

Williamson County Master Gardener *Journal*

Award Winning

Master Gardener's At Work

Rain Barrels Everywhere!

CONTENTS

3

NEWS AND NOTES

4

SPECIALIST TRAINING

5

REGIONAL PARK

7

ALONG THE TRAILS

8

NEW MG CLASS

9

PHENOLOGY

11

BACK TO BASICS

13

BUG OF THE MONTH

14

FERNS

15

BEANS AND PEAS

17

FROM THE PRESIDENT

19

2008 ASSOCIATION

OFFICERS



A large number of Williamson County Master Gardeners constructed rain barrels from food-safe recycled containers at the September 14th Monthly meeting. On Oct 17th (see page 2) we are having a Rain Barrel Workshop and Sale — tell your friends!

Join Us October 12th for our Monthly Meeting

Ed Myatt will be working with an ad hoc group of volunteers to present a program on Composting and Vermiculture, (worm farming). These are fascinating skills that, once mastered, allow the gardener to reduce their waste stream to the curb while providing their gardens with some high-quality nutrients.



RAIN BARREL

WORKSHOP & SALE



**17
OCT
9 AM**



**MAKE YOUR OWN
ONLY \$45
BUY ONE READY
TO GO
JUST \$60**

**RESERVE YOUR BARREL TODAY!
LIMITED TO THE 1ST 100 SIGNED UP & CONFIRMED BY
PAYMENT !!!**

**10
RSVP BY OCT 7 TO DONNA AT THE AGRILIFE EXTENSION
OFFICE 512-943-3300 -WITH CHECKS MADE OUT TO
WCMGA**

**RECYCLED FOOD GRADE BARRELS ARE COMPLETE WITH
MOSQUITO SCREEN, FAUCET & OVER-FLOW CONNECTION**

Master Gardeners at Work

News and Notes



Congratulations!

Elizabeth Grieder (pictured above, and, with her husband Jack in the back ground) shows off her Oak Wilt Specialist certificate. Liz has completed the 15 hours of additional volunteer time to become an Oak Wilt Specialist. Way to go Liz!



Several Master Gardeners attended a recent talk given by Central Texas soil specialist, naturalist, and natural gardening entrepreneur Malcolm Beck (pictured with his wife with NPSOT members) (<http://www.malcolmbeck.com>) at the Williamson County chapter of the Native Plant Society of Texas. Malcolm began using organic techniques in 1957, discovering that he could get top production through the use of mulches and compost. In 1968, he was the founder of Garden-Ville, the shops that made the use of composting and organic gardening techniques popular in this part of the country. Since he sold his business to Texas Disposal Systems, he has had more time to carry out his educational mission to promote growing methods that preserve the environment. He is largely self-taught, an experimenter who has used trial and error in his own garden, orchard, and greenhouse to find out what works and what does not. In his Georgetown presentation, Malcolm spoke mainly of paramagnetism, which has recently been popularized through Phillip Calahan's *Paramagnetism: Rediscovering Nature's Secret Force of Growth*. Essentially, this theory holds that because plants are diamagnetic (they generate a weak repulsive magnetic field in the presence of an externally-applied magnetic field), they grow better in proximity to paramagnetic materials (materials that can sustain a stronger induced attractive magnetic field, such as igneous rock with high iron oxide content). Malcolm showed a series of photographs illustrating the results he has obtained in his own greenhouse. These showed an effect even if the paramagnetic material was just adjacent to the plant in a separate container, not in the plant's own pot. Plants with paramagnetic support prospered, gained increased resistance to stress, and withstood frost, as compared to plants left on their own. The talk left the audience with a lot to think about.



On Saturday and Sunday, September 26-27, Hill Country Natives, the nursery west of Leander run at their home by native plant enthusiasts Mitch and Kathy Mitchamore, hosted an open house. This was a rare treat, as they are normally open only by appointment. Numerous members of local gardening, naturalist, and native plant organizations (to say nothing of the public) toured the facilities and admired the plants. They also enjoyed cake, cookies, and lemonade and the opportunity to chat with other lovers of native plants. Hill Country Natives (left) is one of the leading sources locally for scarce Texas natives, particularly trees. In a year marked by water restrictions, the Mitchamores have noted increased interest in plants adapted to periodic dry spells. Sadly, many Central Texans are looking for replacements after our extraordinarily hot summer. Hill Country Natives is a good place to look. Among the new additions are a water garden and woods showing some of the plants in native ensembles. For plant lists, see <http://www.hillcountrynatives.biz/> and for appointments, call 512-914-7519.

Master Gardener Advance Training

Specialist Training

Christine Powell

The Master Gardener Specialist Training programs are offered to provide advanced training so a Master Gardener can obtain specialization in areas that support or expand designated educational programs of Texas AgriLife Extension Service. The following are to be held over the next couple of months and more details can be found at <http://www.texasmastergardeners.com/>. Why not sign up for one!

National EarthKind™ Specialist

October 7-9, 2009, Coordinator/Sponsor: Steve Chaney Texas AgriLife Extension Fort Worth, Texas

The National EarthKind™ Specialist program is designed to provide advance training and resources to Master Gardeners and Rosarians to certify them to be part of a state and national corps of EarthKind™ experts and educators. To become a certified National EarthKind™ Specialist, participants are required to attend the National EarthKind™ Specialist training to fulfill training requirements, subsequently meet service requirements describe below. This certification does not empower the individual with supervisory or administrative authority within her/his local county programs. If you have any special accommodations please contact Steve Chaney at 817-884-1946 or sachaney@ag.tamu.edu

Master Gardener Specialist – Irrigation Efficiency Training

October 14 - 16, 2009, Texas AgriLife Extension Service Host: Ector/Midland Counties Training, Location: CAF – Commemorative Air Power Museum, Midland, TX 79706

Automatic irrigation systems are a convenient method to irrigate and maintain landscape beauty and investment. However, most homeowners tend to overwater their landscapes and create runoff. Runoff waste valuable water and contaminates water resources. Irrigation efficiency and other landscape water conservation practices are the keys to protecting water resources, maintaining a beautiful landscape and extending your community's water supply. Most homeowners increase water usage during the summer by 35 to 60%. Homeowners do not want to cause pollution, waste water or increase their water bill but most homeowners just do not know how to determine how long to run their irrigation system, how to set and reset their irrigation controller for different seasons, detect leaks and how to fix common irrigation problems. Texas AgriLife Extension wants to provide this information to homeowners through presentations and demonstrations. The Master Gardener Specialist – Irrigation Efficiency training will cover hands-on practices for determining irrigation efficiency, setting controllers, soak and cycle method, minor irrigation repairs, system trouble shooting, catch-can test, converting spray head irrigation to new water conserving heads, converting spray irrigation to drip irrigation and other water conservation practices. For more information, contact Dr. Dotty Woodson, d-woodson@tamu.edu or call 972-952-9688.

