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DESERT TRACKS

CONSERVING THE LAST FRONTIER

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Assessing Pronghorn Restoration Success: Movement and Acclimation

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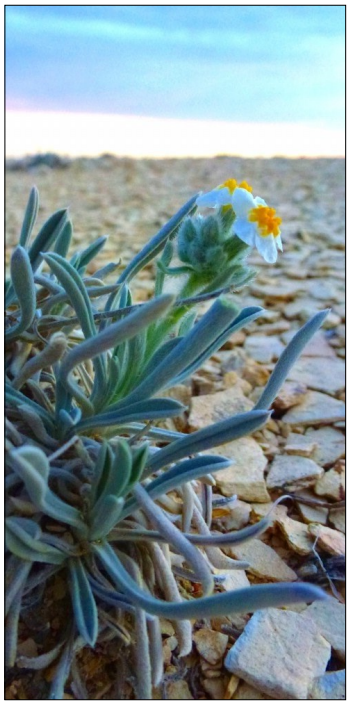
Pronghorn once occupied nearly all of Texas, but their range is much smaller today, in part due to drought, restrictive fencing, and anthropogenic expansion. In 2011 Texas Parks and Wildlife Department (TPWD) began a tremendous long-term program to restore pronghorn in the Trans-Pecos, partnering with Borderlands Research Institute, Texas Parks and Wildlife Foundation (TPWF), landowners, and other conservation organizations to monitor and learn from these efforts.

Recently, we've been working on the far western edge of the Edwards Plateau at the Rocker b Ranch. This ranch has a history rich with pronghorn, but woody shrub encroachment has degraded the open grassland habitat that pronghorn require. Over the last several years, the ranch has undertaken extensive habitat restoration efforts, and has increased connectivity within the pastures by making 200 pronghorn-friendly fence modifications. After these modifications, pronghorn from Pampa, Texas, were translocated to the Rocker b and fitted with GPS collars so we could track their movement post-release. We compared this data with GPS points from resident pronghorn, and the results were somewhat surprising.

Pronghorn strongly rely on their memory of the landscape, what we call a cognitive map, to choose habitat. We thought that translocated pronghorn would learn from residents to develop their cognitive map, benefiting from the residents' experience. Instead we found that translocated pronghorn readily crossed modified fences and moved freely throughout the ranch, whereas residents, by and large, did not. The *memory* of past restriction still limited their use of the landscape.

In this situation, the naivety of translocated pronghorn toward fences is advantageous as they are not restricted to one pasture. This allows them to be more selective, better balancing the energetic costs and risks of moving to find resources. This also allows them to colonize areas beyond the limits of the resident population, expanding the species' range in the state. Somewhat ironically, naivety turns out to offer a management benefit for pronghorn restoration. Translocated pronghorn might be able to teach the residents something new about finding greener pastures.

A pronghorn crosses under a modified section of fence at the Rocker b Ranch. We found that translocated pronghorn were more likely to use these crossings than resident pronghorn. Photo courtesy of Cody Webb, Rocker b Ranch. Photo at top courtesy of Paul Slocumb.



From the Director—15 Years of Research, Education, and Outreach

It was 15 years ago that the Borderlands Research Institute first opened our doors. Our administration, faculty, and students took a leap of faith on helping prop up BRI as an academic institute that strives to conserve the Chihuahuan Desert Borderlands through research, education, and outreach.

From the beginning, the BRI Advisory Board has been our rock and our compass. They have posed research questions, they have opened gates, they have provided financial assistance, and they have served as ambassadors to BRI. For 15 years their support has been unconditional!

Through the 15 years we have also grown. Our most remarkable growth has been through the constituency we serve. They're made up of donors, landowners, hunters, ranchers, science teachers, community members, resource professionals, bird watchers, hikers, and bikers...but they all have one thing in common: they, too, want to ensure the long-term stewardship of the Chihuahuan Desert Borderlands.

In 15 years, our commitment to our mission, to our students, to the natural resources, and to our constituents has not faltered. On behalf of the students, staff, faculty, and our Advisory Board, thank you for believing in and supporting the Borderlands Research Institute!

—Louis A. Harveson

Conservation Partnership Program Benefits Landowners

West Texas landowners who qualify for the new program can receive assistance with projects like invasive shrub removal.

The Borderlands Research Institute (BRI) and Texas Agricultural Land Trust (TALT) are joining forces with the USDA's Natural Resources Conservation Service (NRCS) to implement landscape-scale conservation initiatives in Brewster, Jeff Davis and Presidio counties. The effort, called The Greater Big Bend Conservation Partnership, is fueled by a $3.5 million grant from the NRCS Regional Conservation Partnership Program, which will help fund innovative conservation approaches on private lands, including habitat restoration efforts, conservation easements and ecosystem services.

