TEXAS NATURE TRACKERS

Wildlife Diversity Program
4200 Smith School Road, Austin, Texas 78744
www.tpwd.texas.gov/tracker

The Texas Nature Tracker

TEXAS PARKS & WILDLIFE

2013

Catching Up!

MARSHA E. MAY,
TNT COORDINATOR, TPWD

There are so many smart phone apps out there that it can be mind boggling. We hope to make it a little easier for you by introducing an app that we at TPWD would like to see our volunteers use for various wildlife sightings. With the iNaturalist app you can easily record many of your Texas Nature Tracker sightings. Even without a smart phone, you can take advantage of easily recording your sightings from your home computer by going to www.inaturalist.org.

Several biologists with the Texas Parks and Wildlife, Wildlife Diversity Program were involved in developing the following projects in iNaturalist and are administrators/curators of these projects.

- Hummingbirds of Texas
  www.inaturalist.org/projects/hummingbirds-of-texas
- Herps of Texas (for reptiles and amphibians)
  www.inaturalist.org/projects/herps-of-texas
- Mammals of Texas
  www.inaturalist.org/projects/mammals-of-texas

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Texas Whooper Watch Takes Off!

© SUE KERSEY

LEE ANN LINAM, TPWD

The comeback story of the Whooping Crane has been described as one of the greatest endangered species success stories in North America. Texas and Texans have played a key role in that recovery progress, providing wintering habitat for the last remaining wild, self-sustaining flock. However, increasing Whooping Crane populations offer increasing challenges. As the population of Whooping Cranes that winters in Texas has grown, Whooping Cranes have modified their wintering habits to include many areas disjunct from Aransas National Wildlife Refuge and nearby properties, where they are traditionally associated with saltmarsh habitats. As a result, Whooping Cranes now winter outside traditional protected areas, often utilizing private lands and non-traditional habitat types and creating scenarios where additional information is needed in order to best approach management of the species.

Texas Whooper Watch (TXWW) was initiated by Texas Parks and Wildlife Department (TPWD) in 2012 to address some of these emerging issues. Texas Whooper Watch seeks the help of citizen scientists in identifying Whooping Crane migration stopover sites and non-traditional wintering areas, in assessing whether any hazards exist to whoopers at these sites, and in learning more about behavior and habitat use at these sites. The goals of the program are:

- To increase public awareness of the need to report Whooping Crane sightings.
- To more systematically share sighting information among resource managers.
- To increase consistency and value of observational data collected.
- To track sightings for early detection of unusual movements or habitat use, especially for wintering in non-traditional areas.

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TEXAS PARKS AND WILDLIFE DEPARTMENT MISSION STATEMENT
"To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations."

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FOR MORE INFORMATION

All inquiries: Texas Parks and Wildlife Department, 4200 Smith School Rd., Austin, TX 78744, telephone (800) 792-1112 toll free, or (512) 389-4800 or visit our website for detailed information about TPWD programs:

www.tpwd.texas.gov

TEXAS PARKS & WILDLIFE

Life's better outside.®

Catching Up, continued

- Texas Box Turtle Survey
  www.inaturalist.org/projects/texas-box-turtle-survey
- Texas Freshwater Mussels
  www.inaturalist.org/projects/texas-freshwater-mussels
- Texas Whooper Watch
  www.inaturalist.org/projects/texas-whooper-watch

At this time, these projects are designed for individual sightings and not for Texas Nature Tracker projects where you are regularly collecting data at a specific location.

Texas Nature Tracker is sadly saying goodbye to long-time TPWD biologist, Lee Ann Linam. She is taking that next big step in her life and entering into retirement. I have worked side-by-side with Lee Ann for the past 13 years teaching Texas Nature Tracker workshops throughout the state. We have had some amazing experiences and I will really miss her, as I am sure many Texas Nature Tracker volunteers will too. However, Lee Ann assures us that she will stay connected through being a Texas Nature Trackers volunteer. Maybe our parting words will be the ones she has offered many of you many times, "Don't forget to send in your data..."

Texas Whooper Watch

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- To gather behavioral and habitat use data in order to gain insights on non-traditional wintering areas.

TXWW took a variety of steps to further these goals. In the fall of 2012 TXWW developed a brochure and website (www.tpwd.texas.gov/whoopingcranes/) to solicit sightings, provide basic information about the program, and to educate the public about Whooping Crane identification. Fill-able and emailable observation forms were provided on the website and to observers who contacted TPWD. An identifiable program email address (whoopingcranes@tpwd.texas.gov) and phone number (512-389-TXWW) were set up, and the program was announced in a press release in the fall of 2012, timed to coincide with the traditional arrival time of Whooping Cranes in Texas. TXWW also set up a communication plan to share sightings among TPWD field staff, the U.S. Fish and Wildlife Service, the Whooping Crane Conservation Association, the International Crane Foundation, and the Gulf Coast Bird Observatory.

In addition, TXWW staff offered several workshops to train volunteers. The two-hour workshops provided information on the recovery of the Whooping Crane, Whooping Crane identification, appropriate behavior around Whooping Cranes, categories of crane behavior, and focal scan sampling techniques, with the goal of engaging these trained volunteers in gathering more detailed information on Whooping Crane behavior at non-traditional wintering sites. TXWW also set up a private Facebook page that allowed trained observers to share information about locations of Whooping Cranes with each other and post questions. Over 135 volunteers were trained at a total of eight workshops during the fall and winter.

Texas Whooper Watch proved very valuable in monitoring the status of Whooping Cranes wintering in expansion areas. Over 150 observations of Whooping Cranes were collected in Aransas, Matagorda, Lavaca, Wharton, and Williamson counties, the majority by TXWW volunteers. TXWW volunteers even provided monitoring data on Whooping Cranes this summer when young whoopers from an experimental population in Louisiana arrived in the DFW area and remained for several months!

Several of our volunteers went beyond basic observations and provided quantitative data about Whooping Crane behavior. These movement, behavior, and habitat observations will provide a strong foundation for understanding just how well whoopers will do in these new habitats.

Volunteer observations this winter were also used to improve U.S. Fish and Wildlife Service wintering population estimates for whoopers and guide management activities. When whoopers were reported from an area, posters and brochures were distributed to inform hunters and boaters about the presence of Whooping Cranes and to discourage disturbance. Media interviews were provided to encourage responsible viewing by wildlife-watchers. Observers used location data to ensure that management activities, such as an aerial feral hog control program at Granger Lake, did not cause disturbance or harm to Whooping Cranes. Finally, TXWW partnered with the International Crane Foundation (ICF) to congratulate landowners on their land stewardship through a letter of appreciation and a complimentary membership to ICF.

The expansion of Whooping Crane wintering areas truly makes Whooping Cranes belong to all of Texas. TPWD staff are working to develop an expanded education and outreach campaign designed to inform hunters, guides, and other wildlife users about the presence of Whooping Cranes, including identification and responsible behavior around whoopers. It is hoped that such a campaign, to include signage, brochures, videos, and more intentional communication, will help to prevent accidental shootings or other forms of take in the future. Whooping Cranes are a Texas treasure – now more than ever!

If you are interested in hosting a Texas Whooper Watch volunteer training in 2013-14, please contact whoopingcranes@tpwd.texas.gov!

What I Did on My Summer Vacation

JESSICA WOMACK, BOIS D'ARC MASTER NATURALIST

> *It is my job to teach them, but my passion to teach them about wildlife.*

As summer vacation comes to an end and the first day of school is near, I will go back to work as a second-grade teacher. Many educators will have their new students tell or write about how they spent their summer vacation. I just hope the new faces that fill my classroom will have had some exciting encounters with wildlife, like I have.