Master Gardener Specialist - Greenhouse Management

October 28-30 Ft. Worth, TX

In an effort to provide training, the MG Specialist - Greenhouse Management training was created as a hands-on, intensive multi-day training that will empower MG's with knowledge and skills required to effectively support and multiply Texas AgriLife Extension efforts in educational programs. The class is divided into separate tracks, commercial and hobby greenhouse for more specialized situations. Texas MG's who fulfill specified training and volunteer requirements will be recognized as a MG Specialist in the specific field of Greenhouse Management. This certification does not empower the individual with supervisory or administrative authority within his/her local county programs. Registration fee: \$150.00 (Includes dinner (2), lunch (1), snacks, drinks, Greenhouse Management equipment, Power Point CD and resource materials distributed during course). • Transportation and lodging is on your own. • Course is limited to the first 40 applications to send check and application. • A maximum of 2 Master Gardeners from each county.

Master Gardener Specialist - Plant Propagation

November 6-7, 2009, Montgomery County Extension Center Conroe, Texas Master Gardener Specialist - Plant Propagation

In an effort to provide advanced training, the Master Gardener Specialist - Plant Propagation training was created as a hands-on, intensive multi-day training that will empower Master Gardeners with knowledge and skills required to effectively support and multiply Texas AgriLife Extension Service efforts in educational programs. For more information Contact: Cody Ferguson cferguson@ag.tamu.edu 936.539.7824.

Rainwater Specialist Training

November 13th, and 14th- Concho Valley Master Gardeners-

"The Concho Valley MG's will be hosting in Tom Green County (San Angelo) a Rainwater Specialist Training November 13th and 14th. Billy Kniffen has his team rounded up and we are getting ready for a training in West Central Texas, more central located for several MG Chapters to travel less miles.

Master Gardener Field Trip

A Short Introduction to the Northwest Williamson County Regional Park

Christine Powell

A group of Williamson County naturalists recently toured the newest addition to the county's park system, the Williams Tract between Liberty Hill and Leander that will one day be the Northwest Williamson County Regional Park. They saw 1,011 acres of rolling hills covered with a mix of grassy pastures and oak-juniper woods, including frontage on the South San Gabriel River. (pictured below) Exercising remarkable foresight in the midst of a recession, county commissioners recently took advantage of the lull in development to acquire the land before it could be cut up for subdivisions. In future years, it will be an island of green—yellow in drought years—inevitably surrounded by suburban sprawl.

The property was formerly farmed and grazed, but has not been in active use for several years. There are a few old ranch buildings surrounded by wide open spaces. As a result, the Williams Tract is currently a reasonable approximation of what most land just west of the Balcones Escarpment looked like when white settlers began arriving near the end of the 1840s. Because contemporary plow technology could not handle the dense roots of the Blackland Prairie on the east side of the Escarpment, the thinner soils to the west attracted most of the early farmers in Williamson County, who turned to grazing when erosion made cotton farming a losing proposition. The community of Bagdad, a few miles to the south, was one of the first sizable towns in the area until the Austin and Northwestern Railroad bypassed it in favor of Leander. By then, the modern steel plow had opened up eastern Williamson County, which acquired and held economic and political dominance for almost a century. The western part of the county was a thinly-populated backwater until Austin commuters began moving in during the 1970s. The future park site was thus saved from overuse or development, so it is possible to imagine it as it must have appeared when the last Comanche bands passed through, shortly after the Republic of Texas became a state.

The group from the Williamson County chapter of the Native Plant Society of Texas and the Capital Area chapter of the Texas Master Naturalists were just the advance party for what will likely be a continuing involvement with the Williams Tract. County Parks Director Jim Rogers hopes to use volunteers to take an inventory of the species currently found on the property (much like the recent quarterly surveys at the Gault Archeological Site), and to use their expertise to develop plans for maintaining and sustaining the property in as natural a condition as may be possible. The advance team was encouraged to discover that the distance from Austin has limited the spread of common invasive plants to the area... so far. The mix of grasses includes common imported pasture grasses, as one would expect, but there is a substantial proportion of Texas natives as well. With proper management, it should be possible to improve the property for public use without destroying its natural appearance.

That is the aim of the Williamson County Commissioners Court. The company that is helping to develop plans for the property, the BWM Group, recently met with all the members of the court to gather their thoughts. Commissioner Cynthia Long was the principal driver of the idea to acquire this space in her precinct for passive park and conservation uses. Commissioner Lisa Birkman really likes the idea of unprogrammed large open spaces for the community to experience the outdoors, run and play... something many of her constituents do not have access to in their home environment. Commissioner Ron Morrison suggested echoing the existing ranch improvements in the new construction materials and styles. Judge Dan Gattis said he wanted a wilderness experience with camping and trails that make you realize you are in the woods. For details, see <http://williamstract.blogspot.com>



Eryngium leavenworthii

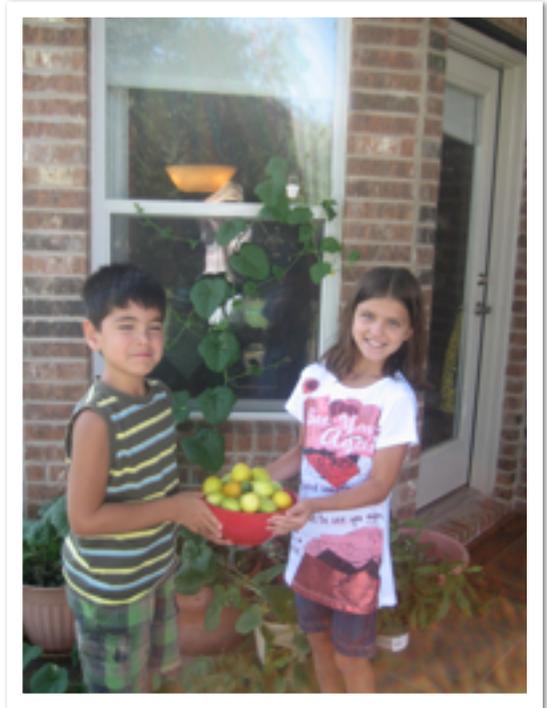


The court is also gathering public comments. It recently sponsored two Open House events in which participants were invited to list their top priorities for the Williams Tract. Aside from people associated with the county or the planners, the majority of those in attendance were from groups such as the Native Plant Society, Native Prairies Association, Master Naturalists, or Master Gardeners. As one might expect, they urged that the property be developed for passive purposes such as nature trails, natural science education, and picnic areas, rather than being cut up into athletic fields and concert venues. This is consistent with the county's vision for the future Northwest Williamson County Regional Park. Keep your eye on this space for developments.



