ECHO

Extension's Community Horticultural Outreach

July— August 2006

Hello Friends,

What a wonderful time to be involved in Extension education. With watering restrictions in place throughout North Texas, this is a teachable moment for folks with relation to proper watering techniques, plant selection and landscape maintenance. There are multiple opportunities for us to make a positive environmental impact in our community. Homeowners are calling and visiting the office, and talks are being given that help people understand how to handle these new watering policies. These are times when your knowledge and experience as a Texas Master Gardener can really make a difference.

Thanks for your hard work as we've entered summer! Keep on sending your hours in to Diane Sharp. Also, remember that if you are unable to fulfill your scheduled Telephone Answerline time, please find a replacement for yourself. This will help keep us out of a bind at the office.

You're great!

Landry Lockett, CEA-Horticulture,
Texas Cooperative Extension

In this issue:

The March of the Fire Ants

A report by Nancy Furth

Fire Ants have been in the United States some 70 years, coming here aboard a ship from Brazil which landed in Mobile, Alabama in 1936. On a recent trip to South Carolina, my newspaper-friendly husband passed me an interesting article to read. (He always has my interests at heart—even on vacation!)

"They bite our legs and ruin our lawns" says Mike Toner, a writer for the Atlanta Journal Constitution. According to his article, dated Sunday, June 11, 2006, fire ants can now be found in 18 states, populating some 320 million acres. Cold temperatures are all that keeps them from crawling into the northern half of the country. Global warming could perhaps extend their march.

Mr. Toner's article goes on to list some fascinating information:

- How they got here: "After docking in Alabama, their first mound was found in the 1940s. If not for their sting, they might have gone unnoticed longer."
- A fire ant colony is a family: "A mother who mates with a single father lives with up to 250,000 of her daughters. Over her seven-year life span, a single queen may lay up to 2.5 million eggs."
- A mid-air affair: "Male and female ants mate in midair, during a brief period when both sexes have wings. The act gives the queen-to-be enough sperm to last her life span. The male dies once it's over."
- The birth: "The queen files off to choose a nest site, digs a chamber, sheds her wings, and lays her eggs. Her first priority is hatching a cadre of worker ants. Until these sterile females can forage for her, she lives off her fat. As the colony matures, it grows more specialized, with a clear division of labor, special diets, and a distinct social structure."
- Home in a hill (the mound): "The ants build a home that may be 18 inches high, with a maze of subterranean tunnels that can be as much as 300 feet long."
- The bite: "If disturbed, fire ants bite and sting. The sting injects a cell-destroying toxin that destroys tissue, causing pain and swelling. Inflicted by sufficient numbers of ants on hypersensitive individuals, stings can, in rare cases, be life-threatening."

What has been known as the "imported fire ant" has become an American export. "In 2001, the fire ant showed up in Brisbane, Australia, apparently carried there in a shipping container from the United States. In recent years, the fire ant has also turned up in Hong Kong, China and, last year, the Philippines."

In his article, Mr. Toner goes on to state: "In recent years the U. S. Department of Agriculture has tried a new strategy to fight back. It is importing and releasing one of the fire ant's natural enemies, a decapitating South American fly that quite literally takes the ants' heads off. Scientists are also testing a relative of human cold viruses as a way to control fire ants."

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(The March of the Fire Ants, continued from page 2)

FOLLOWING UP with the Texas Connection:

My recollection and curiosity led me to this closer-to home article which I hope will be of interest to those of you (like me) who try, but don't always stay on top of things.

AgNews
News and Public Affairs
Texas A&M University System Agriculture Program

Oct. 31, 2005

Phorid Flies Found in North Texas

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DALLAS – Entomologists have achieved another milestone in the war against the red imported fire ant. This month phorid flies, a natural enemy of fire ants, were found on the county line between Denton and Wise counties.

The first population of the fire ant's natural enemy in North Texas, this colony is also the northernmost establishment of a phorid fly population in Texas to date. The same phorid fly species, P. curvatis, was found in Oklahoma after a release and has since crossed the Texas/Oklahoma state line.

This milestone didn't occur naturally or by accident. In the fall of 2004, Texas Cooperative Extension entomologists Kim Engler and Dr. Bart Drees, with help from local Master Gardeners and Master Naturalists, spent three weeks collecting fire ants.

The ants were then shipped to Gainesville, Fla., for one week. The U.S. Department of Agriculture's Animal and Plant Health Inspection Service deposited the ants into chambers that also contained phorid flies. Over the course of that week, the female flies laid their eggs inside the thoracic region of the fire ants.

The ants were then flown back to North Texas and re-released into the colonies from which they were originally collected.

"This parasitic fly lays its eggs inside a fire ant worker," Engler said. "The larvae eats its way into the head capsule and eventually decapitates the ant. It then completes its development in the fire ant's head and emerges from there fully grown. If it's a female, it will mate then start the whole process over again. The entire process takes about one month."

The red imported fire ant is originally from South America, where it has a number of natural enemies and is not considered to be a serious pest. It gained entry to the U.S. via cargo ships unloading in a port at Mobile, Ala. in the late 1920s to early 1930s. With no natural enemies, the ants quickly spread. Today, they infest the Eastern two-thirds of Texas and many other Southern states.

