

Structural Pruning of Young Trees



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The Purpose of Pruning

- ✓ Strength
- ✓ Form
- ✓ Growth
- ✓ Health
- ✓ Fruit production



When to Prune

Winter

- ✓ Considered best time to prune
- ✓ Tree is dormant

Spring

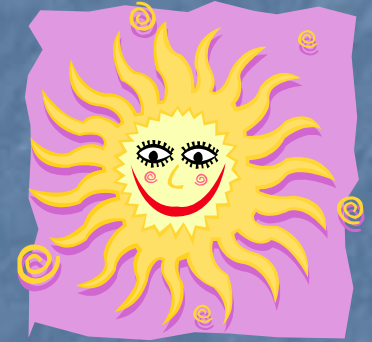
- ✓ Before bud break
- ✓ Fruit trees
- ✓ Disease can be spread

Summer

- ✓ Clearance pruning & light maintenance

Fall

- ✓ Decay fungi are active- don't prune



Make good pruning cuts

Step 1

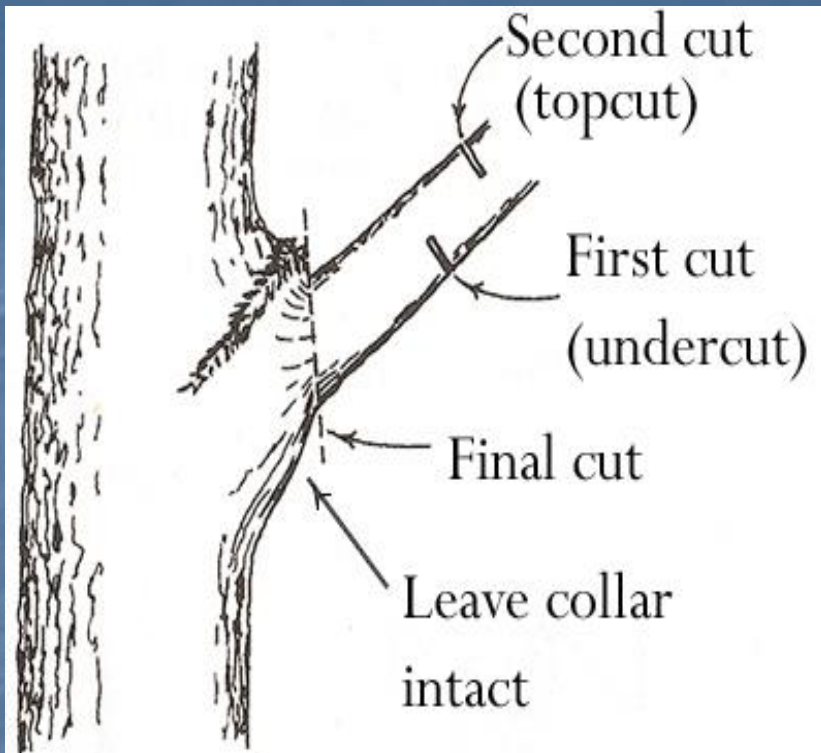
Make an undercut about 12 inches from the trunk.

Step 2

Make a topcut farther out on the limb.

