

SOUTH TEXAS WILDLIFE



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REGIONAL TRENDS IN BODY AND ANTLER SIZE OF WHITE-TAILED DEER

by Randy W. DeYoung and
Seth T. Rankins

White-tailed deer range from South America to Canada. Deer body and antler size vary dramatically across this geographic area; Canadian deer may exceed 300 lbs, while the diminutive Florida Key Deer tops out at 70 lbs. As early naturalists encountered populations of deer that were noticeably larger or

Editor's note: This is part of a long-term study of white-tailed deer supported by the East Foundation that formed part of Seth Rankins' MS thesis. CKWRI scientists Aaron Foley, Tim Fulbright, Poncho Ortega, Dave Hewitt and numerous student volunteers have been instrumental in this effort.

smaller than expected, the tendency was to christen the population as a different subspecies. Over time, the range of white-tailed deer was divided into 38 subspecies based on differences in body and antler size, coat coloration, and geographical location.

Modern DNA sequencing analyses have revealed that genetic differences among animal populations do not always coincide with human perceptions of subspecies. This insight has prompted more objective definitions of subspecies. However, the factors that influence how physical traits vary geographically remain murky. Recently, studies in the Southeast and the Upper Midwest

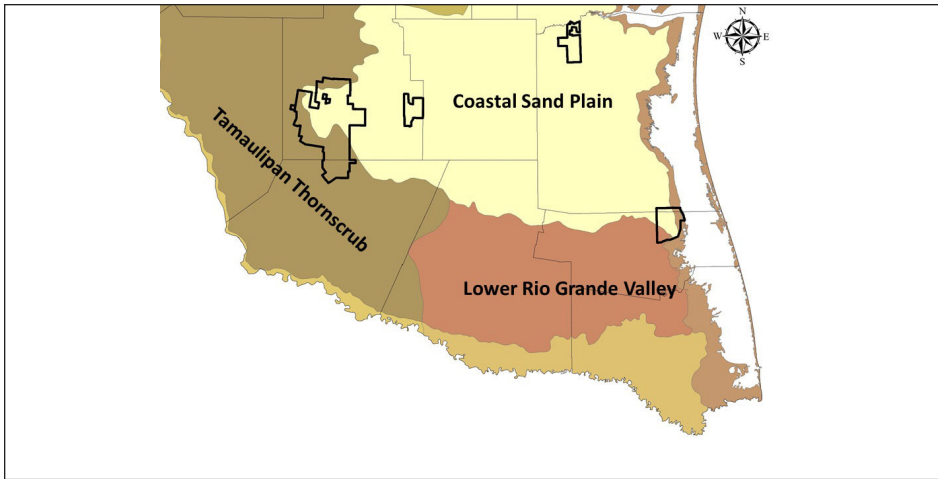
regions of the U.S. found that regional trends in body and antler size of deer were associated with soil quality and vegetation communities. It seems unlikely that the best genetics ended up in the most productive areas. Therefore, environmental factors—especially nutrition—may be an important determinant of regional trends in body and antler size.

The part of South Texas between Kingsville and the Rio Grande Valley is composed of deep sandy soils dominated by active dunes, coastal prairie, oak mottes, and patches of brush. Deer living in this Coastal Sand Plain region are noticeably smaller than deer in loamy or other soils on the periphery of the sand. Our long-term research in the region revealed that bucks in the Coastal Sand Plain averaged 38 lbs lighter and had antlers 10.5 inches smaller on the Boone and Crockett scale than deer on the periphery.

To determine if quantity or quality of food could explain the trends in body and antler size, we

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sampled preferred deer forage species common to 4 rangeland sites in South Texas. The study sites are owned by the East Foundation and are managed as cattle ranches, with no hunting or management of the deer populations. The study sites spanned the Coastal Sand Plain and other soil and vegetation types on the periphery of the sand. We found that digestible energy and plant diversity were higher on sites with larger-bodied deer. The amount of deer forage changed dramatically among years— not surprising, given the frequent droughts interspersed with wet years. There was no difference among sites in crude protein content of forage.

