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# Say Yes, to Rain Water Harvesting!

- Ursula Nanna

For Master Naturalists, rainwater harvesting is an expression of stewardship. It's using what we have to soften the "blow" or impact of man on the surrounding world. It's a



demonstration of our responsibility to make small contributions to the areas in which we live by using what we have wisely and conservatively. These contributions allow for a better quality-of-life at home, within the community, and surrounding areas. Everything we do or don't do affects everything around us. It passes outside our little world. After all, a Master Naturalists' mission is to educate the public about our natural resources and to demonstrate how to manage, conserve, and protect these resources.

Rainwater harvesting has been around for 9,000 years and water has been fought over by every nation at one time or another. The battles and cost of water will elevate as the commodity becomes

...continued on page 3

## Calendar at a Glance

Angler Education Training, June 16, Salado Civic Center

CTMN General Meeting, June 14

**Mark your Calendars** -Deadline for photos, stories, etc. for the August issue of The Tracker, July 26

*Chapter Motto*

**Earth Day, Every Day**



# Musings From the President

Oh, hum, those hot, dry, windy days of summer are upon us, and did I say windy? Goodness, I think we are going to blow away with some of those wind gusts, which also do a number on our gardens, wicking the moisture out of the ground.

I made the acquaintance with another geologist, unbeknownst to me at the time, but I should have known, with his many unique rocks and fossils. On my second visit with him I learned his degree was in geology, which explained his wonderful collection. I told him I wanted to learn more about geology and that opened the flood gate.

I don't know how many of you look for rocks when hiking, but I love to see what I can find out there. I have come upon some of the most unique specimens, but I am not up on geological terms, but wish I were. I want to be able to say 'this is calcite', 'this is feldspar', etc.

Dan, my new friend, has had more than his share of operations, as he served in the marines, and has been in the local VA numerous times. He has a metal plate in his head, and does not drive a car. With that said, he gets out and about, hiking here and there, and finds these exquisite pieces. Like that lovely piece of calcite, cleavage rhomb, which he found while walking along one of the hiking trails in Temple. The builders had pushed massive amounts of dirt to the side, and there was this rock sticking out. Then he has found petrified wood in Bryan/College Station while on a construction job, lovely beautiful pieces, just like what you would find at the Petrified Forest in Arizona, but right here in Central Texas. Ah, then there are the fossils. One he found was of a nautiloid, related to squid, that could get 4-6 feet in diameter. He also has several types of gryphea. One was a large 'slab' with thousands of these little shells in it. Around Central Texas they are called gryphea limestone.

I could go on and on with this topic, but I encourage you to see what you can find out in the wide, blue yonder. Cultivate that new friendship. Learn new things. One thing for sure, when you find someone who is a kindred spirit, nature can take on a whole new meaning.

Happy observing!

**-Mary Ann Everett**

No, not that kind of rock!!!



## Photo problems

**-Terrie Hahn, Editor**

Dale Hughling has looked into rules regarding pictures of children in online publications and has found that we cannot legally publish pictures of children on the internet without a written release. If you are working with children at a school function, please make sure that you speak with the principal if you are going to take pictures. She/He will have a list of parents who have filled out forms saying they don't want their children to be photographed and can check that list. You can email your pictures to the principal and they can check their files and email you back with permission. If you are in a public forum, you need to get permission from parents. Written is best. When you send pictures that have children in them, please make sure to tell me that you have their permission. It is probably okay to use pictures where you can't see their faces, like the photo Marilyn sent in on page 5. Thanks so much for keeping this in mind.

Photo by Terrie Hahn

## Rainwater Harvesting....continued

more precious and less available.

85% of Texas' fresh water supplies have already been discovered and utilized. Through efficient conservation and re-use of our water reserves, we can save Texas some real money and a lot of water. If each person endeavors to save even just 10 – 15% of their water usage, we would save many billions of dollars. If we don't start to conserve NOW we will be paying per gallon for water what we are paying for gas.

John Sutton from the Texas Water Development Board outlines at least 50 ways to save water beginning in the bathroom to the kitchen and laundry to appliances and plumbing and to outdoors. Let me highlight a few of them. **BATH:** shorter shower; shower instead of a bath; use low-volume flush toilets using 1.6 gallons of water; test for toilet leaks; fix leaky faucets immediately; do not use hot water when cold will do; brush teeth without running water; install aerators to reduce water output.