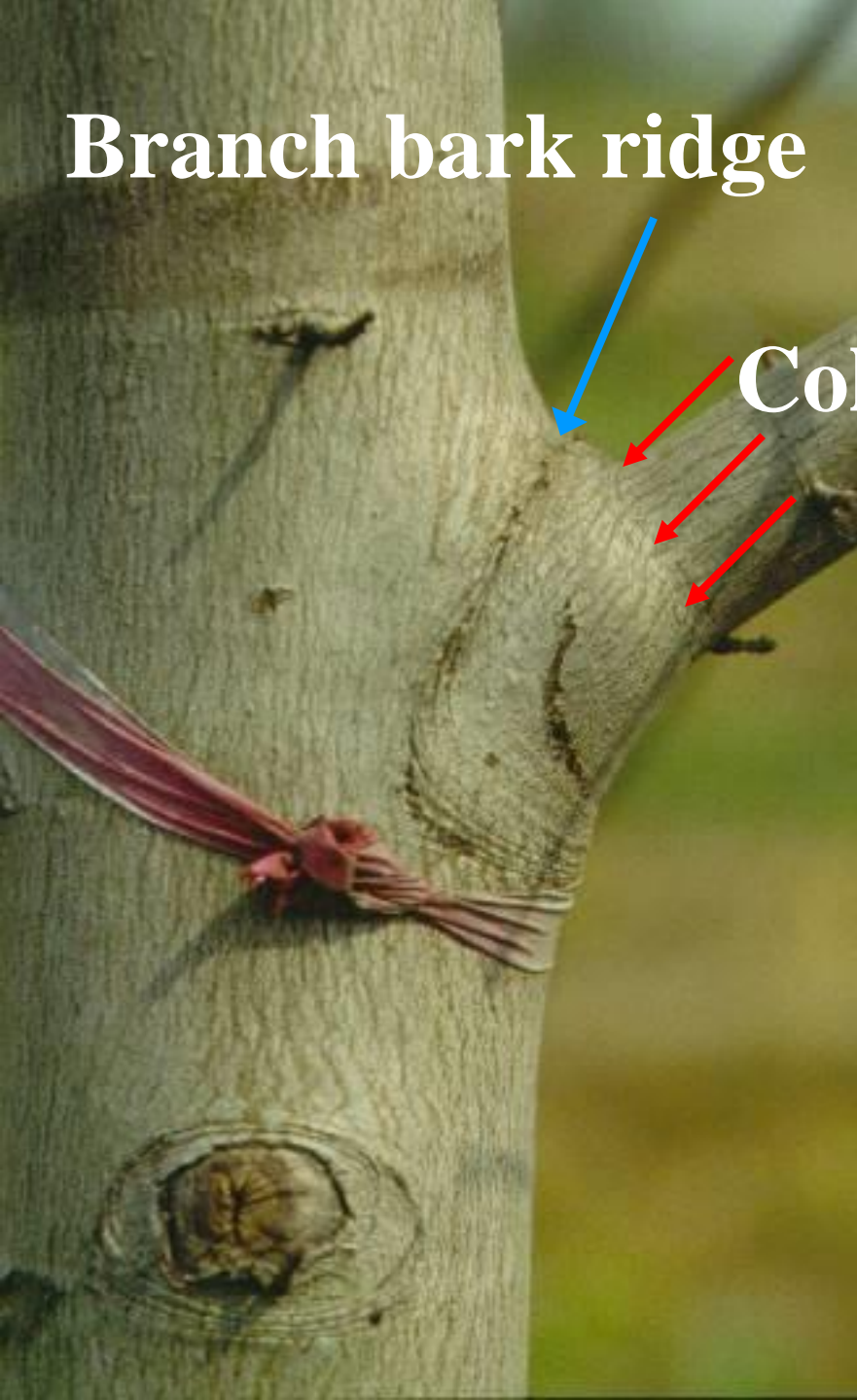
Step 3

Remove the stub with final cut, being careful not to cut flush against the trunk. Leave the collar intact.



