2026

Conservation Biology Research Report

BORDERLANDS RESEARCH ◆ INSTITUTE

CONSERVING THE LAST FRONTIER

OUR MISSION:

Conserving the natural resources of the Chihuahuan Desert Borderlands through research, education, and outreach.

Since 2007, the Borderlands Research Institute has encouraged effective land stewardship of the ruggedly beautiful terrain of the Chihuahuan Desert. By providing land managers with the most current scientific information, the Borderlands Research Institute is helping to conserve one of the most biologically diverse regions of the world.

Housed at Sul Ross State University, the Borderlands Research Institute builds on a long-lasting partnership with private landowners, the university's natural resource program, cooperating state, federal, and non-governmental organizations, and other stakeholders. Faculty scientists and the graduate students they mentor are conducting groundbreaking research on every aspect of the desert landscape and the wildlife it supports.

RESEARCH TEAM

Maureen G. Frank, PhD
James A. "Buddy" Davidson Charitable Foundation Endowed Chair and Associate Professor of Conservation Biology

Antonio Cantu, PhD
Community Ecologist and Assistant Professor of Community Ecology and Research Scientist

Amanda M. Veals Dutt, PhD
Carnivore Specialist and Research Scientist

Alejandro Chávez Treviño, PhD
Avian Ecologist and Research Scientist

ENDOWMENTS

James A. "Buddy" Davidson Foundation Endowed Chair in Conservation Biology

Programmatic capacity is always a challenge in conservation organizations. Fortunately, the Borderlands Research Institute is experiencing a growth spurt!

We are proud to welcome Dr. Antonio Cantu de Leija and Dr. Alejandro Chávez Treviño as they work to enhance and expand our Conservation Biology program.

Dr. Antonio Cantu is an Assistant Professor of Community Ecology at Sul Ross State University and a Research Scientist at the Borderlands Research Institute. Dr. Cantu's research spans wetlands, bird communities, vegetation, hydrology, and remote sensing, with a focus on applying quantitative and spatial tools to conservation problems.

Dr. Alejandro Chávez Treviño is a Visiting Assistant Professor and Research Scientist (avian ecologist) with the Borderlands Research Institute, where he teaches biostatistics and collaborates on avian ecology projects. His work emphasizes grassland bird responses to habitat restoration and management.

Louis A. Harveson, PhD
Dan Allen Hughes, Jr., Endowed Director

My freshman Conservation Biology students have been learning about different conservation ethics. We return often to Aldo Leopold's ethic:

"When we see land as a community to which we belong, we may begin to use it with love and respect."

In this issue, you can read the results from a years-long wintering grassland bird study. For that research, we focused on bird communities rather than individual species. Not only is the land a community to which we belong, it is a community to which wildlife belongs. Species connect across gradients of vegetation, elevation, and climate, forming communities that can help us monitor and understand our natural resources.

My graduate student on that project walked across the stage last fall, and we miss having her around BRI — because here, we proudly build a community not just of land but of scholarship, partnership, and service. Thank you for being part of our community.

Maureen G. Frank, PhD
James A. "Buddy" Davidson Charitable Foundation Endowed Chair and Associate Professor of Conservation Biology

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SHRUB MANAGEMENT FOR GRASSLAND BIRDS:
Testing Restoration Strategies

Audrey Taulli, Carlos E. Gonzalez, Justin T. French, and Maureen G. Frank

Image 1: Baird's sparrows are a Species of Greatest Conservation Need in Texas that require grasslands with very little shrub cover. (photo credit: Bryan Calk)

Grassland habitats are among the most rapidly declining ecosystems globally, and bird populations that rely on them are disappearing just as quickly. This decline is driven by habitat fragmentation, overgrazing, land conversion, and woody plant encroachment.

Approximately 90% of migratory grassland-reliant birds spend the winter in the Chihuahuan Desert, which spans from the Trans-Pecos region of Texas down into northern Mexico. The Marfa and Marathon grasslands in Texas represent the northern end of this range and serve as focal areas for Borderlands Research Institute's Wintering Grassland Birds Restoration Project.

For seven winters, we have conducted bird surveys and vegetation surveys on private ranches in the Marathon and Marfa grasslands to examine the impacts of brush treatments. Earlier work compared bird communities in untreated shrublands to areas treated with herbicide. More recently, we evaluated a site where brush was mechanically removed three years after being treated with herbicide.

The primary goal for this project was to evaluate whether wintering avian communities respond better to areas treated with chemicals only or to areas treated with the combined use of chemical and mechanical removal of encroaching woody plants within grassland habitats. Both treatments were compared to an untreated reference site with minimal brush encroachment.

