



In the Shade

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November 2007

21ST ANNUAL TREE CONFERENCE A BIG SUCCESS



Signing up for CEUs at the 2007 Texas Tree Conference in Waco.

This year's Texas Tree Conference was attended by well over 300 people and was once again an excellent program.

Pre-conference workshops by Nelda Metheny and Dr. Bruce Fraedrich were well attended and offered further opportunities to receive CEUs for Certified Arborists. Multiple tracks offered in the main conference allowed people to choose from a wide range of topics to better fit their education needs.

The conference concluded with the Certified Arborist exam given to 35 people. Also very popular was the Cameron Park social Thursday evening. Outdoors, beer and BBQ, what more could you ask for?

—Courtney Blevins

New ISA Members from Texas

Jimmy Armor, Whitmire Line Clearance, Pilot Point
James Russell (Rusty) Bramblett, Town of Flower Mound, Flower Mound
Charles Brown, Tree Systems Plus, Shady Shores
Oscar Escobar, Town of Flower Mound, Flower Mound
Joah Graham, Austin
Cary Don Griggs, Alldredge Gardens, Midland
Robert Litton, Town of Flower Mound, Flower Mound
Jody Machuca, Jody's Tree Service, Temple
James Maguffrey, The Davey Tree Surgery Company, Spring
Lisa Dawn May, Abilene Christian University, Abilene
William McSherry, Abilene Christian University, Abilene
Jose Ochoa, Unity Contract Services Inc., Austin
Derek Plamer, Alldredge Gardens, Midland
Humberto Perez, Whitmire Line Clearance, Tioga
Jason Stubblefield, Signature Land Care, Hutto

Why Do Leaves Change Color?

By Pat Wentworth

Every year, you can expect to have a few folks ask you why leaves change color in the fall. If you haven't kept up with the latest research, you may be giving a wrong answer. As more and more is learned, trees are being found to be incredibly frugal organisms that don't do anything that isn't for a specific purpose.

What is widely accepted is that two compounds are largely responsible for fall colors – anthocyanins and carotenoids.

Chlorophyll, which is green, is present in large quantities during the growing season and is why the leaves of a healthy tree appear green in color. Chlorophyll doesn't attach itself to the leaf but to chloroplasts within the cells and is responsible for the photosynthesis of sunlight into oxygen and carbohydrates.

For many years, it has been assumed that leaves don't actually "change color" but simply reveal colors that were present all year that had been "over shadowed" or covered up by the large amounts of chlorophyll.

Each fall, leaves begin a highly regimented process of disassembly known as "senescence." As the photoperiod shortens each day in the fall, chlorophyll production slows to a stop and the chlorophyll remaining in the leaves breaks down. Soluble photosynthetic compounds within the leaf are broken down and nutrients (mostly nitrogen and phosphorous) are moved into storage cells within the woody tissue in a process known as resorption. In this way, a tree can "recycle" as much as 85% of what it needs to get started the following season.

As chlorophyll breaks down and diminishes within the leaves, compounds called carotenoids

become more visible. Carotenoids are thought to be present in the leaves all year and are responsible for the bright yellows. This "theory" is still largely agreed upon.

It has also been theorized that anthocyanins, like carotenoids, are present in leaves in small amounts all year and only become visible as the amount of chlorophyll diminishes in the fall. Sugars, supposedly trapped in the leaves in the fall, were thought to be responsible for increased anthocyanin production, which gives leaves the red, orange, or purple fall colors.

In reality, as leaves senesce, the sugar levels within the leaves drop quickly and leaves actually have very low sugar levels during this period of senescence. As sugar levels drop, the production of anthocyanins starts. This process actually begins in earnest about midway through the senescing process each fall.

The latest theory being brought forth is that anthocyanins are produced in the fall to aid in the resorption of foliar nutrients. Drs William Hoch, Eric Singass, and Brent McCown call this the "resorption protection hypothesis." The presence of anthocyanins is thought to shield leaves from the bright sunlight as resorption takes place. This concept is based on the fact that the breakdown of photosynthetic compounds during senescence can lead to greater vulnerability to damage from bright light.

Anthocyanins have been shown to be effective light screens in foliage. This explains the phenomenon where cool nights and bright sunny days seem to elicit the most color in the fall. The anthocyanins are shielding the leaves allowing the trees to reabsorb more

of the soluble products without them being broken down by the bright sunlight.

