

# The Texas Star

Newsletter of the  
Texas Master Naturalist Hill Country Chapter

John Eddleman photo

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T E X A S



## APRIL 22 MEETING: ANSWERING THE CALL

Dr. Dale Rollins, Professor and Extension Wildlife Specialist with Texas AgriLife Extension Service in San Angelo, will speak on quail management--a subject near and dear to his heart. He has served as Executive Director of the Rolling Plains Quail Research Ranch in Fisher County since 2007 and is presently coordinating a "Quail Decline in Texas" initiative that is aimed at reversing that decline. Everyone is welcome to join us Monday, April 22, at 7 p.m. in the Upper Guadalupe River Authority's lecture hall, 125 Lehman Drive in Kerrville. Arrive at 6:30 to chat with members and guests.

## PRESIDENT'S MESSAGE . . . Vern Crawford

Happy Spring to all,

It is so good to see a bit of rain falling in the Hill Country these past few weeks. A few evenings ago, the hummingbirds were having a wild feeding frenzy on our back deck as the air was filled with the smell and sounds of a coming thunderstorm about to roll through.

Now, the Guadalupe is flowing with a bit more swiftness as it cascades over the rapids just downstream. The river's roar is a considerably louder than it was, but it cannot begin to compete with the volume of the happy bird calls filling the air as I compose this month's message. Although I am only beginning to hone my skills at identifying each of these beautiful individual voices, within five minutes or so it is clear that there are well over a dozen distinct songs in the chorus filling my ears.

With the coming of Spring, this is a reminder of some chapter housekeeping that we all need to do: updating our personal information to reflect any changes in our current home addresses, phone numbers, and email addresses. It is especially important that our email addresses are correct, since email has become the primary means of communication with the entire membership.

Our clever and efficient webmaster, Kristie Denbow, has made it very easy to update that information in your official record, so you don't miss out on any chapter activities that might interest you. Simply go to [www.txmn.org/hillcountry/](http://www.txmn.org/hillcountry/) and click on Members in the list on the right; then select Update Contact Information to update your profile. It is that simple!

Now, get outside and enjoy. . .

Vern

## This Month We Honor

Keeping the  
Hill Country  
Native!

### Special Recertification:

John Walker

### 2013 Recertification

Stephen Bishop, Cynthia Burgin, Jim Birgin,  
Tom Collins, Ginny de Wolf, Ann Dietert, Fane Downs,  
Ronald Hood, Sandra Magee, Scott Magee, Ruth McArthur,  
Diane McMahon, Lara Nielsen, Karla Trefny, Ken Weber

### Milestones

Jim Clarke, Tara Randle, Kathy Ward - Bronze Dragonfly; 250+ hours  
Vern Crawford, Lenore Langsdorf, Alexis McRoberts, Paula Smith -  
Brushed Silver Dragonfly; 500+ hours  
Jim Burgin - Gold Dragonfly; 1000+ hours



*Congratulations to members who received awards at the March meeting:  
from left: Priscilla Stanley, Jim Stanley, Sandy Leyendecker,  
Tom Hynes, Margaret Carter, and Ric McCormick*



Chapter members are welcome and encouraged to attend and contribute to Board of Directors meetings. The board meets on the Wednesdays prior to the monthly chapter meetings at 1:30 PM at Riverside Nature Center.

### Unveil the Mysteries with Master Naturalist Training

I sit on my front porch and listen to the symphony of bird songs and fill my eyes with the differing shades of green from the trees and grasses. It occurs to me that these wondrous sounds and sights, always noticed and admired, are no longer mysterious, nameless springtime happenings. The individual melodies are clearly heard and attributed to the black-crested titmouse, the vermillion flycatcher, the Bewick's wren and the ladder-backed woodpecker. The bright green of the Spanish oak, the yellow green of the little walnut, the blue green of the little bluestem grass blades, are all quite distinct and individual.

Our ability to perceive quality in nature begins, as in art, with the pretty.  
It expands through successive stages of the beautiful to values as yet  
uncaptured by language. -- Aldo Leopold, *A Sand County Almanac*

For me, the unveiling of spring's mysteries began when I was handed a Texas Master Naturalist Hill Country Chapter brochure. Here was an organization offering a training course specifically designed to lead me on the path to a better understanding of the natural world. I jumped at the opportunity, and sent in my application. Admittedly, my initial reasons for applying were a bit self-centered; not ones in keeping with the Master Naturalist Mission: "*To develop a corps of well-informed volunteers to provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities.*" However, a mere eight months later, I find that the spirit and mission of the Master Naturalist program has affected me in a profound and life altering way. I cannot possibly drive down the road without taking note of the varying land management practices of my neighbors, both good and less than desirable. I now have a gut reaction to the waste I see when lawn sprinklers are running at noon in July. When shopping at a local nursery, I find myself leading the uninformed buyer from the invasive Japanese honeysuckle over to the native coral honeysuckle. More directly, I regularly contribute my time and new-found knowledge of ecology to our local youth through educational outreach programs.



photos by Vern Crawford

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Don't just take my word. Here are what a few of the members of the 2012 New Class have to say:

*My wife and I took the Master Naturalist training classes shortly after we moved to the Hill Country. It really helped us learn and appreciate our new surroundings; the classes were very interesting; the instructors were exceptionally knowledgeable about their subject. We would highly recommend this to anyone that is interested in nature and would like to share what they learn.” --Terry Swann*