Starting in 2019, herbicides were applied to combat western honey mesquite, creosote, and tarbush across multiple properties within the Marfa and Marathon grasslands. In 2023, mechanical removal of mesquite via roller-chopping also occurred in some of the areas that had been treated with herbicide (referred to as combination-treated plots).

We conducted fieldwork on four ranches in the Trans-Pecos ecoregion of Texas, with wintertime surveys conducted from 2019-2025. Across all study sites, we walked a series of 800-meter transects, running east to west, across vegetation types. In total, the team completed 352 surveys and detected over 30,000 individual birds representing 76 species.

We then analyzed whether the bird communities in any of the treated shrubland plots were becoming more like the bird communities found within the grassland habitats. Bird communities across each year were compared to determine similarity to the communities found within grassland habitat during those same years. We plotted these comparisons across the years of the project, looking for increases or decreases within each shrub-related habitat type. For each year, bird communities were compared to those observed in intact grassland habitats. Birds in the combination-treated habitats became more similar to those in the intact grassland habitats, meaning that the bird communities shifted to have more of the same species and relatively similar abundances.

Results revealed clear differences among treated plots. By removing the overall standing structure of the treated brush, grassland-reliant bird species began to occur more frequently and in higher numbers in previously unoccupied habitat, making the avian communities in those areas more similar to communities found in the referenced grassland habitat.

Ultimately, our study shows that the structure of the brush, regardless of whether the plant is dead or alive, can negatively impact grassland bird species. To restore habitat for grassland birds, woody vegetation must be completely removed. Effective treatment of encroaching woody vegetation that positively impacts grassland-reliant birds may help bring back the open landscapes that grassland birds need to thrive.

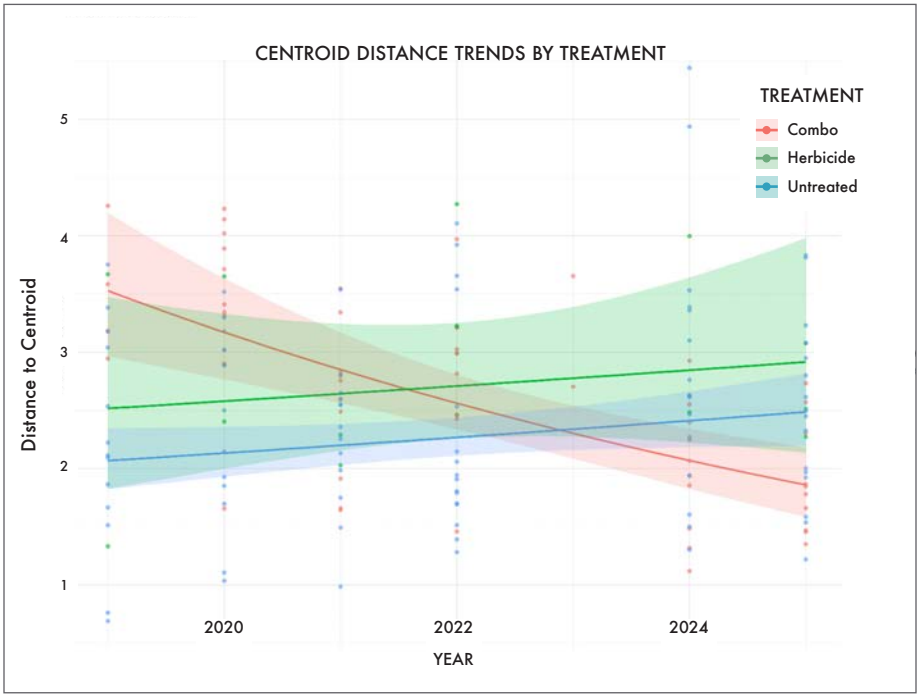

Figure 1: This graph indicates changes in similarity of treated and untreated shrublands to a reference grassland, which is calculated as centroid. The combination of herbicide and mechanical treatment became more similar to the reference grassland over time (red line approaches x-axis), while the area treated only with herbicide became less similar, paralleling the untreated areas (green and blue lines increase away from the x-axis).

