



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.

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The status of an introduced species (*Phrynosoma cornutum*) on barrier islands in South Carolina

By Courtney Heuring

While walking the beachfront near Charleston, South Carolina, visitors may notice an unfamiliar creature—the Texas horned lizard (*Phrynosoma cornutum*). The species is thought to have been introduced to South Carolina barrier islands during the early 1900's by soldiers traveling from Texas to the military bases on the South Carolina coast, but exact details of the introduction are unknown. In the 70+ years since the introduction, populations of the have persisted and are now found in several areas along the coast of South Carolina.

As these introduced populations had not been studied, the purpose of my study was to locate *P. cornutum* populations on three barrier islands and compare them to the native populations in



the western United States. Specifically, I used morphology, diet, and genetic markers to determine divergence from western *P. cornutum* populations and among the South Carolina populations.

During the summers of 2014 and 2015, I performed my field work

and caught a total of 123 individuals. I found that lizard body shape and size significantly varied across the introduced populations. Compared to lizards in the native range, South Carolina lizards generally followed the latitudinal trend for body size.

My diet analyses revealed that the South Carolina *P. cornutum* diet is composed of mostly

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2015 Grant Recipient Research Summary

In 2015 HLCS awarded a grant to Courtney Heuring to help support her research on the *P. cornutum*, an introduced species in South Carolina. For many years the HLCS has heard stories of this species existing in South Carolina and wondered where the species came from. Courtney's research has now spread some light on the subject. She also told the editor that the Texas horned lizard survived the historic thousand year flooding event in 2015 which devastated the coastline where the Texas horned lizards live. HLCS would like to thank Courtney for summarizing her research for our membership!

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The status of an introduced species...continued from page 1

ants (94.23%) along with a small percentage of other insects which is similar to the diet for western populations. I found slight differences in diet composition and prey types eaten between the introduced populations. Interestingly, *P. cornutum* in South Carolina did not eat *Pogonomyrmex* harvester ants (the most common prey in native western populations). Instead, I found that ants from the genus *Dorymyrmex* were the most common prey consumed, suggesting that harvester ants

may not be needed for *P. cornutum* to persist as long as other ants are available.

In collaboration with Dr. Dean Williams from Texas Christian University, I performed genetic analyses on *P. cornutum* from South Carolina and directly compared them to individuals from the native range. I found that the introduced populations had less genetic variation than the populations in the native range. Additionally, only two haplotypes were found in the South Carolina populations, indicating a small

single founding event. Both the nuclear and mitochondrial data suggested that South Texas was the source of the South Carolina introduction.

I am grateful that I was selected as a recipient of the 2015 Horned Lizard Conservation Society grant award and I used the funding to cover the cost of materials and travel to my field sites. This research was performed as part of my M.S. Environmental Studies degree at the University of Charleston, South Carolina.



Courtney releasing a juvenile lizard back at the site of capture



Hatchling P. cornutum



*Juvenile P. cornutum exhibiting camouflage in the sand - look in the center
(photo by Courtney Heuring)*



*Female P. cornutum
(photo by Courtney Heuring)*



*Male P. cornutum foraging at an ant mound
(photo by Courtney Heuring)*

Meet our nominees for 2017-2018

HLCS Board of Directors

Jared Fuller assumes the Presidency as he has been President-Elect for the last 2 years under the guidance of out-going President, Tim Tris-tan. Elections for our new leaders occur every two years, and we have a great slate for the incoming board. Enclosed with this issue of *Phrynosomat-ics*, is the ballot for our incom-ing Board of Directors. We've included an autobiography for each person on the ballot so you can get to know them. Please review the candidates, make your selections and mail the completed and stamped ballot to the address preprinted on the reverse side of the ballot by December 15, 2016. Thank you for voting!