*“The Master Naturalist class opened my eyes to a whole new world of information on conservation, land management and a general understanding of the treasures of the Hill Country. The land has taken on a more intense beauty for me than ever before--and I have loved this Hill Country all my life. Who knew the classes could be so illuminating!”--Barbara Oates*

*“After a life-long educational path in the sciences, owning my own landscaping business at one time, a lifetime of loving the outdoors, being an avid observer of nature, and trying to be a good steward of my land in the Hill Country for the last twenty years, I was reluctant to sign up for the Master Naturalist Program. I thought I could learn nothing from it. How wrong I was! After the very first class, I was hooked.”--Hunter Scott*

*“Our TMN experience totally changed our perspective. We would have been guilty of buying land that was void of character and forbes. We now manage a piece of property that we hope will sustain the native biology and will pass on the love of the land to our family. We are so blessed to be stewards of a piece if the Texas Hill Country! Rocks Rule!”--Sarah & Junior Hilburn*

If you would like to become a trained Texas Master Naturalist and join forces with hundreds of other Certified Texas Master Naturalists in the Hill Country Chapter, now is the time to take the first step.

**Applications for the Fall Training Course are currently being accepted. The deadline to apply is July 12, 2013.**

The training course will run from August 19 – November 13, 2013. The majority of the classes will be held at the Texas Lions Camp in Kerrville. Visit our Chapter website to see a complete listing of the class topics.



The training also includes field trips. Canyon Lake Gorge, the Fredericksburg Nature Center, Selah Bamberger Ranch Preserve, Riverside Nature Center, Kerr Wildlife Management Area, and the Cibolo Nature Center are on this year's schedule. The class size is limited to 35 trainees, who will be notified of acceptance into the training program by August 1, 2013.



Further information and applications may be obtained through the Chapter website, [www.txmnp.org/hillcountry](http://www.txmnp.org/hillcountry). Or, contact Valeska Danielak, Membership Director, [hillcountry13@rocketmail.com](mailto:hillcountry13@rocketmail.com), 830-370-2464. All of the members of the 2013 New Class Committee hope that you find the New Class Fall Training informative, exciting, and inspiring.



## Legumes: An Interesting, Important, and Diverse Family of Plants

The scientific or Latin name for the legume family is *Fabaceae*, and it is also known as the pea family. Worldwide, legumes are the third largest plant family after the aster or sunflower family and the orchid family. In Texas, legumes are third after the aster and grass families.

Flowering plants are classified and placed in families by scientists according to the (sometimes minute) structures of the flowers, so the general appearance of the plants as a whole may have little in common with other members of the family. Members of the legume family can be annual or perennial, herbaceous or woody.

The most easily recognized characteristic of the pea family is that its seeds are enclosed in a "pod" composed of two halves which split apart when dry. Think sweet peas, black-eyed peas, or green beans.

From an agriculture/nutrition standpoint, the most important characteristic of almost all legumes is that they have associated with their roots bacteria called rhizobia that have the ability to "fix" nitrogen. Elemental nitrogen in the air is not very reactive and is not easily available to most plants to convert into nitrogen-containing proteins or DNA. The rhizobia can convert atmospheric nitrogen into forms the plants can take up and convert into nitrogen-containing plant material.

This ability of the bacteria associated with the roots of legumes to make nitrogen readily available to the plant explains why legumes tend to have a higher protein content than other plants. We, and all other animals, need plant protein to survive. We must get it either directly from the plants or indirectly by eating other animals.

When legumes die, the nitrogen "fixed" by the bacteria in the soil as well as the nitrogen in the plant's tissues becomes available for subsequent plant growth in crop rotation. This is how legumes enrich the soil for subsequent crops, saving on the use of synthetic fertilizers. Legumes are sometimes called "green manure" for that reason.

Most anything we would call a bean or a pea or a lentil is a legume, including all of the different peas and beans we find in the grocery store, but also including soybeans (worldwide the species produced in greatest amount). Likewise, the very closely related species of clovers, vetches, and alfalfa are legumes.

One perhaps surprising member of the legume family is the peanut. The plant blooms above ground, but then forces the growing fruit below ground where it matures to contain, usually, two "seeds" which we call peanuts, inside a "pod" which we call the shell.

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Other than the pea-like “pod,” the other characteristic of legumes that is easy to note is that most, but certainly not all, have compound leaves. The leaves of plants are classified as either simple or compound. A simple leaf is a single leaf that is attached to a stem or twig. A pinnately-compound leaf has the appearance of many pairs of simple leaves attached to opposite sides of a stem, usually with a single leaf at the end. In fact, these are leaflets and the whole collection of these pairs of leaflets along the stem is part of a single compound leaf. Think mesquite or pecan.

Other compound leaves can be palmately compound in which (usually) five leaflets are attached to the end of the stem in a pattern resembling your spread-out fingers. Think bluebonnets or Virginia creeper. Other compound leaves composed of three leaflets are called trifoliate leaves.

One has to keep in mind that everything in biology or botany doesn’t fit in neat little boxes with no exceptions. Not all legumes can fix nitrogen. Not everything that bears a fruit called a pod is a legume. Not every legume has compound leaves, and not everything with compound leaves is a legume. But if I see something that makes what looks like a bean pod, I am certainly going to suspect it is a legume, and if it has compound leaves the odds are even better.