**In the kitchen:** scrape dishes, don't rinse before putting in the dishwasher; run dishwasher only when full; use a basin to catch water from rinses and reuse on plants; chill water in the refrigerator instead running until cold; let ice cubes melt in a basin and reuse on plants; do not use the garbage disposal, start a small compost pile instead. **For the laundry;** wash only full loads and at lowest water setting; use cold water where possible; don't use the re-rinse cycle.

**For Appliances and plumbing:** purchase water-thrifty products; fix all leaks in faucets and water con-



nections; insulate hot water pipes where possible; to reduce 'run-to hot' time.

Perhaps the area of most conservation misuse is the great outdoors. Lawn watering uses the precious purified potable water prepared for drinking purposes. In warm weather, use here accounts for 85 – 90% of a home's water consumption. Water lawns only as needed following the 1" per week rule. Choose a less thirsty lawn of ,perhaps, Bermuda grass over St. Augustine; water early in the morning like from 4 a.m. but not after 11 a.m.; use sprinklers that apply large drops on a horizontal plane instead of small drops sprayed in the air; adjust sprinkler heads to be low-angle and to avoid wasteful run-off; use drip irrigation in flower and vegetable beds; choose mulch at 3 – 4" deep; choose plants with low water requirements; or are drought tolerant; sweep driveways and walks with a broom instead of using water; wash the car on the lawn to avoid run-off; be sure all leaky hoses are repaired and hoses are tight on the faucet and have washers where necessary.



Continued on next page...

## Rainwater Harvesting....continued

The idea here is that before you buy your rainwater harvesting materials, begin to learn water conservation in the home first.

So, why harvest rainwater? The water is free; it contains no minerals or salts; it's pure and soft; it's harvesting the rain before it even touches the ground; it's capturing and re-using the rain before it goes to the sewer; it's independent of municipal regulations (for now ) and can be used without restriction if it has been stored; it reduces fertilizers and pesticides in the storm water runoff; operation costs are negligible; it's reusable as long as it rains; you may water at the point

of consumption. Rainwater can be used to flush toilets, bathe, wash clothes, water lawns and gardens, and wash the car. You may not drink rainwater unless specific requirements are followed. If properly installed, a rainwater harvesting system will provide for your outdoor and landscaping needs. Even a light rain will contribute to the harvest.

The basic idea is that the roof should be large enough to fill the tank (s) and the tank should be large enough to supply the water needed throughout the dry season. Be aware that some states make it illegal to harvest rainwater or permits may be needed. Depending on where you live, the government may own your rainwater rights !!!!

The harvesting system is composed of 4 major components; Capture; Conveyance; Holding; and Distribution. The capture system is the roof. These dimensions are set at the time of building. The roof can contain dirt, grit, bird poop, insect parts, and small dead animals, a roof washer or first flush is needed to

divert this. Install screens on every gutter opening and tank opening and use small-hole screening.

Rainwater gets to the tank from the roof by conveyance. The most cost-effective way is to have the tank as close to the downspout as possible.

Distributing the water one may use gravity flow to hoses, or a pressure tank with a built in pressure switch and holding tank, and a ½ hp pump.



Tanks should be black, green or brown to keep out sunlight and deter algae growth. All vents and openings should be screened to keep out mosquitoes and small wildlife. Tanks can be propylene, steel, fiberglass, wood, concrete, or ferrocement.

The simplest installation is with tanks of 50-75 gallon capacity. Most of these are gravity fed or dipped with a water can. This size is great for a small garden or a few potted plants.

For a more serious approach, use large tanks of 500 gallons and up. Equipped with a pump, as previously described, this will tend most back yards. A few plumbing parts makes the distribution simple and efficient.

If you're wasting water everywhere else, it's ineffective to save rainwater. Be a steward of the rainwater that hits your roof because if you get no use out of it, it was useless.

Happy harvesting !!!!!

# Bug Picking at Salado Earth Day

-Marilyn Whitworth

Richard McCarthy and I set up and manned the Central Texas Master Naturalists Bug Picking program booth at the Salado Earth Day Festival.