BLACK BEARS ON A CHANGING LANDSCAPE:

Activity Patterns Around Human Food Sources

Nicole Dickan, Justin T. French, Amanda Veals Dutt, and Louis A. Harveson

Image 1: Nicole Dickan caring for a bear while working to collar bears in the Trans-Pecos. (photo credit: Matt Hewitt/BRI)

Black bears are adaptive animals that can live in a wide range of environments and eat a variety of foods. Although native to all of Texas, black bears disappeared from the region for many decades. Now bears are naturally returning to the Trans-Pecos from Mexico, but little is known about how these bears behave in today's West Texas landscape.

The Texas landscape has changed dramatically since bears were last present in the state. Human populations have increased and bears now frequently encounter human-created food sources (attractants) such as trash and deer feeders. To better understand how black bears are adjusting to these changes, we studied how bear behavior patterns changed in the Trans-Pecos throughout the day and across different seasons.

Like all wildlife, bears shift among behavioral states (such as resting, feeding and traveling) to meet their needs for growth, reproduction, and survival. These behaviors change over time as food and temperature shift throughout the year. Identifying seasonality in activity patterns is critical for understanding how animals effectively balance energy tradeoffs.

Flexibility in activity patterns is particularly beneficial for surviving in environments like the Trans-Pecos. These bears are experiencing new conditions compared to populations living in more established areas. Not only are the conditions different but in desert ecosystems resources can be limited and unpredictable, and temperatures can be more extreme.

While researching behavioral changes and activities of this recolonizing black bear population, we identified four behavioral states using movement metrics collected from 13 GPS collared black bears: step length, turning angle, revisitation rate, and return time. The top model included sex, day of year, and hour of day on all transition probabilities between behavioral states. From this information, we identified four behavioral states consistent with resting, foraging, traveling, and distinctive behavior when using concentrated food sources, such as deer feeders.

Both resting and attractant use involved localized movement, but attractant use stood out from other behaviors. Bears spent longer periods at these sites and returned to them more often. Overall, bears followed a crepuscular activity schedule, meaning they were most active around dawn (04:00-10:00h) and dusk (16:00-22:00h) for foraging and traveling.

During the summer months, we observed increased nocturnal activity when temperatures were highest during the day. Traveling behavior also peaked during summer, particularly for males who spent nearly 50% of their time traveling in July. The proportion of time spent using human-related food sources varied among individual bears from 2-28%. This behavior was most often seen for both sexes when in search of food to pack on pounds for winter, and post-denning for females caring for cubs.

These findings provide a window into how black bears are adapting to this unique and highly dynamic desert ecosystem. This study provides the first documentation of a distinct behavioral pattern associated with repeated use of human-created food sources, characterized by disproportionately high residence times and revisitation rates. Black bears showed complex behavioral patterns based on the time of year and daily cycle, as well as significant differences in behaviors between males and females.

Overall, black bears demonstrated remarkable flexibility in how they adjusted their behavior to cope with the environmental extremes of the Trans-Pecos. These results have important implications for the long-term conservation and management of black bears in Texas. Understanding when bears are most likely to use human food sources can help wildlife managers and landowners reduce potential conflicts with black bears by securing trash, feeders, and other food resources during critical times. Additional tips and strategies can be found at BearWise.com and by contacting local Texas Parks and Wildlife Department staff.

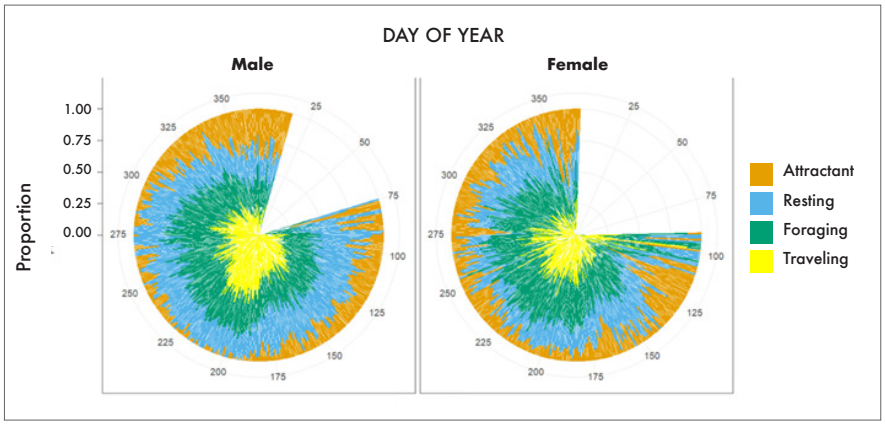

Figure 1: Proportional activity budgets for males and females across Julian days of the year. Proportions up to day 105 in females are skewed due to low sample size during that time period. Periods without data represent hibernation. Numbers around the circle represent the 365-day annual cycle. Colors represent the four different behavioral states.

