

Mason Mountain Wildlife Management Area - Bringing Back Texas Horned Lizards

by Lynn Seman

On June 25, several members of the HLCS participated in a survey at the Mason Mountain Wildlife Management Area near Mason, TX. This site, a former exotic game ranch consisting of about 5,300 acres, was donated to the state of Texas by C.G. Johnson in 1997, and is now the largest publicly

owned land in the Llano Uplift. Presently, this wildlife management area is used in various research projects including a horned lizard reintroduction project.

Being my very first HLCS horned lizard survey, I did not know for sure what to expect on the trip. As a recently retired middle school math and science teacher, I jump at any opportunity to get out in the field to survey, observe, and participate in science data collection. I arrived way ahead of time at our meeting location - Topaz Confections on the historic square in Mason, TX. The aroma of freshly baked pastries was too much to resist so consequently, I enjoyed a cinnamon roll with milk from this local hot spot which I highly recommend! Before too long, the other members of the group began to arrive.



Sign to the Horned Lizard Area (photo by Leslie Nossaman)

We were quite a diverse group. Carolyn Todd, a charter member of HLCS, informed everyone of the ground rules, passed out waivers, and described a basic plan for our outing. Carolyn, a veteran member of the organization for 26 years, has participated in numerous surveys. Leslie

Nossaman, a geologist and member of the HLCS board of directors, and her daughter, Vivian Thomas, a recent Zoology graduate, joined the group with their expertise and photography skills. Two biologists from the Houston Zoo Herpetology Department, Monty Criswell and Chris Valdez, came to help with the survey with hopes of sighting numerous reptiles. Both of these two herpetologists are continuing their education as they work toward master's degrees and to be future PhD candidates. Our Texas Parks and Wildlife Representative, Jim Gallagher, has a PhD in Wildlife Biology and is the Research Supervisor for the Mason Mountain Wildlife Management Area. Jim has held many positions over the years which all have contributed to his experience and excellent qualifications for his current position at Mason Mountain.

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Please Send Membership Applications or Requests for Information to:

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Horned lizard taxonomy

The famous zoologist and taxonomist Carl Linnaeus described the first horned lizard in 1758 (*Phrynosoma orbiculare* = *Lacerta orbicularis* Linnaeus 1758), and if there was ever a “golden age” of horned lizard discovery it was during the 1800s when herpetologists described 14 additional species that are still recognized today. The total was raised to 16 species when Leonhard Stejneger described *Phrynosoma ditmarsii* in 1906. Just because no new horned lizards have been discovered in over a century doesn't mean that their taxonomy has remained stable. For example, the coast horned lizard (*P. coronatum*) has had an exceptionally turbulent taxonomic history since the late 1800s with upwards of 20 taxonomic reappraisals recommending anywhere from one to seven species. The discovery of *Phrynosoma sherbrookei* raises horned lizard diversity up to 17 species.

Every participant in the group had something unique to bring to this outing.

After meeting at the Mason square, we completed introductions, discussed the ground rules, and then headed out to the site four miles north of Mason, TX. When we reached the site, we joined Alyssa Fink, a graduate student at Texas State University, who is conducting a habitat study on Texas Horned Lizards, and also Mark Mitchell, the man-

ager for the wildlife management area. Alyssa, wearing a horned lizard belt buckle (which made me smile), gave us a synopsis of her research for the site. Next, our group split into two groups and boarded 4-wheel drive vehicles to trek up the mountain for the survey.

Our first stop was in the extreme North middle pasture. Within 10 minutes, the first Texas Horned Lizard was spotted. Using radio telemetry equipment, Alyssa

located the general vicinity of Horned Lizard L62, a male, who was equipped with a tracking backpack. Alyssa explained to the group that Texas Horned Lizards have been translocated to the Mason Mountain site from an area west of San Angelo. L62 stood very still and posed for several photos while occasionally snatching up a red ant that crawled by his view. His camouflaged backpack glued onto his back and secured with a fishing line-type neck collar did not seem to hinder him at all from his daily activities.

