HORNED LIZARD CONSERVATION SOCIETY
Post Office Box 122, Austin, Texas 78767

Phrynosomatics

The Newsletter of the Horned Lizard Conservation Society

Our purpose is to document and publicize the values and conservation needs of horned lizards, to promote horned lizard conservation projects, and to assist with horned lizard management initiatives throughout their ranges.

Volume 24, Issue No. 3 **AUGUST 2019**

HLCS Field Survey in the Yuha Desert in Southern California

By Leslie Nossaman

Survey attendees from left to right: Doug Earle and his wife, Taylor Dee, Leslie Nossaman, Cheryl Jenkins, Caiden Jenkins

On April 13, 2019 HLCS sponsored a field survey to look for Flat-tailed Horned Lizards (*P. mcallii*) and Desert Horned Lizards (*P. platyrhinos*) in their natural habitat in the Yuha Desert. The purpose was to count the numbers in a public area known for seeing these species. The field survey was for members only. Cheryl Jenkins and Taylor Dee organized this field survey. Cheryl and Taylor are the HLCS Regional Contacts for Southern California and Taylor is our newsletter print manager. The HLCS Board is very grateful to Taylor (and all her helpers) for all her hard work on the newsletter. And very grateful for Cheryl and Taylor who organized this survey.

People attending this survey were myself, Cheryl Jenkins, Cheryl's son Caiden, Taylor Dee, and Doug Earle and his wife. Cheryl has training and several years of experience in surveying for Flat-tailed Horned Lizards in their native environment and was authorized to handle Flat-tailed

continued on page 3

Board of Directors

Regional Contacts

Other contacts

Find us online on-
the web: www.hornedlizards.org
Facebook: www.facebook.com/hornedlizard/
Instagram: www.instagram.com/hornedlizardconservation/

Horned Lizards by the California Department of Fish and Wildlife. The Desert Horned Lizard does not currently have any protections in California. The Flat-tailed Horned Lizard is listed as "sensitive" by the BLM and a "species of special concern" by the California Department of Fish and Wildlife and is offered some protection with the Flat-tailed Horned Lizard Rangewide Management Strategy (see article on Page 5).

The field trip site was in a Bureau of Land Management mixed-use area which allows off-road vehicle activity along designated routes which might not be conducive to any lizard conservation.

Cheryl explains issues around Flat-tailed Horned Lizard conservation in Southern California.

I went to the site the day before to check it out and only saw a Great Basin Whiptail although it might have been a Western Whiptail. It was hard to tell from its movement and coloration and hiding so quickly. It was incredibly windy so the lizards may not come out during this type of weather. But I did see lots of black ants and beetles which would provide a food source for the Flat-tailed Horned Lizards and Desert Horned Lizards. And I saw several lizard tracks of different varieties, so I was hopeful.

The day of the survey many of us met at a nearby coffee shop and then drove to the site. We met our survey leader, Cheryl Jenkins at the trail head. Cheryl explained the conservation history of the Flat-tailed Horned Lizards and how to conduct a survey for them. Included was a description of the area and what other reptile species we could expect to find, as well as a general safety discussion.

Before we really got started and near the trail head, we saw a Desert Iguana sunning itself on a rock. This got us excited by what we might see. Then we got in our cars and drove to the end of the trail road where we started our hike. We moved south toward the Mexican border. It was a sunny day with a slight wind. We spread out but were within shouting range and we all had our cell phones ready. We hiked and climbed in the heat for a few hours but did not see any horned lizards. We did see a few Desert Iguanas and lots and lots of lizard trails but still no horned lizards. Cheryl saw a track of a sidewinder rattlesnake in the sand. And there was one jackrabbit that ran through our gathered group at one time perhaps taunting us to catch him. The sides of the arroyos were a good place to look and a good place to find lots of tracks but no horned lizards.

After several hours it became very hot and since we were not lucky enough to see many lizards, we decided to call the survey over. We had a lengthy discussion back at the cars about the Flat-tailed Horned Lizard and plans for further cooperation between the Southern California regional contacts and the HLCS Board.

continued on page 4

Surveyors at work in and on top of the arroyo. The mountains in the distance are in Mexico. Photo by Leslie Nossaman.

I was the last to leave the area and while driving back toward the trail head I saw a Desert Horned Lizard on the side of the road. It quickly ran across the road in front of the car and I slammed on the breaks. Then grabbed my camera with eyes on the lizard. It was a Desert Horned Lizard on the side of a creosote bush, but it quickly ran inside the bush. I waited 45 minutes for the horned lizard to reappear, but it never did so I left without any photos.