# OOPS!!! We've Done It Again

- Ursula Nanna

The question may be, "Once we let the proverbial cat out of the bag, how do we get it back in again?" As a scientist, I know it's common to exhibit some short-sightedness...SOME...Let me refer you to the Master

Naturalist Curriculum under Entomology, page 57 to read for yourself. It may be risky to say the excitement of the find led to the short-sightedness of the cure....



Consider *Cactoblastis cactorum* (Berg) or the cactus moth or prickly pear moth native to South America and imported to the Caribbean to control prickly pear cactus which had truly become an invasive pest originally imported for animal fodder. From the Caribbean, the cactus moth was introduced to the USA in Caribbean cargo and also arrived here naturally.

This moth has been around since before 1925 being introduced at that time to Australia and then to Hawaii, India, South Africa, other Caribbean islands to control several species of North and South American *Opuntia*. In 2009, the moth was discovered in the Cancun area of Mexico and then along the USA Atlantic and Gulf coasts, soon going into S. Carolina and Louisiana. Texas borders are being carefully monitored.

Currently, and sadly, there are no known chemical controls of *Cactoblastis cactorum* that would not also harm many species of *Lepidoptera*. Classical biological control with natural enemies outside their normal habitat has not yet been determined. These natural enemies outside their normal habitat may cause even more severe challenges....imagine that!!! Like how this whole dilemma began....

The female lays her eggs in the form of a chain with the 75 -140 eggs stacked in the chain like coins. The larva crawl from the chain sticking to the cactus pad ( cladode ) and burrow into it speedily moving from pad to pad as the food is depleted. The waste or frass is pushed out of the pad during feeding forming a noticeable heap on the ground. From here, the developed larva leaves the cactus and spin white cocoons in the leaf litter or in

the bark of nearby trees. Pupation leads to the moth emerging which begins the process again. This generational process can happen 2 – 3 times a year.

So, why the concern over this moth? One reason is that the prickly pear (*Opuntia ficus indica*) is a major

source of food for many peoples. It is the source of fruits called tunas and edible pads called nopales. There is a whole commercial market for this food. Also, prickly pear



serves to feed livestock like cattle, sheep, goats and

Continued on next page...

## OOPS!!!...continued

wildlife like deer, javelina, rodents, and coyotes. It also serves as nectar sources for wildlife and as protective nesting sites.

There are many uses for Opuntia in the medical world

from diabetic treatments to hyperleukemia, high cholesterol, and obesity. A dye or coloring called cochineal, extracted



from indigenous insects on Opuntia, is used for food coloring and a major source of red for Native American folk art. The cosmetic industry employs the dye and it is Mexico's second most valuable export following silver.

In commercial uses, extracts from Opuntia aide in plaster curing, sticking, and setting. Opuntia's strong fibers are woven into fans, baskets, fabrics, and used to make paper. The spines are used for pins, needles, and tooth picks. Who would have thought !!!

There is actually an established network called The Cactus Moth Detection and Monitoring Network (CMDMN). Partnerships have been formed between Federal agencies, states' departments of agriculture, Extensions, and other groups. This partnership formed the CMDMN. Volunteers of Master Gardeners, Naturalists have helped monitor public and privately held lands and report their observations on cactus moth findings. This is the first step in the early detection resulting in a system of graphs and charts.

An article actually called the cactus moth "Friend Turned Foe". Perhaps it was more human error considering the moth was utilized outside any area of natural foe for control. I think the finger of blame is fickle here....OK,JUST ME !!!

Currently, research has mass fed the moths on an artificial diet and irradiated them to result in sterility. The hypothesis is that the irradiated moths would be released in large numbers resulting in fewer and sterile offspring. This is called SIT or Sterile Insect Technique. There are currently many experiments using modified techniques following this logic.

Let me say, I am conflicted over all this but will hold conclusions and opinions for a later time. I wish the entomologists and other scientists speedy favorable results. Much good science has resulted from these very same conditions for many scientific results, so no seed goes unsown.



