FLORIDA URBAN FORESTRY COUNCIL

The Council Quarterly

Quarterly Newsletter of the Florida Urban Forestry Council *2012 Issue Two*

URBAN FOREST STRIKE TEAMS AT YOUR SERVICE

Steven Graham, UFST Task Specialist

No one really likes to talk about it and when they do it is usually in a whisper. Don't look now, but the 2012 hurricane season is upon us. Officially it runs from June 1st to November 30th.

It has been a peaceful and passive seven years since the turbulent 2005 hurricane season. That season brought us three of the most powerful hurricanes on record. Wilma, Katrina and Rita were all Category 5 hurricanes with an attitude. Fortunately they only grazed south Florida and the panhandle, leaving the state of Florida relatively unscathed.

Louisiana was not to be so lucky and sustained both fatalities and massive destruction of property. In fact, Katrina is listed as one of the five-most-deadly hurricanes in the history of the United States.

Hopefully, Florida communities have been vigilant and their equipment and contact lists are updated with memorandums of agreement and contracts in place for the eventuality. It is so easy to be lulled into indifference, but plan you must. Rapid response and recovery are reality for the prepared community.

In spite of the aforementioned misgivings, there is a silver lining to the whirling cloud mass: the creation of Urban Forest Strike Teams (UFST). The concept was based on the Gulf Coast Tree Assessment project developed by ISA, SMA, Davey Resource Group, and the USDA Forest Service following hurricane Katrina. The actual implementation occurred in 2007, at the request of the urban and community forestry coordinators for North Carolina and Virginia.

A primary objective is to provide rapid response and recovery for disaster affected communities within the southeast region. UFST is organizationally modeled after the Incident Command System, or ICS. Protocols and services followed by the UFST include: National Disaster and Recovery Framework; FEMA 325; ANSI A300 Part 9; and the Matheny and Clark Photographic Guide to the Evaluation of Hazard Trees in Urban Areas.

A typical scenario is as follows: A state experiences a cataclysmic event and if state resources are limited and the severity of damage significant, the governor asks the president through FEMA to declare the area a federal disaster. First, FEMA will respond with assistance programs to restore basic infrastructure. Then, the recovery phase begins.

Concurrently, the urban forestry coordinator for the state will make a general assessment of impacted communities and request UFST assistance through the UFST advisory committee. Based on scale and intensity of event and availability of personnel, team leaders and task specialists are called up and deployed to specific affected areas.

While strike teams may be asked to assist with debris estimation, their primary role is to conduct tree risk assessments on standing damaged trees located on publicly-managed property within a defined area. By the time the UFST begins work, the roads have been cleared and power and water have been restored. At this point, standing hazardous trees represent the remaining risk to public health, safety and welfare.

The strike team evaluates event-damaged public trees, street by street within areas designated by the controlling authority, e.g., municipal forester. They are aided by a GPS system, e.g., TDS Nomad with Garmin receiver, to enter data and identify locations. Both i-Tree and Solo Forest software have been used to facilitate data entry. Both have pre-populated drop down menus that increase efficiency.

FEMA assistance programs are generally designed as cost share. In most cases, 25% of tree hazard abatement is incurred

continues on pg. 3

INSIDE:

PRESIDENT'S MESSAGE

It's hard to believe that we are already halfway through the year! Our Executive Committee continues to work hard and already has several successful programs under its belt. The Education Committee has had its nose to the grindstone, producing The Right Tree/ Right Place seminar held in the Central Region in February, which was well received and attended. Look for this program to be presented in the future in your area. We also held our very first Urban Forestry Institute at the beautiful University of Central Florida campus. This two-day event was yet another fantastic educational opportunity for our members and non-members as well. Watch for the second UFI to take place at the University of South Florida next spring.

As funding has become an issue for many organizations, our Marketing Committee has been in high gear, looking for sponsors and new collaborative partnerships. In addition, they have applied for three grants to help fund our educational programs like the "Trail of Trees" which teaches elementary-age children the value and benefits of trees. To date, we have reached over 35,000 students with this fabulous program.

Another ongoing project is working with colleges and universities to help them achieve Tree Campus USA status. We have been successful at this endeavor as well with eight new Tree Campus designations within the past couple of years. Reaching all age groups, especially the younger generation, helps to ensure that our trees and forests will be protected well into the future. I believe it is our responsibility to pass down our knowledge for their benefit and the success of urban forestry management for years to come.

Now that summer is upon us, I am reminded how fortunate we are to live in the beautiful state of Florida; however, we also live with the ever-present potential of being impacted by strong storms, including hurricanes. One important preventative measure you can take to ensure your safety, as well as that of your property, is to maintain your trees properly. This issue of the newsletter is focused on storm preparedness and recovery as we enter the hurricane season. I hope you find it informative and take away valuable information to help you "weather the storm" both before and after.

As always, I encourage you to visit our website at www.fufc.org and learn more about our educational programs, sponsorship opportunities and links to a myriad of websites that will help you navigate the wonderful world of trees and the urban forest.

Sincerely,
Mayor Mary Lou Hildreth
FUFC President

ROOTS PLUS GROWERS™

RPG Trees Are Superior Performers In Your Landscapes

- Hardening-off Trees
- Improving Quality
- Research & Education

Now More Than Ever...
Look for the RPG Tag for Quality!

2012 Grower Members

The Arbor Group
Orlando/407-235-8492

Nature Coast Tree Corp
Bell/386-935-9349

BE-MAC Farms
Odessa/813-920-2247

SMR Farms
Bradenton/941-708-3322

Fish Branch Tree Farm
Zolfo Springs/863-735-2242

Snapper Creek Nursery
Ft Pierce/772-216-9993

Huntsman Tree Supplier
Brooksville/352-754-5295

Spectrum Tree Farms
Live Oak/800-753-1379

Marshall Tree Farm
Morriston/800-786-1422

Stewart's Tree Service
Brooksville/352-796-3426

Supporting Members

John Deere Landscapes **/ 941-737-2305**

Associate Members

Cherokee Manufacturing
Graco Fertilizer Company
Grass Roots Nurseries
Griffin Trees, Inc
Jack Siebenthaler
Treemart

RPG Growers are committed to enhancing the image and quality of field-grown trees through the hardening-off process. Research continues to show that hardened-off field-grown trees are more wind resistant, use water more efficiently at planting, establish faster after planting, and when planted with container trees in a situation of limited water or irrigation will have dramatically higher survival rates.

To Subscribe to the RPG Times Newsletter or to request copies of the Tree Grading, Planting or Pruning Cue Cards contact an RPG member or visit www.rootsplusgrowers.org

continued from pg. 1

by the affected community. In order for a community to receive reimbursement for the remaining 75%, it is critical for the team to follow the hazard tree and limb removal criteria outlined in FEMA 325.