Protecting the photosynthetic system during senescence is critical, as leaves require a steady supply of energy to carry out the numerous chemical processes of senescence and to drive the translocation stream, which carries the nutrients out of each leaf.

Other factors play key roles as well. Soil moisture, nighttime temperatures that are cool, but not freezing, and mineral and nutrient availability in the soil all play a role in the amount of anthocyanins and carotenoids a tree can produce.

These are some ways you can influence the amount of fall color in trees:

- Choose varieties that are hardy to northern climes. (The farther north a tree occurs naturally, the more anthocyanins it is likely to produce.)
- Keep the soil evenly moist throughout the summer months.
- Plant trees so that they will be shielded for harsh sunlight in the fall.
- Keep the trees healthy with adequate, balanced fertilization.



INDUSTRY CALENDAR

November 14-15

Partners in Community Forestry National Conference, Radisson Plaza, Baltimore, MD

Conference will focus on a variety of issues related to community forestry including community tree management, trees and development, and the contribution of trees to the social and physical health of the community.

<http://arborday.org/shopping/conferences/brochures/pcf/2007/call.cfm>

November 14-16

Invasive Plants Conference, LBJ Wildflower Center, Austin, TX

Concurrent sessions addressing prevention, early detection, management, information sharing, and research on aquatic and terrestrial invasives. ISA, TLP, and TDA CEUs will be available. More information and registration is available at www.texasinvasives.org

November 28, 2007–Dec. 1, 2008

ASCA Annual Conference, Loews Vanderbilt Hotel, Nashville, TN

Co-sponsored by the ISA Southern Chapter. For more information visit: www.asca-consultants.org

January 5, 2008

First certification test of the year, Houston, TX

As with all Certification Examinations the application must be in the ISA office 12 working days prior to the Exam.

Information and application available at http://www.isatexas.com/Members/Certification_Information.htm

February 24-29, 2008

Municipal Forester Institute, T Bar M Conference Center, New Braunfels, TX

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CONGRATULATIONS, 2007 AWARD

Arborist of the Year: James Tuttle



James Tuttle has been a certified arborist since the inception of the program in Texas. He has faithfully served West Texas and eastern New Mexico, and for many years was the sole arborist in the vicinity. He currently owns Tree Loving Care, a company dedicated to educating people about tree care in West Texas.

Tuttle served for several years on the ISAT board and was president in 2003-2004. His dedication to arboriculture and ISA has been a direct influence on there now being many Certified Arborists in the region. He has given talks, taught at workshops and seminars, and had many one-on-one talks to promote arboriculture. In addition to his work in the field, he runs an annual poker tournament to help raise funds for research.

Professional of the Year: Kathy Lord

In her efforts to reforest Houston, Kathy Lord of Trees for Houston has organized and participated in neighborhood and parkway plantings, highway reforestations and downtown beautification projects. She has heightened awareness of the benefits of Houston's urban forest through persistent contact with government, corporate, community and media representatives.

Since 1993, Trees for Houston has planted more than 300,000 trees and seedlings throughout Houston, many under Lord's guidance and direction. Her zeal for a greener, cleaner city has spurred the partnerships and financial commitments necessary to undertake large-scale tree plantings.

Victor Cordova, City Forester of Houston, accepted the award on behalf of Kathy Lord, who was in California for the birth of her granddaughter.

Arboricultural Project of the Year: 5th Street Commons

After decades of neglect, a historic 52-inch live oak affectionately named "George" was in poor shape to face the construction of the 5th Street Commons, a new multi-use residential complex in downtown Austin. The tree had a healthy crown but its flare roots were buried in four feet of fill dirt. The building contractor's design team and the City of Austin understood George's need for help. Arborist Matthew Tobola and a team of workers from F.A. Bartlett Tree Experts carefully excavated the area around the tree and provided a healthy and structured space for new root growth. They will continue to monitor the tree for the duration of the construction.



Arborist Matthew Tobola (center) from F.A. Bartlett Tree Experts, with ISA Texas President Jordy Hagen (l) and President Elect John Giedraitis.

The cultivation of trees is the
cultivation of the good, the
beautiful and the ennobling in
man.

— J. Sterling Morton

Gold Leaf Landscape Project Awards (co-winners):

Southpark Meadows

Endeavor Real Estate was recognized for contributing to the preservation of 47 of 52 mature live oak trees in Southpark Meadows, a once famous outdoor concert venue and now a shopping center in south Austin. The five trees that could not be preserved were slated for relocation.

