



Selecting Landscape Trees

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Considerations when selecting a tree...

- Look at several important factors in choosing the correct tree for your landscape
- Take these into consideration when selecting your trees for the best outcome.....
- And remember it's not rocket science, don't overthink it. Enjoy it

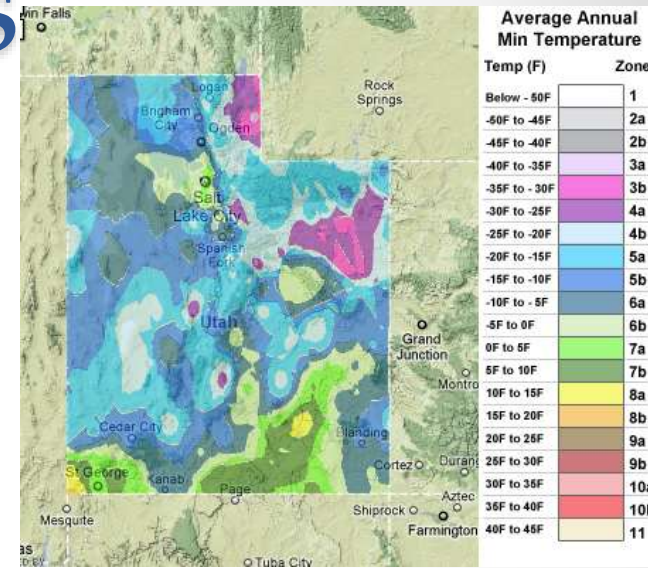
Soil Conditions

- Know your soil type. Do you have sand, loam, clay, or a mix?
- Is it compacted, or loose?
- What type of drainage does it provide?
- Does it have high salinity?
- Soil samples may be taken to the USU soil lab to be tested if you need help in this area. Usual.usu.edu



Hardiness

- Know your USDA zone.
Generally you will be in zone 4-5 (-20 to -30degrees) along the Wasatch front.
- <https://planthardiness.ars.usda.gov/PHZMWeb/>



- Know how the tree being considered tolerates heat or cold (plant tag will show cold hardiness)



Shade Tolerance

- Know how much sun/shade your tree choice can handle. Some trees prefer full shade, but others can handle sun or shade.
- Shade intolerant trees rarely do well in shaded areas.



Water Requirements

- Each tree has a different watering requirement.
- Some tree species have extreme drought tolerance and can do fine on nearly no irrigation water.
- Others have high water requirements consistently
- And most are in the middle with moderate water requirements (The first year of watering and establishment is crucial after planting)
- Precipitation does not provide enough water for most tree species we plant. Utah is a desert
- *However overwatering can cause weakened trees and tree death*



Pest Resistance

- Buy pest resistant tree varieties.
- Some trees are more susceptible to pests than others. **For example Lombardy Poplar is susceptible to stem canker and is likely to die within 5-15 years. On the other hand Ginkgo trees have very few known pests and even pollution tolerance.**
- Stressed trees are often more susceptible to pest damage



Growth Rate

- Too often we focus our efforts on planting trees without considering the future
- Many homeowners pick a tree because it has a rapid growth rate and will become large quickly
- Beware of fast growing trees. Most are weak wooded and short lived, or outgrow their site. Examples of this are Cottonwood, Mulberry, and Silver Maple
- In neighborhoods it is a good idea to have trees that may grow slower, but live longer

Canopy/Crown Size

- When choosing a tree keep in mind how large the tree will be at maturity. The fully grown canopy or crown of the tree needs adequate space.
- If trees are planted too close together or too close to structures the tree will have poor growing conditions and overall tree health
- Strong wooded tree crowns can be allowed to overhang a roof, while weak wooded crowns should be planted one-half of their mature width from a building. Unless you love roof damage after a storm.



Don't let this happen



Or this...

Form

- What shape/form do you desire in a tree?
- Although it is personal preference, tree form may be important to tree function.
- Tree shape comes in many forms:

Tall, narrow (columnar), weeping, round, conical, pyramidal, vase shaped, and more

Tree form can be functional, for example: columnar trees are used in narrow spaces and windbreaks, weeping ornamental trees are usually in a main space to catch the eye.

Tree form can create a statement in your landscape

What shape/form do you desire in a tree?

TREE FORMS



ROUND



SPREADING



PYRAMIDAL



OVAL



CONICAL



VASE



COLUMNAR



OPEN



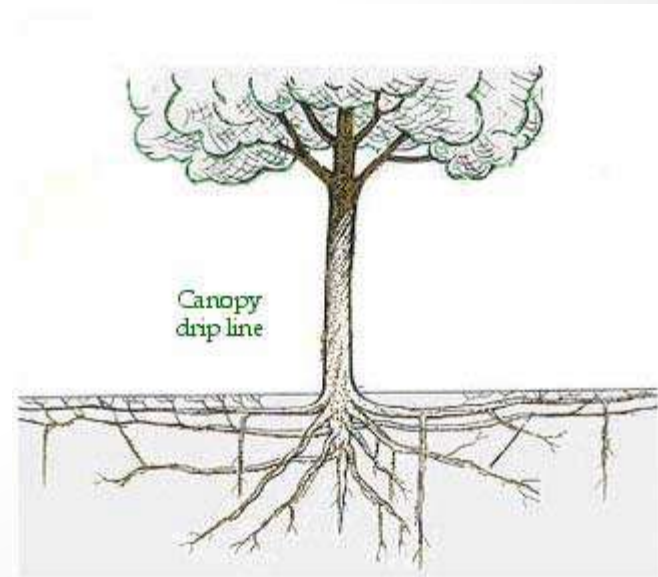
WEeping



IRREGULAR

Rooting Area

- Adequate rooting space is just as important as adequate crown/canopy space
- Just as the crown doesn't like overcrowding, neither do the roots
- For example planting very close to concrete is not ideal for root growth, since soil conditions below concrete are unfavorable