Generally speaking, if a tree greater than 6 inches in DBH has been damaged by this storm and is an immediate threat to life or improved property, removal costs are eligible for reimbursement if the tree has one or more of the following defects:

- 50% of the crown is damaged; or
- the trunk or a structural limb has been damaged to the point that heartwood is exposed; or
- the tree has been uprooted in a public use area or the tree has a lean greater than 30 degrees as a result of the event.

Costs for pruning hazardous limbs may be reimbursed if the tree is located on improved property and is a threat to a public use area and the limb(s) are greater than 2 inches in diameter at the point of breakage and still attached to the tree. Similarly, the costs of removing stumps may be reimbursed if at risk and on improved public property and measuring 24 inches in diameter at the minimum height of 2 feet.

"Costs for pruning hazardous limbs may be reimbursed if the tree is located on improved property and is a threat to a public use area..."

The strike team uses a modified version of Matheny and Clark's tree assessment protocol relating potential targets to the size of the tree part most likely to fail and its probability of failing. Points are assigned and used to prioritize scheduling of hazard tree abatement.

The information collected in the aggregate by the strike team can be used immediately for FEMA documentation necessary for reimbursement. Moreover, the municipal forester will have information critical to long-term recovery of the urban forest and it can be used to schedule follow-up restoration pruning and risk management inspections. In that way, the UFST is a catalyst for restoring environmental services to communities.

The prerequisites for participating on a strike team include: arborist certification through ISA; Incident Command System (ICS) training, *i.e.* IS-100, IS-200 and IS-700 NIMS; knowledge and experience with tree risk assessment and an interest in local, state or regional strike team deployments.

The Florida Forest Service (FFS) through Charlie Marcus is striving to train their personnel to achieve capacity to be able to respond to disaster events throughout the southeast region. Florida municipal foresters and certified arborists may qualify to supplement agency efforts *(more on that in future articles--we are working out the details)*.

Since its inception 5 years ago, the UFST has responded to 10 disasters in 11 states. Disaster events have included hurricanes, ice and snow storms and tornados. In 2011, UFST responded to disaster events in Georgia, Virginia and North Carolina and were funded through the State Emergency Management office and reimbursed by FEMA.

While we can't prevent catastrophic events, we can be better prepared to respond and recover. The UFST can help impacted Florida communities manage the storm damage to their standing tree canopies and compile the information more quickly that they need in order to attain reimbursement from FEMA. For more information, contact Urban Forester Charlie Marcus with the Florida Forest Service, charles.marcus@freshfromflorida.com.

Help Trees in Hardscapes.

Use the WANE Tree System.

The W.A.N.E. (**W**ater **A**ir **N**utrition **E**xchange) 3000 Tree Unit is a tree feeder and irrigator that supplies water, air and nutrition for trees surrounded by pavement.

These units have been used throughout the United States since 1972 in city sidewalks, roadways, parking lots, theme parks and private home sites.

- **Installs in any paved medium**
- **Send essential nutrients to the tree's root system**
- **Supplies water and air necessary for healthy tree growth**
- **Attractive and safe**
  (Visitors with high heels, wheel chairs, canes, etc. will not have a problem trying to maneuver around uneven surfaces.)
- **Available in different colors**

View our complete brochure at wane3000.com

Eliminate sidewalk grates - use a 6" W.A.N.E. unit utilizing the soil beneath the paving and lessening the trip hazard.

WANE 3000®

TREE FEEDER SYSTEM

wane3000.com

12312 Sunriver Lane • Dade City, FL 33524 • 813-961-1060

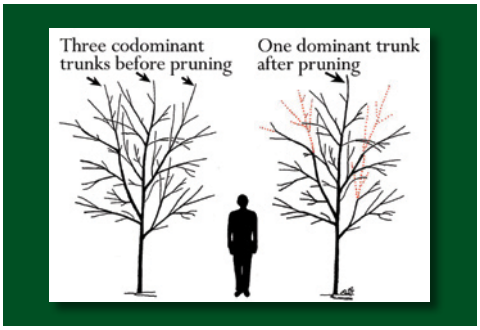
STORM DAMAGE PREVENTION BY MAINTAINING SOUND STRUCTURE

Dr. Edward F. Gilman, Professor – UF Environmental Horticulture

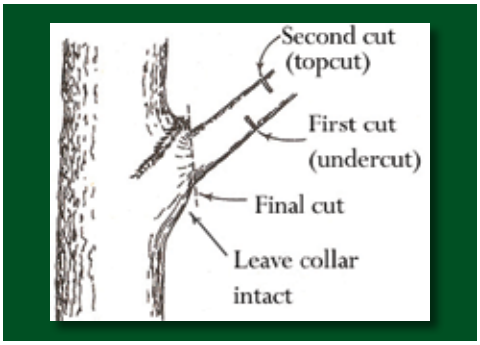
Proper pruning and training of young, large maturing trees has a significant impact on their future growth. Arborists and urban foresters know that young trees properly trained in the nursery with a dominant leader survive storms better and are likely to live longer in the landscape than trees that are not trained, or those that are improperly pruned. In addition, trees with one dominant leader can be limbed up easily to create clearance for vehicles; whereas those with multiple leaders are difficult to prune. The nursery industry recognized this with the publication *American Standard for Nursery Stock* (ANSI Z60.11990) which calls for a dominant leader in large-maturing shade trees. Some states have adopted more detailed standards for nursery trees that also call for a dominant leader *(Grades and Standards for Nursery Plants,* Florida Dept. of Agric.1998). For a number of years, leaders in the nursery industry have trained their large maturing shade trees to one trunk. There is now consensus among green industry leaders that a dominant leader is the most appropriate method of growing shade trees.

Second to placing a tree in an appropriate location and planting it correctly, pruning has the biggest impact on longevity. Landscape managers should know that planting well-structured nursery trees makes it easier for them to complete the job begun in the nursery of developing structurally-sound trees.

The main objective of pruning in the nursery and landscape is to create strong structure by guiding the tree's architecture. You minimize the growth retarding effects of pruning by removing the smallest amount of living tissue at any one pruning, while producing a strong structured, healthy tree with a functional and pleasing form. For most trees, this is accomplished by developing and maintaining a leader early in the life of the tree (one year old is not too soon), and pruning at regular intervals when the tree is young. A regular pruning program prevents branches from growing too big too fast and outpacing the leader.

