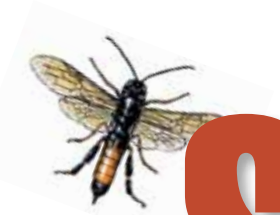

SHADE
URBAN TREES FACE NATURE'S CHALLENGES
The Mechanics of
WHY TREES
FALL DOWN
HOW TO
AVOID
Tree-related
Lawsuits
URBAN AND
COMMUNITY
FORESTRY
Managing the Risks
of Storms, Pests ...
and more!



SHADE

URBAN TREES FACE NATURE'S CHALLENGES

Georgia Urban Forest Council (GUFC)

MISSION
To sustain Georgia's green legacy by helping communities grow healthy trees.

VISION
To be a broad-based leadership resource in promoting the importance of trees throughout Georgia by leveraging user-friendly technology, influencing the policy-making process and providing cutting-edge programming.

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Georgia Urban Forest Council

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AROUND THE STATE

Smyrna Promotes Planting Projects

Smyrna students and teachers plant trees at school.

For the last three years, the Smyrna Tree Board has taken on the challenge to increase tree canopy cover at Smyrna's schools and to educate students on the importance of those trees. The Tree Board completed planting projects at four schools in 2010-2011, with students and teachers assisting in the projects at two of the schools. This gave the Board an opportunity to educate their helpers on how to care for the trees and why they are important. A total of 21 trees have been planted at six schools since 2009.

Trail Presents Construction Challenge

Tanyard Creek Trail.

Preserving the natural character of a woodland area became a priority when construction of the mile-long Tanyard Creek Trail section of Atlanta's BeltLine called for the trail to pass through large areas of native woodlands. Original plans required the installation of three bridges, a tunnel and hundreds of tons of concrete. This would have severely impacted the critical root zones of over 100 mature trees.

Arborguard Tree Specialists' President, Spence Rosenfeld, was asked to look for possible tree preservation solutions. He proposed an alternative method of construction, which minimized tree loss and assured the survival of the woodland area.

Rome Saves Crape Myrtles

Transplanted crape myrtles adorn public buildings.

How do you re-purpose mature trees that need to be removed from a highway median? The City of Rome's Tree Board came up with a win-win solution. The Board suggested not only removing 275 of some 400 overgrown crape myrtles from a 1.5-mile strip of highway, but also transplanting them to public spaces and making them available to private citizens for planting.

In early 2011, crews carefully dug out and transported the designated trees. Several days later, over 100 trees were sold to local residents for a nominal fee. The remaining trees were transplanted onto public spaces, where they are now thriving.

Mayor Cocchi Champions Trees

Mayor William Cocchi.

The City of Mansfield has found an urban forest champion in William Cocchi! As mayor of Mansfield since 1992, Cocchi formed the Mansfield Tree Board, adopted a tree ordinance and exceeded budget needs to meet the requirements for certification in the Tree City USA program. Cocchi has supported all Mansfield Tree Board initiatives such as grants, planting and tree care projects. The Mansfield Council has adopted a 2011–2021 Comprehensive Plan with an emphasis on tree planting to restore lost canopy.

Association Fights Insect Invasion

Since 2000, professionals in the South started noticing a new insect problem moving into the region. The Hemlock Wooly Adelgid, an aphid-like insect native to China, was coming to Georgia, and experts knew it would be a problem for Georgia's hemlocks.

The Environmental Group of the Sautee-Nacoochee Community Association realized there were no readily available Kioritz injectors to apply insecticides to control the spread of the insects. The group purchased and made available the Kioritz soil injector system — well before any other agencies were able to mobilize their resources. The group was lauded for their quick reaction in recognizing a serious threat to their community forest.

Gwinnett Tech Launches Website

Gwinnett Tech's green campus.

Gwinnett Technical College has launched its Gwinnett Trees Count website, an online inventory of the college's urban forest campus, which will serve as a resource for community residents and GTC students.

Gwinnett Trees Count provides a viewable, online inventory of more than 800 different trees in the maintained areas of the college's 87-acre campus. The site identifies the type of tree, in addition to statistics about its size and canopy. To access the site, click on: gisweb.gsc.edu/website/Gwinnett_Tech_Tree_Finder/viewer.htm

AT THE *Conference*

Participants explored the reasons why trees fall down while attending the 21st Annual GUFC Conference and Awards Luncheon held Nov. 2–3, 2011, in Madison. This year's theme, "Managing the Fear Factor," had a special focus on risk management and disaster planning.

1. Trees Columbus' assistant director Ashley Smith and executive director Dorothy McDaniel; **2.** David Fulgham of the National Tree Preservation talks to an attendee; **3.** Dudley Hartel, Urban Forestry South, USDA Forest Service; **4.** Wildland Management Service's Samuel Breyfogle; **5.** Biff Adams, landscape architect, and India Woodson, DeKalb County arborist; **6.** Gail Woody of Douglas County and Zeke Martinez, arborist, A to Z Trees; **7.** Rachel Barker, environmental planner/special projects manager for the Central Alabama Regional Planning and Development Commission.

8. GUFC president Rusty Lee; Atlanta Tree Conservation Commission members Dan White, Bill Fuller and Bruce Morton; James Johnson, Georgia Forestry Commission management director; and Earl Smith of the Georgia Forestry Commission board of directors; **9.** GUFC president Rusty Lee; City of Atlanta arboriculture director Ainsley Caldwell; City of Atlanta Office of Parks' arborist Brent Beamon; James Johnson, Georgia Forestry Commission management director; and Earl Smith of the Georgia Forestry Commission board of directors; **10.** Trees Atlanta's Brian Williams; Marcia Bansley, retired executive director of Trees Atlanta and 2011 recipient of the Mary Helen Ray Legacy Award; USDA Forest Service's Ed Macie; Trees Atlanta co-director Greg Levine; and Blake Watkins of Trees Atlanta; **11.** GUFC president Rusty Lee; Mansfield mayor Bill Cocchi; James Johnson, Georgia Forestry Commission management director; and Earl Smith of the Georgia Forestry Commission board of directors; **12.** Rick Shannon, Brian Smith, Robert Mercer, Trudy Brandau and Nancy Beckemeyer, all with Georgia Power Company's Forestry & Rights of Way Services; **13.** Roy Matthews, Coweta County arborist; **14.** Attorney and arborist Randall Stamen; **15.** Dr. Kamal Gandhi, assistant professor of forest entomology, Forest Health and Protection, Warnell School of Forestry and Natural Resources, University of Georgia; **16.** William Kaufman, state plant health director, USDA.