Other phorid fly populations in Texas have been established near Vidor in Orange County, Caldwell in Burleson County, Austin in Travis County and in Polk County. But the population discovered in North Texas means the fire ant's enemy may spread to whole new area. It also means a new opportunity for researchers to study how cold temperatures and drought affect the phorid fly's life and reproductive cycles.

"Little is known about how the conditions here in North Texas affect the process, Engler said.

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"Phorid flies are not social insects, even though they will congregate next to a mound in order to produce offspring. They don't live together as a unit. They kind of do their own thing, so just getting a population established was very exciting. A lot of sweat, stings and tears went into collecting the ants, so finally getting some payoff from that was fantastic!"

Another release of phorid flies will probably happen next year, Engler said.

"This will not only decrease the fire ant populations, but it will also keep many of the worker ants from foraging for food," she said. "The phorid fly basically stalks the worker ants to lay their eggs, which prompts the ants to hide. If they're hiding, they're not taking food back into the colony. That hurts the colony and also benefits the native ant species, because there's more food for them. The native ant species are far less aggressive and harmful. So there's a positive domino effect."

Engler hopes the phorid fly population will spread in a 1- to 2-mile radius from its original population by next year.

"This is one of the most rewarding projects I've worked on so far, because it's a biological approach to controlling fire ants, and we had the success of getting a phorid fly population established," she said.

Horticulture Therapy Program

By Kathleen Brooks

The Horticulture Therapy Program at the Medical Center of McKinney, Wysong Campus is a service provided by Collin County Master Gardeners. They work with patients on the second and forth Wednesdays of each month. The combination of plant skills and a desire to work with special populations makes these volunteers a unique group.

At the rehabilitation facility, between eight and fifteen patients participate in a program that adds some color to their hospital stay. Each patient pots up a seasonal flower that they keep in their rooms. Most enjoy the handling of the plants and the potting soil.

The program makes the patient assume the role of caregiver for the plant. Sensory stimulation, socialization and personal achievement are some of the goals of the activity.

Involvement in this program is a rewarding experience for the volunteer as well as the patient. Master Gardeners earn an hour of volunteer credit plus drive time for their participation. Expansion of the program to other rehabilitation facilities will require commitments from additional Master Gardeners of two to four hours a month. Contact Sara Garretson at 972-527-8699 or Kathleen Brooks at brooksjohn@comcast.net if you are interested in volunteering for this rewarding opportunity.

Spotlight on Water Restrictions

By Candace Fountoulakis

They came, they saw, they taped, and taped and taped. "They" are the media, responding to an invitation to attend a press conference held in my front yard on June 1 to roll out the Stage 3 drought response by the North Texas Municipal Water District. Watering restrictions for members of the district, which includes all of Collin County, vary somewhat city to city but most are onboard for the recommended goal of saving at least 5%. Ordinances are posted on city websites, but all focus on more stringent requirements affecting residential and commercial landscape water use.

What we took away from the experience of "starring" in a public service announcement videotaped a few weeks earlier by EnviroMedia of Austin, and the subsequent outdoor press day at our home in Plano, was gratitude for the hearty nature of native plants and their ultimate "garden worthiness". Mulch and soaker hoses took center stage during demonstrations around the yard but the blooming beauties in the landscape that thrive under "once a week" watering underscored the central message - that you don't have to drain Lake Lavon to have beautiful flowering plants!

Mike and Candace Fountoulakis during the filming of the press conference.
Photo courtesy of Deb Bliss

My husband Mike and I enjoyed "pledging" to reduce our water use by at least 5% and participated in the interactive display of easy ways to accomplish this modest goal. As master gardeners we are well aware of the principles of xeriscape, but to summarize what was emphasized during the media blitz: mow grass at 3" height; leave clippings on lawn; use mulch (minimum 3 inches) on plants, under trees, over any bare soil; check for sprinkler leaks, and repair; and maintain and learn how to best utilize automated sprinklers if you have them. This last tip had multiple parts, including setting watering schedules to your day of the week, watering only during allowed hours (which avoid the most inefficient, i.e. evaporative hours of the day) and set the system to repeat cycles during those hours so water does not run off but soaks in and eventually puts out your precious inch of water. Our system is set to run each zone for three minutes at a time, and waiting a while to let it soak in before running the cycle again through all the zones, eventually putting out an inch of water total. This takes the entire midnight to 7 am allowed watering time on our day of the week so it took some calculating to get it done. The most surprising thing was finding out that three minutes was all it took to get to the point of runoff on our soils, so running each zone for longer than that was still not optimal. Deep watering to get deep roots doesn't mean dumping it all on at once, just getting it into the soil during the same day, so running multiple cycles with a 'soak-in' time between will make the most of your watering opportunity. Of course if it rains, turn the system off! Better yet, have it fitted with weather or rain sensors and it will shut off automatically when rain is detected.

Some of my favorite drought tolerant plants this time of year will be familiar to all who have to deal with limited amounts of moisture available in their landscapes but bear repeating... lantana, wire grass (stipa), salvia greggii, winecup, skullcap and pavonia lasiopetala. They are tough and flower through the worst Mother Nature throws at us, but don't forget to mulch, baby, mulch and of course, pray for rain.