Branch bark ridge

Collar



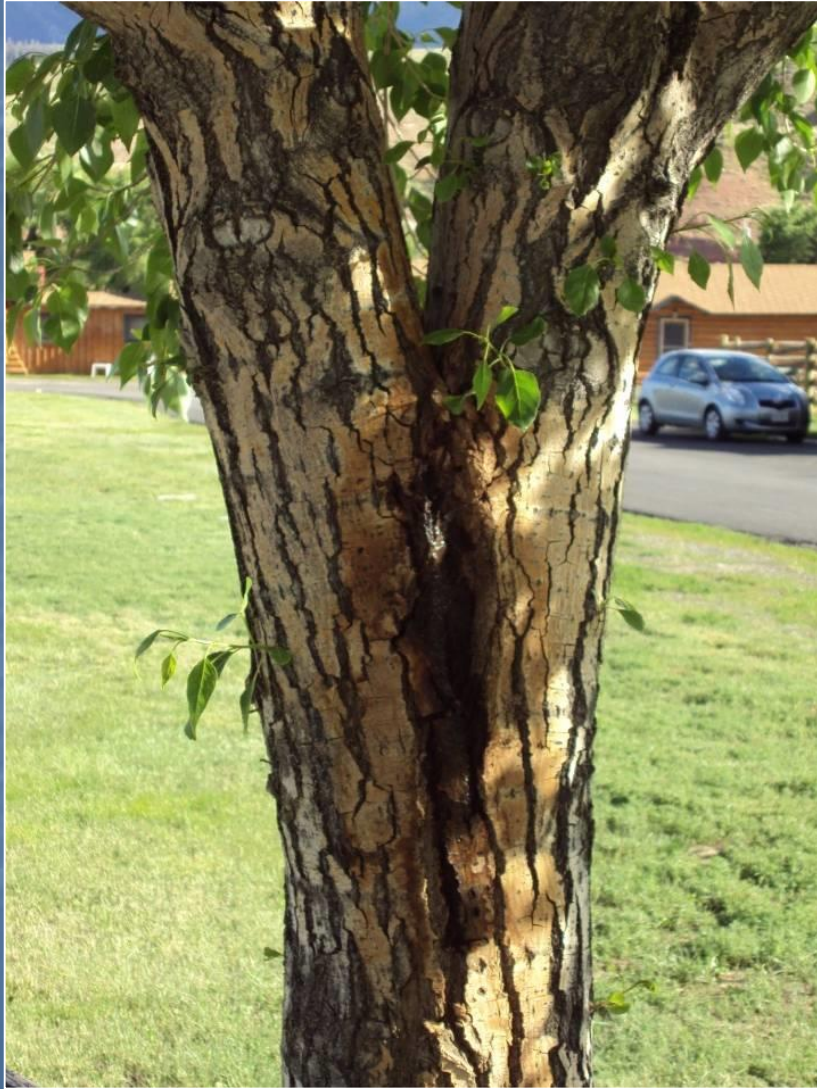


Will this wound compartmentalize?

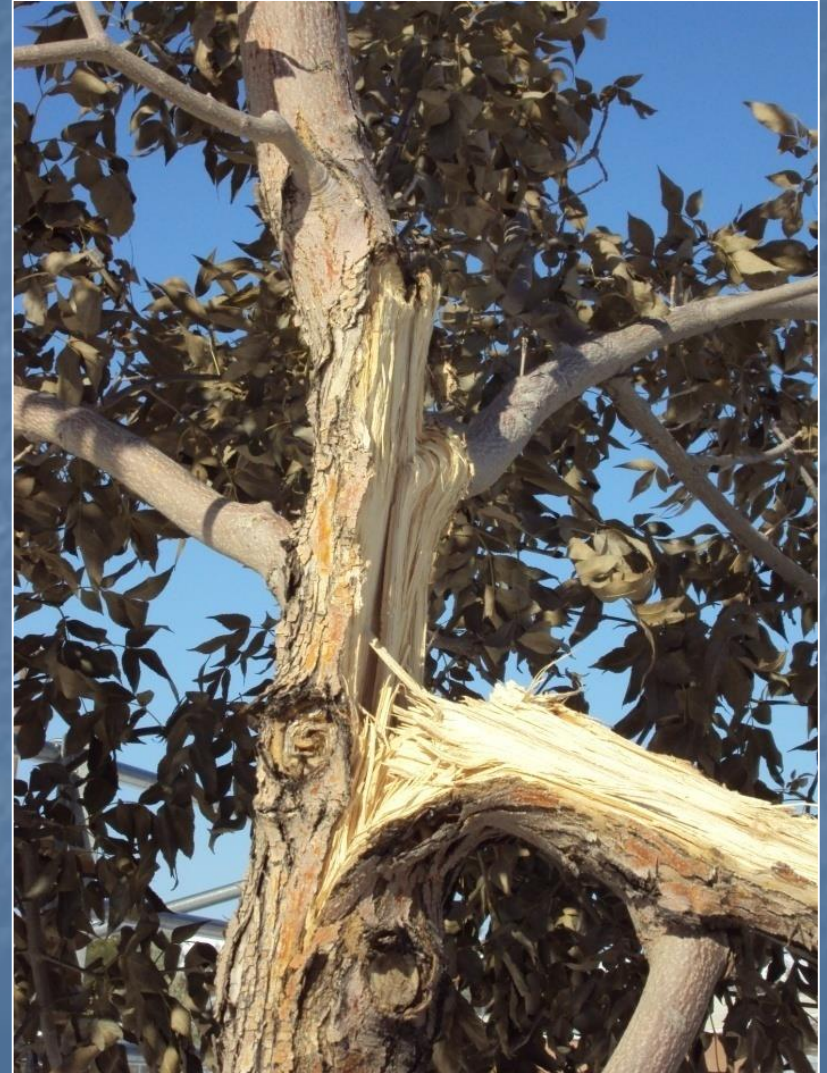
What Happened to These Trees?