The more common woody plants that are legumes include all of the many acacias (*Acacia* spp.), daleas (*Dalea* spp.), and mimosas (*Mimosa* spp.) as well as false indigo (*Amorpha fruticosa*), Texas kidneywood (*Eysenhardtia texana*), golden-ball leadtree, honey locust (*Gleditsia triacanthos*), etama (*Parkinsonia aculeata*), Eve’s necklace (*Sophora affinis*), rattlebush (*Sesbania drummondii*), and Texas mountain laurel (*Sophora secundiflora*). Eastern redbuds (*Cercis canadensis* var *canadensis*) and Texas redbuds (*Cercis canadensis* var *texensis*) are legumes even though they do not have compound leaves.

Probably the most well-known legume in Texas is the mesquite or honey mesquite (*Prosopis glandulosa*). Because it can be invasive under certain conditions in certain areas, it is often considered to be a nuisance. However, in moderate density in many places it is a valuable tree providing nectar for bees and highly nutritious beans for livestock and wildlife.

Some forbs or wildflowers that are legumes include, but are certainly not limited to the following: clovers (*Trifolium* spp.), vetches (*Astragalus* spp. and *Vicia* spp.), bundleflowers (*Desmanthus* spp.), or peas of various species, plus coral bean (*Erythrina herbacea*), two-leaved senna (*Senna roemeriana*), Lindheimer’s senna (*Senna lindheimeriana*), and Texas bluebonnet (*Lupinus texensis*).

Jim Stanley is a Texas Master Naturalist and the author of *Hill Country Landowner’s Guide*. He can be reached at [jstmn@ktc.com](mailto:jstmn@ktc.com). Previous Kerrville Daily Times columns can be seen at [www.hillcountrynaturalist.org](http://www.hillcountrynaturalist.org).

The Spring/Summer 2013 issue (Volume 5, No. 5) of  
HEADWATERS

the E-newsletter of the Texas Stream Team  
has just been published.

To subscribe, go to [txstreamteam@txstate.edu](mailto:txstreamteam@txstate.edu)

Indian Artifacts Program at the Kroc Center

Steve Stoutamire, a local archeological expert, presented a great hands-on program to our interested group of 4<sup>th</sup> and 5<sup>th</sup> grade after-school kids at the Kroc Center on March 21. Master Naturalist volunteers Rheda Boardman, Pat Nelson, and I also learned that there was a lot to admire about the earliest inhabitants of the Hill Country. Steve focused on the Apache and Comanche tribes and showed some pictures of these Indians. They hunted enormous mammals for their food, and their hunting weapons were handmade from good quality flint found on the land. Looking closely at the tools and imagining how they could kill animals by pitching a spear called an atlatl through their tough hides was awesome. Peeling off the fibers of a twist-leaf yucca to use as string that wraps the sharp spear around the wooden pole of the atlatl was a stroke of genius.

The kids experienced another method Indians used to make food. They practiced using a hand tool--a rock called a mano--that they could grip to make grinding circular motions over beans placed on a larger rock slab called a metate. Food preparation was more difficult in those days.

We went out to a field on the KROC grounds to try thrusting the atlatl, which really opened our eyes as to how difficult it was to harvest animals for food. The volunteers also tried throwing the atlatl. We cheered everybody on for their efforts. This was a fun activity for both learning more about nature and appreciating Hill Country people of the past.



Volunteer Opportunities

The Riverside Nature Center Rainwater Collection System is operational and needs periodic maintenance. This is an approved Master Naturalist volunteer project (KR-02-D) and will resume as soon as we get a team organized. The maintenance is not complicated and training will be provided. If you would like to assist with this project or want more information, contact Diane McMahon at [dianelm@windstream.net](mailto:dianelm@windstream.net) or 830-896-3195.

Cibolo Bridge Area Restoration (KL-12-A). Volunteers will be taking out invasive species, removing trash and dead wood debris from the area, establishing small paths for the public, and planting native forbs and grasses. April 20 will be the first work day. For more information, contact Daneshu Clarke at [jdclarke@gvtc.com](mailto:jdclarke@gvtc.com) or 210-394-1743 (cell) or 830-537-4445 (home).

Has your contact information changed? New email address? Moved? A new phone number? We have a form for that! In fact we have forms for many chapter needs.

Now there is an easy way to update your contact info so you don't miss any chapter communications. Place your cursor over *Members* in the right side bar and click. Move your cursor down to *Update Contact Info* and click, then submit the password. The new **Please Update My Contact Info form** will open. Type in your new info (fields with an asterisk are required), add any comments, and click submit to send to our Director of Membership. Two layers of security protect your information: the form is password-protected and an added layer of security is provided by the CAPTCHA. All chapter forms are protected by CAPTCHAs.

A CAPTCHA is a program that protects websites against bots by generating and grading tests that humans can pass but current computer programs cannot. For example, humans can read distorted text like the one shown below, but current computer programs can't. The term CAPTCHA (for Completely



Automated Public Turing Test To Tell Computers and Humans Apart) was coined in 2000 by Luis von Ahn, Manuel Blum, Nicholas Hoppe, and John Langford of Carnegie Mellon University.