Some tree roots will grow along cracks and in paving blocks, and even under pavement, while many will not do well, ending in tree death or concrete lifting



Longevity

- How long will your trees life span be, given it is cared for properly?
- The typical lifespan of a good tree in a suburban neighborhood is 30-50 years
- Many down town trees only last 5-10 years
- People tend to plant fast growing, short lived trees. Slower growing trees with longer life spans should be considered
- Plant some of each if quick growth and longevity are desired

Ornamental Characteristics

- What characteristics are you looking for in a tree?
- Fruit, or fruitless? Spines, or spineless? Flowers, leaf, and bark color/texture? Fall color and winter interest? Shade tolerance? Odor or odorless? Basal root sprouts?
- There are many things to consider having or not having when choosing a tree

Hawthorne spines



Locust Spines



Sweetgum Fruit





Harvest Gold Crabapple Fruit



Ginnala maple samaras



European Mountainash Fruit

Golden
Chaintree



American
Yellowwood



Prairie Rose Crabapple



Flowering Pear



Utility Locations

- Be aware of overhead and underground electric utility lines
- Check city ordinances for trees that can be planted near or under power lines in your area
- For information or concerns contact your local Blue Stakes @1-800-662-4111. You may also get a copy of “Trees and Powerlines” from your County Cooperative Extension or Utah Power
- Walking through your neighborhood or local park to see similar site conditions as yours with mature trees can be helpful

Good Information Sources

- Where can you find good information sources?
- Local Nurseries
- Arborists
- USU Extension office and website
- Publications
- Conservation/Botanical Gardens
- City Forester

Small Trees

<u>Variety</u>	<u>Growth Rate</u>	<u>Mature Height</u>	<u>Longevity</u>	<u>Crown Shape</u>	
<i>Acer ginnala</i> Ginnala Maple	Slow/Moderate	15-20'	Moderate-High	Oval	
<i>Acer griseum</i> Paperbark Maple	Slow	20-30'	Moderate	Oval-Rounded	
<i>Acer palmatum</i> Japanese Maple	Slow	6-8'	Moderate-High	Broad/billowy	
<i>Acer japonicum</i> Fullmoon Maple	Slow	10-20'	Moderate-High	Round	
<i>Acer tataricum</i> Tatarian Maple	Moderate	15-20'	High	Oval/Rounded	
<i>Cercis canadensis</i> Eastern Redbud	Moderate	20-30'	High	Flat top-Rounded	
<i>Corylus avellana</i> 'contorta' Contorted Filbert	Slow	8-10'	Moderate	Shrubby/Mounding	
<i>Crataegus crus-galli</i> 'inermis' Thornless Cockspur Hawthorne	Medium	15-20'	Moderate	Upright Spreading	
<i>Magnolia stellata</i> Star Magnolia	Slow	15-20'	Moderate	Oval-Rounded	
<i>Malus</i> Spring Snow Crabapple	Moderate	20-25'	Moderate	Round	
<i>Malus</i> Prairie Rose Crabapple	Moderate	20'	Moderate	Rounded	
<i>Malus</i> Indian Magic Crabapple	Moderate	15'	Moderate	Upright Spreading	
(Many other <i>Malus</i> sp. Available)					
<i>Pinus flexilis</i> Vanderwolf Pine	Slow	20-25'	High	Pyramidal	
<i>Prunus cerasifera</i> Flowering Plum 'Thundercloud'	Moderate	20'	Moderate	Rounded	
<i>Prunus serrulata</i> Japanese Flowering Cherry	Moderate	20-30'	Low-Moderate	Vase-Rounded	
<i>Laburnum watereri</i> Golden Chaintree	Moderate	20'	Moderate	Spreading	
<i>Chilopsis linearis</i> Desert Willow	Fast	20-25'	Short	Upright	
<i>Morus alba</i> 'Chaparral' Weeping Mulberry	Fast	20-30'	Moderate	Weeping	
<i>Ulmus glabra</i> 'Camperdownii' Camperdown Elm	Fast	20-25'	Moderate	Weeping	
<i>Pinus aristata</i> Bristlecone Pine	Slow	8-20'	High	Shrubby	

Quick Look-Small Trees(15-30ft)

- Ginnala Maple
- Paperbark Maple
- Japanese Maple
- Fullmoon Maple
- Tatarian Maple
- Serviceberry
- Eastern Redbud
- Hawthorne var.
- Golden Chaintree
- Saucer Magnolia
- Star Magnolia
- Crabapple var.
- Weeping Mulberry
- Thundercloud Flowering Plum
- Contorted Filbert