Next, we moved on to take a look at the outdoor enclosure. This rectangular cage was set up to allow what Alyssa explained as a “soft release.” The horned lizards that have been brought into this area are kept in this enclosure for 18 days before being released to the wild. Alyssa informed us that this helps reduce “homing behavior,” but unfortunately problems can arise with the enclosures. The enclosures must be well-designed to prevent the horned lizards from getting stuck between the wires of the cage and also to prevent

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Lizard number L62 (photo by Lynn Serman)



Alyssa and the enclosure (photo by Lynn Serman)

raccoons from reaching in to retrieve a lizard snack. These releases, usually held during breeding season, occurred in small groups. Last year, out of the 15 released in two groups of 7 and then 8, only 5 made it to hibernation. Out of those 5, only 3 survived. In the next 15 released, 12 are still believed alive in the site area. Alyssa described finding some of the radio devices in various places, such as in the road, inside a rattlesnake, and some just seem to disappear – possibly picked up and moved out of range by a bird of prey. When asked about the cost of the equipment, Alyssa said that each unit can run about \$200 which makes tracking an expensive endeavor and limits the amount that can be utilized. As we moved along the fence line, we tracked and located horned lizard #78, another male, alive and doing well.



Lizard number 78 (photo by Lynn Serman)

As part of her habitat study, Alyssa guided us to a nesting site that she had protected with a small rectangular cage. She had found the female digging in this area on around June 11. The female weighed 60 grams before the nest was completed and then 30 grams after about 8 hours of nesting. Alyssa plans to check the nest site daily for hatchlings. We discussed how termites are important as a food source for the young because the Pogos (which is a short name for the red harvester ants - *Pogonomyrmex barbatus*) are usually a bit too large for the babies to munch. Fortunately, several termite mud tubes were noted in the area. Of course, Pogos make up about 80% of a Texas Horned Lizard diet. The wildlife biologist, Jim Gallagher, showed us the GPS maps of the ant dens in the area noted with red dots for den locations. He pointed out that although the presence of ant dens is important, this does not mean that you

will find horned lizards near them – other factors of the habitat are important such as ground cover, etc.



Beautiful Llano uplift granite outcrops (photo by Leslie Nossaman)

After leaving the first pastures, we headed on to a different part of Mason Mountain to conduct a survey of any presence of horned lizards. Our party split into two groups and followed a trail that wandered into a huge field of sunflowers with an occasional area of granite boulders. An interesting fact about this wildlife management area is that there are two soil types found in the region – limestone- and granite-based. This provides an opportunity for species diversity. Although our two groups did not spot a single horned lizard in this canvassing, we did find reptiles from the Genus *Cnemidophorus* and *Sceloporus*. We spotted whiptails, as well as racerunners, and a crevice spiny lizard sitting atop a granite boulder. I was especially delighted to hear a Black-capped Vireo (*Vireo atricapilla*) that was pointed out by wildlife biologist, Jim. These birds have been listed as endangered since 1987. We also spotted a common poorwill (*Phalaenoptilus nuttallii*) resting on a rock as we descended the mountain.

Although horned lizards had not been spotted in the Mason Mountain Wildlife Management Area since the 1990s, they are now being reintroduced in an attempt to build a healthy population of these critters in this habitat. Thanks to the efforts of Mark Mitchell, area manager, Jim Gallagher, wildlife biologist and research supervisor, and dedicated interns such as Alyssa Fink, the Texas Horned Lizard may have a chance to once again, scamper across Mason Mountain.

The weather was perfect all day with clouds and a breeze. The temperature did not go above 82°F while surveying. We were able to survey until around 2:00 PM.

The trip was fun, educational, but bittersweet for member, Carolyn Todd. This was her last official survey before relocating to Boston, Massachusetts. She

will be extremely missed! I am so glad that I got to attend this outing and actually got to meet her before she leaves Texas. Thank you, Carolyn, for all that you have done for this organization and horned lizard conservation. After completing my first HLCS survey trip, I can say that I definitely want to attend more in the years to come, and I highly recommend these outings to other members.