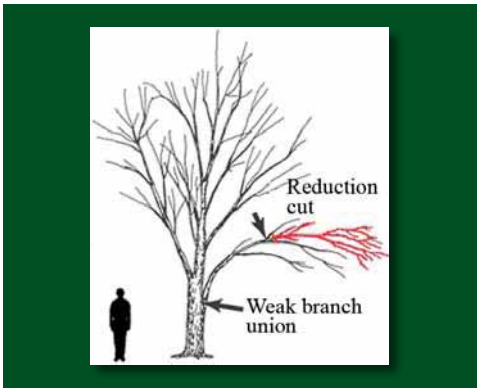


Branches that grow too big too fast often develop into codominant stems, sometimes with included bark. These weakly attached stems can split from the tree as it grows older. In addition, low codominant stems often have to be removed in the landscape as they droop too close to the ground. This leaves a huge pruning wound that can initiate trunk decay. Nursery and landscape managers can discourage lower branches from developing into codominant stems by pruning on these branches to slow their growth rate. Strive to keep branches less than about half the trunk diameter.

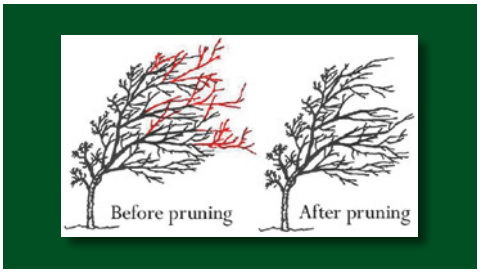


There are three types of pruning cuts designed to develop strong structure in trees. A *reduction cut* removes an upright stem back to a live lateral branch no smaller than about half the diameter of the cut stem. A *removal cut* removes a side branch back to the collar on the trunk. Cutting into the collar could slow growth and slows closure over the wound. Correctly executed removal cuts close in a circle, not an oval. The third type, a *heading cut,* is made back to a bud or between branches and, along with the reduction cut, is used to slow growth on the cut branch. Heading cuts also initiate sprout growth from behind the cut. Heading cuts are not appropriate for trees in the landscape unless there are few other options such as during restoration pruning following storms.

It is never too early to begin pruning to subordinate or suppress growth on codominant stems. Each time you subordinate a stem or aggressive branch, growth rate is slowed on the cut stem or branch. This allows the stem that was not cut to grow faster and dominate. More light reaches branches that were previously shaded above the cut, and these will grow to fill in the void created by the removed branches. It is important to remember that removal of small branch parts at a young age rarely leaves unsightly voids or gaps in the tree canopy. If you are leaving large gaps, you waited too long to prune or you are removing too much of the stem or branch.



In many cases, the reduction cut is the best choice for creating sound structure in young trees, although heading cuts are sometimes appropriate on young trees in the nursery. It is important to learn this technique and to spend enough time with the pruning crews to ensure it is carried through. I find that it is easy for workers to revert back to old habits in matter of hours following an initial instruction session. Once you have learned the technique, have your employees watch you, then have them prune trees while you are present before sending them on their own.



URBAN FOREST PLANNING – STORM PREPAREDNESS AND RESTORATION*

Robert Northrop, Extension Forester - UF/IFAS Hillsborough County Extension

The urban forest is an integral part of our communities. Neighborhoods, homeowner associations, towns, and cities can benefit from the active management of their urban forest resources to meet common goals, including reducing risks associated with violent storms. By working together, communities pool limited resources and enhance their ability to sustain their urban trees, woodlands and parks. A sustainable urban forest maximizes ecological values and is more likely to tolerate natural and human induced stresses and disturbances, such as compacted soils, air pollution, small growing spaces, as well as high winds from hurricanes and tropical storms.

"A sustainable urban forest maximizes ecological values and is more likely to tolerate natural and human induced stresses and disturbances, such as compacted soils, air pollution, small growing spaces, as well as high winds from hurricanes and tropical storms."

Any urban forest management plan in Florida should include strategies for reducing damage from strong storms and serve as a blueprint for post-storm restoration activities. Developing a management plan can:

1. Provide ways of responding to the community's needs and requests following a storm event.
2. Minimize the costs of managing trees and reducing hazards to life and property.
3. Improve coordination of management activities with other associations, neighborhoods, local departments, and state and federal disaster agencies.
4. Establish measurable and long-term goals and objectives that explicitly recognize the need to reduce the potential for strong winds to topple or destroy trees and shrubs.

Information to assist Florida communities in developing strategies to manage the risk to the urban forest associated with strong storms can be found in a series of University of Florida publications, *Urban Forest Hurricane Recovery Program series* (http://hort.ifas.ufl.edu/treesandhurricanes/). This series can serve as a tool kit of information and techniques on how to organize and implement an urban forest management plan tailored to meet a community's specific needs regarding storm preparedness and restoration.

This series provides guidance on the development of management goals and key objectives, as well as identifying essential elements of a plan (criteria) and suggested performance indicators (short term outcomes) that can form the framework for adaptive urban forest planning. For example, performance indicators could be reviewed annually to measure progress in working toward key objectives and criteria reviewed every 5 years. Goals and key objectives could be critically reviewed and updated using new assessments and inventory data once every 20 years. Following a schedule such as this will lead to an ongoing critical evaluation of progress in meeting important long-term goals and allow for adjustment to environmental change and community concerns.

Human, economic, and tree resource assessments are critical steps in successful management of the urban forest. Periodic assessments help identify limitations to management and highlight opportunities. For example, if funding is a critical issue, the community may need to consider applying for an Urban and Community Forestry Grant to help offset costs. The state and private forestry organization of the USDA Forest Service and Florida Forest Service provide financial and technical assistance to plan, protect, and to manage trees. The Florida Urban and Community Forestry Grant Program can be used to help fund tree inventories, management plan development, and other activities.

The ability of a community, large or small, to implement an urban forest management plan to foster a healthy urban forest that is more wind resistant, reduce the risk of damage from hurricane and tropical storms, and to meet the challenge of restoration following a destructive storm is simply sound fiscal, social, and environmental policy. Planning and active management will reduce the loss of life, minimize the loss of critical services, such as electric, emergency medical and fire response, water, sewer, etc., while ensuring the sustainability of the urban forest.