Just a Drop in the Bucket

By Mary Nell Jackson

We all knew it was coming. Summer hasn't even been declared, for goodness sake. It was in our water bill, on the television and radio, the newspaper featured a headline, and it is the most talked-about subject among gardeners since the freeze last winter. Water rationing is dreaded news for any gardener.

We "tree huggers" knew this warning and rationing was a given. We know about the ozone layer, we are aware of what our automobiles do to the environment, we are the first ones to see smog in the early morning hours on a hot summer's day. This year the only water we may see will be from our brow about mid July.

I have often dreamed that the crisis of water shortage would be solved long before now. The warnings have been there for more years than we care to remember.

I will admit I don't have a garden full of native plants, but they are looking better to me with each hot Texas summer. I suppose I could live without my blue/pink hydrangeas, my fragrant gardenias, and many of the tropical plants I have learned to love.

The question is: Could my foundation do without the much-needed water to keep this movable clay soil level? The answer is no.

Foundation repair is no picnic. Twenty-seven piers (the cable-lock type you hear about on TV commercials) were placed underneath the concrete foundation, one inside a bedroom to stabilize it, and hopefully, to stop the cracks above the doors that will not shut and to level the uneven floors. The price was about "a car's worth." After the initial cost shock, we settled our minds, saying that this was home ownership maintenance and had to be done. At least we had a lifetime guarantee; that was supposed to make us feel better. We have become accustomed to home repairs in our 30 + year old home.

I hired a landscape firm to move all the foundation plantings and watched, pacing from the window, as the crew dug holes along the foundation and placed the piers. Not a pretty sight. In early spring, plants were bursting with blooms while my plants were nestled in ugly black plastic pots trying to survive. I am happy to say we all survived, not a plant lost to transplant shock. I am not sure Superthrive was the answer, but water and loving care was something my plants did not lack. My knee however did not lack.

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(Just a Drop in the Bucket, continued from page 6)

My knee, however, did not survive the stress. The doctor said arthritis, an older knee (shame on his bedside manners), and too much gardening caused my ailment. If he only knew what that old knee did to make things right after the crew left their mess. The therapy is going well.

It seems to me that this water crises may be caused from bad karma. You know, when you do something bad or wrong, your karma will come back to haunt you. We know you shouldn't mess around with Mother Nature. But we have. It is called "designer water." Yes, you read that correctly. There it was in our morning paper just the other day - designer water is for the lazy gardener - a mix of purified water and fertilizer. It is advertised as no mixing, no measuring, and no guessing.

We all know about designer drinking water and some people love its fruity taste. For me, good long drinks of "real water" taste just fine. As a child I drank from the garden hose; my parents never cautioned it would poison me; we drank from everyone's tap for there was no such thing as bottled water, flavored water, or designer plant water. There was just plain water. The best water I ever tasted came from a cool deep well long ago and far away; something that my children will never taste, regrettably.

This designer water for plants is costly ($3.99/64 oz.), especially if your plant is thirsty. I am sure there will be numerous brand names, but for now, the one I discovered is called HydraFeed. The company advertises that they will have seasonal custom tonics, i.e. for your Christmas poinsettia and other plants that need special mixes. For now, my plants will have to do without this designer water for I had rather put my money into amending their soil. I wonder if they will miss this treat of designer water? I think not, as they have flourished well with a balanced fertilizer, plain water, and just enough sun for many seasons.

Yes, it is karma; we are messing with Mother Nature and her pure, nontoxic source of water. I prefer real water as long as it is available. Is that a question that we must consider in the future, availability of landscape water?

Do we have to be reeducated about our very basic resources before we lose them? Gardeners must set positive examples to those that refuse to realize that water is a gift of nature and we must be forever grateful. Our hot Texas sun and the recent water restrictions certainly give each gardener a time to reevaluate what we plant and how we water. It's a sad time indeed for each of us that love the vigorous growing season that summer brings. For now, the long-term weather report does not sound encouraging. If I could just figure out how to turn my sadness into a positive emotion and do what the song says: "Cry me a river", my garden could survive.

Echo Newsletter and E-minders Win 3rd at State Convention

By Janice Miller

What a wonderful shock I had when the awards announcement was made that Collin County won third place, large county, in the Publications category for the Echo Newsletter and weekly E-minders! Since I was not invited to make an acceptance speech of any sort, I would like to do that now by thanking all of you who submitted photos, wrote articles, edited, reviewed and helped to make the 1995 Echo Newsletter and E-minders award winning publications.

Thanks to:

Carol Dean
Beth DiGioia
Candace Fountoulakis
Derald Freeman - Tarrant County MG
Renee Furgeson
Nancy Furth
Sara Garretson
Mary Nell Jackson
Nancy Joslin
Dorothy Ingram
Landry Lockett
Rene Mahoney
Mary Means
Sharon Meines
Michael Merchant
Rhonda Mieure
Susan Owens
Katherine Ponder
Diane Poston
Diane Sharp
Dr. William C. Welch
Douglas F. Welsh, Ph.D.
Marilyn Wooley

Awards

By Katherine Ponder

The ECHO and e-Minders communication tools certainly deserved to take an award at our recent state convention. (Of course, I'd have voted for #1 spot, but they didn't ask me!) I have helped with Texas Master Gardener Association award entries for the past two years and will definitely do so again this coming year. The key to winning state awards for ANY program, publication, or activity is public education. Every entry must show how we helped to show county residents the best ways to manage their landscape, how we promoted Texas A&M Extension Center research and findings, how far-reaching our programs are, and how efficiently we used our association resources to do so.