Chris, Monty, Mark, Jim, Carolyn, Vivian, Alyssa, Leslie group photo at the end of our survey (photo by Lynn Seman)

Horned Lizard Research Grant 2017 Applications

The Horned Lizard Conservation Society is dedicated to protecting horned lizards by documenting and publicizing the values and conservation needs of horned lizards, promoting horned lizard conservation projects, and assisting with horned lizard management initiatives. Towards those ends, the HLCS annually sponsors research that has direct conservation applications. To learn more about the society and past grants, go to <http://www.hornedlizards.org>.

We will be offering grants again in 2017. In the past, priority has been given to projects that have direct conservation implications, including public education. To apply, send a proposal

detailing the goal of the study, the rationale for it including relevance to conservation of horned lizards, and how your work would benefit from this opportunity. The proposal may not exceed 1,000 words, excluding up to ten references. Also include a preliminary budget with any other funding sources available or received for your project. In addition, send a short resume or CV (up to 3 pages) for the lead applicant and have a single letter of reference sent to Leslie Nossaman: poppies14@comcast.net and Tim Tristan: exoticvet@yahoo.com. The deadline is January 1, 2017. The decision will be announced by January 31, 2017.

Species Spotlight: The Texas Horned Lizard

By Kelly Norrid

(This article is a reprint with permission from the Oaks and Prairies Wildlifer Spring 2016 Newsletter.)

Known to many as the horny toad or horned frog, the Texas Horned Lizard ranges over the majority of Texas, south to northern Mexico, east to Arizona and north to Kansas. Although once numerous and wide ranged, the Texas Horned Lizard population has seen a steady decline over the past decades. Though their populations outside of Texas seem to be doing well, their population here has dropped and is now believed to encompass only half of the original range. Why this drastic decline in range and population? Researchers can't pinpoint exactly what has caused the decline, but they have a good idea of what contributed to it.

Cause of decline

Dr. Scott Henke, professor at Texas A&M University-Kingsville, has been studying the Texas Horned Lizard since the early 90s and believes red imported fire ants (*Solenopsis invicta*), use of insecticides, loss of habitat and over-collection of wild-caught populations have contributed to their decline. To understand how the first two causes play into the equation, you have to understand more about the diet of the Texas Horned Lizard.

As juveniles, the Texas Horned Lizards eat a variety of different insects. As they mature, they feed almost exclusively on red harvester ants (*Pogonomyrmex barbatus*). It is believed that the red harvester ant makes up as much as 70% to 90% of the lizard's diet. That high degree of specialization and an inability to change their diet means that Texas Horned Lizards are especially vulnerable to fluctuations in prey populations. A decline in the red harvester ant population directly affects the number of Texas Horned Lizards



Texas Horned Lizard (photo by Rusty Dodson, Adobe Stock)

that an ecosystem can sustain. This is where the imported fire ant can have an indirect effect on the Texas Horned Lizard.

Many are familiar with the billions of dollars in agricultural losses the imported fire ant has caused the southern United States since their accidental introduction in the mid part of the 20th century. Their effect on Texas wildlife is just as devastating. Imported fire ants displace the native red harvester ant by out-competing them for resources. Since Texas Horned Lizards are so specialized, declines in harvester ants will cause declines in their population also.

The use of broadcast insecticides could be a contributing factor to their lowering numbers. Broadcast insecticides indiscriminately kill insects on which juvenile Texas Horned Lizards feed, and in some instances, could directly kill red harvester ants.

It all comes down to a place to live and something to eat

There are three basic components to making a good life: food, water and a bit of prop-

erty to call your own. On top of the struggles with the Texas Horned Lizard's preferred food source, they also need a certain type of habitat to thrive. Researchers have determined that the Texas Horned Lizard's preferred habitat is a patchy environment having both open areas where the lizards prefer to hunt, and a vegetative cover in which to hide from predators and aid in thermoregulation. They also prefer sandy loam soils for nesting, bedding and hibernation. It is believed that urbanization and the conversion of native rangeland into agricultural fields have destroyed critical habitat these Texas natives need to survive. Good land management will allow for bare spots where Texas Horned Lizards can hunt and red harvester ants can forage. Avoid large expanses of non-native grasses that can completely cover the ground like Bermuda (*Cynodon dactylon*), Klein (*Panicum coloratum*) or buffelgrass (*Cenchrus ciliaris*), which choke out ground-dwelling critters. Native bunch grasses provide places to hide, so encourage little bluestem

(*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), and yellow Indiangrass (*Sorghastrum nutans*).

