



# The Beetle Invasion of the Texas Horned Lizard's (*P. cornutum*) Diet

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## Introduction



Karnes County, Texas which includes Kenedy and Karnes City where our study sites are located.

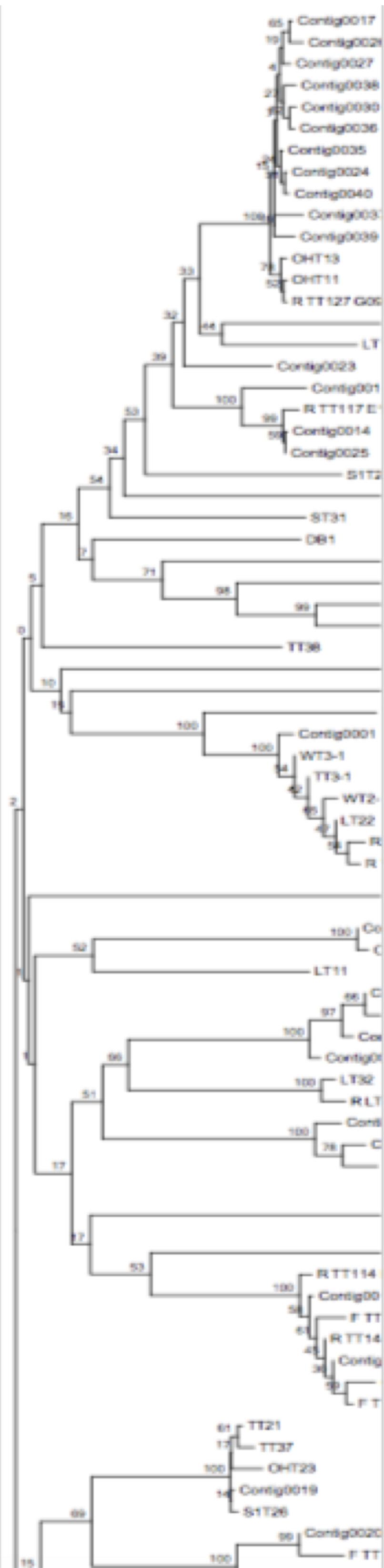
- Texas horned lizards are thought to have evolved as ant specialists.
- Population declines in the Texas horned lizard are thought to be partially caused by a decline in their theorized food source, the harvester ant (*Pogonomyrmex* spp.).
- Preliminary research using sorted scat samples shows that Texas horned lizards in two small Texas towns eat mostly termites, beetles, and non-harvester ants.

## Methods

- Bait and pitfall traps were used in the summer of 2016 to catch various ground-dwelling insects in Karnes Count, Texas.
- DNA was extracted from the beetle species collected in these traps.
- We used polymerase chain reaction (PCR) to amplify the DNA
- extracted using primers specific to a portion of the cytochrome oxidase I (Cox I) gene in the mitochondria.
- These PCR products were sequenced on an ABI Genetic Sequencer using Sanger sequencing and the results were used to identify species through BOLD (Barcode of Life Database).



## Results



Consensus neighbor-joining tree for beetle species in Karnes, Texas from a 500 bp sequence of the Cox I gene and Kimura-2 parameter distances. Bootstrap values >50 are labeled. Branch length is not proportional to amount of genetic variation.



## Conclusion

This small region will allow us to amplify and sequence the degraded DNA extracted from horned lizard fecal pellets and will help us identify beetle species that horned lizards have eaten.



Texas horned lizards caught in Karnes County

## Future Research

- Using scat samples from the summers of 2016 and 2017 we will:
- Use this marker to determine what beetle species are present in the scat
- Additionally:
- Create a similar marker that is termite specific



Texas horned lizard scat



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