For 2007, we will enter our association as a whole for its activities, and I know that we will enter our well-received program "Complete Guide to Landscaping in Collin County." As you plan activities, keep public education at the front of your mind. Remember to plan ways that measure effectiveness. Then send the details over to Landry as a potential award entry. You just may find yourself accepting an award next year.

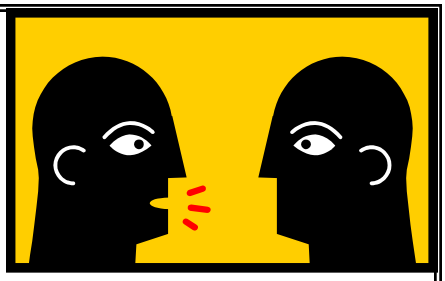
Send in Those Photos

By Katherine Ponder

Gardeners like us love to take photos of our plants and landscape. Share your best with others by sending in photos so that they can be used in presentations, handouts, and a wide variety of other educational tools. We can use photos of whole gardens or individual plants. To use photos of specific plants, we need proper identification, including species and variety names. Example: Black-Eyed Susan *Rudbeckia hirta* "Prairie Sun", or Black-Eyed Susan. *Rudbeckia fulgida* "Goldsturm." This is a great time to increase our crape myrtle photo stockpile! If you don't have the knack for photography, Nancy Furth has volunteered to bring over her camera and click away. You can send your own photos to her (if they are digital) or contact her to set up a photo shoot by emailing her at n.furth@verizon.net. If you have actual prints, identify the plants and hand them off to Nancy.

Conversation Starters or Stoppers?

Dorothy Ingram, Speakers Bureau Coordinator



Many of you involved with the Speakers Bureau know that I absolutely never ever do any program without bringing up the subject of water in some way, shape or form. I urge you all to do the same! Try these out for size!

- 80 percent of the earth's surface is water but 97% of that is (salt) ocean or sea water while 30% of that 97% is in the form of icebergs.
- Only 3% of all the water is fresh water - of that only 1% is potable (after treating).
- 25% of all potable suburban water goes onto lawns.
- Once "used" our water (and what happens to be in it) goes one of two places: the storm sewer to be untreated and allowed to flow into streams and lakes or into our sewers and then into plants to be "cleaned".
- Lake Lavon is down 10 feet from its conservation level of 492 feet above sea level and we can have only the next 30 feet. And then what happens? Here are some ways to make sure we don't get that low:
  - Limit showers to 5 minutes.
  - Turn off the water while brushing teeth
  - Have your auto washed at a commercial carwash and do no laundry unless it is a full load.
  - Observe all Stage 3 rules!
  - Turn off automatic sprinkler timers.
  - Run stations through two cycles for a total of one inch per week.
  - Know the Xeriscape steps and try some of the following: Texas sage, salvia hybrids, silverleaf artemisia, red yucca, purple coneflower, Blackfoot daisies, Sun drops, winecup.
  - Use a non-ionic surfactant that your soil's capacity to hold water.
  - Go to any of the following:
    www.WaterIQ.org
    www.wheredoesitgo.com
    www.savedallaswater.com
    www.regioncwater.org
    www.xeriscape.com
    www.smartscape.com
    Your city web site
    aggie-horticulture.tamu.edu for the appropriate links.

2007 Master Gardener Conference to be in Kerrville Texas

The Hill Country Master Gardeners will be hosting the 2007 Master Gardener Conference. The conference will be held April 12-14 at the Inn of the Hills Resort and Conference Center. Although it seems like a long time away, the Inn of the Hills has only 200 guest rooms and will fill quickly. If you are interested in going, act now and reserve the room (you can always cancel, if you must). Conference information is available on the Hill Country Master Gardener web site at: http://www.hillcountrymastergardeners.org/index.html

Garden Checklist for July/August

Dr. William C. Welch
Professor & Landscape Horticulturist
Texas A&M University, College Station, TX

(The following information was compiled from the 2005 information available at http://aggie-horticulture.tamu.edu/)

