TEXAS NATURE TRACKERS

Wildlife Diversity Program
4200 Smith School Road, Austin, Texas 78744
www.tpwd.state.tx.us/tracker

The Texas Nature Tracker

TEXAS PARKS & WILDLIFE

2010

Catching Up!

with

Marsha E. May, TNT Coordinator, TPWD

Biological Assessment Teams

Do members of your Texas Master Naturalist Chapter or Nature Group enjoy birding, herping or botanizing? Why not take that enjoyment to another level and help Texas Parks and Wildlife Department by joining a Biological Assessment Team (BAT). Teams will be trained by TPWD biologists and botanists on identification of rare, threatened and endangered plants, animals and natural communities that are tracked by the Texas Natural Diversity Database (TXNDD). Established in 1983, this database is TPWD's comprehensive source of information on these species. The TXNDD is used to help evaluate environmental impacts for development projects, environmental review, natural resource management, scientific research and educational applications. There are gaps in coverage and species data in this database, and your help is greatly needed. For more information, please contact us at (800) 792-1112 ext. 8062, or marsha.may@tpwd.state.tx.us

Facebook

Texas Nature Trackers now has a Facebook page! Through Facebook, we are able to bring you current information on happenings in the world of wildlife population monitoring, listings of beneficial Texas Nature Tracker Workshops, as well as provide an avenue for volunteers to share adventures and photos. Please become a fan. All you have to do is go to: http://bit.ly/7ilYgD

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Texas Mussel Watch Volunteers – WHAT A YEAR!

Marsha E. May,
Texas Nature Tracker Biologist, TPWD

Effective January 17, 2010, The Texas Parks and Wildlife Commission adopted an amendment that adds 15 species of freshwater mussels to the state list of threatened species. The Texas Parks and Wildlife Department determined that these species are likely to become endangered in the future.

Texas Mussel Watch 2008-2009

A record number of volunteers (51) collected mussel data in the 2008-2009 Texas Mussel Watch season (see Table 1) in six Texas drainage basins in 15 counties (see Figure 1).

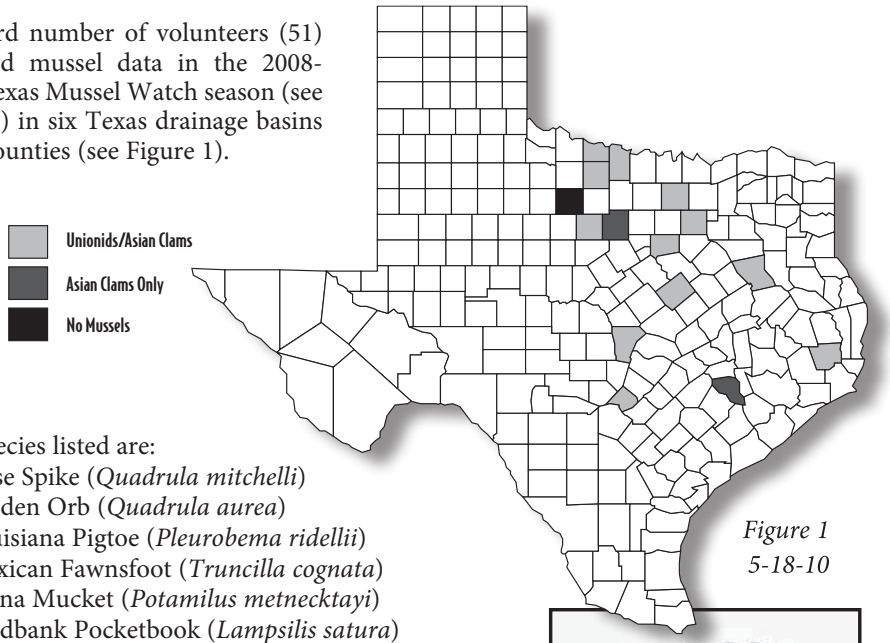
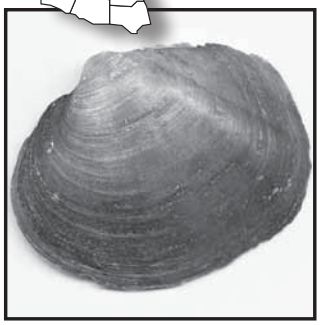


Figure 1
5-18-10

The species listed are:

1. False Spike (*Quadrula mitchelli*)
2. Golden Orb (*Quadrula aurea*)
3. Louisiana Pigtoe (*Pleurobema ridellii*)
4. Mexican Fawnsfoot (*Truncilla cognata*)
5. Salina Mucket (*Potamilus metnecktayi*)
6. Sandbank Pocketbook (*Lampsilis satura*)
7. Smooth Pimpleback (*Quadrula houstonensis*)
8. Southern Hickorynut (*Obovaria jacksoniana*)
9. Texas Fatmucket (*Lampsilis bracteata*)
10. Texas Fawnsfoot (*Truncilla macrodon*)
11. Texas Heelsplitter (*Potamilus amphichaenus*)
12. Texas Hornshell (*Popenaias popeii*)
13. Texas Pigtoe (*Fusconaia askewi*)
14. Texas Pimpleback (*Quadrula petrina*)
15. Triangle Pigtoe (*Fusconaia lananensis*)



Golden Orb

The rule will function by prohibiting the take of these 15 species of freshwater mussels.

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Executive Director
Carter P. Smith

Editor, *Texas Nature Tracker*
Marsha E. May

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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www.tpwd.state.tx.us

TEXAS PARKS & WILDLIFE

Life's better outside.®

Catching up ...

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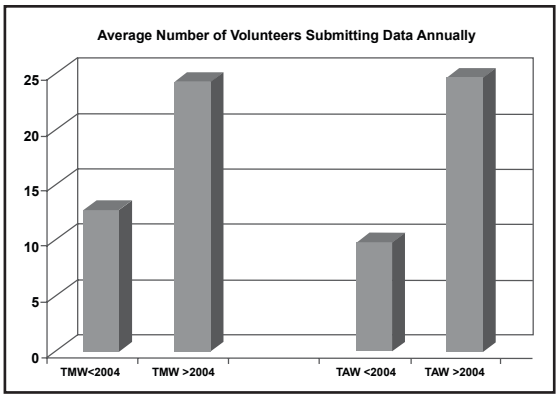
Texas Nature Tracker Volunteers

In the 2009 fiscal year almost 600 Texas Nature Tracker citizen scientists accumulated over 4,000 volunteer hours in 136 Texas counties.

A special THANK YOU to all Texas Nature Tracker volunteers for taking the time out of your busy lives to help TPWD collect important data on Texas' amazing critters.

Texas Nature Tracker Partnership

The Texas Nature Tracker Partnership began in 2004. This partnership involves an effective relationship between groups such as Texas Master Naturalist Chapters, Nature Centers and Zoos with Texas Nature Tracker biologists where we all work together to promote and provide local monitoring events for Texas Mussel Watch (TMW) and Texas Amphibian Watch (TAW). This partnership has now expanded to also include Texas Horned Lizard Watch and Texas Black-tailed Prairie Dog Watch. As you can see from the graph below, there has been a significant increase in data submission with the advent of this partnership.



The Rolling Plains Master Naturalists Chapter was our very first Texas Amphibian and Mussel Watch Partner and now there are 15 Texas Amphibian Watch Partners and 12 Texas Mussel Watch Partners (see list below). Rolling Plains Master Naturalists, El Camino Real Master Naturalists and the Llano Estacado Master Naturalists/Sibley Nature Center are also Black-tailed Prairie Dog Watch and/or Texas Horned Lizard Partners. We would like to expand this program to more sites throughout the state. If your group would like to take part in this exciting program or just get more information, please contact us at: (800) 792-1112 ext. 8062 or marsha.may@tpwd.state.tx.us

Texas Nature Tracker Partners are really making a difference!