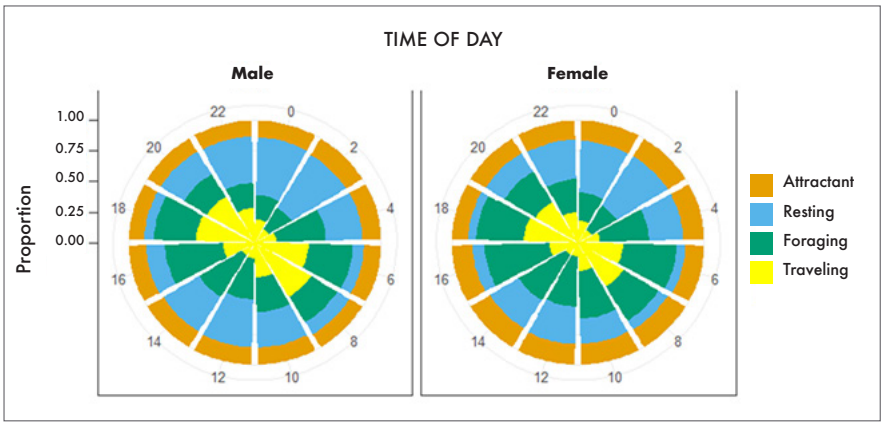

Figure 2: Daily patterns in proportional activity budgets for males and females when averaged across the year. Numbers around the circle represent hours of the 24h daily cycle. Colors represent the four different behavioral states.

WINTERING GRASSLAND BIRDS:

Detecting Livestock Tank Use in the Chihuahuan Desert

Emily Blumentritt, Daniel P. Collins, Justin T. French, and Maureen G. Frank

Image 1: Point count surveys consisted of two observers documenting birds at tanks once a month for 10 minutes. (photo credit: Emily Blumentritt/BRI)

Image 2: Autonomous recording units were mounted next to dirt livestock tanks and protected with cattle panels. (photo credit: Emily Blumentritt/BRI)

The arid grasslands of the Chihuahuan Desert provide essential wintering grounds for many of North America's grassland birds. In a region that receives only about nine inches of rainfall each year, surface water is likely an important resource for birds. Because livestock grazing is one of the primary land uses of these grasslands, dirt livestock tanks (ponds built to hold water for cattle) are common features of the landscape. However, the use of supplemental water by many bird species has been poorly understood.

Bird diversity is often measured using point count surveys (recording birds seen over a set period), but passive acoustic monitoring (PAM) is an alternative method that uses recording devices to capture bird sounds, providing more frequent sampling with less labor. Most bird studies use PAM during the breeding season, when birds sing distinctive songs. Its effectiveness during the non-breeding season needs further research.

The goals of this study were to (1) identify which bird species use dirt livestock tanks in the Chihuahuan Desert grasslands during the non-breeding season; (2) determine how birds use dirt tanks as a resource; and (3) compare PAM with point count surveys for measuring species richness.

We conducted our study at the Dixon Water Foundation's Mimms Unit and a nearby private property from September 2023 to March 2024 and September 2024 to March 2025. Our point count surveys were double-observer surveys, meaning two people worked as a team to detect and identify birds. Surveys lasted 10 minutes and were conducted once a month. Survey observers documented species diversity, abundance, bird location relative to the tank, and behavior.

We also deployed an autonomous recording unit (ARU) at each dirt tank during the survey season. These devices recorded audio for 10 minutes every hour for the first five hours after sunrise, and for 10 minutes starting an hour before sunset, totaling 60 minutes of recordings daily. Audio files were analyzed using the automated classifier BirdNET. Any species detected by the software, but not during point counts, were flagged for human validation.

During point count surveys, we documented 59 species within dirt tanks and 69 species total. Species detected within tanks represented 29 different taxonomic families. The most diverse groups were New World sparrows (13 species), ducks (6 species), and New World warblers (4 species). Birds were observed foraging, drinking, bathing, preening, and singing. Foraging was the most common behavior (32 species), followed by drinking (19 species). Species with a wide range of diets, including omnivores, granivores, carnivores, insectivores, and nectarivores, were documented foraging at dirt tanks, indicating that these sites provide food resources across ecological niches. Dirt tanks may benefit Species of Greatest Conservation Need, such as the chestnut-collared longspur, which was frequently observed.