- Re-blooming salvias, such as Salvia greggii and S. farinacea, should be pruned back periodically during the summer. To make the job easier, use hedging shears, and remove only the spent flowers and a few inches of stem below. Fall-blooming perennials, such as Mexican marigold mint (Tagetes lucida), chrysanthemums, physostegia, and Salvia leucantha, should be pruned in the same manner during the summer to keep them compact, reducing the need for staking. This type of pruning should be completed prior to September 1, since flower buds begin forming about that time.
- Take a critical look at your landscape while at the height of summer development. Make notes of how you think it can be better arranged, plants that need replacement, overgrown plants that need to be removed, and possible activity areas that can be enjoyed by family members.
- Check for insects and diseases. Destroy badly infested plants. Spider mites can be especially troublesome at this time. Select a chemical or organic control, or use insecticidal soap.
- During the summer, soil moisture becomes extremely important and essential for good plant production. Because continual watering is oftentimes costly and time consuming, it pays to conserve the moisture around plants. This is best done by mulching. A good mulch will retain valuable moisture needed for plant growth, and improve overall gardening success. Mulches are usually applied 2 to 6 inches deep, depending on the material used. In general, the coarser the material, the deeper the mulch. For example, a 2-inch layer of cottonseed hulls will have about the same mulching effect as 6 inches of oat straw or 4 inches of coastal Bermuda hay.
- There is still time to plant some of the colorful, heat-tolerant summer annuals. You can direct-seed zinnias and portulaca, and purchase plants of periwinkle, salvia, marigold,gomphrena, celosia, and purslane. Be sure to water transplants as needed until roots become established.
- Removing faded flowers from plants before they set seed will keep them growing and producing more flowers. A light application of fertilizer every 4 to 6 weeks will also be helpful.
- Now is the time to plan for next spring. Consider digging and dividing any crowded spring bulbs. Once the bulbs have matured and the foliage has turned brown, it is time to spade them up and thin out the stand. Crowded bulbs produce fewer and smaller blooms. They usually need thinning every 3 to 4 years.
- Caladiums require plenty of water at this time of year if they are to remain lush and active until fall. Fertilize with 21-0-0 at the rate of one-third to one-half pound per 100 square feet of bed area, and water thoroughly.
- Prune out dead or diseased wood from trees and shrubs. Hold off on major pruning from now until midwinter. Severe pruning at this time will only stimulate tender new growth prior to frost.
- Sow seeds of snapdragons, dianthus, pansies, calendulas, and other cool-season flowers in flats, or in well-prepared areas of the garden, for planting outside during mid-to-late fall.
- Plant bluebonnet and other spring wildflowers. They must germinate in late summer or early fall, develop good root systems, and be ready to grow in spring when the weather warms. Plant seed in well-prepared soil, one-half inch deep, and water thoroughly.
- Picking flowers frequently encourages most annuals and perennials to flower even more abundantly.
- It is time to divide spring-flowering perennials, such as iris, Shasta daisy, oxeye, gaillardia, cannas, day lilies, violets, liriope, and ajuga.
- Make your selections and place orders for spring-flowering bulbs now so that they will arrive in time

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(Garden Checklist, continued from page 11)

for planting in October and November.

- Don't allow plants with green fruit or berries to suffer from lack of moisture.
- A late-summer pruning of rosebushes can be beneficial. Prune out dead canes and any weak, brushy growth. Cut back tall, vigorous bushes to about 30 inches. After pruning, apply fertilizer, and water thoroughly. If a preventive disease-control program has been maintained, your rose bushes should be ready to provide an excellent crop of flowers this fall.
- It is not too late to set out another planting of many warm-season annuals, such as marigolds, zinnias, and periwinkles. They will require extra attention for the first few weeks, but should provide you with color during late September, October, and November.
- Establish a new compost pile to accommodate the fall leaf accumulation

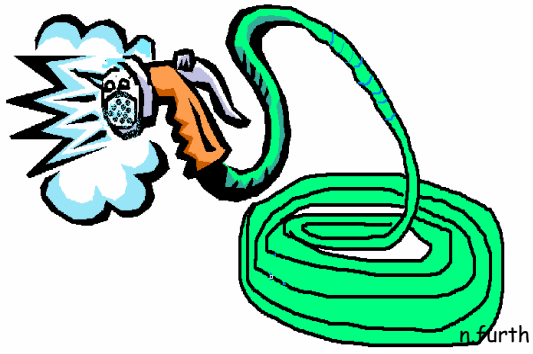
This article appeared in the July/August 2005 on-line issue of *Horticulture Update*, edited by Dr. Douglas F. Welsh, and produced by Extension Horticulture, Texas Agricultural Extension Service, The Texas A&M University System, College Station, Texas.

Volunteer Opportunities:

Frisco's Green Home, Health and Safety Fair: The Master Gardeners have been invited to have an information booth at Frisco's Green Home, Health and Safety Fair on July 29. The fair will be at Centennial High School in Frisco from 9 am until 1 pm. Environmentally friendly companies from around Frisco and the surrounding area will have booths set up. Area hospitals and various departments from the City of Frisco will also be there. This event is open to the public. Contact Renee Ferguson at rennybird@comcast.net to volunteer.

Help Line: The shifts are from 9 am to 12 pm and 1 pm to 4 pm, Monday through Friday. Contact Sheila Nelson at (972) 548-4232, Monday through Friday.

Speaker's Bureau: To volunteer as a speaker or an assistant for talks, contact Dorothy Ingram at (972) 335-1525 or dtingram@webtv.net. The Speaker's Bureau schedule is noted on the calendar on the CCMGA Web site: http://www.ccmgatx.org/



Coiled and ready to strike, I'll help you take the bite out of water restrictions!