Then further down the road a Desert Iguana ran across the road. I slammed on the breaks again and grabbed my camera. And this time I got some good photos and videos of four Desert Iguanas. They blend in so well into their environment just due to their color that they are hard to see. There was a male who was inquiring about some female company from the other three females. He head-bobbed with one female on one side of the road with no luck and then went to the other side of the road again with no luck. He retreated to a creosote bush and sat there for a long time.

Desert Iguana (possibly gravid). Photo by Leslie Nossaman.

Both the Desert Horned Lizards and Flat-tailed Horned Lizards are masters of camouflage and well adapted to the desert environment. It is possible that we walked

continued on page 5

right past them and didn't even notice. Even a well-trained and experienced surveyor can have difficulty finding them under pristine conditions. With surveys sometimes you are lucky and see a horned lizard but there have been many where the field group surveys last all day or a few days and we never see one. Even though it was only a brief encounter with the Desert Horned Lizard, it still feels lucky!

Update on Flat-tail Horned Lizard Conservation

By Cheryl Jenkins

The Flat-tailed Horned Lizard (*Phrynosoma mcallii*; FTHL) is a moderate-sized, flat-bodied lizard, with a gray, tan, reddish-brown, or whitish back with small spines, a narrow dark stripe down the back from head to tail base, and a flattened tail. The lizard has eight horns that extend from the back of the head, and a snout to vent length of approximately 2.7 to 3.2 inches (70 to 80 mm). The FTHL inhabits fine packed sand or pavement that is overlain with loose, fine sand in areas that are sparse or lacking in vegetation at elevations from below sea level to 820 feet (250 m) in southeastern California, southwestern Arizona, and northwestern Mexico. This species has the smallest range of any horned lizard in the United States. Much of the FTHL's historic habitat (up to 50 percent) in the U.S. has been lost due to urban and agricultural expansion, pesticide contamination, off-highway vehicle activities, renewable energy project development, roads, power lines, military activities, invasive plant species, cattle grazing, border patrol activities, and sand and gravel extraction (Sherbrooke 2003, Rorabaugh and Young 2009).

Because of the small range and threats to this species and its habitat, a long-term Conservation Agreement was created by the FTHL Interagency Coordinating Committee (ICC) and signed by several federal and state agencies to implement the Flat-tailed Horned Lizard Rangewide Management Strategy (RMS) in 1997. A revision of the RMS was completed in 2003. The RMS continues to be implemented by all Conservation Agreement signatory agencies. Annual reports are prepared by the ICC to monitor plan compliance. The RMS and additional information are available online at https://www.wildlife.ca.gov/Regions/6/Flat-Tailed-Horned-Lizard. Currently, the species is listed as sensitive by the BLM, and a Species of Special Concern in Arizona and California.

The Conservation Agreement designates five management areas (MA) and one research area (RA) to serve as long-term monitoring sites for FTHL. The MA/RAs include the Yuma Desert MA in Arizona, and the Borrego Badlands, East Mesa, West Mesa, and Yuha Desert MAs, and the Ocotillo Wells RA in California. Maps and boundary descriptions are available in the 2003 RMS. A field trip to the Yuha Desert MA was undertaken by members of the HLCS in April 2019 and is discussed in HCLS President Leslie Nossaman's article above. The FTHL proved elusive during the field trip, though their cryptic nature and ability to hide in plain sight may have contributed to the lack of observations.

References:

FTHL ICC. 2003. Flat-tailed Horned Lizard Rangewide Management Strategy, 2003 Revision. US Fish and Wildlife Service, Carlsbad,California.

Rorabaugh, J.C., and K.V. Young. 2009. Flat-tailed Horned Lizard. Pp. 182–185 In Lizards of the American Southwest: a Photographic Field Guide. Jones, L.L.C., and R.E. Lovich (Eds.). Rio Nuevo Publishers, Tucson, Arizona, USA.

