Proper Pruning
Basic Techniques and Tips

2012 ECCFC
Rocky Ford, CO
The Pro-Active Pruner!

• Plan BEFORE Planting
• Select the ‘Right Tree For the Right Place’
• Begin pruning trees while they are young

Common Mistakes:
- planting trees under power lines
- planting trees too close to anything: houses, sidewalks, street signs
- planting trees that will impair visibility at intersections
Prune early in the life of a tree

Not Pruned When Young

Pruned When Young

Source 5a
Pruning Objectives

WHY does a tree need pruning?

• Develop Structure in Young Trees
• Maintain Structure in Mature Trees
• Removal of Hazard Limbs
• Safety Clearance (traffic intersections, blockage of road signs, pedestrian crossings)
• Electrical Line Clearance—always hire professionals for this!!
Timing Tips

• Dead and Diseased Wood...Prune at Any Time

• Crossing and Rubbing...Prune at Any Time

• Hazard Limbs . . . Prune at Any Time

A HAZARD TREE has a structural defect that may cause a portion of the tree or the entire tree to fall on someone or something—A TARGET.
When to Prune Live Branches

Spring - during growth flush

- Bark and cambium easily damaged
- May stimulate excessive suckering
- Considered by some to be the worst time to prune (additional research is needed)

Source 6
When to Prune *Live* Branches

**Mid-Summer** –

following growth flush-leaves harden and turn dark green

Considered a better time for most species

- Potentially best time of year for species that “bleed” with spring pruning
- Potentially slow root growth temporarily-This will direct growth by slowing growth on branches
- May be desirable or undesirable for slowing canopy growth
- Good time for wood closure

*Source 6*
When to Prune *Live* Branches

**Late Summer/Fall**

- May stimulate canopy growth into the fall
- May interfere with winter hardiness
- Decay fungi spread spores in fall
- Healing of cuts generally seems to be slower in fall

*Source 6*
When to Prune *Live* Branches

**Late Winter** – DORMANT before buds swell

Considered a better time for most species

• Results in new flush of growth in spring

• May stimulate growth rates

• May be desirable on young trees in growth phase without growth limiting factors

• Good time for wood closure

• NEVER prune during freezing temperatures, as this can damage the cambium

*Source 6*
When to Prune *Live* Branches

To Enhance *Flowering* on Flowering Trees

- For trees or shrubs that bloom in SUMMER or FALL on current year’s growth, prune in winter.

- For trees or shrubs that bloom in the SPRING from buds on one-year-old wood (typically most flowering fruit trees); prune when their flowers fade.

*Source 5a*
During Drought

Do NOT remove live tissues during drought stress
Key Pruning Concepts

• Trees do not ‘heal’, they compartmentalize (form walls) around decay.

• The success of the compartmentalization process is dependent on making proper pruning cuts!

• Pruning cuts, whether proper or not, are still considered wounds and take energy to close over the wound.

• The larger the pruning cut, the more energy the tree will need to close the wound, and it will take longer for wound closure.
The Basic Pruning Cut

Key Terms

1. Branch Bark Ridge

2. Branch Collar
Use care not to wound the trunk when pruning.

Make 3 cuts to remove large branches.

1. first cuts

2. final cut

branch bark ridge

collar
Make the final cut just outside the branch collar-do not remove collar.
ALL CORRECT CUTS

Large collar

Final cut

Small collar

First cut

Flat collar

First cut

Final cut

Final cut

The size and shape of the collar determine the position and angle of the cut.

Source 2
Make the final cut just outside of the branch collar.

Source 6
The ‘Chemical Boundary’

The collar contains a ‘chemical boundary’ which resists the spread of fungi and helps the wound close.
Flush Cut = Removing Collar and/or Bark Ridge

Source 1
Stub Cut = Leaving to much beyond the branch collar
Wound Painting = Poor Pruning Practice
Wound Closure
Wound Closure
Wound Closure
The (Not-So) Basic Pruning Cut

Key Terms

1. Co-dominant Stems

2. Included Bark
Codominant Stems = Weak Branch Union
Strong Branch Union – forms branch collar

Codominant Stems
Weak Branch Connection - no branch collar formed

Source 1
Weak union

Strong union
Pruning Codominant Stems

To remove one stem, begin from point 1 and cut up to point 2 (red line), just to the outside edge of the bark ridge.

Point one should be even with point 3 (blue line), which is the base of the bark ridge.
Included Bark = Weakest Branch Union
Included Bark = Weakest Branch Connection

Included bark: branches with bark pinched between the trunk and the branch—they are “squeezed” together.