Under *Members* in the side bar you'll find *Submit Volunteer Events*. Clicking on this tab opens the **Add my Volunteer Project Service or Event form** where Project Coordinators can submit volunteer project activities or events for inclusion in Activities This Week! and our Google calendar. We have many active projects and I hope more Project Coordinators will take advantage of this useful tool designed specifically for them.

Want to start a new volunteer project? Place your cursor over the *Volunteer* tab to expand the drop down menu, then move the cursor down to *Volunteer Projects List* and click. Scroll to the bottom of the *Volunteer Projects List* page and read this paragraph: "Have a proposal for a new project? Review the Volunteer Projects policies, then submit your request online to the Director of Volunteer Projects for approval." Clicking "submit your request online" opens the **New Volunteer Project Proposal form**. Complete and submit the form to our Director of Volunteer Projects who will review your proposed project and contact you.

Know of a possible AT event? We always seek great AT. Move your cursor to *Advanced Training* in the side bar; click and move down to *Submit an AT Event for Approval*. Click again to open the **New AT Event for Approval form**. Complete and submit the form to our Director of Advanced Training who will review the event and if approved, assign an AT code.

Place your cursor over *Land Management Assistance Program* and click to open the LMAP page. Scroll to the bottom of the page to fill out the **Land Management Assistance Program contact form**. We provide trained Master Naturalist volunteers who visit your property and help you identify trees, shrubs, wildflowers, and grasses. Chapter members or any landowners may request a free consultation from our chapter's LMAP team.

We all agree that we have a super cool award-winning newsletter! You can share the *The Texas Star* with anyone! Direct them to our home page where they can click the blue *Newsletter* icon in the side bar and subscribe to receive our monthly newsletter. How cool is that?!

Feel free to email me at [HillCountryWebmaster@gmail.com](mailto:HillCountryWebmaster@gmail.com)  
with any questions about our chapter's website.

From John Huecksteadt

## Running Out of Run-Ins



For the past year my two Labs and I have had the pleasure of stumbling on the same red fox on our walks around our Hill Country land. The dogs' pleasure is in chasing her. My pleasure is in her wildness. We've gotten to know each other, all four of us.

Jack, our five-year old black Lab, gives good chase. He doesn't know he can't catch the fox; on the other hand, the fox hasn't figured out that Jack can't catch her. The energy they both put into the race is wondrous. My twelve-year old yellow Lab, Austin, is so stiff with arthritis that his chase is short and only serves to remind us both of the aches in our joints. Nonetheless, it is just plain life-filling to see him get so excited when he sees the fox, puts all pain out of mind, and tears past me in arthritic syncopation.

The reason I think the fox doesn't know Jack can't catch her is that she *never* looks back to see how close the dog is. She just runs straight out as fast as she can. I've often wondered how far she runs, and whether she has a den-haven awaiting a headlong plunge into safety. If no dens are nearby, how does the fox know when it's safe to stop running, to halt, panting atop a Conservation Corps dike, and look back?

One of the wonderful things about the Hill Country is its closeness to the wild, the untamed. On Thanksgiving Day a parade of Rio Grande turkeys struts by the dining room window blissfully unaware. A sleepy porcupine watches me pass under her live oak La-Z-Boy. A Texas black hare jumps from a brush pile zigzagging across the pasture. I often wonder how nearby any rattlesnakes might be, too. As Dave Barker reminds us, we probably have no idea how many snakes we pass by quite closely and how many shrink back in fear of the huge monster about to step on them.

These run-ins with the wild are, thankfully, quite regular on my land. A walk on any particular day more often than not holds some sort of two-way surprise. It reminds me, too, that as Naturalists, we know in a special way our role in preserving the wild parts of the Hill Country. If the persimmon thicket the fox was hiding in had not been thick enough she would never have ventured near. She was probably in that thicket, which always rewards me with a bird (if only the resident mockingbird)--in the first place, because there were birds in it. If I'd shot the porcupine because she had stripped one of my favorite toothache trees in mid-January, I would not see that sleepy, arboreal smile in late April.

Sadly, for the past several days I've been watching a Bobcat with shears snip every stick of cover from a neighbor's property. In the past I could always count on a jackrabbit darting into cover there when I drove down the road at night. Just last week I enjoyed twenty-odd lark sparrows sitting in and around a persimmon that is now only a memory. I will miss the roadrunner that used to run down the neighbor's driveway with ample cover to right and left when my car passed by. How painful it is to see the Hill Country disappear before our very eyes; to watch us run out of run-ins.

From Craig Hensley

### The Food Friendly Aphid

Craig Hensley, Interpretive Naturalist at the Guadalupe River State Park in Spring Branch Texas, observed a fascinating natural phenomenon in early February. Kip Kiphart, MLMP trainer from Texas, shared Craig's observations with us and noted that they saw 25 species of butterflies that were mainly nectaring on the honeydew left by aphids.

On the 5th of February 2013 I witnessed a diverse menagerie of butterflies, ladybird beetles, honeybees, and various flies all over the leaves of our various thistle plants. These are all rosettes of leaves with no flowers. As I watched I noticed the butterflies appeared to be nectaring on the surfaces and undersides of the thistle leaves. I looked carefully and saw no apparent moisture on the leaves from dew. (There had been no rain – imagine that!) I picked a leaf to see what was going on, suspecting that perhaps with all the ladybird beetles present that this behavior had something to do with aphids. Aphids produce a sugary waste that is farmed by ants – honeydew. An initial inspection of the leaves with my reversed binoculars (make for a great magnifier, by the way) found the leaves covered with lots of white hairs. On the hairs I could see sections that appeared to have a thicker, shiny mass stuck to them. It was then that I also discovered the aphids.