TEXAS MUSSEL WATCH PARTNERS

Rolling Plains TMN
Capital Area TMN
Big Country TMN
North Texas TMN
Rio Brazos TMN
Heart of Texas TMN
Brazos Valley TMN
Big Thicket National Preserve
Lost Pines TMN
Trinity Audubon Center
El Comino Real TMN
East Texas TMN

TEXAS AMPHIBIAN WATCH PARTNERS

Rolling Plains TMN
Capital Area TMN
Big Country TMN
Gulf Coast TMN
Rio Grande TMN
North Texas TMN
Rio Brazos TMN
Heart of Texas TMN
Brazos Valley TMN
Cibolo Nature Center
Dallas Zoo
Lost Pines TMN
El Camino Real TMN
Llano Estacado TMN/Sibley Nature Center
East Texas TMN

What a year!

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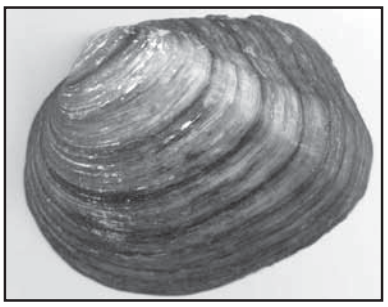
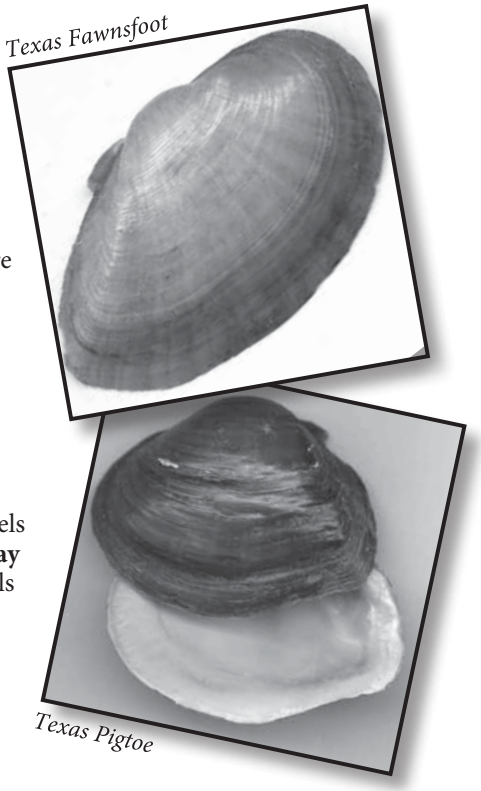


Texas Pimpleback

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 fluminea*) were recorded in 12 out of 15 counties (Figure 1.) and there were no zebra mussel (*Dreissena polymorpha*) observations.

Unfortunately, Zebra mussels have found their way to Texas. On 3 April, 2009, one zebra mussel was reported in Lake Texoma, and since that finding they have spread into Lake Lavon. If you find a suspected zebra mussel, here are the numbers to call:
In Texas: (800) 792-4263
In Oklahoma: (405) 521-3721



Texas Fawnsfoot

Texas Pigtoe

Volunteers observed 240 live unionid mussels, 1,542 unionid shells and 2,420 unionid valves (ranging from very-recently dead to subfossil). A total of 27 unionid species were observed within six drainage basins. Comparing the six drainage basins examined in this study, the Trinity River drainage basin had the greatest number of unionid species recorded with a total of 15.

Five species listed as Priority Species in the *Texas Wildlife Action Plan* (TPWD 2005) were recorded by TMW monitors (three of these species are now listed by the state as threatened):

- **Rock Pocketbook** *(Arcidens confragosus)* – Trinity and Colorado rivers
- **Sandbank Pocketbook** *(Lampsilis satura)* – Neches River
- **Louisiana Pigtoe** *(Pleurobema riddellii)* – Neches River
- **Texas Heelsplitter** *(Potamilus amphichaenus)* – Trinity River
- **Fawnsfoot** *(Truncilla donaciformis)* – Neches River

Since Texas Mussel Watch began in 1998, 162 volunteers have participated in monitoring mussels in Texas, contributing over 1,400 volunteer hours. A special **Thank You** goes out to **Mike McKay** at Texas State Technical College (TSTC), who has involved Texas students in monitoring mussels in Hubbard Creek Lake since 2001.

A special **Thank You** also goes out to individual volunteers who submitted data this year and have participated in TMW for four or more years: **Dian Hoehne, Annette Jones, Penny Miller** and **Timothy Mueck.**

Table 1. Texas Mussel Watch Volunteers who collected and submitted mussel data during 2008-2009

Shawn Benedict
Bob Boensch
Jeanette Boylan
Jennifer Bronson
Lisa Bruce
Cindy Contreras
Robert Corbin
Barrett Christie
(with 25 volunteers)
Tim Dalbey
Jim Flood
Neil Ford
Joan Glass
Jerry Greenwood
Dian Hoehne
Annette Jones
Victor Kulagin
Jane McGough
Mike McKay at TSTC
Terry McKee
Linda McRoney
Penny Miller
Timothy J. Mueck
Ernesto A. Novac
Cody Sims
Shawn Ward
Adam Whisenant
J. J. White
The Nature Conservancy
Trinity River Audubon Center
Texas Master Naturalist Heart of Texas Chapter
Texas Master Naturalist Rolling Plains Chapter
TPWD Water Quality Team
Stephen F. Austin State Park Texas Mussel Watch Workshop
Trinity River Audubon Center Texas Mussel Watch Workshop

For more information on Texas Mussel Watch, please go to our Web site at: www.tpwd.state.tx.us/mussels

THE DROUGHT FINALLY BREAKS TAW Volunteers Back at Work!

Lee Ann Linam, Texas Parks and Wildlife Department

Texas Amphibian Watch volunteers had to be in the right place at the right time in 2009, as dry conditions throughout most of the year limited calling to a few scattered events. Nevertheless, when rain came through and the drought finally broke, we had dedicated volunteers ready to contribute some valuable data. Some highlights of the year included:

- Data forms were submitted to TAW by 26 volunteers, bringing the total number of participants to 82.
- Data were submitted from 27 counties. Bandera and Midland counties produced data for the first time in 2009.
- Data were collected at 24 TAW Adopt-a-Frog Pond sites. Data were collected at an additional 11 sites using automated frogloggers.
- Data were collected on five roadside transects, each representing 10 sampling points.
- Eight volunteers also submitted Amphibian Spotter data from additional sites.
- Data were submitted on 27 frog and toad species and on one salamander species.

The three most widely-reported species were similar to previous years, but gray treefrog species joined the top four this year:

- Northern Cricket Frog (*Acris crepitans*) – 14 counties
- Gulf Coast Toad (*Ollotis nebulifer*) – 13 counties
- Green Treefrog (*Hyla cinerea*) – 12 counties
- Gray Treefrog species (*Hyla chrysoscelis/versicolor*) – 10 counties

Upper coast counties provided the greatest number of volunteers, with five volunteers participating in Harris County, and monitoring also taking in nearby Montgomery, Chambers, and Brazoria counties. The leaders in species totals were as follows:

- Houston County – 12 species
- Brazoria County – 11 species
- Harris County – 10 species
- Cass County – 9 species

Volunteers undertook several interesting investigations in 2009. In southeast Texas, **Rachel Rommel** of the Houston Zoo provided interesting insights on her North American Amphibian Monitoring Program route in Chambers County. She conducted counts on the route following Hurricane Ike, noting that wetlands had been highly impacted by salt water. Average number of species detected dropped from seven to only one or two per run, and number of stops with calling frogs showed a similar decline. In Waco, **Melissa Mullins** of the Heart of Texas Master Naturalist Chapter and Baylor University organized a "Frog Force" activity at the Lake Waco Wetlands that engaged 574 students in amphibian malformation monitoring. The students captured 262 frogs of four species, discovering malformations in only three frogs. Other students initiated investigations of their own in 2009 using frog-loggers. Both **Frank Linam** in Hays County and **Lisa Brown** at UT-Tyler in Smith County conducted studies on the nightly chronology of amphibian calling.