Most of my summer days have been spent in search of something and there hasn't been a day that I've been disappointed. All of this investigating has been because, during these summer months away from public school, I become a citizen scientist! The teaching I do during this time of year is as a Bois d'Arc Master Naturalist and Project WILD facilitator. The Texas Master Naturalist program has given me the opportunity to meet other nature-loving people, learn from guest speakers at our monthly meetings and share with others what I discover during my Texas Nature Tracker observations.

I awake most mornings to photograph bumblebees and other native bees for the Texas Bumblebee Watch and Texas Native Bee Co-op. It is fascinating to me that, with enough time spent in the field, someone can recognize individual bumblebees. They visit the same areas and flowers from day to day and sometimes have unique color patterns on their fuzzy little bodies. It feels good to spend time doing something that might help these little insects that do us such a great service.

This will be the third year that I've counted and reported hummingbirds for the Texas Hummingbird Round-up. I watch the sparkling red feathers of the male hummingbirds buzz past me, listen to their chattering protests as they fight for territory and wonder how something so adorable can be so aggressive. It almost feels wrong to submit time spent being entertained as volunteer hours to my Master Naturalist chapter.

Marsha May and Lee Ann Linam recently visited Fannin County to train our group for the Texas Amphibian Watch and Texas Mussel Watch. Now, as the hummingbirds nestle down for the night, my attention turns to the grunts, chuckles, trills and clicks of the frogs and toads at my pond. I hope to become as familiar with their ways as I am with those of the Ruby-throated Hummingbird and American Bumblebee. So, as I introduce myself to new students in August, they will hear about how I spent my summer volunteering for Texas Parks and Wildlife. It is very important to me that these children will learn to respect and love nature as much as my last group did. It is my job to teach them, but my passion to teach them about wildlife.

© ROWDY WHITE

Dust and Mussels

ROWDY WHITE, BIG COUNTRY MASTER NATURALIST

Mussels are not cute; mussels are not fuzzy. In terms of public awareness and outreach, mussels are not sleek or sexy. Phylum Mollusca goes largely unnoticed by most Texans, especially residents of drought-stricken west-central Texas. Yet, for all that, mussels are a vital indicator species which can offer insight to the overall health of an ecosystem. As filter feeders, mussels do a great deal to promote water clarity and sequester harmful micro-organisms and chemicals which might otherwise impact water quality. Unfortunately, mussels are in decline in Texas; 38 of the 53 mussels species found in Texas are imperiled or are already extinct. This is alarming in that a diverse ecosystem tends to be a stable ecosystem. As diversity is reduced other adverse factors (including recurring droughts) are able to cause lasting damage. Like several other animals, such as the rattlesnake, which the general public either does not understand or even consider, mussels deserve an advocate. It is for these reasons of ecology and lack of public awareness I devote a portion of my service hours as a member of the Big Country Master Naturalists to monitoring mussels with Texas Parks and Wildlife's Nature Tracker Program.

There are several reasons for the decline of mussels in Texas, including pollution and runoff caused by poor land management, but perhaps one of greatest threats for mussels in our corner of the Rolling Plains is there is simply just not enough water. Of the bodies of water I have encountered, some have remained fairly stable, while others are completely dry. Lake Fort Phantom is down only 2% from this time last year at 45%, while Lake Trammel in Nolan County is completely dry. In fact, I recently observed someone using a metal detector looking for fishing weights in what was once the deepest portion of the lake! Other lakes in this area have suffered similar drastic decreases. This time last year Lake Abilene was at 26%, today it is at 8.8%; during the same time, Hubbard Creek Lake has fallen from 39% to 23%. Portions of the Brazos River upstream of Lake Possum Kingdom have dropped so low biologists have for the last two summers removed two species of minnows in an attempt to keep them from facing further threats of extinction. Mussels face these same threats, both of not having enough water to survive and from being trapped in small pools separated from the host fish needed for reproduction. Conducting a mussel watch is often a walk on the beach, but lately I have found it to be a hike through brush that has grown up where the beach used to be. Despite the dust and the brush I have found the Texas Mussel Watch program to be both fun and incredibly rewarding.

Chasing Hummingbirds Across Texas

MARK KLYM, TPWD

Hummingbirds are a beautiful and charming bird whose antics most people find fascinating and entertaining. Whether watching a Ruby-throated Hummingbird in a backyard in Houston, or watching a Blue-throated Hummingbird in an isolated canyon somewhere in Big Bend National Park, their brilliant colors and fascinating aerobics captivate the mind with thoughts of the freedom of flight. The image of a hummingbird actively working a stand of Turk's Cap, while avoiding the spider web conveniently strung between the plants is a testimony to the struggle for survival in the daily world.

Yet there is so much we do not know about these tiny wonders. Through projects like the Texas Hummingbird Roundup, a program within the Nature Trackers umbrella, we can learn more about their daily needs, what they are using within the environments we are providing for them, and how we can better assist them in that daily struggle for survival. This can be done with little more effort than it takes to watch their whirling wings launch them on a seemingly effortless flight across your backyard!

Over the nearly 19 years that we have been collecting data, hundreds of Texans have shared their amazement with these tiny gems. They have collected and shared data from Texarkana to El Paso and from Amarillo to Brownsville, yet large areas of the Lone Star State continue to evade our probing eyes. Is your area one? Whether we have no reports, or 20 participants in your community, your data is needed. Please join us in exploring the lives of these amazing, fascinating and beautifully charming tiny aerobatic marvels. For more information on this program, please go to: www.tpwd.texas.gov/hummingbirds/.

Texas State Technical College Mussel Watch

JENI SULLIVAN, TSTC STUDENT – BRECKENRIDGE, TEXAS

It was that time of year again when TSTC's Mr. McKay assigned the duties for the many Texas Watches for Texas Parks and Wildlife. After much debating, we teamed up and headed out on a four-month adventure.

Choosing the Texas Mussel Watch, one would think "how hard can it be?"... even my mother-in-law thought it was a good idea until she was informed that it was not sitting at the lake watching men with "muscles." Surely we could find a way to incorporate that into biology, but it may take extreme measures to make it valid.

All kidding aside, it was hard to get my brain wrapped around the idea of what mussels had to do with anything. Yes, they are an indicator species, and yes, they serve an importance, but what does that have to do with biology? By the end of the semester, with everything we all had learned, it was a "no brainer"; mussels had almost everything to do with every topic of biology.

Starting out, Scott Book and I decided to check the Brazos River for any possible sightings. Not only did we find an abundance of Asian clams, but we found many "subfossil" and "long-dead" halves. After making three stops along the river, the final stop gave us our pot of gold, or so we acted like it was. This is where we found our first and only live giant floater in the river. Feeling accomplished, we set the mussel back in the water and went home with smiles. The searches to come would be even more giving.

Our second trip would be the most promising and this was to the location of Hubbard Creek Reservoir. Scott and I were very excited to find as many live mussels as we did just a couple of yards from the old boat ramp. I say old because Hubbard Creek is much lower than it was last year, which has caused this boat ramp to become unusable with a "pond" at the end of the ramp. Many trips were made to this location as well as others around the lake where we found giant floaters and maple leaves.

There were several searches made outside of Hubbard Creek, which included Possum Kingdom Lake, The Canyon Lakes of Lubbock, and Lake Daniels. Lake Daniels was the only one out of all of the locations that gave us a sign of mussels. A paper pondshell was found approximately 4 inches from the water, and it had been "long-dead" and brittle.

The day before the presentation to the class, I spent all my time researching the Texas mussels and their importance to our aquatic ecosystem. Not only did I find uses of today, but also found interesting information on their daily lives, reproductive cycles, and habitat conditions, as well as historic uses dating back to 8,000 B.C.

Perhaps the most interesting information that I came across was "mussels cannot get cancer." This is just amazing because with everything they take in and are exposed to on a daily basis, it is a miracle that they do not get cancer.