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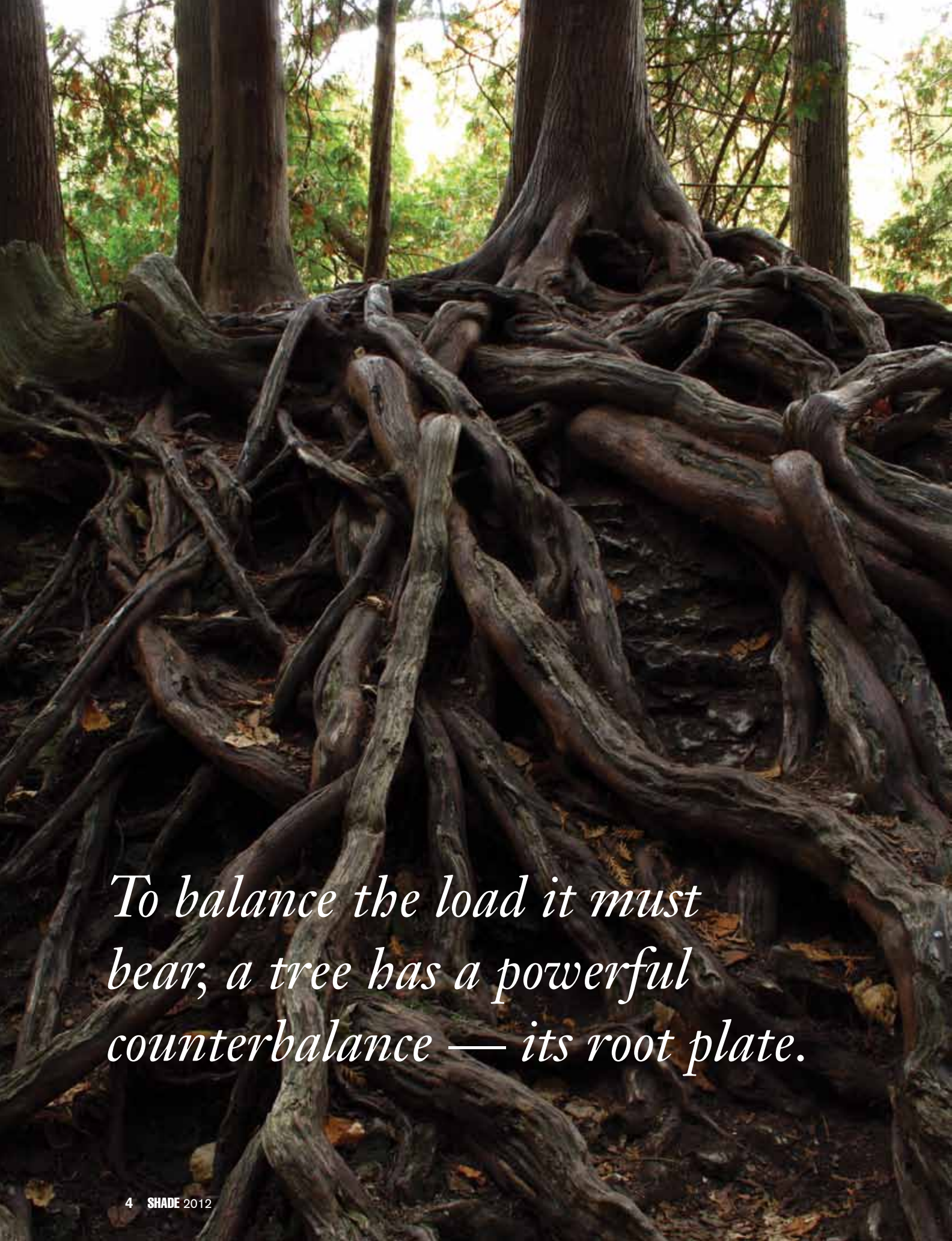


To balance the load it must bear, a tree has a powerful counterbalance — its root plate.

Why Trees FALL DOWN

Trees are designed to stand up. Their root system naturally extends out in every direction far from the trunk, anchoring the tree firmly to the ground. Their rigid thick trunks give stability and support. And their branches and twigs are flexible enough to bend back in high winds and then spring back into place.

"It's really amazing how much force a tree can take from the wind and never fail," says Dr. Kim Coder, professor of Community Forestry and Tree Health at the University of Georgia's Warnell School of Forestry and Natural Resources. "The tree spends its life adjusting to all the ordinary events that occur and the forces they bring with them. So when you see a fallen tree, you know something extraordinary has happened."

What kind of extraordinary force can fell a tree?

"When we talk about the mechanics of how trees fail, we have to look at the load they're under, how they hold themselves up, and how they fail," says Coder. "Then we can try to minimize the risks associated with tree failure."

Let's take a closer look.

The lowdown on load

When trying to predict how likely a tree is to fail, tree experts spend much of their time measuring the holding power of the tree. Instead, they should be trying to calculate how much load the tree can bear. "In the failure equation, it's 80 percent load and only 20 percent hold," says Coder. "It's the load that really matters."

First, we must consider the structure of the tree. It has a large sail area (leaves and twigs) held upright high in the air by a tapered mast (stem). The stem is woven into a thick horizontal mat of large structure roots that forms a root plate. The center of gravity is usually somewhere in the middle of the stem above the root plate.

Wind pushes against the very large sail area, trying to roll the tree out of the soil. Trees modify their structure by reactive growth over time to adapt to average wind loads. However, trees are often subject to greater-than-average wind loads. This generally occurs during one of the major storm types — thunderstorms, hurricanes, tornadoes, ice storms, derechos (a fast-moving band of thunderstorms), snow storms and lightning.

Trees in Georgia generally are not at great risk for damage from snow or ice storms, but the other storms pose a threat. Georgia averages two to three tornadoes a year and about 50 days with thunderstorm events per year. The state has a return rate of about once every 75 years for a Category 3 hurricane. Even areas far inland can feel the effect of such a storm.

"When Hurricane Hugo came ashore in North Carolina, Charlotte sustained a ton of damage," says Coder. "Depending on how fast you drive, Charlotte is three to five hours inland. So communities in middle and even northern Georgia should not think they are out of range."

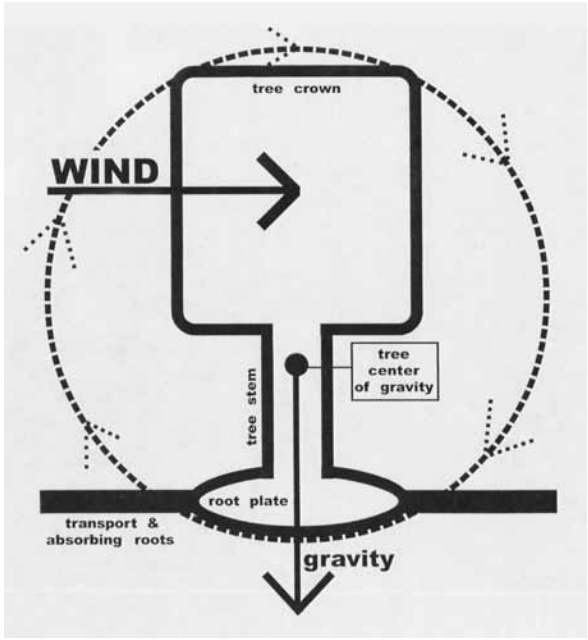
All of these storms have one thing in common — wind. Up to wind speeds of about 50 mph, trees are able to compensate by bending and swaying. Winds of between 50 mph and 100 mph result in stem breakage, uprooting and major tree failure. And wind speeds greater than 100 mph result in catastrophic tree losses.