Protein often dominates discussions about animal nutrition and supplementation. However, deer are comparatively small-bodied ruminants that forage on browse and forbs. Compared to grazing animals like cattle, deer can satisfy their protein requirements easier, but may have a hard time meeting their energy needs. Popular supplements

such as pelleted feed and whole cottonseed are high in both protein and energy.

We are now beginning to understand that many regional trends in body and antler size of deer are more likely to be influenced by the environment rather than genetics. In many ways, this is good news; nutrition is easier to manipulate than animal genetics. In South Texas, plant diversity and energy content of forage appear to be important drivers of trends in body and antler size. Managers should focus on grazing and habitat management practices that promote or maintain plant diversity. Although supplemental nutrition is an effective management tool in South Texas, the supplement does not comprise 100% of a deer's diet. Deer still eat native forage, and not all individuals can access the supplement. Because forage species grow and mature at different times, diversity helps ensure that nutritious forage is available throughout the growing season and benefits other wildlife species as well. ~

Directors Note:
After 25 years with CKWRI, Alan M. Fedynich, Ph.D. has retired. Alan anchored our wildlife disease and toxicology program.

Alan communicated CKWRI research and news as editor of 96 issues of the South Texas Wildlife newsletter and 24 issues of the Current Research Report. He also produced 15 management bulletins and other special publications. Alan's attention to detail, timelines, and scientific content made these publications shine. Alan is the only person I know who can corral notoriously independent faculty and get them to submit articles on time. Alan has done a tremendous job for CKWRI over the past 25 years. Please join me in thanking him for his dedication to CKWRI. ~ Dave



Alan Fedynich, Ph.D.

2021 College of Agriculture & Natural Resources Awards

Each year the Dick & Mary Lewis Kleberg College of Agriculture & Natural Resources presents several awards to faculty and staff members. This year CKWRI staff and faculty were awarded three of the six awards.

The Senior Teaching Award was presented to Dr. Bart Ballard. Bart says, "My most enjoyable moments are when I am working collaboratively with my graduate students to tackle complex ecological ques-

By The Numbers

7-10 lifespan in years of the Bronze frog or Banjo frog (Texas Parks and Wildlife Department. www.tpwd.texas.gov Bronze Frog Wildlife Fact Sheet)

55 height in feet of the National Champion mesquite tree, Real County, Texas. (Remarkable Plants of Texas, M.W. Turner, 2009, University of Texas Press)

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<http://www.ckwri.tamuk.edu>



Bart Ballard, Ph.D.

tions and watch them grow as scientists.” Bart came to CKWRI in 1990 as a graduate student, and became a faculty member in 2002. He and his wife, Yolanda, Assistant Director of CKWRI administration, have a son, Derek, who is now the state biologist in Iowa for Ducks Unlimited, Inc.

The Senior Research Award was given to Dr. Humberto Perotto.

Humberto enjoys “the opportunity that CKWRI gives to faculty and students to work in cutting-edge research ideas to help conservation efforts in South Texas and beyond.” He and his wife, Vivian, have three kids, Vivian, Emilia and Pier Carlo.



Humberto Perotto-Baldivieso, Ph.D.

The Service Excellence Award went to Ms. Susan Smith, who is the Assistant to the Executive Director of the CKWRI. What Susan likes most about working for CKWRI is “the reputation that the Institute has for excellence. The staff, faculty and students all seem to have the same desire for success.”



Ms. Susan Smith

Susan and her husband, Jason, enjoy country living with several four-legged family members in Ricardo. ~

Did You Know?

The Mexican mallard is 10% smaller and darker overall than its northern cousin, and both sexes are brownish. (The Sibley Field Guide to Birds of Western North America, D.A. Sibley, 2003, Alfred A. Knopf, Inc.)