Contorted Filbert



Bristlecone Pine



Star Magnolia



Eastern Redbud



Paperbark Maple



Prairie Rose Crabapple



Ginnala Maple





Contorted Filbert

Thornless Cockspur Hawthorn



Thundercloud Flowering Plum



Spring Snow Crabapple





Golden Chaintree



Desert Willow



MONROVIA

Saucer Magnolia

(*Magnolia soulangeana*)



- Zone 4
- Small to medium
- Moderate
- Spring flowers
- Early freeze



Redbud

(*Cercis canadensis*)



- Zone 3+
- Small to medium
- Slow Moderate
- Pink and white flowers
- Seed pods

Japanese Maple

(*Acer palmatum*)



- Zone 4 – 5
- Small to medium
- Slow
- Leaf color and shape
- Variable hardiness, varieties, shady location

Crabapples

(*Malus* spp.)

- Zone 2 +
- Small to medium
- Fast
- All-season tree
- Persistent or non-fruiting



‘Sugar tyme’



‘Robinson’

Tatarian Maple

(*Acer campestre*)

- Zone 3
- Small to medium
- Moderate
- Fall color, seeds
- Soil adaptability



Canyon or Bigtooth Maple (*Acer grandidentatum*)



- Zone 3
- Small to medium
- Moderate
- Fall color
- Dry location



Bosnian Pine

(*Pinus heldreichii*)



- Zone 4
- Small
- Slow
- Shape and size

Medium Trees

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Quick Look-Medium Trees (30-50ft)

- Hedge Maple
- European Hornbeam
- Buckeye
- Alder
- Turkish Filbert
- Thornless Honeylocust
- Golden Raintree
- Sargent Cherry
- Japanese Flowering Cherry
- Flowering Pear
- Mountain Ash
- Mulberry
- Limber Pine
- Blue Atlas Cedar



● Canada Red Chokecherry ●

Columnar European Hornbeam



Thornless Honeylocust





Limber Pine

Korean Pine





Saucer Magnolia





Bradford Callery
Pear



www.thegardenexplorer.blogspot.com



European Mountainash



Golden Raintree

Goldenrain Tree

(*Koelreuteria paniculata*)

- Zone 4
- Small to medium
- Slow to moderate
- July flowers
- New varieties



River Birch

(*Betula nigra*)



- Zone 3
- Medium
- Moderate
- Shape and texture
- Wet locations

Limber Pine

(*Pinus flexilis*)



- Zone 4
- Medium
- Fast
- Blue color and soft needles
- Native

American Yellowwood

(*Cladrastis kentukea*)

- Zone 4+
- Medium
- Slow to medium
- Showy white flowers
- Fragrant, included bark



Common Alder

(*Alnus glutinosa*)

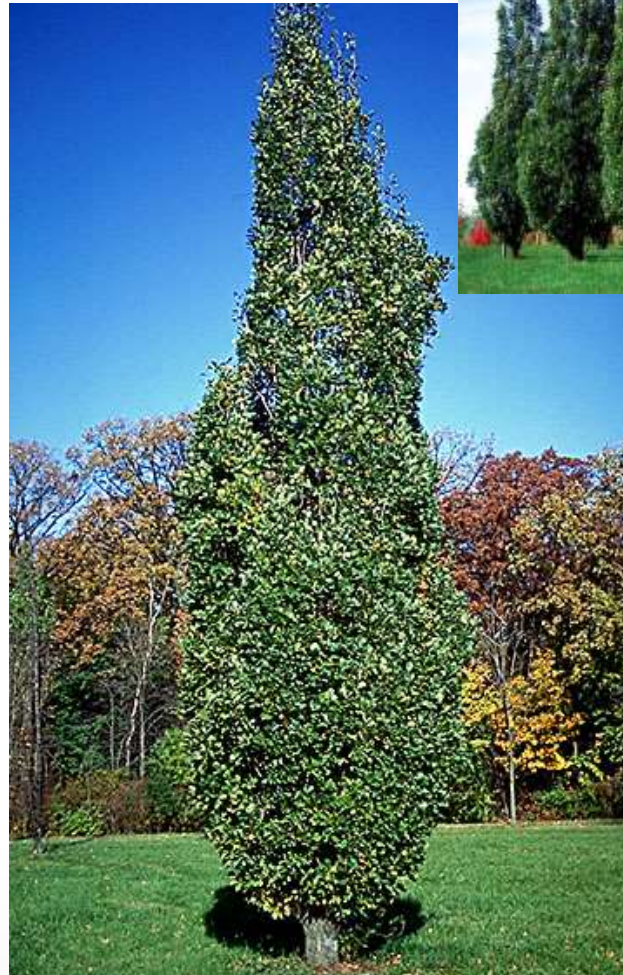
- Zone 4
- Medium
- Moderate
- Soft texture
- Moist soils



Columnar English Oak

(*Quercus robur* 'fastigiata')

- Zone 4
- Medium
- Slow to medium
- Columnar shape
- Leaves stay on tree into winter



European Hornbeam

(*Carpinus betulus*)

- Zone 5
- Medium
- Moderate
- Shape and leaf texture
- Dieback



Blue Atlas Cedar

(*Cedrus atlantica* 'Glauca')