Texas Amphibian Watch staff taught workshops in Austin County, Milam County, Travis County, Brewster County, and Midland County, recruiting the **El Camino Real Chapter of Texas Master Naturalists** (TMN) as a new partner in Texas Amphibian Watch. The August workshop in Midland County offered a wonderful opportunity for participants, as recent flooding of local playas produced large choruses of six species, including three species of spadefoot toads. Several Texas Amphibian Watch TMN partners taught workshops or provided outings in 2009, including the **Capital Area Chapter** under the leadership of **Kathy McCormack**; the Gulf Coast and Heartwood Chapters under the leadership of **Scott Kiester**; the **Brazos Valley Chapter** under the leadership of **Mary Ann Cusimano**; the **El Camino Real Chapter** under the leadership of **Katherine Bedrich**; and the **Rolling Plains Chapter** under the leadership of **Lila Arnold**.

Several volunteers reached milestones in 2009. **Sheryl Marquez** and **Joan Mukherjee** contributed data for the fifth year, joining **Scott Kiester**, who actually reached that milestone in 2008. All volunteers who have reached the five-year mark will receive a Texas Amphibian Watch lapel pin. In addition, three very dedicated contributors provided data for their 10th year in 2009—**Jaime Gonzalez**, **Carol Miserlian** and **Dan Saenz**. Jaime has played a very important role in teaching workshops and providing leadership for the exemplary monitoring efforts on the upper Texas coast. Carol has introduced staff and students at the Houston ISD Outdoor Education Center on Lake Livingston to amphibian monitoring for the past 10 years. Dan, a researcher for the U.S. Forest Service, has graciously shared data from nearly 2,200 hours worth of monitoring data gathered using frog-loggers in the Stephen F. Austin Experimental Forest and Davy Crockett National Forest. All three are true leaders in the amphibian monitoring effort in Texas!

Capital Area Master Naturalist Texas Amphibian Watch Monitoring in 2009

by Kathy McCormack and Sue Anderson

The Capital Area Master Naturalists (CAMN) had two teams performing TPWD's Texas Amphibian Watch (TAW) Adopt-A-Frog-Pond monitoring in 2009. Nocturnal frog and toad calls are monitored on a monthly basis in two locations – Riata Pond in north Austin and Berry Springs Preserve in north Georgetown. Riata Pond is a semi-urban stormwater retention pond, and Berry Springs Preserve is a passive county park with a spring-fed pond and nearby creek. Riata Pond wasn't greatly affected by the second year of drought in Central Texas, but the pond and creek at Berry Springs Preserve were below average (and sometimes dry!) for eight of the 12 months.

In 2009, 13 CAMNers logged over 1,622 roundtrip miles and almost 58 roundtrip hours for a total of 12 monitoring hours and observed three amphibian species at Riata Pond: Bullfrog, Gulf Coast Toad, and Green Treefrog. Two nocturnal bird species were also observed: Great Horned Owl (a male/female pair calling to each other one month) and Common Nighthawk.

In 2009, 14 CAMNers logged over 2,818 roundtrip miles and over 75 roundtrip hours for a total of 13 monitoring hours and observed seven amphibian species at Berry Springs Preserve: Rio Grande Leopard Frog, Gulf Coast Toad, Cope's Gray Treefrog, Bullfrog, Northern Cricket Frog, Red-spotted Toad, and Great Plains Narrowmouth Toad. Five nocturnal bird species were also observed: Great Horned Owl, Barred Owl, Eastern Screech-Owl, Common Nighthawk, and Chuck-wills-widow.

Team support for this effort has been outstanding – between the two sites, participants included Julia Osgood, Liz Wells, Gloria Blagg, Patty Collier, Christopher Fritel, Bill Dodd, Mark Pettigrew (Berry Springs Preserve staff), Cheryl Goveia, Bonita Triplett, Christine and Chris McCulloch, Ixchel Granada, Alice Stolfa, Cindy and Chris Durand, and Becky Patterson. 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 we observe more things – not just the amphibians and birds, but bugs (Bill and Christopher set up a sheet and black lights for us several times), bats (we borrowed a bat detector from TPWD one month), fish (there are some BIG carp in Riata Pond), and plants (lots of wetland species to learn about), as well!

We plan to continue monitoring at these two sites, and will also be adding a south Austin site (Mary Moore Searight Park), in 2010.

Frog Force Amphibian Malformation Monitoring at the Lake Waco Wetlands

by Melissa Mullins

Photos © Bryan Stone; Heart of Texas Master Naturalist
Malformed green tree frog (notice right front limb).

During the fall semester of 2009, 9th- and 10th-grade students from area high schools monitored amphibians at the Lake Waco Wetlands for malformations. The students are part of GEAR UP Waco, a federally funded program to help increase awareness and readiness for education after high school. The Marsh Madness portion of GEAR UP Waco focuses on promoting science proficiency by providing field activities in a wetland environment, and is a partnership between the City of Waco and Baylor University. Local Texas Master Naturalists also partner in the project by volunteering during field trips and training.

Texas Amphibian Watch materials were used during the field trips and to prepare teachers for the exercise. Approximately 550 students (and around 20 teachers) participated to catch and examine about 260 frogs during field trips from September to early December. The most common species encountered were *Hyla cinerea* (Green tree frog) and *Acris crepitans* (Cricket frog). More rarely, bullfrog (*Lithobates catesbeianus*) and southern leopard frog (*Lithobates sphenocephalus*) were encountered. About 100 sites around the 185 acre wetland were identified with flags and GPS points prior to the start of the semester to ensure spatial coverage of monitoring and to avoid sampling the same areas of the wetland repeatedly.

In addition to capturing and identifying frogs and examining them for malformations, students determined site and weather conditions such as water depth, water and air temperature, aquatic vegetation coverage, distance to nearest trees, pH, turbidity, total dissolved solids, relative humidity, solar radiation, moon phase, days since last rainfall, and wind speed. Each student group investigated a question or hypothesis and presented the results of their data analysis to other groups, focusing on how different environmental factors might influence amphibians at different sites or seasonally.

Two malformed frogs were found (<1% of the total), both green tree frogs. One malformation was a partial hind limb, which students decided could have been from an old healed injury (i.e. the frog got his foot bit off by a dragonfly nymph). The other appeared to be a true malformation with a front limb having only three digits, but one of the digits with two toe pads. You can learn more about the Lake Waco Wetland by visiting www.lakewacowetlands.com or about GEAR UP Waco at www.baylor.edu/thinkcollege.

Texas Amphibian Watch and Midland Playa Amphibians

Steven D. Schafersman

At the advanced training at Sibley Nature Center on August 8, we learned how Texas Parks and Wildlife Department would like for us to monitor prairie dogs, box turtles, frogs and toads. The instructors were Marsha May and Lee Ann Linam, Texas Nature Tracker biologists with TPWD.

The amphibian training was the most interesting and informative, since we learned how to identify species of frogs and toads from their calls. After training, we visited Quien Sabe Playa near the Gun Club. The playa was filled with water and the various toads had come out of hibernation to mate and lay their eggs in the water. They were singing even in the afternoon. Burr Williams, Executive Director of the Sibley Nature Center, had e-mailed us about this playa the day before and said we should visit it. I'm very glad we did.