Photos and information extrapolated from:

[Smithsonian Marine Station](#)

[Cornell Daily Sun](#)

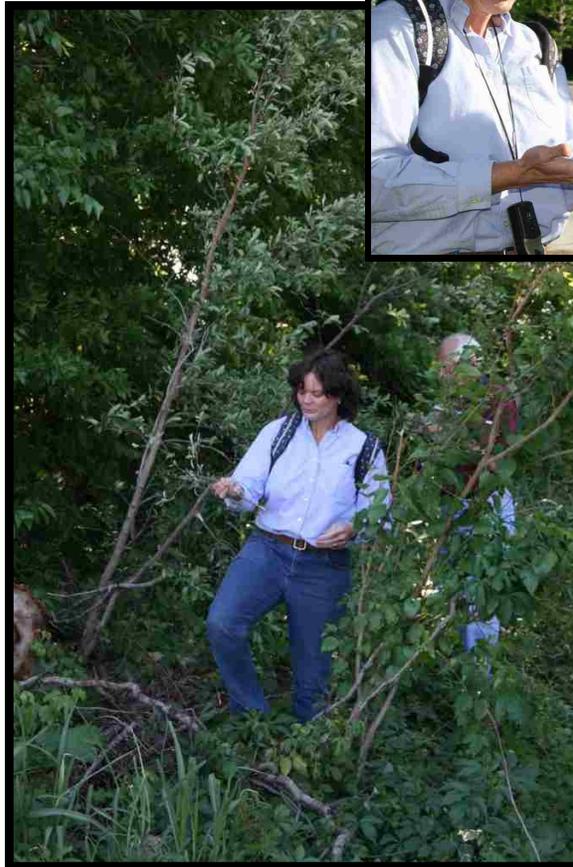
[Geosystems Research Institute](#)

[UF/IFAS Entomology and Nematology Dept.](#)

# CTMN's Practice Identifying Invaders

**-Zoe Rascoe**

A number of those trained by the Texas Forest Service in January as Texas Invaders in identifying and reporting imported invasive plant species met in April for a practice session. Lynn Fleming led the group of Master Naturalists from Central Texas, Heart of Texas and El Comino Real chapters on a walk along Friars Creek in Temple which was replete with invasive species! We identified the species, recorded required information on our data sheets and returned to Blackland Research Center to enter our observations in the statewide database. Lynn has agreed to serve as our chapter's Invasive Species Satellite Coordinator. If you have any questions



about the program, please let her know. Even though nearly half of our members received the Invaders training in January, we will arrange for another class to be held if there is enough interest from others in our chapter.



# MN's Learn More About Invasives From Mike Murphrey

-Zoe Rascoe

About 22 people attended the class taught by Mike Murphrey of the Texas Forest Service. He focused on the nuances of distinguishing the difference between native species and imported invasive species which look very similar. Field work held at Nolan Creek in Belton. Lynn Fleming helped organize the event and selected the field location due to its high variety of invasive plant species on Bell County's Top Ten list. Several members of the El Comino Real Chapter attended as well as a number of Master Gardeners.



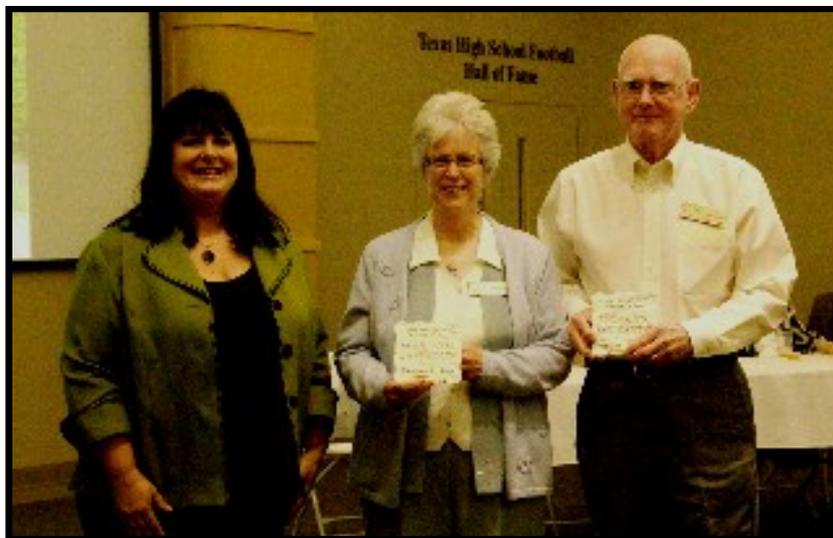
# Awards, Awards, and More Awards for CTMN's!