Mussels are of vital importance to our aquatic ecosystems, for the simple reason that if a body of water does not have healthy live mussels, that body of water does not have a healthy aquatic ecosystem. The loss of any of these species will definitely have consequences on how the aquatic ecosystem functions.

CAMN Amphibian Watch Monitoring

SANDIE MAYFIELD, SUE ANDERSON, AND KATHY MCCORMACK, CAPITAL AREA MASTER NATURALISTS

The Capital Area Master Naturalists (CAMN) had four teams performing TPWD's Texas Amphibian Watch (TAW) Adopt-A-Frog-Pond monitoring in 2012. Nocturnal frog and toad calls were monitored on a monthly basis at Bauerle Ranch Park (formerly Slaughter Creek Greenbelt) and Mary Moore Searight Park in South Austin, Lake Creek Dam in North Austin, and Berry Springs Preserve in North Georgetown. Bauerle Ranch Park is 306 acres of mostly unimproved ranchland with a small pond formed by a ranch road spillway and fed by a tributary creek to Slaughter Creek. Mary Moore Searight Park is a city park that includes a portion of Slaughter Creek. The Lake Creek site is a dammed up natural creek drainage area. Berry Springs Preserve is a passive county park with a spring-fed pond and nearby creek. In 2012, we generally had average water levels for the first half of the year, but then drought conditions began to creep in. Although many area creeks had dried up by the last quarter, some frogs and toads were still being seen and heard.

In 2012, ten CAMNers, four supporters, and five guests of Bauerle Ranch Park logged a total of 90 hours across 12 months monitoring six amphibian species at Bauerle Pond: Bullfrog, Northern Cricket Frog, Gulf Coast Toad, Great Plains Narrowmouth Toad, Green Treefrog, and Rio Grande Leopard Frog. Three nocturnal bird species were observed: Yellow-crowned Night Heron, Eastern Screech Owl, and Chuck-Will's-Widow. Additional birds often active around the pond at sunset and a bit thereafter were Black-bellied Whistling Ducks, Mourning Doves, Barn Swallows, Chimney Swifts, and Whip o' Wills. Several snake species were also spotted occasionally in the pond: the Diamondback Water Snake and Blotched Water Snake. This was the fourth year of monitoring at this location, and Jerry Mayfield and Sandie Mayfield were the site coordinators.

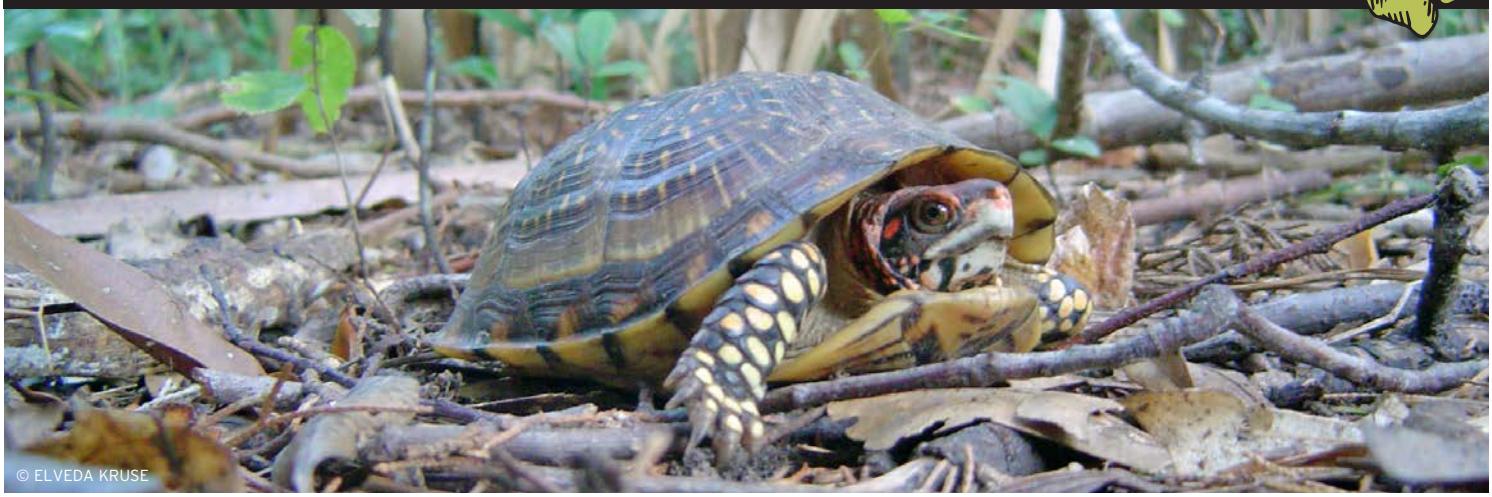
In 2012, four CAMNers and three supporters logged a total of 69 monitoring hours across twelve months and observed four amphibian species at Mary Moore Searight Park: Rio Grande Leopard Frog, Bullfrog, Gulf Coast Toad, and Northern Cricket Frog. Three nocturnal bird species were observed: Yellow-crowned Night Heron, Eastern Screech-Owl, and Chuck-Will's-Widow. One snake species was also spotted occasionally in/around the pond: Blotched Water Snake. This was our third year of monitoring at this location with Jerry Mayfield and Sandie Mayfield as site coordinators.

In 2012, 11 CAMNers and four regular visitors logged over 658 round-trip miles and almost 55 round-trip hours to participate in a total of 12 monitoring hours (Volunteer Time = 75 hours) and observed four amphibian species at Lake Creek Dam: Gulf Coast Toad, Green Treefrog, Great Plains Narrowmouth Toad, and Northern Cricket Frog. One nocturnal bird species was also observed during two of the 12 months: Eastern Screech-Owl. This was our second year of monitoring at this location, and Sue Anderson is the site coordinator.

In 2012, 12 CAMNers, eight Goodwater Master Naturalists, and seven visitors logged over 2,760 round-trip miles and over 73 round-trip hours for a total of 12.25 monitoring hours (Volunteer Time = 87.75 hours) and observed six amphibian species at Berry Springs Preserve: Rio Grande Leopard Frog, Gulf Coast Toad, Bullfrog, Green Treefrog, Great Plains Narrowmouth Toad (first time heard calling at this site!), and Northern Cricket Frog. Two nocturnal bird species were also observed during seven of the 12 months: Barred Owl and Common Nighthawk. This was our fourth year of monitoring at this location, and Kathy McCormack is the site coordinator.

Team support for this effort has been outstanding — in addition to the site coordinators, participants included Alice Stolfa, Alicia Nelson, Andy Swain, Arwen Lietz, Bill Dodd, Bob Kamper, Bonnie & Leroy Sladek, C.R. Smith, Carolyn Doolittle, Cheryl Heinsohn, Chris Mayfield, Christine McCulloch, David Baylor, Gloria Blagg, Heike Laudien, Jackie Davis, Jacob Brown, Jason Cox, Judy Johnson, Julia Osgood, Kate Stinchcomb, Larry Swift, Maggie Moody, Mary Ann Melton, Mary Kay & Chuck Sexton, Meredith & Nolan O'Reilly, Mikael Behrens, Pam & Mike Goolsby, Pat & Harvey Shirk, Patty Collier, Robert Kamper, Steph Johnson, and Winnie Bowen. Since we monitor for the hour or so after sunset, a group provides safety in numbers in these public places. In addition, a team assures that there will be monitoring coverage of the site every month (i.e., not everyone has to make it every month). Plus, more eyes and ears mean that we observe more things — not just the amphibians and birds, but lots of other critters and plants, as well.

In 2013, we plan to continue TAW monitoring at these four sites. Watch the CAMN Weekly Reader for dates and times, or contact one of the site coordinators if you'd like to join the crepuscular crowd this year!



