



Desert Tracks

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

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Editor: Patricia Moody Harveson

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- *Specialization:* Disturbance Ecology and Population Plant Biology

Dr. Bonnie J. Warnock

- Associate Professor of Range Management
- *Specialization:* Restoration Ecology and Rangeland Hydrology

RESEARCH IN ACTION:

Evaluating Movements of Mature Mule Deer Bucks

by Misty L. Sumner and Louis A. Harveson

Few would disagree that desert mule deer are the foundation of the recreational and lease hunting economy that is so important to west Texas and the desert southwest. However, despite their broad distribution and obvious economic value, our knowledge of mule deer ecology and management is lacking. Working with landowners in the Apache Mountains, researchers with the Borderlands Research Institute (BRI) initiated a long-term project to address some of the most pressing research questions relating to mule deer management. Specifically, we wanted to identify annual and seasonal movements, monitor antler development, and evaluate the effects supplemental feed has on mule deer movements. Because most of the current knowledge revolves around does and young bucks, we were particularly interested in the movements of mule deer bucks that were 4.5-8.5 years old.

In 2006, we launched the project by capturing and affixing global positioning system (GPS) radio collars to 20 mature mule deer bucks. GPS collars allowed us to obtain a location on the bucks every 5 hours. In 2007, we recaptured or removed the collars from 13 of the bucks we initially captured in 2006. New radios were placed on 6 of the recaptured bucks and we collared an additional 11 mature bucks (>4.5 years).

Although the study is still in progress, it has already redefined our knowledge of mule deer movements. Specifically, the home



Following capture, researchers quickly measure antlers and attach a GPS radio collar to the mule deer buck. Antler development is another aspect researchers with the BRI are trying to monitor through their studies.

range sizes we observed in our study were substantially larger than those reported in previous studies (1,900-2,700 acres). In our study range sizes averaged over 15,000 acres among the first cohort of trophy class bucks and varied from 4,300 to 30,000 acres. Because range sizes were so large, the scale at which we manage (ranch level) may need to be reconsidered. This is especially true for ranches under 100,000 acres, but even larger ranches likely share trophy class deer with their neighbors.

In early 2008, we will be recovering more data from our radioed deer, as well as capturing and monitoring more trophy class bucks for the Apache Mountains Mule Deer Project. Additionally, BRI researchers are currently looking to broaden this study to include other ranches throughout the Trans-Pecos. If you are interested in participating in or learning more about this study, please contact Louis Harveson at 432.837.8488.

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Dr. Bonnie Warnock, Associate Professor of Range Management, has been named the new Chair of the Natural Resource Management Department.

Trans-Pecos Wildlife Conference Well Attended

Over 200 landowners, managers, and resource professionals from across Texas, New Mexico, Arizona, and northern Mexico congregated at SRSU for the 2008 Trans-Pecos Wildlife Conference. The Borderlands Research Institute (BRI) for Natural Resource Management hosted the event at SRSU on August 14-15, 2008. Wildlife experts provided informative seminars on quail management, elk research, hunting leases and landowner liability, and a host of issues surrounding mule deer management. Presentations on mule deer included reports on movements and ranges, an evaluation of supplemental feeding, the effects of predation, and a comparison of harvest strategies. Later that evening, conference participants were treated to a west Texas BBQ dinner sponsored by the Texas Wildlife Association (IWA).



Photo courtesy of Justin Dreibelbis

Conference attendants gather around Dr. Bill Eikenhorst as he discusses the anatomical, behavioral, and ecological differences between aoudad and mule deer during a comparative anatomy session at the Catto-Gage Ranch.

On day 2, participants traveled to the Catto-Gage Ranch near Marathon for a half-day field session. Elliott Hayne (co-owner), Brent Charlesworth (manager), and Greg Simons (outfitter) provided a brief overview of the historic ranch. Shortly after, attendants participated in plant identification, comparative anatomy, and habitat management programs. Confer-

ence partners included the BRI, TWA, Texas Parks and Wildlife Department, Texas AgriLife Extension, and Catto-Gage Ranch.

If you would like to receive a copy of the proceedings, please contact us at 432.837.8488 or you can download it from our website at <http://www.sulross.edu/brinrm/pubs.htm>

Warnock Named Chair of NRM Department

Dr. Bonnie Warnock, Associate Professor of Range Management, was recently named Chair of the Department of Natural Resource Management. Bonnie is a fifth generation Texan and was raised in the Fort Stockton area where

her family has been ranching in west Texas for over 100 years. Dr. Warnock received her B.S. and M.S. at SRSU and completed her doctorate at Texas A&M University in 2003.