Wild collecting

Many naturalists came about their love of nature by being in the middle of it. Some love nature so much, they feel a need to possess it. It was this interest in the oddly cute Texas Horned Lizard that may have contributed to its decline. Collection of the reptile for the commercial pet trade saw untold numbers of the lizard taken from the wild. These lizards are difficult to raise in captivity; horned lizards typically hang on for a few weeks and eventually die. The ordeal is even more challenging when attempting to get the Texas Horned Lizard to breed in captivity.

All hope is not lost

After many years of research, the Fort Worth Zoo's Texas Horned Lizard captive breeding program has been successful at getting this fickle reptile to reproduce in captivity. The problem now is reintroducing them back into the wild. Texas Parks and Wildlife biologists

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Please renew your annual HLCS membership!!!
HLCS depends on its membership for its conservation and educational presence in the community.

Categories for *annual* memberships include:

Regular	\$25		
Student or Senior	\$10		
Family	\$25	Each additional family member	\$10
Contributing	\$50		
Corporate	\$250		

Lifetime membership \$300

The HLCS welcomes contributions in any amount you wish to submit and is a 501(c)3 nonprofit organization.

Nathan Rains and Devin Erxleben have been studying the viability of taking wild-caught Texas Horned Lizards and releasing them into areas that they once occupied.

"We are studying the feasibility of a reintroduction of Texas Horned Lizard into an area where they have been extirpated," explains Rains. "Our goal is to see if this can be successful as it might hold promise to reintroducing them into other areas/sites where they have disappeared." Rains believes using a technique where the newly introduced lizards are kept protected in predator-resistant enclosures and slowly released into their new home is showing promise. "We are optimistic based upon the success we've had to this point but we're still a ways away from being able to make any definitive conclusions. We are pleased with the response the Texas Horned Lizard have had to our soft-release enclosures, their home range establishment, and reproduction. Our mortality has been fairly high but our survivorship is at least as high as in wild population according to the literature available."

The more information that Rains and Erxleben are able to collect on this species, the better it is for their future management. "We are looking at many parameters such as home range, dispersal distance, mortality factors, reproductive success, habitat use, etc. as these will hopefully give us some confidence on whether

this effort can be successful on some level."

There are still a few hurdles Rains and Erxleben have to overcome before calling the project a complete success. "High mortality rates, the amount of effort involved to track lizards, and lack of suitable habitat are all obstacles. Another obstacle will be that if we find that reintroduction is feasible, how do we select sites for reintroduction?"

What can we do to help?

"The biggest help would be to monitor wild populations and provide data on their locations and trends," says Rains. This can be accomplished as easily as downloading an app to your smartphone.

A significant obstacle is knowing where horned lizards still exist. The Texas Parks and Wildlife Diversity Program offers a mobile app that allows landowners and citizen scientists to contribute to scientific research by reporting sightings of the Texas Horned Lizard and other rare plant and wildlife species. The free app is available from the App Store and Google Play under the name "Texas Nature Trackers." This app also helps people keep track of plants and animals they observe on their land, and if they need help with identification, the app does that too.

Rains also stressed that habitat management aimed at quail, turkey, and grassland songbirds also benefits the Texas Horned Lizard. Good habitat for the lizards is critical, with or

without a reintroduction program.

With strong land management by local landowners, and a little help from researchers, this icon of Texas may be around for the next generation to enjoy.

Kelly Norrid began his career with TPWD in 2010 as a Natural Resource Specialist for Sheldon Lake State Park and later, Davis Hill State Natural Area. In January, 2015 Kelly became part of the Wildlife Diversity Program by becoming an Urban Wildlife Biologist serving the Greater Houston/Galveston Area.



Please send membership applications or requests for information to:

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P.O. Box 122
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**Got news?
For the *Phrynosomatics* newsletter, that is...**

Send your photos (with captions), cartoons, artwork or articles for the newsletter to Leslie Nossaman at poppies14@comcast.net today!