Results of a Hobbyist's Box Turtle Survey at Edith L. Moore Nature Sanctuary

ELVEDA KRUSE

In a study consisting of approximately three hours per week throughout the year of 2012, box turtle sightings were observed and recorded at the 17.5-acre wooded Edith L. Moore Nature Sanctuary in West Houston. Only box turtles in plain sight were studied. No excavation or destruction of habitat was conducted. The first 2012 box turtle sighting was reported March 2, 2012. For the purpose of this survey it was recorded that overwintering lasted from the last sighting of 2011, December 4, 2011, until March 2, 2012. The last sighting of 2012 was recorded as December 24, 2012.

The aim of this survey was to determine the types and numbers of box turtles which inhabited the Edith L. Moore Nature Sanctuary (ELMNS) and if box turtles sighted in 2011 would be found present again in 2012. In this report I have listed the numbers of sightings and the numbers of individual box turtles discovered throughout the year.

Table 1. Number of Sightings in 2012	
Total number of all sightings	180
Number of different, individual box turtles sighted 40 males (58%), 26 females (38%), 3 undetermined	68
Number of box turtles recognized from 2011	9

Table 2. Sightings per Month					
January	0	May	17	September	32
February	0	June	14	October	26
March	12	July	30	November	5
April	14	August	21	December	9

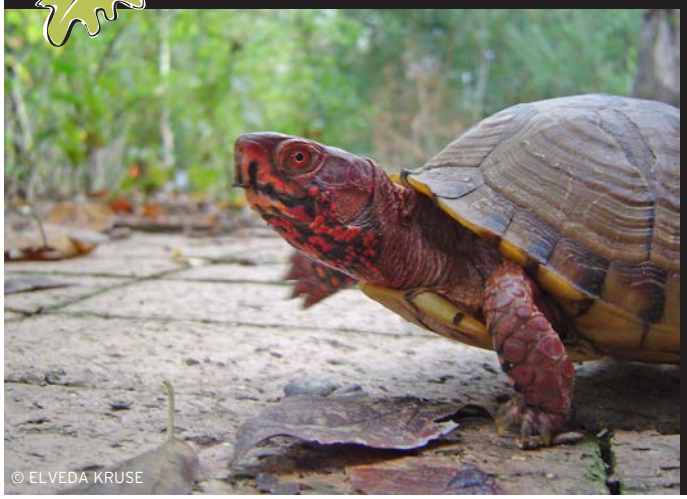
Physical and environmental characteristics were also recorded and reported to the Texas Parks and Wildlife Department in participation with their monitoring project.

Table 3. Physical Observations		
Average plastron length (underside of shell)	4.84 inches	
Number of sighted Males	95	53%
Number of sighted Females	82	46%
Sighted undetermined gender	3	
Mating sightings	7	

Mating activities were witnessed in the months of March, July, September, October, and December.

Table 4. Environmental Factors		
Average temperature at sightings	73.5 degrees F.	
Number of sightings after rainfall	58	32%
Number of sightings in the morning	169	94%
Number of sightings in the afternoon	11	6%

Table 5. Types of Box Turtles	
Eastern Box Turtles sighted (*terrapene carolina*)	178
Ornate Box Turtles sighted (*terrapene ornata*)	2



Listed below are the top 10 most active Box Turtles sighted at the Edith L. Moore Nature Sanctuary in 2012. While observing these turtles throughout the year I couldn't help but become little attached and excited to find specific turtles week after week. You'll see that some were sighted so frequently, that I nicknamed them by their appearance or observed activities.

Table 6. Top 10 Most Active in 2012

tracking number	# of sightings	nickname
073011a	20	Soaker
052812a	11	Waddles
031112d	9	n/a
080711a	8	Bicycle
031712b	8	Yellowjacket
070211a	7	Luke Berry
040712e	7	Marblehead
061612c	6	Highback FM
081812b	6	n/a
071412d	5	n/a

Throughout this year of study I found that not everything I expected to find was proven true. Because of books and reports that I have read, I expected to find more sightings after rainfalls. This didn't prove to be true under this survey. It was certainly easier to spot box turtles after or during a rain; their carapaces (top of shells) were much brighter and less camouflaged. They were also very active after a rain, but no more sightings were observed after a rain than without rainfall. Per this study, it seemed the best time to spot a box turtle at ELMNS was in the morning before the temperature rose above 80 degrees F. Another observation I was surprised to learn was that there was not necessarily a "mating season." Mating was observed year-round, and as described in books I have read, mating activities were observed to last over three hours if the box turtles were left undisturbed.

In the winter when the sanctuary floor was littered with fallen leaves, I found what appeared to be a 10" circular clearing in the leaves where two box turtles were mating. It was not evident if this was caused by the female moving in a circular motion whereby dragging the male and clearing the leaves, or if some other force had created the clearing. Either way, it seemed to benefit the box turtles and was very interesting to see.

I never witnessed a female laying eggs, a nesting site, nor any newborn box turtles. I did, however, find a fairly young juvenile Eastern box turtle this year. His plastron (bottom of shell) was 3 inches in length and his eye color was not yet determined. His eyes were so black you couldn't see his pupils. Although young box turtles proved to be extremely hard to find, I was truly surprised at how many different individual box turtles were observed. I was just as amazed with each individual box turtle's distinctive physical characteristics. Unlike ornate box turtles, gopher turtles, and the red eared sliders which all look very similar to their own species, the Eastern Box turtles were observed to be physically unique from one another. Their carapaces (top of shells) had an array of different markings and were many different colors; the skin on their necks were different in color (some very plain and olive, some spotted with colored polka dots, and some almost rainbow like); many of their beaks, faces, and legs displayed intense shades of red, orange, yellow, black and white. These individual characteristics were not only beautiful, but were also helpful in survey identification.

Another physical characteristic I noticed was that quite a few turtles were observed to have small holes about an eighth of an inch in diameter on their carapaces (top of shell). I wondered if these were just scars from life in the forest, if they were birth defects, or if these box turtles had been bitten or clawed by raccoons or dogs sometime in their lives. Other small white scars were also observed on many box turtle carapaces, but these seemed to heal and go away as new shell must have grown back.

Even though burrows were not observed nor part of the survey, I did witness and help a larger box turtle who appeared to be stuck in the hole of a rotted tree stump desperately flailing his front legs. It was a very unusual sight and quite confusing at first until I realized what the "tentacle" like objects were that seemed to be rising out of the ground. The old tree stump may have been where he had spent his evening. The only locations I observed box turtles hiding, taking cover, or resting were under piles of leaves, under mounds of fallen tree branches, or nestled next to damp fallen tree trunks. After plotting maps and studying the data, it was determined that each box turtle had spent their time in a very specific area of the sanctuary during 2012. Their "home base" seemed to be an average of about 50-100 square yards. A few box turtles were found outside of this "home base," and my thought was that a friendly human observer may have carried them to another part of the sanctuary or the box turtle just decided to take a long hike that day. One box turtle was found at a length of about 200 yards from her normal "home base." I was very surprised to find her on the opposite side of the sanctuary especially since she was the box turtle that crawls with a very distinctive, waddly gait which presumably is a result of an old injury also evident by a missing piece of marginal shield (border of top shell). What a trooper she is.

Throughout the year I was also quite fortunate to catch various box turtles eating. This was observed in the spring and summer months when the foliage was thick and lush. Many box turtles were seen eating orange trumpet vine flowers, a few were witnessed eating small wild cherry tomatoes, and others eating melonettes off vines (which is how Luke Berry got his nickname). Only one box turtle was observed eating protein in the form of a grub worm. There were a few box turtles that would eat from my hand and others that simply refused. I was able to feed about eight box turtles trumpet vine flowers, cherry tomatoes, and/or melonettes, and on one occasion pieces of banana that I had brought.