A Master Gardener Educates
Making lemonade out of lemons
Patty Hoenigman

Sometimes I really enjoy having kids come over for a few hours to do something creative with me. This summer two of my 8-year old friends came over and we had some fun with lemon cucumbers. In the first picture, right, Yui Ginther (left) & Lily Greener show off all the lemon cucumbers they found under the vine; it was like having an Easter egg hunt in August! They filled a huge bowl to the top! This volunteer vine was so tenacious, even in all this heat, that it was growing up the screen behind them! Then we drew pictures of the green and yellow cucumbers, which they'd never seen before. And finally, we cut the cucumbers in half, scooping out the seeds to make little bowls, and poured our fruit smoothies in them for a refreshing afternoon snack! What a great garden adventure!



A Master Gardener Walks

...along the trails
Annette Banks

From devastation to delight so are the trails after the saving rain! The little dark pink rain lilies have nested among the smallest clusters of clover to the tallest turk's caps, awaiting a skilled photographer or an accomplished still life artist. Some of the dark brown plants are showing green from the bottom up, and the beautiful ferns wear a vibrant green once again.

As expected there is little color yet; but looking closely, you will notice the brownfoot (*acourtia wrightii* [Gray]), previously known as *perezia wrightii*. The brownfoot is a member of the sunflower family, *asteraceae*. It blooms from May to November, producing a light pink to purplish blossom in a mass cluster of 8 to 11 disk flowers at the end of the stem. The flower head measures about 3/4 inch. The alternate leaves range from 1/4 to 4 1/2 inches; they have slightly scalloped margins that are uneven and spiny-toothed. The fruit is a slender achene topped with an array of bristles. There is a woody crown just at and below the soil level, and it is woolly tufted just below the soil. The pink *perezia* in our area seem to grow to a height of about 1 1/2 to 2 feet. They stretch across coastal prairies to Trans-Pecos and southern plains in Texas to west and north New Mexico, Arizona, Nevada, Utah and southward into Mexico. Many can be found in the Sonoran and Chihuahuan Deserts. Among these brownfoot plants are those with blossoms of white.

Other common names of the *acourtia wrightii* are desert peonies and desert holly, referring to its toothed leaves. It derives its common name of brownfoot from the fact that during drought, the leaves remain attached to the stalk but turn brown, giving a 'brown foot' to the plant under which it grows. It derived its botanical name from Charles Wright (1811-1885), world acclaimed botanical collector who spent much time in Texas (1837-1852), Cuba, and his native Connecticut.

They are visited by butterflies because of their fragrance of honey. They need light water, full sun to shade, and can be found in well-drained areas of many types of soils: sandy or clay loams, limestone or igneous soils in brushy pastures, along slopes, and on hillsides.

Native American Indians used the brown foot for medicinal purposes. The Huapalai tribe used it for dermatological remedies. They made a poultice of woolly 'cotton' to apply to open wounds. The Pima tribe used it for a styptic to contract the blood vessels, and the Navajo tribe used it during a difficult labor and as a postpartum medicine.



Patrick J. Alexander @ USDA-NRCS PLANTS Database



Perezia (Acourtia) Wrightii, Gray.—1. Leaf (nat. size). 2. Flower head (nat. size), with bases of nut pedicels. 3. Root (½ nat. size). 4. Root deprived of the woolly covering. 5. Floret (nat. size). 6. Corolla. 7. Achenes. 8. Stamens (magnified).



LBJWC

Master Gardener's Learning

The Class of 2009

Grace Bryce



Billy Kniffen shows the new Master Gardener class how rain moves around the watershed



Pat, Hank, Mike & Lynn model their Know & Show Sombreros.



Suck a Bug



Megan, Arlinda, Janet, Ed, Sherry, Rebecca & Judy rappin' with the JMG



Rob Grotty discusses trees with the New Class



A "hands on" demonstration of tree pruning.

Master Gardener Glossary

Phenology**Christine Powell**

On a recent trip to El Paso via the Davis Mountains and Big Bend, I fell in love with many of the spectacular native plants and the incredibly diverse flora and fauna. I had traveled west to enjoy the hummingbird migration and was lucky enough to arrive when the area was at its most beautiful. Unseasonably large amounts of rainfall had made the desert bloom and the display was beautiful. One plant I fell in love with was the ocotillo. While not in bloom, it was in full leaf. I have often seen these plants before but usually looking like dead spiny sticks. Now, they were covered in small fresh leaves and they looked monumental against the desert mountain sky. It was the ocotillo that started me thinking and led to a) the purchase of one, b) a little research, and ultimately to c) the discovery of phenology. I wondered why this plant looked so different this year. Looking into it, I found that there was an entire scientific discipline to study similar issues.

Botanists in West Texas are studying the diverse strategy of plants like the ocotillo which produces leaves after rain events, in a sort of opportunistic way and flowers immediately in the growing season. Other species like mesquite produce leaves once in a season, then hang on to them until the end of the year before dropping them. It has one big flowering event, not many. Cacti have an entirely different strategy governed by when they might produce fruit and drop their seeds. All of these things are driven by the interaction between environment and biology, thus it is not so easy to tackle these problems. However, there are clear recurring patterns, and these are the subject of phenology.

Phenology (derived from the Greek word *phaino*, meaning to show or appear, and not to be confused with phrenology, the study of head bumps) is the study of recurring biological phenomena and their relationship to time, to weather... and to one another. The recurring plant and animal life cycle events, or phenophases, such as leafing and flowering, maturation of agricultural plants, emergence of insects, and migration of birds have been recorded for centuries. Using viticultural records of grape harvests in Europe, scientists have been able to reconstruct what the growing season temperatures have been for over five hundred years.

Many famous historical figures, including Thomas Jefferson and Henry David Thoreau, made phenological observations that are being resurrected and used to understand how environmental conditions have changed across North America over the last century or more. Studying the cycles that express the timing of various things can be used to tie together many separate observations of diverse species, both for study and predictive purposes.