The City of Austin required the developer to fund the relocation of these trees, find a certified arborist to oversee the project, and provide long-term management to ensure that each tree was successfully replanted.



L to r: Patrick Brewer, Bartlett Tree Experts; Chris Ellis, Endeavor Real Estate; Chris Dolan, City of Austin Environmental Review Department.

Texas Memorial Stadium

The University of Texas at Austin was awarded for its outstanding contributions to the preservation of sixteen trees on their campus. These sixteen were all that could be safely and effectively relocated in a \$150 million expansion of Texas Memorial Stadium.

The university has successfully extracted all sixteen trees from the ground and placed twelve in locations throughout the campus. The other four sit in a holding ground, receiving constant attention and care until a suitable site can be found for a replant.



Larry Maginnis, UT urban forester, Landscape Services.

Gold Leaf Award for Best Arbor Day: Dallas Arbor Day

Arbor Day in Dallas started with planting trees along the Katy Trail to kick off the national campaign – Making America a Little Greener – a partnership of the National Arbor Day Foundation and Frito-Lay Corporation. At the same time professional arborists were being trained in aerial rescue by the Texas Chapter of ISA at Reverchon Recreation Center and Park.

At a noon formal ceremony, the National Arbor Day Foundation presented the City of Dallas with the Tree City USA award. The ceremony culminated Dallas Mayor Laura Miller's Tree Climbing Challenge to other area mayors.

"One group's dedication can be the driving force for change within a community and an innovative example of how a city can bind together to celebrate the significance of trees in America," said Jordy Hagen, ISAT president. More than 120 trees were planted and more than \$30,000 was donated at the events.



L to r: Matt Grubisich, Dallas area regional forester, Texas Forest Service; Walter Passmore, former Dallas urban forester, now in Austin; Mike Hellmann, Dallas senior parks planner; Toria Frederick, public relations, Frito-Lay.



Climbing Lines by Guy LeBlanc **A HOT NEW TIP**

Yet another climbing hitch variation is setting the climber crew abuzz. I was introduced to it in Honolulu this summer, where climbing equipment and technique expert Craig Smith of the UK chapter showed it to a group of us at the International Tree Climbing Championship. The unanimous response was “Why didn’t anyone think of this before?!”

I came home intending to write about it for *Climbing Lines*, but wondered what to call it, as Craig hadn’t given it a name. Now, according to Texas Climbing Championship perennial Abram Zies of Weatherford, TX, word of the technique has spread like a virus through the arboreal world, and it is being called the TIP (tie in point) Glider. Whatever...



The principle is similar to that employed with the Anchor Bridge, a great, recent invention by Richard Hattier of Ohio. Rich demonstrated his Anchor Bridge system to those in attendance at this year’s Texas chapter competition, and it was a big hit. However, whereas the Anchor Bridge requires two custom-spliced Tenex split-tails in addition to whatever split-tail you usually use, plus an extra large boat snap, as well as the

two carabiners one usually uses in a split-tail climbing set-up, the TIP Glider only uses one carabiner for the whole set-up, and a very small prusik loop, plus your usual split-tail, so there’s no special gear to buy.

As you can see in the photos, instead of attaching the working end of your line to your saddle with a carabiner, you thread it through the attachment point and then attach it to a carabiner. Of course if your rope has a large eye splice you must either girth hitch it on, or use a banding device to keep the eye tight on the carabiner, so that it does not shift out of position and side load the carabiner. This is one of the main safety dangers one must be aware of when converting to carabiners from rope snaps.

On the other end of the ‘biner you attach your usual split-tail, which is also attached to the falling end of the line as usual. This creates a big “loop” of a climbing system, which if not tethered would not be practical or safe, as the climbing hitch could be advanced to beyond your reach. This is where the prusik comes in. By attaching it to the working end of the line, and also to the carabiner, you can now adjust how close to or far from you your climbing hitch is. To make the prusik easier to connect, I have put a small screw-link on my carabiner. Because the prusik and screw-link are not weight bearing, they do not have to be rated.

