

2017

Habitat Space Used by Northern Bobwhites and Texas Tortoises on South Texas Rangelands

Ross O. Couvillon

Texas A&M University, Kingsville

Leonard A. Brennan

Texas A&M University, Kingsville

Fidel Hernández

Texas A&M University, Kingsville

Bart M. Ballard

Texas A&M University, Kingsville

Thomas V. Dailey

*University of Tennessee, Knoxville*Follow this and additional works at: <https://trace.tennessee.edu/nqsp>Part of the [Natural Resources and Conservation Commons](#)

Recommended Citation

Couvillon, Ross O.; Brennan, Leonard A.; Hernández, Fidel; Ballard, Bart M.; and Dailey, Thomas V. (2017) "Habitat Space Used by Northern Bobwhites and Texas Tortoises on South Texas Rangelands," *National Quail Symposium Proceedings*: Vol. 8 , Article 30.

<https://doi.org/10.7290/nqsp08w49n>

Available at: <https://trace.tennessee.edu/nqsp/vol8/iss1/30>

This article is brought to you freely and openly by Volunteer, Open-access, Library-hosted Journals (VOL Journals), published in partnership with The University of Tennessee (UT) University Libraries. This article has been accepted for inclusion in National Quail Symposium Proceedings by an authorized editor. For more information, please visit <https://trace.tennessee.edu/nqsp>.

HABITAT SPACE USED BY NORTHERN BOBWHITES AND TEXAS TORTOISES ON SOUTH TEXAS RANGELANDS

Ross O. Couvillon¹

Caesar Kleberg Wildlife Research Institute, Texas A&M University–Kingsville, Howe Agricultural Building #205, Kingsville, TX 78363, USA

Leonard A. Brennan

Caesar Kleberg Wildlife Research Institute, Texas A&M University–Kingsville, Howe Agricultural Building #205, Kingsville, TX 78363, USA

Fidel Hernández

Caesar Kleberg Wildlife Research Institute, Texas A&M University–Kingsville, Howe Agricultural Building #205, Kingsville, TX 78363, USA

Bart M. Ballard

Caesar Kleberg Wildlife Research Institute, Texas A&M University–Kingsville, Howe Agricultural Building #205, Kingsville, TX 78363, USA

Thomas V. Dailey

National Bobwhite Conservation Initiative, University of Tennessee–Knoxville, 3661 E. Doe Brook Lane, Columbia, MO 65202, USA

ABSTRACT

South Texas rangelands are increasingly managed for recreational hunting, particularly northern bobwhite (*Colinus virginianus*). Effects of habitat management for game species on non-game species are largely unknown. Large private ranches used for recreational hunting could also provide habitat for the threatened Texas tortoise (*Gopherus berlandieri*). We studied habitat use of Texas tortoises and northern bobwhites on a private ranch in South Texas that undergoes active habitat management. In 2015, tortoises (n=12) and bobwhite hens (n=42) were tracked during their active and breeding seasons, respectively, with radio-telemetry. Satellite images were analyzed using ArcGIS 10.3 to delineate habitat through unsupervised classification for relevant habitat categories. Habitats were delineated based on reflectance. Differences in percent habitat composition of observed and random home ranges (100% Minimum Convex Polygon) of tortoises were not significant, but were significant for quail in 3 of 5 habitat categories in only 1 of 2 pastures. These observed quail home ranges included more areas corresponding to light woody cover and moderate herbaceous cover and fewer areas corresponding to sparsely vegetated or bare ground than random home ranges. Tortoise home ranges included more areas with woody brush cover than bobwhite home ranges. Bobwhite home ranges included more areas associated with moderate grass and herbaceous cover than tortoises. This study will continue in 2016 and will include more quail home ranges in areas with tortoises. This research seeks to determine the compatibility of managing for recreational hunting while maintaining landscape characteristics important to Texas tortoises.

Citation: Couvillon, R. O., L. A. Brennan, F. Hernández, B. M. Ballard, and T.V. Dailey. 2017. Habitat space used by northern bobwhites and Texas tortoises on south texas rangelands. National Quail Symposium Proceedings 8:133.

Key words: northern bobwhite, Texas tortoise, *Colinus virginianus*, *Gopherus berlandieri*, habitat compatibility, habitat use, non-game, sympatry

¹Email: ross.couvillon@gmail.com

© 2017 [Couvillon, Brennan, Hernández, Ballard and Dailey] and licensed under CC BY-NC 4.0.