



The Value of Pricklypear and other Native Plants as Nesting Habitat for Chestnut-bellied Scaled Quail

Fidel Hernandez, Eric Grahmann, and Tim Fulbright

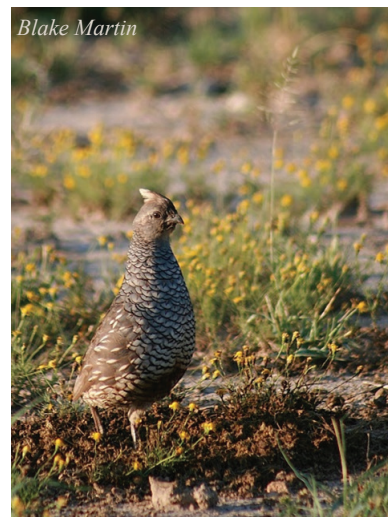
Knowing what constitutes habitat for a wildlife species is key to its conservation. The relationship between habitat and wildlife generally is quite simple: more habitat usually means greater and more persistent wildlife populations. Unfortunately, the habitat needs for some species are not always well known thereby limiting conservation efforts. Until recently, this was the case for chestnut-bellied scaled quail, a subspecies of scaled quail that inhabits the Tamaulipan thornscrub of southern Texas and northern Mexico. Chestnut-bellied scaled quail populations have been declining at an alarming rate. According to Breeding Bird Survey data, scaled quail have been declining 2% per year throughout their US distribution during 1967–2021. However, chestnut-bellied scaled quail have been declining about twice this rate (4% per year) during the same period. Various factors have been proposed as causes of the scaled quail decline including habitat loss, habitat fragmentation, disease, and predators.

Unlike the more northern and western subspecies of scaled quail found in western Texas, New Mexico, and Arizona that inhabit open grasslands with low shrub cover, chestnut-bellied scaled quail inhabit dense, multi-canopied thornscrub possessing sparse herbaceous understory. The few studies



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that were conducted on the subspecies back in the 1970s and 80s suggested that the subspecies uses areas with moderate to high amounts of woody cover (>35%), low grass cover (10–25%), and high bare ground (70–80%). In the 1940s, Val Lehmann noted that pricklypear could be an important component of their habitat given that abundance of chestnut-bellied scaled quail appeared to be associated with areas of dense pricklypear. However, beyond this broad characterization of their general habitat, little was known of their specific habitat requirements.



Blake Martin

The chestnut-bellied scaled quail inhabits the Tamaulipan thornscrub of southern Texas and northern Mexico. Its populations have been declining.

Fidel Hernandez is the Alfred C. Glassell, Jr. Endowed Chair for Quail Research at CKWRI. Eric Grahmann is Habitat/Stewardship Scientist, El Coyote Ranches. Tim Fulbright is retired from CKWRI as a Research Scientist. ~

Dr. Fidel Hernandez

CKWRI's Fidel Hernandez gave the Dyksterhuis Distinguished Lecture at Texas A&M University in November. This lecture series celebrates renowned scholars and the spirit of groundbreaking discoveries in rangeland sciences. Congratulations to Fidel on this honor!

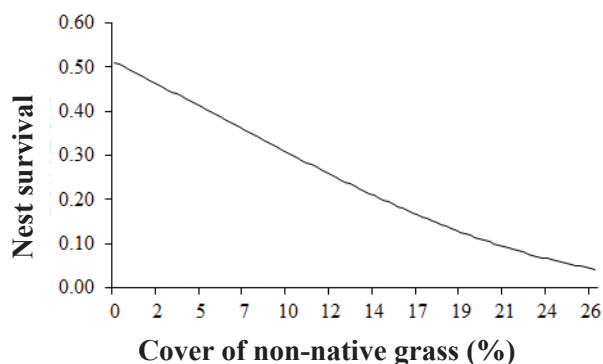


North Texas Research Program of CKWRI

We recently opened a new satellite office in Lubbock. The CKWRI North Texas office will facilitate research efforts throughout the southern Great Plains, and further our collaborative efforts with Texas Tech University, Sul Ross University, and many others.

CKWRI News is continued on page 4.

We conducted a series of studies on chestnut-bellied scaled quail during 2010–2015 to better understand their life history and habitat ecology to help inform future habitat management. We trapped and radio-monitored chestnut-bellied scaled quail on 5 ranches in LaSalle and McMullen counties and measured vegetation characteristics at used and random points. Our findings confirmed some old suspicions regarding the subspecies and surfaced new and interesting insights. We observed that most nests ($n = 53$) were located in pricklypear (68%) followed by shrubs (21%), grasses (9%), and forbs (2%). Pricklypear density was considerably greater at nests (825 plants/ac) than random points (207 plants/ac). In addition, cover of woody plants and native grasses were important variables distinguishing nests from random sites. Chestnut-bellied scaled quail selected nest sites in areas with $\geq 40\%$ woody plant and $\geq 5\%$ native-grass cover. Chestnut-bellied scaled quail also selected nest sites in areas with a high diversity of woody plants (5–10 species).