Now you have a closed type of climbing system in which your climbing hitch can be close to you (for working) or far from you (for body thrusting or limb-walking inward). And the real beauty of it is you can do this instantly, without needing to have a second tie-in while changing from one position to the other, as you do with the Anchor Bridge. As you know I like the minimalist approach, and so this simpler technique that uses less gear appeals to that part of me, but on the whole, I have to admit I like the Anchor Bridge more. One problem with the TIP Glider, at least the crude form of it that was shown to me, is that it is difficult to disconnect and reposition the system. Abram Zies tells me this can be improved upon (slightly) by inverting the carabiner from how it is positioned in the photos.

I believe this technique is going to be refined and become much more popular. If you want to check it out, remember, as always, it’s low and slow until you get it right. Climb safe.

The author has owned and operated Arbor Vitae Tree Care in Austin, TX for over 24 years. He is available for tree care and worker safety instruction and may be reached at 512-301-8700.



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Too Much Water Hurts Post Oaks; Professional Care Recommended for Stressed Trees

By Janet Phelps

Reprinted with permission from the Bryan-College Station Eagle.

Yellow leaves and defoliating trees may seem like signs of an early fall to the untrained eye surveying Bryan-College Station, but experts say area trees are in distress because of the heavy summer rainfall.

And well-meaning tree owners can unintentionally make things worse, arborists said.

The Brazos Valley's most common indigenous tree—the post oak—has a very low stress tolerance, said Eric Zimmerman, a Texas Cooperative Extension agent specializing in agriculture and natural resources.

Post oaks are sensitive to environmental changes and to standing water, soil compaction and other harsh conditions for trees, arborist Todd Watson said. Too much water fills in air spaces in the soil and can suffocate tree roots, he said.

The heavy rainfall Central Texas experienced this summer followed by relatively little precipitation in the past few weeks has caused local trees to show signs of stress, including brown and yellow leaves, the loss of many or all leaves or even death, said Watson, who is also a lecturer in urban and community forestry, said.

“Most indigenous trees are post oaks,” Watson said. “They’re the ones that are showing these symptoms the most.”

Post oaks are so common in this area that 31 counties—including Grimes, Brazos, Burleson and Milam—are known as the Post Oak Savannah, according to the Texas Parks and Wildlife Department.

Housing developments such as Castlegate in College Station have seen a sharp increase in the number

of unhealthy looking trees, said Sandy Miller, who works for SideByte and manages the Castlegate Homeowners’ Association in College Station.

Castlegate has strict rules for its residents, who must remove trees that die, she said. But the number of stressed post oak trees in Castlegate has made it difficult to know when its time to take down a tree, Miller said. Most often, Miller said, residents end up calling in an expert.

“There’s a lot of trees that have been lost ... in Castlegate,” she said. “There’s not much you can do a lot of times.”

Trees under stress can get sick just like people, Zimmerman said. Once post oaks are under stress, he said, they’re more likely to be susceptible to insects such as borers, ants, grasshoppers and caterpillars, which normally don’t affect healthy trees.

Stressed trees are normal for this time of year, Zimmerman said, but the difference this year is too much water instead of too little.

Excessive soil moisture can cause tree roots to suffocate and increase transpiration, moisture evaporation from leaves, Watson said. When the soil dries out, trees naturally drop leaves to decrease transpiration and reduce their demand for water, he said.

Some trees can withstand long seasons of soil moisture, Watson said, but post oaks can’t.

The most important part of taking care of post oaks is giving the trees the correct amount of water, he said. In fact, having too little or too much water is the No. 1 cause of death in all trees.

There are two elements that affect tree irrigation—soil compaction and watering, Watson said.

When the soil around trees is com-

pacted, it pushes out the air tree roots need to breathe. Most people don’t have control over soil compaction, which often occurs during construction, he said. But owners can control the amount and frequency of the water trees receive, Watson said.

The most important thing is to let the soil dry out before watering again, he said. Trees—even post oaks—can withstand great quantities of water at one time, but need time to dry before more water is added.

Tree owners who water after it has already rained or who frequently water their lawns and trees are more likely to have stressed trees, Watson said, and watering trees too frequently can kill them.

“I tell people to increase the duration of irrigation and decrease the frequency,” he said.

It could be hard for tree owners to know whether trees that defoliate are dead, Zimmerman said. “You may not know until they refoliate,” he said. “In some cases, it could be until next spring.”

If the tree is totally defoliated, Watson said, green underneath the bark means the tree is still alive. But, in most cases “it’s really something you need to have an arborist come look at,” he said.

