

Spring/Summer 2009

TREE *Notes*

CROSS TIMBERS URBAN FORESTRY COUNCIL • 4200 SOUTH FREEWAY, SUITE 2200 • FORT WORTH • TEXAS • 76115-1499
Mission: To promote programs in the region to increase interest in urban and community forestry



Annual Meeting September 18, 2009

11:00 am
Mineral Wells State Park

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Lunch will be provided. After the meeting you will find lots of activities at the park, including fishing, swimming, canoeing, cliff climbing, and hiking. Some folks plan to spend the night; you can check campsite availability online by searching for Lake Mineral Wells State Park.

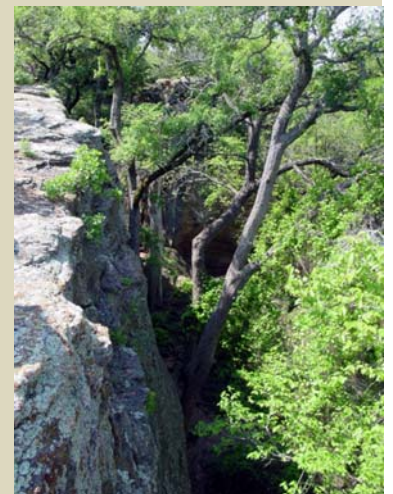
Elections will be held, and we urge you to consider a position on the board of the Council. Positions to be filled include

- Vice President: 1-year term followed by the Presidency for one year
- Secretary/Treasurer: 1-year term
- Editor: 1-year term
- Director: 2 positions, 2-year term
- Citizen Forester representative (Director): 2-year term

Please consider a board position and send a message to Courtney Blevins at cblevins@tfs.tamu.edu by September 14



If you plan to attend the annual meeting please RSVP to Courtney by September 16.



Pine Tip Moth Infestations Abound

We are seeing a tremendous increase in Nantucket Pine Tip Moth, *Rhyacionia frustrana*, damage across the metroplex.



Eldarica Pine, *Pinus eldarica*; Loblolly Pine, *Pinus taeda*; and Austrian Pine, *Pinus nigra*; seem to be bearing the brunt of the damage.

Tip moth damage shows up as dying branch tips in the early summer. The outer three to six

inches of branch candles often turn reddish brown as the moth larvae tunnel through the stems. One tell-tale sign of tip moth damage is the accumulation of white, crusty pitch at the branch tips. The brown needles also pull away easily by hand. Over time, severe infestations can disfigure the tree.

Control can be difficult, and standard contact insecticides won't work. Dimilin 25W is an insect growth regulator that can be effective against Nantucket tip moth.

Tree canopies must be sprayed in March, May, and July. The pest can have up to four generations per year. Imidacloprid (Merit) is also labeled for tip moth control, although it can take four to six weeks to begin controlling the

pest. Dinotefuran (Safari) is not labeled specifically for tip moth, but may offer more rapid systemic control.

Reprinted from ArborNews, June 2009



Pine tip moth damage.

Texas Arbor Day Poster Contest: Honorable Mention Awarded to Denton Student

Students from at least 15 schools in our region participated in the contest. School districts represented included Fort Worth, Denton, Sanger, Muenster, West Lake, Aubrey, Era, Nocona, and Ringgold.

Our local award winner is Emily Hu from Sam Houston Elementary in Denton. The Cross Timbers Urban Forestry Council, along with the Texas Forest Service, recognized the achievement. Emily and her teacher each received a prize of \$100, and her class was given \$100 for a pizza or ice cream party.



Arbor Day in North Richland Hills **Geoffrey Sherman**

Arbor Day was celebrated in North Richland Hills on March 28 in conjunction with Discover: Project Green, our environmental awareness event. The three-hour event included electric car dealers, solar/wind power vendors, rainwater harvesting demonstrations, environmentally friendly personal care product vendors, educational sessions, a bean growing contest for the kids, and,

of course, an Arbor Day proclamation. Over 250 oak, elm and pine tree saplings were given away. As an extra special treat for attendees, entertainment was provided by the musical group Vocal Trash. The day was a little chilly and the wind blew as if we were in Lubbock, but the event was a success and a few more trees made their way to the North Richland Hills landscape.