Studying these box turtles during 2012 was extremely enjoyable and at times a completely obsessive hobby. Unfortunately, it seems that my survey has left me with more questions than answers. Questions like:

- "Do the box turtles I've met numerous times recognize my voice?"
- "Do they remember the smell of the coffee I constantly carry with me on my observations?"... maybe their nickname for me is the Coffee Lady, not the Turtle Lady.
- "Why are there so many box turtles living near the cabin at ELMNS?"
- "ARE there more box turtles near the cabin, or are they just more active than others in the sanctuary, or do I just happen to be in the right place at the right time more often near the cabin?"
- "Do the box turtles choose their home base by the amount of food present in the area, or by lack of predators, or by availability of water, or...?"
- "Do they live where they were hatched?"
- "Where are their nests, and are they laying eggs?"
- "Where do these box turtles sleep?"
- "Where are the box turtles that I can't seem to find numerous times? "Have they died?" "Have they moved further down Rummel Creek, and out of the sanctuary?" "Are they still there and active on days that I am not present?"
- "Are there ways to calculate these box turtles' ages?"
- "Why aren't there more ornate box turtles in the sanctuary?"
- "Why don't I ever see empty box turtle shells?" "Are there not many deaths in the sanctuary?"
- "Wouldn't it be amazing to track some of these box turtles' routines using telemetry?" "Do UHF/VHF tracking devices exist that are water proof and small enough to attach to a box turtle without hindering their lifestyle?" "What about GPS trackers?" "Are the costs of such electronic devices unimaginable?"
- And the biggest question of all... "Will I continue the survey next year?" Three hours in the field usually means another three hours recording and reporting data. I know I'll continue to search for and visit my little friends (there are a few I am anxious to find again), but I'm not sure I will continue to log and collect all of the data. Only time will tell. ... I have a couple of months of overwintering to think about it.

Even though, these questions and curiosities still exist, I am extremely satisfied and proud of the observations and data recorded. Still, the most surprising observation to me was how gentle and amiable this wild reptile was. There was never a snapping of jaws as I had witnessed with aquatic turtles while growing up in Texas. I had never encountered land tortoises except for the giants at the Houston Zoo, so this new gentleness I observed in the wild was inviting and helped fuel the attraction to these creatures. Of course, most of the time the box turtles would scurry to hide or wish to be released from my data collecting hands, but their actions were still so very gentle and I guess when frightened they must have felt quite safe taking refuge within their shells ... their little "turtle boxes."

Texas Mussel Watch FY 2012

MARSHA MAY, TPWD

During the fiscal year of 2012, 34 sites within 10 Texas drainage basins in 27 counties (see Figure 1) were examined for freshwater mussel species by 58 Texas Nature Tracker (TNT) Texas Mussel Watch (TMW) volunteers, including **Al Bartel's students at Camp Olympia, students from Mike McKay's Texas State Technical College Environmental Biology Class, students from Anne Semrau's Northeast Texas Community College Environmental Science class**, participants from one TMW workshop by Texas Parks and Wildlife Department (TPWD) biologists, Marsha May and Lee Ann Linam and five TNT Partners: **Big Country, Blackland Prairie, El Camino Real, and Rolling Plains Master Naturalist Chapters, and The Big Thicket National Preserve/The Nature Conservancy** (see the full list on the next page). All TMW volunteers participated in or were directly associated with someone who attended at least one TMW workshop, where they received training on identification and correct methods of handling freshwater mussels.

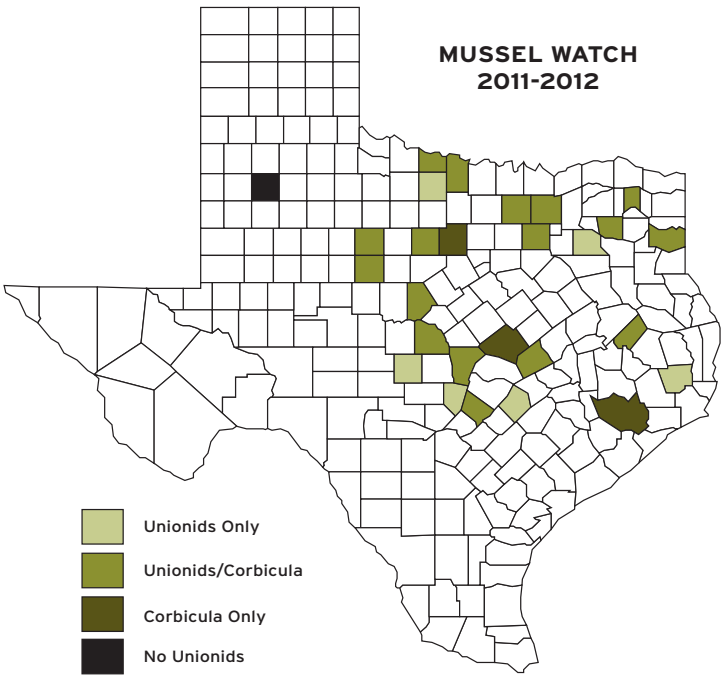


Figure 1. Counties where Texas Mussel Watch volunteers recorded: *Corbicula* spp. (Asian clams) only, no unionid mussels, unionid mussels only, and unionid mussels and *Corbicula* spp. present.

The highlight of this monitoring season was the discovery of a very recently dead Texas fatmucket (*Lampsilis bracteata*) shells by TMW volunteer, Ann Connell, in the Llano River drainage and by TMW volunteer, Leigh Jandle, in the Pedernales River drainage. Other state threatened species found live or very recently dead during this monitoring season were smooth pimpleback (*Quadrula houstonensis*), Texas fawnsfoot (*Truncilla macrodon*), and Texas pigtoe (*Fusconaia askewi*).

Live freshwater mussels were observed, identified and released. Freshwater mussel shells and valves were collected and identified to species. When identification was questionable, samples were mailed to the TPWD biologists for verification. The method for collecting data was by hand. Asian clams (*Corbicula* species) were recorded in 20 out of 27 counties (Figure 1) and there were no zebra mussel (*Dreissena polymorpha*) observations.

Since Texas Mussel Watch began in 1998, 421 volunteers have participated in monitoring mussels in Texas, contributing 2,573.75 volunteer hours.

For more information on Texas Mussel Watch, please go to www.tpwd.texas.gov/mussels/

We at TPWD would like to especially thank the following volunteers for their years of dedication to Texas Mussel Watch

Mike McKay
10 years

Al Bartell
8 years

Penny Miller
8 years

Dian Hoehne
7 years

Bob Boensch
5 years

Neil Ford
5 years

Terry Young
4 years

Katherine Bedrich
3 years

David Buzan
3 years

Barrett Christie
3 years

Karen Marks
3 years

Jay McCurley
3 years

Thank You, Mussel Watch Volunteers!

