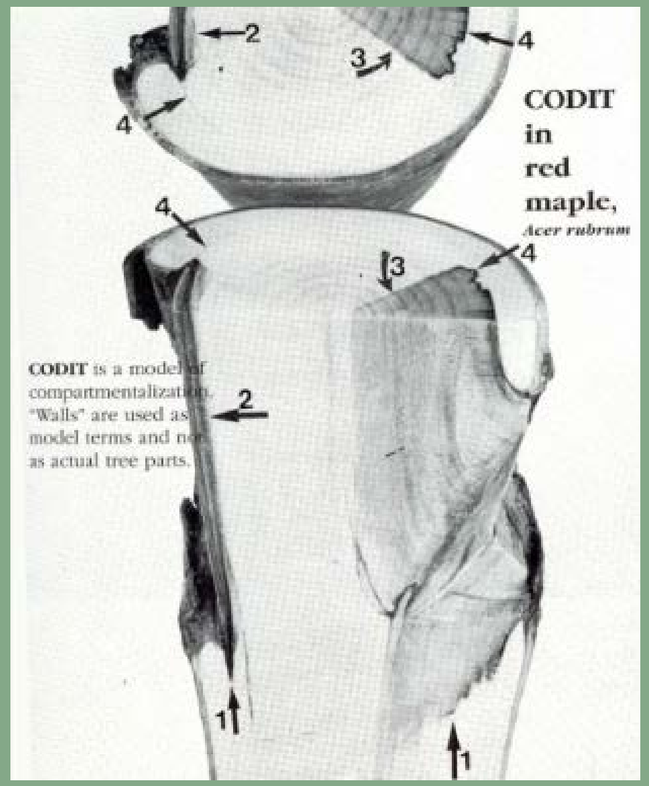
Tree Biology 101:

How a tree fights infection (CODIT)

Trees don't have an immune system.

Instead of fighting infection, they have biological mechanisms to slow it down.

Some trees do this better than others: Listed Here



PC: Dr. Alex Shigo,"Tree Basics" p.11

The model of Compartmentalization of Decay in Trees (CODIT):

Trees "wall up" immediately following injury as best they can.

Cells surrounding the wound area and new growth become chemically altered.

There are 4 walls:

Wall 1 (weakest) - Slows spread vertically
Wall 2 ---------- Slows spread inward
Wall 3 ---------- Slows spread circumferentially
Wall 4 (strongest) - Slows spread to new growth

Because of Wall 4, decay *may* be contained to the size of the tree at time of injury.

Tree Biology 101: Takeaways

1.Trees are tall “woody” plants growing from both apical meristem and lateral meristem tissue

2. A nail in the trunk won’t move up over time

3.Trees compartmentalize (they slow, seal off, and prevent infection but cannot heal)

4.Trees conduct nutrients and water in a very thin layer called the cambial zone. It must be protected.

5.Tree roots typically grow 3-4 x the width of the crown in the top 18 in. of soil. Protect this area.

