

DESERT TRACKS

BORDERLANDS
RESEARCH ♦ INSTITUTE

CONSERVING THE LAST FRONTIER

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Wintering Birds' Early Response to Shrub Removal in West Texas

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A Baird's sparrow, one of the grassland-dependent species that overwinters in West Texas.

Grasslands in North America were once enormous expanses of land kept functional by cycles of bison grazing, droughts, storms and wildfires. Human activities such as unsustainable grazing, fire suppression, extirpation of burrowing mammals, oil development, and climate change have progressively disrupted these natural cycles. This disruption may cause a shift in the vegetation structure,

promoting desertification and shrub proliferation over grasses, also known as shrub encroachment.

Many species rely on grasslands to survive, so these changes in vegetation structure lead to population declines. Grassland birds in particular show steep declines; since 1966, grassland birds have lost more than 53% of their populations, and species that overwinter in the Chihuahuan Desert show even steeper losses. For example, the chestnut-collared longspur has lost 87% of its population since 1966.

Shrub removal may mitigate deterioration of bird populations by bringing back habitat conditions needed for grassland

birds. Borderlands Research Institute (BRI), Texas Parks and Wildlife Department, and the National Fish and Wildlife Foundation are working to restore grasslands near Marfa, Texas. In the summer of 2019, about 4,000 acres were sprayed with Dow Sendero Remedy, an herbicide mix that targets specific shrub species, leaving grasses unharmed.

In the winters of 2019 and 2020, we monitored how the wintering bird community responded, surveying the shrub-encroached area before and after treatment as well as an open grassland site for reference. Every morning, highly experienced field technicians identified and recorded all birds detected within about 60 transects. We estimated density, diversity and community dissimilarity of the sites. We found that grassland-dependent birds were least abundant in the shrub-encroached sites both years. One year post-treatment, we found a dramatic reduction of shrub-dependent birds such as black-throated sparrows and vesper sparrows in the sprayed site, suggesting a shift in the community.

The process of grassland restoration takes at least five years, and one year post-treatment we did not find an increase in grassland bird density. We can expect that after a few more years, habitat conditions will be better to sustain grassland bird species. This study provides a starting point for a long-term bird-monitoring project that aims to determine how grassland restoration can improve grassland bird habitat and measure the change in the bird community.



Director’s Note – Changing of the Guard

Behind every successful conservation group is a cadre of core volunteers that give selflessly of their time and resources. For the BRI that group is our Advisory Board. Our board serves as goodwill ambassadors and helps guide our mission, goals, strategies, and research priorities. Since our inception, Elliott G. Hayne has served as chairman of our Advisory Board. Through his leadership, BRI has blossomed from a concept to an effective model of public-private conservation partnership in the borderlands regions of Texas, New Mexico, Arizona, and Mexico.

After 13 years of service, Elliott has stepped down as chair but will continue to serve on the board, as chairman emeritus. Dan Allen Hughes, Jr., was unanimously approved as the new chairman. Dan Allen is president and CEO of the Dan A. Hughes Company and Hupecol Operating Company. He has served as chair of the Texas Parks and Wildlife Commission, and on the boards of

the Texas A&M University Foundation and the Berg-Hughes Center at Texas A&M. An avid hunter and fisherman, Dan Allen was named Texas Outdoorsman of the Year by the Texas Wildlife Association in 2014.

Please congratulate both Elliott and Dan Allen for their leadership and continued commitment to Conserving the Last Frontier!

–Louis A. Harveson



Elliott G. Hayne, Chairman Emeritus, and Dan Allen Hughes, Jr., recently appointed Chairman of the BRI Advisory Board.

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Biannual Research Reports in Print and Online

We have a new series of programmatic research reports, available in print and online. Published twice a year, each report covers one of our four programs on a rotating schedule.

The Game Bird Research Report, shown at right, details the past several years of game bird research conducted at BRI.

The report is now available on the BRI website under the Publications and Media tab. If you would like a print copy, stop by the BRI office at the Sul Ross State University Range Animal Science Center in Alpine, or contact us at bri@sulross.edu or 432-837-8225 to have a copy mailed to you.



Houston Livestock Show and Rodeo Continues to Support BUMP

Houston Livestock Show and Rodeo (HLSR) recently awarded BRI \$30,000, a continuation to support the Borderlands Undergraduate Mentorship Program (BUMP). Despite canceling the rodeo in 2020 due to COVID-19, the organization continued to grant funds to support Texas youth.