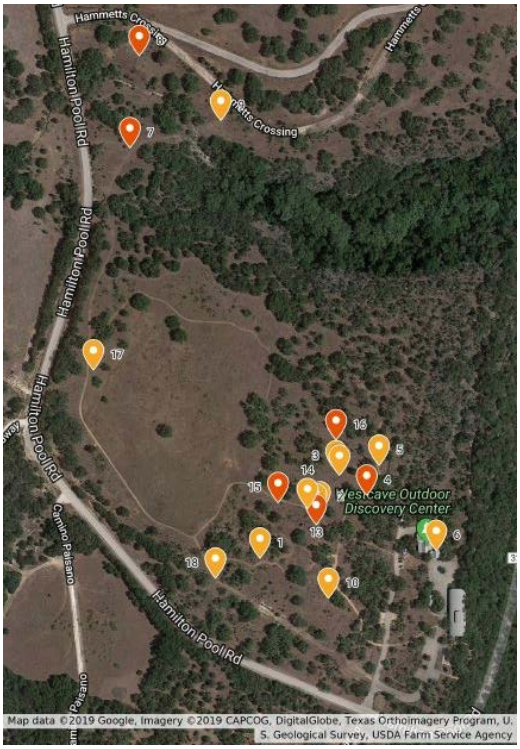
Sherbrooke, W.C. 2003. Introduction to Horned Lizards of North America. University of California, Berkeley, California, USA.

Westcave Outdoor Discovery Center Survey

by George Perry, HLCS Director at Large

Survey participants from left to right: Traci Foulkes, Cara Murray, Rob Abraham, John Kluth, Greg Smith, and Carmen Retzlaff. Venita Fuller is not shown. Photo by George Perry.

On Friday, May 17 of this year, HLCS conducted a horned lizard survey at the request of Westcave Outdoor Discovery Center. The Center is located in the northwest corner of Travis county, Texas on 76 acres. The purpose was to investigate the area for a possible horned lizard reintroduction site.



GPS locations of active (yellow) and inactive (orange) harvester ant mounds.

The property is owned by LCRA and is managed by a private non-profit corporation. The site was originally purchased by John Covert Watson in 1973 and then purchased by LCRA in 1983. It currently has a very nice Environment Learning Center and conducts scheduled tours to the public on weekends. https://westcave.org

The survey was planned to be a preliminary discovery operation. The plan was to do radial searches in 30 yard zones. We were fortunate to have eight people participate in the survey. All eight of us surveyed each active ant mound and were very thorough in our efforts.

Cara Murray and Traci Foulkes completing a radial survey. Photo by George Perry.

continued on page 7

Traci Foulkes and Greg Smith conducting the radial survey. Photo by George Perry.

Active ant mound. Photo by George Perry.

In short, we found no evidence of horned lizards or scat. The conclusion drawn was that the soil at the site was too compacted or not loose enough to entice horned lizards to take up residence.

HLCS Newsletter Access

As part of HLCS's strategy to save money to better focus what we have, we are asking our members who are receiving the newsletter by paper and post mail to move to having it delivered by email instead. This will save HLCS printing and mailing costs for sending the paper newsletter.

Each newsletter is sent by a link to all members who have given us an email address. The link will take you to a version that is in color and if you prefer paper, you can print it out and read it. Please consider making the move to a digital copy. To make the change, contact Lynn Seman, the HLCS Membership Services officer at rlynnseman@gmail.com

Official Facebook Member Group Page!

HLCS has created a new method for communicating between other members and between members and the HLCS Board. This new page will allow the Board to keep you updated with the latest news and activities and allow you a forum to post your photos and stories and ask others, including the Board questions and make comments. This page is for the dues paying members and the objective is to provide more value to you!

If you are on Facebook and are dues paying member, look for the page to be a part of this group. Go to this page and ask to become a group member: https://www.facebook.com/groups/HLCSmembers/ It is easy to sign up and it is fun! Hope to see you there!

Elusive and Cryptic: The Ditmars' Horned Lizard

by Thomas R. Van Devender, Guillermo Molina-Padilla, and Jose' Abel Salazar-Martinez

GreaterGood.org, 6262 N. Swan Rd., Suite 165, Tucson, AZ 85718

The rock horned lizards or Ditmars' horned lizard (*Phrynosoma ditmarsi*) is endemic to the state of Sonora, Mexico (Fig. 1). It was described by Leonhard Stejneger in 1906 based on three specimens collected on the Carl S. Lumholtz expeditions to Mexico in 1890-91 and 1897 from "Sonora a short distance over the border of Arizona". The species was not found again for 73 years, when mining engineer Paul Geiger discovered it on Rancho El Alacrán in the Sierra Manzanal southeast of Cananea. This population was studied by Charles H. Lowe and his students at the University of Arizona (Lowe et al. 1971).

