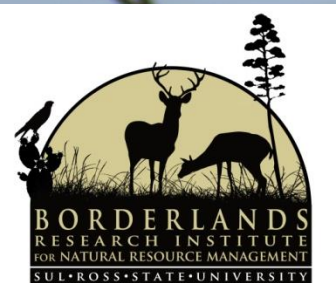


Desert Mule Deer: A Texas Treasure



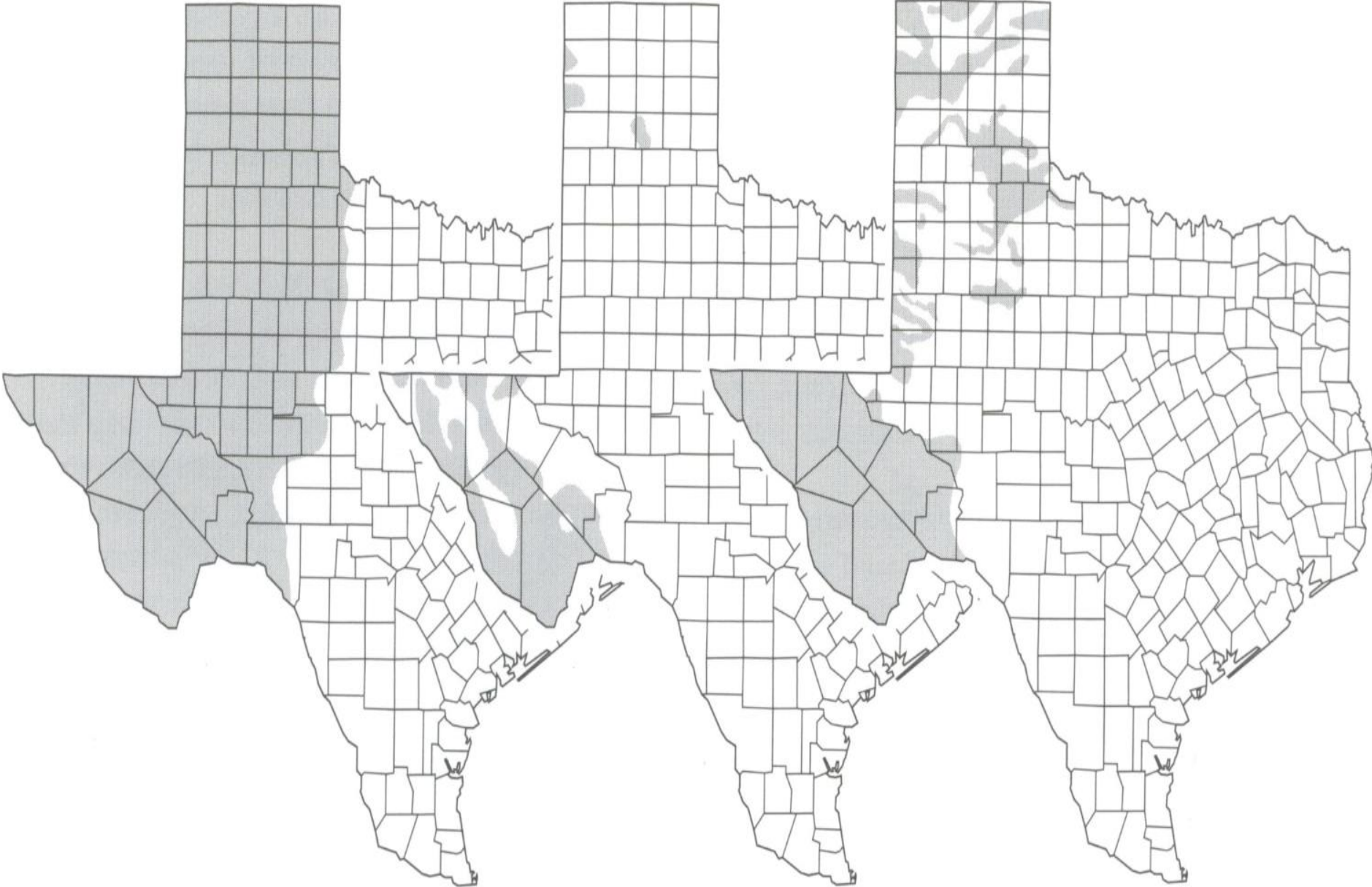
Thomas S. Janke
J.C. Kiddo Campbell
Borderlands Research Institute
Sul Ross State University