... – President-Elect
None yet

... –Treasurer
None yet

Leslie Nossaman – Secretary
From when I was very young I have always had a particular fondness for horned lizards when they were all over our backyard in West Texas. Start-ing in 2003 I have been in-volved with the Horned Lizard Conservation Society and felt like I connected with an old friend. In 2004 I started working on the HLCS newsletter, *Phrynosomatics* as the Copy Editor. The main responsibility for the Secretary is to be re-sponsible for all corporate records and publications. I have been keeping records for the HLCS for all their surveys, bien-nial meetings, grant recipients, membership numbers over the years, and all the attributes that go with these topics. I also have copies of all the newsletters since HLCS started. I have been working as the Secretary since February 2016 and have some ideas that I would like to implement on how we can im-prove our record management.

Monty Criswell – Director At-Large

I received my bachelor's degree in biology from the University of Houston and am starting my master's degree in wildlife sci-ence to be obtained from Texas A&M University this fall. I have also obtained certification as a Texas Master Naturalist and am an active member of the coastal prairies chapter since 2014. I have been a herpetology keeper with the Houston Zoo since 2012, and a coworker and I have received funding for a project in which we are performing habitat surveys at the Katy Prairie Con-servancy in which we hope to determine the viability of re-intro-duced Texas horned lizards. The Houston Zoo just received 12 *Phrynosoma cornutum* hatched at the Dallas Zoo and we plan on getting more involved in this species. As the appointed Institu-tional Representative for *P. cor-nutum*, I feel as if I would make a valuable addition to the board of the society.



Horned Lizard Research Grant 2017 Applications

The Horned Lizard Conserva-tion Society is dedicated to pro-protecting horned lizards by documenting and publicizing the values and conservation needs of horned lizards, pro-moting horned lizard conserva-tion projects, and assisting with horned lizard management ini-tiatives. Towards those ends, the HLCS annually sponsors

research that has direct con-servation 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, pri-riority has been given to proj-jects that have direct conser-vation implications, including

public education.

To apply, send a proposal de-tailing the goal of the study, the rationale for it including rele-vance to conservation of horned lizards, and how your work would benefit from this opportunity. The proposal may not exceed 1000 words, ex-cluding up to ten references.

Continued on page 7

2016 BALLOT

Please select a candidate below or write in a candidate of your choice. Please make sure the person has your permission to write their name on the ballot as a write-in.

President-Elect

_____ other (write-in): _____

Treasurer

_____ other (write-in): _____

Secretary

_____ Leslie Nossaman
_____ other (write-in): _____

Director At-Large

_____ Monty Criswell
_____ other (write-in): _____

YOUR NAME: _____

Ballots should be postmarked by December 15, 2016!

If you don't want to mail through the post, you can email your vote to Jared Fuller at:

jaredfuller8@hotmail.com

Be sure to add your name to the email so we can keep track of it.

CUT HERE TO MAIL. TAPE SHUT.

-----fold here-----

PLACE
STAMP
HERE

Jared Fuller
1350 Express St.
Sparks, NV 89434

-----fold here-----

Horned Lizard Items Make Great Holiday Gifts!

By Leslie Nossaman

The holiday season is coming and have you completed your shopping yet? Did you know that the Horned Lizard Conservation Society has over 20 items for sale? The Society has a fantastic inventory of clever and cute horned lizard items that are appropriate for kids of all ages. Here is a general listing of what you can find:

Figurines	Caps	Pins	Tie tacks
Earrings	Necklaces	Guardian Angels	Hood ornaments
Prints	Cards	Christmas cards	Magnets
Masks	Books	Bookmarks	Tote bags
Bumper sticker		Key Rings (photo shown)	
Cookie cutters (photo shown)		T-shirts (photo shown)	

These items would make a wonderful holiday gift for family members or friends. And the proceeds from the sale go to benefit horned lizard conservation. For more information go to the Horned Lizard Conservation Society website and select the STORE tab. <http://www.hornedlizards.org/store.html>



Horned lizard research grant...continued from page 4

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.



JOIN US and Help Protect the Texas



State Reptile

**HORNED
LIZARD
CONSERVATION SOCIETY**

www.hornedlizards.org



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
HLCS is a 501(c)(3) non-profit organization. Contributions are deductible to the extent allowable by law.

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***Phrynosomatics* is now sent electronically.**