FY 2012 Texas Mussel Watch Volunteers

Allen Bartell with students from Camp Olympia

Katherine Bedrich with El Camino Real MN Chapter members:

Charles Bedrich

Brian Holley

Pat Holley

Chuck Lindberg

Genie Lindberg

Jeanette Patschke

John Pruett

Merlene Slavik

Kim Summers

Paul Unger

Lisa Benton

Bob Boensch, The Nature Conservancy and Big Thicket National Preserve with 10 volunteers

David Buzan

Jan Carrington, Big Country Master Naturalist Chapter

Barrett Christie

Ann Connell

Bryan Cook

Neil Ford

Bethany Foshee

James Guthrie

Dian Hoehne

Leigh Jandle

Rich Jaynes

Jennifer Lezak

Karen Marks

James Masouka

Charlie Mata

Jay McCurley

Jane McGough

Big Country Master Naturalist Texas Mussel Watch Workshop

Mike McKay and TSTC Breckenridge Students:

Scott Book

Tanner Bryan

Savanna Ensey

Brody Jones

Nicholas Morris

Jeni Sullivan

Terry McKee

Penny Miller, Rolling Plains Master Naturalist Chapter

Ashley Oliver

David Powell, Blackland Prairie Master Naturalist Chapter

Charles Randklev

Lynn Seman

Anne Semrau and the Northeast Texas Community College Environmental Science Class

Stephanie Timko

Mel White

Terry Young

Texas Nature Tracker Partners

Big Country Master Naturalist Chapter

Big Thicket National Preserve/ The Nature Conservancy

Blackland Master Naturalist Chapter

El Camino Real Master Naturalist Chapter

Rolling Plains Master Naturalist Chapter

Murky Waters

MICHAEL J. GRAS, M.ED., EAST TEXAS MASTER NATURALIST

Since my days as a child, I have dreamed of a Huck Finn type of adventure. Little responsibility, lazily floating along the Mississippi, knowing that adventure lay ahead yet giving no thought to its occurrence or consequences, living for the moment as an ideal existence. I guess some parts of us never grow up. I played a bit on that old man river in my youth but barges, powerboats and even to some extent riverboats have taken away part of its charm, the part related to privacy.

Did you know that the bulk of the Sabine River basin was formed by the westward meandering of the Mississippi? It was. Stopped only by the hills of what is now East Texas and then migrating back east we have the resulting formation encompassing the bulk of our basin. That being true, it should come as no surprise that the bulk of our native river fauna has much in common with that of the "Mighty Missip" or at least did. Paddlefish, bowfins, sturgeon, monstrous eels, giant gar and incredible catfish filled both of those rivers in days gone by. Slowly, due to their separation and more quickly due to the various influences of humankind, the inhabitants of those overgrown streams diverged. Those waters still share a murky look, a look that causes the eye to seek more admirable venues.

The Sabine is such a great resource and it is somewhat ignored because of that muddy appearance. My interest in the Sabine shot up like a flare while float fishing. It is a tiny Mississippi, a place for a smaller version of my bigger youthful dream. It turns out that the Sabine is a bit under one-fifth the length of the Mississippi. The privacy is certainly there, as is an abundance of wildlife, fishing, fauna and flora. Numerous unanticipated adventures would lay ahead on that 440 mile trip. … Is it possible?

Spending two weeks exploring the access points to the river in teardrop trailer and canoe, I decided the upper Sabine was probably enough of a challenge for my aging bones. Considering that any trip, even a day trip, can, with proper training, help document what we have, I've embarked on the path led by TPWD and the Texas Master Naturalists to tally and document what I can find. Maybe, just barely maybe, we can slow the destruction of our current world enough to make a difference for a few more generations. Combining my desire to explore with the desire to preserve, I'll be collecting data for at least two of Texas Nature Tracker watches. Greater minds than mine can use that data to chart a course into the future. Will you join them/me? Learning about the natural world is a very satisfying endeavor but you can enjoy even more satisfaction by contributing information that no state agency could ever afford to collect. The information collected by the Texas Nature Trackers produces new knowledge. Being part of that is more than satisfying and after all, how many other opportunities do you have to do that!

For information on Texas Nature Tracker Watch projects go to www.tpwd.texas.gov/tracker

Texas Amphibian Watch 2012 Annual Report

LEE ANN LINAM, TPWD

In 2012 the rains returned, the frogs responded, and so did our Texas Amphibian Watchers!

Texas Amphibian Watch received 2012 data from a variety of sources. In total, 22 Adopt-a-Frog Ponds, eight Amphibian Spotters, five North American Amphibian Monitoring Program (NAAMP) roadside routes, one TPWD Wildlife Management Area monitoring project, one Biological Inventory Team survey, and 12 emails provided data for this summary. In addition, 2012 data was also downloaded from three websites that collect herp data: North American Herp Forum (401 observations), iNaturalist Herps of Texas Project (150 observations), and Project Noah (42 observations).

Those combined efforts produced observations in 75 counties for 34 species. Travis County led the species totals, with 12 species reported (Table 1), followed by Hays County (11), Brazoria County (11), Harris County (10), Guadalupe County (10), and Milam County (9). Gulf Coast Toads (*Incilius nebulifer*) were reported from the most sites (96), followed by Cricket Frogs (*Acris crepitans/ blanchardi*), and Green Treefrogs (*Hyla cinerea*). However, thanks to the diversity of sightings submitted to online websites, there were a dozen species that were reported in 10 or more counties (Table 2).

Harris County provided the most observer effort, with data arriving from eight sources, including four frog ponds and one NAAMP route. Other top participation counties included Hays (four ponds and one NAAMP route); Travis (one pond, three emails, and one website); Brazoria (two ponds and one NAAMP route); and Milam (one BIT survey and two routes).

Special thanks go out to Katherine Bedrich, Sue Taylor, Jan Wise, Georgia Monnerat, Mickey Dufilho, Carol Jones, and Scott Kiester for completing roadside routes in 2012. Data from roadside routes and Adopt-a-Frog Pond sites are especially valuable, since they provide standardized sampling data. Thanks, also, to Chris Harrison, who made North American Herp Forum data available for the first time in 2012 and to Chad August for sharing data from extensive monitoring efforts on the J.D. Murphree Wildlife Management Area in Jefferson County. Finally, here is a list of our Adopt-a-Frog Pond Champions — all volunteers with 10 or more site visits in 2012:

Alvarado, Alyssa
Anderson, Sue
Bouley, Betty
Gfeller, Larry
Marcus, Stacy
McCormack, Kathy
McGough, Jane
Mukherjee, Joan
Wells, Elizabeth
Whited, Marcy
Young, Julie

Table 1.
2012 Texas amphibian observations by county.

COUNTY	SPECIES	PARTICIPANTS
Travis	12	5
Hays	11	6
Brazoria	11	3
Harris	10	8
Guadalupe	10	1
Jefferson	9	2
Milam	9	3

Table 2.
2012 Texas amphibian observations by species.

SPECIES	# SITES	# COUNTIES	SPECIES	# SITES	# COUNTIES
Gulf Coast Toad	96	36	Cliff Chirping Frog	10	9
Cricket Frog	87	42	Couch's Spadefoot Toad	9	9
Green Treefrog	79	32	Squirrel Treefrog	8	7
Great Plains Narrowmouth Toad	32	27	Pig Frog	6	2
Southern Leopard Frog	31	26	East Texas Toad	5	2
Rio Grande Leopard Frog	29	17	Cajun Chorus Frog	5	4
Rio Grande Chirping Frog	27	10	Plains Leopard Frog	5	5
Bullfrog	26	18	Hurter's Spadefoot Toad	5	5
Eastern Narrowmouth Toad	23	7	Red-spotted Toad	4	4
Gray Treefrog	19	10	Green Toad	3	3
Cope's Gray Treefrog	17	13	Plains Spadefoot Toad	3	3
Woodhouse's Toad	13	8	Great Plains Toad	1	1
Texas Toad	13	13	Sheep Frog	1	1
Spotted Chorus Frog	12	12	Crawfish Frog	1	1
Green Frog	11	7	American Toad	1	1
Strecker's Chorus Frog	10	7	Mexican Spadefoot Toad	1	1

Texas Amphibian Watch News

We are working on compiling a long-term summary of our Texas Amphibian Watch data. This data set has such valuable implications for identifying trends in habitats, environmental quality, and climate change. Though the volume and diversity of data are daunting, we are very hopeful that our summary report will show us some valuable insights. We hope to be able to post the summary report on our webpage (www.tpwd.texas.gov/amphibians) later this year.