Sources of Information on Urban Forest Planning for Storm Preparedness and Restoration

1. University of Florida's Trees and Hurricanes. Information on the Urban Forest Hurricane Recovery Program. Includes materials from this series. http://hort.ifas.ufl.edu/treesandhurricanes/
2. Burban, L., Hermann, J., and K Himanga. 2006. *Tree Emergency Plan Worksheet for: Urban and Community Foresters, Community Leaders, Public Works and Parks Departments, Planners, Councils, and other Public Officials.* USDA Forest Service, City of Minneapolis, Minnesota, and Heartwood Forestry. http://www.na.fs.fed.us/urban/inforesources/
3. Cornell Cooperative Extension. 2000. *Tree Emergency Manual for Public Officials.* Community Forestry Education Project, Cornell Cooperative Extension of Monroe County. 32p.
4. Kenney, W. Andy, van Wassenaer, Philip J.E. and Alexander L. Satel. 2011. *Sustainable urban forest planning using criteria and planning indicators.* Arboriculture & Urban Forestry, vol.37(3): 108–117.
5. Northrop, R.J. 2011. *Developing an urban forest plan.* Florida Urban Forest Council Newsletter, 2011(4).
6. Husak, A.L., S.C. Grado. 2005. *Mississippi Urban and Community Forestry Management Manual.* Forest and Wildlife Research Center, Publication FO 417, Mississippi State University. 191 pp.
7. USDA Forest Service's Northeast Center for Urban and Community Forestry. Information on tree inventories, sample master plans, and storm damage assessment tools. http://www.umass.edu/urbantree/forest.shtml

**This article is based upon information found in: Escobedo, F., Northrop, R.J. and W. Zipperer. 2007. Developing an urban forest management plan for hurricane-prone communities. University of Florida IFAS – FOR 121. 11 pp.*

TREE SAVER®

The exclusive providers of OTC Tree Injection Formula for the Control of ***Phytoplasma Disease*** *in palms.*

Lethal Yellowing
Texas Phoenix Palm Decline

These fatal Phytoplasma Diseases are thriving in Florida and they are preventable.

Don't let your Palm trees DIE!

36 species of palm trees are susceptible and many are common in our Florida landscape: Coconut Palm, Adonidia Palm, Sylvester Date Palm, Dactylifera Date Palm, Canary Island Date Palm, Sabal Palm
And many more...

Saving palms is easy and inexpensive. Replacing dead palms is not!

For more information please call, go online or visit our booth at the 2012 Trees Florida Conference in Capitva Island.

TREE SAVER®

P.O. Box 210847 • Royal Palm Beach, FL 33421
Phone 561-655-6940 • Fax 561-798-0445
www.palmtreesaver.com • treesave@bellsouth.net

RESTORING TREES AFTER THE STORM

Larry Figart, Urban Forestry Agent – UF/IFAS Duval County Extension

It has been a long dry spring. Thankfully, the summer rains are beginning to come. Unfortunately, occasional strong winds accompany our summer showers. In the worst-case scenario hurricane force winds may impact our area. Whether it is a thunderstorm downdraft or a tropical storm, our trees take the brunt of the winds' force and sometimes they are damaged.

Many trees that are damaged in storms can recover. The ability of the tree to recover depends on the health of the tree, the species-dependent characteristic of the tree to compartmentalize, the extent of damage, the skill of the arborist, and finally, the patience and persistence of the homeowner. Tree restoration may take more than one pruning and may take several years.

Split trunks and cracks are probably the most serious damage that can occur to trees. They can occur because of included bark or from internal decay. Either way they can be braced and cabled by a certified arborist. This treatment is expensive and should be reserved for high value trees.

Leaning trees are also a concern. The key to treatment is to figure out why the tree is leaning. If it is leaning because it was pushed over by wind, it needs immediate attention. If the tree is less than four inches in diameter then it may be able to be staked back up. The support should be left on 3 months for every inch of trunk diameter. Sometimes trees lean because that is the way they grew, perhaps to capture sunlight from a far away opening in the canopy. If the lean is less than 40 degrees on a naturally leaning tree it may be fine. A tree that is leaning because it is unstable usually has an uplift of soil on one side of the tree and a depression on the other side of the tree. Again, if there is some question about a leaning tree, a certified arborist should be called in to evaluate the tree.

Broken branches are the most common type of damage caused by wind. Branches that are broken above the branch collar can be pruned at the branch collar making sure not to cut into the branch collar. If a branch is broken below a branch collar, then the tree should probably be pruned at the next branch union. In some cases a heading cut may be used. Pruning paint should not be used after a branch is pruned. It has been shown to not do anything to help a tree callous over the wound. In fact it can hold moisture and decay behind the paint causing more decay than if the wound was left alone.

In some cases the next available branch collar is a long distance away from the wound. A heading cut can be used as a last resort. However this requires a lot more follow-up. The branch will produce many sprouts at the site of the heading cut. According to Dr. Gilman of the University of Florida, a few of the sprouts should be removed, a few should be reduced, and a few should be left alone. Continued maintenance will eventually produce a branch collar at the heading cut. For a more detailed look at storm restoration go online at: http://hort.ifas.ufl.edu/woody/stormy.shtml.

Right Tree, Right Place Posters

- Tree Selection Tips
- How to Plant Trees
- Area Guidelines
- What to Avoid
- Watering Guidelines
- Pruning Tips
- Charts & Illustrations
- Convenient Size Poster
- Informative for Everyone

The Right Information at the Right Price.

Order Today!

CENTRAL FLORIDA REGION VERSION
NORTH FLORIDA REGION VERSION
SOUTH FLORIDA REGION VERSION
1 to 25 @ $7.00 each
26 to 100 @ $4.50 each
101 to 1,000 @ $3.50 each
1,001 to 2,500 @ $2.75 each

Order online, download an order form and fax or mail your order in, or call to place your order:
FLORIDA URBAN FORESTRY COUNCIL
Post Office Box 547993, Orlando, FL 32854-7993
Phone: 407-872-1738 FAX: 407-872-6868
www.fufc.org

ARTICLES WANTED

The Florida Urban Forestry Council would like to share information on what is going on throughout the state in our newsletters. We would like to receive articles on any aspect of our field. Article ideas may include, but are not limited to, the following:

- New trends in the industry
- News about tree advocacy groups
- Volunteer projects
- Favorite or new websites
- Ideas on working with the public
- City tree programs
- Solutions to common problems in your typical workday
- Children's poems, drawings, favorite quotes

Please update us on urban forestry news in your corner of the state so that we can learn from each other. Our newsletter is not only a great way to share information, but also a way to show off our accomplishments and successes. Articles can be sent to Sherie Burch, FUFC newsletter editor, at sburch@ocalafl.org.

Thanks for contributing!

WIND RESISTANCE IN TREES

Steve Graham

Probably only poets and arborists have deep thoughts concerning trees. Typically, trees are viewed as benign from a maintenance perspective or as beneficial because of their ability to cleanse the air, moderate temperatures and add beauty to the urban landscape. However, in the wake of hurricanes Charlie, Francis and Jeanne it has become evident that trees also can be destructive. It is this dual nature of trees that has sensitized Florida communities and generally created a negative public perception. Now more than ever, it is important to disseminate valid arboricultural principles to practitioners and homeowners.