We parked on the gravel road and just went along the edge to see the enormous variety of insects (both adult and larvae), spiders, fish, and amphibians (both tadpoles and adult frogs) in the water. The water was light brown from the tannin in the plants it had picked up on its journey from the west. The giant water scavenger beetle was abundant. Also present was a species of predacious diving beetle. Both of these trap a bubble of air to their body so they can swim underwater. No water striders or whirligig beetles were seen. We also found the spider that traps a bubble of air to its abdomen so it can live in the water; I had never seen one of these before. Tiny fish were present. We also saw and captured the large larvae of two species of water beetle, including the giant water scavenger beetle. These larvae are large and capable of catching and eating the tadpoles. No doubt they were predating on the abundant tadpoles present. I mistakenly referred to these as "nymphs" while at the playa, but they are larvae, not nymphs, since beetles undergo complete metamorphosis.

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PHOTO: © STEVEN SCHAFERSMAN

Someone found a Texas Horned Lizard. Its DNA was sampled by taking a throat swab and photos were taken. I had captured this species before on several butterfly and bird counting trips and held it. We always let them go after sampling the DNA, since they are a threatened species. We are also listed on a scientific permit to be able to handle these protected species. They do not make good pets since they must eat numerous harvester ants. They are protected in Texas but specimens sometimes found in pet stores come from New Mexico where they are not protected.

We saw tadpoles of different sizes in the water. We heard the calls of the Texas Toad and New Mexico Spadefoot Toad. We agreed to return at 9:00 p.m., a half-hour after sunset. When driving up at dusk it was still light and my wife and I saw numerous toads crossing the road. These turned out to be Texas Toads. There was no water on the other side of the road, however. Along the south side of the road, you could see their heads sticking up out of the water at the edge as they waited to cross. The playa was filled on the south side but the water had not yet crossed to the north side. Their calls were loud and continuous.

We heard the calls of four other toads: New Mexico Spadefoot Toad (once thought to be a subspecies of the Western Toad but now classified as its own species; also formerly named the Southern Spadefoot Toad), Couch's Spadefoot Toad, Plains Spadefoot Toad and the Great Plains Narrowmouth Toad. I was able to hear and identify all of the calls since I had the training. The Couch's didn't begin to call until after it became dark, while the others were calling while it was still light. We were able to catch and examine specimens of the Texas Toad, Couch's Spadefoot Toad, and the New Mexico Spadefoot Toad. The spadefoots have vertical pupils, quite different from the horizontal pupils of the true toads, genus Bufo, such as the Texas Toad, and also have slightly smoother skin unlike the very warty skin of the true toads. The spadefoots uniquely have tiny black spades on their feet that allow them to easily dig into the soft, sandy soil in which they hibernate. We turned the toads over to examine the spades and touch them; they were hard. I thought the Couch's Spadefoot Toad was especially beautiful, since it had mottled dark green bands on a yellow background. I was able to catch and hold all three species of toad. I had captured and handled toads and frogs since I was young so I knew I wouldn't get warts from them!

The two TPWD biologists were having a great time because all three species of Texas spadefoot toads were present. Lee Ann is the state's Amphibian Watch Coordinator, so she was really delighted. She told me they were very lucky to be here to witness the water-filled playa with the mating, egg-laying and calling toads. These toads only appear after a heavy rain when the playas fill with water. Their eggs hatch in one or two days and the tadpoles develop into froglets within two weeks, before the playas dry up. This development cycle is extremely fast for a vertebrate, even compared to other frogs and toads. She was taking photos with her tiny camera. We found a Couch's Spadefoot Toad that was calling. The air sac below its mouth was filled with air and expanded, then emptied when it let out its characteristic bleat. I held a flashlight on it while Lee Ann took a video with her little camera. I bet she wished she had brought a digital video camera and a better light source.

Every Texas Master Naturalist, and every Texan for that matter, should have the experience of visiting a West Texas playa at sunset a few days after a rain to witness the emergence of the native toads and hear their singing. This is truly one of nature's marvels. I'm very glad I was able to do this; it's one of the reasons to become a Texas Master Naturalist. Perhaps this will inspire me to become an amphibian watcher and counter. All I need is more time.

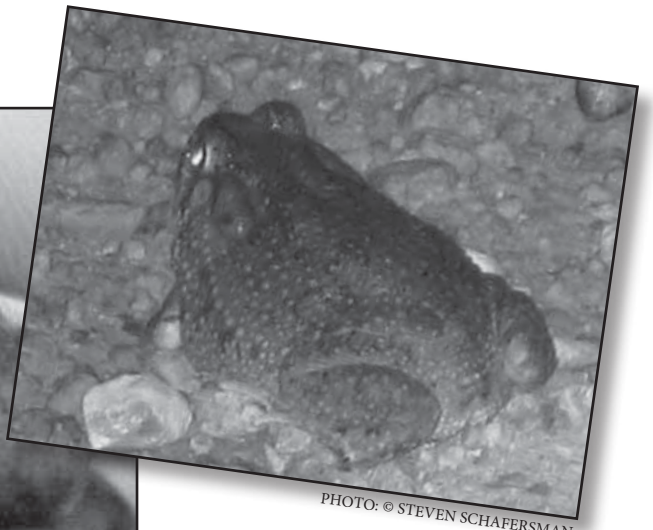

PHOTO: © STEVEN SCHAFERSMAN

PHOTO: © STEVEN SCHAFERSMAN

Texas Horned Lizard Watch Volunteers Go Beyond the Call of Duty in 2009

Lee Ann Johnson Linam - Texas Parks and Wildlife Department

Texas Horned Lizard Watch volunteers went "above and beyond" during their 2009 efforts, adding greatly to our database regarding horned lizard habitat and contributing to an insightful analysis of the genetic diversity of the species. Data were contributed by Texas Horned Lizard Watch volunteers, Texas Master Naturalists, Horned Lizard Conservation Society members, and participants in a Texas Christian University (TCU) horned lizard genetics study. Notable highlights include very encouraging results from the Post Oak Savannah and Matagorda Island, indicating that some healthy horned lizard populations are persisting in the eastern portion of the state. Texas Horned Lizard Watch also received data on round-tailed horned lizards this year.

Data was submitted from 46 counties in 2009. The greatest numbers of horned lizards were reported from Cottle (62), Bastrop (59), Yoakum (45), Calhoun (42), and Mitchell (25) counties, where participants were very active in the TCU genetics study; however, Midland County had the greatest number of participants, with several members of the Llano Estacado Texas Master Naturalist chapter submitting data. Data came in from one new county, Washington, bringing the total number of counties participating to 173. County-by-county results for 2009 are presented in Figure 1.

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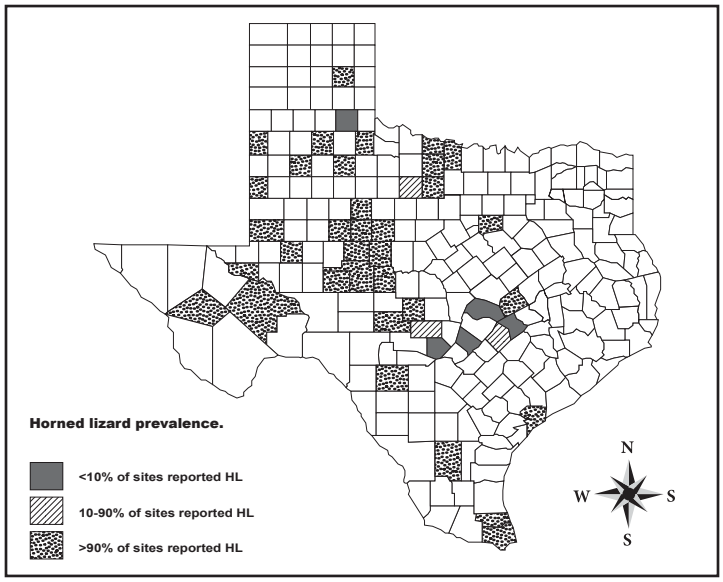

Figure 1. Horned Lizard Prevalence - 2009, based on Texas Horned Lizard Watch and TCU genetics study.

