

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.

The HLCS Biennial Meeting

By Clare Freeman

The 6th national HLCS conference met July 27th - 29th in Fort Worth, Texas. The purpose of the National Conference is to bring the HLCS membership together and share with biologists what we know or need to know about horned lizards to help protect them and see that our conservation efforts are used as effectively as possible. Past meetings have focused almost exclusively on lizard biology, but more recent meetings have opened to broader topics such as land management practices and caring for ant populations.



???? of the Fort Worth zoo describing the outdoor enclosures for the adult lizards. Photo by Fannie Messec.



Wendy Hodges examining the babies at the indoor hibernacula. Photo by Fannie Messec.

Registrants were treated to a behind-the-scenes tour at the reptile house of the Fort Worth Zoo on the 27th. The emphasis was on husbandry of captive Texas horned lizards (*P. cornutum*). Indoor hibernacula and outdoor enclosures were shown and techniques of rearing, identification of individuals and general maintenance were discussed. Each Texas Horned Lizard has a unique dorsal pattern that allows it to be identified by zoo staff.

Following registration (and buffet breakfast!) in the alumni center at Texas Christian University (TCU) on the 28th, conference attendees were welcomed by conference organizer and HLCS president-elect, Joyce Roach, and by Dr. Tony Burgess, head of the Environmental Sciences Program at TCU. Wendy Hodges (Texas Memorial Museum) opened the presentation of papers and introduced the speakers. A variety of research topics focusing on three species of horned lizards (*P. cornutum*, *P. modestum* and *P. hernandes*) and their food sources were discussed by young researchers from Texas, Illinois

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Upcoming Events

Texas Wildlife Expo
Austin, TX.
October 6 - 7, 2007,

Old Rip Festival
Eastland, Texas
October 6, 2007

Texas State Fair
Dallas, Texas
October 13 - 14, 2007

National Board of Directors

President

Lee Ann Johnson Linam
Diversity Wildlife Branch
Texas Parks and Wildlife Department
200 Hoots Holler Rd
Wimberley, TX 78676
(512) 847-9480
lalinam@wimberley-tx.com

President-Elect

Joyce Gibson Roach
P.O. Box 143
Keller, TX 76244
jroach35@earthlink.net

Secretary-Treasurer

Rollo Newsom
4 Longwood Rd.
Austin, TX 78737
rnewsom@austin.rr.com

Member Services

Fannie Messec
8406 Argentina
Jersey Village, TX 77040
fmessec@yahoo.com

on the web at — www.hornedlizards.org

New Mexico Chapter

Tom McCain, Contact
PO Box 53095
Albuquerque, NM 87112
htinc@juno.com

Oklahoma Chapter

Richard Stark, President
1820 Lexington Rd
Claremore, OK 74017
starkkrv@prodigy.net

Southern California Chapter

Lester G. Milroy III, President
14321 Ricaree
Apple Valley, CA 92307
(760) 946-1094
les4toads@aol.com

Texas Chapter

Lee Ann Linam, President
Wildlife Diversity Branch
Texas Parks & Wildlife Dept.
200 Hoots Holler Rd
Wimberley, TX 78676
lalinam@wimberley-tx.com



Phrynosomatics Copy Editor

Leslie Nossaman
poppies14@houston.rr.com

Phrynosomatics Design Editor

Fannie Messec
fmessec@yahoo.com

Please Send Membership Applications or Requests for Information to:

**HLCS
P.O. Box 122
Austin, TX 78767**

and Colorado. A study of the effects of burning and grazing on the richness and diversity of the diet of *P. cornutum* populations found on the Chaparral Wildlife Management Area in south Texas indicates that moderate grazing benefits horned lizards. This should be of interest to landowners wanting to manage for both livestock and wildlife.



Joyce Roach explaining the difference in Texas "aints." Photo by Fannie Messec.