Why is phenology important to us? Well, put another way, it is simply nature's calendar—when the cherry flowers bloom, the robin builds its nest, and the leaves turn colors in the fall. This schedule is critical for plants and animals, and us too. When a caterpillar emerges, it needs developing leaves to eat. When a chick hatches, it



The Ocotillo, (Fouquieria splendens) was the plant that started my interest in phenology and all it entails.

needs caterpillars and other forms of food. For many people, allergy season starts when particular flowers bloom—earlier flowering means earlier allergies. Farmers and gardeners need to know when to plant to avoid frosts, or, in our case, early enough to get the harvest in before it is too hot. The schedule of plant and insect development is important to decide when to apply fertilizers and pesticides. Firefighters need to know when weather and fuel will come together to create the danger of wildfire. In fact, phenology affects nearly all aspects of the environment, including the abundance and diversity of organisms, their interactions with one another, their functions in food webs and their seasonal behavior, and global-scale cycles of water, carbon, and other chemical elements. For example, our health can be affected by allergens and infectious diseases, and phenological studies can better help us to know when these events are going to happen. Here in the Hill County, we (and the businesses that cater to tourists) all would like to know the absolute best time to see the wildflowers in bloom. Phenology can help tell us.

Phenology records can also help us understand plant and animal responses to climate change. Changes in phenological events like flowering and bird migrations are among the most sensitive biological responses to climate change. Across the world, many spring events are occurring earlier—and fall events are happening later—than they did

in the past. However, not all species are changing at the same rate, because some cycles are dependent on temperature while others are dependent on hours of sunlight, rainfall, or other factors. The phenology of some species is changing quickly, while others are changing slowly or even not at all. These different shifts in timing are shaking up ecosystems and altering interactions and processes that took place in the past. Species are changing, and scientists are studying how, so that we can better predict the impact of changing phenology on natural systems and people.

Despite their importance, broadly distributed phenological data are relatively rare in the United States, though other countries have well-developed datasets and phenology monitoring programs. Scientists still need information to answer lots of questions, ranging from simple questions like “What regulates the pace at which a particular species grows and develops?” to more complex questions like “How does phenology affect which organisms live in a particular place? Or, how does phenology affect the cycling of water, energy, and chemical elements in the environment, and how are changing climates likely to affect these relationships?” With sufficient phenological observations, we can document patterns of phenology for critical plant and animal species across the United States, and then use this information to build models to help humans understand and adapt to changing landscapes and climates.

Perhaps an example will illustrate this. We have all observed that plants bloom earlier in a warm spring, and that insects also emerge earlier when it is warm than in cooler seasons. Because the development of both plants and insects is temperature dependent, plants can accurately track the environmental factors that determine when insects are active. For this reason, plant phenology can be used to predict insect emergence. Indeed, the use of plant phenology to predict insect activity dates back at least 300 years. Research at Ohio State University (OSU) has shown that plants bloom and insects emerge in virtually the same order every year, no matter what kind of weather occurred that winter or spring. For this reason, the flowering sequence of plants can be used as a biological calendar to predict insect activity, and to time other gardening practices that are dependent on a particular stage of plant development, such as propagation or weed control. To take practical advantage of this, trees and shrubs planted in OSU Phenology Garden network sites are monitored for the first and full bloom, which can be

The screenshot shows the USA National Phenology Network website. At the top, there is a navigation bar with the USA NPN logo and tabs for Home, About NPN, Participate, Products, Education, and Data. Below the navigation bar is the title "USA National Phenology Network" and a row of ten small images depicting various natural phenomena like a bee, flowers, butterflies, and birds. Underneath the images are three columns of text:

- What is the USA-NPN?**: The USA National Phenology Network brings together citizen scientists, government agencies, non-profit groups, educators and students of all ages to monitor the impacts of climate change on plants and animals in the United States. The network harnesses the power of people and the Internet to collect and share information, providing researchers with far more data than they could collect alone. [Learn more about us](#)
- What is phenology?**: Phenology is the study of recurring plant and animal life cycle stages, or phenophases, such as leafing and flowering of plants, maturation of agricultural crops, emergence of insects, and migration of birds. Many of these events are sensitive to climatic variation and change, and are simple to observe and record. As an USA-NPN observer, you can help scientists identify and understand environmental trends so we can better adapt to climate change. [Why is phenology important?](#)
- Join us!**: We are looking for volunteers to help us monitor some 200 plant species found across the United States. This effort will eventually expand to include animals and physical phenomena, such as bird migrations and ice out on ponds. Please explore our website to learn more about USA-NPN. Better yet, click "Observe" to join us!

used to assist with predicting and identifying insect activity.

This effort has been emulated on a national and international level. Cooperative weather observers for the National Oceanic and Atmospheric Administration have planted identical lilac bushes all over the country. This is providing a national matrix of data-gathering sites for a 50-year project helping to understand how environment interacts with a single genotype to give different growing seasons, different flowering times, and so forth. Building this data set will be a tremendous boost to science. More generally, the new National Phenology Network (<http://www.usanpn.org/>) is collecting data from citizens who are observing the natural world, or their gardens and the species that are around them. So, people might walk out every day into their yards, notice what is flowering and what is not, then contribute that data to a national database. The network lists among its participants gardeners making observations on single plants in their backyard in Maryland, high school classes tracking flowers in Arizona, professional scientists monitoring natural environments in Wyoming, farmers tracking wheat growth in the mid-west, land managers with the US National Park Service and US Fish and Wildlife Service, and Boys and Girls Clubs building and monitoring phenology gardens. You, too, can register and participate by contacting the website.

Another great site is <http://www.naturescalendar.org.uk/> I know a lot of it isn't relevant to us here but it is fun to see what other nations are doing. This site has some great information and gives a great insight to the history and shows how people, just like you and I can make a difference.

Master Gardener Basics

Back to the Basics

Winola VanArtsdalen



In this month's Back to the Basics, I share with you what can be a memorable experience sharing your love of plants with children. Yes, it takes some planning and advance work, but the rewards can be the thrill of a lifetime for both you and the children!-

An On-site Garden Experience For Children

While teaching fifth grade language arts and science at White Elementary School in the Clear Creek Independent School District, one of the most rewarding events of the year was when the whole fifth grade class came to my home in buses for an on-site plant learning experience. Because the yard could not hold all of them at once, half went to the park to play, while the other half came to the house. We then all had lunch together at the park before going back to school. As you can imagine, this was a popular event highly anticipated all spring! I share the "how-to" with you here in the hope that you may find such an opportunity. It does not have to be your personal garden. It could be at a church, park, or some public display garden such as at the county office.