ARU devices detected 127 bird species, an 84% increase in species richness compared to point count surveys. However, when we compared an equal sample size per survey month (one 10-minute recording versus one point count) ARUs detected 45 species. This suggests that the key advantage of PAM is the ability to easily increase sample size, thereby improving the chance of detecting less-common species.

Because ARUs can detect birds 200 meters away or more, some species detected may have been using the surrounding environment and not the tanks themselves. Point count surveys were therefore more effective for confirming tank use and associated behaviors.

Overall, our results suggest that dirt livestock tanks provide important wintering resources for a diverse grassland bird community. Combining traditional surveys with acoustic monitoring offers a more complete understanding of how birds use these human-made water sources in arid landscapes.

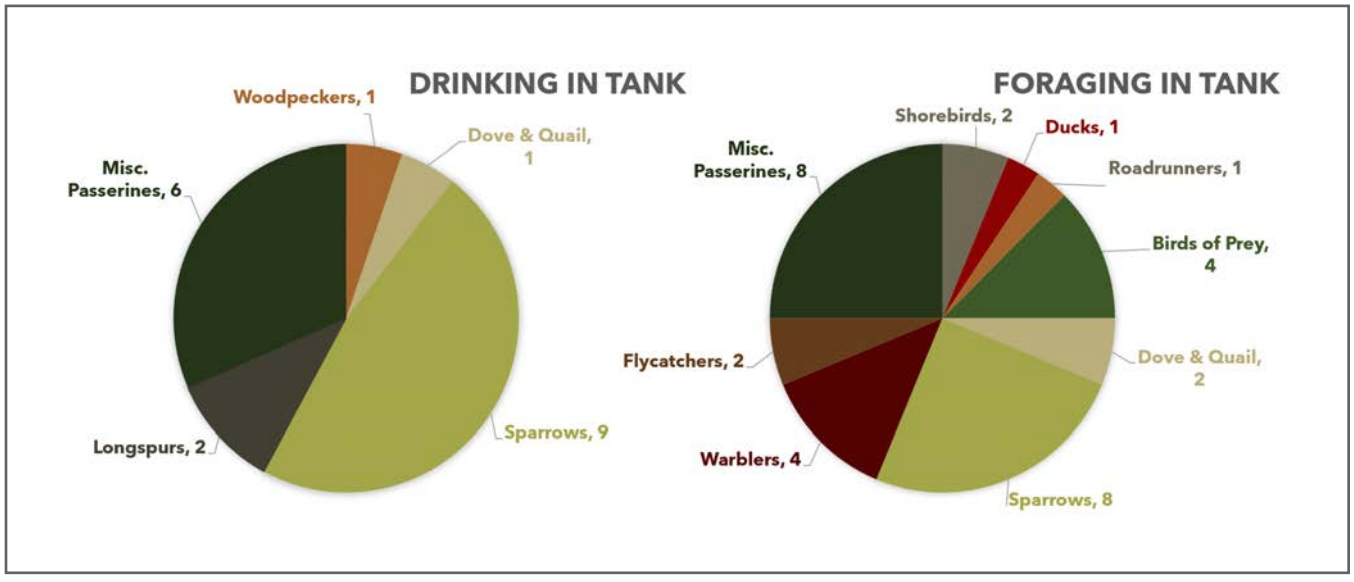

Figure 1: Species of birds observed drinking (left chart) and foraging (right chart) in dirt tanks, grouped by taxonomic family. Observations were conducted at 11 dirt tanks during the nonbreeding seasons of 2023-2025.

BLACK BEARS IN THE TRANS-PECOS:

Optimizing Hair Snare Placement for Accurate Population Estimates

Matthew Hewitt, Justin T. French, Amanda Veals Dutt, and Louis A. Harveson

Image 1: Black bear spotted in the Trans-Pecos rubbing a hair snare and depositing a genetic sample. (photo credit: Matthew Hewitt/BRI)