- Zone 5
- Medium to Large
- Moderate to fast
- Blue color and shape
- Weeping varieties



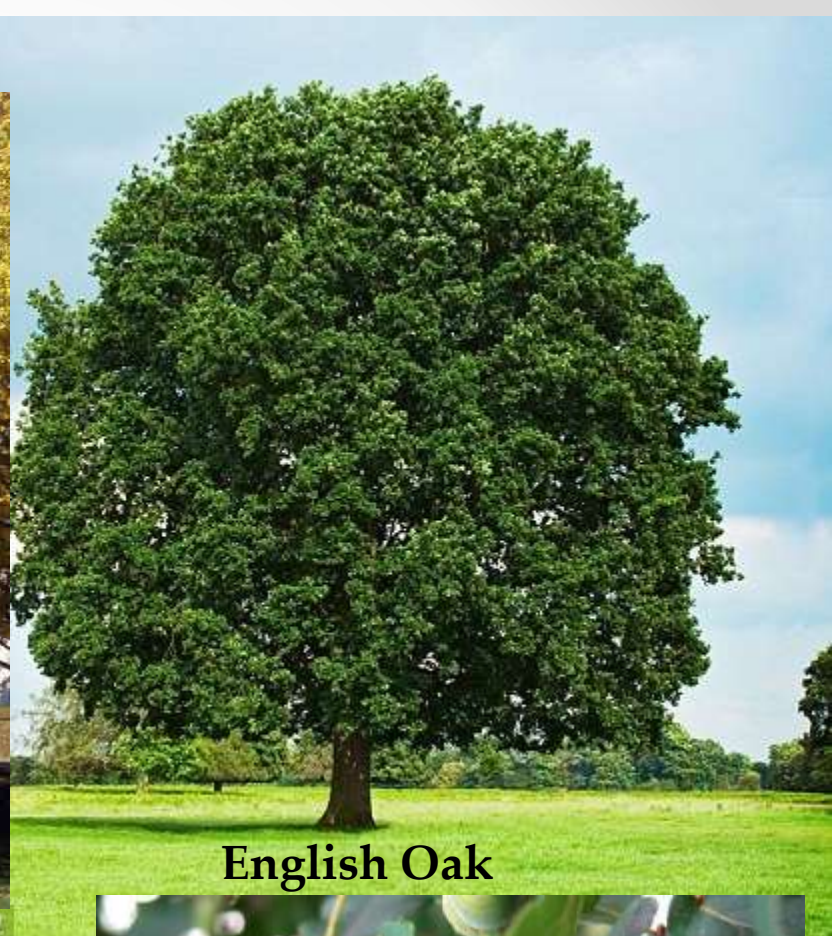
Large Trees

<u>Variety</u>	<u>Growth Rate</u>	<u>Mature Size</u>	<u>Longevity</u>	<u>Crown Shape</u>				
<i>Platanus x acerifolia</i> London Planetree	Moderate	70-100	Long	Spreading				
<i>Acer rubrum</i> Red Maple	Moderate-Fast	40-60'	Moderate	Ovoid, Rounded				
<i>Acer platanoides</i> Norway Maple	Moderate	40-50'	Long	Rounded				
<i>Acer saccharum</i> Sugar Maple	Slow-Moderate	50-70'	Long	Oval-Rounded				
<i>Celtis occidentalis</i> Hackberry	Moderate-Fast	40-60'	Long	Broad, Arching				
<i>Catalpa speciosa</i> Northern Catalpa	Moderate	40-60'	Long	Oval, Irregular				
<i>Fagus sylvatica</i> European Beech	Medium	50-60'	Long	Rounded				
<i>Fraxinus pennsylvanica</i> Green Ash	Fast	50-60'	Moderate-Long	Upright-Spreading				
<i>Fraxinus pennsylvanica</i> Marshall's Seedless Ash	Fast	50'	Moderate	Ovate-Rounded				
<i>Ginkgo biloba</i> Ginkgo	Moderate	50-80'	Long	Dense				
<i>Gymnocladus dioica</i> Kentucky Coffeetree	Moderate	60-75	Moderate	Obovate				
<i>Liquidambar styraciflua</i> American Sweetgum	Moderate	60-75	Moderate-Long	Oblong to Rounded				
<i>Quercus robur</i> English Oak	Moderate	40-60'	Long	Broad-Rounded				
<i>Taxodium distichum</i> Baldcypress	Moderate	50-70'	Long	Columnar-Pyramidal				
<i>Tilia cordata</i> Littleleaf Linden	Moderate	60-70'	Long	Pyramidal/Rounded				
<i>Zelkova serrata</i> Japanese Zelkova	Moderate	50-80'	Long	Vase Shape				
<i>Cladrastis kentukea</i> American Yellowwood	Slow-Moderate	30-50'	Long	Rounded				
<i>Cedrus libani</i> Cedar of Lebanon	Slow	40-60'	Long	Pyramidal in youth to Flat topped crown at maturity				
<i>Abies concolor</i> White Fir	Slow-Moderate	30-50' +	Long	Conical				
<i>Liriodendron tulipifera</i> Tulip Tree	Fast	70-90'	Long	Oval-Rounded				

Quick Look-Large Trees (50+ ft)