Old Rip Festival

By Leslie Nossaman

This year the Old Rip Festival occurs on October 1, 2016 in Eastland, Texas. The festival commemorates the opening of a sealed cornerstone of the courthouse in 1928 and a horned lizard was found alive after being contained in the cornerstone for 31 years. Fact or fiction? Not sure, but there is always fun for all! There is a parade with floats, entertainment shows, fun runs, a fish fry, kids' games, bull riding, a car show, lots of food, and booths, all in a family-friendly environment.

The HLCS has a booth at this festival every year to spread the word about horned lizard conservation so check it out if you attend. If you want to help, contact Bill Brooks at b.brooks@utexas.edu.

For more information about the Festival, contact the Eastland Chamber of Commerce at (254) 629-2332 or toll free at (877) 2 OLD-RIP or email at ecofc@eastland.net. If you go to the Eastland Chamber of Commerce website, you can find discounts for hotels in the area: <http://www.eastlandchamber.com> and photos from past festivals.



Editors's Note

By Leslie Nossaman

Every quarter the editors of *Phrynosomatics* search for articles and photos for your newsletter. As you probably noticed, we have been very fortunate to have received many excellent articles and photos that you have submitted. Thank you to all who have submitted an item for the newsletter!

The types of items we are looking for include:

- local news and events (booths, fairs, meetings)
- national news and events
- newspaper article reprints
- scientific article reprints
- articles on experiences with horned lizards
- survey experiences
- poetry and prose
- kids' contributions
- photographs or drawings
- cartoons

We also have a section where we highlight a member. If you would like people to know about your involvement with horned lizards, we would like to hear from you!

Typical questions people like to hear about:

- How long have you been a member of HLCS?
- What type of activities have you done regarding horned lizards?
- When and why did you get interested in horned lizards?
- What are your interests other than horned lizards?
- Do you have any interesting hobbies (sky diving, hang gliding, bagpiping, gardening, etc.)?

Our readers also really like to see photos of horned lizards. Many of us are not fortunate enough to live around them and have to travel many miles to even be in their neighborhood, so photos are a good way to connect to our beloved lizard friends.

We receive so many nice notes about our newsletter from our readers and enjoy compiling it each quarter. Our newsletter becomes excellent due to contributions from you. Consider contributing and encouraging others to contribute too. See you next issue!



Become a Horned Lizard Leader!

HLCS is currently seeking nominations for a 2-year term for the 2017-2018 Board of Directors.

The following positions will be available:

- President-Elect
- Secretary
- Treasurer
- Member Services
- Director-at-Large

Members who are interested can nominate themselves – if you nominate someone else please get their permission before nominating them.

Please provide a brief (up to 6 sentences) biography describing any interest/expertise in leadership and/or horned lizard conservation efforts. No prior experience is required. Board members are expected to be available for correspondence via e-mail, occasional conference calls or in-person meetings. In addition to the specific duties mentioned above, board members are expected to participate in at least two board meetings per year, one of which should be in person and one of which can be conducted remotely. HLCS can opt to provide travel funds to board members to attend meetings.

This slate of officers should take office in January 2017 and will serve for two years. The President-Elect then shall hold the office of president for two additional years.

Feel free to contact the current officer if you have any questions.

Please submit nominations (with biographies) to President-Elect Jared Fuller at jfuller@unr.edu.

Nominations/volunteers must be received by September 12, 2016.

President-elect - The President-Elect shall serve in the absence of the President or in the event of the incapacity or resignation of the President, and when so acting, shall have all the powers of and be subject to all the restrictions upon the President. The President-Elect shall plan and recruit committees and plan and execute the biennial national meeting. The President-Elect becomes the President at the end of a two-year term.

Secretary - The Secretary shall be responsible for corporate records, keep the minutes of all general membership and BOD meetings, and in general perform all duties incident to the office of Secretary and such other duties as from time to time may be assigned by the President or the BOD. The Secretary shall also be responsible for cataloguing and maintaining the supply of all publications of the corporation and responding to requests for information from the member-

ship and general public.