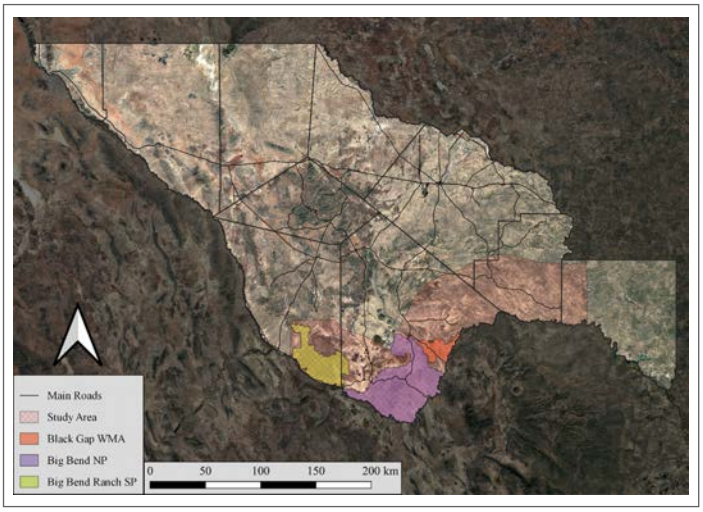

Figure 1: Map of Trans-Pecos study area

Due to a recent increase in human-bear interactions in West Texas, this project aims to estimate the size and distribution of a newly recolonizing population of black bears. Reliable population estimates help inform effective wildlife management decisions.

To estimate population size and habitat associations, researchers rely on three key pieces of information: location, time, and individual identification. Hair sampling devices, known as hair snares (Image 1), are currently the most common method for collecting this information from bears. Researchers know the location and relative time a sample was deposited, and genetic markers within hair help identify individuals.

However, the unique Trans-Pecos environment poses challenges to implementing this sampling method, including property access (~15% of the 6,420 mi^2 study area is private land, Figure 1), field efficiency, and technician safety, which all force deviations from an idealistic sampling design and pose major problems for statistical modeling.

To address these challenges, we used a simulation study, a mathematical representation of the study system, to evaluate how project-specific considerations on the sampling design affect our ability to accurately estimate population size. We tested how limited property access, restricting hair snare locations to within certain distances of roads, and the distance between clustered sampling locations on the landscape influenced estimation accuracy.

The results showed that restricting hair snare locations to within 328 ft. of roads and spacing clusters of hair snares 10.5 miles apart, while being restricted to accessible properties, resulted in estimates that accounted for 68% of the true population size with an acceptable amount of variation. This design was recommended to Texas Parks and Wildlife Department and is now used for future monitoring efforts.

UNDERSTANDING BLACK BEAR MOVEMENT:

Adapting to the U.S.–Mexico Border

Caitlin Camp Pappas, Jesse Ellgren, Amanda Veals Dutt, Justin T. French, and Louis A. Harveson

Image 1: Adult female bear, investigating a trap in Val Verde County, Texas. (photo credit: Caitlin Camp Pappas/BRI)

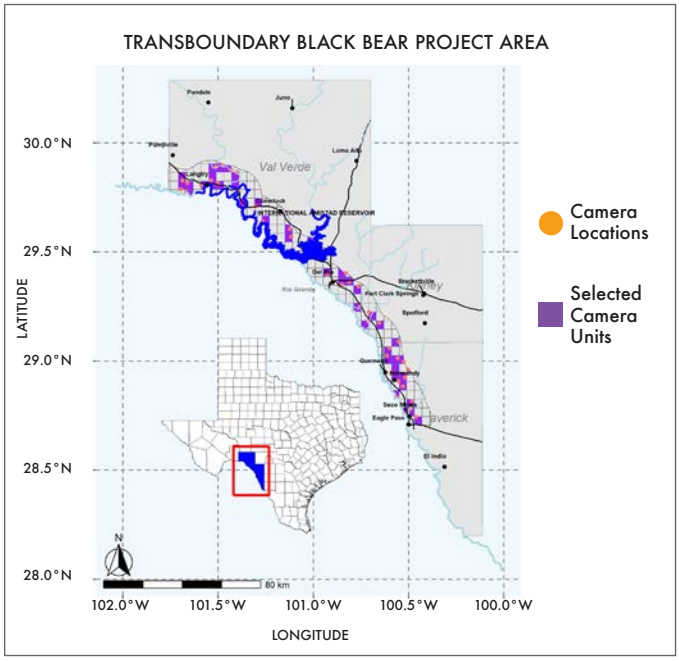

Figure 1: Camera trapping grid in Val Verde, Kinney, and Maverick counties.

Black bears are expanding into new areas of Texas as they naturally travel from Mexico. However, continued expansion of the border barrier along the Rio Grande may restrict cross border movement and connectivity. This study aims to understand how bears move between Mexico and the United States and whether border barriers influence their movements.

To assess bear presence near the border, we sampled 50 grid cells (2.5x2.5 miles) within a 7.5 mile buffer from the Rio Grande using motion-triggered trail cameras (Image 1) in Val Verde, Kinney, and Maverick counties in Southwest Texas.