## Keep Waco Beautiful Awards

**-Nora Schell,  
Executive Director of Waco Wetlands**

Just wanted to spread the word that Richard McCarthy and Marilyn Wentworth from our sister chapter, the Central Texas Master Naturalist Chapter, have won this year's "Partners in Pride" Education Awareness Award from Keep Waco Beautiful.

They volunteered for "Marsh Madness" at the Lake Waco Wetlands and for the school year 2010 – 2011, Richard volunteered for 27 field trips for a total of 130 hours and Marilyn volunteered for 28 field trips for a total of 135 hours, all the while driving from their home in Killeen, Texas to Waco! Needless to say, they have been a HUGE asset to the "Marsh Madness" program. They also attended Saturday in the Swamp trainings on weekends to get ready for the school semesters with the students.



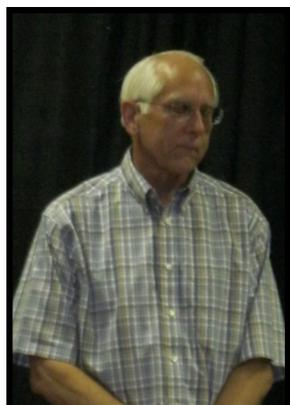
Thanks to the efforts of volunteers like Richard and Marilyn, our Texas Master Naturalist community is able to educate and serve our local community's environmental needs.

*Photo by Annette Jones*

## Bell County AgriLife Awards

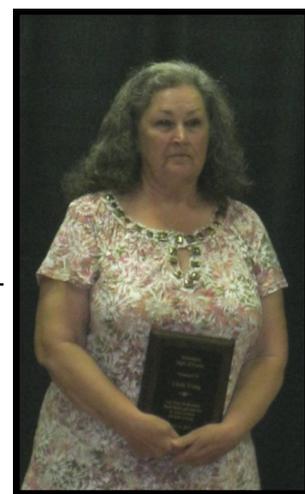
**- Glenda Turck**

Two members of Central Texas' Master Naturalists, Sidney Van Loh and Linda Young, were inducted into the Bell County Volunteer Hall of Fame at the 2011 Volunteer Appreciation Dinner on April 14. The dinner, given by AgriLife Extension of Bell County, was in the upstairs hall in the Bell County Expo Building honoring 4-H, Master Gardeners, Master Naturalists, PVAMU, Youth Fair and Texas Extension Education volunteers. All these volunteer efforts enrich both the community and the lives of the volunteers. For instance Sidney helped plan and organize the 2010 MN class and is a charter member and is continuing that in 2011. He is on our Executive Board and helps approve advance training. In addition, he organized the volunteers at Mother Neff S. P. which was damaged in the floods of 2007



and is a citizen scientist who identifies and reports on native plants. His is a huge give back to the Bell County community.

Linda Young is also a charter member of Central Texas Master Naturalists and now chairs the membership committee among other tasks she has taken on. She is a member of the New Student Training Committee and compiles the quarterly reports and the in depth State Reports. She also maintains the member certification and recognition awards. She is a powerhouse of organization. They both received 7" X 9" engraved awards for their "Dedication, Hard Work and Service to the Citizens of Bell County." Bravo Sidney and Linda!



# More Awards for CTMN's!

At the **February** 8th General Meeting, Flo Oxley of the Lady Bird Wildflower Center gave a very informative presentation on "The Fauna of Central Texas: Wildflowers, Trees, Shrubs, Vines and Grasses." Her talk was so informative and interesting that we're hoping she'll come and speak again.



At the same meeting, many of the MN members received their certification and pins.



Above and clockwise, Zoe Rascoe hits her 250 hour milestone; Flo Oxley gives presentation; Mary Ann presents Dale Hughling, Becky Denton, Darla Menking, Linda Young, Sidney Van Loh, Marilyn Whitworth and Gail Hughling with certifications and pins. Below, Mary Ann Everett gets pinned by Louann Hight.



Photos by  
Zoe Rascoe,  
Flo Oxley's  
photo by  
Terrie Hahn

# More Awards for CTMN's!

Dr. Randy Pinkston spoke about "Birding In Central Texas" for the Advanced Training at the April 12th CTMN General Meeting. Dr. Pinkston has some fascinating stories about birds to go along with his power point and we hope to hear from him again soon.