Green Gardens Under Rainless Skies

By Scott Ogden

(Reprinted from Oktober Gartenfest 2001, Texas Gardening Adventures in Success)

With droughts and water shortages becoming commonplace features many gardeners are wondering which plants will make good choices for their gardens. It's not so much survival that's at issue; there are many plants (including nearly all the native flora) that seem to survive occasional droughts. It's just that most of these look the worse for wear. The real question is, "What can I plant that will keep my garden looking lush and green in July, even if it doesn't rain and I can't water?" This is a serious challenge, to be sure. Yet, a surprising number of plants stand ready to meet it.

The first acquisition for any drought challenged garden might be to place some tough trees to assure a measure of shade. For this purpose pines like the native loblolly pine (*Pinus taeda*) are unsurpassed, making tall canopies that supply generous filtered shade, and rooting deeply to make gardening easy beneath. Many oaks are also remarkably tough and drought resistant; the coarse-leafed bur oak of the prairies states (*Quercus macrocarpa*) is especially rugged, eventually growing to majestic proportions and supplying crops of huge, scale-cupped acorns each fall.

Exotic trees like Chinese pistache (*Pistacia chinensis*), with a rounded canopy of feathery sumac-like foliage that turns a spectacular red-orange in fall, and the umbrella-shaped Chinaberry (*Melia azederach*), with fragrant lavender flowers in spring, glossy fern-like foliage in summer, and golden berries and leaves in the fall, will make fast growing, drought tolerant trees even on thin, rocky soils. Goldenrain tree (*Koelreuteria paniculata*) affords another rugged subject, with unusually divided dark green foliage and branched panicles of small golden flowers that ripen to papery lantern-like seed capsules. These small trees seem to relish drought, retaining their rich, lush green foliage whether it rains or not.

Among flowering trees the same might be said for several selections of redbud from the Southwest. 'Oklahoma' (a rich wine-purple), 'White Texas' (with creamy white flowers), and 'Traveler' (with a weeping habit) are all selections of *Cercis canadensis* var. *texensis*, the Texas redbud, and all three have glossy rounded leaves that hold up in the worst dry weather, even in full sun. Another small native tree or large shrub, the Southern or rusty blackhaw (*Viburnum rufidulum*) also laughs off drought, displaying white flowers in spring and rich glossy foliage in summer that turns burgundy in fall as a foil for steel blue berries.

Evergreen shrubs provide much of the structure in gardens, and here the choices of drought-enduring materials are also wide. Most hollies are very tough, with good glossy foliage even when they are not in active growth. The native yaupon holly (*Ilex vomitoria*) is versatile and popular in its rounded dwarf form, 'Stokes'. Other lush-looking evergreens with remarkable drought resistance include boxwoods like *Buxus microphylla* ' Wintergreen', firethorn (*Pyracantha coccinea*), and feathery conifers like the oriental arborvitae (*Platycladus orientalis*) and junipers in varieties too numerous to count. One of the most refreshing of these, ideal for reviving a drought-stressed landscape, might be the cool blue creeping shore juniper, *Juniperus conferta* 'Silver Mist'.

An unusual "shrub" native to the Mediterranean deserves special mention: the Alexandrian or poets laurel (*Danae racemosa*) is a distant cousin of asparagus with flattened leaf-like stems (called "cladodes") that resemble the leaves of a bay. It makes a choice dwarf evergreen in partial or full shade, impervious to drought, with slow-growing glossy foliage and red-orange berries in the fall.

Some of the most verdant plants in any summer landscape are ornamental grasses and many of these are among the most drought resistant. The waving blue-green clumps of switchgrass (*Panicum virgatum*) revive any dry landscape and may be had in several selections ranging from 3-6' in height, all with ornamental seed heads in the fall, followed, in many cases, by blushing red leaves. Inland sea oats (*Chasmanthium latifolium*), little bluestem (*Schyzachirium scoparium*), feather needlegrass (*Stipa (Nassella) tenuissima)*, and blue Lyme grass (*Elymus arenarius* 'Findhorn') all hold up superbly under dry conditions and give freshness and movement to a garden.

Finding colorful flowering plants for a drought-afflicted garden might seem like an unrealistic challenge, but there are choices here, as well. Among annuals, tried and true varieties like bachelor's button (*Gomphrena* spp.), purslane (*Portulaca* cvs.), narrow leaf zinnia (*Zinnia angustifolia*) and several lantana varieties seem to bloom whether it rains or not. Perennials like salvias, verbenas, wild indigos (*Baptisia* spp.), Mexican petunia (*Ruellia brittoniana* 'Chi-Chi Pink'), purple heart (*Setcreasea pallida*), hybrid oregano (*Origanum* 'Hopley's'), pink skullcap (*Scutellaria suffrutescens*), Arkansas blue-star (*Amsonia hubrechtii*), and aromatic aster (*Aster oblongifolius* 'Raydon's Favorite') can guarantee a lush display of bloom and texture over a long season. In shaded gardens leafy plants like bracken fern (*Pteridium aquilinium*), the newer hybrids of *Heuchera americana*, lungworts (*Pulmonaria longifolia* cvs.) and mondo grass (*Ophiopogon japonicus*) can maintain a lush appearance when other perennials fail.

