

Desert Tracks

"Helping conserve the natural resources of the Chihuahuan Desert Borderlands through research, education, & outreach."



RESEARCH IN ACTION:

Evaluating the Potential for Mountain Lion-Human Conflict in Big Bend National Park

David Price Rumbelow and Patricia Moody Harveson

Apex predators provide ecosystem services, from the top down, that have far-reaching effects. However, for the conservation of large predators to be successful, understanding their interactions with humans is essential. This is particularly the case in our National Parks, where interactions between park visitors and large carnivores can occasionally lead to conflicts. In 2014, the Borderlands Research Institute initiated a study on the potential for conflict between humans and mountain lions in Big Bend National Park.

Between 2014 and 2016, 5 mountain lions were monitored with satellite-linked GPS collars. Male and female mountain lions were found to be most active during crepuscular periods (morning and evening) and at night, with decreased activity during the day. Surprisingly, female mountain lion activity during the day only decreased slightly; they were active (moved >30 m) in 64% of hourly daytime movements measured.

Spatially, mountain lions stayed away (>3 km) from high-use trails and facilities frequented by humans. In some cases, they used areas relatively close (1-3 km) to park infrastructure (such as less used trails, paved roads, and dirt roads). Some mountain lion kill sites were <250 m from trails and paved roads; however, the majority were >3 km from park infrastructure and human activity.



A radiocollared mountain lion climbs on a cliff in Big Bend National Park.

In addition to monitoring mountain lions, we monitored human use of 20 trails with motion-activated infrared trail counters. Trail counters recorded the date and time recreationists were active. Recreationists were most active during the day, with a low percentage of use in the morning, evening, and night. Recreationists also changed their use of trails to fit the season, selecting high elevation trails during the summer while avoiding low desert trails.

In national parks, wildlife is protected in perpetuity so that current and future generations may experience the grandeur of American wilderness. This study will provide information to Big Bend National Park on areas of overlap, both spatially and temporally, between mountain lions and humans, and help park staff to implement education and management programs with the aim of reducing conflict and ensuring the safety of both wildlife and humans who use the park.

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BRI Researchers:

Dr. Louis A. Harveson, Dan Allen Hughes, Jr., Endowed Director and Professor of Wildlife Management
• Big Game Ecology & Management

Dr. Patricia Moody Harveson, Associate Professor of Conservation Biology
• Population Ecology & Spatial and Systems Analysis

Dr. Robert J. Kinucan, Professor of Range Management
• Disturbance Ecology & Plant Biology

Dr. Ryan S. Luna, Assistant Professor of Wildlife Management
• Upland Gamebird Ecology & Management

Dr. Ryan O'Shaughnessy, Assistant Professor of Agribusiness
• Agribusiness & Wetland Ecology

Dr. Bonnie J. Warnock, Clint Josey Endowed Chair and Professor of Sustainable Ranch Management
• Rangeland Ecology & Sustainable Ranch Management

Dr. Whitney Gann, Research Scientist
• Pronghorn Ecology & Restoration



Pronghorn Revival tells the story of the collaborative efforts of landowners, Texas Parks and Wildlife Department, and Borderlands Research Institute to restore the pronghorn to the Trans-Pecos. In just 3 days, Pronghorn Revival was viewed >250,000 times.

Photos by Ben Masters



From the Director—“YETI Story No. 26”

Pronghorn Revival is a story of persistence; a story of collaboration and a story of conservation.

Pronghorn Revival is a short (~6 min) wildlife documentary that eloquently chronicles our efforts to restore pronghorn to the Trans-Pecos. The film was directed by Ben Masters of Fin and Fur Productions.

Ben and his colleagues (John Aldrich and Tito West) accompanied the Borderlands Research Institute and Texas Parks and Wildlife Department on our most recent pronghorn restoration effort this past winter. Ben and his crew spent a week with our team conducting interviews and filming the

capture, processing, transport, and release of 112 pronghorn to the Marfa Plateau.

Pronghorn Revival was premiered at Telluride Mountain Film Festival this past fall and has since been accepted to several additional film festivals across the country.

YETI, a leading premium cooler and drinkware brand that also sponsors various outdoor films, helped sponsor the documentary. *Pronghorn Revival* is YETI Story No. 26 (<https://stories.yeti.com>).

Many thanks to our friends at YETI, and Ben Masters and his crew for sharing our story!