Without Structural Pruning



Double Leaders



Become Single Leaders

Structural Pruning

Benefits

- ✓ Pruning wounds are small, seal quickly
- ✓ Growth goes where you want it
- ✓ Develop strong structure when tree is young
- ✓ Prevent future structural problems
- ✓ Less damage from storms
- ✓ Only minor pruning will be necessary later on

Structural Pruning

When do I start?

- ✓ Wait until the tree is established- putting on good growth
- ✓ Bur oak vs. cottonwood
- ✓ Usually 2-4 years



Structural Pruning

Pruning Severity

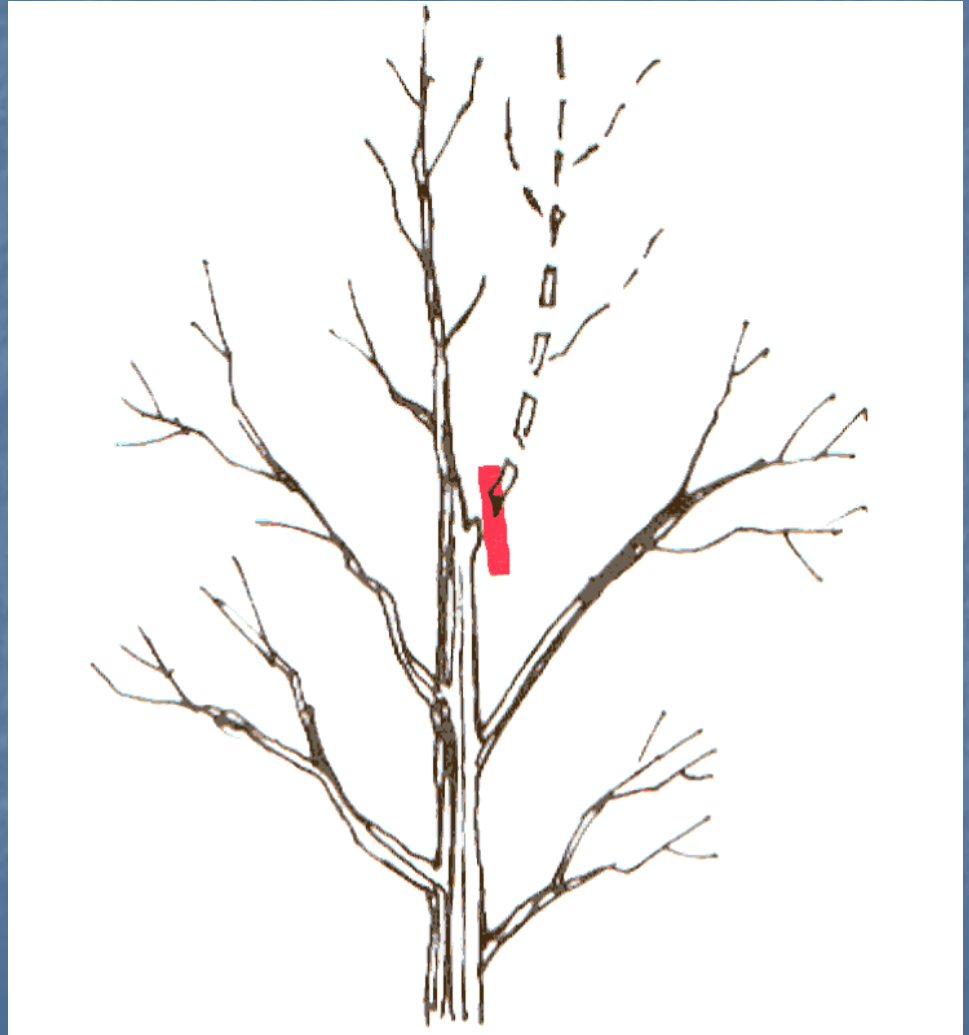
- ✓ How much can I take off?
 - ✓ Most experts say $1/4 - 1/3$
- ✓ What should you consider?
 - ✓ Species
 - ✓ Health
 - ✓ Growth rate
- ✓ How do you determine when you've hit the limit?