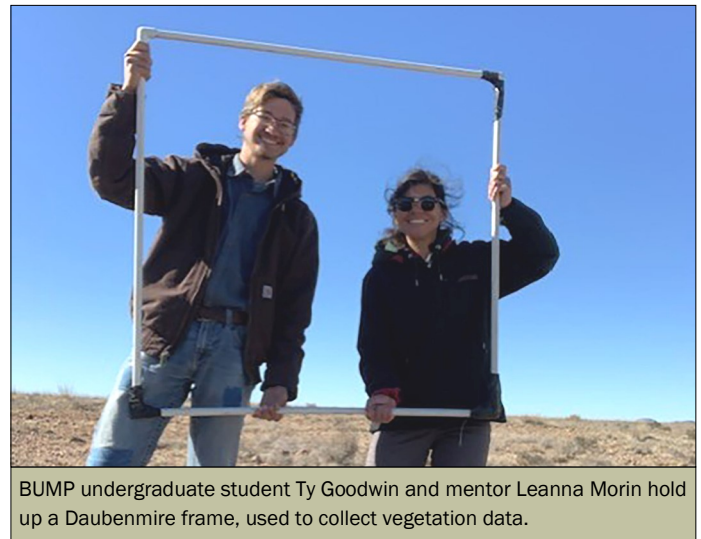
HLSR funds programs that focus on youth, education, agriculture, and/or preserve heritage and culture. To date, HLSR has provided almost \$80 million to more than 100 organizations and institutions in Texas.

HLSR funds BUMP, which provides opportunities for undergraduates to work with graduate students on grant-funded projects. Funds from HLSR are leveraged and matched 1:1 by various research grants to support experiential opportunities for our students. Together, graduate and undergraduate students conduct projects ranging from estimating abundance and distribution of Montezuma quail, brush management effects on pronghorn forage, and reproductive characteristics of aoudad.

Undergraduate students gain knowledge, experience, and professional connections in the field of Natural Resource Management. In addition to their projects, undergraduate students engage in monthly professional development

meetings, gaining essential soft skills including professional communication, effective writing, and how to deliver impactful presentations.

Through BUMP, graduate students also develop important career enhancement tools, including teaching others technical skills, mentorship, and setting goals for their mentees. These skills are important as they enter careers after graduation.



BUMP undergraduate student Ty Goodwin and mentor Leanna Morin hold up a Daubenmire frame, used to collect vegetation data.

BRI Receives International Grant for Chihuahuan Desert Conservation



BRI has been awarded a \$25,000 grant from the 100,000 Strong in the Americas Innovation Fund. The grant will facilitate an enhanced partnership between the Borderlands Research Institute at Sul Ross State University and the Facultad de Zootecnia y Ecología at the Universidad Autónoma de Chihuahua.

Through this grant, students from the University of Chihuahua will have the opportunity to visit a higher education institution in the US. These students will learn about agricultural, management, and conservation practices in the US that affect the shared natural resources along the Mexico-US border, and will gain hands-on experience with research that addresses wildlife management relevant in both Mexico and the US. The project will also promote collaborative efforts between both institutions on research projects relevant for the conservation of shared natural resources.

“We’re thrilled to be selected for this prestigious grant, and we look forward to enhancing the educational opportunities for students on both sides of the border,” said Dr. Louis Harveson, the Dan Allen Hughes, Jr., Endowed Director of BRI. “Wildlife knows no borders, so finding new ways to work together to protect the natural resources of the Chihuahuan Desert is a wonderful opportunity.”



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Water for Wild Birds Publication Now Available

West Texas landowners and residents are encouraged to lend a hand in conserving the birds of the Trans-Pecos. A new publication, *Water for Wild Birds: Tools for Arid Landscapes*, is now available to help folks provide the resources birds need to thrive in the Chihuahuan Desert.

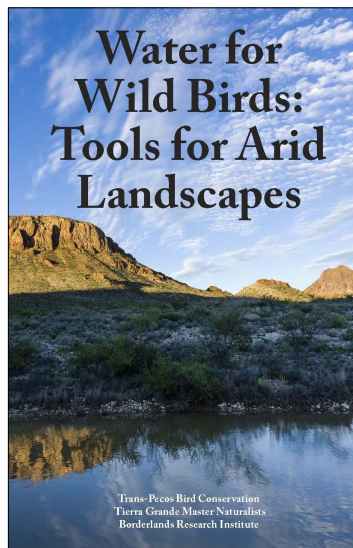
The project originated with the Davis Mountains Hummingbird Celebration and was guided by Trans-Pecos Bird Conservation Inc. and the Tierra Grande Master Naturalist chapter. Additional support was provided by the Borderlands Research Institute at Sul Ross State University and private funding.

"We're very appreciative of

the funding provided by Apache Corporation to print 1,500 copies that will be available to landowners and others who are interested in bird conservation," said Cecilia Riley, who is president of Trans-Pecos Bird Conservation Inc. "Thanks to the Borderlands Research

Institute, the publication is also available online. Everyone can play a role in bird conservation, and every drop of water that we can provide for birds will help them survive in our arid West Texas environment."

The publication can be found on the BRI website under Research Reports in the Publications and Media tab. Copies of the booklet are also available upon request or can be picked up at the BRI office in Alpine.



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