A publication of the Borderlands Research Institute for Natural Resource Management at Sul Ross State University.

BORDERLANDS RESEARCH INSTITUTE FOR NATURAL RESOURCE MANAGEMENT
SUL·ROSS·STATE·UNIVERSITY
A Member of the Texas State University System

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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BRI Researchers

Dr. Louis A. Harveson
- Professor of Wildlife Management
- *Specialization*: Big Game and Upland Gamebird Ecology and Management

Dr. Patricia Moody Harveson
- Assistant Professor of Conservation Biology
- *Specialization*: Population Ecology and Spatial and Systems Analysis

Dr. Robert J. Kinucan
- Professor of Range Management
- *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:

Using Fire and Herbicide to Control Whitebrush

by Iric Burden and Bonnie J. Warnock

Whitebrush infests about 6 million acres of rangeland in the desert southwest. Whitebrush is an invasive shrub which grows to about 10 feet tall with several stems arising from the basal crown. Whitebrush is usually found growing in overflow and flood areas associated with tobosa and alkali sacaton, but also occurs on rocky soils.

The invasive nature of whitebrush poses a problem to many land managers in that it commonly forms a dense monoculture around seasonal water sources including creeks and drainages. Whitebrush thickets are often impenetrable to livestock and wildlife, rendering the water unavailable.

Previous studies evaluating the effects of prescribed fire, mechanical treatments, and various herbicides to control whitebrush have been ineffective or cost prohibitive. In 2007 we initiated a study investigating the "tandem" effects of prescribed burning and herbicide applications on whitebrush on the O2 Ranch in Brewster County, Texas.

We evaluated 3 concentrations of GrazonNext™ (aminopyralid + 2,4-D) on individual whitebrush plants. Following a spring prescribed burn, GrazonNext™ was applied in the summer of the next year to post-burned whitebrush plants that were <10 feet tall.

Based on our data, whitebrush may be top killed under the right conditions with prescribed burning, however, whitebrush will vigorously re-sprout. The prescribed burn achieved 100% canopy reduction. Two years after herbicide treatment, we documented 95% plant mortality using GrazonNext™ applied at 0.5% active ingredient concentration, the lowest concentration tested.

Whitebrush is a native plant, but often becomes invasive in low-lying areas. Using a combination of prescribed fire and herbicide, BRI researchers have documented a 95% mortality rate for whitebrush.

Cost analysis suggests prescribed burning whitebrush coupled with manually applied herbicides are competitive to costs associated with mechanical treatments or other herbicide treatments.

For more information on this project and the rangeland management and restoration program, please contact Dr. Bonnie Warnock at 432.837.8488.

Graduate students serve as the "lifeblood" of the research program at the Borderlands Research Institute. With their faculty mentor, graduate students collect and analyze data to help answer research questions posed by natural resource managers.

From the Director—"What Does It Take…?"

One of the most common questions I receive about our research program is "What does it take to conduct a research project?"

Very simply, research projects require two essential elements: 1) a question, and 2) funding.

Questions.—Questions are boundless, but we rely on you (natural resource professionals, landowners, ranch managers, and concerned citizens) to help identify our research questions.

Many times, the questions posed by landowners and managers are also of interest to state and federal agencies or other funding entities so that we may cost share project expenses.

For example, the Lykes family (the focus of our *Donor Spotlight*) has been staunch supporters of the BRI and have collectively donated over $180,000 over the past 8 years to support our rangeland restoration program. However, through the works of our research team, we have leveraged another $500,000 from other entities to support the projects. The rangeland restoration projects on the O2 Ranch are perfect examples of effective partnerships between landowners, state and federal agencies, and the Institute.

Funding.—One of the most critical parts of any potential research project is securing funding for a dedicated graduate student. Employing and training graduate students helps fulfill our educational mission, but graduate students are also the "lifeblood" of our research projects. Under the supervision of our faculty, graduate students help collect and analyze data so we may answer our research questions.

On average, our research projects cost $25,000/year and run for 2 years. The majority of those costs support graduate students via payroll ($15,000/yr) and travel ($5,000/yr). Other research–related costs vary by project.

We would love to hear from you about your natural resource priorities and how we might be able to address them.

—Louis A. Harveson

Natural Resource Management Students Recognized

Six Natural Resource Management students were recently recognized for their strong academic achievements during 2009-2010 academic year.

