



## Tree Maintenance Workshop

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### PREPARING TREES FOR SUMMER

City of Oxford and Oxford College  
April 17, 2009

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### Remember...

- You likely have the most impact on trees and tree health than anyone else in your community
- You put time, effort, and money into caring for trees—maximize your effectiveness
- Doing things right saves time and money
- If you have knowledge and experience beyond what's presented, please share it with us

### Content

- Review of Tree Care Basics
  - Pop Quiz!
- Tree Pruning
- Tree Protection
- Tree Inspection
- Field Demonstrations

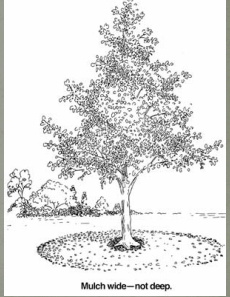
### Mulching



"Mulch volcanoes" cause many problems for trees.

**NO**

←



Mulch wide—not deep.

**YES**

→

From the International Society of Arboriculture, *Proper Mulching Techniques*, [www.treesaregood.org](http://www.treesaregood.org); used with permission.



## Tree Pruning

- Safety
- Equipment
- Reasons for Pruning
- Branch structure
- Natural target pruning
- Pruning guidelines
- Timing of pruning
- Training pruning
- Mistletoe
- Tree topping



## Safety

- There are published standards for safety for tree care operations, ANSI Z133.1-2006.
- PPE should include at a minimum hardhat, safety glasses or goggles, gloves, and high visibility vest
- Orange traffic cones are also recommended
- First aid kit and cell phone are essential
- Insect repellent, sunscreen, and water cooler are also important and useful
- Do not operate beyond your skill level or above your equipment's capability

## Equipment

- Use the right equipment for the job
- Keep equipment clean and in good operation
- Basic tree maintenance equipment
  - Pruning clippers (up to ½ inch diameter)
  - Loppers (up to 1 inch in diameter where reach is needed)
  - Folding hand saw (up to 2 inches in diameter)
  - Curved-blade hand saw (2 inches and greater)
  - Chain saw (large limbs and extensive pruning)
  - Lift truck
  - Chipper

## Reasons for Pruning

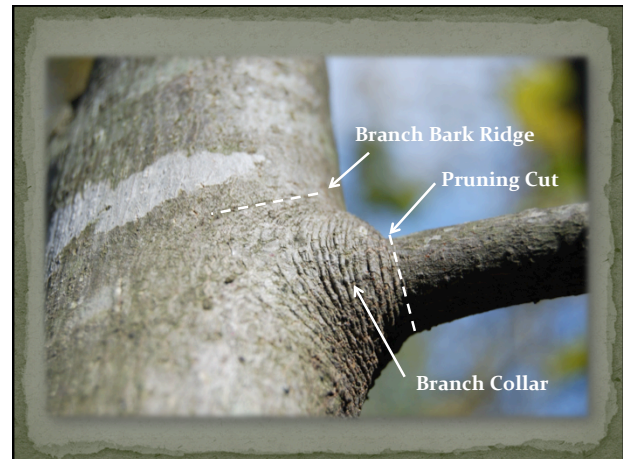
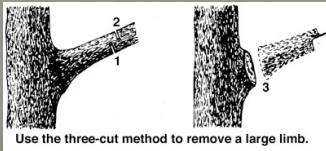
- Training pruning
- Crown cleaning to remove broken, dead, crossed, rubbing, diseased, or otherwise objectionable branches
- Vehicle, pedestrian, building, utility line clearance
- Corrective pruning, to improve structure and form after improper pruning or storm damage
- Hazard reduction to remove splitting limbs, limbs with weak attachments, decaying limbs, dead limbs

## Branch Structure

- Branch bark ridge = raised area of bark in the branch crotch that marks where the branch and parent stem meet
- Branch collar = the swollen area at the base of a branch
- Leader = a dominant, typically upright, stem—usually the main trunk; there can be several leaders in one tree
- Internode = the area between lateral branches or buds
- Node = location of a lateral branch or bud
- Co-dominant stems = branches or stems arising from a common junction, having nearly the same size

## Natural Target Pruning

- Prune just outside the branch collar
- Do not cut into the branch collar—it contains a protection zone to reduce the chance of trunk or parent limb decay
- Remove large limbs using a 3-cut method to avoid stripping the bark beneath the pruning cut



## Pruning Guidelines

- Remove co-dominant stems when trees are young
- Do not remove more than 25% of a tree's foliage in any one growing season
- The crown should be located in the upper 2/3 of the tree, with a clear stem comprising the lower 1/3
- 1/2 of the tree's leaves should be located in the lower 2/3 of the main stem
- The percentage and distribution of foliage removed should be adjusted by the species, age, health, and site of the tree



## Timing of Pruning

- Remove dead, diseased, dying, or damaged branches at any time
- Prune during the winter months when trees are dormant
  - Minimizes the risk of pest problems associated with wounding
  - Allows trees to take advantage of full growing season to close and compartmentalize wounds
  - Be cautious about pruning when pathogens are active (oak wilt, Dutch elm disease)

## Timing of Pruning

- Prune trees that bloom on the current year's growth (crapemyrtle) in late winter prior to leaf emergence, or in summer after they bloom
- Prune trees that bloom on 1 year growth (cherries) just after they bloom to preserve flower display

## Training Pruning

- 5 Step Pruning Method
  1. Remove broken, dead, diseased, dying, crossed, rubbing, and otherwise objectionable branches
  2. Select a central leader and remove competing branches
  3. Select the lowest permanent scaffold branch
  4. Select future scaffold limbs and cut back or remove competing branches
  5. Select temporary branches and subordinate to reduce competition with permanent branches

