Differential diets, growth rates, and survival of captive-bred hatchling Texas horned lizards (Phrynosoma cornutum) reintroduced at two locations in central Texas.

Rachel Alenius-Thalhuber1, Diane Barber,2 Nathan Rains,3 Jim Gallagher,3 Tom Thalhuber,1 & Dean Williams1

TCU; Fort Worth Zoo; Texas Parks & Wildlife Department

INTRODUCTION

- Texas horned lizards have declined throughout their native range.1
- Several zoos have begun captive breeding programs of Texas horned lizards for the purposes of reintroduction to the wild.
- Reintroduction attempts of captive-bred animals can have limited success.2

METHODS

- 254 captive-bred lizards were randomly assigned to 2 release sites at Mason Mountain Wildlife Management Area (Mason County, Texas) (Fig. 1).
- Lizards were tagged and located 3-4 times a week from Sep. to Nov. 2020 using uniquely labeled harmonic radar diode tags (Fig. 2).
- Diet: Scat were opportunistically collected and dissected to assess diet at each site (Fig. 3).
- Growth: Weight and snout-to-vent length (SVL) were measured 1x a week.
- Survivorship: Lizards were classified as “dead” if the tag was found attached to a deceased lizard or was recovered in fecal material of a predator. Lizards that could not be located or confirmed dead were assigned unknown fates.
- Failure to select suitable habitat could influence the reintroduction success of hatchling horned lizards, whose habitat requirements are poorly understood.3
- The goal of this study was to assess whether diet, growth rates, and short-term survivorship of hatchling horned lizards differed between two reintroduction sites in central Texas.

RESULTS

Figure 1. Release Sites

Figure 2. Hatching horned lizard with harmonic radar diode tag

Figure 3. Horned lizard scat & exoskeleton fragments used to assess diet.

Figure 4. Diets of horned lizards at each release site.

Figure 5. Average lizard growth rates at each site.

Figure 6. Upper and lower survival estimates for each release site.

DISCUSSION

- Texas horned lizards have declined throughout their native range.1
- Several zoos have begun captive breeding programs of Texas horned lizards for the purposes of reintroduction to the wild.
- Reintroduction attempts of captive-bred animals can have limited success.2
- Failure to select suitable habitat could influence the reintroduction success of hatchling horned lizards, whose habitat requirements are poorly understood.3
- The goal of this study was to assess whether diet, growth rates, and short-term survivorship of hatchling horned lizards differed between two reintroduction sites in central Texas.

ACKNOWLEDGEMENTS

Resources, lodging, and funding for this project were provided by the Ft. Worth Zoo, Dallas Zoo, and Texas Parks & Wildlife Department. Additional thanks to Vickie Poele, Mark Mitchell, Ryan Keitz, and the other individuals who have contributed to this project, as well as the authors of Vesy et al. (2021) for their help with survival analysis.

REFERENCES