Ants constitute an important part of horned lizard diets and Joyce Roach provided an ad lib explanation of Texas ants: there are two kinds - "big red aints and big black aints". There is a third kind that often is found in sugar bowls in the summer and is known to Texans who aspire to gentility as "sugar aints" but known by a more vulgar term to the rest of us (the term is also applied derisively to persons or things of little importance). Some of these ants may comprise an element of horned lizard diets.

A Texas style buffet lunch of fajitas, guacamole and beans with peach cobbler for dessert ended the



Jane Manaster. Photo by Fannie Messec.

morning session. Dessert was topped off by an address by Jane Manaster, naturalized Texan and author of the popular book, *Horned Lizards*. She spoke of inadvertent migrations and range extensions of horned lizards through human intervention and the possibility of viable colonies existing in Florida, South Carolina and as far away as southern France. She made the interesting suggestion that if horned lizards can't adapt to the environmental problems facing them, their survival may depend on such migrations.

The afternoon session began with Leslie Nossaman presenting the results to date of the search by HLCS members for references to and depictions of horned lizards in movies, car-

toons, music and literature. Her powerpoint presentation included clips from the movie "Old Yeller" and the Looney Tunes cartoon "One Froggy Evening". Other presentations in the afternoon session along similar lines of popular

or parascientific research included young Eva Thomas outlining the very good reasons not to remove any horned lizard from its habitat, Bill Brock describing the Texas Master Naturalists program to survey rural cemeteries for horned lizards, and Lee Ann Linam's report on the results of 10 years of the Texas Horned Lizard Watch sponsored by TPWD. While the Texas horned lizard has declined over its historical range, the good news from the Watch data is that 10 years of monitoring by participating Texans has not shown a continuing decline. Data from the monitoring program statistically link only the presence of red imported fire ants as a predictor of horned lizard distribution.

For those still standing on Sunday morning (29th July), a wagon tour of the Fort Worth Nature Center was available and Joyce Roach invited conference registrants to her Crosswinds Ranch outside Fort Worth for an afternoon of heavy deserts and a chance to relax.

We'd like to thank Joyce Roach and all who helped her, the Fort Worth Zoo, TCU, and The Fort Worth Nature Center for their hard work and hospitality. There will be an email sent to the attendees later to survey them for improvements which could be made next time. So if you were an attendee look for an email soon.

Abstracts for this year's presentations are online at the HLCS website (www.hornedlizards.org).

2007 HLCS Conservation Grants Awarded

By Gad Perry

The HLCS periodically sponsors research or management efforts that have direct conservation applications. This year, we offered two \$500 grants. Proposals could have addressed any Horned Lizard species and could take place in any state in the United States or Mexico. Competition for the grants was open to undergraduate and graduate students, post-doctoral researchers, and as people outside of academic institutions.

We received a number of excellent applications, and several reviewers carefully evaluated each proposal. After much consideration, the grants were awarded to Scott Newbold, a postdoctoral researcher in the Department of Soil and Crop Sciences at Colorado State University, and Victor Bogosian, III, a graduate student in the Life Science Department at Southern Illinois University, Carbondale.

Newbold's study is entitled, "Use of ground penetrating radar in wildlife research: a novel, non-invasive technique for estimating the depth and substrate of hibernating horned lizards beneath the ground surface."

He proposes to examine the efficacy of using ground penetrating short-wave radar (GPR) to estimate the depth of hibernating horned lizards that have been tagged with radio-transmitters.

His study objectives are to investigate the effectiveness of using GPR to: 1) detect horned lizards located beneath the ground surface in a variety of substrate types, 2) estimate the depth of hibernating horned lizards beneath the ground surface, and 3) describe the density of the substrate surrounding hibernating lizards (i.e., detect whether a lizard is located within a rodent burrow or not). He will be working with two species, the Texas horned

lizard (*Phrynosoma cornutum*) and the short-horned lizard (*Phrynosoma hernandesi*).