—Louis A. Harveson

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West Texas Chapter of SCI Scholar: Jill Morgan

Undergraduate student Jill Morgan is this year's recipient of the West Texas Chapter of Safari Club International's Endowed Scholarship. The West Texas Safari Club endowed scholarship was established in 2014 to support outstanding Natural Resource Management students at Sul Ross State University.

Jill grew up in Camp Wood, Texas, and after receiving her AS degree from Southwest Texas Junior College in 2014, she transferred to Sul Ross State University to pursue a Bachelor's Degree in Wildlife Management.

Since arriving at Sul Ross, Jill has been an active member of the Range and Wildlife Club, and has served as president of that organization. Jill has also been active in the Borderlands Research Institute Undergraduate Research Program. Last year she worked

as a technician on the pronghorn restoration project, and completed a research project investigating the dietary overlap among pronghorn, cattle, and prairie dogs in Trans-Pecos, Texas.



Donor Spotlight: Permian Basin Area Foundation

The Permian Basin Area Foundation has recently provided a generous grant to the Borderlands Research Institute to support our online outreach efforts. The funds will go towards overhauling our website to make it more responsive and dynamic, and supporting ongoing updates to make available the most up-to-date information we have.

One of the major goals of the Borderlands Research Institute is to provide relevant management information to landowners, resource professionals, and the general pub-

lic, and our website provides an important means for doing so. This grant will allow us to continue to grow our online presence, and reach more people with information relevant to conserving the natural resources of the Chihuahuan Desert Borderlands.

Permian Basin Area Foundation was established in 1989 with the goal of enriching the quality of life in west Texas communities. We are extremely grateful for the support of the Foundation, and we look forward to premiering our new and improved website in the coming months!

Over 90% of our funding comes through private donations!

Please consider making a tax-deductible donation to the Borderlands Research Institute.

Students Honored at Sul Ross Honors Convocation

Every spring, the Natural Resource Management faculty selects a group of outstanding students to be honored at the Sul Ross Honors Convocation.

This year, undergraduate student Alec Ritzell was named the outstanding underclassman in Natural Resource Management, while John Whetstine was named the Outstanding Upperclassman. Additionally, undergraduate student Cody Putman was named this year's Outstanding Field Volunteer. Alec, John, and

Cody have each participated in the BRI Undergraduate Research Program, in addition to being active members of the Range and Wildlife Club.

Graduate students were also honored at the event. From the Natural Resource Management department Rich Mrozinski, James Eddy, and Jose Etchart were named as the outstanding graduate students in Conservation Biology, Range Management, and Wildlife Management, respectively.



John Whetstine, named the 2016 Outstanding Upperclassman in Natural Resource Management, assists with a duck banding project at Bosque del Apache wetlands.

Trans-Pecos Wildlife Conference—A Huge Success!

The Trans-Pecos Wildlife Conference was held earlier this month at Sul Ross State University and provided an excellent opportunity for researchers, landowners, and concerned citizens to come together and discuss topics related to the management of wildlife in west Texas.

Over 160 people attended the conference, which featured sessions on big game, habi-

tat, nongame wildlife, and gamebird management, as well as a special presentation and discussion made by the Texas Deer Study Group.

The conference concluded with a chance to get out in the field for some hands-on learning at the CF Ranch. Our thanks to all those who attended the conference, and the sponsors and co-hosts who put it together.



Landowners, ranch managers, and wildlife enthusiasts from across west Texas gathered together to participate in the Trans-Pecos Wildlife Conference, including a comparative necropsy and plant identification at the historic CF Ranch.



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San Antonio Livestock Exposition Scholars, 2015-16

The San Antonio Livestock Exposition, Inc., (SALE) has been a longtime supporter of the Borderlands Research Institute. Just one of the ways that SALE supports our education efforts is by sponsoring graduate student scholarships at the BRI. This year SALE is supporting a group of students working on a diverse collection of projects in the Natural Resource Management field.

Daniel Tidwell, from Sachse, Texas is studying the post-release survival and movements of captive-reared white-tailed deer in the Hill Country of Texas.

J.C. Kiddo Campbell, from Castroville, Texas is monitoring mule deer translocation and restoration efforts in the Trans-Pecos.

Ron Jankowiak, from Brenham, Texas is

studying the comparative ecology of scaled and Gambel's Quail in the Trans-Pecos region.

Rich Mrozinski, from Houston, Texas is studying the use of spatial capture-recapture techniques to estimate predator and prey population densities.

We're very grateful for SALE's continued support of our students and their projects!



Clockwise from left, SALE Fellows, Daniel Tidwell, J.C. Kiddo Campbell, Ron Jankowiak, and Rich Mrozinski.