I next placed the leaf under one of our magiscope microscopes for a closer look. As I was watching an aphid, a clear bubble suddenly formed from the upturned abdomen. At this moment, the aphid (and I am not making this up!) raised a leg and essentially popped the bubble! Imagine blowing bubbles – what happens when they pop, the liquid flies out in all directions. Based on this observation, and confirmed by another staff member who witnessed the bubble formation, it became clear to me that the butterflies and honeybees were actually feeding on the sugary excretions of the aphids. Wow, wow, wow! Anyway, I reported this "discovery" to Kip Kiphart and we both, along with his son, witnessed this feeding frenzy two days later.



Remember now that at the time the only flowering plants were a few scattered wind flowers and an occasional Dutchman's breeches and slenderstem bitterweed. Apparently, these aphids were helping sustain these early emerging insects! Think of it, two things we often try to rid our landscape of, aphids and thistles, were in fact key to the early survival of our beloved butterflies, ladybird beetles and honeybees.

Ain't nature grand!

reprinted from the February-March issue of MLMP Updates (the Monarch Larva Monitoring Project newsletter). For more information, go to [www.mlmp.org](http://www.mlmp.org).

## Nature Center Hosts Class on Art of Falconry

by Beth Elderkin, Staff Writer, Kerrville Daily Times

Falconry is not easy. "It's not just a passing fancy that anybody can pick up," said instructor Cynthia Burgin, falconry enthusiast. "It's a lifelong dedication."

Still, the Riverside Nature Center's learning center was packed Tuesday with locals eager to learn about falconry, a 4,000-year-old hunting sport in which participants work with trained falcons to find and gather small animals.

Burgin showed attendees the basics of falconry, including its history, purpose and what exactly is needed to get started as an amateur or professional falconer. She said falconry is one of the few sports or sport like activities that has not seen any major changes since it was first documented in China about 403 B.C.

During the class, Burgin described her lengthy and intense training with master falconer John Karger, executive director of Last Chance Forever Birds of Prey Conservancy, who was present during the lecture. She said those interested in becoming falconers have to be licensed apprentices for two years and have to catch their own falcons in the wild. The birds can live for 30 or 40 years.

"It is a commitment to the bird you make for the bird's life," she said. "It's not just a passing fancy."

According to Karger, falconry is not the same as hunting with other animals such as dogs. Karger said falcons are encouraged to never lose their bird of prey mentality, which means they are cooperative instead of obedient.

"This is not a game of possessing the bird; the bird possesses you," Karger said. "The bird never likes you, (but) it respects you."

Two of Karger's apprentice falconists presented some of the conservancy's birds to the crowd, including a falcon, an eagle and a gray spotted owl. Volunteer Daneshu Clarke showed how to get falcon Nevar to stay on her arm, secure the protective "hood" on his head and move him to and from his perch. Karger encourages his apprentices to always say "please" and "thank you" to the birds, because the animals respond to positive verbal tones and language.

"No matter what kind of day you're having, it's hard to say 'thank you' in an angry way," Karger said.

Karger said Last Chance Forever's ranch in Comfort will start hosting daylong falconry classes for anyone interested in learning about the hunting sport in the near future. For more information, including how to register, call the San Antonio office at 210-499-4080.



Cynthia and Jim Burgin  
with a Harris hawk



Daneshu Clark  
with a great horned owl

photos by Susan Sander

text copyright Kerrville Daily Times; reprinted with permission

## AgriLife Research Scientist Hopes Soapy Water Testing Lathers Up Statewide Interest

Inside a greenhouse on the grounds of the Texas A&M AgriLife Research and Extension Service Center in Uvalde, Dr. Raul Cabrera recently inspected several groups of ornamental plants for signs of damage or distress.

"This is the first component of our practical gray water investigation," explained Cabrera, who along with colleagues from the Uvalde center and the Texas Center for Applied Technology started research in late 2012 to confirm the potential use of gray water for home landscape irrigation.

Gray water, explained Cabrera, is basically the soapy water that remains after tap water has been run through a washing machine or used in a bathtub, bathroom sink or shower and does not contain serious contaminants.

"We wanted to find out whether or not using gray water to irrigate home landscapes would be a practical thing to do, based on its effects on various ornamental plants," he said. "So we set up an experiment to irrigate various ornamental plants using different types of gray water."

To perform his research, Cabrera set up sections within the greenhouse where he placed multiple pots or containers of about a dozen different ornamental plants – ranging from herbaceous and flowering plants such as Mexican heather, Asiatic jasmine, lantana, and dianthus, to hardy native and adaptive ornamentals such as yucca, agave, oleander and yaupon holly. The plants are irrigated through a network of PVC and plastic tubing from 55-gallon plastic containers that water different sets of each plant species with tap water and three varying degrees of gray water.

"You don't usually see a washing machine in a greenhouse, but we had one installed so we could run loads with detergent alone, then loads with detergent and fabric softener, then a load with bleach," he said. "This way, we could produce and use different types of gray water and see how it might affect the growth and aesthetics of different ornamentals, particularly since there would be different chemicals in the water, depending on the detergents and cleaning agents used."