After getting permission from the owner of the garden, your first major hurdle could be transportation. At my school, I was fortunate to have a strongly supportive PTA who budgeted for the expense of buses for this experience each year. For a smaller group, you might arrange car pools, and, of course, parents might bring the children individually, as well. For a special event like this, you might even get a business or individual to donate bus funds. "Where there is a will, there is a way" applies here. You may come up with your own creative solution!

First, I made a master catalog of plants in the yard that had something to teach the children. I made sure there were examples of many types of plants, especially natives. I also had all types of propagation in progress for examples. The yard was divided into five areas, as students were accustomed to the class working in five groups with rotating responsibilities at school on days of the week. For this experience, groups rotated between areas, so that all children experienced each area of the yard. Each group had a volunteer adult guide with them who had a copy of the catalog to be able to help the students find the right area in the yard. Four of the areas were studies of plants and the fifth area was the compost pile. My husband, Jim, is shown discussing the compost pile with one of the groups.

I made a card for each plant with a laminated leaf on it, its location by area, and information about each plant such as size, texture, growth requirements, etc. For each plant, there were one or two questions like why that plant was planted in that location, why it did or did not look healthy, etc. Within the five groups, students were paired in advance before they left school. When they got to their designated area for that period of time, each pair was given at least one card. They were to find the plant, become the expert on that plant, and then meet with the group to teach the group about "their" plant. Some questions were quite challenging, and they could ask other students for help, but not the volunteer! (There was no opportunity for



enough training for volunteers to convince them to let students figure things out for themselves instead of telling them. Students understand this, but parents often do not!

My husband had a large, old anvil that he tied on the back porch railing to use as a gong when hit by a sledge hammer to signal when groups were to switch to the next area. The students dearly loved this gong, but were strongly advised not to slip up and ring it themselves! I might add here that all students were perfectly cooperative in every way at this event. There was a bit of an "awe" factor, as they were thrilled to be invited to the teacher's home. They were really too busy to have time to look for trouble, and it did not hurt that they were getting out of school for most of the day!

After rotating through all the areas of the yard, the children sat on the lawn for a "closure" session. They talked about their favorites, and I always saved a couple of tricky questions for this session. For example, I often asked why that tall water oak was growing in that space east of the house. After they thought of every reason why I might have planted it there, I told them that I had originally planted a bush there that never did well. Mother Nature planted a little water oak seedling there, that grew up right in the middle of the bush. I cut away the bush and let the tree have the spot. The children always loved that! Of course, sometimes one of them would catch on right away that I didn't say, "Why did I plant it there?" but "Why was it growing there?" Let me tell you, sometimes it is hard to think faster than a fifth grader!

For the grand finale, I would always pick up my sharp shooter spade, dramatically walk over and dig up a pecan seedling (I had three pecan trees in the backyard, so there was always an abundance of seedlings.) This event was in May each year, and, without fail, there would be a pecan hull still attached to the roots. You cannot believe the excitement caused by this event! These were really bright children, NASA scientists' kids, etc. and most any one of them could have answered the question if you had asked how a pecan tree started, but to actually see the opened pecan hull with the roots delighted them more than you can imagine! To me, this validated the need for such experiences in the real world.

I hope you will keep this garden tour in mind, and you just might find an opportunity to lead a group of children in such an event yourself. It will be a richly rewarding experience for you, the volunteers, and, especially, the children!



“Bug” of the month



This month’s “bug” is the dragonfly. It seems as though they have really come out in the last month. I have seen more in my back yard than any time this year. While at the greenhouse on Saturday there were hundreds flying around behind it. It must be the water that we have had in the last month that triggered them to come out in such large numbers.

A dragonfly is a type of insect belonging to the order Odonata. It is characterized by large multifaceted eyes, two pairs of strong transparent wings, and an elongated body. Dragonflies are similar to damselflies, but the adults can be differentiated by the fact that the wings of most dragonflies are held away from, and perpendicular to, the body when at rest. Even though dragonflies possess 6 legs like any other insect, they are not capable of walking,

Life Cycle

Female dragonfly lay eggs in or near water, often on floating or emergent plants. When laying eggs, some species will submerge themselves completely in order to lay their eggs on a good surface. The eggs then hatch into nymphs. Most of a dragonfly’s life is spent in the naiad (that is, nymph) form, beneath the water’s surface, using extendable jaws to catch other invertebrates or even vertebrates such as tadpoles and fish. They breathe through gills in their rectum, and can rapidly propel themselves by suddenly expelling water through the anus. The larval stage of large dragonflies may last as long as five years. In smaller species, this stage may last between two months and three years. When the larva is ready to metamorphose into an adult, it climbs up a reed or other emergent plant. Exposure to air causes the larva to begin breathing.

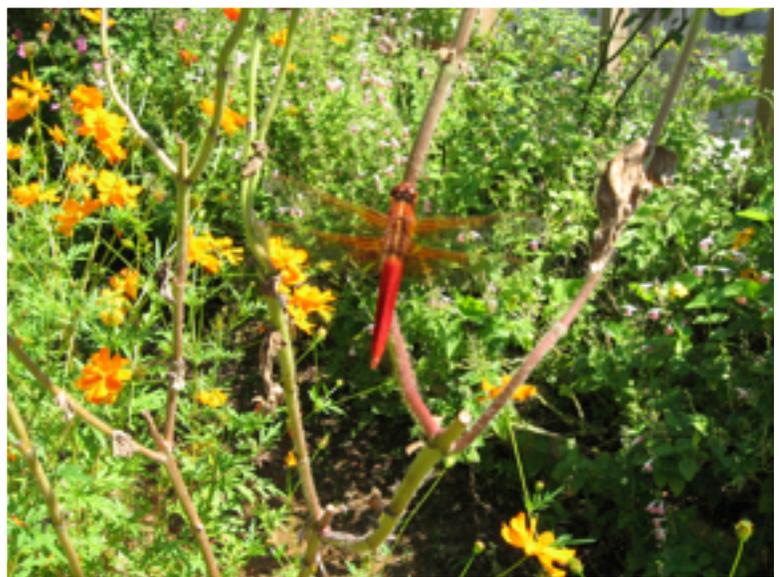
In flight the adult dragonfly can propel itself in six directions; upward, downward, forward, back, and side to side. The adult stage of larger species of dragonfly can last as long as five or six months.

Food

Dragonflies are generalists, that is, they eat whatever suitable prey is abundant. Oftentimes, they hunt in groups where large numbers of termites or ants are flying, or near swarms of mayflies, caddis flies, or gnats. They also eat mosquitoes and sometimes other dragonflies.