Tree Pruning - Long Term

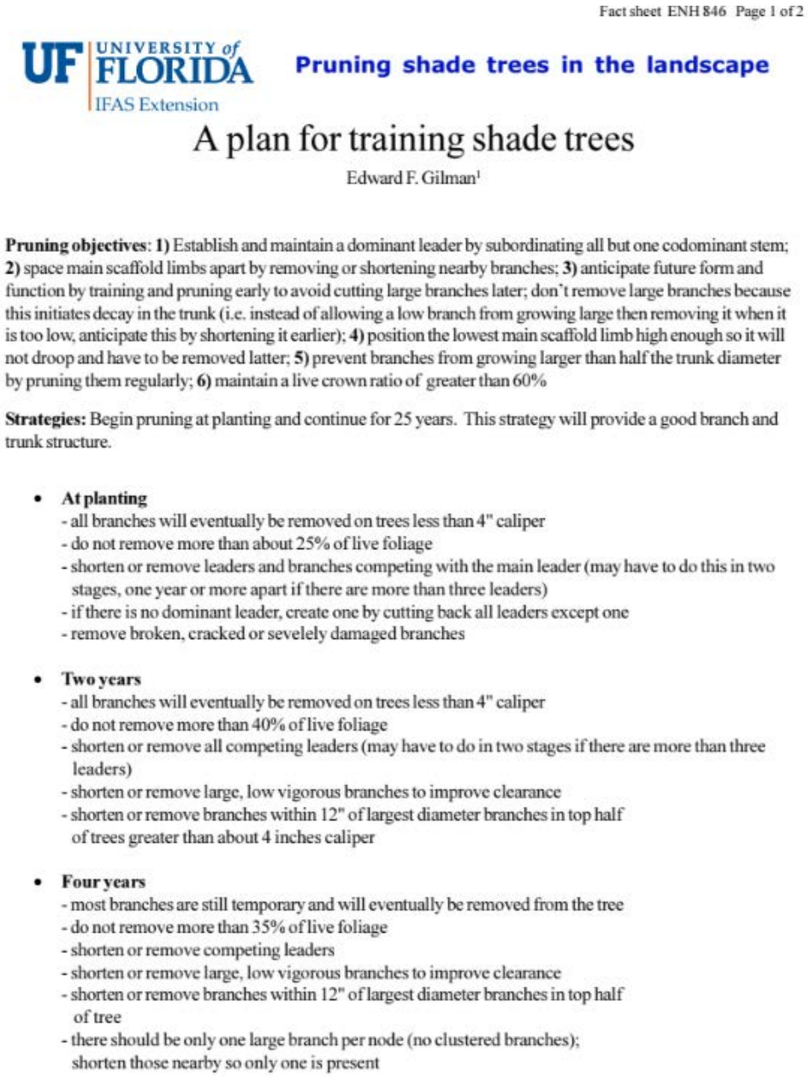
Most urban trees don't naturally grow to have good form. The structurally sound, upright form needed must be created by trained professionals through multiple pruning cycles in the first 25 or so years after planting.

To read more about this practice, consult Dr. Ed Gilman's "Plan for training shade trees" (pictured right), or

Read more HERE

Always remember to consult an ISA Certified Arborist before any tree work is to be done

Find an Arborist HERE



UF UNIVERSITY of FLORIDA IFAS Extension

Pruning shade trees in the landscape

A plan for training shade trees

Edward F. Gilman[1]

Pruning objectives: **1)** Establish and maintain a dominant leader by subordinating all but one codominant stem; **2)** space main scaffold limbs apart by removing or shortening nearby branches; **3)** anticipate future form and function by training and pruning early to avoid cutting large branches later; don't remove large branches because this initiates decay in the trunk (i.e. instead of allowing a low branch from growing large then removing it when it is too low, anticipate this by shortening it earlier); **4)** position the lowest main scaffold limb high enough so it will not droop and have to be removed latter; **5)** prevent branches from growing larger than half the trunk diameter by pruning them regularly; **6)** maintain a live crown ratio of greater than 60%

Strategies: Begin pruning at planting and continue for 25 years. This strategy will provide a good branch and trunk structure.

- **At planting**
  - all branches will eventually be removed on trees less than 4" caliper
  - do not remove more than about 25% of live foliage
  - shorten or remove leaders and branches competing with the main leader (may have to do this in two stages, one year or more apart if there are more than three leaders)
  - if there is no dominant leader, create one by cutting back all leaders except one
  - remove broken, cracked or sevelely damaged branches

- **Two years**
  - all branches will eventually be removed on trees less than 4" caliper
  - do not remove more than 40% of live foliage
  - shorten or remove all competing leaders (may have to do in two stages if there are more than three leaders)
  - shorten or remove large, low vigorous branches to improve clearance
  - shorten or remove branches within 12" of largest diameter branches in top half of trees greater than about 4 inches caliper

- **Four years**
  - most branches are still temporary and will eventually be removed from the tree
  - do not remove more than 35% of live foliage
  - shorten or remove competing leaders
  - shorten or remove large, low vigorous branches to improve clearance
  - shorten or remove branches within 12" of largest diameter branches in top half of tree
  - there should be only one large branch per node (no clustered branches); shorten those nearby so only one is present

- **Eight years**
  - shorten or remove competing leaders
  - do not remove more than 25 to 35% of foliage
  - determine where you want the lowest permanent scaffold limb and shorten all large or vigorous branches lower than this limb
  - shorten branches within 12-18" of largest diameter branches (there should be only one large branch per node (no clustered branches)
  - shorten low branches that will have to be removed later so they do not become large