Cabrera chose what he considered the most popular domestic brands of detergent, fabric softener, and bleach for his experiment, using each according to its manufacturer's recommendations. After two and a half months of irrigating these various ornamentals with different types of gray water, Cabrera said initial results based on visual inspection of the plants are promising, with a few exceptions.



A few of the more flowering plants in the experiment such as dianthus (shown here) were negatively affected by gray water containing a bleach component.

"As we expected, some of the plants irrigated with the gray water containing bleach in the recommended amounts for laundry showed signs of yellowing and reduced flowering," he said. "We noticed this particularly in some of the flowering plants we chose, including the lantana and dianthus. We have measured concentrations of chlorine in this gray water that appear to be high enough to create a negative impact on these particular species. We are also evaluating the concentrations of other chemical constituents in gray water that could be harmful for plant growth, like sodium and boron."

However, Cabrera added, the gray water containing bleach had little effect on the remainder of the ornamentals used in the experiment, particularly the hardier plants like holly, yucca, and agave.



Dr. Raul Cabera checks the levels of gray water used to irrigate landscaping plants.

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"There also was no significant negative impact on any of the ornamentals from the gray water with detergent or detergent and fabric softener combination," he said. "So far, it looks like these types of gray water hold the best promise for short and long term use in irrigation, with the gray water and bleach component mainly having use for longer-lived perennial and woody plants."

Cabrera said this research is particularly relevant for drought-prone Texas as it may reduce household landscape water use by as much as 10-25 percent or more, depending on the size, geographical location and plant selection. He noted that the average household currently uses about 50 percent of its water consumption for landscaping – irrigating turfgrass, ornamentals and trees.

He added that implementing the use of gray water for landscape irrigation across the state could mean a tremendous water savings in terms of acre-feet of water, contributing to the statewide water use and conservation goals of the 2012 Water Plan.

"Gray water has tremendous potential for water savings, especially in an urban environment," he said. "Its use is already allowed with some restrictions as outlined by applicable ordinances in some Southwest states. It is also used in parts of Texas, particularly in rural areas. However, most of the information on gray water use for irrigation is anecdotal and to date there has been little actual scientific research on its effects on landscape plants."

Cabrera said he will continue this first phase of irrigation trials in the greenhouse for another two months as preparations are made for the second component of gray water experimentation.

"The second phase involves establishing an outdoor landscape here at the center," he said. "For that, we are planting trees and shrubs along with flowering and bedding plants. In this study, we will examine the medium- and long-term effects of gray water on these materials over a two-year period. Furthermore, we are very interested in determining the effects of gray water use on physical, chemical and biological characteristics of the landscape soil. In addition, as these landscape plants will be watered with a drip irrigation system, we will also find out how well such an irrigation system performs and what kind of maintenance it might require when running gray water through it."



Hardy landscaping plants such as holly, yucca, and agave fared well after more than two months of being irrigated by different types of gray water, including gray water containing a bleach component.

Cabrera said this is the kind of information needed by city planners, water-system administrators, and municipal, county and state officials for the purpose of officially permitting and promoting the use of gray water as a significant urban water conservation practice. "We hope this also will lead to support by other agencies, groups and organizations, and eventually expand into a statewide initiative to inspire people to use gray water for home landscape irrigation," he said.

Texas A&M AgriLife Research photos

#### **Native Plant Society to host speaker Jim Stanley on May 14**

The May meeting of the Kerrville Chapter of the Native Plant Society of Texas will be held Tuesday, May 14<sup>th</sup> at 3:00 p.m. at the Riverside Nature Center, 150 Francisco Lemos Street in Kerrville. NPSOT member Jim Stanley's topic will be "Cedar Myths and Management." Stanley is a well-known columnist for the Kerrville Daily Times and author of *Hill Country Landowner's Guide*. He is an active member of Kerrville's Riverside Nature Center, has served three terms as president of the Hill Country chapter of Texas Master Naturalists, and was the winner of the 2012 Carroll Abbott Memorial Award, presented by The Native Plant Society of Texas. There is no charge to attend, and visitors are welcome. For more information, contact chapter president Bill Stone at 238-3132.

## AgriLife Extension expands online feral hog reporting system across the state

Feral hog management experts need your help, said a Texas A&M AgriLife Extension Service associate who deals with the unwelcome critters. "AgriLife Extension has developed an online feral hog reporting system, but for it to be successful, we need ongoing input from landowners and the general public," said Jared Timmons, who is based in San Marcos. He said that the system at <http://feralhogreports.tamu.edu/> is meant to document feral hog activity. The system, originally piloted beginning in 2009 in the Plum Creek Watershed in Caldwell and Hays counties, has just been made available statewide.

"This newly expanded reporting tool was developed to record two types of feral hog activity," Timmons said. "One reporting method is the public report, which allows the general public – most likely motorists seeing hogs along the highway – to report feral hog sightings and activity. The other method solicits landowner input relating to feral hog damage and financial loss, and control measures conducted on their property." Timmons said feral hogs contribute to watershed pollution through wallowing and defecating in and around streams. This can increase E.coli bacteria, nutrients and sedimentation in the water bodies. Feral hogs not only pose a problem for water quality in the state. They also compete with wildlife and livestock for habitat, harbor endemic exotic diseases, and transmit parasites to domestic livestock and humans. Their rooting, wallowing and other behaviors cause damage to pastures, cropland, and wildlife habitats. "The reporting system will be used to support AgriLife Extension's outreach efforts and those of our watershed partnerships across the state. These partnerships include landowners and citizens, city and county officials, and state and federal agencies working together to protect water quality. The public and landowner reporting of feral hog sightings and/or signs of damage will help us locate areas of high activity and guide both management and educational efforts to reduce their impact to watersheds," Timmons said.