Germination of tanglehead seeds is promoted by smoke. (Ecology of Plant-Derived Smoke, Jefferson, et al. 2014. Oxford University Press)

A TALK ON THE WILD SIDE

*by C. Jane Anderson,
Sandra Rideout-Hanzak, and
Rebecca Zerlin*

They say everything is bigger in Texas, and that includes our diversity of natural resources. From the Gulf Coast to the Guadalupe Mountains, nature lovers can find a little bit of everything in our state to appease the call to get outside and explore. Unfortunately, most of us don’t have the luxury of traveling to the places we love in Texas as often as we’d like, especially in these days of quarantines and social distancing. So how do we get our nature fix while in our homes, cars, and neighborhoods?

In April 2021, CKWRI scientists, Sandra Rideout-Hanzak, Jane Anderson, and Rebecca Zerlin, were awarded the Harvey Weil Sportsman Conservationist Award from the Rotary Club of Corpus Christi.

Using this generous funding, they will produce, “A Talk on the Wild Side,” a new podcast discussing all things native, wild and natural in Texas.

Each episode will focus

on a new topic of Texas natural resources. Examples of proposed episodes include: monarch butterflies and how natural resource managers are working to improve their habitats in Texas; zoonotic diseases – what we know, what we don’t, and how we should respond; ongoing and upcoming impacts of climate change in Texas; wildlife-vehicle collisions and what state agencies are doing to avoid them; hunting in Texas and why it matters to non-hunters; and the use of detection dogs in wildlife research.

In addition to the bi-weekly audio podcasts, the Talk on the Wild Side team will produce two to five videocasts. These short video productions will feature topics that are particularly visually interesting, such as sea turtle conservation on the Gulf and the prescribed fires used by Texas land managers to improve habitat and protect us from wildfires.

A TALK ON THE
WILD SIDE

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Join us for A Talk on the Wild Side podcast beginning in June 2021.

All podcast and videocast episodes will include transcripts and closed captioning to ensure they are accessible to hearing-impaired audience members.

Podcasts are an exciting new tool for scientists and environmental educators to reach broader audiences. Today, approximately 32% of Americans age 12 and older listen to podcasts at least monthly – an increase from 9% in 2008 – according to a 2019 study by media research company Edison Research. Dr. Rideout-Hanzak, Dr. Anderson, and Ms. Zerlin hope A Talk on the Wild Side will pique the interest of nature lovers and novices alike. To tackle conservation challenges in our state, we need as many Texans informed and on-board to support wildlife and nature conservation initiatives. The podcast team aims to inform and educate in a way that is scientifically-sound, while also entertaining.

Bi-weekly episodes of A Talk

Advisory Board

The Advisory Board of the Caesar Kleberg Wildlife Research Institute (CKWRI) provides leadership in all aspects of our work. We are indebted to them for their commitment to the CKWRI and its mission.

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|-----------------|----------------------------------|----------------------|
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Emeriti: A.C. “Dick” Jones, IV and James A. McAllen

on the Wild Side are scheduled to begin airing in June 2021. Podcast episodes will be available for download free-of-charge on all major platforms, including: iTunes, Spotify, and Apple Podcasts. Videocasts will be posted on YouTube. All episodes will be available on the podcast website, <https://www.ckwri.tamuk.edu/media/talk-wild-side-podcast>, and announced on the CKWRI social media accounts including Facebook, Twitter, and Instagram. ~



Wildlife crossings in South Texas are one of the many topics for discussion on the podcast. Photo by C. Jane Anderson.

Editor’s Note: Dr. C. Jane Anderson is an Assistant Professor of Research at the Caesar Kleberg Wildlife Research Institute (CKWRI), Dr. Sandra Rideout-Hanzak is a Research Scientist at the CKWRI. Ms. Rebecca Zerlin is a graduate student at CKWRI.

What Do They Eat?

Verdin, a songbird whose males have a bright yellow head, feed on insects, fruit, and nectar (The Sibley Field Guide to Birds of Western North America, D.A. Sibley, 2003, Alfred A. Knopf, Inc.)

Harvesters are the only butterflies in North America whose caterpillars are carnivorous, feeding on aphids. (Swift Guide to Butterflies of North America, 2nd Edition, J. Glasberg, 2017, Princeton University Press, N.J.)

Consider giving a donation to the CKWRI

For information about how to make a contribution visit:

www.ckwri.tamuk.edu/giving



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