Graduate students Sally Street (Conservation Biology), Miguel Grajeda-Garcia (Range Management), and Reagan Gage (Wildlife Management) and undergraduates Madeleine Cantu and Justin Hoffman received "Outstanding Student" awards. Kody Kubala also received special recognition as the "Outstanding Volunteer" from the Department of Natural Resource Management.

Outstanding students are (L-R): Miguel Grajeda-Garcia, Madeleine Cantu, Reagan Gage, Kody Kubala, and Justin Hoffman (Sally Street not pictured).

Donor Spotlight: The Lykes Family and Corporation

Over the past 8 years, the Lykes family, corporations, and foundations have played a pivotal role in developing the rangeland restoration program at the Borderlands Research Institute. During that time, the Lykes have co-sponsored over 10 range and wildlife research projects. In addition to their monetary donations, the Lykes have donated a research and education lease on over 100,000 acres. Located in Brewster and Presidio counties and spanning over 275,000 acres, the Lykes-owned O2 Ranch serves as the hub for a multitude of projects including: restoring riparian habitats, recovering rare plants, reestablishing ecosystem health, and monitoring wildlife responses to habitat manipulations.

Field days are an integral part of the outreach mission of the rangeland restoration program on the O2 Ranch.

"Shooting West Texas" Scheduled for Fall 2010

World renowned wildlife and nature photographers will congregate on SRSU campus on September 16-19, 2010 to participate in the Second Annual "Shooting West Texas" Photography Symposium.

Co-sponsored by the Borderlands Research Institute, the symposium opens with a free lecture on Thursday night, followed by two full days of speakers showing their work via digital projection, workshops, portfolio reviews, a photo contest, and much more.

Wyman Meinzer, internationally acclaimed author and photographer, will serve as the Keynote Speaker. Meinzer was named the official Texas State Photographer in 1997 by then Governor George W. Bush and the 75th Legislature. Meinzer's work has graced the covers of more than 250 magazines and books. He has published over 20 photography books with subjects ranging from Texas landscapes to playas, rivers, quail, working dogs, sky, and more.

To find out more about the symposium go to www.shootingwesttexas.org

Join us September 16-19, 2010 for the "Shooting West Texas" Photography Symposium.

Harveson Named SRSU Outstanding Teacher

SRSU awarded Dr. Louis Harveson, professor of Wildlife Management and Director of the Borderlands Research Institute, as the recipient of the 2009 Sul Ross State University Outstanding Teaching Award.

Harveson, who came to Sul Ross in January 1998, received a Bachelor of Science in wildlife management from Texas Tech University; a Master of Science in range and wildlife management from Texas A&M University-Kingsville; and a doctorate in wildlife science from Texas A&M University and TAMU-Kingsville.

Harveson advises approximately 50 undergraduate and 15 graduate students each year majoring in wildlife management.

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

Borderlands Research Institute
for Natural Resource Management

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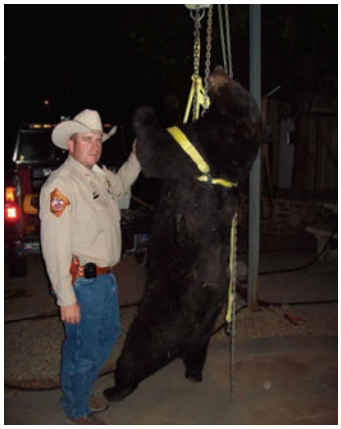
Black Bear to be Displayed at Museum of the Big Bend

Last summer, one of the largest black bears recorded in Texas was hit by a vehicle between Alpine and Marfa on Hwy 90. This and other black bear sightings in west Texas indicate that bears are beginning to expand further north of their small populations in the Big Bend region of Texas.

Their recolonization has been made possible due to a number of factors including a source black bear population in northern Mexico, intact suitable habitat, regulation and enforcement banning bear hunting, and most importantly, the willingness of private landowners to coexist with bears. Recolonization of black bears is currently being studied by scientists at the Borderlands Research Institute.

The bear will be mounted for educational purposes and displayed at the Museum of the Big Bend at Sul Ross State University. Funding for the museum display is being sponsored by the Borderlands Research Institute, L&F Distributors, Texas Parks and Wildlife Foundation, Museum of the Big Bend, Texas Parks and Wildlife Department, and Hip-O Taxidermy.



The 415-pound bear was struck by a vehicle west of Alpine in the summer of 2009. (Photo courtesy of Brewster County Sheriff's Office).