State Arbor Day **Susan J. Henson, Horticulturist, City of Grand Prairie**

A State Arbor Day ceremony can be a chance to educate and raise awareness about trees. A chance to “grow our own” arborist happens so few times that when we have the ability to raise awareness we must take the chance.

Over 500 4th and 5th grade children from the Grand Prairie Independent School District attended the 120th Arbor Day Celebration on April 24 at City Hall Complex in Grand Prairie, Texas. The city celebrated its 25th year as a Tree City USA and its 100th year as an incorporated city. Over 1,000 people attended and that many trees were given out to citizens and children.

Ruthe Jackson, Grand Prairie Mayor Pro Tem, was honored with a special award and plaque from the Texas Forest Service for her 50 years of dedication to the environment and children throughout the state and the nation. In addition, the Fort Worth Parks and Community

Services Department, and particularly their Forestry division, was honored with a plaque for its 100th year as a department. It was accepted by Melinda Adams, Fort Worth Forester. Bonsai trees were given as mementos to the speakers and VIPs in attendance to help them remember their experience in Grand Prairie.

The day started out cloudy and breezy — perfect for an outdoor event. The vendors’ tents went up, the stage was set, and the ceremony began. The children were treated to a wonderful Arbor Day address by Jean Palmer, the great-granddaughter of J. Sterling Morton, founder of Arbor Day. Tom Boggus, Director of the Texas Forest Service, was the MC, and he kept things flowing with his wit and wisdom. John Giedraitis, also with the Forest Service, searched the crowd and found several children to talk about the benefits of trees. The children were wonderful, but

the last two wore t-shirts that said “Home Work Kills Trees – Play More Video Games”! Leave it to John to brighten any event! The GPISD honor choir performed with Trout Fishing In America with a repeat performance at the UpTown Theater in Grand Prairie that evening.

Each child received a tree and a coloring book full of puzzles, games, and trees to color and information about the benefits of trees, along with Trees are Good tattoos. There was a free All American Lunch of hot dogs, chips, and lemonade. A climbing demonstration was provided by Four Seasons Arbor Care. The children watched in amazement as the workers climbed and worked in a tree. Several were heard walking away saying “That’s what I want to do when I grow up!” Maybe some little seeds of change were planted that day in the memories of the children.

Bronze Leaf Awards

Clockwise from top right: Award winners with President Melinda Adams; Melinda promotes t-shirts; Ruthe Jackson addresses the meeting; a view of the audience; keynote speaker Randy Miller.



Water Restriction John Tomlinson, Bartlett Tree Experts

It's that time of year where water management is crucial. With the water restrictions that are being enforced, many homeowners are concerned about their landscape. Perhaps the information provided below will ease the minds of you landscape-conscious people and give you some ideas for making these restrictions work in your favor.



When enough water isn't available, movement of nutrients throughout the tree will be reduced. The process of photosynthesis will slow down and the tree will begin a decline that leads to the attack of many pests. This is rarely a problem for homes in our area that have a sprinkler system installed.

Too much water in soil can have a similar impact on the plant. In this case, water is not available in the leaves because transpiration and nutrient movement in the plant are reduced by root damage. Damaged roots cannot absorb oxygen as they normally would. Diseases prosper in wet soil conditions and add

further stress. With the clay soils common to our area, this is more likely the problem you will see. Treatments for this are available, but the first step is to correct the source of the problem.

The time of watering and the amount of water to apply to trees and shrubs depend on plant species and water requirements. Soil type, soil drainage characteristics, and weather conditions are also factors. With normal rainfall and good soil conditions, trees will adjust water usage by opening or closing small holes in their leaves. These openings are called stomates. Under certain circumstances trees and shrubs cannot adjust sufficiently to their environment to maintain health.

Most established trees or shrubs require a combined total from rain and irrigation of 1 to 1.5 inches of water per week. Be sure to factor rainfall into this amount with use of a rain gauge.

