Post Storm Tree Management; Restoring or Replacing Damaged Trees

INTRODUCTION

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Alabama Cooperative Extension System
The workshop today...

Part 1: Assessing Storm Damaged Trees

Part 2: Restoring Storm Damaged Trees

Part 3: Replanting for the Future
Cities and Towns Happen

- 25,375 places
- 106.3M developed acres
- 295.9B ft² of built space
- Alabama
  - 4.7 M citizens
  - 453,760 developed acres
Urban Trees Happen

- 3.82 billion urban trees
- 3.5% US land space
- Contains 75% population
- Average 27.1% canopy cover
Storms Happen

• 1,000 tornadoes yearly
• 7.67 major hurricanes/decade
• Annual severe ice storms
• Countless thunderstorms
When They Collide, ____ Happens!

- Clogged streets
- Disrupted utilities
- Loss of city services
- Increased debris
- Damaged structures
- Threat to public safety
It's no secret trees can be dangerous...
Hurricane Ivan, Brewton, AL

Photo by Charles Nesbitt, Birmingham News
Hurricane Ivan, Brewton, AL

Photo courtesy of Richard Lynn
Tuscaloosa, AL

Source: India-times
Tuscaloosa, AL

Picture; Annie and Matt Rogers
Can *some* of this be prevented...

The answer is Yes

- Better Tree Placement and design
- Minimizing damage from construction, utilities, & poor arboriculture
- Regular urban tree assessments & maintenance
So why are trees worth the risk?

Aesthetics
Make our communities more livable

St Augustine

Slide by: Ed Gilman
However, there is more than beauty...

Psychological Benefits

- Stress reduction
- Shorter hospital stays & use less meds for patients with landscape views
- Lower domestic violence
- Children with A.D.D. have better behavior in green environments
There is more than emotion... $$\$\$

**Energy Savings!!!**

- Auburn residential study showed that 17% shade saved $10/month on power bill.
- Same study also showed 50% shade saved $28/month
More trees = higher property values

Each mature front lawn shade tree adds ~1% to home property value

Shoppers purchase 12%
The list of tree benefits is long...

- Water retention in canopy (28%)
- Trees cool by 10-20 degrees
- CO₂ reduction (3%)
- Streets w/ little or no shade need re-paving twice as often as those with 30% tree cover
- Etc...
Most of us can agree trees are good...
However... We don’t always know how to get there...

- Which trees are dangerous?
- Which trees should we removed?
- Which ones should we keep?
- How do we repair storm damaged trees?
- How do we prevent future problems?
What makes a hazardous tree?

A hazard tree has a structural defect that may cause the tree or a portion of the tree to fall on someone or something else of value. (National Arborday Foundation)
Hazard Tree Identification Process

- 1. Targets
- 2. Tree Characteristics
- 3. Tree Health
- 4. Tree Defects (damage)
- 5. Abatement
  (what are you going to do about it?)
1. Targets...

“the target component of a hazard rating is the people and property that would be injured or damaged should a failure occur”

Matheny & Clark
Target; Occupancy

Hazard rating increases with increasing use...

Constant use
Frequent use
Intermittent use
Occasional use

What is the probability that a target will be **present** during the most likely failure event, before the next evaluation
Targets...

NOT ALL TARGETS ARE CREATED EQUAL
2. Tree Characteristics

- Size & Age
- Species
Tree size and age

Younger and smaller trees will take less time to restore than more mature and larger trees. – Ed Gilman
Tree species

Trees that resist decay are better candidates for restoration than those prone to decay.
Tree species cont.

Short-lived species may not be worth restoring.

<table>
<thead>
<tr>
<th>Short-lived</th>
<th>Medium-lived</th>
<th>Long-lived</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 50 years old</td>
<td>50 to 100 years old</td>
<td>&gt; 100 years old</td>
</tr>
<tr>
<td>laurel oak</td>
<td>Red maple</td>
<td>live oak</td>
</tr>
<tr>
<td>red bud</td>
<td>Silver Maple</td>
<td>sweetgum</td>
</tr>
<tr>
<td>Water oak</td>
<td>River Birch</td>
<td>S. magnolia</td>
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<tr>
<td>Bradford Pear</td>
<td>Pecan</td>
<td>baldcypress</td>
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<tr>
<td></td>
<td></td>
<td>White Oak</td>
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3. Tree Health

Once foliage re-sprouts....

Health:

- Consider information:
  - Foliage color
  - Foliage density
  - Vigor

Tree health can be an indicator of root problems and should be considered when factoring tree hazards.
4. Tree Defects:

- Root defects
- Trunk defects
- Crown defects

Defects:
- crook
- wolf tree
- sweep
- snag
- fork
- rot
Before making a decision, examine the tree in these regions:

- Branches and Leaves
- Large Limbs
- Trunk
- Roots

Look up, down and around!

Slide by Ed Gilman, UFL
Two Defect Categories for Today...

• Immediate attention (Storm related)
  – Leaners
  – Cracks
  – Splits
  – Missing the crown

• Precautionary or preexisting conditions
  – Decay
  – Cavities
  – Site constraints
  – Etc...
5. Abatement

• Remove

OR

• Restore
Assessment Immediate Goals

• Decide which trees must be removed
• Decide which trees will need future or additional evaluation

Assessment Long Term Goals

• Reduce future tree failures
• Make trees less likely to fail during storm events
Helpful tools for evaluating trees...

- Camera
- Diameter tape
- Rubber mallet
- Increment borer
- Soil auger
- Chisel or surveyors
A few things that can help you identify hazard trees...

• 1. Know your trees (Tree ID)
• 2. Know some basic tree biology
• 3. Understand tree structure
• 4. Experience...

If in doubt consider hiring the services of a Certified Arborist
What is an Arborist?

“...a person trained, educated, and has experienced in caring for individual trees.”
Who is an Arborist?

- Professional
- Educated/experiences in the science of arboriculture
- Insured
- Licensed
- Provides references
- Provides an estimate
- Puts it in writing
Hire Professionals

www.isa-arbor.com
What will professional evaluations by Certified Arborist produce?

• Certified Arborist will often use more technical hazard rating systems

• They bring more experience and knowledge about tree species, biology, structure, biomechanics and site constraints

• They have better tools for in-depth assessments...
Specialized arboricultural tools ...

Airspade
Resistograph
Hire professionals
There is not such thing as a perfect tree... hazard tree evaluations is a balancing act between tree benefits and risks

For some, trees are worth more risk than for others...