

# APACHE MOUNTAIN MULE DEER STUDY

*Home Range Data Shows Bucks Have a Big Home on the Range*

article by MARY O. PARKER

Ask any question about whitetail in Texas, and you'll get your answer. But mule deer? Well, that's a different story. Even though approximately 225,000 mule deer range across about 40 million acres of Lone Star habitat, inquire about these cervids, and you may receive only silence.

"They're a cornerstone species in West Texas, but the fact is we know very little about them," said TWA Director Dr. Louis Harveson.

Dr. Harveson, a Sul Ross State University professor of wildlife management who also heads the Borderlands Research Institute (BRI), explained that it was this knowledge gap that caught the imagination of Apache Mountain Ranch owner and TWA member Dan Allen Hughes Jr. and compelled him

to underwrite five years of extensive research on mule deer bucks.

"Dan Allen Hughes had a vision," said Dr. Harveson. "He saw all these great studies coming out of South Texas. Everyone assumes a deer is a deer, and he said, 'Let's find out. Let's put some science behind the management.'"

So began a study which, from 2006 to 2010, collected data every five hours from store-on-board GPS collars, ranged across 300,000 acres, mapped 93,492 locations, and incorporated 40 unique mule deer. A study that, while directed by Dr. Harveson through the BRI, using Texas Parks and



Photo by Jeff Parker

Sul Ross State University graduate research assistant Andy James analyzes data collected during a five-year study which focused on mule deer bucks in West Texas. The findings help establish a baseline for future research.

Wildlife Department-loaned collars, was otherwise privately funded by Hughes, Jobe Ranch owner and TWA member Stanley Jobe, and dozens of other hunters and landowners. Thus began a study that would ultimately generate a better understanding of Trans-Pecos mule-deer movement than ever before.

In August 2011, about five months after removing the last of the collars, Sul Ross graduate research assistant Andy James inherited the tough job of crunching thousands of hours' worth of collar data logged by numerous graduate students. James, whose undergrad studies focused on range management, is writing his masters' thesis on this groundbreaking study. With a large exhale, he insisted, "There's so much! There's no way I could include everything we learned in my thesis." Instead, James chose to focus on three primary issues: seasonal home range, regular home range, and the effects of supplemental feed and water on habitat.

James explained that information gathered on home ranges garnered the most surprising, and useful, data. As he drove for nearly two hours over dusty dirt-



Photo by Jeff Parker

From 2006 through 2010, store-on-board GPS collars automatically downloaded data every five hours. In 2011, Sul Ross State University graduate research assistant Andy James began culling through the massive amount of info collected in order to gain insights into Trans-Pecos mule deer. The last collar was removed in spring 2011.



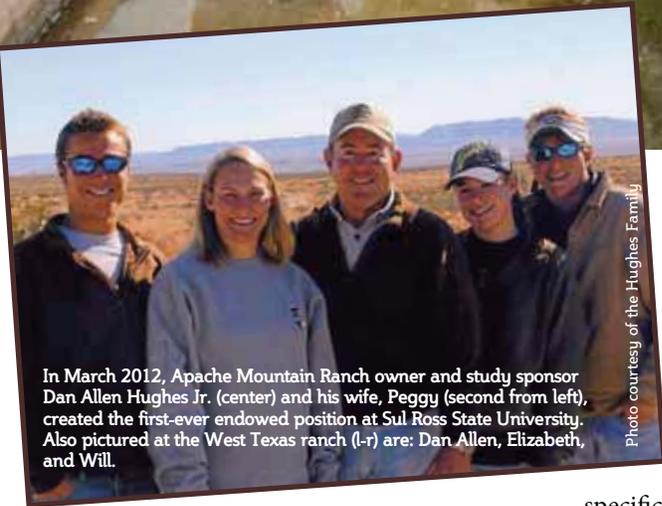


Sul Ross State University graduate students release a GPS-collared mule deer buck. TPWD Mule Deer Program Coordinator Shawn Gray said, "GPS allows us to collect better, tighter data. We can catch those couple or three-day movements, whereas with the old VHF collars, a lot of times it looked like the deer hadn't moved at all."





Apache Mountain Ranch manager Lane Sumner (l) and George Strickhausen IV, ranch and properties manager for Dan A. Hughes Company (r), both assisted throughout the five-year study. Sumner did the Boone and Crockett scoring (among other tasks), and Strickhausen coordinated overall on-site efforts.



In March 2012, Apache Mountain Ranch owner and study sponsor Dan Allen Hughes Jr. (center) and his wife, Peggy (second from left), created the first-ever endowed position at Sul Ross State University. Also pictured at the West Texas ranch (l-r) are: Dan Allen, Elizabeth, and Will.

Photo courtesy of the Hughes Family

roads, through limestone covered hillsides, draws, and past signs of flash-flood erosion, he gestured to the rugged terrain.

“The study area ended up being over 300,000 acres, a whole lot bigger than what they’d intended,” he said. “They probably thought that 70,000 or 100,000 acres would be enough, but it wasn’t.” Why had so much land been needed? “Because of the huge size of the [bucks'] home ranges, particularly during the rut, when they increased up to 80 percent,” James answered.

With that much acreage involved, the study ultimately exceeded the boundaries of both the Jobe and Apache Mountain

ranches – the two official participants in the study. “We thought home ranges would be a couple thousand acres, but they were considerably larger,” Apache Mountain Ranch owner Hughes explained. “I think this shows that it helps for landowners in the area to work together, especially those with smaller pieces of property. It shows that it’s important for everyone to have the same management strategy, or a similar one, so that everyone is on the same page.”