- **Fourteen years**
  - shorten or remove competing leaders
  - identify several permanent scaffold limbs
  - shorten vigorous branches within 18-36" of permanent scaffold limbs
  - shorten or remove large branches lower (on the trunk) than the lowest permanent scaffold limb
  - there should be only one large branch per node (no clustered branches)
  - shorten low branches that will have to be removed latter

- **Twenty years**
  - shorten or remove competing leaders
  - identify 5 to 10 permanent scaffold limbs
  - shorten aggressive branches within 18-36" of permanent scaffold limbs
  - shorten or remove large branches lower (on the trunk) than the first permanent branch
  - there should be only one large branch per node (no clustered branches)
  - shorten low branches that will have to be removed latter

- **Twenty-five years**
  - shorten or remove competing leaders
  - continue to develop and space permanent scaffold limbs
  - shorten branches within 36" of permanent scaffold limbs
  - shorten or remove large branches lower (on the trunk) than the first permanent branch
  - there should be only one large branch per node (no clustered branches)
  - shorten low branches that will have to be removed latter

With seven prunings in the first 25 years after planting, a good structure can be developed that can place the tree on the road to becoming a permanent fixture in the landscape. Less frequent pruning may be acceptable if good quality nursery trees were planted with a dominant leader, and trees were irrigated appropriately until established.

[1] Professor, Environmental Horticulture Department, 1245 Fifield Hall, Gainesville, FL 32611

Newly-Planted Tree Pruning 101

You can generally remove 3 types of branches and twigs year-round (the 3 D's)

Dead

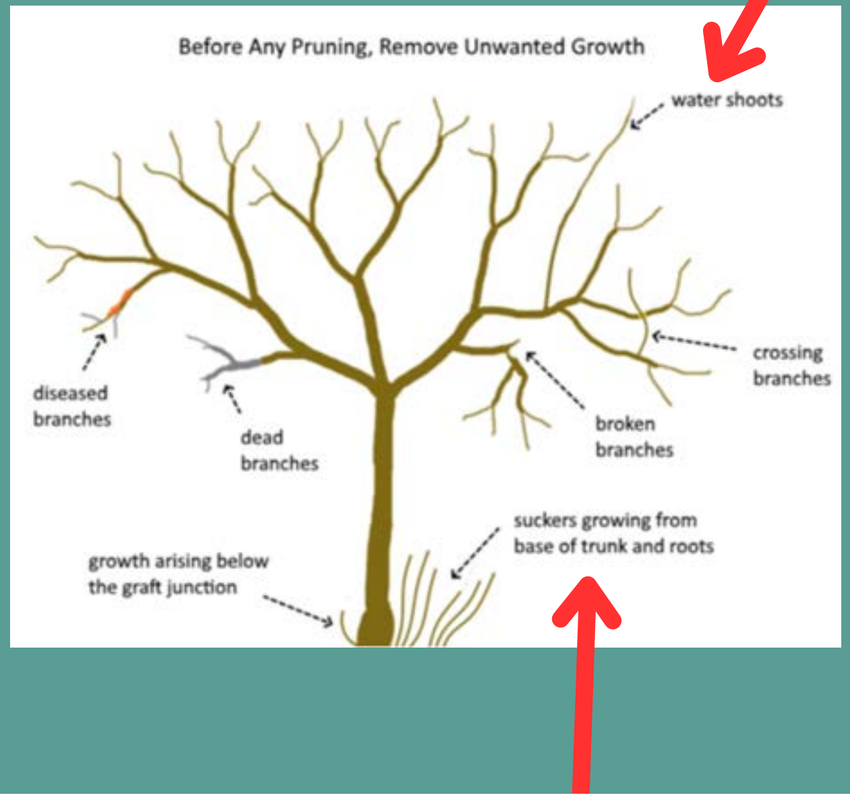
**Give the branch a tiny scratch,
if underlying wood is still green, it's alive.
If it bends, instead of snaps, that's another sign
it's still living.**

Diseased

**Typically discolored, or deformed
Consult a field guide such as the
Purdue Tree Doctor**

Damaged/dying

**Broken
Severe bark or cambium wound**



Newly-Planted Tree Pruning 101

Consider pruning objectives & parameters

1. Find the Central Leader

You want the tree to put most of its energy into one main trunk
This will prevent the development of weak branch unions and attachments, which are prone to failure during extreme weather events and over time

Central leader

All branches temporary, remove when aspect ratio reaches 1:3

Consider limiting the pruning dose until after the first or second growing season

