

# DESERT TRACKS

**BORDERLANDS**  
RESEARCH ♦ INSTITUTE

CONSERVING THE LAST FRONTIER

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## Effects of Cattle Grazing on Forb Biomass and Nutrition in Pronghorn Habitat in the Trans-Pecos, Texas

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Above: A female and male pronghorn on the Dixon Water Foundation's Mimms Ranch in Marfa, Texas.

At top: Cattle management in arid regions such as the Trans-Pecos requires adaptation and attentiveness to climatic variation to maintain sustainability and conservation of forb communities and the rangeland. Pictured here are cattle on the Mimms Ranch during the monsoon season.

**P**ronghorn are herbivore specialists that rely on key plant species for metabolic demands. Once abundant in the Trans-Pecos region of Texas, pronghorn populations dwindled from 17,000 individuals to less than 3,000 by 2012 due to drought, habitat degradation, and land fragmentation. Livestock grazing greatly influences long-term vegetation changes. Yet, research regarding the effects

on plant communities by livestock grazing reveals inconsistent results across ecosystems.

We investigated the effect of cattle grazing systems on forb abundance and quality to assess approaches for improving pronghorn habitat with objectives to compare vegetation production, species diversity, and nutritional quality in rotational, continuous, and deferred cattle grazing systems during the cool season. We conducted this project on the Dixon Water Foundation's Mimms Ranch in Presidio County, Texas. Our results suggest that cattle grazing systems had little influence on forb diversity and forb nutrition. The cool season forbs we detected in our study could be less reliant on precipitation during the Trans-Pecos monsoons, or more resistant to drought compared to those not detected.

Since we did not find differences in biomass or species diversity in one grazing system compared to the others, our results support previous research that specialized grazing systems do not have an advantage in arid rangelands. However, an important consideration is stocking rate. Essentially, forage is the supply, and cattle are the energy demand. Thus, supply and demand should be balanced using stocking rate as a fundamental tool. In arid ecosystems, precipitation could be more influential in plant production and is highly variable within and between years.



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## From the Director—Conservation Legacies and New Frontiers

**S**pring is the season of newness. With our winter precipitation, West Texas is painted with hues of green, purple, yellow, and orange. Many of our migrating birds have found their way back to (or through) the Big Bend, and we begin anticipating the birthing season for pronghorn, mule deer, and our other hooved animals.

Spring also brings new faces to our research team; we are pleased to introduce you to Dr. Maureen Frank, Bill Adams, and Rick Guilliams, each of whom brings professionalism and passion to our team. They, too, are committed to the mission of the Borderlands Research Institute and Sul Ross State University.

We also find newness in our friends and relationships and are proud to announce two legacy gifts. The Bannister Operating Endowment Fund was established to

memorialize Wes and Victoria Bannister, who were passionate about the natural resources and people of Far West Texas. We are eternally grateful to the Bannister family for supporting our mission in this way.

The second gift is from our close friends, Suzi Davidoff and Carl Ryan. Carl's story is both colorful and inspiring. Carl is a cowboy, rancher, conservationist, visionary, and lawyer. Carl is also a founding board member of the Borderlands Research Foundation, our non-profit arm. To celebrate his 50<sup>th</sup> Anniversary as an alumnus of Sul Ross State University, Carl and Suzi pledged \$50,000 to BRI.

We are proud to serve you and the natural resources of the Borderlands!

*—Louis A. Harveson*

## Welcoming New Hires at BRI

**B**RI has expanded its team with the addition of three new hires in 2023.

Bill Adams has come aboard as Associate Director of Operations, a new role designed to provide support to the growing organization. Adams brings experience from over 20 years in wildlife management. His move to Alpine marks the achievement of a lifelong dream to return to the area, after first encountering the region as a Range and Wildlife Management graduate student at Sul Ross State University in 1999. In his work as a biologist and project leader with Texas Parks and Wildlife Department he worked on diverse projects, including quail research, public outreach, and habitat restoration.