In this study, we also captured and fitted GPS collars to five bears (three females, two males) in Val Verde County (Image 1). Between March 19 and December 31, 2025, we detected black bears twice using camera surveys. Both were recorded on the Pecos River with two adjacent cameras: on May 12, 2025 at 6.2 miles from the international border and on September 14, 2025 at 6.1 miles from the international border.

Due to low detections in the study area, we incorporated data from other border counties, including Presidio, Brewster, and Terrell, totaling 43 GPS-collared bears (24 males, 19 females; (Figure 1). So far, eight males and two females have regularly crossed the international border, including one male traveling almost 62 miles within one month between Devils River State Natural Area and northern Coahuila, Mexico. It is unknown whether any of the collared bears have encountered complete border barriers, as crossings have only been documented in areas where detection technology is currently deployed.

To provide a broader ecological context, we plan to expand our analysis to include other medium to large-sized mammals detected within the study area.

This ongoing research will be critical to guide land and wildlife management decisions in the U.S.-Mexico borderlands.

CURRENT STUDENTS AND ONGOING PROJECTS

CAITLIN CAMP PAPPAS

Caitlin grew up exploring creeks and public lands across the United States, developing an early love for wildlife and the outdoors. She earned a BS in environmental studies from Texas A&M University, gaining research experience with honeybees and coral reef systems. After working in various environmental roles and visiting Big Bend National Park in 2020, she decided to focus on wildlife research. She completed an MS in Range and Wildlife Management at Sul Ross State University, studying carnivores and other mammals in Big Bend National Park. She later worked in California surveying threatened species before returning to Texas to pursue a PhD in black bear ecology.

SHELBY DUPERIER

Shelby grew up in Central Texas, where she explored her love of nature through camping, mountain biking, and trips to the Gulf Coast. During her pursuit of a bachelor's degree in environmental science, she developed a strong interest in conservation and restoration ecology. Her professional background in hospitality refined her communication, problem-solving, and organizational skills – strengths she now applies to collaborative, field-based wildlife research. Shelby is currently completing her MS in Range and Wildlife Management at Sul Ross State University, where she integrates these interpersonal skills with rigorous scientific inquiry.

Assessing Transboundary Movements of Black Bears in Texas

Black bears, once extirpated from Texas, are naturally recolonizing the state. Caitlin's research examines their transboundary movements and how border infrastructure may affect them. Using GPS collar data, she identifies travel corridors, habitat selection, and connectivity between Texas and Mexico. She also analyzes genetic data to assess gene flow, connectivity, and genetic diversity in this recovering population.

Distribution of High-elevation Owls in the Davis Mountains, Texas

Sky island ecosystems within the Chihuahuan Desert provide isolated, high-elevation habitat that supports unique and rare species, including flammulated and northern saw-whet owls. In the Davis Mountains of West Texas, these species remain poorly documented due to their elusive behavior and the remote terrain. Shelby aims to capture the occurrence and seasonal vocal activity of target owl species using autonomous recording units.

JESSE ELLGREN

Jesse was born and raised in the Front Range of Colorado. Starting his love for nature as a boy scout, he graduated in 2014 with a BS in wildlife biology from Colorado State University in Fort Collins. For ten years Jesse worked on a myriad of wildlife projects, from bubonic plague research in prairie dogs, to management of urban chronic wasting disease. Most recently he live-trapped grizzly bears across the Inland Northwest with the U.S. Fish and Wildlife Service before starting his black bear master's research at BRI. Outside of school, Jesse enjoys hiking, snowboarding, disc golf, and playing acoustic guitar.

ELIANA GOODWIN

A native of the Coastal Bend region of South Texas, Eliana first visited West Texas in 2020 and was captivated by its unique landscapes and wildlife. She moved to Alpine the following year to pursue a BS in Natural Resource Management with a concentration in Conservation Biology, graduating from Sul Ross State University in 2024. While she pursues her graduate degree, she works as the Engagement and Activities Coordinator at the Borderlands Research Institute, where she leads community outreach and educational initiatives to strengthen connections between conservation science and the public.

Assessing Black Bear Distribution and Response to Increasing Border Infrastructure in Southwest Texas

Jesse is sampling 50 of 222 possible 4x4 kilometer cells within a 12 km buffer from the Rio Grande River across Val Verde, Kinney, and Maverick counties. From 3/19/25 to 12/31/25, across over half a million total photos, only two detection events of black bears have been recorded so far. With low detection rates, Jesse plans to include other large and medium bodied mammals into analyses to understand possible responses to border infrastructure, other anthropogenic factors, and landscape resources.