“You may garden or plant flowers, but if they die, you just go down to the store and buy more,” Watson said. “Because trees are very valuable, big, long-lived, and because they can potentially be hazardous ... it’s better to leave the trees to professionals.”

To find an arborist or to learn more about taking care of trees, Watson recommends using the International Society of Arboriculture’s Web site, www.treesaregood.com.

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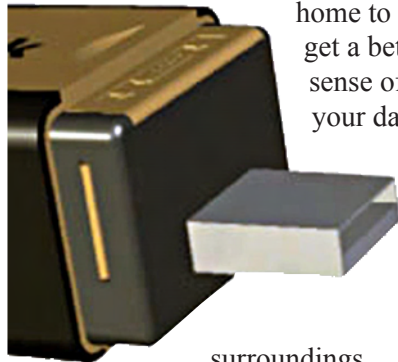


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Tree Planting and Global Warming

By Greg McPherson

Several stories have appeared recently in popular news outlets suggesting that trees are not a solution in the fight against global warming. While these pop-media pieces represent the views of a few researchers, an overwhelming body of peer-reviewed research from forest scientists around the world point to the importance of forests in reducing carbon dioxide (CO₂) in our atmosphere, and slowing the build-up of that greenhouse gas. Because these popular news reports fail to capture the complexity and the potential of the role that trees play in fighting global climate change, they have motivated rebuttals from the scientific community.

I wrote this article to assure the professional arborist that trees do indeed reduce CO₂ in the air, thereby reducing the warming “greenhouse” effect of the gas, and to explain that urban trees in particular are valuable because they provide that benefit in more than one way.

* First, as they grow, trees take CO₂ out of the air and transform it into roots, leaves, bark, flowers, and wood. Over the lifetime of a tree, several tons of CO₂ are taken up.

* Second, by providing shade and transpiring water, trees lower air temperature and, therefore, cut energy use, which reduces the production of CO₂ at the power plant. Two-thirds of the electricity produced in the United States is created by burning a fuel (coal, oil, or natural gas) that produces CO₂. On average, for every kilowatt hour of electricity created, about 1.39 lbs of CO₂ is released.

It is certainly true that not emitting CO₂ in the first place is a good strategy. Lowering summertime temperatures by planting trees in cities is another way to reduce energy use and thereby reduce CO₂. Even if we were able to switch immediately to fuel sources that do not emit CO₂, the levels in the air will remain high for decades or even

centuries because of the long “lifetime” of CO₂. Urban forestry doesn’t require the development of new technologies or massive investment in alternative energy sources. Planting a tree to shade a building is something all of us can do now.

Claims

To address other claims: Are CO₂ and other greenhouse gas reductions from tree planting temporary? In a sense, yes, greenhouse gas reductions are temporary if trees are removed and not replaced. To achieve long-term reductions, a population of trees must remain stable as a whole. This requires a diverse mix of species and ages so that the overall tree canopy cover remains intact, even as individual trees die and are replaced. Although sequestration rates will level off once an urban tree planting project reaches maturity, the reduced emissions due to energy savings will continue to accrue annually. Dead trees can be converted to wood products or used as bioenergy, further delaying, reducing, or avoiding greenhouse gas emissions.

Tree planting projects may appear more risky than reducing emissions by building solar or wind farms because the tree-related climate benefits are less easy to document and because the 50 to 200 year life span of a tree seems less permanent than a new power plant. This uncertainty can be offset by legally binding instruments such as contracts, ordinances, and easements that guarantee tree canopy in perpetuity. Of course trees and alternative energy sources are not mutually exclusive because both have a place in reducing CO₂ emissions.

Will urban tree planting in mid-latitude cities result in zero or even negative climate benefits?

One article describes two main ways trees lower temperature:

1. They remove CO₂ from the air, reducing the greenhouse effect
2. They release water vapor, which increases cloudiness and helps cool the earth’s surface

But because tree leaves are dark, they also absorb sunlight, which increases the temperature near the earth’s surface. The difference between trees in tropical latitudes and those in mid-latitudes has to do with the difference in how much sunlight forests reflect compared to other possible surfaces, such as grass or crops. “Shiny” surfaces reflect more sunlight back into the atmosphere than forest vegetation, resulting in less heat trapped near the earth’s surface. Large-scale tree planting projects that replace highly reflective surfaces with forests will result in more heat trapped near the ground during winter.