Before timer recommendations can be made for any sprinkler system, water output needs to be determined. This is easily done by placing multiple tuna cans on the ground near one or more important plants in order to obtain an average measurement of water output. Run the irrigation system for 10 or 15 minutes and measure the depth of the water. A typical built-in sprinkler system will deliver about ½ inch of water in 15 minutes. In this case, the timer should be set to run for 15 minutes two times per week to apply the necessary 1" of water. During severe droughts this can be increased to 20 minutes or 1.5" per week. Repeat this process for

each zone because they will likely differ from each other.

It is best to run any sprinkler system during the early morning, between 4:00 am and 8:00 am. This reduces evaporation, increases use efficiency and reduces foliage-wetting periods. Wet foliage is more susceptible to disease infection.

When dealing with new transplants or trees with root damage, sprinklers may not direct the water where it is needed the most. In these cases, hand watering directly into the root ball is preferred. This can be done with a hose, preferably with a water breaker nozzle, or with a water container such as a "Tree Gator." Avoid application of water directly to the trunk, for all application methods as this may increase the risk of canker diseases.



A closed stomate.

Mulch greatly reduces water loss from evaporation and keeps soil temperature much lower. During drought years, mulch is an excellent means of keeping plants healthy with less irrigation. Two to three inches of wood chips or other coarse organic matter should be used. Mulch should not be in contact with the trunk.

Noted in Passing

At a Starbucks in Arlington, six trees are suffering from the same clearly avoidable problem: They were all staked a few years ago and left to strangle. Would it be worth the risk to launch a midnight mission with wire cutters, or is it already too late?



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Historic Tree Planted in Grapevine Lisa A. McCowan

Grapevine's historic Nash Farm will be home to a new tree that has quite a rich history.

The Stephen F. Austin Heritage Oaks project grew from an interest in Stephen F. Austin by a Houston businessman, Bill Price, and his wife, Janie. The Prices purchased property near West Columbia where Stephen F. Austin died on December 27, 1839. Still standing at the site was a giant live oak tree that had been standing before Austin's death. Acorns from that tree were gathered and were propagated into trees certified by the Texas Forestry Association as disease free and authentic. These heritage oak

trees have been planted in every county in Texas and at every public school that is named for Austin.

In October 1843, General Sam Houston and fellow Republic of Texas Commissioners camped at Tah-Wah-Karro Creek, also known as Grape Vine Springs, to meet with leaders of 10 Indian nations. This historic meeting culminated in the signing of a treaty of "peace, friendship, and commerce," which opened the area for settlement by homesteaders and pioneers. The settlement was named Grapevine because of its location on the Grape Vine Prairie near Grape Vine Springs, both of which were

named for the wild mustang grapes that blanketed the area.

Grapevine city councilperson Sharron Spencer and husband Jerry attended a planting ceremony at Tarrant County Courthouse last fall. Jerry decided to contact Mr. Price to see if he would provide one of the heritage oaks to be planted in Grapevine. Mr. Price agreed not only to allow Grapevine to have one of his trees but insisted on delivering it in person. The Stephen F. Austin heritage oak was planted at noon on April 4 at Nash Farm.

Lisa A. McCowan is Media Relations Manager for the Grapevine Convention and Visitors Bureau.

Oldest Tree in Texas? Mark Duff, Texas Forest Service

It turns out that one of the most impressive trees in Texas may also be the oldest. This information came from Dr. Malcolm Cleveland, from the University of Arkansas-Fayetteville Tree-Ring Laboratory, during a visit to the Fred Collins sawmill in Bandera last May.

Dr. Cleveland took a look at some of the cross sections of large baldcypress logs that were at the mill, and he was not that impressed. The trees had wide rings, and he concluded they were no older than 250 years or so. After all, in northeast Texas, still-living baldcypress have been dated to the early 1200s, an 800-year chronology. Apparently the trees along the rivers in the Hill Country don't live that long because they get beat up and

washed downstream during violent floods that occur relatively frequently in the area.

But there was one former champion baldcypress that is growing about 200 feet from the Frio River near Concan that I wanted Dr. Cleveland to see. The tree is in the old river channel and its lower fluted trunk is buried in as much as 15 feet of alluvium. There is no telling how long the tree has been protected by being off the bank of the river.