Structural Pruning

Double Leaders

- ✓ Prune out leader with weaker attachment
- ✓ Suppress competing leaders
- ✓ Protect leader from competition
- ✓ Main leader will grow faster

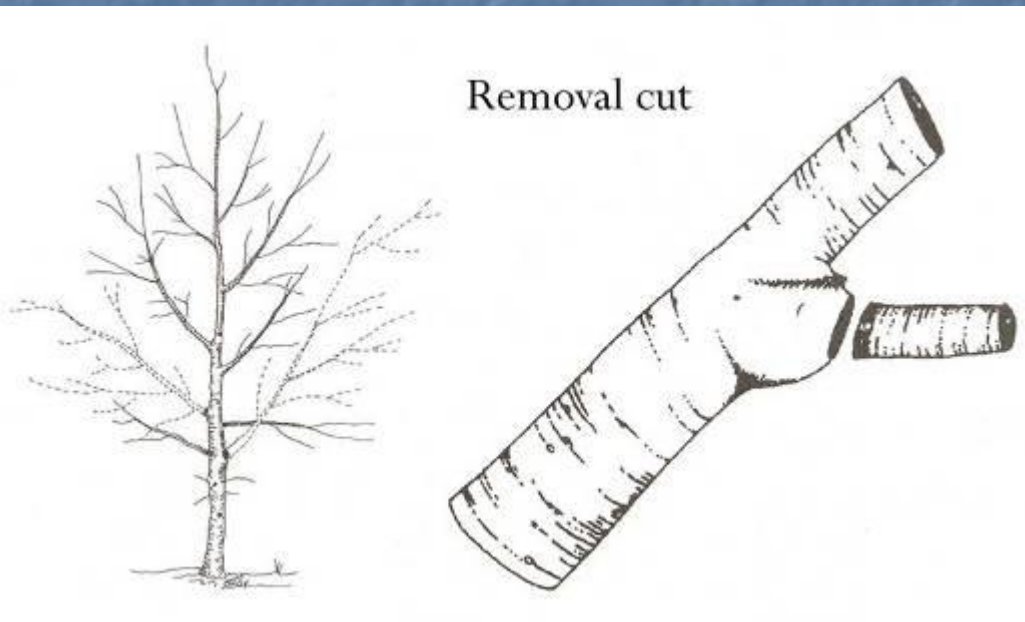
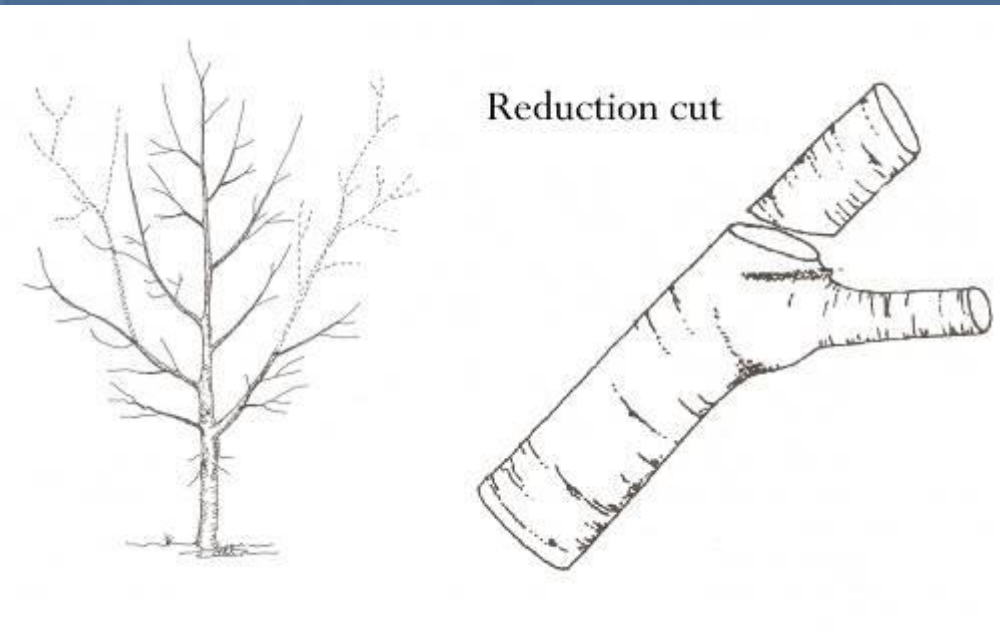