BRI will be responsible for implementing restoration and enhancement projects, as well as monitoring and evaluating projects. TALT will provide the expertise for conservation easement agreements, and will assess ecosystem services compensation options.

"This will be a game-changer for conservation efforts in West Texas," said Dr. Louis Harveson, who is the Dan Allen Hughes, Jr., BRI Endowed Director. "Through this collaboration with TALT and by partnering with private landowners, we'll be able to implement a variety of conservation initiatives to address some of the most critical natural resource priorities in the Trans-Pecos, including grassland and riparian habitat restoration and enhancement."

Landowners will be able to apply for funds for a variety of on-the-ground conservation projects in West Texas. Applications will soon be available on the BRI website.

Borderlands Research Institute Hosts International Exchange

Led by Dr. Carlos Gonzalez, several groups of students from the University of Chihuahua toured Sul Ross State University this summer and participated in hands-on learning and habitat restoration work.

The Borderlands Research Institute hosted students from the Autonomous University of Chihuahua (UACH), a Mexican public university located in Chihuahua City, Chihuahua, Mexico. Students from the Animal Science and Ecology programs at UACH learned about BRI research projects and other regional conservation initiatives.

Over twenty-five students stayed in Alpine for six nights. They visited all of the ecoregions represented in the Big Bend, from the sky islands to the desert floor, and toured Sul Ross State University and the Alpine downtown district.

BRI's Nau Endowed Professor in Habitat Research and Management, Dr. Carlos E. Gonzalez, said the exchange benefits programs on both sides of the river.

"It's an opportunity to showcase our different challenges, different laws, and the differences in how people apply resource management. But at the end of the day, we have the same goal—to sustainably manage resources over long periods of time," Gonzalez said.

The exchange was funded through a grant from 100,000 Strong in the Americas Innovation Fund and its partners, the U.S. Department of State, Fundación Banorte, and Fundación Gruma, as part of the dynamic public-private sector collaboration between the Bureau of Western Hemisphere Affairs at the U.S. Department of State and Partners of the Americas. The organization works with companies, foundations, regional government entities, and academic networks in the United States and the rest of the Western Hemisphere to create innovative, sustainable partnerships that provide access to new models of academic exchange and training programs in the Americas.

Read more on the BRI website under the *What's New* tab or go to https://bri.sulross.edu/borderlands-research-institute-hosts-international-exchange/.

Guglielmo Newest Member of BRI Advisory Board

We are proud to welcome Dr. Kennon Guglielmo as the newest member of the BRI Advisory Board.

Kennon holds a B.S. in Mechanical Engineering from Texas A&M University and an M.S. and Ph.D. in Mechanical Engineering from The Georgia Institute of Technology. He began his professional career in San Antonio at Southwest Research Institute in the Engine Research division.

In 1994, he founded EControls, a provider of advanced powertrain control systems for industrial and heavy-duty equipment. EControls merged with FW Murphy Production Controls in 2009 to form what is now Genisys Controls, LLC. Today, with approximately 1,000 employees and 5 global facilities, Genisys provides advanced control solutions for engine and electric powertrains in the industrial, heavy-duty, and oil & gas markets worldwide.

Kennon currently serves as CEO of Genisys, a director of Rush Enterprises, and a school board member of The Christian School at Castle Hills in San Antonio. Kennon and his family whole-heartedly enjoy outdoor activities, including hunting, fishing, and exploring their ranches in South and West Texas.

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Trans-Pecos Wildlife Conference 2022—A Recap

The 2022 Trans-Pecos Wildlife Conference drew about 175 attendees for a full day of wildlife management speakers and a half-day field excursion to view habitat restoration techniques.

The conference was co-hosted by the Borderlands Research Institute, Texas Wildlife Association, and Texas Parks and Wildlife Department.

Conference attendees visited nearby ranches where conservation work like riparian and grassland restoration projects are in progress.

Partnership and habitat restoration were repeated themes, with acknowledgment given to the prominent role farmers and ranchers have in making wildlife conservation a statewide success.

A big challenge facing the agricultural industry is public perception. The general public does not always fully recognize the societal benefits of working lands across the state, and the large historic ranches of the Trans-Pecos represent much of the last remaining intact rangelands in Texas. Besides providing food and supporting the economy of the state, these relatively unimpacted properties are vitally important as wildlife habitat, and they contribute to other important values such as dark skies, scenic vistas, and clean water.

Attendees also learned about the latest research regarding wildlife management, from chronic wasting disease to bear safety, grassland bird habitat, and more.