The picture of the red dragonfly was taken in my back yard. The picture of the dragonfly emerging from the larva, is from Wikipedia, the free encyclopedia.

Wayne Rhoden
Entomologist Specialist



A Master Gardener Learns

Ferns - We Have a Lot to Learn

Marlyn Hooper

I recently attended the 2009 Festival of Ferns at Zilker Park in Austin. The seminar was wonderful. The featured speaker was Sue Olsen, from Bellevue, Washington, who has written a lovely book on ferns, *Encyclopedia of Garden Ferns*. It is a fabulous book and it was an honor to meet the author. She was a very impressive lady and so knowledgeable. “Fern people” are amazing—they were buying plants by the dozens. The most important thing I learned was that my asparagus fern isn’t a fern at all. Go figure!

There were about 50 people there and probably a million ferns. Well, maybe not, but it did look like it! I have never seen so many ferns. I had no idea there were so many different kinds, and I had no idea I knew so little about ferns.

Did you know the number of fern species is about 9,000? There are estimates it could be as high as 15,000. The number varies because certain groups haven’t been studied completely and because new species are still being found in unexplored tropical areas.

Ferns are a very ancient family of plants: early fern fossils predate the beginning of the Mesozoic era, 360 million years ago. They are older than land animals including the dinosaurs. They were thriving on earth for two hundred million years before the flowering plants arrived.

Fern plants are easily recognized by their beautiful leaf structure. The leaves, known as fronds, vary widely in size and shape. They are often found growing in cracks in rocks, moist forests, swamps, and even on the bark of trees. Ferns reproduce by spores and not seed. Most are perennial, spreading by low-growing roots. Some taller types, such as tree-ferns, grow in the tropics.

Ferns usually do not like to have wet feet. Most of them like to dry out between watering, especially stag horn ferns, Boston ferns, and bird's nest ferns. I keep some of my ferns in my bathroom and I mist them. Misting ferns usually doesn’t do anything for the plant, buy it

makes me feel good, so I do it! I guess I am pretending that my bathroom is a rain forest.

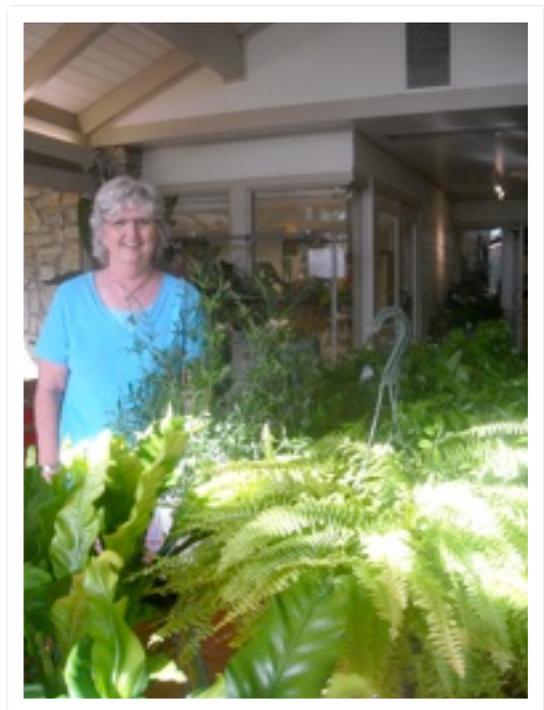
They grow best in a soil that is a mixture of peat, potting soil, sand and pebbles mixed in for the roots to cling to. It seems it is best to keep them on continuous feed—with a plant food that is close to 15-5-15. If you think your fern isn’t loving life, try reducing the fertilizer. For the most part, if proper soil preparation is done correctly, they should do fine on their own.

Your fern will do well in locations where there is a lot of indirect light with high humidity. Don’t put them in full sun—it is just too hot. Plant them where the sun doesn’t shine on them directly. A shaded area will be perfect and they will love you all year long. This summer of 60 days of 100+ degrees has been bad on my ferns. They look like we just had a freeze. Maybe next year will be better.

Some people recommend placing your potted fern on gravel in a saucer full of water, keeping the plant above the water line for humidity. The more delicate the fern is, the more successful you are supposed to be with this system. I haven’t tried this, but others praise this method.

As with other perennials in Texas, the best time to plant is during the spring and fall when we have rain. (Remember rain?) Ferns come in an amazing range of texture, color, sizes and shapes. They should be a part of any well rounded garden.

The American Fern Society is the leading organization in North America devoted to ferns. There are also web sites devoted to ferns. The book stores have dozens of books on the subject. If your plant is looking “sick”, you can find lots of help, just as the Festival of Ferns helped me.



Treats from the Master Garden

Beans and Peas in the Fall Garden

Margaret Seals

Green beans and sugar snap peas are always present in my fall garden due to the short maturity dates for these vegetables. Most bush bean varieties will begin to produce fruit in 50-55 days, and the same is true of most sugar snap pea varieties. That means three months before the first average frost date, these vegetables can go into the fall garden and be expected to produce well (if covered in freezing temperatures) right up to Thanksgiving and beyond. I usually plant them about August 15 in my Williamson County garden, and the green bean casserole on my Thanksgiving Holiday table is usually made with fresh beans only minutes out of the garden. I like bush type green bean varieties Maxibel or Provider because they both have 50 days to maturity rates, and this year I have planted Dwarf Gray Sugar snaps with a 65 day maturity just to see if they will make a crop before Turkey Day. I have had good luck with Sugar Anns (52 days) and Sugar Bons (56 days) in the past. Sugar Bons are mildew resistant and have a very high yield. If a wet fall is expected, they are an excellent choice.

Soil preparation for the fall garden should include some additional compost following the hot summer days, and some granular molasses, Texas greensand, granite sand and organic fertilizer followed by a very thorough tilling.

Bush bean seeds should be planted about 1 inch deep and 1-2 inches apart in the row. After the seeds sprout, thin to 3-4 inches apart. They love worm compost tea, and will do well with a once a week feeding after they are up. The soil needs to have continuous moisture while the beans are blooming or bloom drop will occur. Aphids and spider mites can be a problem with bush beans, but an insecticidal soap can be applied to the underside of the leaves to help keep these pests at bay. Start harvesting as soon as the beans are ready so that the plant will keep producing. Beans have lots of Vitamin A and C, and are good for you just like your Mama said.