Now Available: Partnership Opportunities with Texas Horned Lizard Watch!

Several motivated groups contacted Texas Nature Trackers last year with a desire to get more involved in Texas Horned Lizard Watch. After seeing great results from these collaborations, TPWD has now decided to start offering Texas Horned Lizard Watch partnership opportunities. TPWD staff will train partner groups to gather additional data on horned lizards, provide some field equipment, and place partners on its scientific permit. In return, partner organizations are asked to provide systematic surveys of horned lizards in their area and contribute additional data on habitat characteristics. If your group is interested and is located in an area that supports a horned lizard population, please contact Lee Ann Linam (leeann.linam@tpwd.state.tx.us) about how to develop a proposal and schedule a workshop.

New and Improved

Texas Horned Lizard Watch Monitoring and Management Packet Available!

Texas Nature Trackers staff and TPWD graphics staff have collaborated to produce a great new update of our Texas Horned Lizard Watch monitoring packet. The new packet contains information on all three species of horned lizards in Texas (we'd love to receive data about all three species), modified data forms designed to capture more consistent habitat information, and a brand new section on managing land for horned lizards. Download your copy now at www.tpwd.state.tx.us/hornedlizards/.

Beyond the Call of Duty

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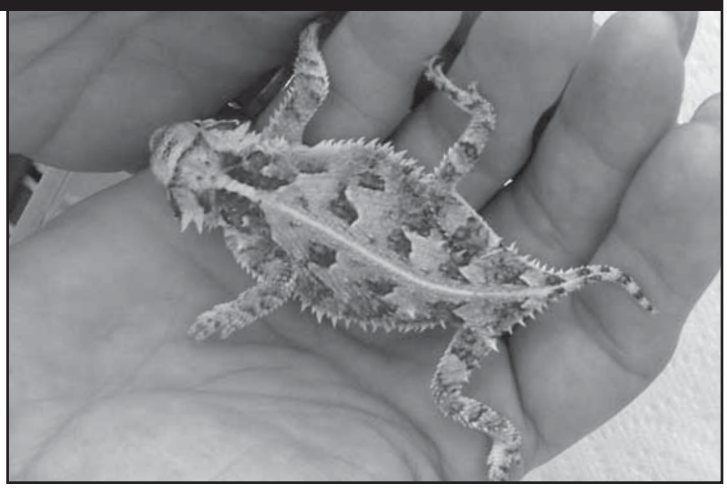

In 2009 a total of 22 volunteers submitted THLW data sheets, bringing the total number of participants to 214. Two transects were conducted, 19 sites were surveyed, and five spotter reports were submitted. 2009 data were also received from 18 other individuals, including TPWD staff, TCU students and staff, Texas Master Naturalists, and other volunteers who contributed samples to the TCU genetics study. An additional 15 incidental reports came in via phone or e-mail. While some of these incidental reports could not be verified, some volunteers submitted photos or other data that allowed the sightings to be included.

Several groups committed themselves to more in-depth study of horned lizards in 2009. The Llano Estacado Chapter of Texas Master Naturalists collected DNA samples from 13 horned lizards in support of the TCU study. Members of a Fredericksburg nature group contributed data from a concerted survey effort in Gillespie County (although no horned lizards were found). Members of the Horned Lizard Conservation Society assisted with research on Matagorda Island, conducted surveys at Fort Hood (no horned lizards were found, despite records from earlier this decade), and provided data on five round-tailed horned lizards found in Terlingua and Big Bend National Park. Other significant contributions follow.

Candice Parsons and her 8th grade students conducted an extensive study of horned lizards on two small study sites in Bastrop County. They successfully captured 60 horned lizards and submitted DNA samples to TCU. They also conducted habitat studies and discovered that horned lizards were frequently found on very deep, sandy soils in vacant lots and fields within the residential areas. Bare ground on those very open sites averaged 40 percent to 80 percent, while the dominant vegetation was forbs (weeds). Harvester ants and smaller "cheese" ants (*Forelius* sp.) were abundant, averaging 30 feet and 8 feet, respectively, from capture sites, but red imported fire ants were rare (Table 2). Candice and her students were happy to find that community residents were very supportive of horned lizards and their study.

The Rolling Plains Chapter of Texas Master Naturalists under the leadership of Lila Arnold worked with a private landowner in Clay County to begin a study of horned lizards on his ranch. They surveyed harvester ant mounds along a ranch road and captured three male and one female horned lizards, plus a recapture of one horned lizard. Overall habitat was characterized as mixed grass and shrubs, with sandy soils. Horned lizards were found in sites that were very open (averaging 86% bare ground) (Table 1), usually with a harvester ant bed within 6 feet and a mesquite (*Prosopis glandulosa*) within six to 15 feet (Table 2).

The El Camino Real Chapter of Texas Master Naturalists under the leadership of Lucy Coward also undertook a group effort to locate and sample horned lizards in Milam County, located in the Post Oak Savannah ecoregion. As in Bastrop County, they encountered horned lizards (n=20) in residential areas with rapidly-draining, deep sandy soils. Thus, citizen scientists at all three sites reported sandy soils.

Finally, Lee Ann Linam, Kathy McCormack, and Christine Powell undertook a survey of rural cemeteries in Post Oak Savannah portions of Washington, Lee, Bastrop, and Williamson counties, hoping to explore habitats that might be similar to the areas occupied by horned lizards in Bastrop and Milam counties. A total of 50 cemeteries were visited, with 30 of those appearing suitable for horned lizard occupancy (well-drained sites with minimal maintenance). No horned lizards or horned lizard scat were encountered. While cemeteries in sandy sites had many small native ants, harvester ants were present at only one cemetery and were rare in the surrounding countryside. Red imported fire ants were present in 7 percent of sandy sites, 41 percent of loamy sites and 100 percent of clay sites.

Texas Horned Lizard Watch will continue to look for partnership opportunities with Texas Master Naturalists and other groups to collect detailed habitat information at more horned lizard sites, information that will hopefully play an important role in efforts to conserve and restore the species. In future years, TPWD will be recruiting data on other horned lizard species in the state, with the hope of establishing a monitoring system so that the greater short-horned lizard (*Phrynosoma hernandesi*) and the round-tailed horned lizard (*P. modestum*) do not experience unanticipated declines.

Horned Lizards Bring a Hometown Together

by John and Casey Dees

Longhorns, bluebonnets, chili, the Alamo— ask any person in the Lone Star State to name Texas icons, and those are likely to be the most common responses. However, some people around these parts might add another name to that list: the horned lizard. That's because Bastrop County still boasts a population of these curious-looking lizards, despite their decline around other parts of the state.

Although the horned lizards are not as common a sight in the county as they once were, pockets of them still do exist. A recent survey and study of the lizards, conducted by Bastrop County 8th grade science teacher, Candice Parsons, in conjunction with the Texas Parks and Wildlife Department (TPWD), confirmed a solid population of these spiny scaled, pudgy-bodied lizards.

"Growing up, I remember when they were all over the place," said one resident with horned lizards on her property. Parsons and the property owners who participated in the survey do not want the sites of lizard populations revealed, in the hopes that the isolated colonies not only survive but thrive. "Even though they are not seen as much as in the past, you'd be surprised at how many are hanging in there," said Parsons.

Her survey located over 60-plus lizards at various sites in the area, including a good number of juveniles. Females typically lay anywhere from 13-45 eggs per clutch, but many of those that hatch do not make it to adulthood. Dogs, cats, birds, snakes and people are all threats to their survival. "Kids pick up these lizards and want to keep them, not knowing that it's illegal to have as pets," Parsons says. Besides, she explains that they are high maintenance and difficult to keep alive in captivity. "They have to eat a lot of ants every day to survive, and have certain environmental conditions that they need."