Exacerbating matters, wind does not happen in a linear and continuous flow. Rather it is chaotic, with gusts and calms, complex pulses and rotations. So the tree bends back and rebounds. "You always hear reports on wind speeds, but the maximum gust speed is what really stresses the trees," says Coder. "Gust speeds can be 1½ to 2 times the average wind speed."

Rainfall is another critical factor in these storms. Rain turns the soil first into plastic. More rain in already saturated soil turns it nearly liquid. "Can you keep a tall tree up in a high wind in liquid?" asks Coder. "It gets a lot harder. So rainfall matters."

To get a sense of the degree of risk Georgia trees face on an annual basis, Coder fashioned his own "Coder Storm Intensity Map," merging the occurrence and severity rates of all types of storms. On this scale, Zone 10 represents the

Anatomy of a Load Wheel



DR. KIM D. CODER, 2008

Storm wind forces, and to a lesser degree gravity, act to rotate a tree out of the soil as a combined load wheel.

greatest storm intensity area, leading to the greatest tree damage.

Where does Georgia fall? In Zone 7 — the same zone that includes the area of the United States dubbed "Tornado Alley" for the number of twisters it gets each year. "I just took all those storm types and put them together and clustered everything that belongs together for tree risk," says Coder. "So overall we have the same risk of loading on our trees as they have in Tornado Alley."

Holding power

To balance the load it must bear, a tree has a powerful counterbalance — its root plate.

A tree has three rooting areas: the large roots that emerge from the stem and taper very quickly; the woody transport roots, which are the ones everyone sees; and then absorbing root fans. Most tree roots grow in the top six to 24 inches of soil and extend two to four times the diameter of the tree crown.

The job of holding the tree upright falls to the woody roots close to the trunk. These roots grow primarily horizontally in a network that spreads out from the base of the tree trunk, and they have vertical anchoring roots along this network that may grow several feet deep or more. Though the roots are not as deep as many people imagine, they fan out to a diameter of two to three times the height of the tree, generating quite a bit of holding power. And like the branches and twigs above ground that can bend with the wind rather than snap, this area actually has a bit of give to it — like the popular children's toys Weebles, which wobble but don't fall down. In a strong wind, a tree's root plate can bend rather than break, moving up and down as much as one-fourth to one-third of an inch. "That doesn't sound like much until you put 40,000 pounds of wet tree above it," says Coder. "As we get winds of over 55 to 60 mph, we are now starting to pull on the big woody roots."

Not all roots are created equally. The roots on the windward side of the tree have 2½ times more holding power than those on the leeward side. That's because during high winds, the windward roots are pulled on like a rope, and over time they develop greater strength.

Minimizing risk

So if you can measure a tree's holding power through its root system and calculate wind loads in different storm events, should you be able to accurately predict which trees will fall down and which will remain standing? Not necessarily.

There are equations to predict tree stability, but they have so much variability that they are nearly useless in accurately predicting tree failure.

So the best you can do is minimize the risk. That means first and foremost leave the tree alone as much as possible. Trees generally do a great job of growing and staying upright as long as we don't interfere.

Pay particular attention to keeping the root plate as healthy and intact as possible. Avoid soil compaction close to the tree, which will limit the tree's ability to "wobble." Don't trench off roots, particularly on the windward side of the tree, which would be the equivalent of severing the ropes that are holding it upright. Don't drive heavy equipment over the root area or park vehicles under trees.

"The strength of the root plate is proportional to its size to the fourth power," says Coder. "That means a small increase in root plate diameter translates into a great increase in wind resistance. So don't pave up to the base of a tree. Don't trench the roots."

Non-interference also refers to pruning. Mature trees seldom need much in the way of pruning, other than removing dead or damaged branches. Mature trees also don't generally need a lot of assistance when it comes to watering or fertilizing, unless we are in a time of severe drought. Do keep a watchful eye out for any diseases or pests that may strike.

"We need to do a better job of risk management," says Coder. "Trees stand up and fall down because of us and in spite of us."

Nature's Lightning Rods

Did You Know…

- Lightning kills more people than tornadoes and hurricanes.
- Most deaths occur in open fields near or under trees or around water.
- Lightning strikes the earth somewhere 100 times every second.
- The temperature of a lightning flash can be 30,000 degrees Celsius — five times hotter than the sun.
- Peak currents can be 20,000 amps.

Because of their height, trees are nature's lightning rods. That's not good news for the millions of trees that are struck each year by lightning, thousands of which are severely damaged or destroyed.

Considering the punch that lightning packs, it's amazing that any trees survive a strike. Understanding the mechanics of a lightning strike helps illuminate risk, damage and protection.

Lightning occurs when the negatively charged particles leading down from storm clouds meet up with the positively charged particles streaming up from tall objects on the ground, such as trees. The resulting charge column heats to 50,000 degrees Fahrenheit — hotter than the sun — and packs an average pressure of 35,000 to 40,000 atmospheres.

The lightning can't go through the tree — the wood is too resistant. So it travels down and around the outside, causing the water and sap to turn into steam, resulting in an explosion that can blow bark off. More damaging, however, are the shock waves associated with lightning.

"It's like you take a huge hammer and bang on the tree," says Dr. Kim Coder, professor of Community Forestry and Tree Health at the University of Georgia's Warnell School of Forestry and Natural Resources. "When the tree rebounds from that strike, it will lose bark and wood. Look at the shock waves we're talking about. A C-4 explosion (a common variety of plastic explosives) produces 40 atmospheres, but here in Georgia lightning can produce as much as 200,000 atmospheres. The shock waves are 10 times more powerful than the steam explosion."

The damage resulting from the strike can range from very little to total destruction. "About 20 percent of trees hit by lightning show no visible outward signs of damage, and most of them are not killed," says Coder. "The damage mirrors the strength of the charge exchange and the structural components of the tree."

When outward damage is visible, it is often a vertical scar or scars along the trunk. Unlike human skin, tree bark cannot be grafted or transplanted, and with significant patches of bark removed, the tree will not be able to survive drought or freezes. In addition, pests are naturally attracted to physical injury sites and will easily invade a struck tree.