Of course, gray-leaved shrubs like artemisia, dusty miller, and lavender accept dry conditions and evergreen

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perennials like rosemary and Jerusalem sage can be called upon to keep a garden well furnished in drought. But these, and other drought hardy flora like pomegranates, chaste trees (*Vitex agnus-castus*), yuccas, figs, sotols (*Dasylirion* spp.), agaves, and the hardy spineless prickly-pear cactus (*Opuntia ellisiana*) will suggest a Mediterranean or dry-climate garden if used exclusively. Inherently verdant materials like bamboos or hardy dwarf palmettos (*Sabal minor*) and needle palms (*Rhapidophyllum hystrix*) make more appropriate choices if a lush, green garden is the goal.

Finally, when the rains do come it's great to have some opportunistic plants to respond and get the garden blooming in a hurry. Crinum lilies, with their massive fountains of foliage and tall stems of fragrant lily-like blooms are perfect for this, as are rain lilies (*Zephyranthes* spp.), tiny crocus-like cousins of Amaryllis. These subtropical bulbs will come into bloom in just a few days or weeks following a summer thunderstorm and can do wonders in reviving the spirits of a drought-plagued planting. By taking advantage of a wide range of plant materials such as these, keeping a garden lush and intriguing under drought conditions can be a realistic achievement.

Light and Verity

By early January several freezes will usually have singed lawns and prairies around Austin to various shades of straw. Late perennials will be collapsed in blackened masses along with their spent blooms. Even the amazingly tardy foliage of the local oaks (often still gloriously burnished red in December) will have released from gnarled twigs, tumbling to earth in piles of drab gray-brown. Mid winter in central Texas seems as lifeless a moment of the year as it does in many other parts of America. Yet, there is an epiphany here for those who remain alert. In a superb expression of nature's irony, the desolation of the season brings with it the most intimate ally of beautiful gardens: magnificent light.

Most of the year, it should be remembered, the quality of sunlight here offers all the charm and subtlety of a plaza in Cairo (roughly the same 30 degrees N latitude on the globe). Like overly well-read gardeners anywhere, Austinites may be tempted to reproduce the delicately blended floral joys of Giverny (about the same latitude as Bangor, Maine) or the rustic beauties of Tuscany (roughly equivalent in latitude to Albany, New York). In the laser-beam illuminations cast by the Texas sun these efforts invariably fall short, with floral colors clashing inharmoniously or fading pathetically, and many plants simply incinerating in the blast furnace of late summer. Even the architectural Italianate garden loses much of its appeal when it feels like Kuwait City outside. Most Texans will have given up these attempts just about the time the gentle, low-angled light of winter arrives and actually makes such dreams possible.

The peaceful suffusions of the January sun give even simple garden compositions the power and warmth of a Vermeer painting. A simple clump of papwerwhite narcissus (*Narcissus papyraceus*) will reflect this winter light like silken stars. Other early bulbs like the old heirloom *Narcissus italicus* and the Chinese sacred lily (*Narcissus tazetta v. orientalis*) enliven the cool air with warm tones of eggshell and linen, as they offer pungent fragrances.

Gray and silver foliage brings unparalleled illumination at this season, and giant lambs ears (*Stachys byzantina* 'Countess Helene von Stein') can make a beacon in borders with its plush reflectivity. Common mulleins (*Verbascum thapsus*) luxuriate in felted majesty, collecting dew and frost on winter mornings to add to their sparklings in the winter sun. Arizona cypresses (*Cupressus arizonica* 'Carolina Sapphire'), with pungent blue branches and vague turpentine aromas, make brilliant sentinels.

Grasses make the most of the winter light by transmitting the low rays of the sun through their thin, slender foliage. Mexican feather grass (*Stipa* (or *Nasella) tenuissima*) and bamboo Muhly (*Muhlenbergia dumosa*) are two of the best; capable of surviving the annual summer roasting they must endure here, as well. Lastly, the surprising frost hardy Australian cycad, *Macrozamia johnsonii*, offers magnificent 12' rosettes of feathery chartreuse leaves, clustered like crowns of a date palm so that each plume gracefully weeps and twists, catching the best of the sun as it moves across the southern sky. Like the grasses, these ancient plants take all the heat and drought that the rest of the year can (and will) throw at them.

Plant Profile:

Algerian Iris *(Iris unguicularis)*

The most exquisite midwinter bloom Texans may hope to enjoy belongs to a clumping iris (once called *Iris stylosa*) with luscious, pale periwinkle-blue flowers that resonate in winter light, appearing in flushes from December through February. Fast drainage and dry, rocky conditions are welcome, but don't seem essential. Sun or part shade will do. The grassy foliage remains handsome most of the year, but sometimes hides the short-stemmed blooms, inviting gardeners to inspect clumps for flowers every few days.

Plants For The Dry Years

Common Name	**Botanical Name**
White & Navy Texas Bluebonnet	*Lupinus texensis*
Gaura, Plume Poppy, and Cosmos	*Gaura lindheimeri & Macleaya* sp.
Dahlberg Daisy	*Dyssodia* sp.