Figure 1. Phrynosoma ditmarsi. A. Rancho la Palma, east-northeast of San José de Baviácora. Photo by Erik F. Enderson. B, C, D. Rancho Subitatechi, east-northeast of Divisaderos. Photos by Ana L. Reina-G.

Since 2009, new populations of this unique horned lizard have been regularly discovered as part of Sky Island Alliance's Madrean Archipelago Biotic Assessment (MABA) and GreaterGood.org's Madrean Discovery Expeditions (MDE) biotic inventories in Sonoran Sky Island mountain ranges. Aguilar and Van Devender (2018) and Turner et al. (2017) summarized the known distribution of P. ditmarsi in Sonora --- 18 localities at 1,004 to 1,679 (3,293-5,507 ft) elevation in rocky habitats in desert grassland and oak woodland. The entire rango is from near Cananea south to Aribabi 139 km (86 mi) south of the Arizona border.

continued on page 9

Figure 2. Phrynosoma hernandesi. A. Cañada el Pinalito, Sierra Elenita. Photo by T. R. Van Devender. B. Rancho El Seis, east-northeast of Cananea. Photo by G. Molina-P.

The MDE Wildlife program is documenting mammals in high priority areas in northern Sonora using wildlife cameras. In October one of us (GM-P) saw Greater Short-horned Lizards (Phrynosoma hernandisi) on Presidio Chinapa and Rancho el Seis, about 25 km (15.5 mi) northeast of Cananea in grassland and oak woodland at 1517 and 1819 m (4976 and 5966 ft) elevation (Fig. 2). This is the common horned lizard in the Cananea area. In October, Molina-P. and former student Salazar-M. left cameras on Rancho las Playitas. The Picacho de Bacoachi on Rancho las Playitas is a striking landmark in the Rio Sonora Valley (Fid. 3). They saw juvenile P. ditmarsi at 7.5 and 14.4 km (4.7 and 8.9 mi) west-southwest of the town of Bacoachi on November 4 and 10, 2018 in desert grassland (Fig. 4). The habitat was rocky desert grassland at 1238 and 1352 m (4061 and 4345 ft) elevation. These are the first records for the Municipality (=County) of Bacoachi and increase the number of known localities to 20.

Figure 3. Desert grassland and Picacho de Bacoachi. Photo by G. Molina-P.

Figure 4. *Phrynosoma ditmarsi*. Rancho Las Playitas, west-southwest of Bacoachi. A. Photo by G. Molina-P. B. Photo by J. A. Salazar-M.

Literature Cited:

Aguilar-M., C., and T. R. Van Devender. 2018. Horned lizards (Phrynosoma) of Sonora, Mexico. Sonoran Herpetologist 31:40-50.

Lowe, C. H., M. D. Robinson, and V. D. Roth. 1971. A population of Phrynosoma ditmarsi from Sonora, Mexico. Journal of the Arizona Academy of Science 6:275-277.

Turner, D. S., T. R. Van Devender, H. Silva-K., N. León del Castillo, C. Hedgcock, C. Roll, M. Wilson, and F.I. Ochoa-G. 2017. Distribution of Phrynosoma ditmarsi. Stejneger. 1906, with notes on habitat and morphology. Mesoamerican Herpetologist 4:969-985.

Texas Conservation Symposium Conference

by Leslie Nossaman

On January 10 and 11, 2019 The Williamson County Conservation Foundation held their 5th Annual Texas Conservation Symposium. It was held at Southwestern University in Georgetown, Texas. Around 70 people attended. There were 22 talks and six were of horned lizards. This is a summary of the six horned lizard talks.

Dean Williams presenting at the Texas Conservation Symposium Conference. Photo by Leslie Nossaman.

Andy Gluesenkamp from the San Antonio Zoo talked about the Texas Horned Lizard reintroduction project. He mentioned there was a reason to work to conserve. That Texans love this lizard as much as they hate all other herps all put together. It is best to release after the lizards are at last 2-3 months old as then they can eat harvester ants and beetles better. To make this reintroduction successful there needs to be a long-term commitment from landowners to horned lizard management. And that the land management issues are similar to those for quail.

Dean Williams from Texas Christian University discussed the genetic considerations for captive breeding and reintroducing Texas horned lizards. The genetics of a horned lizard need to be considered before reintroducing them into a habitat. It is important to preserve the evolutionary distinctiveness of populations. The age that a Texas horned lizard can reproduce is two years old. The maximum normal life span is at six years, but a few can live up to 10 years. The average number of young a female can produce is 21 young per year. Most Texas horned lizards are polygynandry and not monogamous.