Roots can also transport the damaging effects of lightning, resulting in injury to surrounding trees. "If there is a lot of root overlap, lightning can kill many other trees in the area," says Coder. "In a Florida citrus grove, you can have one hit in the middle and it will kill one-fourth to one-third acre of trees."

What can you do if your tree is struck by lightning? For one thing, you need to react immediately. "One of the biggest problems is water loss through the scar," says Coder. "If you are going to protect the tree, you have to get there within about eight hours. Use plastic or heavy pruning paint to cover the scar and try to minimize water loss."

In addition, be diligent about watering the tree, especially during dry conditions. Fertilizer might also be helpful, but you should consult an arborist before applying.

It is often not possible to determine the extent of damage the tree has suffered. Some trees will die immediately, and others will live for a number of years before succumbing.

Preventing lightning damage in trees is more effective than repairing it. Lightning conduction systems basically conduct the electric charge between the cloud and the ground in a way that minimizes tree damage. "Lightning conducting systems do not attract lightning," says Coder. "Nor do they prevent all tree damage."

The conduction system consists of an air terminal up high, a cable of copper or copper and bronze and a ground rod. They are effective in protecting trees, but they are also quite costly both in materials and labor.

"You can't afford to protect every tree," says Coder. "You have to do a risk/benefit analysis and decide which ones merit the cost of protection. Those could be rare value and specimen trees, centers of a landscape, trees under which people or animals will shelter in a storm, a tree that overhangs a house. The bottom line is we can't stop lightning from striking trees. What we want to do is try to minimize risk and reduce collateral damage."

Little Critters *Big Problems*

One of the biggest threats to Georgia's forests comes in a very small package: *Insects*. These tiny creatures can do more damage than a wildfire. And that's serious considering forestland ranks as one of Georgia's most valuable resources. Forest-related industries inject $27.2 billion and 118,423 jobs into the state's economy, making it Georgia's second largest employer. The state's vast forests significantly improve air and water quality. And heavily wooded parks and campgrounds help lure the many tourists who visit the state each year.

Protecting this valuable resource from destructive pests falls to a partnership including the Georgia Forestry Commission, the Georgia Department of Agriculture and the University of Georgia. Their main goals: to keep outside pests from entering the state in the first place and to keep native pests under control. "The most important thing is early detection," says Bill Kauffman, state plant health director for the U.S. Department of Agriculture's APHIS Plant Protection and Quarantine. "You can pay a little bit now to nip a pest in the bud, or you can pay a whole lot later when it spreads. Eradication programs can run into the millions of dollars."

Keeping pests out is no easy task in a state that has two huge points of entry. Atlanta is now the highest-volume airport in the world, and the Port of Savannah is the second largest seaport on the Eastern seaboard.

To try to keep a step ahead of unwelcome guests, experts determine which ones pose the greatest threat and which ones have a potential pathway into Georgia. In the past, pests have stowed away on the wooden packing materials and pallets used in shipping. So now all such materials must be fumigated before they can be unloaded onto Georgia soil.

The USDA is also building a new inspection station at the Atlanta airport to the tune of $5 million. "We get millions of plant imports — almost 200 million a year," says Kauffman. "They are propagation plants to be distributed to nurseries, and they have to be in the soil within 72 hours. Our job is to inspect them and make sure they are not bringing in foreign diseases."

Keeping an eye on native pests involves aerial surveys to monitor affected areas and actual traps set in the forests. When pests are found, experts first try to determine the limits or boundaries of where they are established. Then they evaluate their options. Can they remove affected trees and eradicate the problem? If not, would some type of insecticide aerial spray be effective? When pests are too widespread for effective containment or eradication options, experts will turn to natural bio-control agents — in other words, insects or parasites that prey on the pest. "Bio-control agents won't eliminate the insect, but they will keep it under low levels and reduce its impact," says Kauffman.

Here's a look at some of the most worrisome forest pests that have either caused great damage already or threaten to do so:

SOUTHERN PINE BEETLE

This native pest is the most destructive forest insect in the Southeast. In 2001–2002, a Southern Pine Beetle epidemic caused $72 million in timber losses.

Other species of pine beetles also thrive in the state. All types tend to attack trees that are stressed by drought, age, tree competition in overcrowded stands, disease, root rot, fire, hail, lightning or other insects.

Identifying which type of beetle is attacking the trees is very important, since treatment varies depending on the species. "The best way to identify it is to find the beetle itself," says Scott Griffin, a forest health specialist with the Georgia Forestry Commission. "You can also look at the tracks or tunnels it leaves, since different beetles leave different types of tubes."

HEMLOCK WOOLLY ADELGID

Native to Asia, this small, aphid-like insect was first detected in Georgia in early 2003. Since then, it has spread rapidly through Georgia's hemlocks, resulting in a 90-percent infestation in the eastern range of the state.

The hemlock woolly adelgid damages trees by feeding on the starch the tree produces. This inhibits the tree's ability to produce new growth. After three to five years of heavy infestation, the tree will die.

"It's a pretty bad picture at this point," says Griffin. "Insecticides work well against the adelgid, but you can't treat a forested area when you're talking about a quarter million acres of hemlocks in Georgia. Work is going on in bio-controls, but the time factor is against us. The adelgids have moved through the hemlock range really quickly and we have a lot of dead hemlocks out there already."