What determines whether a tree is a friend or foe? While there are no hurricane-proof trees, certain characteristics afford wind resistance. These include type or species of trees, age of trees, placement of trees in landscape, conformation and vitality of trees, and tree maintenance practices. Some species of trees are generally more durable and flexible than others, particularly those with wide-angled limb attachments.

This type of information is useful in selecting trees to plant in the residential landscape. Examples include live oak, magnolia, sweetgum, and most palms. In addition, trees should not be planted within 20 feet of a structure with a conventional foundation. This not only reduces potential for damage from limb failure, but also allows for adequate access to prune canopy and, if necessary, roots next to foundation.

While we have less control over mature trees in the landscape, it is helpful to know the relative wind resistance of each species. Trees near structures that are inherently weak-wooded (e.g., chinaberry, sugarberry and maple) probably should be removed. However, it is important to note that maturity is a relative term between species and younger trees have greater elasticity due to fewer age-related structural faults. Therefore, in some cases it may make more sense to keep the young maple, but remove the aging laurel oak.

"While we have less control over mature trees in the landscape, it is helpful to know the relative wind resistance of each species."

Another factor affecting wind resistance in trees is conformation. Research has demonstrated that certain growth characteristics result in stronger trees. While some species and individuals have a propensity to develop a strong growth form, it must be cultivated in others. In a corollary, the Florida Division of Plant Industry publishes current grades and standards to guide the nursery industry in growing strong and healthy trees. Structural failures in trees may well be a relatively rare occurrence for future generations.

While volumes have been written on tree structure, a summary statement might read: maintain a single, dominating trunk to promote securely attached primary branches with optimal vertical and radial separation for growth and exposure to sunlight. In addition, natural crown shape and proportions should be encouraged, particularly with respect to the overall height of the tree.

This allows for flexing under wind loads, which dissipates energy while stimulating the development of taper in the trunk and branches. The formation of opposing compressed and tensioned reaction wood reinforces wind resistance. Moreover, a full crown of foliage more effectively dampens, sheers and deflects potentially damaging winds. The industry recommends that two-thirds of the height of the tree should be maintained in foliage.

If a mature tree with a full crown can moderate the force of wind, then by extension a grove of trees can do it even more effectively. Not surprisingly, farmers for centuries have employed shelterbelt trees for soil conservation and crop protection. Also, anyone who has stood in the middle of a forest on a windy day has sensed the calm. Similarly, it is practical to plant trees on close centers, *i.e.,* 20-25 feet, because the resulting canopy is one integrated and fortified unit.

Also, healthy trees have better wind resistance than trees in poor condition. The proper ratio of essential minerals is needed for adequate formation of lignin, cellulose and wood fibers to confer strength. Just as important is water potential of trees. When soil moisture levels are adequate, water-conducting vessels are turgid and there is greater elasticity. This enables trees to bend and flex under a wind load with less breakage. However, it should be noted that water, which weighs six pounds per gallon could add significantly to the tonnage of a tree. This can be problematic when combined with structural faults.

Too much rainfall can saturate soils and allow large, spreading trees to be wind-thrown. Wet soils are fluid and offer little resistance to roots being pulled from the ground under the weight of a leaning tree. Many mature live oaks were lost this way from hurricane Jeanne. It is ironic that there was little crown damage to this species, which seems to have excellent wind resistance. As a sidebar, utility trenching and construction too close to trees contributed to the wind-throw of many species during this event.

Finally, the maintenance history of a tree has some bearing on wind resistance. The most important maintenance activity is proper pruning. The objective is to maintain a full crown of foliage, but to remove dead or dying branches on an annual basis. However, it is important to note that embedded bark and ensuing decay at branch connections initiated most branch failures from hurricane Jeanne. This could be avoided by maintaining a dominant trunk and retarding rate of growth of competing branches with reduction cuts. This not only promotes strong limb attachments, but also improves defense against decay.

Often it is not inaction, but rather inappropriate action that renders trees hazardous during a storm event. Heading back primary limbs to some arbitrary point, i.e., "topping," has long been recognized as damaging to tree structure. Not only does this expose a larger volume of wood to decay, the resulting sprouts are weakly attached and as they increase in size are more apt to split out and fall on a target.

The other extreme involves removing excessive interior foliage from a tree, i.e. lion-tailing, under the pretext of reducing "sail." This is a very damaging practice that interferes with the tree's ability to develop proper taper for wind resistance. Moreover, wind loads are applied to separate branch components resulting in amplified stress and leverage at trunk connections. Branch failure generally occurs at attachments. However, in some species, e.g., southern red cedar, branches will break internodally when the crown is opened up. Also, the sudden exposure to sunlight can lead to sunscald, decay and decline in trees.

Understandably, residents are now more concerned about large tree limbs over houses. However, removing a primary limb that originates from the trunk will only provide a false sense of security. Primary limbs are structural and develop load-bearing capability over time and in relation to other limb and trunk components. Eliminating a primary limb over a house may negate a counter weight opposing other forces at play within the tree. The problem is compounded from increased exposure to turbulence and torque from wind activity.

How should storm damaged limbs be pruned? The ANSI A300 standards provide the arborist with information needed to make a variety of cuts depending upon intended purpose. The most common practice is to remove a damaged limb back to parent branch or to a lateral branch large enough to assume lead and support growth and maintenance. However, this can result in the unnecessary loss of structural components and a warehouse of stored energy in the form of organic compounds. Also, removing a primary limb back to the trunk exposes a larger volume of wood to decay.

While there is some timidity in the industry, reduction cuts or heading to a node may be a more acceptable alternative to compromising structure, resources and defense. In the short term, this means leaving some calculated stubs, which is not aesthetically appealing. However, latent or dormant shoot buds can be trained over time to resume growth and function within the crown. These "restorative" cuts are consistent with the standards and are a practical approach to maintaining the integrity of a tree.

In the event that a tree is destroyed, don't forget that mature trees have substantial value and a tree appraisal may be used in claiming a casualty loss for income tax purposes. Hurricanes have created a lot of work for the tree industry. They have also created the opportunity to promote arborist certification and professionalism within the industry. We have an ethical obligation to reach out and reassure the public concerning proper tree care.