TWA Director Lane Sumner, who managed the Jobe Ranch during the study (and now manages Hughes’ Apache Mountain Ranch), recalled, “One [buck] picked up and left 15 miles to Kent and came back home for two months.” Sumner and his wife, Misty, a TWA Director and member of the TWA Executive Committee and a TPWD wildlife biologist, assisted from day one of the study. Among many other tasks, he did all of the Boone and Crockett scoring, and she did the aging. “We learned that the deer are very individualistic,” he said.

George Strickhausen IV, the ranch and properties manager for Dan A. Hughes Company, agreed. “They like certain spots, specific spots. Of course, everything’s different when the rut starts,” he said.

“Yeah, then the range to get the average home range was crazy,” James responded with a shake of his head. “Outliers typically get tossed from a study,” he explained, “but, I feel they’re important in this case. I think you can learn just as much from these outliers as from the others.”

Turns out, James was right. After data verified how far bucks travel before returning to their home ranges, the Texas Animal Health Commission began to reevaluate its Chronic Wasting Disease (CWD) containment strategy. When, in July 2012, two mule deer near the New

Mexico border tested positive for CWD, said Shawn Gray, TPWD Mule Deer Program Coordinator, “Andy’s data was very timely. It showed a deer could move up to 25-30 miles, and we definitely used it to help create the [CWD] Containment Zone.”

Gray credits the study with turning qualitative hunches into quantitative data. “We had a general idea that mule deer here roamed that far, but we hadn’t documented it in past research. We had reports from landowners, and we’d all known about their large home ranges. It’s very neat finally to have the hard data, good precise data to document something we’ve always talked about,” he said.

The data helped define not only movement behavior from a larger perspective, but it provided more detailed stats, as well. For example, James discovered a decline in home range size the older a buck gets. “From a scientific standpoint, it’s statistically not much of a change, but when I pull out a map, I can see it. And, while their home range size went down the older they got, the core area stayed the same. Once they establish a home range, they keep it,” he said.

“In winter, those 4 1/2 year olds moved a whole lot more than others. I like to compare it to an 18 to 24-year-old college guy. They have a lot more energy, and they’re a lot more willing to go look for a girl. Mule deer definitely mature later. They max out on antler development at 7 1/2, whereas whitetails max out at about 5 1/2. Drop-off for mule deer isn’t until they’re about 8 1/2” James explained.

Regardless of supplemental food or water, because of the rut, wintertime home ranges increased dramatically. (The study classified “winter” as December 1 - February 28.) James noted an interesting fact with regard to feeders: “The study seems to show that in the Trans-Pecos, mule deer don’t always come out to the feeders, regardless of season. We had to mix plant tastes in with the pellets to entice them.”

Through the study, they also discovered that some of the methodology wasn’t appropriate for mule deer. “A lot of the techniques for whitetails don’t apply to mule deer; but we didn’t have any studies on mule deer to use, so we applied the whitetail techniques,” Harveson explained. “Aging techniques, for example; Andy’s found a lot of disparity there.”





Photo by Jeff Parker

Even though approximately 225,000 mule deer range across about 40 million acres of Lone Star habitat, we still know very little about them.

“Whitetail deer have been one of the most thoroughly studied species, but this is our first scratch at the surface for mule deer. This study provides us with a baseline view,” he added.

To create the baseline, James had to consider a vast number of variables, which made this, at times, an overwhelming task. But, he remained enthusiastic. “This study could go in lots of directions. For instance, I think there’ll be something significant to be studied regarding the slope, elevation aspect, especially when you look at it on a seasonal basis.”

Sumner’s suggestion for future research? “I’d like to follow up and do this sort of study with does. I saw some interesting movement with does, just in my daily work on the ranch, and it would be interesting to see how they compared to the bucks.”

For now, it’s evolved into an examination of antler genesis. Since the deer were already color-coded with ear tags to indicate age, explained Strickhausen, “We left a lot of the tags in so we can identify them. And, we trapped some more. In a couple of years, we’ll be able to make some guesses about antler growth, but we’re not ready, yet. What we’re trying to do next is to

determine management deer.”

And, so thanks to Hughes’ unquenchable curiosity, yet another mule deer study is underway. “We’re learning some pretty interesting things, finding characteristics that seem to be good indicators of antler development,” Hughes said, excitement tingeing his words. “We’re starting to get some discernable details at an early age.”

In March 2012, Hughes and his wife, Peggy, created the first-ever endowed position at Sul Ross State University with a gift of \$1 million. The endowment supports the directorship of the BRI. “I love West Texas. I think the wildlife of West Texas is very interesting – the blue quail, the antelope, mule deer. I like the vastness, the openness. Unlike South Texas, it hasn’t been studied much. We have a lot to learn,” Hughes shared.

Hughes, who also serves as a TPW Commissioner, is right; we still have plenty to learn about Trans-Pecos wildlife. But, ask a mule deer question today and, thanks to this study and James’ analysis, chances are



George Strickhausen IV, ranch and properties manager for Dan A. Hughes Company (L), and Sul Ross State University graduate research assistant Andy James discuss the necessity of creating particular flavors for the feeder pellets. “[The deer] had to be talked into them,” said Strickhausen. “They weren’t used to eating from the feeders, at first.”

Photo by Jeff Parker

you’ll get a better answer than you would’ve six years ago. 🦌