The startling conclusion that tree planting increases global warming by absorbing more heat, especially in temperate latitudes, is based on modeling of the reflectance (albedo) of forest canopies that are darker than snow, grass, or crops and absorb more heat. The models rely on various assumptions, such as wide scale afforestation; i.e. broad plantings of trees on grass and croplands. While more precise measurements may be warranted, the necessary conclusion: the earth would be cooler if the forests were cut down, defies common sense and is neither realistic nor ecologically desirable.

In cities, the climate effects of incremental darkening from increased tree canopy cover are even less relevant. Asphalt, concrete, and roof surfaces account for 50% to 70% of urban areas, with the remaining area covered by trees, grass, and bare soil. The difference in the albedos of the different urban surfaces is small. Vegetation canopies have albedos of 0.15 to 0.30, the albedo of asphalt

Continued on page 14

Scenes from the Texas Tree Conference



“True
leadership
only functions
on the basis
of trust.”

—Les Brown





"The moment you stop learning
you stop leading."

—Rick Warren



Trees & Global Warming

Continued from page 11

is 0.10, that of concrete and buildings is 0.10 to 0.35, and the overall albedo in low density residential areas is 0.20. In cities, increasing urban tree canopy cover does not appreciably alter surface reflectance, or increase heat trapping.

At the same time, as described above, a number of field and modeling experiments have found that urban trees reduce summertime air temperatures through evapotranspiration and direct shading. This reduces energy consumption and the emissions related to energy generation. Recognizing the climate benefits of trees, the California Climate Action Team Report recommended planting 5 million trees in cities to reduce 3.5 million metric tons of CO₂. A recent study found that by planting one million trees, the Million Trees LA program will reduce atmospheric CO₂ by about 1 million tons over the next 35 years, equivalent to taking 7,000 cars off the road each year. Since 1990, Trees Forever, an Iowa-based nonprofit organization, has planted trees for energy savings and atmospheric CO₂ reduction with utility sponsorships. Over one million trees have been planted in 400 communities with the help of 120,000 volunteers. These trees are estimated to offset CO₂ emissions by 50,000 tons annually.

Do tree-planting projects give people a “feel-good illusion that they are slowing global warming?”

The climate benefits of trees in mid-latitude cities are not an illusion, although they certainly feel good. Reductions in atmospheric CO₂ are achieved directly through sequestration and indirectly through emission reductions. Still, planting trees in cities should not be touted as a panacea to global warming. It is one of many complementary bridging strategies, and it is one that can be implemented immediately.

Moreover, tree planting projects provide myriad of other social, environmental, and economic benefits that make communities better places to live. Of course, putting the right tree in the right place remains critical to optimizing these benefits and minimizing conflicts with other aspects of the urban infrastructure.

The solutions to the problem of climate change are as complicated as the mechanisms of global warming itself. It is far too early and we have too little information to have decided to only invest in strategies that reduce fossil fuel emissions. Certainly we must transform the way we produce and consume energy. Doing so will require the brightest minds of science, the staunchest will of politicians, and a great deal of time, effort, and money.

In the meantime, we can all plant a tree.

References

- Akbari, H., H. Taha, “The Impacts of Trees and White Surfaces on Residential Heating and Cooling Energy Use in Four Canadian Cities”, *Energy*, 17(2):141-149, 1992.
- Brahic, C., “Location is Key for Trees to Fight Global Warming”, *New Scientist*, Dec. 15, 2006. <http://environment.newscientist.com/channel/earth/dn10811-location-is-key-fortrees-to-fight-global-warming.html>
- Caldeira, K., “When Being Green Raises the Heat”, *New York Times*, January 16, 2007.
- California Climate Action Team, “California Climate Action Team Report to Governor Schwarzenegger and the California Legislature”, California Environmental Protection Agency, Sacramento, CA, 2006.
- eGRID, “Emissions and Generated Resource Integrated Database”, US EPA, version 2.01, 2002.
- Gardner, T., “Trees take on Greenhouse Gases at Super Bowl”, *Yahoo! News*, Jan. 30, 2007.
- McPherson, E.G., J.R. Simpson, “Guidelines for Calculating Carbon Dioxide Reductions through Urban Forestry Programs”, Gen. Tech. Rep. PSW-171, Albany, CA
- McPherson, E.G., J.R. Simpson, “Potential Energy Savings in Buildings by an Urban Tree Planting Program in California”, *Urban Forestry and Urban Greening*, 2(2): 73–86.
- McPherson, E.G., J.R. Simpson, P.J. Peper, Gardner, S.L. K.E. Vargas, S.E. Maco, Q. Xiao, “Midwest Community Tree Guide: Benefits, Costs and Strategic Planting”, PSW-GTR-199, 2006.
- McPherson, E.G. J.R. Simpson, Q. Xiao, C. Wu, “Los Angeles One Million Tree Canopy Cover Assessment”, Final Report, Pacific Southwest Research Station, U.S. Department of Agriculture Forest Service, Albany, CA, 48 p. 2007.
- Rosenfeld, A.H., H. Akbari, J.J. Romm, M. Pomerantz, “Cool Communities: Strategies for Heat Island Mitigation and Smog Reduction”, *Energy and Buildings*, 28:51-62, 1998.
- Taha, H., H. Akbari, A. Rosenfeld, J. Huang, “Residential Cooling Loads and the Urban Heat Island—the Effects of Albedo”, *Building and Environment*, 23(4):271-283, 1988.