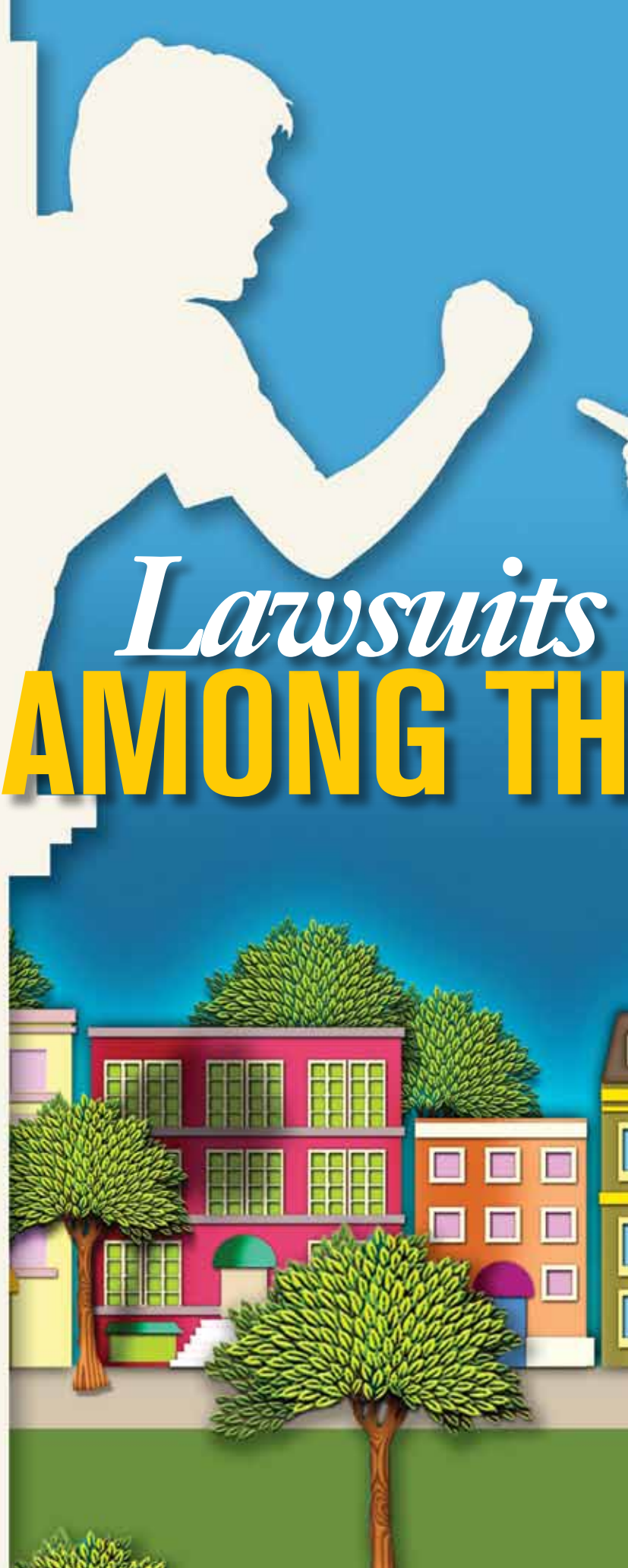
EUROPEAN WOODWASP

Native to Eurasia and Africa, this insect has not made it into Georgia yet, but experts are keeping a sharp eye on its progress elsewhere. Foresters are particularly concerned because it favors yellow pine, which is one of the main commercial species of trees in the state.

"We have native woodwasps in Georgia, but they mainly attacked stressed trees and they are not a major issue at all," says Griffin. "But the European woodwasp is much more aggressive and attacks healthy trees. It also could have a natural corridor of entry into Georgia through the pines in the Appalachian mountains. We are concerned and keeping an eye on it."

As with any of these pests, prevention is the best medicine. "Good forest management can go a long way toward keeping pests at bay," says Griffin. "You need to thin trees when necessary. Work to increase the health of trees. Good practices will minimize the impact of pests on trees."

Lawsuits AMONG TH



Arborists and tree contractors may agree with Joyce Kilmer about no poem being as lovely as a tree. But that lovely tree can also drag them into some serious legal disputes.

"It happens all the time — someone hires a contractor and cuts down trees that are on his neighbor's property," says Randall Stamen, a Riverside, CA, attorney and a certified arborist. "A contractor prunes a tree that later falls and is sued for damages. Understanding arboricultural law can help you avoid being caught in a lawsuit."

That's something to be avoided, not just for the time and stress involved, but also the cost. Contractors embroiled in a lawsuit may have to pay legal fees and, in some cases, triple damages. "If a person wrongfully enters another's property and causes damage to a tree, that person can be held liable for up to three times the value of the tree," says Stamen. "That's because all the laws regarding trees were enacted in the 1870s to protect against timber theft."

Here is a look at some of the **most common tree-related lawsuits** and what you can do to avoid them.

☞ **TRESPASS.** Trespass cases typically go along with nuisance cases or "view" cases. Someone doesn't like a neighbor's tree dropping debris in their yard or blocking their view, so that person hires a contractor to cut it down and lies, saying either that the tree is on his property or that he has his neighbor's permission.

"I give arborists four pieces of advice to avoid being sued for trespass," says Stamen. "Know where the property line is, and don't take the homeowner's word for it. Never go through a gate or over a fence to cut trees. Verify in writing that the neighbor has, in fact, given permission. And confirm that the homeowner who hired you actually owns the home and is not renting."

Stamen also points out that as a general rule, homeowners do not have the right to a view, sunlight or air. Three exceptions to this are when a city or town has enacted an ordinance, when there are covenants and restrictions that encumber properties, or when someone has obtained a view easement. "When Madonna lived in LA, she bought a view easement over her neighbor's property," says Stamen.

☞ **UTILITY LINE CLEARANCE CASES.** "I used to get a call a week from someone who said the utility over-pruned his tree," says Stamen. "That can be a problem for the contractor who did the pruning, because utility contracts generally contain an indemnity provision

Lurking E LEAVES

requiring the contractor to defend and indemnify the utility if a dispute arises."

However, in October the California Supreme Court ruled that a tree owner can no longer sue a utility for over-pruning or cutting a tree. "California is the trendsetter, so it won't be long before we see this law in other states. I don't think the court thought it all the way through, though. What happens if over-pruning creates a dangerous tree? What happens when it falls and damages property or injures a person? I'm sure we'll see these lawsuits in the future."

☞ **ENCROACHMENT CASES.** You used to be able to chop off any part of a neighbor's tree that crossed over onto your property. In the 90s, those laws began to change. In recognition that trees are valuable and beneficial and that we increasingly live very close together, many laws now say you can cut the tree at the property line if cutting is reasonable and has been done in a reasonable manner. "That's a lot of gray area," says Stamen. "How do you define reasonable? I would advise you not to put yourself in the position of having a court determine what's reasonable and what's not. I would avoid taking this type of job if at all possible."

☞ **HAZARDOUS TREE CASES.** These cases may arise if an arborist was the last person to prune or inspect a tree because there was concern about its health and safety. If that tree subsequently falls and injures someone, the contractor can be in a world of trouble.

A tightly-written contract is your best protection. "You need to spell out any limitations the homeowner or homeowner's association put on you," says Stamen. "Maybe they only had the budget for two hours of your service; if so, you need to state that in the contract. Or maybe you could not have access to the entire tree. Put that in writing."

☞ **CONTRACTOR MALPRACTICE.** "I find that contractors, as a general rule, want to do what's right," says Stamen. "Occasionally, a client will want them to do something that is slightly edgy or outright wrong."

For example, a homeowner will want a tree pruned way beyond the recommended level. Once again, this needs to be put into the contract. "You need to state that you were requested to do this, that you warned the client about the dangers of pruning to this degree and that the client accepted the risk," says Stamen.

Stamen has seen tree-related lawsuits increase over the past several years, and he offers this general advice to arborists, contractors or tree consultants:

1) Keep records. Keep a log book, or jot notes in your appointment book. Keep a camera in your glove box, and if you encounter any type of problem, snap a picture.

2) Avoid neighborhood disputes. "These pose the most danger for you," says Stamen. "Businesses know how much litigation will cost, and they make rational business decisions regarding disputes.