Timmons was recently joined by Mark Tyson in College Station who, like Timmons, is an AgriLife Extension associate hired to help address the burgeoning statewide feral hog problem. The men are tasked with providing technical assistance to landowners, by conducting site visits to assist in creating a feral hog management strategy specific to their property. They also provide watershed based educational training to increase public knowledge of feral hog biology, behavior and management options.

Timmons is assigned to the Plum Creek, Geronimo and Alligator Creek, Gilleland Creek and Lower San Antonio River watersheds. These watersheds are in Caldwell, Comal, DeWitt, Goliad, Guadalupe, Hays, Karnes, Refugio, Travis, Victoria and Wilson Counties.

Tyson's area of responsibility involves Bastrop Bayou, Dickinson Bayou, Lake Houston Area Watersheds, San Bernard River Watershed and Upper Oyster Creek. These watersheds are in Austin, Brazoria, Colorado, Fort Bend, Galveston, Grimes, Harris, Liberty, Montgomery, San Jacinto, Walker, Waller and Wharton Counties.

For more information, contact Jared Timmons at 254-485-4886, [jbtimmons@ag.tamu.edu](mailto:jbtimmons@ag.tamu.edu) or Mark Tyson at 979-845-4698, [mark.tyson@ag.tamu.edu](mailto:mark.tyson@ag.tamu.edu).

More information on feral hog management is available at: <http://plumcreek.tamu.edu/feralhogs/>, <http://feralhogs.tamu.edu/>, or [http://www.extension.org/feral\\_hogs](http://www.extension.org/feral_hogs). Or visit the Texas A&M AgriLife Bookstore at <https://agrilifebookstore.org/>.

Texas A&M AgriLife Extension photos



## Hill Country Master Naturalist Annual Family Picnic

**Save the Date! Saturday, May 18 from 10 am – 4 pm**

**Joshua Springs Park & Preserve – Kendall County**



Our event will be based in a covered pavilion on a hill with a pleasant breeze overlooking this scenic lake. It's **FREE!** Please bring your own picnic lunch and chairs. Soft drinks and bottled water will be provided.

### Activities in the park include:

- Walk the manicured trails with educational signage, native plant gardens and natural vegetation.
- Active and passive recreation areas offer many opportunities to have fun and enjoy nature.
- Hiding stations are available for bird observation.
- Two chimney swift towers provide nesting sites for these beneficial aerial acrobats.
- Three bluebird trails provide 18 nest boxes to shelter migrating Eastern bluebirds and other native Texas species.
- Bring field glasses and a birding book to identify numerous species seen in the preserve.
- Karst features are visible throughout the preserve and park.
- Designated fishing areas allow anglers to test the waters. Fish in the lake from two piers (must have a Texas fishing license).
- Two age progressive play areas will keep kids entertained.

See more info on the park at [www.kendallcountyparks.org/parks/joshua-springs-park-and-preserve-jspp](http://www.kendallcountyparks.org/parks/joshua-springs-park-and-preserve-jspp)  
Questions? e-mail Priscilla Stanley at [jbstan@ktc.com](mailto:jbstan@ktc.com).

## Advanced Training

### **SATURDAY, APRIL 20 10AM; 11:30AM RIVERSIDE NATURE CENTER**

#### **AT 13-087 EARTH DAY SPEAKERS**

Rainwater Harvesting: Why & How (10am) Jim Stanley, who helped design the RNC rainwater harvesting system and has built his own system, will explain the reasons for harvesting rainwater as well as the basics of how to collect rainwater, the equipment needed, and its availability. Questions & answers discussed; followed by a tour of the RNC's rainwater harvesting system. Free.

The Magic of Monarchs (11:30am) Cathy Downs, Chair of the Bring Back the Monarchs to Texas (BBMT) program, will provide a close and interactive look at the world of monarch butterflies. See live caterpillars, chrysalis, and adults, while learning about monarch biology, habitat, and migration. Suitable for both children and adults. Free.

### **SATURDAY, APRIL 20 9AM-NOON CIBOLO NATURE CENTER AUDITORIUM AND PARK**

#### **AT 13-112 BIRDING BY EAR**

Join master birders Tom & Patsy Inglet to learn how to recognize subtle differences between bird songs. This workshop will introduce you to many of the common bird calls heard in the Hill Country and will include time in the field practicing bird call identification. Cost: Free for those who sign up at the workshop to participate in the Cibolo Nature Center's Breeding Bird Point Counts on April 30, May 9, and May 14. For non-participants in the bird counts, \$20 per person for members; \$25 per person for non-members. To register, go to [www.cibolo.org](http://www.cibolo.org)