## Mistletoe

- Neither an insect or disease, but a parasitic plant pest
- Removes water and nitrogen from the tree
- Causes tree decline and eventual death that is difficult to reverse
- Remove at first sign of infection
- If left it will rapidly multiply through the action of birds eating the very sticky seeds and excreting them onto branches

From *Treating Mistletoe in Trees* by Dr. Kim D. Coder, University of Georgia, Warnell School of Forestry and Natural Resources, <http://www.warnell.uga.edu/h/publicservice/h/publicservice/publications/>

## Treatment of Mistletoe

- Knock or snap off the shoots flush with the branch bark
  - Used for massive infections
  - This reduces immediate water loss from the tree
  - Reduces mistletoe reproduction (by removing female plants)
  - Does not eliminate parasitism on the tree
  - Shoots will reappear after removal within several years

From *Treating Mistletoe in Trees* by Dr. Kim D. Coder, University of Georgia, Warnell School of Forestry and Natural Resources, <http://www.warnell.uga.edu/h/publicservice/h/publicservice/publications/>

## Treatment of Mistletoe

- Branch pruning
  - Commonly used for minor to moderate infections
  - Prune branch back at a node at least 14 inches below the infection site
- Chemical spray
  - Growth regulators (FLOREL) that controls the mistletoe shoot
  - Timing is important in preventing tree damage
  - Spray in spring with temperatures above 65 degrees

From *Treating Mistletoe in Trees* by Dr. Kim D. Coder, University of Georgia, Warnell School of Forestry and Natural Resources, <http://www.warnell.uga.edu/h/publicservice/h/publicservice/publications/>

## NEVER TOP TREES!

- Topping is the indiscriminate cutting of tree branches to stubs or lateral branches that are not large enough to assume the terminal role. Other names for topping include "heading," "tipping," "hat-racking," and "rounding over."
- Topping stresses and weakens trees, using their valuable energy reserves
- Topping causes decay and reduces the tree's ability to compartmentalize decay

From *Why Topping Hurts Trees*, the International Society of Arboriculture, [www.treesaregood.org](http://www.treesaregood.org)

## NEVER TOP TREES!

- Topping causes "sunburn" of limbs and parts of the trunk suddenly exposed to sunlight
- Topping creates hazards, as the multiple shoots that are produced as the tree tries to regain balance and food producing capacity grow quickly and are weakly attached to the parent branch or stem
- Topping is expensive because it results in a decrease in a tree's useful life and increased maintenance costs
- Topping is ugly!

From *Why Topping Hurts Trees*, the International Society of Arboriculture, [www.treesaregood.org](http://www.treesaregood.org)





## Tree Protection

### Tree Protection

- Types of protection
- The critical root zone (CRZ)
- Activities to avoid within the CRZ
- Trunk and crown protection

### Types of Protection

- Passive
  - Begins before a tree is planted
  - Passive protection = preservation
- Active
  - Essential when there is a risk of damage to a tree due to construction activity or any other harmful activity within the critical root zone
  - Consists of the erection of sturdy fencing at the edges of the critical root zone and the placement of signs identifying the area as the tree protection zone

### The Critical Root Zone

- The critical root zone is the area of soil and roots around a tree that must be protected from damage for a tree to be able to survive, and thrive
- It is the soil area around a tree where the roots that provide stability and a significant uptake of moisture are located
- The radius of the critical root zone is calculated based on the trunk diameter (DBH), and is equivalent to 1.5 feet for every 1 inch DBH
- Or the dripline, whichever is greater



### Activities to Avoid within the CRZ

- Vehicular and heavy equipment traffic
- Pedestrian traffic
- Parking
- Placement of trailers, temporary offices, portable toilets
- Storage of materials and equipment
- Equipment washouts, especially concrete
- Trenching
- Paving
- Fires

### Trunk and Crown Protection

- Protect the tree trunk and the crown from
  - Wounds
  - Crushing impacts
  - Fire
  - Excessive heat (exhaust pipes from equipment)
  - Chemical contamination, herbicides











## Inspection

- Keep a list of trees in marginal condition
- Inspect trees in marginal condition at least once per year, preferably in early summer
- Check structural problems in winter when leaves are off the tree
- Check pruning needs in the summer when branches are loaded with leaf weight
- Observe trees throughout the season and know the signs of a tree in trouble



## Field Demonstrations

## Remember ANSI Standards

- Standards developed by industry representatives and approved by the American National Standards Institute (ANSI)
- Published by the International Society of Arboriculture
- Available at [www.isasouthern.org](http://www.isasouthern.org) or [www.isa-arbor.com](http://www.isa-arbor.com)

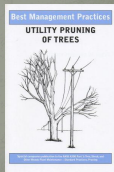
## Available ANSI Standards

- Z133.1 – 2006 Safety Requirements (also in Spanish)
- A300 (Part 1) – 2008 Pruning
- A300 (Part 5) – 2005 Management of Trees and Shrubs During Site Planning, Site Development, and Construction
- A300 (Part 7) – 2006 Integrated Vegetation Management, a. Electric Utility Rights-of-way



## Best Management Practices

- Tree Pruning (Revised 2008, also in Spanish)
- Tree Lightning Protection Systems, 2<sup>nd</sup> Edition
- Integrated Vegetation Management
- Utility Pruning of Trees (also in Spanish)



Most importantly, remember that...

- **You** have the most impact on tree health in your community



## THANK YOU!

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