"But neighborhood disputes are like divorce cases. People will spend an enormous amount of money to stick it to their neighbor. And trees are an emotional issue. People always say, 'I bought this house because of that tree.' They do not make rational decisions regarding their trees."

3) Get the right insurance. If you do any consulting, get errors and omissions insurance, which is different than general liability. "When you give an opinion about something and you erred in your opinion, this type of insurance will protect you," says Stamen.

"There has definitely been an increase in lawsuits involving trees, for several reasons," continues Stamen. "People are generally more litigious. Attorneys are a lot hungrier than they used to be. And in these urban and suburban areas, we live on top of each other, and trees don't respect property lines. So you need to protect yourself."

Watch that Coverage, Please!

If a tree falls in the forest and no one is around to hear it, whose insurance covers it?

Tree owners may not spend much time worrying about that ditty, but they do have many concerns when it comes to coverage for any damages or injuries their trees may cause. Here's a look at what is and is not covered in common homeowners' policies according to State Farm, Georgia's largest writer of such policies. But as disclaimers everywhere can attest, individual policies may vary, and you need to check with your agent to determine your exact coverage.

■ **A tree falls on your house, garage, fence or shed.** If a tree damages a structure on your property, the cost of removing the tree from the damaged structure is covered as well as the cost to repair the structure. "We've also recently added a provision that says if you can't access your home because trees have blocked your driveway, we'll pay to have them removed as well," says Shane Herrera, fire claims manager for the Southern zone of State Farm. "That just makes sense because we can't very well repair your house if we can't get to it."

■ **A tree falls on your property but does not damage any structure.** This scenario depends on what made the tree fall. If a tree is damaged by lightning, fire or even theft, it is covered up to $500. That is total coverage to be applied toward removal or pruning of the damaged tree and replacing it with a new one. But if the tree is downed by wind, including a tornado or hurricane, there is no coverage. Removal is your total responsibility.

■ **Your tree falls on your neighbor's house or car.** Here the answer gets murkier. Whether or not you as the owner of the tree are liable for damage it causes depends on whether you, or any reasonable person, could be expected to know the tree was hazardous and whether you took reasonable care to mitigate that hazard. "If the tree looked healthy to the average person and it blew over in a wind storm and took out the neighbor's roof, the tree owner would not typically be held liable," says Herrera. "The neighbor would submit it to his insurance company."

If, however, your tree was visibly diseased, or if your neighbor had warned you about your hazardous tree, you could be legally liable. "In the worst-case scenario, it could end up in civil claims court," says Herrera.

This same line of thinking holds true if a root from your tree cracks a neighbor's driveway or an overhanging limb dents his car. "It doesn't particularly matter which part of the tree you are talking about. If you should have known it could damage a neighbor's property and did not take reasonable care to prevent it, you could be held liable," says Herrera.

■ **A limb from your tree falls in your yard and injures a visitor.** Most policies contain medical payments coverage. This covers medical bills that result from an accident occurring on your property. "The visitor could be inebriated and trip on his own two feet, and our medical payments coverage may still pay out," says Herrera. "However, if you had an obviously hazardous tree on your property and did not mitigate the risk and someone came onto your property and got injured, you could be held liable. The bottom line is, as a homeowner you have a responsibility to maintain your property, including your trees."

Risk Management
A Balancing Act

Urban trees give us many gifts — improved air quality, increased property values and a boost in psychological health, to name a few. But when a big storm hits, trees can also give us blocked streets, downed power lines and broken roofs.

Maintaining the benefits of trees while mitigating the risk is the goal of urban tree risk management plans. "What we don't want is risk avoidance," says Dudley R. Hartel, center manager for Urban Forestry South. "Homeowners who want to cut down all their trees or insurance companies requiring homeowners to remove all trees within 100 yards of the house — that's risk avoidance, and that's not what we want. We lose too many benefits."

Instead, a well-conceived risk management plan can reduce the impact of storms on the urban forest, lessen personal injury and property damage and decrease emergency management costs while preserving the many benefits trees provide. In fact, urban tree risk management and emergency management goals dovetail so nicely that the two can be merged.

"We can offer emergency managers a lot," says Rachel Barker, environmental planner and special projects manager for the Central Alabama Regional Planning and Development Commission (CARPDC). "We can help them reduce injuries resulting from falling limbs and trees. We can reduce costly damage to critical infrastructure. And we can reduce clean-up costs. But all too often emergency managers and urban foresters don't know anything about each other. They even speak a different language. Emergency managers call trees 'potential debris' if they are standing and 'debris' if they are on the ground. They are just looking at response and recovery. We can offer them a lot of solutions for mitigation prior to storms."

Consider Barker's experience in Columbus. When she was the city's deputy director of operations of public services, she knew she had to get her costs down. So she brought the city's arborists and urban foresters to the table with emergency managers. Their joined efforts paid off for the city.

Barker was able to reduce claims related to trees by 72 percent from 2001 to 2006. She reduced work order complaints and/or requests for services by over 55 percent and reduced 911 and overtime expenditures for tree cleanup by over 69 percent.

"You need to insert yourself into the emergency management process," says Barker. "Get into their cycle of response, recovery and mitigation. Urban forestry fits nicely into that cycle."

Arborists don't need to reinvent the wheel in the process. Jill Pokorny

STORM DAMAGE IN GEORGIA
Photos previous page: (left) a cottage on the Berry College campus in Rome; (center) a blocked intersection in Newborn; (right) county equipment clearing debris from a Newborn highway.

This page: (right) fallen trees on the Berry College campus; (below) a Berry College parking lot.

of the USDA Forest Service has already detailed a flexible, 10-step approach to follow in *Urban Tree Risk Management: A Community Guide to Program Design and Implementation*, which can be downloaded online.

The steps outlined can be adapted to any type of environment — city, corporate campuses, suburbs. If the 10 steps seem too daunting, just pick a few to get started. Hartel identifies a few minimum steps to get a successful tree risk management program off the ground.

First, assess your tree resource. Know where your trees are, particularly your old trees, since they pose the most risk. Next you have to decide exactly what you are trying to do. Do you want to reduce 911 calls for branches in the street? Reduce the public works budget for emergency tree care? Once you know what your priorities are, you can formulate some risk strategy.

A well-conceived plan can reduce the impact of tornadoes and storms on urban trees.

Getting the outcomes you want will require designating risk zones. Establishing these zones involves looking at an area's roadways, critical facilities, population and urban canopy. So a segment of town with major roadways, a hospital, a dense or vulnerable population and significant urban trees might be designated a high-risk zone, while an area with fewer, smaller roads, few if any critical facilities and a more spread-out population might be classified as low risk.

"The concept of risk zones provides a management framework that can be used to prioritize and schedule risk reduction inspections and maintenance," says Hartel. "Risk management systems, regardless of what they are for, always work with the most critical elements first, or the elements most likely to fail and create the biggest problems. Then they work backward from there. In high-risk zones, you will want more frequent inspections and you may want to look at trees individually in these areas. In a low-risk zone, less frequent drive-by inspections may suffice."