TPWD Conservation biologist, Lee Ann Linam, trained Parsons to conduct the survey. Since it is against the law to handle, collect and keep horned lizards without a special permit, Parsons is authorized through Linam's permit. Parsons was given permission to recruit volunteer teams to scout for the lizards during the survey, since wild creatures don't really cooperate as nicely as they do for all the nature shows on TV. "It really helps to have a big team searching methodically for the lizards," she said.

Near the end of the last school year, she had her big team: her science classes participated in the study. "This was such a great opportunity for the kids," Parsons said. "They were excited to get out in the field, do something hands-on and use what they learned in the classroom. That really brings science to life." During the summer, as the study continued, she recruited local volunteers to assist her. Parsons and Linam presented a session at the library, followed by a field trip by the attendees to study the lizards up close.

Once a property owner has granted Parsons permission to come on their land and conduct the survey, she brings in her team. The team spreads out over the area and moves along slowly to locate the lizards. Their markings help camouflage them perfectly in the environment of sandy soil, short grasses and sparse plant cover that they prefer. When one is spotted, it usually takes two to three people to corral it, as the lizards are surprisingly fast. They can also rapidly burrow themselves into sandy soil. Another defense against predators is that they can, indeed, squirt blood from the corners of their eyes. This blood confuses predators and tastes foul.

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The team then attempts to capture them as gently as possible. Once captured, the exact location is recorded using a GPS so the lizard can be returned to where it was found once the lizard is examined.

The lizards are measured, weighed and their gender is determined. Parsons also takes a DNA swab of each individual. Most lizards comply with the mouth swab, but if not Parsons takes a guitar pick to gently pry open the mouth. "If that doesn't work, we have to swab them somewhere else that they won't like," Parson said.

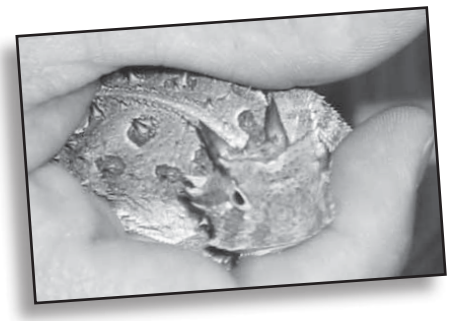
Photos are taken of the top and bottom as well, to identify their markings; the photos are provided to a college that is conducting a study on horned lizard markings. A number is then placed on the lizard using a marker, so it won't be included in the survey again if it is recaptured. The DNA samples are sent to Texas Christian University, where a researcher records the results and uses the data to study and track the genetics of the population.

Bastrop County has a unique population of horned lizards, since they are in an area isolated from other lizard populations around Texas. Parsons said studying the horned lizards living in this area is critical. "This is a excellent chance to study the genetic diversity of these horned lizards. It can help us determine the health of this population, and the overall population around the state. This is vital to future conservation efforts."

Conservation is something Parsons cares deeply about. After graduating from a local high school in 1994, she went on to get a Bachelor of Science degree from Texas A&M in Wildlife and Fisheries Sciences followed by a 8th through 12th science teaching certification. Parsons credits her own interest in science and nature to two influences: the native countryside and her teachers. As a youth, there were always animals and nature all around. "Also, I had some great junior and senior high science teachers that really got me interested and guided me," she said.

Because Parsons grew up around here, she gains the property owners' cooperation with the study more easily. "I think it would be hard for an outsider to get some of these people to let these studies be done. They think of these lizards as "theirs" and do everything to protect them," said Linam.

One property owner, after getting assurances from Parsons that the lizards would not be removed or injured, agreed to the survey but added she is very protective of the horned lizards and takes great care to ensure they are not disturbed. "We're careful when we mow and we don't poison their harvester ant food source."



"I'm really encouraged by the interest of the local people in the project," Linam said. "Between the property owners, the science students and all the volunteers, it's been a great example of how a community can come together to protect one of our native species."

"I'm doing this so my kids can get to see the lizards and other animals that I grew up with," Parsons said. "We have to look after them for future generations." Parsons lists one more reason for her participation in the survey. "They are such fascinating creatures. It's almost like looking at a miniature dinosaur. They're just so cool."

Box Turtles: A Progress Report from TPWD

Michael Smith, http://texasherp.org

Box turtles are primarily land-dwelling reptiles that used to be a familiar sight all across Texas and much of the U.S. Particularly in the morning or late afternoon after a rain, box turtles would be seen making their way across fields and, unfortunately, highways. Large numbers were run over on the roads, and this still happens in those places where they are fairly common. Many were picked up for pets, or collected commercially to be sold to pet stores. Others disappeared as their habitats were developed into suburbs or were plowed for agricultural use. Those who spent time outside noticed, over the years, that box turtles were not seen as often as before. Now, in some states they are known to be threatened and are officially protected. In Texas, they are not designated as threatened and an individual can still collect a box turtle, but the commercial trade in Texas box turtles has now been outlawed.

The Texas Parks and Wildlife Department (TPWD) has been receiving reports of sightings of box turtles, to help evaluate how these turtles are doing in the wild. Any individual who sees one can report it, using a reporting form available at the TPWD website (www.tpwd.state.tx.us/boxturtles/). An electronic reporting form is available at the Web site of the Gulf Coast Turtle and Tortoise Society (www.gctts.org). Between 2005 and 2009, a total of 527 people participated in the reporting program, turning in 1,310 sightings of our two species of box turtles, according to data obtained from TPWD.

It may be helpful to clarify what is meant when we refer to our "two species" of box turtles. In common parlance, people talk about the three-toed box turtle, the ornate box turtle, and the desert box turtle occurring in Texas. However, the three-toed box turtle is but one race ("subspecies") of a larger group that occurs throughout the eastern U.S., and those turtles are collectively called "eastern" box turtles (*Terrapene carolina*). Understanding the differences between an "eastern" and a "three-toed" box turtle can become confusing to those people who are not familiar with the scientific classification system. Now to consider the ornate box turtle – most of these box turtles in Texas are the subspecies called "ornate box turtles" (*Terrapene ornata ornata*). However, out west of the Pecos River, there is a different subspecies called the "desert box turtle (*Terrapene ornata luteola*). Confused yet? Notice that both of these are subspecies of *Terrapene ornata*. And so, when TPWD speaks of "ornate box turtles," they mean both ornate and desert box turtles.

Now, back to the citizen reports of these turtles. Over the five years, there were 612 sightings of "eastern" box turtles. There were five east Texas counties in which more than 20 sightings were turned in, from just above Houston, at the lower edge of the Big Thicket, near Palestine, and along the Red River in Fannin county. Based on the reports, TPWD estimated that six to eight viable populations were identified by the reports.