Dr. Cleveland and I were given permission by the owner to core the tree with a two-foot increment borer we had. To get to the center of the tree's 14-foot diameter would have required a 7-foot increment borer. The biggest increment borers ever made were 4 feet long, and

apparently the last known survivor broke off inside a tree.

We were able to core the tree and extract the borer rather easily. When Dr. Cleveland began to examine the core, I noticed increasing excitement in his voice. "This section is really tight, and here it grew faster, now here it really slowed down again," said Cleveland. This pattern was observed all the way to the end of the 2-foot solid core. "This could be the oldest tree in Texas," he continued. He estimated that just this outer 2-foot section took roughly 500 years to produce. And yet we would need 5 additional feet of sampling before reaching the pith.

Next time Dr. Cleveland comes to this area, he will bring his 3-foot increment borer.

Naturally Cool Laura M. Miller, Extension Agent, Texas Agrilife Extension

Summertime officially begins in June, but here in North Central Texas it can start early and end late. Keeping cool is a priority for many Metroplexians, and air conditioning units work round the clock to maintain comfortable indoor temperatures. However, there is another way, and it is literally green: Use plants to keep cool this summer.

Plants cool us down in two ways. They provide shade and they transpire. Shade is a valuable commodity in warm climates where well over half of residential energy consumption can be attributed to air conditioning. Transpiration is little more com-



plicated but still provides significant cooling benefits.

Forecasting Sunshine with a Touch of Shade

Strategically placed deciduous trees (those that lose their leaves in winter) can reduce cooling

costs in the summer while allowing for passive heating from the sun in the winter. An American Forests study in Dade County (Miami), Florida, a very warm and humid place, found that trees provided direct energy savings equaling 3.3% of total consumption. The same study estimated that the addition of one mature tree in the right place per residence would provide an additional 6.4% energy savings.

The US Department of Energy reports that an outdoor air conditioning unit operating in the shade uses about 10% less electricity than

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Bacterial Leaf Scorch Gareth Harrier, Bartlett Tree Experts

Bacterial Leaf Scorch (BLS) is caused by a xylem-limiting bacterium, *Xylella fastidiosa*. This pathogen causes Pierce's Disease in grapes. BLS is vectored mainly by insects in the leafhopper (Cicadellidae) and the spittlebug (Cercospidae) families, but research is being conducted to evaluate additional vectors. In our area the main culprit is the glassy-wing sharpshooter.



BLS symptoms are very irregular. Leaves emerge apparently healthy in the spring, but with the onset of hot, dry weather, symptoms develop rapidly during July and August. The general symptoms of most trees include a characteristic leaf scorch that progresses inward from the margin and results in premature defoliation across all tree species.



On certain species, such as elm, there is a well defined yellow or reddish brown band or halo separating living and dead leaf tissue. In the earliest stages there may only be a few limbs that display foliar symptoms within the crown, but as a result of scorching and premature defoliation over the years, limb dieback and water sprouts develop. Because the trees are stressed from this disease, they become more susceptible to secondary pests such as cankers and borers.

Diagnosis can be difficult in the field due to the indistinct symptoms produced by the disease. The symptoms are indicative of many other problems that inhibit water movement in the xylem, such as sunscald, salt damage, wind burn, drought



stress, and overwatering. Because of this, close attention must be paid to the host species involved and adequate and proper sampling. In North Central Texas the most common species that suffer from BLS are American elm, cedar elm, red oak, sycamore, and London plane tree. Many agricultural laboratories provide Enzyme-Linked Immunosorbent Assay (ELISA) tests to confirm the

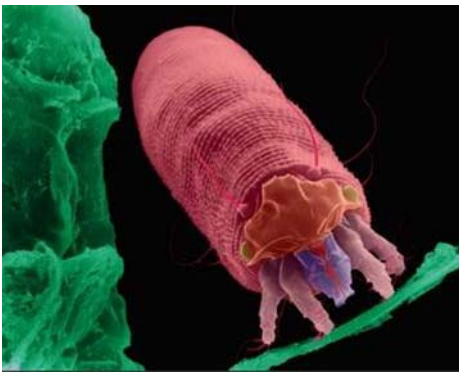


presence or absence of the pathogen. Sample quality and quantity is critical to achieve accurate results. The sample should be composed of 25-30 freshly collected leaves with petioles, preferably attached to twigs, so that the sap containing the pathogen can be extracted for analysis.