Sara A van der Leek from Wayland Baptist University presented habitat associations and population estimates for the Texas horned lizard in the Southern High Plains of Texas. Introduction of cattle has decreased the number of horned lizard occurrences at the Floyd County survey site.

Mary Tucker presented the ectoparasite loads of urban horned lizards. She studied in Karnes City and Kenedy, Texas for six years. Of the horned lizards that were studied 50% were infested with red mites. These mite larvae use the lizards as hosts until they are big enough to live on their own. The majority of mites were found within their neck folds. Males in breeding season had more infestations that any other parameter and was probably due to increased testosterone levels.

Dusty Rhoads from Texas Christian University talked about the background color-matching of the Texas horned lizard to its habitat. He mentioned he felt it was the first line of defense to hide from predators. He uses digital imagery for the color matching. The process includes using a photo of a horned lizard and determining all the colors then repeat with the substrate. Then group the colors into a histogram and then quantify the colors with a color table to analyze the frequency of the colors. Then calculate the percent color matching. A 50% match is good enough to consider a horned lizard color and substrate color match.

continued on page 11

Stephen Mirkin from Texas Christian University talked about the urban predation of Texas horned lizards around Karnes City and Kenedy, Texas and in a natural area in Dimmitt County. As part of his study he created 126 horned lizard models of three class sizes: baby, juvenile, and adult. And then left the models out and checked for predation. One group was color matched to their environment and another group was not. There were also controls set up which were the same size but not the same shape as a horned lizard. There were higher predation rates in natural areas. There was a major difference in predation hits on the controls versus the horned lizard models which had more predation events of bites and bird pecks. The adults and juvenile models had more predation events than the babies.

Horned Lizard Research Grant 2020 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 2020. 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 1000 words. 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 George Perry: Gbperry10101@gmail.com. The deadline is January 1, 2020. The decision will be announced by January 31, 2020.

President's Message *by Leslie Nossaman*

HLCS continues to grow and expand our mission since our last newsletter. Last I checked, which was a couple of weeks ago, we had 298 members. Two years ago, we had 186 members which is a significant growth. We also have over 1400 Followers to our public Facebook page which is over 30% growth since the beginning of the year. And more of our dues paying members are finding our private group member Facebook page. Almost 25% of our dues paying members are now members of this group page. Look for the article named "Official Facebook Member Group Page" in this issue for more information on this group page.

The HLCS Board has also been working hard to improve our processes to have a stronger foundation from which to work. And we have our original charter document and tax-exempt declaration document stored in a convenient place and all legal documents up to date. We also made some improvements and updates to our banking accounts, one of which is we won't be charged fees anymore. Please read the article titled "HLCS Newsletter Access" to learn more about how you can help HLCS save money. We are continuing to find ways to save money and focus our funds that you provide to further protect the horned lizard. And HLCS sponsored three surveys since the last newsletter and you can read about two of them in this newsletter. Stay tuned for more announcements!

HORNED LIZARD CONSERVATION SOCIETY
Post Office Box 122, Austin, Texas 78767

Return Service Requested

PLEASE JOIN US! Students/Seniors: $10; Regular: $25; Contributing: $50; Lifetime: $300
Families: $25 for the first person and $10 for each additional member
HLCS is a 501(c)(3) non-profit organization. Contributions are deductible to the extent allowable by law.

Printed on Recycled Paper

Table of Contents

HLCS Field Survey in the Yuha Desert in Southern California .....pp 1, 3-5
Leslie Nossaman
Update on Flat-tailed Horned Lizard Conservation .....p 5
Cheryl Jenkins
Westcave Outdoor Discovery Center Survey .....pp 6-7
George Perry
HLCS Newsletter Access.....p 7
Official Facebook Member Group Page!.....p 7
Elusive and Cryptic: The Ditmars' Horned Lizard .....pp 8-9
Thomas R. Van Devender, Guillermo Molina-Padilla, and Jose' Abel Salazar-Martinez
Texas Conservation Symposium Conference .....pp 10-11
Leslie Nossaman
Horned Lizard Research Grant 2020 Applications.....p 11
President's Message.....p 11
Leslie Nossaman

***Phrynosomatics* is sent electronically.**