Bogosian's study focuses on the use of habitat modeling for conservation applications. His specific objectives are to: 1) determine dietary habits and thermal landscape data for horned lizards; 2) compile these data with existing geographic data on-site [Tinker Air Force Base in Oklahoma City] into a comprehensive habitat model; 3) monitor marked lizards to test predictions regarding movement and spatial use from the model; and 4) translocate and monitor lizards at model-supported translocation sites.

We look forward to the results of both studies and hope to see them present their results at the next HLCS National Meeting. We also hope to offer additional awards in the coming year, to further stimulate research on horned lizards.



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.

Scenes from the HLCS 2007 Biennial Meeting



Lee Ann Linam and Juan Carlos Diaz work the registration table for the Biennial Meeting. Photo by Fannie Messec.



Horned Lizard cookies as part of the afternoon snack at the Biennial Meeting. Bette Armstrong made them. Thank you, Bette! Photo by Leslie Nossaman.



Joyce Roach giving the introductory remarks at the Biennial Meeting. Photo by Leslie Nossaman.



One of the table exhibits at the Biennial Meeting in Fort Worth. Submitted by Barbara Standlee with the TCU Library.



Student Awards at Fort Worth Conference

By Wendy Hodges

This year, I am very pleased and honored that the society was able to provide six young scientists with awards that recognize their contributions and value. We handed out 2 research awards and 4 travel awards.

The travel awards provided students a waiver of their registration fees and \$100 to attend the meeting.

Research awards recognized the top 2 abstracts that were submitted with funds to help with their research and travel to the meeting and an annual member-

ship to the society.

The Board of Directors showed renewed interest on Friday night to increase funding for research in future years and additional conservation specific projects will be targeted for funding.

Research Awards were granted to Jeremy Lane and Daniel Martin. Jeremy's research was, "Texas Horned Lizard Diet Analysis: Evaluating the Effects of Burning and Grazing," and Daniel's research project was, "Hibernation Site Selection of Short-horned Lizards in North-eastern Colorado."

Winners of the travel awards were Juan Carlos Diaz, (Home Range, Life History, and Activity Patterns of Texas Horned Lizards (*Phrynosoma cornutum*) in the High Plains region of Texas), Victor Bogosian III (Tests of Interactions in Texas Horned Lizards: Evidence of Territoriality?), Ann Mayo (Research Notes on *Pogonomyrmex barbatus* and *Pogonomyrmex comanche* in North Central Texas) and Ellen Schwaller. (An Envirogram for the Texas Horned Lizard)

Two winning Research Award Abstracts are on the next page.

Research Award Recipients



Daniel Martin. Photo by Fannie Messec.



Jeremy Lane. Photo by Fannie Messec.

Travel Award Recipients



Ann Mayo. Photo by Fannie Messec.



Victor Bogosian III. Photo by Fannie Messec.



Juan Carlos. Photo by Fannie Messec.



Ellen Schwaller. Photo by Fannie Messec.

Two Winning Research Award Abstracts

Texas Horned Lizard Diet Analysis: Evaluating the Effects of Burning and Grazing

Jeremy S. Lane and Richard T. Kazmaier
Department of Life, Earth, and Environmental Sciences, West Texas A&M University, Box 60808, Canyon, TX, 79016: jeremylane03@yahoo.com

Although the diet of the Texas horned lizard (*Phrynosoma cornutum*) has been characterized as being dominated by harvester ants (*Pogonomyrmex* spp.), little attempt has been made to quantify variation in diet or the influence of land management practices on diet. Such information would be valuable for conservation efforts. For this purpose, Texas horned lizard fecal samples, collected from Chaparral Wildlife Management Area in southern Texas from 1998-2003 in conjunction with a fire ecology project on this species, were dissected to identify their contents.