WIND RESISTANCE OF URBAN TREE SPECIES

Adapted from Duryea et al., 2007

TREE SPECIES SHOWING THE HIGHEST WIND RESISTANCE

American holly	*Ilex opaca*
Crape myrtle	*Lagerstroemia indica*
Dahoon holly	*Ilex cassine*
Dogwood	*Cornus florida*
Florida scrub hickory	*Carya floridana*
Inkberry	*Ilex glabra*
Live oak	*Quercus virginiana*
Myrtle oak	*Quercus myrtifolia*
Podocarpus	*Podocarpus spp*
Sand live oak	*Quercus geminata*
Southern magnolia	*Magnolia grandiflora*
Sparkleberry	*Vaccinium arboreum*
Turkey oak	*Quercus laevis*
Yaupon holly	*Ilex vomitoria*

CONIFERS

Baldcypress	*Taxodium distichum var. distichum*
Pondcypress	*Taxodium distichum var. nutans*

PALMS

Cabbage	*Sabal palmetto*
Canary Island date	*Phoenix canariensis*
Date	*Phoenix dactylifera*
Pindo	*Butia capitata*

DICOTS

American hophornbean	*Ostrya virginiana*
Black tupelo	*Nyssa sylvatica*
Chickasaw plum	*Prunus angustifolia*
Common persimmon	*Diospyros virginiana*
Florida sugar maple	*Acer saccharum subsp. floridanum*
Fringe tree	*Chionanthus virginicus*
Ironwood	*Carpinus caroliniana*
Japanese maple	*Acer palmatum*
Mockernut hickory	*Carya tomentosa*
Pignut hickory	*Carya glabra*
Post oak	*Quercus stellata*
Red bud	*Cercis canadensis*
River birch	*Betula nigra*
Saucer magnolia	*Magnolia xsoulangiana*
Shumard oak	*Quercus schumardii*
Swamp chestnut oak	*Quercus michauxii*
Sweetbay magnolia	*Magnolia virginiana*
Sweetgum	*Liquidambar styraciflua*
Water tupelo	*Nyssa aquatica*
Winged elm	*Ulmus alata*
White ash	*Fraxinus americana*
White oak	*Quercus alba*

PALMS

Washington fan	*Washingtonia robusta*

TREE SPECIES SHOWING MEDIUM-LOW WIND RESISTANCE

DICOTS

American elm	*Ulmus americana*
Black cherry	*Prunus serotina*
Boxelder	*Acer negundo*
Camphor*	*Cinnamomum camphora*
Green ash	*Fraxinus pennsylvanica*
Hackberry	*Celtis occidentalis*
Loquat**	*Eriobotrya japonica*
Redbay	*Persea borbonia*
Red maple	*Acer rubrum*
Red mulberry	*Morus rubra*
Silverdollar eucalyptus	*Eucalyptus cinera*
Silver maple	*Acer saccharinum*
Sugarberry	*Celtis laevigata*
Sycamore	*Platanus occidentalis*
Wax myrtle	*Myrica cerifera*
Weeping willow	*Salix xsepulcralis*
Willow oak	*Quercus phellos*

CONIFERS

Loblolly pine	*Pinus taeda*
Longleaf pine	*Pinus palustris*
Slash pine	*Pinus elliottii var. elliottii*

TREE SPECIES SHOWING THE LOWEST WIND RESISTANCE

DICOTS

Bradford pear	*Pyrus calleryana*
Carolina laurel cherry	*Prunus caroliniana*
Chinese elm	*Ulmus parvifolia*
Chinese tallow***	*Triadica sebifera*
Laurel oak	*Quercus laurifolia*
Pecan	*Carya illinoensis*
Southern red oak	*Quercus falcata*
Tulip poplar	*Liriodendron tulipifera*
Water oak	*Quercus nigra*

CONIFERS

Leyland cypress	*Cupressocyparis leylandii*
Sand pine	*Pinus clausa*
Southern red cedar	*Juniperus silicicola*
Spruce pine	*Pinus glabra*

OCALA & MARION CO. HOST AN ARBOR DAY "TREE PRUNING SEMINAR"

Sherie Burch, Utility Arborist – City of Ocala Utility Services

Wind resistance is all about good structure according to Dr. Ed Gilman of the University of Florida. On National Arbor Day 2012, with the assistance of the Tree Lady Company and members of the Tree Climbing Concepts training team, Dr. Gilman demonstrated pruning techniques on two trees located in Ocala's Tuscawilla Park.

Prior to the pruning, Dr. Gilman noted that the dictionary defines a tree as "a perennial woody plant. It most often has many secondary branches supported clear of the ground on a *single main stem or trunk with clear apical dominance.*" This growth form will develop naturally in a forest setting, but requires some assistance in the landscape where individual trees do not have to compete for light and tend to develop multiple leaders that compete with each other within the canopy as the tree grows. This unnatural form results in weak attachments that frequently give way in high winds.

The concept of structural pruning is simple and straightforward: begin pruning as early as possible with the ultimate goal being a single trunk with strong lateral branches that do not compete with the leader. The process involves choosing the best of the competing leaders to be the top of the central trunk then subordinating the rest by reducing them in length from the tip back to a lateral branch, 50% or more of the limb length should be removed. This process slows the growth in the competing and allows the chosen leader to increase in diameter more quickly than the competitors, which produces a stronger attachment point as the tree grows. The competitors are turned into limbs along the central trunk.

This process of removing the end portion of the competing limb is repeated throughout the canopy to slow growth in the lower limbs. This discourages formation of large lateral limbs low in the canopy and balances the tree.

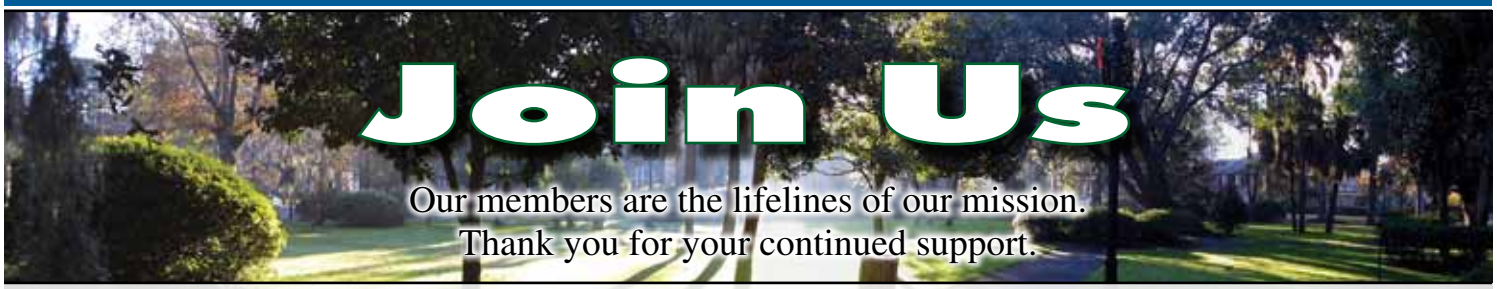
Originally the canopy of trees at Tuscawilla looked like large bushes with multiple competing leaders throughout the canopy. Both were live oaks, one approximately 20 years in age and the other nearer 10.

