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SPATIAL ECOLOGY AND HABITAT SELECTION OF MONTEZUMA QUAIL IN TEXAS

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ABSTRACT

Montezuma quail (*Cyrtonyx montezumae*) occur throughout desert mountain ranges in the southwestern United States and northern Mexico. Considered a popular game bird in Arizona and New Mexico, they are not hunted in Texas. A hunting season was proposed for the species in 1997 but met with strong objections, most citing the dearth of information about the species. Much of the literature on Montezuma quail ecology is anecdotal or outdated. Previous researchers had problems capturing birds for marking and, once captured, keeping radio-marked birds alive. We used trained pointing dogs and conducted a radiotelemetry study on Montezuma quail in the Davis Mountains of Texas from January 2009 through September 2010. We captured 72 birds and recorded 966 locations. Home ranges were calculated for 13 individuals which had at least 25 locations. A 95% fixed kernel was calculated on each individual giving a mean \pm SD home range of $2,149.4 \pm 4,736.8$ ha. Movements varied widely by individuals and the greatest straight-line movement was 12.7 km. We also performed habitat selection analysis. Mountain savannah ecological sites were preferred across all 3 spatial scales. Our results confirm that home range size and movements by Montezuma quail occur at a much larger scale than previously reported. Thus, managing lands on a larger scale and targeting mountain savannah ecological sites should be considered.

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Key words: *Cyrtonyx montezumae*, Montezuma quail, northern Mexico, southwestern United States, spatial ecology, Texas

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