The goal of these inspections is to mitigate risk before a storm hits. Identify at-risk trees and either prune or remove them. Remove hazardous branches. Maintain overall tree health. Also, pre-determine where staging sites for debris will be, so when branches and limbs do fall, you have already designated an area in which to collect them.

When a storm does hit, the next phase of the risk management plan goes into effect — response. The risk zones you've developed can be very helpful here, because they tell response crews where the most significant or troublesome damage is likely to be. "We can help them determine where they need to send their trucks first," says Hartel.

And arborists know which areas need their immediate attention to assess the health of surviving trees. Here a little-known resource can be invaluable. Urban Forest Strike Teams are professionals trained to come in after a disaster and identify trees that need to come down and trees that can be saved. (Read more about these teams on page 15.) "Bringing in Urban Forest Strike Teams can prevent the removal of trees that are still healthy or could be retained with proper pruning," says Hartel.

"This whole idea of arborists and urban foresters working with emergency managers is relatively new. But when the two have come together, such as in Columbus, the outcome has been impressive."

"It Finally Happened to Us!"

Mention April 27 or 28, 2011, to residents of **MADISON, NEWBORN** and **ROME** and they will tell you that's when strong winds and tornadoes roared through their communities, uprooting or damaging hundreds of trees.

THE STORM IN ROME: "We hope it was a once-in-a-lifetime event," says Michael Huffman, remembering the April 27 system of storms that hit Berry College in Rome. Huffman is Berry's chief forester and was among the first on the scene to assess the damage. "I was amazed that there were no injuries."

The campus's woodlands took a major hit, however. More than 1,000 trees were damaged, and 591 trees — mostly large willow oaks — needed to be removed. Huffman had logging crews working on campus for about six weeks. They had to clear streets for emergency vehicles. Huffman had to map every tree to evaluate its condition. Some 6,000 tons of wood were removed from the campus. "We merchandised what we could. But there was so much damage from wind shear, so a lot of it had to be grinded."

Lessons Learned: "We learned we need to have someone in charge — a formal person to direct everyone. There was no official plan in place. Everyone in the heat of the moment just acted quickly."

Looking ahead, Berry College is working on a master plan, Huffman says. An assessment of trees on campus to evaluate their conditions is also being discussed.

THE STORM IN NEWBORN: Georgia Forestry Commission Forester Beryl Budd drove to Newborn after the tornado hit in the early morning of April 28. "I couldn't get into town. All the roads were blocked and trees were down," Budd recalls. "It was a mess."

Although a tornado didn't touch the ground, the storm did a lot of tree damage. At least 80% of the trees lost were large water oaks and willow oaks; many were 75 to 100 years old.

Newborn is a small town with limited resources and little equipment. Budd put in a request for additional Georgia Forestry Commission help, and, with assistance from the county fire department, most streets were cleaned up by late afternoon. The town received FEMA assistance for debris removal.

Lessons Learned: Every community should have a storm management plan, a tree inventory and a tree board, Budd says. In Newborn, a newly revived tree board has planned a canopy recovery and replacement program. "As soon as a storm happens, you should get a certified arborist out there to do an evaluation of your trees; otherwise, good trees might come down."

THE STORM IN MADISON: "It finally happened to us!" says Madison City Manager, David Nunn. On the night of April 28, straight-line winds caused widespread power outages and took down trees. Then came the tornado. It cut across Madison's commercial area and through several neighborhoods. "There were no direct hits on houses and no injuries," Nunn says. "But we lost a lot of trees in the commercial area."

The first to respond were volunteer firemen who cleared streets and driveways. Nunn had his crew plus several contractors who all worked for seven days a week to get the clean-up done quickly.

"We didn't have a written plan, but we had plenty of equipment and help. Our plan was based on past experiences and knowing how we dealt with smaller occurrences."

Lessons Learned: Prepare a list of "go to" people, including contact names and numbers at your utility companies, Nunn says. Designate someone to be a volunteer coordinator, to know where to send volunteers who want to help out. Lastly, you need to pre-plan what to do with trees and debris after the clean-up.

Who You Gonna Call?

Urban Forest Strike Teams (UFSTs) are relatively new resources to the urban forestry community. These specialized teams have been mobilized in the wakes of Hurricane Gustav in Baton Rouge, Louisiana, in 2008, ice storms in Oklahoma, Arkansas and Kentucky in 2009, and most recently, Hurricane Irene. Approximately 180 certified arborists have been trained nationwide in this program, which is funded by the U.S. Forest Service.

The Georgia Forestry Commission will host the next UFST nationwide training in May 2012 and is formalizing processes for UFST deployment, payment and funding sources. GFC is leading an effort to help arm communities with information and write storm response management plans. The Commission not only trains state agency employees, but it also leads training for municipal arborists statewide, to broaden storm response and recovery efforts.

For more information about initiating an Urban Forest Strike Team response in your community or preparing an urban forestry or disaster management plan for your city trees, contact Susan Granbery, Urban & Community Forestry Coordinator, Georgia Forestry Commission, at **sgranbery@gfc.state.ga.us** or 678-476-6227.

The People Factor

Diane Houston, Mike Browning and Ann Fries pause in front of Savannah's historic Candler Oak.

These volunteers show how smart business practices and a love of trees keep the Savannah Tree Foundation humming.

DIANE HOUSTON showed her talent for raising money as well as trees during her tenure at the helm of the Savannah Tree Foundation. It started when the county wanted to restore a park in the historic district that was former railroad property. The soil had been contaminated and remediation involved cutting down a lot of trees. But the project stalled — no one bid to redevelop the park. So Houston, then president of the Foundation, stepped up.

"We were offered the chance to be the contractor for the park — something we knew absolutely nothing about — but the prospect of earned income was too enticing," says Houston, now immediate past president. "It was a real learning experience for us — some good and some bad — but we've since done four other contracts with the county, and the income has gotten us through this economic downturn."

During Houston's time in office, the Foundation also hired Karen Jenkins as executive director, after years of the post sitting vacant. "I promised Karen, as she was coming on and I was leaving, that I'd do whatever she needed me to," she says. "I'm still deeply involved with the Foundation."

ANN FRIES is no trees expert, but she does know finance. During her working years, she served as the chief financial officer of a small venture capital firm and then as executive vice president of the Liberty Science Center in New Jersey.

So when she retired and moved to Savannah and a good friend asked her if she would lend her skills to the Savannah Tree Foundation, she said "Sure."

Fries heads a committee of one, handling all the Foundation's financial issues. During her more than three years with the nonprofit, she has brought its financial record-keeping in line with a large for-profit. "I've developed a strong budget with good cash-flow management," she says. "I've done workshops on balance sheets and profit and loss statements. I've set up a much tighter accounting program for them, so they can have real-time information, and I've done some strategic planning on future directions."