Treasurer - The Treasurer shall be responsible for all funds and securities of the corporation; receive and give receipts for moneys due and payable to the corporation from any source; and deposit all such moneys in the name of the corporation in such banks, trust companies, or other depositories as shall be elected by the BOD. The Treasurer shall advise the BOD in preparation of an annual budget, be responsible for all financial records, and provide the BOD and the membership with written financial reports, including an annual report, sit on the Fund-Raising Committee, and in general perform all duties incident to the office of Treasurer and such other duties as from time to time may be assigned by the President or the Board of Directors.

Director-at-large - The Director-at-Large shall be responsible for development of special projects as assigned by the Board, particularly related to integration of scientific knowledge and conservation issues – this position has been filled by a professional biologist/ecologist in the past. Whenever possible, nominees for this position should be drawn from states not otherwise represented on the BOD.

The HLCS is also looking for volunteers for the **Member Services Officer**. This is not

an elected position but is an appointed one. Here is the description as documented in the bylaws: "The Member Services Officer shall see that all notices are duly given in accordance with the provisions of these Bylaws or as required by

law, oversee the membership records and provide the membership with reports as may be requested by the BOD. The Member Services Officer shall serve as chair of the Member Services Committee and act as liaison between the BOD and

any other standing or special Committees assigned to him or her, and perform such other duties as from time to time may be assigned by the President or the BOD." If you are interested in this position, contact Jared Fuller at jfuller@unr.edu.



Horned Lizard Survey and BioBlitz at the Katy Prairie Conservancy

By Leslie Nossaman

On April 19 the Katy Prairie Conservancy held a horned lizard survey and a BioBlitz.

The Katy Prairie Conservancy has a study to see if there are any horned lizards present on the grounds and to study if there are habitats that could support a population for reintroduction. The Katy Prairie Conservancy is located west and north of Houston.

The mission of the Katy Prairie Conservancy is "To Preserve an ecologically vital tallgrass prairie and associated wetlands area on Houston's far west side for the enjoyment and benefit of all." For more information, go to www.katyprairie.org.

We met at the Warren Ranch, just north of the Conservancy, and walked out to the Matt Cook two-level observation deck that overlooks the lake. We watched the birds for a while, took pictures, and got acquainted.

People on the survey team were Julie d'Ablaing and Mary Waters who are Master

Naturalists, Leslie Nossaman and Vivian Thomas from the HLCS, and Cassidy Johnson. Cassidy is the horned lizard study project manager. Cassidy has a PhD in biology and is a biology professor at Houston Community College.



Vivian Thomas and Cassidy Johnson hiking on the prairie (photo by Leslie Nossaman)

She is also the President of the Coastal Prairie Partnership and founder for the Texas Organization for Amphibian Diversity.

After our introductions, we drove to the Prairie Conservancy lands and then looked for horned lizards and documented all the wildlife for the BioBlitz. The BioBlitz is also part of the Katy Prai-

rie Biodiversity project. We documented over 30 plant species, 3 bird species, 11 invertebrates, and 1 vertebrate which was a mosquito fish that was brought in with the recent floods. We did see animal foot prints in the dried mud for coyotes, skunks, and armadillos. The only herp species we saw was ribbon snake and they were abundant and especially abundant near any water areas.

There were two areas surveyed, one that was wet and muddy and one that was higher and dry. In the wetter area the grasses were low and thick and may have been difficult for a horned lizard to move around. There were harvester ant mounds in this area although they did not appear to be permanent mounds and may move with the higher water events. The higher dry areas had many permanent ant mounds, less grass than in the wet areas, and scrub trees for horned lizard shelter. It would be great to go back and continue with future horned lizard surveys in the Conservancy lands. It has a large biodiversity and is wonderful place to visit.



Return Service Requested

PLEASE JOIN US! Students/Seniors: \$10; Regular: \$25; Contributing: \$50; Corporate: \$250; Lifetime: \$300
 Families: \$25 for the first person and \$10 for each additional member
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To receive the electronic copy and be taken off the newsletter print list, please contact Katie Talbott at Katie.Talbott@state.mn.us.