Sugar Snaps need some support because their fruit is fairly heavy when mature. I like to use those skinny little wire plant stakes with a crook on the top (the kind you'd need for a large-bloom

flower like a dahlia). I just poke them among the snaps as they are growing before they begin to set

fruit. Sugar Anns and Sugar Bons will top out at about 18-24 inches. The Dwarf Grays I planted this year are supposed to top out about 18 inches and need no staking. (We will see about that!) Since peas don't transplant well, sow sugar snap seeds right into your garden about 1/2 inch deep and 1-2 inches apart. Some gardeners like to presoak all seeds before planting, but some research indicates that "presoaked pea seeds absorb water too quickly, split their outer coatings, and spill out essential nutrients which encourages damping-off seed rot." However, a coating of rhizobium bacteria (a black powder that can be applied wet or dry) is good to add to the seed before planting. It helps the pea roots fix nitrogen from the air, and is supposed to double the yield of the fruit. This product is easily found at most nurseries or feed stores.

Peas, unlike green beans, are light feeders, but they like moisture while they are blooming just like the green beans do. I feed the snaps worm compost tea also, but on an every two or three week schedule when they are blooming, and I dilute the compost tea with water more for the snaps than the beans. The same pests that like green beans also like the snaps, so I just spray all of them with insecticidal soap regularly. Cabbage loopers can be attracted to the sprouts if you have cabbage planted in your garden, also slugs, snails, and sow bugs. An application of Sluggo Plus usually keeps those pests from doing damage.

Here are a few new recipes that might jazz up any meat entrée or casserole dish, or the cold green bean salad can stand alone for a wonderful vegetarian meal.



Cold Green Bean Salad with mozzarella, tomatoes, and arugula and basil dressing

(From Taunton's Magazine *The Best of Fine Cooking No 30, Big Buy*)

- 1 C loosely packed basil leaves
- 2 strips lemon zest about 3 inches long and 1/2 inch wide, no pith
- 1/3 C extra-virgin olive oil
- Kosher salt and freshly ground black pepper
- 2 lb. fresh slender green beans, trimmed (long ones halved)
- 2 C arugula, rinsed and spun dry
- 2 C cherry tomatoes (use Juliette if you have them!) halved
- 1 1/2 C (10 oz) 1 inch diameter fresh mozzarella balls, halved
- 1 T fresh lemon juice, more to taste

Fill an 8 quart stockpot 3/4 full of water and bring to a boil over high heat. Put the basil and lemon zest in a metal sieve, immerse it in the boiling water and blanch for 5 seconds. Remove, tapping the sieve over the sink to shake off excess water. Turn off the burner, but leave the water in the pot with the cover on.

Roughly chop the lemon zest. Put the basil and lemon zest in a blender and pulse a few times. With the blender running, pour the olive oil through the lid's hole and puree until smooth, stopping to scrape down the sides of the blender as needed. Transfer to a small bowl or liquid measuring cup and cover. Refrigerate until nearly ready to assemble the salad.

Return the water to a boil over high heat. Add 2 T Kosher salt and the green beans. Cook until the beans are crisp-tender or fully tender depending on your preference, about 4-6 minutes. Drain and rinse with cold water. Spread the beans on a large rimmed baking sheet and refrigerate to cool completely. If making more than 1 hour ahead, cover and refrigerate.

To assemble salad, combine the cooled beans with the arugula, tomatoes and mozzarella in a large serving bowl. Toss with the basil oil and lemon juice. Season to taste with kosher salt and freshly ground black pepper and more lemon juice.

Green beans, boiled, 1.00 cup 125.00 grams, 43.75 calories				
Nutrient Amount	DV %	Nutrient	Density	Worlds Healthiest Food Rating
vitamin K	20.00 mcg	25	10.3	excellent
vitamin C	12.13 mg	20.2	8.3	excellent
manganese	0.37 mg	18.5	7.6	excellent
vitamin A	832.50 IU	16.6	6.9	very good
dietary fiber	4.00 g	16	6.6	very good
potassium	373.75 mg	10.7	4.4	very good
folate	41.63 mcg	10.4	4.3	very good
tryptophan	0.03 g	9.4	3.9	very good
iron	1.60 mg	8.9	3.7	very good
magnesium	31.25 mg	7.8	3.2	good
vitamin B2 (riboflavin)	0.12 mg	7.1	2.9	good
copper	0.13 mg	6.5	2.7	good
vitamin B1 (thiamin)	0.09 mg	6	2.5	good
calcium	57.50 mg	5.8	2.4	good
phosphorus	48.75 mg	4.9	2	good
protein	2.36 g	4.7	1.9	good
omega 3 fatty acids	0.11 g	4.6	1.9	good
vitamin B3 (niacin)	0.77 mg	3.9	1.6	good

Two recipes for Sugar Snap Peas from *Martha Stewart's Everyday Food Magazine*. Both recipes are good served hot or cold.

Sugar Snaps with Dill Butter

In a large skillet heat 1 T butter over medium low heat. Add 1 lb. trimmed sugar snap peas, strings removed if necessary. Add salt and pepper to taste. Cook, tossing frequently, until bright green and crisp tender, about 6-8 minutes. Stir in 1/4 C coarsely chopped fresh dill.

Gingered Sugar Snaps

In a 12 inch skillet, heat 1 T vegetable oil over medium high heat. Add 1 lb trimmed sugar snap peas, strings removed if necessary, and 1 piece fresh, peeled and finely chopped ginger (piece about 1 inch long will make about 1 T). Cook, stirring occasionally, until peas begin to brown, about 5 minutes. Add 1/4 C water; reduce heat to medium. Cook, stirring and scraping up the ginger from bottom of skillet with a wooden spoon until peas are crisp tender, about 2 minutes. Season with salt and pepper to taste.

President's Column

Wayne Rhoden

Hello Master Gardeners!

It is hard to believe that it is already October. Time is flying by and after this really hard summer it is beginning to cool down and give our plants, and ourselves, some relief. It is not that the summer heat is so bad but the fact that it does not cool down enough at night to let the plants rebuild their stores of carbohydrates for the next day. Now for the next two months they can restore some of the lost reserves and get ready for the winter months. Do not forget to plant your wildflower seeds this month so you can enjoy them next spring. It is also time to plant lettuce and fall greens which you can enjoy all winter.

I also think back to the time when we first started the Master Gardener Program in Williamson County and how hard it was to get our volunteer hours completed because of the lack of opportunities. Now there are opportunities at every corner with our greenhouse operating and the JMG program kicking off a little early this year. Several schools are starting programs in the fall rather than the spring as it was in the past. I know all of the new students will be able to get in their required hours without having to scratch around for volunteer opportunities. We now have the irrigation installed for the vegetable garden and the proposed Earthkind rose garden and with the cooler weather we can plant some cool season crops, get our herb garden growing and place a few roses to see if the deer will munch on them or hopefully pass them by.