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Common Name	Botanical Name
California Poppy	*Elsholtzia californica*
Pink Evening Primrose	*Oenothera speciosa*
Sundrops	*Calylophus drummondianus*
Silver Fluttermill	*Oenothera macrocarpa v. incana*
Purple Coneflower	*Echinacea purpurea*
Hill Country Penstemon	*Penstemon triflorus*
Sweet Alyssum & Silver and Gold Mum	*Ajania pacifica & Lobularia maritima*
Mountain Sage	*Salvia madrensis*
Big Red Sage	*Salvia darceyi*
Pink Skullcap	*Scuttellaria suffrutescens*
Arkansas Blue Star & Aromatic Aster	*Aster oblongifolius & Amsonia hubrechtii*
Red Batchelor's Buttons	*Gomphrena haageana*
Blue Mistflower	*Eupatorium odoratum*
Gayfeather	*Liatris* sp.
Cigar Flower and Compact Ceniza	*Cuphea micropetala & Leucophyllum*
Orange Bulbine (Bulb-Eye'-Nee)	*Bulbine* 'Hallmark'
Trailing Lavender Lantana	*Lantana montevidensis*
Hybrid Verbena	*Verbena x teasei*
Pink Wood Sorrel	*Oxalis crassipes*
Oxblood Lily	*Rhodophiala bifida*
Velvet Creeper	*Tradescantia sillamontana*
Purple Heart	*Setcreasea pallida*
Early White Flag	*Iris albicans*
Algerian Iris	*Iris unguicularis*
Spuria Iris	*Iris spuria* hybrid
Cretan Tulip	*Tulipa bakeri* 'Lilac Wonder'
Lady Tulip	*Tulipa clusiana* 'Lady Jane'
Early Red Tulip	*Tulipa praecox*
Virgin's Spray	*Ornithogalum narbonense*
Spring Starflower	*Ipheion uniflorum*
Byzantine Gladiolus	*Gladiolus byzantinus* 'Cruentus'
Narcissus	*Narcissus italicus*
Fall Crocus	*Crocus goulimyi*
Dwarf Myrtle	*Myrtus communis* 'Compacta'
Wall Germander	*Teucrium chamaedrys*
Silver Germander	*Teucrium cossonii*
Love in a Mist	*Nigella damascena*
Hybrid Oregano	*Origanum x* 'Hopley's'
Oleander	*Nerium oleander* 'Single Hardy Pink'
Jerusalem Sage & Corn Poppies	*Phlomis fruticosa & Papaver rhoeas*
Artemisia and Drumstick Allium	*Artemisia* 'Powis Castle' & *Allium*
Rosemary	*Rosmarinus officinalis*
Hacienda Creeper	*Parthenocissus cv.* 'Rancho Viejo'
Orange Crossvine	*Bignonia capreolata* 'Tangerine Beauty'
Variegated Giant Cane	*Arundo donax* 'Variegata'
Mexican Feather Grass and Mealy Sage	*Stipa (Nasella) tenuissima & Salvia*
Canada Wildrye	*Elymus canadensis*
Four O'clocks	*Mirabilis jalapa*
Milk and Wine Lily	*Crinum* 'Empress of India'
Texas Ash	*Fraxinus texensis*
Texas Redbud	*Cercis texensis*
Arizona Cypress	*Cupressus arizonica*
Live Oak with Oxblood Lily	*Quercus fusiformis & Rhodophiala*
Mexican Plum	*Prunus mexicana*
Possumhaw	*Ilex decidua*
Rusty Blackhaw	*Viburnum rufidulum*

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Common Name	Botanical Name
Bourbon Rose	*Rosa x borboniana* "Maggie"
Mountain Laurel	*Sophora secundiflora*
Redberry Juniper	*Juniperus pinchotii*
Bermuda Palmetto	*Sabal bermudana*
Barbados Pride	*Caesalpinia pulcherrima*
Convent Ceniza	*Leucophyllum frutescens* 'Convent'
Red Yucca	*Hesperaloe parviflora*
Sacahuista or Beargrass	*Nolina texana*
Pale-leaf Yucca	*Yucca pallida*
Mountain Maguey	*Agave montana*
Prickly-Pear	*Opuntia* sp.
Hen and Chicks	*Echeveria runyoni*
Little Gray Stonecrop	*Sedum potosinum*
Hinckley's Columbine	*Aquilegia hinckleyana*
Palmer's Stonecrop	*Sedum palmeri*
Shrimp Pink Tropical Sage	*Salvia coccinea* 'Jones' Pink'
Naples Onion	*Allium neapolitanum*
Chinese Ground Orchid	*Bletilla striata*
Purple-leaf Wood-Sorrel	*Oxalis regnellii* 'Triangularis'
Mixed Water Lilies	*Nymphaea* spp.

This and That

Meetings: The July General Meeting will be held at the Heard Museum on July 27 at 11:30am with CCMG, Dorothy Ingram, speaking on holiday plants and their maintenance. The August General Meeting will be held at the Heard Museum on August 24 at 11:30am with CCMG, Carrie Dubberly, speaking on herbs.

Calendar: The monthly calendars are now available on the CCMGA web site at http://www.ccmgatx.org/Association/Calendar.htm

Other events of interest can be found on the Texas Master Gardeners web site at www.texasmastergardeners.org/events/events.html

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