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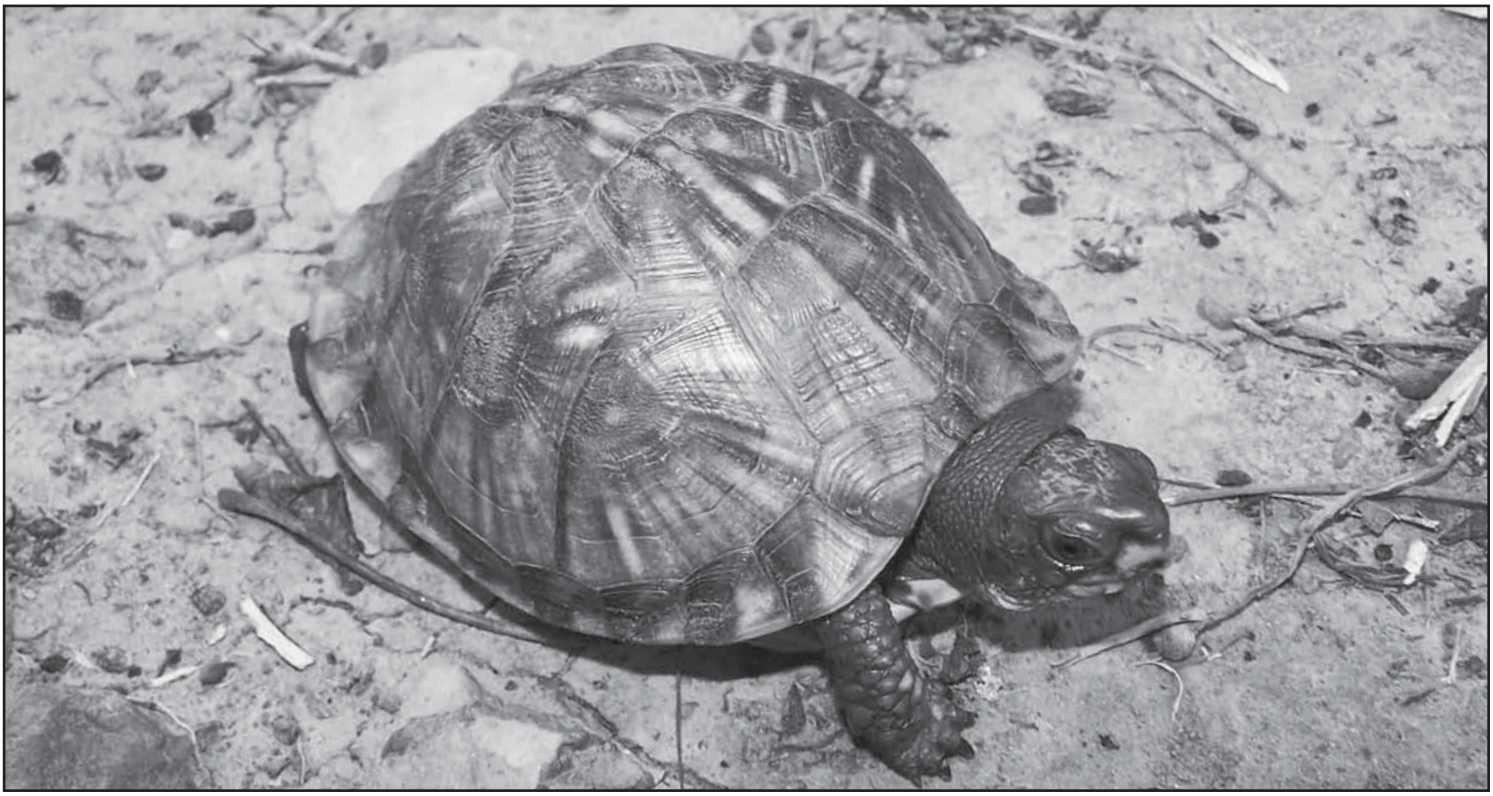

PHOTO: © MICHAEL SMITH

PHOTO: © MICHAEL SMITH

During this same period, there were 669 sightings of "ornate" box turtles reported. These reports were very scattered across Texas, and reports of over 20 turtles originated from just five counties. These were, Calhoun, Harris, Dallas, Fannin, and Cottle counties, scattered from the coast to north-central Texas to the lower panhandle. Based on the reports, two to five viable populations were identified.

But what does this mean? Hopefully, this provides only a sample that undercounts our box turtles. Identifying only two to five, or six to eight viable populations across Texas would be grim news. Similarly, if only five counties could produce more than twenty sightings of each species over five years' time, we could conclude that box turtles were on their way out in Texas. These numbers are dependent on the numbers of people who take the time to report the turtles. The TPWD information is that 527 people participated. That means that, on average, each person turned in just under two reports. If these are the most dedicated turtle-reporters in Texas, and their average sightings were this low, we have some reason to be concerned. If this was a controlled study with regularly scheduled, consistent observations, the results would be frightening – only 1,310 box turtles seen in five years? However, some counties would be more heavily monitored, and others hardly at all. In the case of Cottle County, this is the location of a study of the ornate box turtle, so the monitoring was more intense and naturally, more reports were turned in. Harris County, with Houston and the surrounding communities, is so thickly populated that you could hardly swing a wealthy socialite without hitting whatever box turtles remain there. In other words, the box turtles would be much more visible there. Here is another example: by far the most commonly reported habitat was, "paved road." Not that box turtles prefer to hang out on paved roads, but that is where most people see them. For the "eastern" box turtle, the two most common uses of surrounding land were, "residential" and "park/preserve." Also perhaps the two commonest categories of places were turtle observers are found. For the ornate box turtle, the top two land use categories were, "ranching" and "residential."

For comparison, let's look at how that compares with my observations. I am an active field herper with an interest in box turtles, and over the past five years I've seen two ornate box turtles (on paved and dirt roads in ranch land) and three "eastern" box turtles (on paved and dirt roads in preserves). Not especially cheery results, when compared with how it was thirty or more years ago.

Just because the box turtle survey results are hard to interpret does not mean they are not valuable. I am very glad that TPWD continues to collect the data, and I admire Lee Ann Linam's ability to sort it out and make the best use of it. Thanks to this program, we do know that box turtles are continuing to show up in much of their traditional range in Texas, and we have some ideas where, at minimum, they are most common.

Hopefully, all of us who care about box turtles can redouble our efforts to look for and report these turtles. Various aspects of box turtle reproductive biology say that it takes fairly large concentrations of long-lived adults in an area to make a viable population. The news so far is not especially good. We need to keep adding to our knowledge, and in the process keep letting TPWD know that these turtles matter to us.

For more information

Conant, R., & J.T. Collins 1998. A field guide to reptiles and amphibians of eastern & central North America (3rd Ed., expanded). NY: Houghton Mifflin

Texas Parks and Wildlife Department. Texas Box Turtle Survey. http://www.tpwd.state.tx.us/learning/texas_nature_trackers/box_turtle_survey/

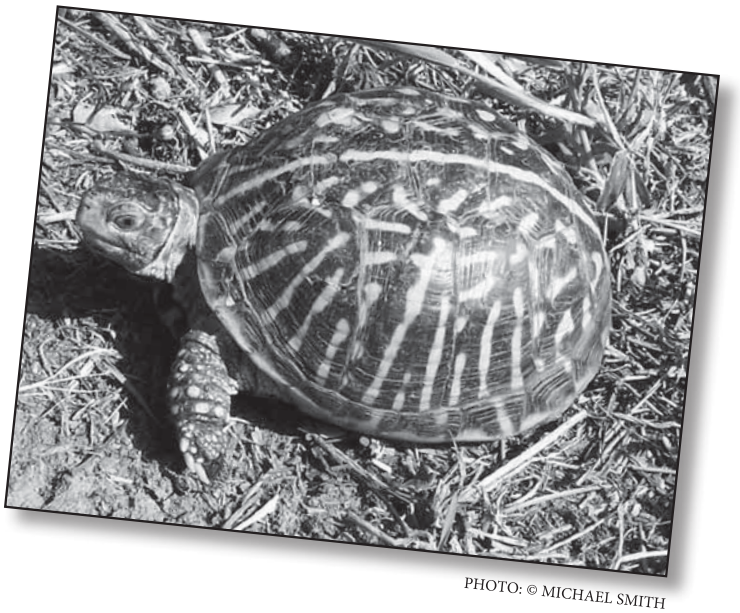

PHOTO: © MICHAEL SMITH

2009 Hummingbird Roundup

Mark Klym, TPWD

As the year drew to an end, we began to receive data from the 2009 hummingbird season. As always, there is a vast difference of opinion as to the density of hummingbird populations, with some observers reporting a disappointing season while others are saying, "Where did all the birds come from?"

One thing that seasoned birders commented on at the Rio Grande Valley Nature Festival in Harlingen in November was the obvious absence of Rufous Hummingbirds in the valley. Other regions of the state where Rufous are often reported in good numbers, including central and coastal counties, generated few reports of overwintering Rufous this year. There were some areas where Rufous Hummingbirds did overwinter though, like the Tarrant County home where a female is present for the 9th year. These changes will be worth watching in 2010.