Dr. Maureen G. Frank also joined the team as the James A. "Buddy" Davidson Foundation Endowed Professor and Associate

Professor of Conservation Biology. Frank graduated with a B.S. in Wildlife Ecology from Texas A&M University and with her Ph.D. from Utah State University. She returned to Texas to work for the Texas A&M AgriLife Extension Service as a Wildlife Extension Specialist.

We also welcome Rick Guilliams, our new Administrative Coordinator. He holds a B.A. in History from the University of Texas and an M.A. in English Literature from Sul Ross State University. He provides essential support to faculty, researchers and students in BRI's daily operations.



Our newest members of the BRI team, left to right: Bill Adams, Dr. Maureen Frank, and Rick Guilliams.



## Charitable Giving Honors Family Legacy



A new operating endowment fund and scholarship fund have been established at BRI in honor of Wes and Victoria Bannister, pictured here. Longtime residents of Alpine, the couple actively supported conservation and philanthropy in the region.

**W**es and Victoria Bannister were avid West Texas naturalists. On walks around the Big Bend, they loved to identify the native plants and gave many impromptu botany lessons, as their son Michael Bannister fondly recalls.

The couple fell in love with the Big Bend area on frequent

visits passing through West Texas and decided to spend their retirement years living in Alpine. Sul Ross State University, along with its many continuing education opportunities, was part of the attraction.

“They were impressed with the University and knew many professors,” noted Michael.

Thoughtful conservation of the Big Bend region was important to them. They paid attention to groups that worked toward this goal. That’s why the Bannister family created the Wes and Victoria Bannister Operating Endowment Fund along with the Wes and Victoria Bannister Scholarship Fund at the Borderlands Research Institute in their honor.

Each year, these funds support scholarships for two graduate students studying in the field of wildlife conservation along with critical general operations. These generous donations enable the Borderlands Research Institute to continue its mission to conserve the natural resources of the Chihuahuan Desert that the Bannisters so loved and admired.

## Celebrating 50 Years as an SRSU Alumnus

**C**arl Ryan fell long and hard for the Davis Mountains when he was just 10 years old, as a summer camp attendee at the Prude Ranch in Fort Davis. Decades later, this part of West Texas remains close to his heart.

Carl sees Sul Ross State University, his alma mater, as having incredible potential to positively impact the region he loves. He is an active board member of the Borderlands Research Foundation, the charitable arm of Borderlands Research Institute, located at Sul Ross.

“We share the same conservation goals. It’s important to be able to rely on someone who can give us information about the challenges we face. The Borderlands Research Institute is important to Trans-Pecos landowners and to all the people who will inherit the Trans-Pecos,” Carl said.

In honor of his 50-year anniversary of graduating from Sul Ross, Carl pledged \$50,000 to BRI.

“We are so appreciative of Carl’s support to the Borderlands Research Institute and Sul Ross State University,” said Dr. Louis A. Harveson, who is the Dan Allen Hughes, Jr.,

Endowed Director of BRI. “Carl has inspired us all with his commitment to conserving the land he loves, and this major gift will help ensure that BRI’s focus on wildlife and conservation research will remain strong in the years and decades to come.”

Read the full story on our website, [bri.sulross.edu](http://bri.sulross.edu).



Carl Ryan at his ranch in the Davis Mountains of West Texas.



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## Black Bear Research in the News



Top: A black bear mother and cubs. Below: BRI's Matt Hewitt collects samples from a bear near Terlingua.

**B**orderlands Research Institute's multiyear black bear project has received a lot of media attention this year, as West Texans learn to navigate what it means to live in bear country.

The goal of our research is to better understand black bear ecology—their ranging habits, population numbers, and seasonal diets—in order to minimize human-bear conflicts and inform management decisions.

Texas Monthly highlighted this research in the article *West Texans Are Learning What it Means to Live in Bear Country*, and Texas Farm Bureau Radio Network spotlighted our work in a series of radio clips. We also assisted Texas Parks and Wildlife in two black bear workshops in the Terlingua area to discuss becoming a bear wise community.

Links to these stories and more about our current black bear research can be found at [bri.sulross.edu](http://bri.sulross.edu).