Types of pruning cuts:

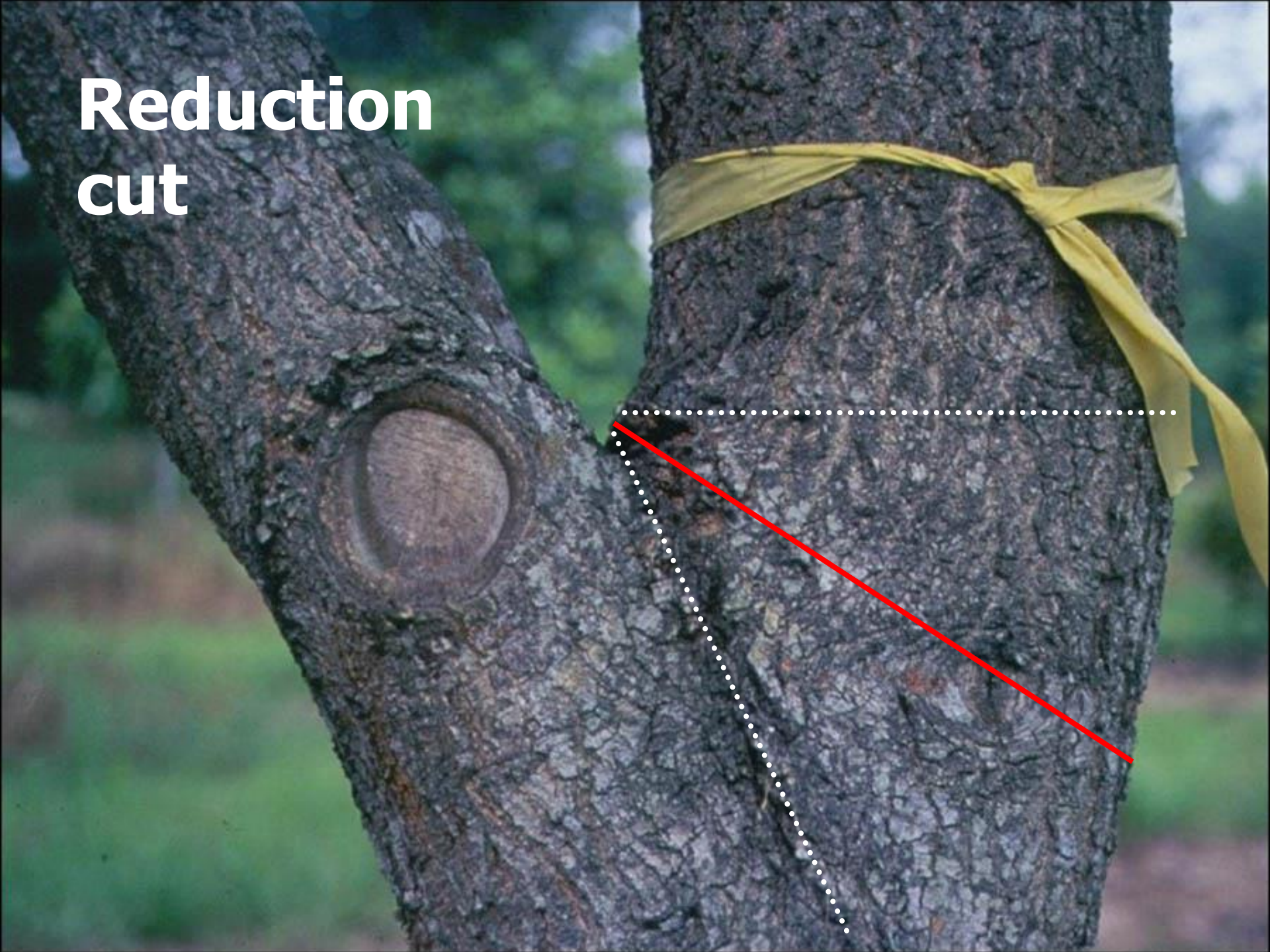
Reduction cut

shortens the length of a stem by pruning back to a smaller limb.

Removal cut prunes a branch back to the trunk or parent branch.



