



2017

# Changes in Habitat Use of Montezuma Quail in Response to Tree Canopy Reduction in the Capitan Mountains of New Mexico

Ryan S. Luna  
*Sul Ross State University*

Elizabeth A. Oaster  
*Sul Ross State University*

Karlee D. Cork  
*Sul Ross State University*

Ryan O'Shaughnessy  
*Sul Ross State University*

Follow this and additional works at: <http://trace.tennessee.edu/nqsp>

 Part of the [Natural Resources and Conservation Commons](#)

### Recommended Citation

Luna, Ryan S.; Oaster, Elizabeth A.; Cork, Karlee D.; and O'Shaughnessy, Ryan (2017) "Changes in Habitat Use of Montezuma Quail in Response to Tree Canopy Reduction in the Capitan Mountains of New Mexico," *National Quail Symposium Proceedings*: Vol. 8 , Article 97.

Available at: <http://trace.tennessee.edu/nqsp/vol8/iss1/97>

This Western Quail is brought to you for free and open access by Trace: Tennessee Research and Creative Exchange. It has been accepted for inclusion in National Quail Symposium Proceedings by an authorized editor of Trace: Tennessee Research and Creative Exchange. For more information, please contact [trace@utk.edu](mailto:trace@utk.edu).

# CHANGES IN HABITAT USE OF MONTEZUMA QUAIL IN RESPONSE TO TREE CANOPY REDUCTION IN THE CAPITAN MOUNTAINS OF NEW MEXICO

Ryan S. Luna<sup>1</sup>

Department of Natural Resource Management/Borderlands Research Institute, Sul Ross State University, East Highway 90, Alpine TX 79832, USA

Elizabeth A. Oaster

Department of Natural Resource Management/Borderlands Research Institute, Sul Ross State University, East Highway 90, Alpine TX 79832, USA

Karlee D. Cork

Department of Natural Resource Management/Borderlands Research Institute, Sul Ross State University, East Highway 90, Alpine TX 79832, USA

Ryan O'Shaughnessy

Department of Natural Resource Management/Borderlands Research Institute, Sul Ross State University, East Highway 90, Alpine TX 79832, USA

## ABSTRACT

Montezuma quail (*Cyrtonyx montezumae*) are unique among quail with respect to clutch size, diet, covey dynamics, and habitat use. With the exception of a few notable early studies, there is relatively little information on the ecology of Montezuma quail. Previous research has indicated that one of the primary habitats utilized by Montezuma quail is pinyon–juniper (*Pinus* spp.–*Juniperus* spp.) woodlands. Throughout many areas of the southwestern United States, pinyon–juniper woodlands are often targeted for thinning projects. Many studies have been conducted on the amount of canopy cover needed by other quail species. However, data on characteristics of their preferred habitat in many of the mountains they inhabit is limited in the literature and no data are currently published on their response to thinning projects. Therefore, studies are warranted to fill in these missing data, which will increase our knowledge about the habitat requirements of Montezuma quail and allow us to make informed decisions about thinning projects in areas occupied by Montezuma quail. The goal of this research was to evaluate Montezuma quail responses to common silvicultural practices, specifically pinyon–juniper thinning in the Capitan Mountains of New Mexico. Results of our project indicated that Montezuma quail selected for sites that had been thinned to reduce canopy cover to a 30–40% mosaic. Selection for this habitat was much higher than selection for the surrounding area, which consisted of  $\geq 70\%$  canopy cover (Manly–Chesson Selectivity Index = 1.68). Overall, this study yields vital information for managers considering implanting thinning projects in Montezuma quail habitat.

**Citation:** Luna, R. S., E. A. Oaster, K. D. Cork, and R. O'Shaughnessy. 2017. Changes in habitat use of Montezuma quail in response to tree canopy reduction in the Capitan Mountains of New Mexico. National Quail Symposium Proceedings 8:387.

**Key words:** canopy cover, *Cyrtonyx montezumae*, habitat management, Montezuma quail, population characteristics, thinning

---

<sup>1</sup> E-mail: [rluna@sulross.edu](mailto:rluna@sulross.edu)

© 2017 [Luna, Oaster, Cork and O'Shaughnessy] and licensed under CC BY-NC 4.0.