- Ash var.
- Ginkgo
- Kentucky Coffeetree
- Sweetgum
- Tuliptree
- Bur Oak- White Oak- Red Oak
- Sycamore
- Linden
- Zelkova
- Black Walnut
- Bald Cypress
- Maple (Norway, Red, Sycamore, Silver, Sugar)
- Common Horsechestnut
- Birch
- Catalpa
- Hackberry
- European Beech
- American Yellowwood
- Dawn Redwood

Ginkgo



English Oak



Green Ash



● Marshall's Seedless Ash



American Yellowwood





London
Plane Tree
(Sycamore)



Red Maple



Horsechestnut



Northern Catalpa

Zelkova

(*Zelkova serrata*)



- Zone 4+
- Large
- Fast
- Fall color, vase shape
- Adaptable, included bark

Burr Oak

(*Quercus macrocarpa*)



- Zone 3
- Large
- Medium to fast
- Shape
- Pest free, adaptable

Northern Red Oak

(*Quercus rubra*)



- Zone 3
- Large
- Slow
- Fall color, stately
- Adaptability



Little Leaf Linden

(*Tilia cordata*)

- Zone 3
- Large
- Moderate
- Fragrance and shape
- Adaptable, aphids, included bark



European Larch

(*Larix decidua*)

- Zone 3
- Medium to large
- Moderate
- Spring foliage and fall color
- Moist and shady



Hackberry

(*Celtis occidentalis*)



- Zone 3
- Large
- Fast
- Nice shape
- Adaptable, Water-wise

Ginkgo

(*Ginkgo biloba*)



- Zone 3
- Medium to large
- Slow
- Fall color
- Plant males, no pests



Sweet gum

(*Liquidamber styraciflua*)

- Zone 5
- Large
- Moderate
- Fall color
- Drainage, fruit



White Fir

(*Abies concolor*)

- Zone 3
- Large
- Fast
- Blue color and soft needles
- Water-wise



Beech

(*Fagus sylvatica*)

- Zone 4
- Large
- Slow
- Beautiful and stately
- Leaf color



Tulip Tree

(*Liriodendron tulipifera*)



- Zone 4
- Large
- Fast
- Flower
- Weak wood



Cedar of Lebanon

(*Cedrus libani*)



- Zone 5
- Large
- Moderate
- Stately, graceful

Dawn Redwood

(*Metasequoia glyptostroboides*)

- Zone 5
- Large
- Fast
- Fall color
- Deciduous conifer



Shade Loving/Tolerant Trees

- Ginnala Maple
- Japanese Maple
- Fullmoon Maple
- Serviceberry
- European Hornbeam
- Eastern Redbud
- European Beech
- Magnolia varieties

Specimen Trees

- A Specimen Plant is one that is unusual or impressive and grown as a focal point or interest in the landscape
- There are many in the Garden/Green Industry marketed as specimen plants for their qualities
- You may have a personal preference as to what tree will be a specimen tree in your landscape
- Choose to plant a specimen tree in a place it will be seen, somewhere you want to draw or add interest to, and that can provide protection from the elements as some trees are more tender

A Few Specimen Trees

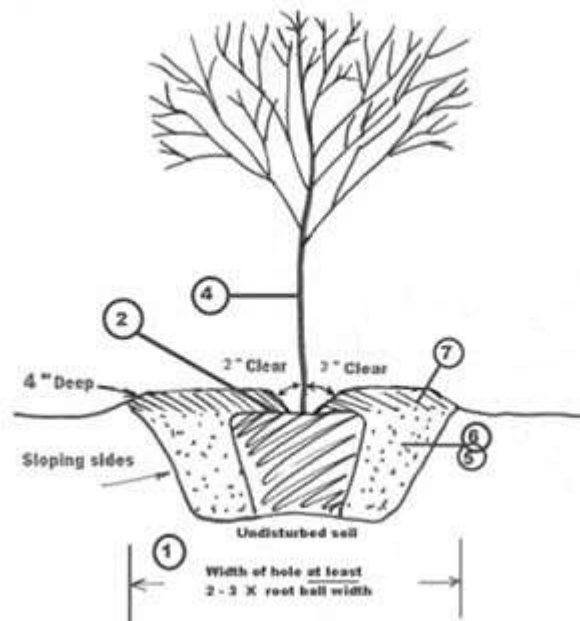
- Contorted Filbert
- Japanese Maple
- Weeping Spruce/Pine
- Weeping Pussywillow
- Bruns Columnar Spruce
- Golden Deodar Cedar
- Cedar of Lebanon
- Paperbark Maple
- Snow Fountains Weeping Cherry
- Magnolia varieties
- Anything that you find unique or beautiful that would make a great centerpiece or accent to your landscape.