Tree 1 was treated as if it were part of a landscape design that needed to be aesthetically appealing throughout the process of transforming it from a 'bush' to a 'tree.' This type of pruning will guide the tree toward good structure and it will grow stronger for it, but additional work will be needed in coming years.

Tree 2 was treated as if it would be pruned this one time only as is the case with many municipally-owned trees. It was a healthy young tree, so Dr. Gilman noted that the pruning could be aggressive without doing harm. Considerably more than the rule of thumb "20% of the canopy" was removed with this pruning. Although the finished product was not aesthetically appealing, the heavy pruning set the mold for good structure in this young tree. It will fill in with a season's growth and grow into a strong wind resistant tree with little additional pruning.

For your pruning needs, always consult a professional arborist or urban forester who will assess your tree's individual needs prior to making a pruning recommendation. The following links provide additional information on Dr. Ed Gilman and his work with trees: http://www.ufl.edu/2008/06/24/ed-gilman/ and http://hort.ifas.ufl.edu/woody.

MEMBERSHIP



New and renewed members through May 31, 2012. Please let us know if we fail to mention your name.

SUPPORTING

A BUDGET TREE SERVICE, INC
Dale Meagher
Darcy Meagher
Michael Mingea
Carolyn Nelson
Brad Smith

ALL PRO LANDSCAPING
Robin Barber

CITY OF ORLANDO – KEEP ORLANDO BEAUTIFUL, INC.
Jody Buyas

EARTH ADVISORS, INC.
Mark Brumet
Darlene Harris
John Harris
Michelle Lena
John LePage

NELSON TREE SERVICE, INC.
Chuck Benton
Bob Turner
Greg Viscusi

NRPS – LEGACY ARBORIST SERVICES
Erin Givens
Eric Hoyer
Mindy Moss
Jack Vogel

ORLANDO UTILITIES COMMISSION
Wayne Zimmerman

SUMTER ELECTRIC COOPERATIVE, INC.
April Hurst
Ken Lacasse
John LaSelva
Amanda Richardson
David Watford

THE TREE LADY COMPANY, LLC
Bruce Paulson
Kimberly Paulson

URS CORPORATION
David Crawley, RLA
Emilyvette DeGaetano, RLA
Jill Griffiths, RLA
Paul Kurtz, RLA
Shirley Pearsall, RLA

GOVERNMENTAL AND NON-PROFIT

BONITA BAY COMMUNITY ASSOCIATION
Juan Gomez
William Lynn
Israel Quesada
Julio Reyes
Ronald Simpson

CITY OF ALTAMONTE SPRINGS
Eric Alewine
Andy Capuano
Tommy Collins
Mike Insley
Bob Urice

CITY OF CAPE CANAVERAL
Tim Davis
Lonnie Dunn
David Greene
Kay McKee
Rocky Randels

CITY OF CASSELBERRY
Saul Betancourt
David Pell
James Peterson
Steve Spencer
Tom Wood

CITY OF GAINESVILLE
Ella Bernhardt Brooks
Linda Demetropoulos
Stanley Harrell
Herb Poole
Mark Siburt

CITY OF KEYSTONE HEIGHTS
Lee Edgy
Kenny Hall
Mary Lou Hildreth
Cheryl Owen
Terry Suggs

CITY OF MAITLAND
Mark Barton
Brien Dierks
Rick Lemke

CITY OF MIAMI BEACH
Rhonda Gracie
Jeremy Hinkle
Millie McFadden
John Oldenburg

CITY OF NAPLES
Joe Boscaglia
Chet Ewell
David Lykins
Heather Shields

CITY OF ORLANDO
Denise Aldridge
Marcus Brown
Brian Eichner
Matt Fortini
Jim Kunze
Greg Mallory
Nikki Palean
John Perrone
Janice Rahill
Henry Rivera
Rondale Silcott

CITY OF PINELLAS PARK
Joe Aukstikalnis
Matt Bale
David Bowen
Bill Byrd
Steve McKenzie

CITY OF SANFORD
Fred Alexander
Elizabeth Harkey
Jan Henry
Marc Hultin
Alvarise James

CITY OF TAMPA
Kathy Beck
Robert Irving
Bruce Lucas
David Reilly
Brad Suder

CITY OF WINTER PARK
Doug Lafortune
Alan Lee
Jon Lupo
Lee Mackin
Dan Sitrman

CITY OF WINTER SPRINGS
Michael Barclay
Bobby Howell
Ken Hutchings
Steven Richart
Stephanie Wolfe

JEA
Landall Demby
Greg Preston
Scott Souder
Paul Traylor
Kim Wheeler

OCALA UTILITY SERVICES
Matt Brower
Sherie Burch
Joe Roos
Rodney Weaver

TOWN OF LAKE PARK
Kimberly Alexander
Verdree Patterson
Willie Williams

TOWN OF LANTANA
Jerry Darr
Deborah Manzo
Larry McCollum
Frank Patterson
Tammy Reeves

UNIVERSITY OF FLORIDA SFRC
Michael Andreu
Chris Demers
Francisco Escobedo
Martha Monroe
Tim White

VALENCIA COLLEGE
Clarence Canada
Javier Garces
Deborah Green
Timothy Shattuck
Patricia Smith

PROFESSIONAL

Mary Jo Aagerstoun
Beth Barth
Richard Bailey
Rose Bechard-Butman
Carol Keiper Bennett
Sandra Wilson Benton
Tom Benton
Lorraine Bertone
Bill Butler, RLA
L. Thomas Chancey
Joseph Cone
Greg Cook
Gene Dempsey
Michael DePappa
Roy Detwiler
Van Donnan
Ron Faberman
Jeff Farley
Brian Fischer
Justin Freedman
Jennifer Gihring
Jennifer Gooding
Bill Grubbs
Wayne Grubbs
Dean Hall
Ruth Hamberg, RLA, ASLA, AICP
Rick Harman
Michael Harnden
Eric Hatcher
Leah Hoffman
James Hunter
Tom Jacob
David Jahn
Ray Jarrett
Gayle Lafferty
Linda Lartigue
Michael Lartigue
James Le Gette
Chuck Lippi
Stephen MacKenzie
Mike Mackiewicz
Kevin Mangan
Michael Marciniak
Richard Maxwell
Bruce McElroy
Shirley McKendree
Tim Messick
Joseph Mignano
Chris Miller
Mark Miller
Michael Mittiga
Pat Moore
Moshe Morgenstern
Robert Northrop
Kurt Olsen
David Paradise
Victoria Parsons
Stephen Pategas
Elisha Pearson
Chris Poe
Nina Potters
Cherry Prewitt
Darrell Purchase

Continued on next page.