Competing leaders

2. Determine the lowest permanent branch

For newly planted trees, generally all existing branches will eventually be removed
You will still want to preserve lower branches in the first few years in order to encourage trunk growth

3. Consider the pruning dose

Never remove more than 25% or 30% of the live crown
Within that, you may consider lighter or more aggressive pruning doses depending on how fast the tree grows or how often you will come back to it

4. Consider the pruning objective

For newly planted trees this is subjugating competing leads and removing the 3 Ds

2/3 Crown, 1/3 trunk: Don't remove more than 25-30% canopy at any one time

*****Unsure what is competing? Consider the <u>aspect ratio!</u>**
Healthy branch unions are 1/3 the size of the trunk or less***

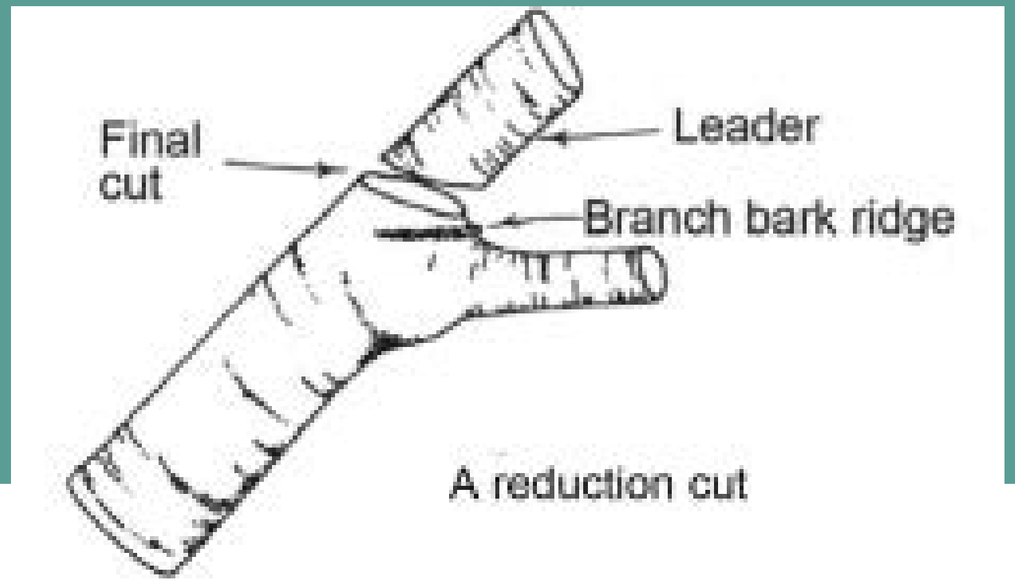
Newly-Planted Tree Pruning 101

There are 3 types of pruning cuts for young trees

Reduction Cuts

- Most frequent pruning cut on young trees
- Cut back to a lateral branch
- Subjugate competing leaders/large aspect ratio temporary branches
- Best used on smaller branches