Clockwise from top, left: Dr. Pinkston address the group; Linda Mahaffey receiving her one year certificate and pin, "the group," receiving their Re-certification are, Mary Ann Everett, Marilyn Whitworth, Becky Denton, Linda Young, Darla Menking; Linda Young has received her Bronze Milestone Award, 250 hr mark.

Photos by Zoe Rascoe.

## For Your Information

### “The Nature Principle”

Richard Louv\*s new book, “The Nature Principle” is out. Now we have the reasons we adults need to get out and play! But as Master Naturalists you already know that!

In his best-selling book Last Child in the Woods, Richard Louv sparked a national debate that spawned an international movement to reconnect kids and nature. He coined the term nature-deficit disorder; influenced national policy; and helped inspire campaigns in over eighty cities, states, and provinces throughout North America. In The Nature Principle, Louv delivers another powerful call to action-this time for adults. **He'll be in Austin on June 6 at Book People for a book signing.**[ <http://www.bookpeople.com/event/richard-louv-nature-principle> ]

## Walnut Corn Dip

-Terrie Hahn

Several people requested a recipe from the snacks served at the April General Meeting. This is a recipe from MG Diane Calderwood.

2 (8 oz.) pkg cream cheese

1 T cumin

1 t pepper

1/2 t salt

1 t cayenne pepper

1/4 C fresh lime juice

1 8 oz can or 1 C frozen corn

3 green onions, chopped

1 C walnuts, chopped

1 4 oz. can chopped green chilies

Whip the cream cheese until fluffy. Beat in seasonings and lime juice until smooth. Stir in corn, walnuts, chilies and onions. Refrigerate at least 8 hours. Serve with Frito Scoops.

## Upcoming Events and Opportunities

### Angler Ed Training By TPWD

Free class for youth leaders, teachers and volunteers who want to introduce fishing and share their love of the outdoors with young Texans.

Angler Education Instructor Course

Hosted by Central Texas Chapter Master Naturalists

Salado Civic Center

601 N. Main

Thursday, June 16th, 2011

From 10:00 a.m. to 4:00 p.m.

This FREE class will equip adults to teach basic fishing skills and prepare young and old alike to be responsible anglers who are respectful of Texas' fish and water resources.

Upon completion of the Angler Education Instructor Class, volunteers receive a special instructor pin, become part of TPWD's Angler Education team and are able to order FREE awards and instructional materials for students.

To sign up for this class, contact Zoe Rascoe at [trascoc@hot.rr.com](mailto:trascoc@hot.rr.com) or 254-913-1013

Register by Monday, June 13th. Class participants need to wear comfortable clothing for outdoor activities. Bring a sack lunch and water. **AT**

**Please send any news of events, articles or photos of what you're doing or what's going on in your yard or area to:**

**Terrie Hahn at [moompie45@hotmail.com](mailto:moompie45@hotmail.com)**

**V** Approved for Volunteer Hours  
**AT** Approved for Advanced Training  
**MA** Must Apply for approval of hours

## *Newsletter Mission Statement*

*"Our mission is to inform and educate Master Naturalist members and the general public about our local environment and resources, and what we, as caretakers, can do to protect them."*

### **Board of Directors**

**President:** Mary Ann Everett

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**Web Master:** Dale Hughling

**Membership:** Linda Young

**Historian:** Becky Denton

**Historian:** Joanne Milican

**Host:** Marilyn Whitworth

**Newsletter:** Gail Hughling

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**Assistant Editor:** Werner Hahn

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**Contributing Writers:** Mary Ann Everett, Zoe Rascoe, Ursula Nanna, Marilyn Whitworth, Nora Schell

**Contributing Photographers:** Zoe Rascoe, Marilyn Whitworth, Ursula Nanna, Annette Jones, Terrie Hahn

Cover banner photo is one of Werner and Terrie Hahn's local foxes just outside the door.

### **Chapter Advisors:**

County Extension Agent, Ag and Natural Resources

Randall Rakowitz,  
County Extension Agent, Natural Resources

Derrick Wolter,  
Wildlife Biologist, Texas Parks and Wildlife

**Please send any news of events, articles or photos of what you're doing or what's going on in your yard or area to:**

**Terrie Hahn at [moompie45@hotmail.com](mailto:moompie45@hotmail.com)**