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<http://www.fs.fed.us/database/feis/plants>

This database discusses the effects of fire on a variety of species –trees, shrubs, vines, etc.

<http://www.erh.noaa.gov/box/dailystns.shtml>

If you need data regarding recent weather conditions to write your report on a tree, this is the place to start.

<http://www.almanac.com/signin/index.php?schemenumber=133&returnto=%2Fweatherhistory%2Findex.php%3F>

This site lets you check the weather history as far back as 1946.

<http://groundwaterwatch.usgs.gov/Default.asp>

Another site for weather statistics

<http://www.animatedknots.com/>

This site has most of the knots used in tree climbing done very nicely in an animated form that lets you learn at your own pace.

<http://people.eku.edu/pedersonn/oldlisteast/>

This database is of some of the oldest trees.

<http://texastreeplanting.tamu.edu/>

A great site put together by the Texas Forest Service to help homeowners choose appropriate trees.

www.conservationcalling.com

Conservation Calling sells ringtones that sound like birds and wildlife, and contributes 10 percent of its net revenue to American Forests' Global ReLeaf program.

<http://raleigh.injuryboard.com/1000000000-settlement-in-tree-branch-case.php?googleid=11231>

A tree branch fell on a man's car and broke his neck; he sued and was awarded ten million dollars. The experts lined up by the injured man's lawyers included four professors of arboriculture, an expert on arborist equipment, and a practicing arborist.

www.41pounds.org

Reduce your junk mail and help raise money for American Forests. This non profit organization will remove your name from direct mail marketing lists.

TVMA Conference Report

The 2007 Texas Vegetation Management Association (TVMA) Conference, hosted in San Antonio, was a great success. The conference brought together over 200 vegetation management professionals and 22 exhibitors from Texas and surrounding areas to review and discuss some of the latest technologies and developments in vegetation management. Presentations included topics ranging from ANSI Z133.1 safety standards to the role of Vegetation Management in Fire Management. As well, scholarships, totaling \$4000, were awarded to college students with degree plans in vegetation management. The 2008 conference will be held again in San Antonio from October 6th through the 8th.

The mission of the TVMA is to promote and support the vegetation management industry in Texas through professional development, continuing education and training, sound environmental stewardship and academic scholarship for its members and the public; to assist and cooperate with legislative and regulatory agencies. For more information on the TVMA, visit our website at www.tvma.net.

—per Michelle McAfee, TVMA Board

New San Antonio Association

The San Antonio Arborist Association has sent an application the IRS to seek tax-exempt status for our new association. We are currently working on ways to improve the tree care in the Greater San Antonio Area by helping tree companies to have an active tree maintenance license that is required by the City of San Antonio, pushing membership for the ISA and, ultimately, to have a certified arborist with all local tree care companies. Any San Antonio area tree workers that need additional information, please contact Booker Arradondo, 884-8984.

—James Koenig

Free Training Opportunity

The Alliance for Community Trees offers a FREE monthly training (webcast) for anyone interested in issues pertaining to preserving and planting their urban canopy. The series is geared for volunteer organizers, community groups, and others who work with the public. Registration is required. More information, including the list of topics that will be covered through March 2008, can be found at <http://actrees.org>

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