Each sample was matched to a pre-existing burning (unburned or burned) and grazing (ungrazed, moderately grazed, or heavily grazed) treatment according to the area in which it was found. Dietary abundance, diversity, richness, and evenness were calculated and compared among

burning and grazing treatments using ANOVA. Two hundred twenty-five fecal samples were dissected, with ants (Formicidae) and termites (Isoptera) comprising the majority of the samples with 76.37% and 23.05% respectively.

Twenty-six invertebrate families and approximately 27 ant species were identified from the samples. Of the ants, honeypot ants (*Myrmecocystus*; 60.27%) and harvester ants (*Pogonomyrmex*; 31.64%) were the majority. While there was no effect of burning on diet observed, there was an apparent trend among the grazing treatments. Species diversity, richness, and evenness were not different between grazing treatments. However, dietary abundances were higher in fecal samples from moderately grazed areas than in heavily grazed or ungrazed areas at both family and genus levels of invertebrates. As samples from moderately grazed areas had the highest abundances of food items, including the taxa that formed the majority of the diet analyses, moderate grazing appears beneficial to this population.

Keywords: Texas horned lizard diet

Hibernation Site Selection of Short-horned Lizards in Northeastern Colorado.

Daniel Martin and Tom Mathies
Colorado Division of Wildlife, USDA NWRC, 1907-D Ross Ct., Ft. Collins, CO, 80526: djm_ks@yahoo.com

We radio-tracked 17 adult Short-horned Lizards to their individual overwintering sites on the Shortgrass Steppe Long-Term Ecological Research (SGS LTER) site in Weld County, Colorado. Above-ground habitat characteristics of 16 overwintering sites and 32 randomly selected points within the study area were assessed. All individuals entered overwintering between 29 August and 19 September with a mean estimated entrance date of 8 September. The first sub-zero nighttime air temperatures occurred shortly thereafter on 16 September. No lizard left its normal

area of use to overwinter and there was no tendency to aggregate. Lizards did not necessarily overwinter on warmer south-facing slopes; the proportion of overwintering sites oriented southwards (0.62) was not different from random. Most lizards (75%) selected overwintering sites in the banks of washes that had steep slopes relative to random sites, and at locations where substrate was relatively bare and penetrable. Overwintering sites also had slightly greater coverage of *Yucca glauca* (0.02%) than the general study area (0.01%). Analyses of historical soil temperature data from the SGS LTER revealed that hibernating lizards would have to overwinter at a subsoil depth of approximately one meter to avoid freezing temperatures.

Keywords: Colorado, hibernation, microhabitat, *Phrynosoma hernandesi*



Results of the Horned Lizard in Movies, Cartoons, Music, and Literature Contest

By Leslie Nossaman

We have the final results of the contest and want to show you what we have collected and the contest winners. The contest may be over but the search is going to continue. Prizes of horned lizard pins will be given to anyone who sends in items that can be validated and follow the rules.

The person who sent us the most references to the horned lizard in literature such as books and poetry (nothing scientific), music lyrics, and movies made for entertainment (no educational TV shows or documentaries) in the approved format wins. The literature, music and movies must be available to the general public.

First prize is a painted set of Texas Horned Lizard family members donated by Tom McCain. Second prize and third prizes are t-shirts.

Rollo Newsom provided the most references and has won first prize. Joyce Roach is second place and Wendy Hodges is third place.

Other contributors are Dan and Sue Ferguson and Leslie Nossaman. These were first announced at the Biennial Meeting.

We have gathered references for

- 2 movies
- 1 song
- 3 cartoons
- 17 literature items

Literature

- Short Story by O. Henry
- W. B. Parker, Notes Taken During the Expedition
- From Hell To Breakfast
- The Rise, Progress, and Prospect of the Republic of Texas
- Early Times in Texas
- S. Omar Barker poem
- Hippie Hollow: A murder on a Nude Beach
- Stone Butterfly: A Charlie Moon Mystery
- Moods of the Prairie
- Found Dead in Texas and Other Stories
- Law West of the Pecos: The Story of Judge Roy Bean
- The Saga of Judge Roy Bean: The Law West of the Pecos
- The Saga of Pecos Bill
- Missing Member
- Tumbleweed: Rites and Wrongs of Passage in a Left of Center Texas Town
- The Red Pony
- Old Yeller

Music

- Goodbye Yellow Brick Road by Elton John
"Back to the howling old owl in the woods,
Hunting the horny back toad.
Oh I've finally decided, my future lies
Beyond the yellow brick road."

