



Desert Tracks

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

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Editor: Patricia Moody Harveson

RESEARCH IN ACTION:

Understanding Hummingbird Ecology in the Big Bend

by Patricia Moody Harveson, Dauna Jo Hodnett, and Josette Delgado

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Hummingbirds, with their small size, quick movements, and bright plumage are a favorite among birders. Luckily, hummingbirds are easy to attract with nectar producing plants and artificial feeders so anyone can get a close-up look at these magnificent birds. Over 320 species of hummingbirds occur throughout North and South America. The Trans-Pecos is a major migratory flyway where 16 species can be found. In an effort to better understand the hummingbird community of the Trans-Pecos, we have initiated several studies.

First, we are studying the nesting ecology of black-chinned hummingbirds. As the most common hummingbird of the Trans-Pecos, black-chinned hummingbirds are known to be habitat generalists, utilizing a wide variety of habitats across all elevations. Black-chinned hummingbirds arrive in West Texas around mid-March, begin nesting by early April, and end nesting in late August.

Nesting chronology from egg laying to fledge time is approximately 39 days. Females lay two eggs per clutch and may have up to two clutches per nesting season. Nest building, incubation, and care of young are the responsibilities of the female, with males rarely participating in reproduction beyond copulation. In addition to carrying out these responsibilities, female hummingbirds must also tend to their needs, such as food procurement, plumage maintenance, and predator avoidance.

From our studies, nests were found at heights ranging from 6 to 21 feet. All nests rested on branches that sloped at a downward angle of 45-80° with most nests being

shaded throughout the day. Nestling mortalities were recorded from different sources, including high winds and avian predation. We documented a nesting success rate for black-chinned hummingbirds of 56%.

We are also investigating the use of stable isotopes in determining the locations of black-chinned hummingbird wintering grounds. Stable isotopes occur naturally in the environment and vary throughout the landscape. These isotopes can be found in hummingbird feathers and we can use this information to trace their origins. This project has just begun and we'll continue to collect and analyze samples over the next couple of years.



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The Big Bend Region is a major migratory flyway for a number of hummingbird species including the most common, black-chinned hummingbird.

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The iridescent gorget feathers of this male rufous hummingbird are designed to catch the eye of potential mates.

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From the Director—“Training Future Conservationists”

As a unit of Sul Ross State University, it is inherent that education is a key element in the mission of the Borderlands Research Institute.

The research projects that we conduct not only advance our ability to manage the natural resources of the region, but they allow us to train and educate the next generation of wildlife biologists, range conservationists, and ranch managers.

For the research team at the Institute, educational opportunities not only come in the more traditional settings of classrooms and lecture halls, but some of the most effective settings for teaching occur behind a windshield, under a shade tree, or on the side of a mountain. The dialogues and discussions that emerge in these

outdoor learning environments will long be remembered by our students.

The Chihuahuan Desert Borderlands offer some of the most scenic outdoor classrooms. From monitoring hummingbird nests and migration routes to assessing rangeland health, our students receive a wealth of opportunities working first

hand with the natural resources. The recent acquisition of the Christmas Mountains by the Texas State University System will afford many additional opportunities for our students.

Thank you for helping us train the next generation of conservationists.

—Louis A. Harveson



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BRI student researcher Dauna Hodnett holds a magnificent hummingbird that was recently caught as part of a research project in the Davis Mountains.

Wildlife Students Receive Scholarships from HSC

Three wildlife students from Sul Ross State University recently made the trek from Alpine to Houston to attend the annual awards banquet of the Houston Safari Club (HSC). Their trip was well worth it as each student received a \$4,000 scholarship!

Scholarship recipients included Justin Hoffman, a senior wildlife management major; James Weaver, a graduate student studying the recent pronghorn decline; and Thomas Janke, a graduate student studying the movements of translocated desert bighorn sheep.



SRSU students (l-r) James Weaver, Justin Hoffman, and Thomas Janke recently received scholarships from the Houston Safari Club.

Donor Spotlight: Mrs. Louise O'Connor and Family

Wildlife conservation is a long-standing tradition throughout the O'Connor ranches of south Texas. West Texas is no exception for the O'Connors who own and operate the Lado Ranch in Presidio, Jeff Davis, Hudspeth, and Culberson counties.

Through the Wexford Cattle Company LTD, Mrs. Louise O'Connor and her family have recently donated \$125,000 to the Borderlands Research Institute to support their ongoing studies on desert quail.

The O'Connors have sponsored a five-year research

project investigating the effects of prescribed fire on reproduction, density, and survival of desert quails.

The Lado Ranch hosts two desert quail species including abundant populations of scaled and Gambel's quail, providing a unique opportunity to study both species.



© Richard Temple

Gambel's quail will be studied as part of a grant from the O'Connor family.

O2 Ranch Wins Regional Land Steward Award

The annual Lone Star Land Steward Awards recognize and honor private landowners for their accomplishments in habitat management and wildlife conservation. This year the Texas Parks and Wildlife Department recognized the O2 Ranch for the Trans-Pecos region.

Owned by the Lykes Brothers

since 1941, this 275,000 acre ranch began major restoration efforts in 1998.

Over the years, the owners have partnered with resource agencies to protect and restore riparian areas and associated uplands. Treatment of 4,000 acres of shrub encroached land provides crucial habitat for grassland species such as

prairie dogs, pronghorn, and burrowing owls. Their restoration efforts in the Terlingua Creek watershed have decreased invasive shrubs and bare ground and increased grass and forb cover to reduce soil erosion. The O2 Ranch supports numerous research and educational programs of the Borderlands Research Institute.

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

BRI Director Receives Conservation Leadership Award

During the 2011 Wildlife Awards Banquet, the Texas Wildlife Association recently awarded Dr. Louis Harveson, Director of the Borderlands Research Institute, with the Sam Beasom Conservation Leadership Award. The award is

given to a member of the professional conservation community who has made an outstanding contribution to the conservation of Texas wildlife and shares the philosophies of the Texas Wildlife Association. Dr. Harveson was noted for his

dedication in developing students into wildlife professionals and his efforts to engage a broad landowner base in the Trans-Pecos via the Borderlands Research Institute. Dr. Harveson has been an active member of TWA for over 5 years.



Photo courtesy of TWA

Dr. Louis Harveson (center) recently received the Sam Beasom Conservation Leadership Award from TWA President Glen Webb (left) and Vice President Neal Wilkins (right).

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Christmas Mountains Transferred to University System

Christmas came early for the Texas State University System when the Texas General Land Office announced that it will be transferring the Christmas Mountains to the System to be used for research and educational purposes. The rugged 9,269-acre tract of land in southern Brewster County will become an outdoor classroom, open to all, with conservation of the land guaranteed forever.

Because of its proximity, Sul Ross State University is al-

ready making plans to incorporate the new property into its teaching and research endeavors. The Christmas Mountains offer an extraordinary opportunity for both graduate and undergraduate students at nearby Sul Ross State University to study black bears, mule deer, and desert bighorn sheep, as well as a variety of birds and lizards that inhabit the Chihuahuan Desert Borderlands.

The Christmas Mountains represent a critical piece of



The Christmas Mountains are renowned for their diversity of birds, including this Lucifer hummingbird.

habitat connecting over 3,500,000 acres of contiguously owned public lands in the transboundary region of Texas and Mexico.