A novel and interesting finding was that nest survival decreased with increasing cover of non-native grass (see the graph above). We had previously documented that chestnut-bellied scaled quail were particularly sensitive to non-native grasses, avoiding areas with $>20\%$ grass cover. However, besides this general avoidance of non-native grasses, we had not documented a detrimental impact of non-native grasses on the demography of the subspecies. We do not know the mechanisms producing this negative relationship. However, it may represent a process through which landscape changes trending toward less native and more non-native grasses could be contributing to the population decline of the subspecies. Traditional range management practices such as mechanical and chemical brush management and planting of non-native grasses such as buffelgrass are likely a major contributor to the decline of scaled quail. ~

By The Numbers

1.1 million: The number of acres burned in February 2024 by the Smokehouse Creek wildfire, the largest recorded in Texas. (<https://fire-information-tfsgis.hub.arcgis.com/pages/historical-fire-statistics>)

Wildlife Matters

David G. Hewitt

Leroy G. Denman, Jr. Endowed Director
of Wildlife Research

Those of you reading this note understand the value of wildlife and therefore the importance of the Caesar Kleberg Wildlife Research Institute's mission. However, our society has growing numbers of people who are unable to interact with wildlife and, consequently, may not understand its value. If they do not value wildlife, does CKWRI's mission matter to them? I say it should, and here's one reason why.

There is ample evidence that experiences in nature matter to people. I recently came across more evidence that animals are important to all people. Our brain has regions dedicated to parts of our world that matter most to us. For example, language is part of what makes us human, and there are specific areas of the brain dedicated to language. Social interactions among people are also incredibly important, and so there are regions of our brains that not only recognize faces, but can distinguish the faces of individuals, and, from features of their face, the person's emotional state.

I recently learned there is a region of the brain dedicated to recognizing animals. This region is active in kids, who have an innate ability to pick out animals from inanimate objects. When this region is damaged, the afflicted people can no longer distinguish an animal from an inanimate object. People with such an injury have trouble recognizing animals even if they have seen animals before.



A region of the brain dedicated to recognizing animals is strong evidence that animals have been critical to the human experience. Throughout human history, animals have been food, threats, companions, and cues to the natural world. This innate connection to wildlife is why wildlife-based recreation and entertainment (think nature programs and animal videos) are so popular. It is also a reason why CKWRI's research matters beyond the direct benefits for wildlife management and conservation. The Institute's research matters because it fills an innate need people have to know wildlife. Our research can engage people who are not able to readily interact with wildlife because of where they live. Our research can stoke their sense of awe at the animals sharing the earth with them.

I hope you enjoy and learn from the newsletters, magazines, social media posts, and Current Research Reports that CKWRI publishes. I also hope you share these items with your friends and family, especially those who are unaware of the importance of wildlife. By tapping into their fundamental sense of what it means to be human, they too can come to recognize the fundamental role of wildlife in our lives. ~



Did You Know?

Bare-nosed Wombats (*Vombatus ursinus*) poop cube-shaped pellets because of alternating stiffer regions of the intestines with relatively faster contractions and softer areas of the intestines with slower movement. (Yang, et al. Intestines of non-uniform stiffness mold the corners of wombat feces. *Soft Matter*. 2021.)





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More CKWRI News

Deer Research Meeting

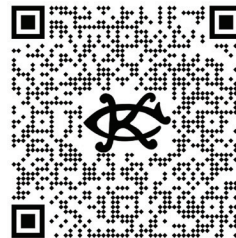
Our 2025 Deer Research Meeting will take place Friday, March 7 from 10:00 a.m. - 2:00 p.m. at the Witte Museum in San Antonio. Use the QR code to the right to register for the meeting. Registration is \$150 before Feb. 28 and \$175 after Feb. 28.

NOTE: State employees and Caesar Kleberg Partners, please register by contacting Gina Cavazos at:
gina.cavazos@tamuk.edu or 361-593-4311

What Do They Eat?

House finches (*Haemorhous mexicanus*) eat almost exclusively plant materials, including seeds, buds, and fruits. They also feed their nestlings exclusively plant foods, which is rare in the bird world. Wild foods include mustard seeds, knotweed, thistle, mulberry, poison oak, and cactus. At feeders they eat black oil sunflower seeds, millet, and milo. The more carotenoids (yellow, orange, or red fat-soluble pigments) in their diets, the redder the males become.

(https://www.allaboutbirds.org/guide/House_Finch/overview)



Can't make it in person? Join us virtually! The meeting will be delivered simultaneously in-person and via Zoom.

Advisory Board

The Advisory Board of the Caesar Kleberg Wildlife Research Institute provides leadership in all aspects of our work. We are indebted to them for their commitment to the Institute and its mission.

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