Movies

- The Outlaw Josey Wales
– This lizard was identified as a Mexican Plateau Horned Lizard – *P. orbiculare*
- Old Yeller
– This lizard was identified as a Texas Horned Lizard

Cartoons

These cartoons are all from Warner Brothers. This may be due to the cartoonist Tex Avery who was with Warner Brothers in the thirties and forties. His real name was Fred Bean Avery.

He was born in Taylor, Texas on February 26, 1908. Taylor is 20 miles from Austin and would have had a lot of horned lizards there and during the time he was growing up.

He created Porky Pig, Daffy Duck and the personality of Bugs Bunny. It has been said that he was a lineal descendant of Judge Roy Bean. The familiar phrase "What's up, Doc?" came from Tex and was believed to have been an expression used in Avery's home town in Texas when he was growing up.

- One Froggy Evening – (Looney Tunes – Golden Collection, volume 2) Warner Brothers (editor's note – Steven Spielberg said this was the Citizen Kane of cartoons. Cartoon is partially based on the Old

Rip story in Eastland, Texas. The green frog in the cartoon became the Warner Brother's mascot for their TV channel. His name is Michigan J. Frog.)

- Knight-Mare Hare (Looney Tunes – Golden Collection, volume 4) – Warner Brothers “Hoo boy, what big horny toads they do have around here.” after seeing a fire-breathing dragon run by.
- An unknown Yosemite Sam Cartoon – Warner Brothers “Great horny toads, I’m up north. Gotta burn my boots, they touched Yankee soil.”

Thanks to everyone who contributed. This has been a fun and exciting contest. Again prizes of horned lizard pins will be awarded to anyone who sends any additional contributions.

Required formats for further contributions:

Books – Title, ISBN number (optional but nice), author, chapter, page number, excerpt with the reference

Songs – Title, composer, verse, Album or CD name where it can be found, excerpt with the reference

Poetry - Title, poet, stanza, book or website where it can be

found, excerpt with the reference
 Movies – Title, director, movie genre, date of release, description of the section of the movie in which the reference is made, any lead actors’ names
 Cartoons – Title, DVD or Video, Studio

We will need to have enough information to validate the entries. Check the November 2006, February 2007, and May 2007 issues for more examples.

Please consider contributing!
 Email items to poppies14@houston.rr.com.



Scenes of Activities Preceding the HLCS 2007 Biennial Meeting



HLCS National News

President's Message

By Lee Ann Linam



Lee Ann Linam. Photo by Fannie Messec.

It's amazing what a little enthusiasm and vision can do. Joyce Roach brought both to our recent National Meeting in Fort Worth, and it was gratifying to watch those seeds begin to germinate among students, researchers, zoo-keepers, land managers, and just plain ol' fans of horned lizards. I think the interactions we enjoyed at the national meeting hold much promise of future cooperative research, restoration, and conservation efforts in North Texas. Thank you, Joyce, and your family, for a great job!

Joyce Roach was just one of several special people with us in Fort Worth. The Horned Lizard Conservation Society has a long history of prospering because of the extraordinary enthusiasm of some very dedicated people. I am constantly awed by the dedication and enthusiasm of the people who have made this organization effective over its 17 years. In that spirit, HLCS offered some special recognition awards at the meeting:

Lifetime Membership – Carolyn Todd – Carolyn is a long-time member of HLCS, serving as president of the Texas Chapter and in many other committee roles. She has been instrumental in developing some of the Society's printed materials and has especially championed the cause of outreach and education. She continues to assist in field surveys and in rescue efforts.