Second, in regard to that daunting variety of data, we wanted to let you know that we are working toward developing online data entry for Texas Amphibian Watch. One alternative is already available. Starting with your 2013 data, we would like for you to enter Amphibian Spotter incidental sightings on the iNaturalist Herps of Texas website: www.inaturalist.org/projects/herps-of-texas. We are also exploring options for you to be able to enter your Adopt-a-Frog Pond data online as well. For this year, please just mail or email your 2013 frog pond data to us, but, hopefully, some online options will be available for your 2014 data.

Texas Horned Lizard Watch 2012 Annual Report

LEE ANN LINAM, TPWD

Texas Horned Lizard Watch volunteers submitted data from 16 sites and three transects in 2012. In addition, 30 incidental reports were received via email, including 11 photos. Twenty-four horned lizard sightings were also reported on the online site: iNaturalist Herps of Texas (www.inaturalist.org/projects/herps-of-texas).

Data were received from 54 counties in 2012. Texas Horned Lizards were reported from 49 counties, while iNaturalist also reported Greater Short-horned Lizards from two counties (Jeff Davis and Culberson), and Roundtail Horned Lizards from Brewster County. THLW volunteers exerted the most survey effort in Taylor County and Nolan County (three sites each). The greatest number of individual horned lizards were reported from Karnes County (17), Wichita County (10), Andrews County (9), Bailey County (9), and Mitchell County (8).

Mary Jo Bogatto (Cameron County) and Marianne Marugg (Nolan County) reported the greatest number of sample hours (110 and 44, respectively) in 2012. Transects conducted by Marianne, Mary Jo, and Ed and Linda Allen in Dickens County provided valuable data on density of horned lizards and ant beds (Marianne conducted both a site survey and a transect). Alice Liles and students, Austin and Ashlyn Lowe, reported horned lizards on nine different dates. Ercie Hill reported the presence of hatchling horned lizards in Wichita Falls in August. Thanks to our observers for these extra efforts!

Finally, thanks to the Rolling Plains Chapter of Texas Master Naturalists who helped return three displaced horned lizards back to West Texas in April. The lizards were illegally brought home as a souvenir, and the Master Naturalist Chapter, which is listed as a partner on our Texas Horned Lizard Watch scientific permit, helped to translocate them back to their point of origin.

Texas Horned Lizard Watch News

First, we are now providing an annual horned lizard pin to everyone who submits data according to our Texas Horned Lizard Watch protocols. So...you no longer have to wait five years for your first THLW pin!!

Second, staff in our GIS lab are, at this very moment, putting the finishing touches on an online database for Texas Horned Lizard Watch. We have been working for months to enter the data from 16 years of Texas Horned Lizard Watch and are very excited to see your awesome data instantly displayed in graphs and maps. As you wrap up your surveys this year, please hang on to your paper data forms. During September you will receive an email telling you how to enter your data online, so that you, too, can instantly see summaries of your data and look at maps and graphs depicting the results of Texas Horned Lizard Watch. You can even upload photos, which will make your data verifiable and eligible for our Texas Natural Diversity Database. We've been working on this project for years and are very glad to report that it is near completion.

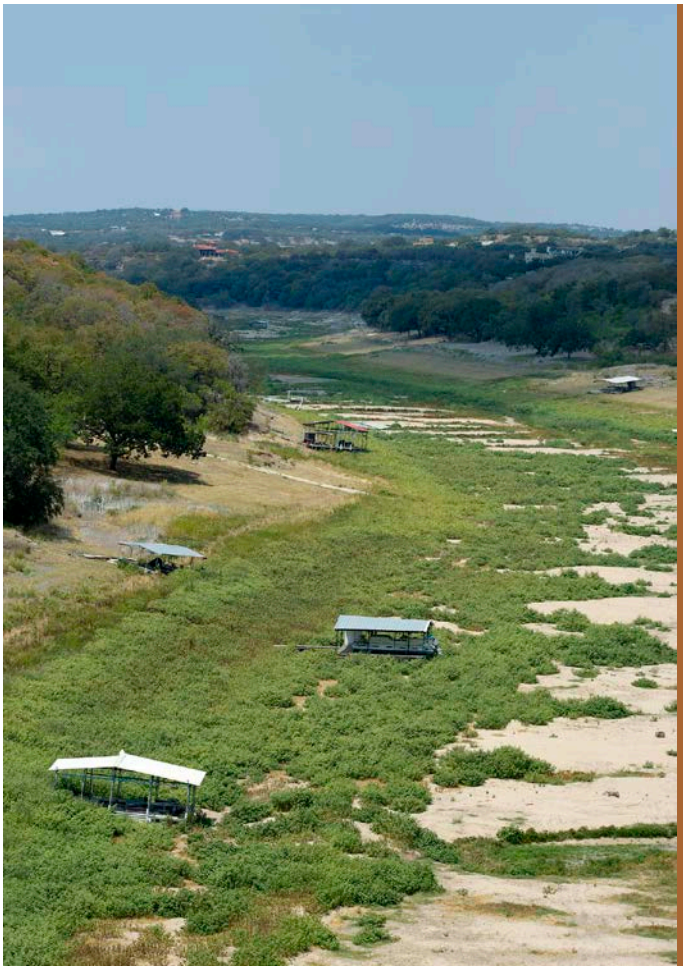
Herpetology Class at Dobie High School

JOHN EARL KNEISLER, TEACHER AT DOBIE HIGH SCHOOL

Here's a little bit about my course. I teach Herpetology to Seniors, here at Dobie High School. It's a new fourth-year Advanced Science Course. The course is technically referred to as Scientific Research and Design which requires the students to do field work, where they must do a project with "student-collected data." They then produce graphs as well as a species count of all the animals seen that month, which then culminates into a final project covering the whole school year, concentrating on amphibians.

Our school was built next to a swamp, so we decided to join the Texas Amphibian Watch "Adopt-a-Pond" project for Texas Parks and Wildlife Department and the Operation FrogWatch USA Project. We are also participating in an Apple Snail (introduced species) Eradication Project for U.S. Fish and Wildlife. With this project, the students set traps and once a month we collect and remove the snails from the swamp. We go out into the swamp once a month to monitor the amphibian population. We also conduct water sampling and testing.

The students monitor all of the other groups of animals that we see. We have been a part of this project for the last three years. We have been lucky enough to see bald eagles and nesting alligators! We discovered our swamp is a very important stop-over spot for migrating birds and amphibians, especially since we have been in a drought for the last four years. Many of my students have lived near this swamp all their lives, but never knew it was there! Very few of them knew of the importance of wetlands, and they really seem to enjoy being out of the classroom and applying what they have learned in class and seeing animals firsthand. Many of which they had only seen on TV shows like Animal Planet or on the Discovery Channel.



Drought Survival Kit

The drought continues to grip Texas and it's taking a toll on everything from wildlife to water bills. TPWD created the Drought Survival Kit, a website designed to tell the public how to "Help Wildlife, Save Your Yard, Cut Your Water Bill."

The website offers practical tips and suggestions on ways of supporting and coping with nature. The Drought Survival Kit can be found at **www.texasthestateofwater.org** and the main page also links to *Texas Parks & Wildlife* magazine water resource special issues from the past 10 years. And, it showcases online video documentaries TPWD has produced in partnership with Texas PBS stations. The documentary *Gulf of Mexico: America's Sea* can be seen in its entirety on the website.

You can also find information on hosting videos screenings in your community using the Texas State of Water Video Screening Toolkit.

Citizen Science

MARY ANN MELTON

Citizen Science is a partnership between individuals and professional scientists. Even before funding for research became scarce, citizen scientists have been helping to collect data for scientists. The Christmas Bird Count is one of the early efforts that paired lay people with an interest in birds to scientists who were analyzing the data collected. With today's Internet connections, large amounts of data can be collected from citizens all over the world.