"Precise, timely financial statements are great planning and decision-making tools, no matter what size your organization is," Fries says.

When **MIKE BROWNING**'s job as a landscape architect for Atlanta-based JB+a brought him to Savannah three years ago, he wasted little time getting involved in the community. He joined the Rotary Club and he jumped on board the Savannah Tree Foundation. "They were losing some board members and looking to replace them with folks who would be like-minded and be the kind of person who would not only be passionate about trees but be a resource for the Foundation," says Browning, who is the Foundation's tree-planting chair.

In addition to large tree plantings in parks and other areas, Browning wants to encourage small projects. "We'll work with organizations that just want a couple of trees," he says. "Our mission is about canopy shade, and every little bit helps."

The Foundation has been a highlight of his move to Savannah. "It's really invigorating to be around, talk to and engage with other folks who get the science of trees and urban foresty, who get the economic development part, and get the social impact," he says. "It's about aesthetics, but it's about so much more, and this organization gets that."

BUILD A GRASSROOTS EFFORT

The Georgia Urban Forest Council's mission is to "sustain Georgia's green legacy by helping communities grow healthy trees." 2012 GUFC President India Woodson explains why doing small things in our suppressed economy can make big things happen in our urban forest.

SHADE: How can we make the "going green" label more clearly green?

WOODSON: Trees are only one part of the "going green" movement, and all help urban forestry in our quest for tree preservation. In order to better understand, you must know the other components of "going green." Going green means that the choices you make contribute to the health of the planet. Even a small reduction in your consumption of products can make a difference. Green infrastructure means planning and managing networks of natural land, working landscapes and other green spaces. The process may start out as a broad landscape, but it trickles down from a state greenway project to the county green path project to the individual home in the conservation subdivision.

SHADE: What are some ways to get "back to the basics"?

WOODSON: Arborists, landscape architects and urban forestry professionals need to hold each other and their local governing bodies accountable for following ANSI (American National Standards Institute) and BMPs (Best Management Practices) at all times. Continued due diligence needs to be practiced when selecting and planting trees on every job. We should design and plant with longevity in mind. Poor design and increased use of hardscapes continue to contribute to loss of tree-growing space in our community forest. This may be a cliché, but it's true: Plant the right tree in the right place. If you look up before you dig the hole, we will have more trees growing to maturity with full canopies.

SHADE: What is the best way to approach the decision makers in local government about the tree ordinances that affect our communities?

WOODSON: First, become familiar with the ordinance. Read it and compile a list of questions you have. Most municipalities and counties have links on their websites that will take you to the latest version of the tree ordinance. Know when it was last updated and what's changed in your community since it was approved. What about the ordinance is no longer applicable and what needs to be added? Then get "face to face" with the lawmakers at forums that are open to the public. Ask who enforces the ordinance and what the penalties are. Don't just complain about what's wrong; be a part of the solution. Solicit your homeowners association and other neighbors to rally with you. You should become the squeaky wheel! Remember, no idea or effort is too small.

SHADE: How can we rally the "citizen foresters" to the grassroots movement of urban forestry?

WOODSON: Let's take community education down a step. We have spent a lot of time making sure that the professional expertise is promoted. It would be nice if we could go "door to door" to recruit individual homeowners as citizen foresters. But it's easier to reach out to organized groups that have direct contact with homeowners at various levels. These groups include HOAs, garden groups, real estate companies and neighborhood associations. We need to implement more community forestry programs directed to those groups. They, in turn, help to create public awareness of the value of trees and lessen the fear of falling trees during storms. The economy has caused an increase in home renovation instead of new construction. Many more homeowners need information on how to preserve and maintain mature trees. These professional groups are our first line of defense.

Smart Forestry Links

Alliance for Community Trees
www.actrees.org

American Forests
www.americanforests.org

The American Grove
www.americangrove.org

Atlanta BeltLine
www.beltline.org

Georgia Grove
www.americangrove.org/ga

Lifestyles of Health and Sustainability
www.lohas.com

Sustainable Urban Forests Coalition
www.urbanforestcoalition.com

US Dept. of Agriculture Animal and Plant Health Inspection Service
www.aphis.usda.gov/plant_health

US Forest Service
www.fs.fed.us

University of Georgia Warnell School of Forestry and Natural Resources
www.forestry.uga.edu

Urban Forest Strike Teams
www.ufst.org

www.gufc.org

GEORGIA FORESTRY COMMISSION
www.gatrees.org

www.urbanforestrysouth.org

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DID YOU KNOW?
THE GEORGIA URBAN FOREST COUNCIL (GUFC)

- ✔ ***Was established*** in 1988 as one of the first urban forest councils.
- ✔ ***Is our only statewide*** urban forestry nonprofit, bringing tree care education and urban forestry programming to communities across Georgia.
- ✔ ***Is certified*** by the Standards for Excellence Institute.
- ✔ ***Is a member of*** the national Alliance for Community Trees.
- ✔ ***Produced the only*** tree ordinance study ever compiled for Georgia.
- ✔ ***With its partner,*** the Georgia Forestry Commission, GUFC founded the nationwide social network for tree enthusiasts, AmericanGrove.org, and produces SHADE magazine.
- ✔ ***Provides*** scholarship and grant opportunities to communities for urban forestry education and tree planting.
- ✔ ***Is open to*** any individual, organization, or business sharing its educational mission and dedication to improving Georgia's urban forest. Membership benefits include discounts on educational programs, networking opportunities, print and electronic publications like SHADE magazine, and updates on opportunities and events in urban forestry.

Become a member today at www.gufc.org.

Outstanding Programming Year-Round

The Georgia Urban Forest Council (GUFC) accomplishes its mission of "sustaining Georgia's green legacy by helping communities grow healthy trees" through comprehensive educational programming. These efforts include year-round programs and workshops featuring renown urban forestry educators, researchers, and practitioners; electronic and print publications; a website of urban forestry resources, and a signature annual conference, all focusing on forestry education that is current and compelling. At the Georgia Urban Forest Council Annual Conference and Awards Program, attendees enjoy keynote speakers, concurrent sessions, tours, and an urban forestry recognition program that acknowledges outstanding contributions to our community trees.

The GUFC membership is very diverse and includes landscape architects, foresters, arborists, educators, nonprofit practitioners, engineers, city and county personnel, utility and planning professionals, and citizen tree advocates.

Please donate at www.gufc.org.

Your fully tax-deductible donation directly benefits the **Georgia ReLeaf program,** a tree planting initiative spearheaded by the Georgia Urban Forest Council in partnership with the Georgia Forestry Commission to help restore the urban forest in towns and cities across Georgia that have been devastated by storms.