Tree Planting

- Soil conditions will play a large role in planting your tree. Texture, pH, drainage, compaction, and structure all play a part, and can be modified to an extent (When conditions cannot be modified, tree species may be selected that are tolerant of extremes)
- What soil texture do you have? Sand, silt, clay, or a loamy mixture? Knowing this will determine the rate water will move through the soil (Both sand and clay soils can be amended and improve water flow/capacity by adding a compost of organic material)

Preparing the Planting Site (Digging the Hole)

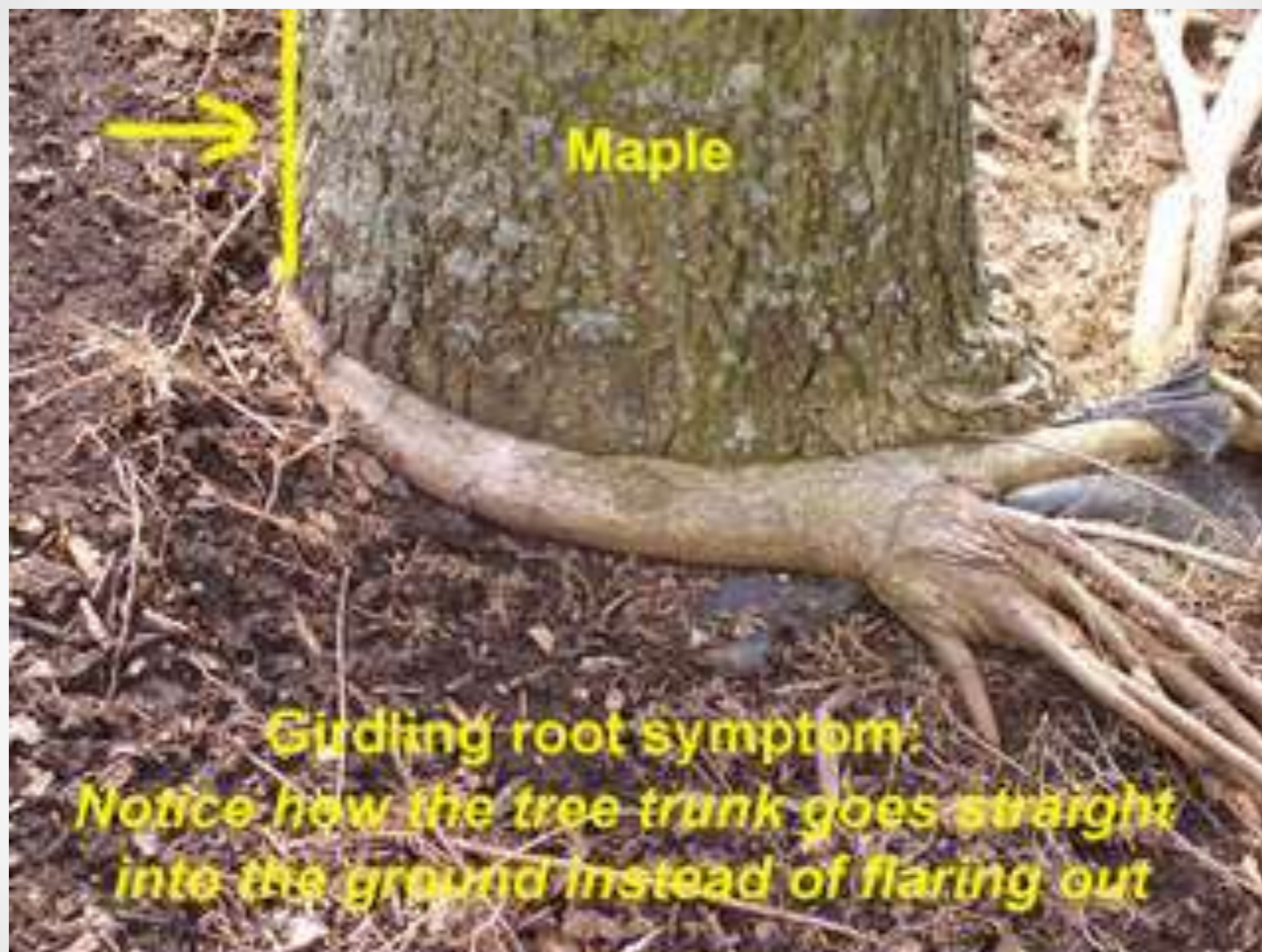
- Dig your hole much wider with the root ball, with sloping sides
- The hole should be just deep enough so the bottom of the root ball will sit on undisturbed soil and the root collar will be above or at the level of the surrounding soil



The planting hole should be shallow and wide to allow for rapid root growth after planting.
*Planting too deep is a common problem

Placing the Tree

- Place the tree in the bottom of the hole on undisturbed soil with the trunk vertical *Handle the tree by the container or its root ball to avoid trunk damage*
- Make sure your root collar is at the same level as the ground or slightly above
- Always remove ropes, wires, or tags that could girdle the trunk or branches as the tree grows
- Roots must be able to quickly grow from the root ball into the surrounding native soil for the tree to survive, so be sure to remove or cut back wire cages and at least half of the burlap. If leaving half of the burlap, make many slits (Backfilling as you remove these materials helps to keep the root ball intact)



Backfilling

- Backfill the hole with the original native soil-this is what the tree roots must ultimately move through to survive
- Up to 25% composted organic matter can be mixed in with the backfill material if the native soil is heavily clay. Generally in a case with heavy clay, till the soil outside the root ball 8-12 inches deep to help promote healthy root growth
- Pack the soil with your hand or lightly with your foot to avoid over compaction

Season to Plant

- Trees are best planted when they are still dormant with tight unopened buds and the tree is not actively growing. Generally early to mid spring
- Fall planting also works well for many tree species, although watering will be critical if it remains dry
- Ball and burlap trees can be planted spring, summer or fall- watch watering if planting in summer
- Bare root trees should ONLY be planted in spring while still dormant.