The bark does not grow together.

Branches with included bark actually “push” against one another, have no collar, and do not have a bark ridge.
Huge crack

Same tree five years later

Source 1
Bark inclusion

Decay and discoloration from self wounding

Source 1
Pruning Included Bark

Begin your cut at point 1 and cut up to point 2 (red line)
Pruning for Structure

Prune *early in the life of a tree* to develop good structure, and to keep pruning wounds small.

Not Pruned When Young

Pruned When Young

*Source 5a*
Structure . . .

Poor Structure - multiple stems (trunks) and co-dominant stems
(i.e. Siberian elm)

Better Structure - One main stem (trunk) and nicely spaced scaffold branches
(i.e. oak, sycamore)
Weak union

Strong union
Avoid “Lions-Tailing”

Cleaning out lower foliage while leaving top outer canopy full—turning limbs into ‘pom-poms’
More Structurally Sound...
When pruning-up the trunk, always keep at least $1/2$ of the foliage in lower $2/3$s of tree.
Tree Topping
A common practice, but NOT recommended
Topping = A Poor Pruning Practice
Why Not to Top . . . .

1. Topping Causes Decay - Trunk and root rot

Source 3
2. Topping Promotes Weak Limbs - It CREATEs Hazards

The main reason for topping is to reduce the size of a tree.

However, topped trees become more of hazard in the long run because of the excessive shoot growth at the topped location.

These shoots are weakly attached and are attached to a limb that is beginning to decay because of an improper pruning cut: a hazardous combination.
Regrowth is structurally unsound
3. Topping is Expensive -
In the short run topping may seem inexpensive, but in the long run it is extremely expensive

• Topping causes rapid new growth: new shoots develop profusely below a topping cut. These new shoots quickly grow to the original height of the topped limbs, increasing the need for pruning and maintenance.

• Topping may very well cause the tree to die. You will pay to have it topped and then pay to have the entire tree removed—Very expensive.

• Topping increases the risk of liability due to weakened branches.

• Topping decreases property value.

Source 5c
Topping

Pruning

Year 1

The topped tree is an ugly stub and a remnant of a once lovely tree. If pruned properly, size is reduced but form and beauty are retained.
Year 3
Vigorous sprouts have sprung out of the topped tree in large numbers and are growing with abnormal rapidity. The pruned tree adds growth more slowly and distributes it more normally.

Year 6
In a relatively short time, the topped tree is as tall—and far bushier and more dangerous—than it was to begin with. The properly pruned tree is safer, more beautiful, and its size better controlled.
Key Terms to Remember

• Branch Bark Ridge - ridge of bark formed at branch unions
• Branch Collar - tissue formed at strong branch unions
• Drop Cut - removing the weight of a branch first
• Chemical Boundary - the cells located in the branch bark ridge and collar that wall off decay after wounding
• Compartmentalization - trees do not heal - if possible, they build walls around decay
• Codominant Stems - weak union
• Included Bark - weakest union
• Good Structure – One main trunk with evenly spaced branches with strong branch unions
• Electrical Line Clearance - always hire a professional!
Key Things To Avoid

• Stub Cutting
cutting a branch too far beyond the collar, leaving a stub

• Flush Cutting
cutting off or into the branch bark ridge and/or collar

• Wound Painting

• Lions Tailing (*pom-pom*)
pruning all limbs off of a branch, except for the very tips

• Topping

• Planting large trees under power lines

• Waiting to prune trees until they are mature:
  start young!
Hiring an Arborist

Consider Several Things When Hiring an Arborist . . .

• Membership in Professional Organization: ISA Certified Arborists are experienced professionals who are knowledgeable in all aspects of tree care

• Ask for Proof of Insurance/Liability/ Worker’s comp

• Ask for References

• Get more than one estimate (especially if you are hiring an arborist for the first time)

• Be wary of people who go door-to-door and offer bargains for performing tree work

• Don’t always accept the low bid: determine the best combination of price, work to be done, skill and professionalism

Source 4d
Remember, a Properly Pruned Tree is a . . . .

Happy Tree!
Interactive Tree Pruning Guide

http://www.arborday.org/trees/pruning/
http://www.treesaregood.com/treecare/resources/Pruning_YoungTrees.pdf

Sources for this Presentation


6. Whiting, Dr. David.  Colorado State University, Landscape/Horticulture Department.