https://youtu.be/vHDoxyv9jns



Newly-Planted Tree Pruning 101

There are 3 types of pruning cuts for young trees

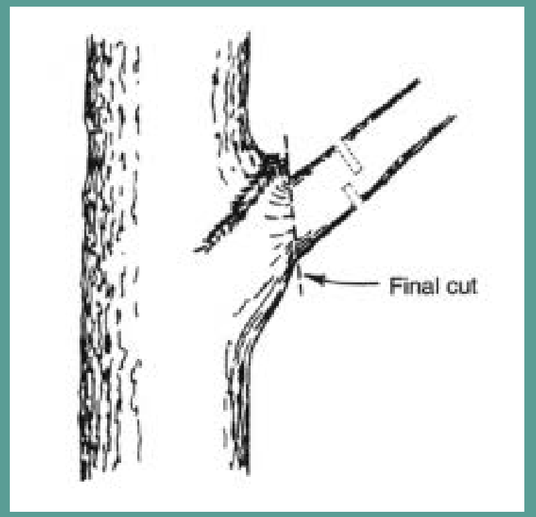
Branch Removal Cuts

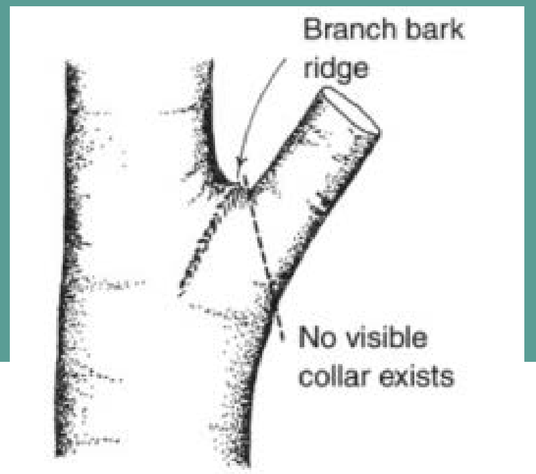
- Cut back to the main trunk or leader
- Diverts growth/energy into main trunk
- Forces growth upward

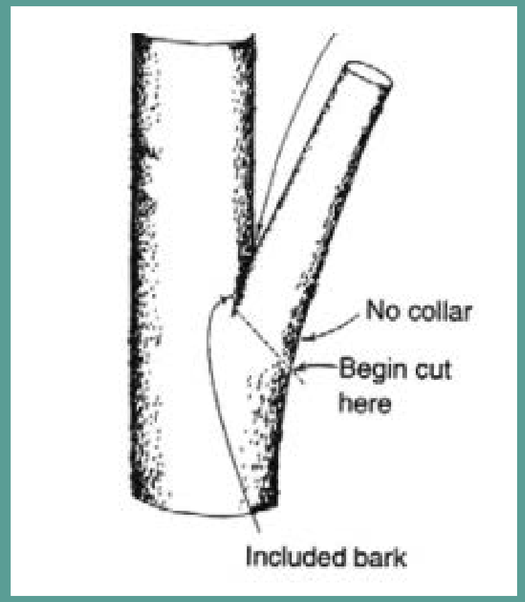
Similar to “Thinning cuts” - removing smaller branch at a union

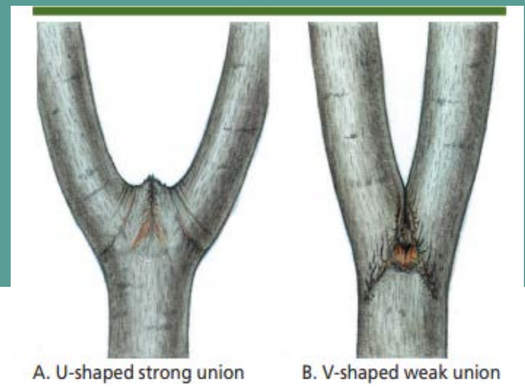
- Avoid over use, can cause “lions tailing”

https://youtu.be/rf0-trrla1c









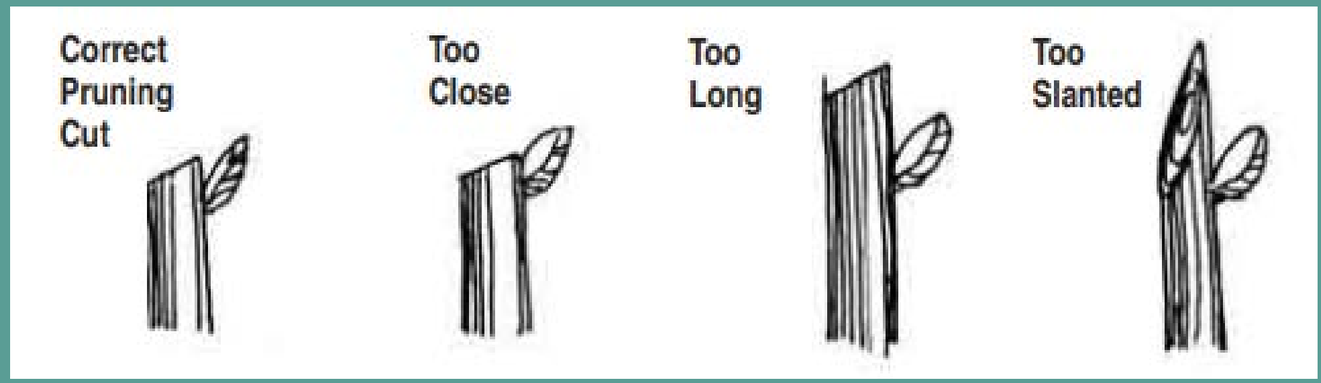
Newly-Planted Tree Pruning 101

There are 3 types of pruning cuts for young trees

Heading Cuts

- Cutting between the nodes
- Causes high sprouting
- Used in tree nurseries to generate lower branching and miniature “tree-like” form