Follow up Maintenance

- Water is the trees greatest need at planting since up to 95% of a trees roots are cut off during transplanting
- Thoroughly water new trees, letting water soak into the root ball and surrounding soil. Fill in any holes that open due to settling *Don't pack wet soil
- Apply water often so the soil near the tree is moist several inches below the surface,
- *REMEMBER It is possible to overwater a tree. Do not water so often or so deeply that it becomes water logged and remains saturated



Fertilizing

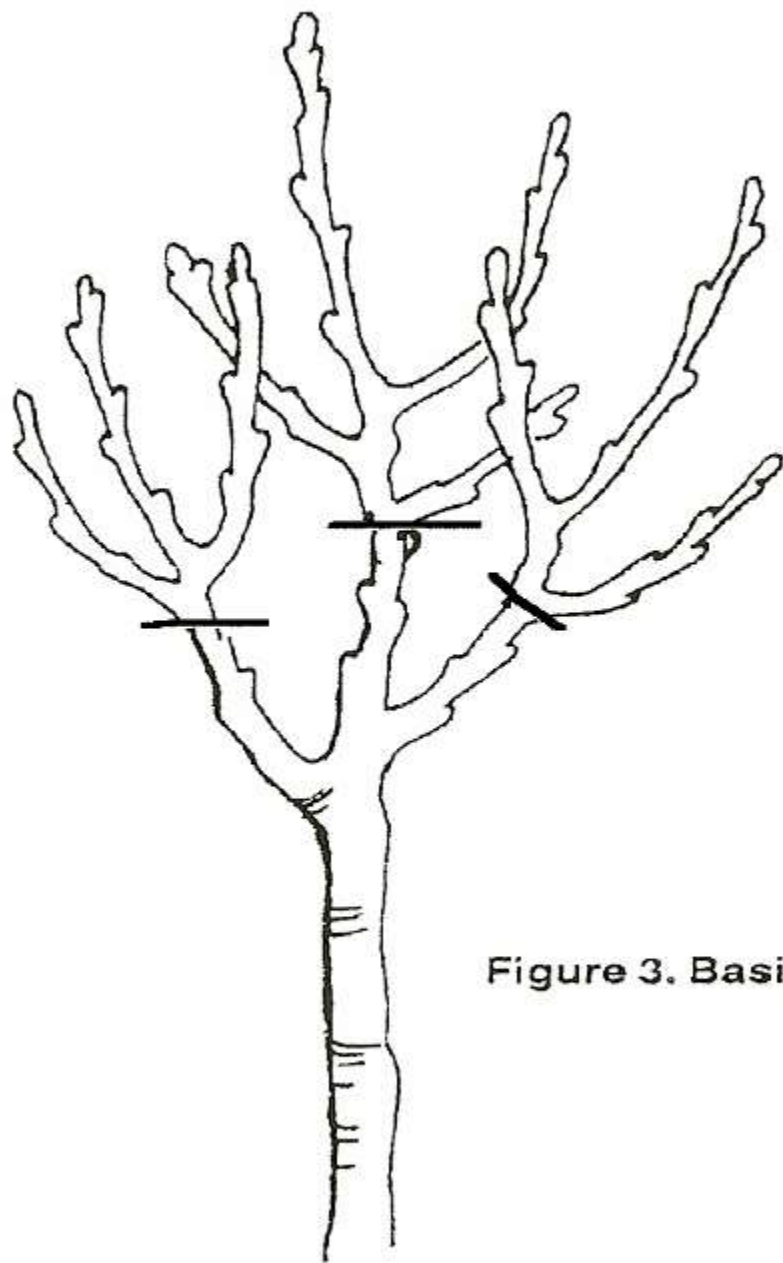
- NO fertilizers should be used at the time of planting since they can decrease root growth and cause the crown to outgrow the roots
- Root stimulator, hormones, or other products have proved to be beneficial when planting. Save your \$
- Finally, fertilizing should only be done after a tree has recovered from planting. This can take 2-3 years, and even longer for larger trees