Reduction cut



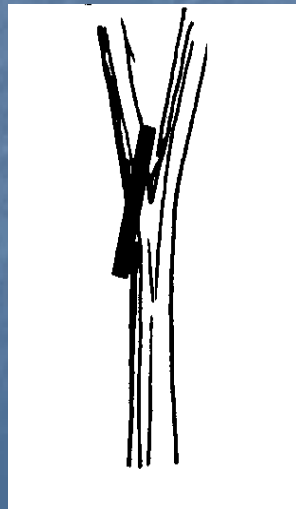
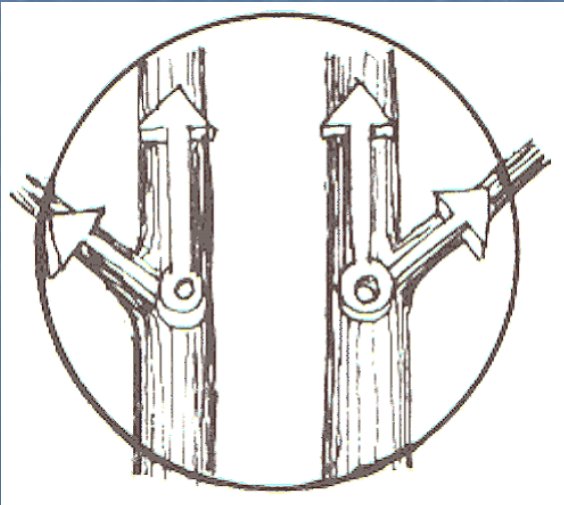
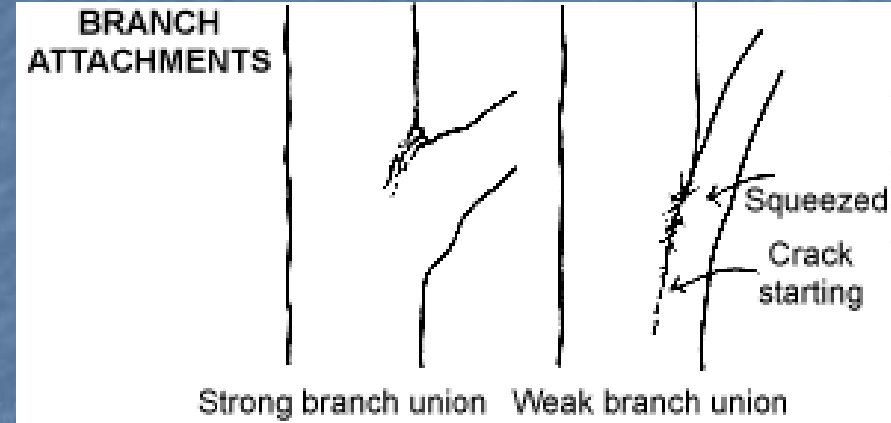
Norway Maple



Structural Pruning

Branch Angles

- ✓ Narrow angles are weak
- ✓ Ideal angles are at 10 or 2 o'clock



Branch Size

- ✓ Branches ideally are not larger than $\frac{1}{2}$ the diameter of stem

Large branches/Narrow angles



Weak Attachments



Will Become This!

Sensation Boxelder



Structural Pruning

Temporary vs. Permanent Branches

- ✓ What's the natural form of the tree?
- ✓ Where is the 1st permanent branch?
- ✓ Suppress temporary branches



Structural Pruning

Recap: Structural Pruning Steps

- 1) How much can I remove?
- 2) Double leaders
- 3) Branch angles
- 4) Branch size
- 5) Temporary vs. permanent branches



Structural Pruning

Pruning Cycle

- ✓ Generally 3-5 years for young to developing trees
- ✓ Fast vs. slow growing trees

Pruning Consistency

- ✓ Do you know what needs to be done?
- ✓ Are all staff following standards?





Where do I start?

When is it too late?



Structural Pruning

Equipment

- ✓ What do I need to do the job most effectively?
 - ✓ Ladder
 - ✓ Hand saw, pruners
 - ✓ Climbing equipment
 - ✓ Pole saw, pole pruners, loppers



Structural Pruning

Safety Requirements

- ✓ ANSI Z133.1-2006
- ✓ PPE- helmet, eye/ear protection
 - ✓ Gloves?
- ✓ Ladders- beware of metal
- ✓ Climbing- over 12 ft.: need a buddy
 - ✓ must be secured at all times
 - ✓ 3 points of contact

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