https://youtu.be/SYrhG6ZBvi0

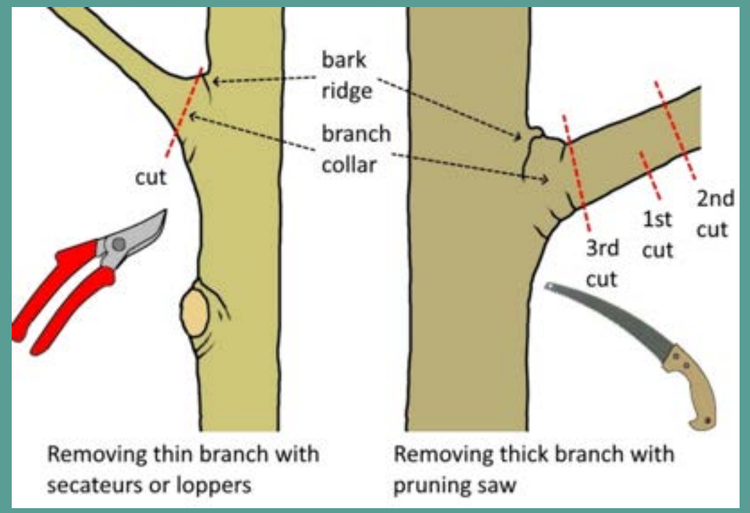


Newly-Planted Tree Pruning 101

The 3-Cut method must be followed for larger branches

3-Cut Method

Avoid the weight of the branch stripping bark to the trunk



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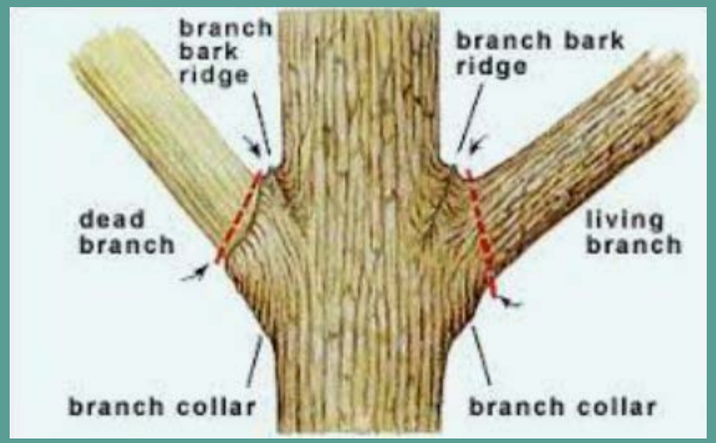
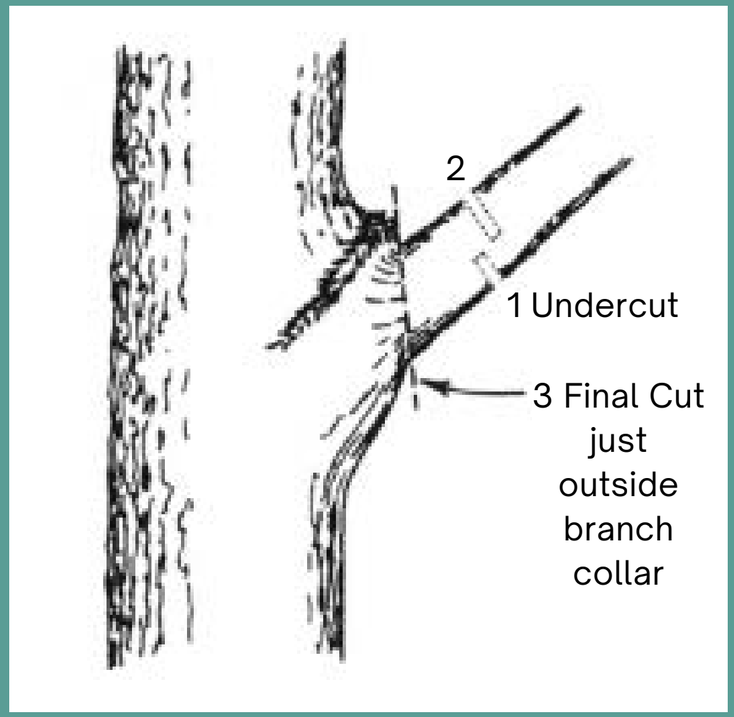