Evaluating Responses of Plant and Insect Communities to Various Mowing Regimes

Insect pollinators are crucial to the function and resilience of desert grasslands. Fort Davis National Historic Site is a small-scale, semi-natural grassland managed by mowing. High-frequency mowing may reduce resources for pollinators by decreasing plant biomass and flower production, while intermediate mowing may be beneficial by stimulating plant growth and diversity. Eliana is researching this topic to understand the impact on plant and pollinator communities.

JAKE GOWDY

Jake was born and raised in Lubbock, Texas, and attended Texas Tech University. He was introduced to the field of ecology through the Natural Resource Management program at the university, where he graduated with a BS in natural resources management. Jake worked as an undergraduate research technician, gaining experience with big game species, game birds, birds of prey, and macroinvertebrates. Jake is extremely excited to be a part of all the great work being done at Borderlands Research Institute and is looking forward to working with large carnivores.

MATT HEWITT

Growing up in Texas, Matt developed a passion for wildlife and wild places and knew from an early age he wanted a career in wildlife. He received a bachelor's degree from Texas A&M University–Kingsville in range and wildlife management, and soon after, he was accepted to a master's position at Sul Ross State University focused on determining the potential distribution of kit fox in the Trans-Pecos. After his schooling, Matt took a job with the Oregon Department of Fish and Wildlife assisting with multiple wildlife research projects. Now back in Texas, Matt is working toward his PhD focused on estimating the density of black bears in the Trans-Pecos of Texas.

Modeling Den Timing and Habitat Use of Trans-Pecos Black Bears

Due to their absence until recent recolonization of the Trans-Pecos, bears have returned to a highly altered landscape, due to increased human population sizes and availability of anthropogenic food sources. This altered landscape, as well as unique desert adaptations, leaves us with a lot of questions regarding seasonal resource use by bears. We have little information on diet and denning ecology, such as timing and habitat characteristics that influence site selection in the Chihuahuan Desert. Jake's project seeks to find relationships between habitat, climate, den selection, and diet.

Estimating the Density of Black Bears in the Trans-Pecos Region of Texas

Rising human-bear interactions have underscored the need for a reliable population estimate. In collaboration with the Texas Parks and Wildlife Department (TPWD) and Texas Tech University, Matt's research aims to identify an accurate and practical method for estimating the size of the recolonizing bear population in the challenging Trans-Pecos environment. Using simulation studies and field trials, he will identify a feasible sampling design to support future monitoring efforts and produce the first population estimate for this region.

BRYCE MANN

Bryce's passion for animals and the natural world began early in life, growing up spending summers on his great-grandparents' ranch. After spending time on the family farm and working at veterinary clinics, Bryce found his way to Texas Tech University where he had countless opportunities to learn more about natural resources management and truly develop career skills through volunteering with vegetation surveys, wildlife projects, and the museum collections. Now a graduate student at Sul Ross State University, Bryce is eager to continue pursuing his passion.

MADISON VASTINE

Madi grew up in central Pennsylvania, where she developed a love for the outdoors while fishing, hunting, and cutting firewood with her dad. After starting college in fine art and engineering, she discovered a job posting for a "bear biologist," which inspired her to transfer to the University of Montana to study wildlife biology. She later worked on a black bear research project in western Montana, spending summers collaring bears and winters conducting den checks. Madi is excited to broaden her focus in ecology and, outside of research, enjoys art, weightlifting, reading, and time with her dog, Rooster.

Mapping and Modeling Wetland Availability in the Chihuahuan Desert

Arid wetlands worldwide are declining due to human water use and climate change, impacting migratory birds. In the Chihuahuan Desert, Bryce is quantifying surface water availability to assess changes in wetland habitat conditions. His research will provide insights into the status, trends, and key factors affecting these critical habitats to inform effective conservation strategies.

Evaluating Spatial Memory as a Driver of Black Bear Resource Selection and Movement Patterns

American black bears, once extirpated from West Texas, are now recolonizing the region. Madi's research uses GPS collar data to study how spatial memory influences movement, seasonal behavior, and space use. She examines how bears navigate terrain, revisit resources, and respond to deterrents like electric fencing. Her work identifies recurring patterns to support science-based management and reduce human–bear conflict as populations expand.

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All photos courtesy of BRI unless otherwise noted. Front cover: black bear cubs (photo credit: Matt Hewitt/BRI); back cover: white-crowned sparrow (photo credit: Audrey Taulli/BRI).
BRI staff editors include Cindi Meche, Julie Rumbelow, Bill Adams and Lydia Saldaña.

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