Dr. Warnock replaced Dr.

Louis Harveson as Chair beginning in July 2008. Dr. Harveson stepped down as Chair after serving over seven years in that position to dedicate more time to managing the newly formed Borderlands Research Institute.

Donor Spotlight: Texas Chapters of Quail Unlimited

For over 10 years, Quail Unlimited (QU) has been a valued friend of the Desert Quail Research Program at SRSU sponsoring scholarships and research equipment for various research projects. Most re-

cently, Chip Martin (Regional Director of QU) helped secure a much needed ATV for the Borderlands Research Institute. Within weeks Chip was able to recruit 6 chapters of QU from across Texas and raise

the necessary funds for a Honda Rancher 4x4 ATV. Chapters that helped raise funds for the ATV included the Texas Council, Alamo, Cross Timbers, Park Cities, South Texas, and TU-Mile chapters of QU.



QU members join Chip Martin (right) as he shakes hands with BRI graduate student Curtis Greene (second from right) and donates the ATV to BRI.

BRI Researchers Awarded Over \$750,000 in Grants

During the first year of operation, researchers with the Borderlands Research Institute (BRI) have been awarded 14 research grants totaling over \$750,000. Drs. Patricia Moody Harveson, Bonnie Warnock, and Louis Harveson form the core of the research team. Newly funded research projects vary considerably and a brief list of funded projects are listed below:

Conservation Biology

- Transboundary movements of large carnivores
- Vegetation mapping along the Rio Grande

Rangeland Ecology

- Monitoring grassland birds in the Chihuahuan Desert
- Flora, fauna, and water quality of stock tanks
- An integrated ranch management mapping project
- Ecology and sustainability of ocotillo populations

Wildlife Management

- Ecology of Montezuma quail
 - Use of Spike 20P to restore desert grasslands
 - Assessing pronghorn movements using genetics
 - Effects of broad-scale habitat change on mule deer
 - Effects of Spike 20P on mule deer habitat use and forage
- Stay tuned to future editions of *Desert Tracks* or our *Research Highlights* for updates on these and other research projects.

Please consider making a tax deductible donation to the Borderlands Research Institute to support our research, outreach, and educational programs.

Graduate Student Enrollment Continues to Grow

Graduate student enrollment in Range and Wildlife Management (R&WM) has grown since the creation of the Borderlands Research Institute. The R&WM program enrolls 20-25 students at SRSU. Research projects rely heavily on graduate and undergraduate students to help collect and analyze

data. Research projects not only advance our ability to manage natural resources, but they allow us to train the next generation of wildlife biologists, range conservationists, and ranch managers—an important part of our mission. Graduate students are recruited throughout the country to fill research assistantships to con-

duct research. The skills our graduate students gain from their classroom and field studies make them highly qualified in the job market. Recent graduates in R&WM have secured jobs with state and federal agencies, private ranches, consulting firms, and many other agencies and organizations across the country.



Gaining practical experience outside the classroom is an integral part of the R&WM graduate program.

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Join Us for Prescribed Burning Association Meeting

Please plan to attend the start up meeting for a Trans-Pecos Prescribed Burning Association. BRI has partnered with local landowners to organize a regional prescribed burning association. The meeting is February 25, 2009 at SRSU's Range Animal Science Center. Dr. Butch Taylor, founder of the Edward's Plateau Prescribed Burning Association and proponent of prescribed fire, will be on hand to help local landowners complete the necessary paperwork to begin a local

association.

Prescribed fire is a valuable tool in rangeland management, but its application can be daunting to private landowners. The purpose of the meeting is to form an association composed of ranchers that can assist one another in using prescribed fire. Members of a prescribed burn association share equipment and labor, benefit from each others experience and training, and promote the use of prescribed fire on rangelands. The association will

also set standards for prescribed burning so that this tool is applied in a safe manner. Prescribed burning associations can obtain grants for equipment and training that are not eligible to individuals.

The meeting will give ranchers an opportunity to discuss prescribed burning and begin the process of forming an association. For more information, contact Dr. Bonnie Warnock at 432.837.8488 or go to <http://www.sulross.edu/brinrm/outreach.htm>.

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for Natural Resource Management*

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