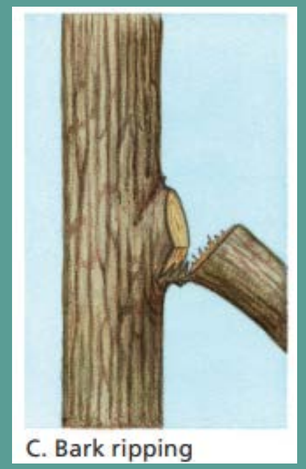
Newly-Planted Tree Pruning 101

Word of Caution

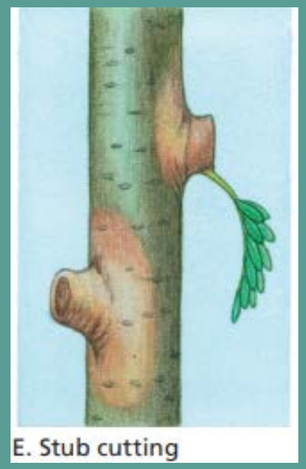
Pruning is best done in late winter/early spring to reduce the time wounds are exposed.

Avoid pruning oaks April - October to prevent Oak Wilt Spread
More information

AVOID:


C. Bark ripping


D. Flush cutting


E. Stub cutting


B. Tipping


A. Topping

https://files.dnr.state.mn.us/assistance/backyard/treecare/how-to-prune-trees.pdf

Newly-Planted Tree Pruning 101

Why Prune?

Young trees are more vigorous
Pruning early results in smaller wounds which can be easily sealed up
Pruning early results in better tree architecture
Better tree architecture responds better under severe pressure



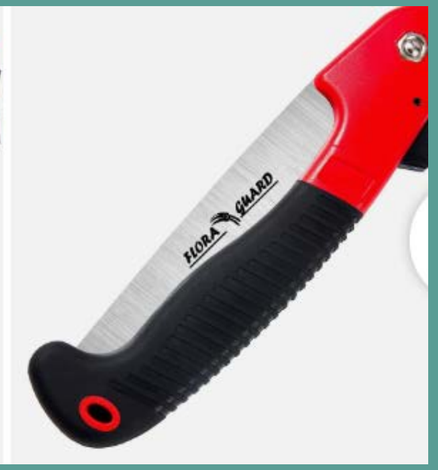


Tree Pruning Tools

Never prune on a ladder

Bypass pruners

Branches less than 1/4 inch diameter



Foldable hand saw

Branches 1/2 inch in diameter and larger

fine teeth, small cuts

Fixed hand saw

Branches 1/2 inch in diameter and larger

medium teeth, larger branch removal/reduction cuts

Pole saw/pruner

Pruner - reduction cuts less than 1/2 inch in diameter

Tree Pruning: Sanitation

70-90% isopropyl acohol, undiluted

- Dip, wipe or spray hand pruner blades with alcohol before moving from one plant to the next.

10% Bleach solution

- Mixing one part bleach with 9 parts of water in a plastic container large enough to immerse all or part of the item
- Clean all visual dirt and debris from tools.
- Dip, douse or spray tools with the 10% bleach solution. This will kill fungi, bacteria, and viruses within seconds.
- Turn taller items over in the bucket to make sure all parts are treated.
- Allow tools and equipment to dry completely.
- Rub metal items with a few drops of linseed oil, Tung oil or mineral oil. Do not use motor oil as it may transfer to plants. If rust does develop, use steel wool or wire brush to remove and re-oil.

More on disinfecting tools here

Newly-Planted Tree Pruning 101

TAKEAWAYS

1. Routinely remove 3Ds, suckers, & sprouts
2. Consider pruning objectives & dose
3. Use the 3-Cut method
4. Branch removals/thinning - Avoid until necessary - establish central leader, raise canopy
5. Reduction cuts - Most common, slow growth of competing leaders until they can be removed
6. Heading cuts - suppress upward growth of fast growing shoots, promote lateral branch growth
7. Be careful when and how you prune, avoid unnecessary injury/infection
8. Sanitize tools when possible

Review pruning cuts here: https://marinmg.ucanr.edu/CARE/HOWTOPRUNE/Cuts/

More about Trees & Pruning