This month we will be announcing the slate of candidates for officers at our monthly meeting and you will get to meet them and hear a little about each at the meeting. Hopefully all of them will have the time to come and let you get to see who has chosen to run for office. The elections will be at the November meeting and the new officers will take over their positions in January. All of them will need your support to keep our association growing and improving. We are still a young organization and will improve greatly as we gain more volunteers and can get to our job of education, both to ourselves and to the community. The new students are hungry for more information and eager to volunteer and we want to provide both for them. We also are getting ready to have our awards program in December and you will be hearing more about that as the time approaches.

Hope to see all of you in our gardens.

Happy gardening,
Wayne

The Sixth Edition of the Texas Master Gardener Handbook is now available!

New features include:

Chapter 3 Earth-Kind Landscaping

Weeds and weed management

Updated plant lists

Master Gardeners can purchase the latest edition through their Master Gardener Coordinators at a price of \$43.00.

The 6th edition —Text Only|| (no binder or tabs) can be purchased for \$28.00.

Master Gardeners, please contact your MG Coordinator, Wayne Rhoden to order this edition, publication number B-6217T.



Master Gardeners Day Out

National Wildlife Refuge Week

Balcones Canyonlands National Wildlife Refuge invites you to participate in free activities on Saturday October 10 at Doe-skin Ranch on RR 1174. Guided walks & programs include:

- BIRDS & BUTTERFLIES**- for Beginners walk - 8:30 – 10:00 am *binoculars and identification books provided.
- NATURE PHOTOGRAPHY**- digital & 35 mm workshop Register ahead. 8:30 – 10:30 am. Bring your camera manual & camera. For Adults.
- PATRIOTIC PLANTS**- casual walk to discover how native plants contributed to the birth of our nation. 9:30 am- 11:30 am.
- ANIMAL MIGRATIONS**- Biologist Chuck Sexton will lead a walk focusing on all movements and migrations of ani-mals—on very large & small scale- which can be observed in the fall. 10- noon
- NATURE WALK**- Learn about ferns, flowers, fire, frogs & fossils! 10:30 am - noon & 2:00 pm – 3:30 pm
- SPIDER WALK**- 11 am – 12:15 pm and 2:30- 3:45 pm.
Sign up ahead to share amazing facts about spiders w/ "Spider Joe" Lapp!
- SNAKES ALIVE!**- Live snake program 12:15 pm- 1 pm.
- MONARCH MANIA!**- Author & children's performer Lucas Miller celebrates nature & the migration of Monarch butter-flies with music & puppetry. Prepare to laugh & learn! 1:15 pm- 1:45 pm
- DRAGONFLIES & DAMSELFLIES**- Walk- 1pm- 2:30 pm Look for different species found at the creek and pond!
- NATIVE GRASSES**- the Big 4 & a Few More Walk! 3-4 pm

at your leisure:

- Look for migrating hawks!
- Enter the Butterfly tent!
- Buy bird nest boxes- 9 am until supply lasts. \$5 each.
- Creatures from the water- View bizarre water creatures from 10 am- 4 pm.
- Help capture the creatures from 9-10 am.
- Catch Monarch Butterflies & tag them if Monarchs are present.

For more info call Rob Iski at 512-339-9432 x 70

- Groups: please call in advance to register
- Times & Activities subject to change

Balcones Canyonlands National Wildlife Refuge

Balcones Canyonlands National Wildlife Refuge offers some of the best birdwatching and habitat left in Texas for two endangered song-birds - the black-capped vireo and the golden-cheeked warbler. Less than an hour from Austin, visitors can step off the streets into the wilds of the Texas Hill Country.

Imagine planting one foot in the Great Plains and the other in the Gulf Coast. When you enter Balcones Canyonlands NWR, you stand at the juncture of these two geographic regions. Add the unusual limestone geology of the Edwards Plateau and it's not surprising to find plants and animals adapted to live here and nowhere else.

The more than 525 plant species include the Texabama Croton, discovered here only in 1989. At least a third of the state's threatened and endangered species live or move through the area.

Getting There . . .

Headquarters is located on FM 1431. If you are coming from the Austin area go west through Lago Vista. The office is five miles from the Lago Vista High School. If you are coming from the west, the office is one mile east of the intersection with Cow Creek Road. If you don't want to get on the 183A Toll Road and you're going north on U.S. 183 from Austin, get off at the Lakeline Mall Drive exit. Continue north on U.S. 183, then west on 1431.

Williamson County Master Gardener Association Officers for 2008

Officers:

Wayne Rhoden, President:	mgardener@suddenlink.net	(512) 869-8016
Juanita James, Vice-President	jjames20@sbcglobal.net	(512) 341-7116
Nancy Moore, Treasurer:	nancy3610@att.net	(512) 215-9697
Jeanne Barker, Secretary:	jubarker@yahoo.com	(512) 608-1296

Standing Committees/Chairpersons:

Programs/Education:	Paul Lawrence	pwlawrence@austin.rr.com	
Communications: (Newsletter, Website & Publicity)			
	Christine Powell	xtinepowell@verizon.net	(512) 863-8250
Membership/Volunteer Opportunities:			
	John Papich	texasjayp@yahoo.com	(512) 863-4098
Awards:	Margaret Seals	marjim@suddenlink.net	(512) 863-4127
Class Training/Facilitation:			
	John Papich	texasjayp@yahoo.com	(512) 863-4098
Jr. Master Gardener Coordinator:			
	Patsy Bredhal	pbredahl@austin.rr.com	(512) 217-0693
	Juanita James	jjames20@sbcglobal.net	(512) 341-7116
Fundraising:	Janell Crego	jgcrego@verizon.net	
Greenhouse Manager:			

Ad Hoc Committees:

New Class:	John Papich	texasjayp@yahoo.com	(512) 863-4098
Newsletter Editor:	Christine Powell	xtinepowell@verizon.net	(512) 863-8250
Newsletter Layout:	Christine Powell	xtinepowell@verizon.net	(512) 863-8250
Webmaster:	Christine Powell	xtinepowell@verizon.net	(512) 863-8250

WCMG Website:

<http://grovesite.com/mg/wcmg>

Mailing address:

3151 Inner Loop Road, Suite A, Georgetown, TX 78626

Monthly Meetings

Williamson County Master Gardeners hold monthly meetings at the Williamson County Extension Office, 3151 SE Innerloop Road, Suite A, Georgetown on the second Monday of each month at 6:00pm. Master Gardeners and the public are welcome to attend.