Ornithology and astronomy have benefited from the large number of people watching, collecting data, and even making new discoveries. Information collected from dedicated bird watchers provides a basis for managing bird populations, improves knowledge of ecology and promotes habitat preservation. Dedicated amateur astronomers using backyard telescopes discovered many comets and asteroids.

Individual citizen scientists benefit because they learn about scientific methods and they learn more about the subject of the project. This participatory research responds to the experiences and needs of the community, fosters collaboration between researchers and the community, and increases community awareness of ecological issues.

One of the most important aspects of citizen science is that it enables extensive data collection not possible otherwise due to limited time and resource availability as well as allowing information to be collected in areas that might be difficult to access such as private lands.

Many well known scientific entities have citizen science projects — the Audubon Society, Cornell University, United States Geological Survey, Smithsonian Migratory Bird Center, and the Texas Parks and Wildlife Department. Some programs require a certain amount of training — either online or in a classroom setting. With some of the birding observations, novice birders can accompany experienced birders and learn while helping to collect important data.

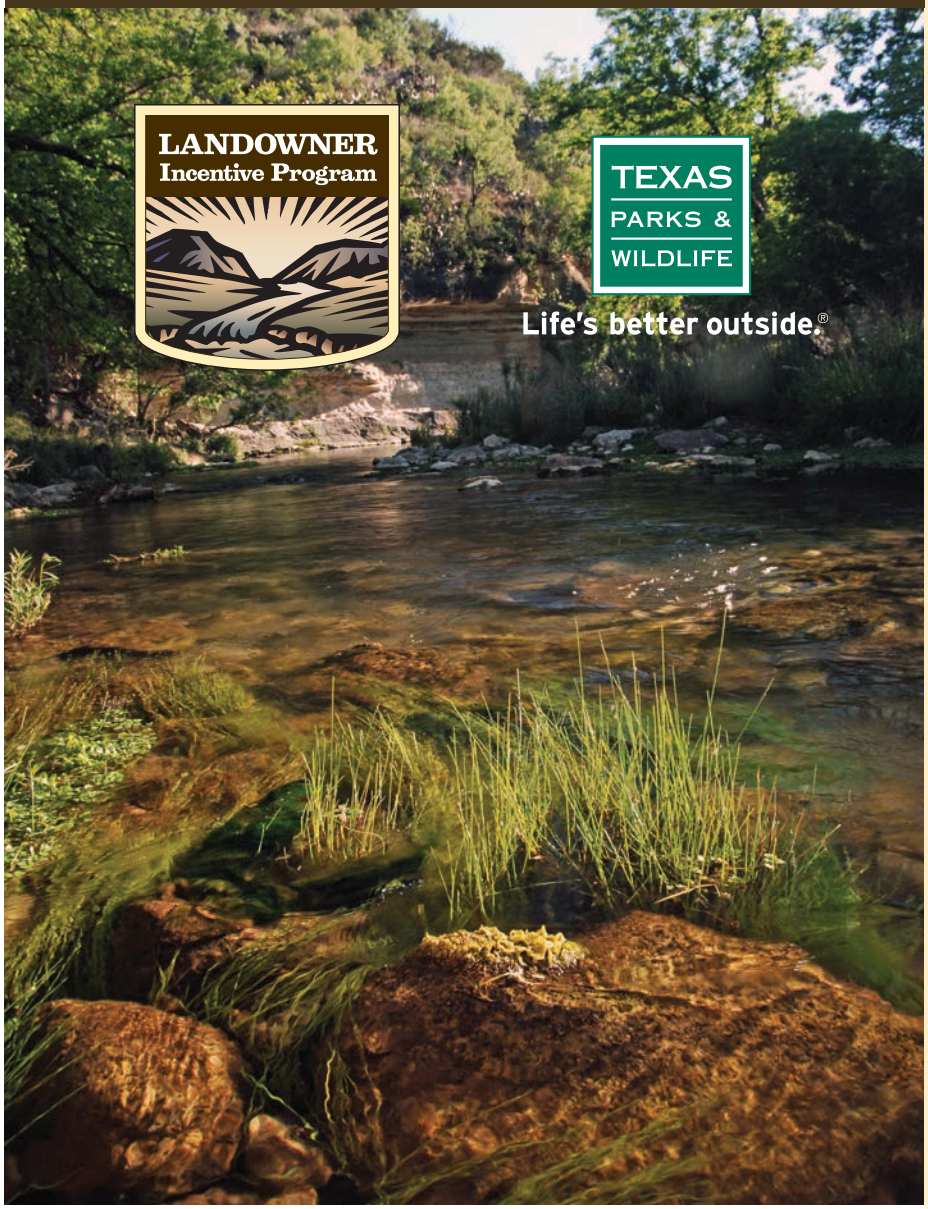
During the nesting season, it can be fun to participate in Project NestWatch (Project NestWatch: http://tinyurl.com/Project-NestWatch). By watching nesting boxes and other bird nests, egg counts, chicks, and fledglings are monitored and counted and results sent to Cornell University to monitor bird population trends. While species such as bluebirds, purple martins, tree swallows, and screech owls may be the primary targets, all visible nesting birds provide useful information. There is online training to minimize the disturbance to the nests during monitoring.

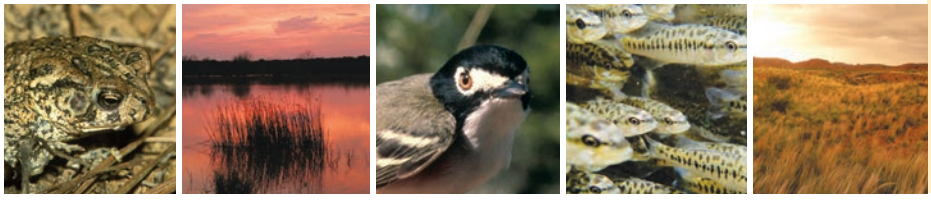
Texas Hummingbird Roundup (http://tinyurl.com/Hummingbird-Survey) monitors when hummingbirds begin to arrive in the spring and depart in the fall as well as which hummingbirds visit winter feeders.

The Community Collaborative Rain, Hail and Snow Network (http://tinyurl.com/Rain-Hail-Snow-Network) is a citizen science project that requires a lot of dedication. Volunteers set up special rain gauges and report the rainfall on their property on a daily basis to the National Weather Service. Training is available for monitoring hail and snow as well.

Other Texas projects include: Texas Nature Tracker projects: Texas Horned Lizard Watch, Texas Black-tailed Prairie Dog Watch, Texas Whooper Watch, Texas Mussel Watch, Tarpon Observation Network, Texas Amphibian Watch, Texas Bumblebee Watch and Texas Box Turtle Survey, and Invaders of Texas Project.

Conservation funding available for landowners





The Texas Landowner Incentive Program (LIP), administered by Texas Parks and Wildlife Department, offers cost-share funding to private landowners who wish to implement conservation practices that benefit wildlife, both upland and aquatic species and their habitats. LIP projects focus on creating, restoring, protecting and enhancing habitats in targeted watersheds throughout Texas. You don't have to have a river or creek on your land to qualify for funding, since all land practices ultimately affect the watershed.

LIP projects positively impact watersheds by restoring and enhancing native vegetation, reducing soil erosion, and enhancing habitats (stream, riparian, and upland). Projects seek to restore the proper functioning of rivers, creeks, and riparian areas. There are no acreage restrictions for LIP and each project is evaluated on how effective it will be in addressing resource problems compared with the cost of treatments. Please contact your local TPWD biologist or Arlene Kalmbach, LIP Coordinator, at arlene.kalmbach@tpwd.texas.gov or (512) 581-8732. For additional information, you may also visit our website at www.tpwd.texas.gov/lip.

TEXAS PARKS & WILDLIFE

The Texas Nature Tracker

Texas Parks and Wildlife Department
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