Disease suppression is treated by injecting antibiotics into the root flare. There is no cure, but treatment with antibiotics can limit the spread of the xylem-clogging bacterium. The best long-term treatment is to limit or prevent other tree stresses. Maintaining the health of the tree through proper mulching and irrigation practices will delay and suppress the symptoms of the disease by assuring adequate moisture availability for the tree. Fertilization should be based on soil analysis results. Secondary pests should be monitored and controlled as needed. There are no data to suggest that sanitation (i.e., immediate removal of diseased trees) reduces the incidence of new infections. Pruning out diseased limbs as a means of eradicating the disease has not been shown to be effective.

Galls on Trees Bob Bauernfeind

Most galls are formed by a wide array of insect species including gall midges, gall wasps, sawflies, aphids, psyllids, and adelgids. Not all galls are incited by insects. For instance, various mite species are responsible for producing galls.



Of particular interest are “flower galls” caused by a type of eriophyid mite. The most common observed “flower gall” is the ash flower gall. Fertile female mites overwinter in protected sites beneath bud scales and bark. In spring, they move to male flowers where they deposit eggs. The newly developing mites cause a proliferation of flower growth and distortion. These abnormal growths may be masked by the current season’s foliage. But after leaf drop in the fall, the then-browned flower galls become apparent and create a cause for



concern by homeowners. However, these flower galls are entirely a cosmetic situation and of no harm to the tree. They may reoccur in ensuing years or simply phase themselves out and become nothing more than a faded memory.

Note that the galls provide shelter and food. The galls merely reside on leaves, taking nothing. Under certain conditions extremely heavy numbers of leaf galls may cause premature leaf drop. But this could be viewed as “good” because early in the season trees almost immediately put out a flush of new leaves that will be gall-free; the egg-laying



gallmakers have run their course and are no longer present.

With warmer temperatures, foliage production of most trees explodes, and those leaves are devoid of leaf galls. The seasonal life histories of those species responsible for initiating the galling process are synchronized with initial leaf production in spring.

Are there measures to prevent the formation of insect galls? Yes. The timely application of insecticide treatments to coincide with



the presence of gallmakers could reduce populations and minimize the extent of gall formation. But it is impossible to predict when, where, and which trees will be affected. Also, there is little wiggle room in the timing of insecticide applications — miss it by a week and the deed is done.

The size of a tree may prevent thorough spray coverage if attempted by a homeowner. And again, the bottom line is that leaf galls are not detrimental to overall tree health. See them, and maybe even marvel at them. Make the best of a harmless situation.



Bob Bauernfeind is an entomologist with the Cooperative Extension Service, Division of Horticulture, Kansas State University. Reprinted from Horticulture 2009 Newsletter, Number 19, May 13, 2009.

Leaf Management Laura Miller, Extension Agent, Texas AgriLife Extension



Most of the year, it's difficult and expensive to get enough organic matter. In the fall, organic matter falls from above on both the just and the unjust. Many yards are virtually covered by leaves from deciduous trees. Disposing of these leaves can create a significant burden on landfills and municipal compost facilities.

Leaves cause even more problems when they get into the storm drain system (often with a little help from a leaf blower) where they can cause serious problems if it rains. On the other hand, leaf fall provides a great opportunity to turn what some people see as messy debris into an environmentally friendly landscape enhancement. Here are a few leaf management options:

Mowing:

A light covering of leaves can be mowed, simply leaving the shredded leaves in place on the lawn. A mulching mower is best for this. During times of light leaf drop or if there are only a few small trees in the landscape, this technique is probably the most efficient and easiest way to manage leaf accumulation.