The Allen's Hummingbird that has overwintered at Bentsen-Rio Grande Valley State Park for four seasons was seen briefly at the end of 2009 and has not been seen since mid January.

It is never too early to get your 2010 survey and plan for the 2010 season. This year we had several surprises – Green-breasted Mango in Central Texas, Buff-bellied Hummingbird in Milam County and Green Violet-ear in Kerr County. These rare or unusual birds should always be carefully documented – photos and sound recordings always help – and reported both to the Roundup and to local birding clubs. Next year could be equally exciting, and who knows – your garden may host something different and unique. Get your survey forms online at www.tpwd.state.tx.us/hummingbirds or by sending a $6 donation to:

Texas Hummingbird Roundup
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744

Hummingbird Roundup in Milam County, Texas

Ann Graham Collins

I have been a birder for about 30 years. That's more than I care to admit to. I have had lots of interesting and exciting experiences. This past summer was right up there with some of the best ones. I had the great, good fortune of being able to observe a female Ruby Throat nesting in my backyard. Dense woods surround my home so Ruby Throats are about all I get, and not many of them. Quality over quantity is best any day of the week for me.

Mark Klym advised some of us to tie red ribbons on bushes in our yards to possibly attract the hummers. I think he even quietly suggested that the next car we bought should be red. I did tie the ribbons near the feeders but it was still a quiet year, possibly due to the heat and drought. I kept three feeders filled from March to early November.

One morning in mid May, as I sat with binoculars trained on the feeders, I noticed a female Ruby Throat zooming to a limb about twelve to fifteen feet off the ground and about twenty or so feet away from my perch on the deck steps. She was actually dive bombing a bright red male Cardinal. I've seen Mockingbirds dive bomb Crows and Crows mob owls, but never a tiny speck of a bird actually attacking any bird other than another hummer. I didn't know what to think. It never occurred to me that she would be defending a nest that was quite invisible to my naked eye. But, she was! As the summer dragged by I saw her dive bomb numerous Cardinals, both male and female and a Tufted Titmouse. About ten days after my first observation, a pair of Cardinals built a nest on the same limb above the hummer. Guess they figured she was a real warrior and would protect their nest as well as her own.

Birders all have addictive natures so I was hooked immediately. I could hardly do my daily chores for watching this industrious little homemaker about to become a mother. I finally located the exact spot the nest was attached to the pencil sized limb. It was so fascinating, smaller than the palm of my hand and exactly the color of the limb of the Oak tree it was on. It was covered with lichen from the oaks in my woods and glued together with a fine mesh of spider webs. I observed her on several occasions seeming to check or repair the spot where nest met limb. There were a couple of leaves just above the nest that served as umbrellas to protect from rain and the relentless sun.

Numerous times I observed her perched on the side of the nest poking her beak into the bowl. I suppose in the beginning she was just making sure the eggs were arranged to her liking. Later on she would feed them in the same manner until finally, their sharp little beaks were consistently visible above the top of the nest. The way she sat on the nest was quite interesting. She looked like she was sitting on a flat surface, with head exposed on one side and her tail in the air on the opposite side.

Many of my observations began at dawn and ended with the falling of darkness. I tried to take pictures. I even climbed up on an eight foot ladder and got as close as I thought sensible but none of the pictures was very good. She had chosen her spot well. Invisible from the ground and shaded by leaves from the top.

Toward the end of the nesting period I could see the juveniles fluttering their wings, practicing for their final launch. I began my observations on May 19th, 2009. On the 14th of June, at 8:05 a.m. I could see two juveniles on the nest. At 8:49 a.m. there was only one. At 11:31am there was one juvenile on the nest. When I checked at 12:14 p.m. the nest was empty at last! I saw them for a day or so around the feeders. After that they blended in with the other Ruby Throats in the area.

I think I was as proud of them as their own Mama. Next year, I will be more vigilant and if there are nests to be found, I will find them and begin the process all over again. I should be so lucky!

Facebook and Digital Photography for Citizen Scientists

Burr Williams, Executive Director, Sibley Nature Center

"Conversations like this are what make Facebook worthwhile!" wrote Sheridan Coffey, a naturalist from San Antonio. She was commenting on a discussion about a photograph I had posted on my Facebook page (http://www.facebook.com/profile.php?id=1337305398). I post two photographs of West Texas flora and fauna every day on the page (along with less than 50 words of text). The photograph was of a large hornworm that was curled at the top of a plant, with a strange black mass at its rear end, and several silk lines tying it to the plant. One expert thought it was evidence of a parasitical disease, while the other thought that the caterpillar had just finished molting.

Recently the Llano Estacado Chapter of the Texas Master Naturalists took a field trip to the I-20 preserve and several members had photographed a delicate damselfly that rested with its wing spread. I had no idea what species the creature was, so I asked the Facebook naturalists to help me out. One of the major contributors to the incredible Web site "Bugguide," Joshua Stuart Rose (of Amherst, Massachusetts) saw the posting and immediately "tagged" the photo to dragonfly and damselfly experts around the nation. Within a few hours several experts had agreed on its identification as a Plateau Spreadwing, including Dr. John Abbott of the University of Texas, whose "Odonata Central" Web site is a constantly evolving digital version of his book, *Field Guide to Texas Dragonflies*. It turned out to be a species not seen before here in Midland County.

In four months' time about 445 people have joined my "friends" list on Facebook. The audience of the Facebook page is quite diverse. Besides naturalists, we have a number of high school and college students that see our postings on Facebook. Many West Texans joined the page and have commented that they look forward to the postings, because they are learning about the critters and plants of West Texas. They often have more information to add.

Most of the photographs that I post are other people's photographs. The Sibley Nature Center receives photos via e-mail and "jumpdrive" delivery from the local Llano Estacado Chapter of the Texas Master Naturalists, the Midland Naturalists, the Sibley Photo Club, and from hunters, homeowners, and landowners for us to use for educational purposes. We credit the photographers however we use them. All of the photos that I have posted are still on my page in the photo section, along with all of the comments.

I also have a number of avid hunters that "subscribe" to the page, as well. Among them is Dr. Dale Rollins, who heads up the Quail Research Ranch near Roby, and is "Mr. Quail" to every quail hunter in the state. Hunters spend a lot of time in the out-of-doors, and nowadays more and more hunters take a digital camera along with them not only to record their successes, but also to photograph their surroundings and the beautiful places they visit.

The staff and board of directors of the Sibley Nature Center are excited and impressed by the power of Facebook as another educational tool. On our busiest days at the Sibley Nature Center, we may have 100 children and adults come through our doors. We give 350+ programs to 13,000+ people every year. Modern technology has allowed us to reach many more people. The Facebook page reaches 445 people every day, our Midland Reporter Telegram column goes to 22,000 subscribers every week, our "This Week on the Llano Estacado" e-newsletter goes to 161 Midland school teachers (and 20+ teachers in other towns or private schools) each week, and our "El Despoblado" e-newsletter goes to 2,000 people every month. When all of that is added up, we have over one million "units of educational service" each year!

We would love to have more folks join the Facebook page, and for more people to send us or bring us photos! The digital photo-documentation of the flora and fauna of West Texas is a citizen science project in which everyone can participate. We do not know everything about our surroundings. You may discover something new to science, if you get out and start photographing. The circle dance of the rainbugs and the swarming of insects to fungal jelly on wet cryptogamic soil were unknown to science until Midlanders got out and started looking and photographing!

Please visit: www.sibleynaturecenter.org.

TEXAS
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The Texas Nature Tracker

Texas Parks and Wildlife Department
Wildlife Diversity Program
4200 Smith School Road
Austin, Texas 78744