Carolyn Todd receiving Lifetime Membership Award. Photo by Fannie Messec.

Special Service Award – Bette Armstrong – Already recognized as one of our HLCS "Heroes" for her outreach efforts and historical preservation efforts in Eastland, the "Horned Toad Lady" has also granted many years of service to the Society, having served as Membership Chair for many years and stepping forward to serve in many other roles when needed. She is a lifetime member of HLCS.

Special Service Award – Bill Brooks – Bill has served as President of the Texas Chapter and of the Society at a national level, but may be best known for his enthusiastic presentations

on horned lizards to a variety of audiences. He continues to serve the Society in many ways, including handling our wonderful selection of merchandise, and responding to many requests for information (including those from current officers, such as myself!). He is a lifetime member of HLCS.



Bill Brooks receiving Special Service Award. Photo by Fannie Messec.

Special Service Award – Wendy Hodges – Wendy has a respected history as a horned lizard researcher, but also has devoted an extraordinary amount of time in service to HLCS. After service as national president for many years she continues to willingly offer assistance to the Board in many matters and maintains the Society's website. She is a lifetime member of HLCS.



Wendy Hodges receiving Special Service Award. Photo by Fannie Messec.

Certificate of Appreciation – Lester Milroy – Although not present at this year’s meeting, HLCS wished to thank Lester for his many years of service as President of the California Chapter, along with previous service as National President. Lester continues to monitor conservation issues in California for HLCS to be involved in the field there.

Certificate of Appreciation – Richard Stark – Although absent from the meeting this year, Richard has long served as president of the Oklahoma Chapter. He has initiated Society-supported research in Oklahoma and contributes much in broadening the perspective of the National Board.

Certificate of Appreciation – Tom McCain – Tom has been president of the New Mexico Chapter for many years and is tireless in promoting HLCS during his many travels around



Tom McCain receiving Certificate of Appreciation. Photo by Fannie Messec.

the U.S. A talented artist, whose jewelry and sculptures of the various species of horned lizards are much admired, he has also been very generous in sharing his work with HLCS and, in fact, donated several of his hand-painted figurines as gifts for our Special Service Award recipients and conference guests, along with a lapel pin for all conference registrants. [Thank you, Tom!] Tom is a lifetime member of HLCS.

Certification of Appreciation – Joyce Gibson Roach – In addition to her tireless efforts in

coordinating this conference, Joyce has done much to promote enthusiasm for horned lizards among many audiences through her children’s books, folklore writings, and interaction with her alma mater, TCU. She is a lifetime member and President-elect of HLCS.



Joyce Gibson Roach receiving Certificate of Appreciation. Photo by Fannie Messec.

Thank you to all these individuals for their selfless service to HLCS, and, on a personal note, thank you to all of you for making my job as President easier!



Upcoming Texas HLCS Events

October 6-7 – Texas Wildlife Expo – Austin, TX – This HUGE FREE outdoor event draws about 40,000 visitors, with many things for people to see and do. Our horned lizard education booth and merchandise sales are hugely popular. If you are willing to work one or more 3-hours shifts, then please contact Lee Ann Linam at lalinam@wimberley-tx.com or 512-847-9480.

October 6 – Old Rip Festival – Eastland, TX – This small-town festival commemorates the legend surrounding Texas’ most famous horned lizard. HLCS provides a valuable service in providing information about horned lizards, along with activities for kids. If you can help with the booth, please contact Bill Brock at Bill.Brock@abilenetx.com.

October 13-14 – Texas State Fair – Dallas, TX – Tom McCain is present at the State Fair every year and says that many members of the crowd are interested in learning more about horned lizards. Tom has invited HLCS to share some of his booth space on one of the weekends in order to be able to do some education and outreach. Please contact Tom McCain (tom@httom.com) if you could help present HLCS material this weekend.