Mulching With Leaves:

Using leaves as mulch is a simple and effective way to recycle organic material and improve the landscape. Leaves can be used as mulch in vegetable gardens, flower beds and around shrubs and trees. Apply a 3- to 6-inch layer of shredded leaves around the base of trees and shrubs, carefully avoiding the tepee effect by keeping mulch away from tree trunks and shrub crowns. In annual and perennial flower beds, a 2- to 3-inch mulch of shredded leaves is ideal. Mulching is especially important in establishing



newly planted trees, shrubs, and perennials. If the natural look of shredded leaves isn't what your customer likes, top off the leaf mulch with a thin, inexpensive layer of bark mulch. You'll get all the benefits of bark at a fraction of the cost.

Soil Improvement:

Leaves may be collected and worked directly into garden and flower bed soils. A 6- to 8-inch layer of leaves tilled into a heavy clay soil will improve aeration and drainage. The same amount tilled into a light sandy soil will improve water and nutrient holding capacity. Adding a little

fertilizer to the soil after working in the leaves will hasten their decomposition.

Composting on site:

To prepare compost, organic material, microorganisms, air, water and a small amount of nitrogen are needed. Microorganisms break down the organic material. The nitrogen, air and water provide a favorable environment for the microorganisms to decompose the organic materials and make compost. Air is the only ingredient which cannot be added in excess. A lack of nitrogen to "feed" the microorganisms will greatly slow the process, while an excessive amount is wasteful and can kill the microorganisms. Too much water limits the amount of air (oxygen) available to the microorganisms, greatly inhibiting their activity. As composting occurs, heat is generated, often causing temperatures to rise to 140 degrees F or more. Caring for an onsite compost pile could become part of a regular landscape maintenance service plan.

For more information and lovely color publications that you can give to residential customers, visit the Earth Kind Web site at <http://earthkind.tamu.edu/>.



Naturally Cool continued from page 6

one operating in the full sun. When installing plants to shade an air conditioning unit, be sure to allow plenty of room for air circulation around the unit.

Dr. David Laband, Professor of Forestry and Wildlife Sciences at Auburn University in Alabama, another hot place, recently concluded that electricity usage and associated costs will be 11.5% less in a house with just 17.5% shade coverage compared to a house with no shade. His study of 160 houses in the Auburn area covered an entire year, but found the greatest cooling impact of trees in the months of May through September. The study calculated shade coverage for each house, analyzed power bills, and surveyed homeowners about household makeup, electricity usage habits, types of appliances, building materials, and other factors.

Late afternoon shade, which is best provided by trees and shrubs on the west side of a building, provided the greatest energy savings. The next best way to save energy was to raise the thermostat. He found an energy savings of 3.3% for each degree increase in temperature. What's the best way to use more energy? Have children under age 12 in the house. They are the major power consumers: watching television, playing video games and leaving the lights on.

Dr. Laband hopes his finding will encourage real estate developers to preserve existing trees when constructing new houses. He found significant differences in energy use between older homes

with large trees and new homes without, despite the fact that newer homes had more energy-efficient appliances.

Growing a shade tree is a long-term undertaking, but shrubs and vines can provide some late afternoon shade relatively quickly when properly sited on the west side of a structure.



Evaporation, Transpiration, and Cooler Temperatures

Everyone who has stepped out of a shower has experienced the cooling effects of evaporation, the change in state that occurs when liquid water becomes water vapor. Transpiration is the movement of water through a plant. All plants transpire. Water vapor is released from the stomata of plants and moves into the atmosphere. Both processes consume heat energy and that cools the surrounding air.

Chris Martin, Professor of Horticulture at Arizona State University (ASU), reports that recent studies at ASU have shown that during hot summer afternoons the surfaces of homes next to a healthy summer lawn can be as much as 10 degrees cooler than similar homes surrounded by desert landscaping. The term 'desert landscaping' is used to describe a turf-free landscape that features desert plants and often inorganic mulch, such as stone. The key to cooling with transpiration is simply the volume of plant material. There is a direct correlation between leaf surface area and cooling effect.

Plants in any environment create a cooler microclimate by transpiring. You might be able to fry an egg on the cement this summer, but you won't be able to do that on the soccer field. Large plants that provide shade provide even more cooling benefits. And finally, with apologies to Joyce Kilmer, "I think that I shall never see an air conditioner as lovely as a tree."

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