### **SATURDAY, APRIL 20 2-4:30PM GUADALUPE RIVER STATE PARK (GRSP)**

#### **AT 13-104 HONEY CREEK WALK**

Join Park Ranger Craig Hensley for a walk to enjoy the beauty of the creek. We'll hike to "The Point" where Honey Creek flows into the Guadalupe River and then upstream. You'll learn about the features found there, including a locally rare geologic occurrence. Bring water and wear sturdy hiking shoes; having a hiking stick is encouraged. Meet at the Rust House inside the park, which is located at 3350 Park Road 31 in Spring Branch. For more information, call 830-438-7653

### **MONDAY, APRIL 22 7-8PM UPPER GUADALUPE RIVER AUTHORITY (UGRA)**

#### **AT 13-113 ANSWERING THE CALL**

Dr. Dale Rollins, Professor and Extension Wildlife Specialist with Texas AgriLife Extension Service, will speak on quail management--a subject near and dear to his heart. He has served as Executive Director of the Rolling Plains Quail Research Ranch in Fisher County since 2007 and is presently coordinating a "Quail Decline in Texas" initiative that is aimed at reversing that decline. Free; for further information, call Tom Hynes at 830-990-5750.

### **FRIDAY, APRIL 26--MONDAY, APRIL 29 LADY BIRD JOHNSON MUNICIPAL PARK, FREDRICKSBURG**

#### **AT 13-067 THIRD ANNUAL WINGS OVER THE HILLS NATURE FESTIVAL**

For information, go to <http://www.wingsoverthehills.org/index.html> AT is for presentations/lectures only. For information on volunteer opportunities, contact Jane Crone at 830-990-9823 or email [jcrone@austin.rr.com](mailto:jcrone@austin.rr.com)

### **SATURDAY, APRIL 27 8-10PM GUADALUPE RIVER STATE PARK**

#### **AT 13-105 STAR PARTY WITH THE SAN ANTONIO ASTRONOMICAL ASSOCIATION**

You'll have the opportunity to view the night sky through many different telescopes and meet knowledgeable stargazers and amateur astronomers. The park is located at 3350 Park Road 31 in Spring Branch. For more information, call 830-438-7653.

### **FRIDAY, MAY 3 9AM-4PM CIBOLO NATURE CENTER AUDITORIUM AND BACK PORCH**

#### **AT 13-115 MONARCH BIOLOGY, ECOLOGY, AND LARVAL MONITORING PROJECT TRAINING**

Master Naturalists Kip Kiphart and Cathy Downs will host this training session, which will cover the monarch's life cycle, milkweed ecology, and citizen science projects to monitor monarchs. Participants will visit the CNC's milkweed patch to monitor for monarch larvae. Live butterflies and caterpillars will be on display. Suggested donation: \$10. To register, go to [www.cibolo.org](http://www.cibolo.org).

### SATURDAY, MAY 4 9AM-3PM KREUTZBERG CANYON NATURAL AREA

AT 13-106 FAMILY FUN DAY

Explore your new Kendall County Natural area. For detailed information on activities and a map, go to [Kendallcountyparks.org/parks/kreutzberg-canyon-natural-area-kcna](http://Kendallcountyparks.org/parks/kreutzberg-canyon-natural-area-kcna).

### FRIDAY, MAY 10 8:30AM-4:30PM SPRING CREEK RANCH, BOERNE

AT 13-114 HOLISTIC MANAGEMENT INTERNATIONAL-OPEN GATE ON-FARM LEARNING SERIES

Learn what local land managers are doing to maintain land health and profitability during drought. Cost: \$20 (includes lunch). For detailed information and registration, go to [www.holisticmanagement.org/spring-creek](http://www.holisticmanagement.org/spring-creek).

### WEDNESDAY, MAY 15-SATURDAY, MAY 18 UNIVERSITY OF NORTH TEXAS, DENTON

AT 13-069 36TH ANNUAL SOCIETY OF ETHNOBIOLOGY CONFERENCE

The conference theme is "Climate Change and Ethnobiology." For details on the program, registration, and costs, go to [www.ethnobiology.org](http://www.ethnobiology.org).

### MONDAY, JUNE 10-WEDNESDAY, JUNE 12 FLAGLER RANCH, MOUNTAIN HOME

AT 13-109 L.A.N.D.S. TEACHER/VOLUNTEER TRAINING

This training provides classes and field activities to prepare participants to become a Learning Across Dimensions in Science volunteer or teacher. Cost: \$150. (includes food, lodging, and materials). Registration deadline is May 20; for more information, contact Koy Coffer at 830-866-3066; [kcoffer@texas-wildlife.org](mailto:kcoffer@texas-wildlife.org) or Leslie Wittenburg at 512-680-6000; [twittenburg@texas-wildlife.org](mailto:twittenburg@texas-wildlife.org).



T E X A S



We meet on the fourth Monday of most months at 7:00 PM. in the Upper Guadalupe River Authority Lecture Hall at 125 North Lehman Drive in Kerrville.

Join us at 6:30 for our social half-hour.

Everyone is welcome.

Texas Master Naturalist mission:

To develop a corps of well-informed volunteers to provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities.

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The Texas Star is a monthly publication of the Hill Country Chapter of the Texas Master Naturalist Program. News stories, comments, and ideas are welcome.

Please email them to:

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The Hill Country Chapter does not recommend or endorse organizations or commercial sources mentioned in our newsletter. The opinions expressed are those of the authors and editor.



*Questions about our chapter?*

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