Larry Rabbat
Marnie Radebaugh
Glenn Raulerson
Debra Renfro
John Rochester
Matthew Roth
Ludwig Sabillon
Joseph Sentance
Linda Seufert
Robert Shoelson
Scott Shultz
Wayne Smith
Jay Sockriter
Jeanne Taylor
H. Lawson Turner
Paul Verlander
Sarah Weston
Tom Wilde
Rob Williamson
David Wing
John Wynne
Michael Zimmerman

TREE ADVOCATE

Lilia Ana Bazo
Jan Beljan
John Foltz
Roy Gold
Thomas Kukitz
Lassie Lee
Terrell McCombs
Sharon McDow
Theresa Schretzmann-Myers
John Springer
Bob Wiley

STUDENT

Emily Foster
Don Spence

HONORARY

Mike Conner
Anna Dooley
Norm Easey
Ed Gilman
Steve Graham
Michael Greenstein
John Holzaepfel
Julie Iooss
Howard Jeffries
Andy Kittsley
Earline Luhrman
Bill Reese
Jerry Renick
Mike Robinson
John Tamsberg
Celeste White

FUFC Past Presidents

Steve Graham	*(1990-1991)*
Ed Gilman	*(1991-1992)*
Bill Reese	*(1992-1993)*
Andy Kittsley	*(1993-1994)*
Jeffrey Siegel	*(1994-1995)*
Norm Easey	*(1995-1996)*
John Tamsberg	*(1996-1998)*
Mike Conner	*(1998-1999)*
Julie Iooss	*(1999-2000)*
Anna Dooley	*(2000-2001)*
Howard Jeffries	*(2001-2002)*
Mike Greenstein	*(2002-2003)*
Mike Robinson	*(2004 and 2005)*
Celeste White	*(2006 and 2007)*
Earline Luhrman	*(2008 and 2009)*
John Holzaepfel	*(2010)*
Jerry Renick	*(2011)*

NEWSLETTER ADVERTISING ANNUAL RATES:

FLORIDA URBAN FORESTRY COUNCIL

Business-card size advertisement	$75
Quarter page advertisement	$115
Half-page advertisement	$225
Full page advertisement	$450

To place an advertisement in *The Council Quarterly*, please contact Sandy Temple, FUFC Executive Director (407-872-1738).

MEMBERSHIP APPLICATION

(Dues are effective for the calendar year of January 1 - December 31)

Make check or money order payable to FUFC and mail to:
Post Office Box 547993, Orlando, FL 32854-7993

Categories (please check one):

❑ Professional @ $25.00
(Professional membership is open to anyone who is actively working in the profession of Urban Forestry or any related profession.)

❑ Tree Advocate @ $20.00
(Tree Advocate membership is granted to those volunteers who are members of a tree board, beautification committee or other Urban Forestry volunteer group.)

❑ Supporting @ $200.00
(Supporting membership is granted to those individuals, groups or other entities expressing a desire for a strong supportive role in the Council. Membership will be granted for up to five individuals of an organization or business.)

❑ Government/Non-Profit Agency @ $100.00
(Government/Non-Profit Agency membership is granted to those individuals, groups or other entities actively working in the profession of Urban Forestry or any related profession. Membership will be granted for up to five individuals within the agency.)

❑ Student @ $10.00
(Student membership is granted to anyone who is actively enrolled as a full-time student and who is considering pursuing a career in Urban Forestry.)

Name: _____

Title: _____

Firm: _____

Address: _____

City: _____

State: _____ Zip: _____

Telephone: (_____)_____

FAX: (_____)_____

E-mail: _____

Amount Enclosed: _____ Date: _____/_____/_____

Would you be interested in further information regarding serving on a Council subcommittee? ☐ Yes ☐ No

Area of interest: _____

Clip and Mail Today!

FLORIDA URBAN FORESTRY COUNCIL
Post Office Box 547993
Orlando, FL 32854-7993

For more information or change of address, please contact the FUFC:
Phone: (407) 872-1738
Fax: (407) 872-6868
E-Mail: info@fufc.org
Website: www.fufc.org

CHANGE SERVICE REQUESTED

Address Update:

❑ Please change my address as noted on the right.
❑ I receive duplicates. Please delete my name at right.
❑ Please remove my name from your mailing list.

2012 FUFC EXECUTIVE COMMITTEE MEMBERS

OFFICERS:

Mary Lou Hildreth
President
Appointed Position
Florida League of Cities
City of Keystone Heights

Elizabeth Harkey
President Elect
Elected Position
City Arborist
City of Sanford

Ken Lacasse
Vice President
Elected Position
Member-at-Large
SECO Energy

John Foltz
Treasurer
Appointed Position
Advisory Member
University of Florida
(Retired)

Linda Seufert
Secretary
Appointed Position
Advisory Member
City of St. Petersburg

Jerry Renick
Immediate Past President
Appointed Position
Advisory Member
Land Design South

COMMITTEE MEMBERS:

Kathy Beck, *Elected Position*
Member-at-Large
City of Tampa

•

Sherie Burch, *Elected Position*
Utility Forester
City of Ocala Utility Services

•

David Crawley, *Appointed Position*
ASLA / FL Chapter
URS Corporation

•

Jeff Farley, *Elected Position*
Private Arborist
Professional Tree Care, Inc.

•

Larry Figart, *Elected Position*
Member-at-Large
Duval County Extension

•

Justin Freedman, *Elected Position*
Member-at-Large
Metric Engineering, Inc.

•

Jennifer Gihring, *Appointed Position*
Advisory Member
SJRWMD

•

Erin Givens, *Appointed Position*
Society of American Foresters
Natural Resource Planning Services, Inc..

•

Steve Graham, *Appointed Position*
Advisory Member
City of Melbourne

•

Eric Hatcher, *Appointed Position*
FNGLA
Cherry Lake Tree Farm

Leah Hoffman, *Appointed Position*
Florida Recreation and Park Association
Marion County

•

Julie Iooss, *Appointed Position*
Advisory Member
City of Orlando

•

Guy Murtonen, *Appointed Position*
Florida Department of Transportation
Florida's Turnpike Enterprise

•

Rob Northrop, *Appointed Position*
Cooperative Extension Service
Hillsborough County Extension

•

Kimberly Paulson, *Appointed Position*
FL Chapter ISA
The Tree Lady Company

•

Scott Souder, *Appointed Position*
Advisory Member
Jacksonville Electric Authority

•

John Springer, *Elected Position*
Tree Advocacy
Enchanted Walkabouts

•

Wayne Zimmerman, *Elected Position*
Member-at-Large
Orlando Utilities Commission

•

Charlie Marcus
Florida Forest Service Liaison

•

Sandy Temple
FUFC Executive Director