Mulching

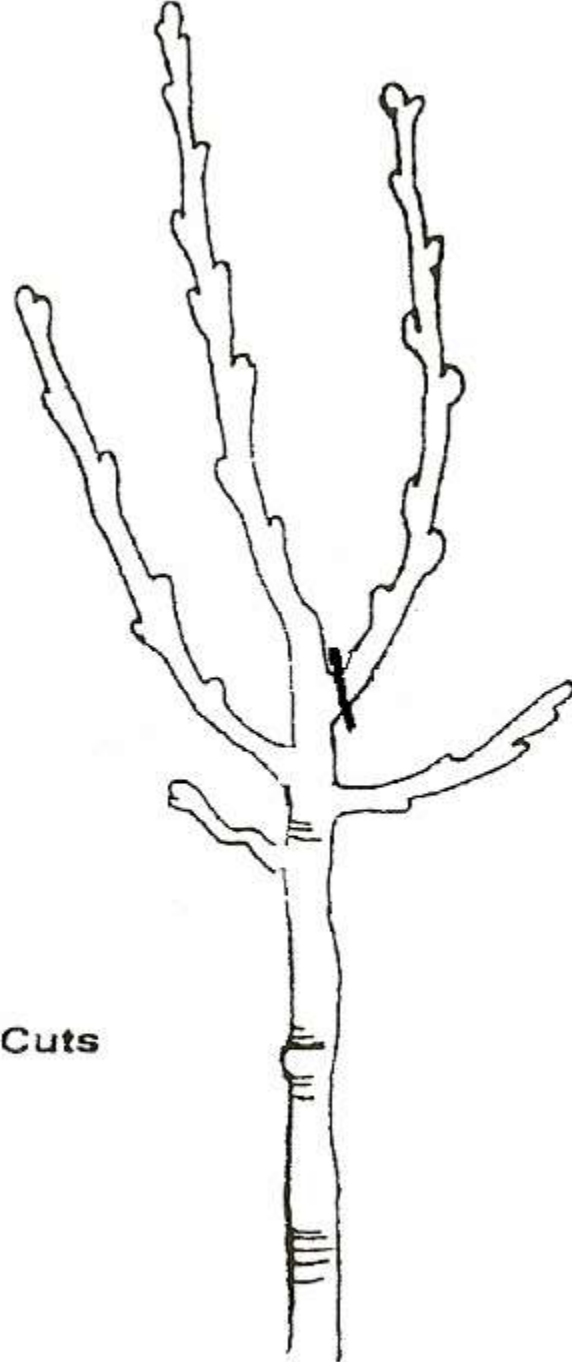
- Never use air tight sheeting with rock around trees
- Weed barrier can also be a pain and not as beneficial as you think. Again save your \$
- The greatest mulch you can use is applying woodchips or other coarse organic mulch 3-4 inches deep around the tree (*always remember to keep mulch 2-3 inches away from trunk)
- Mulch will help retain soil moisture and provide beneficial compost/nutrients to the tree as it breaks down
- For best results, replace mulch every few years after it has broken down

Pruning

- Little if any pruning should be done at the time of planting since a young tree needs all the stored food (found in the bark) and food making ability (from the leaves) it can get.
- Only remove dead, diseased, or crossed branches
- The tree will naturally lose branches or twigs if balance is needed
- Once the tree becomes established after a few years dead, diseased, rubbing, or crossed branches should be removed to ensure good tree form later in life



a. heading back



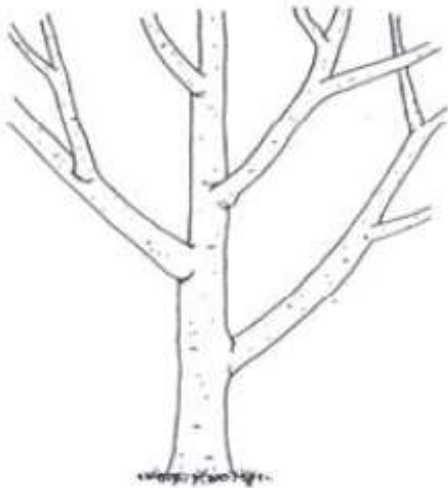
b. thinning out

Figure 3. Basic Pruning Cuts

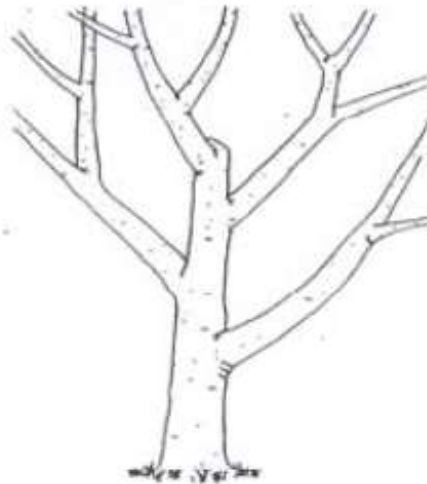
Tree Form and Shape

- Does the tree have the shape or form you want?
- Can you make a few cuts to direct growth to get that form?

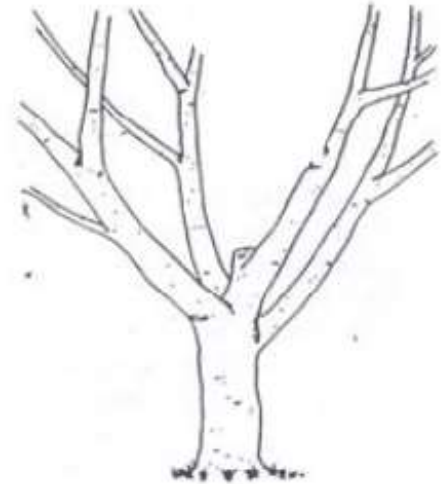
Central Leader



Modified Central Leader



Vase or Multiple Leader



Resources

- **Sources:**

- **Selecting and Planting Landscape Trees** Mike Kuhns, Extension Forester and Larry Rupp, Extension Horticulturist (book)
- **Dirr's Hardy Trees and Shrubs** Michael A. Dirr (book)
- **forestry.usu.edu**
- **extension.usu.edu**
- **isa-arbor.com** to find a certified arborist
- **treebrowser.org**- searchable database by characteristics

Questions?