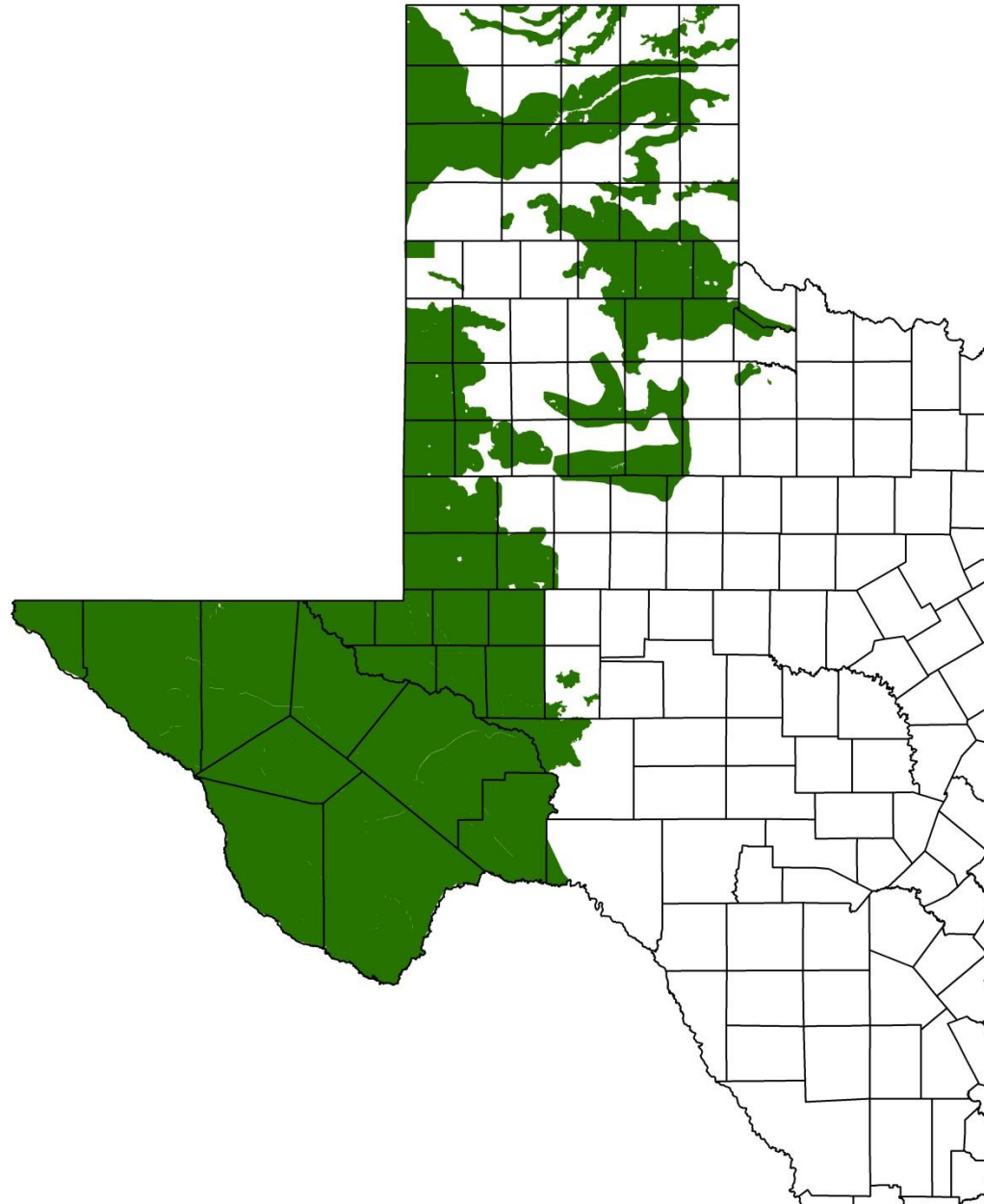
Mule Deer Distribution
circa 1850

Mule Deer Distribution
1945

Mule Deer Distribution
1997



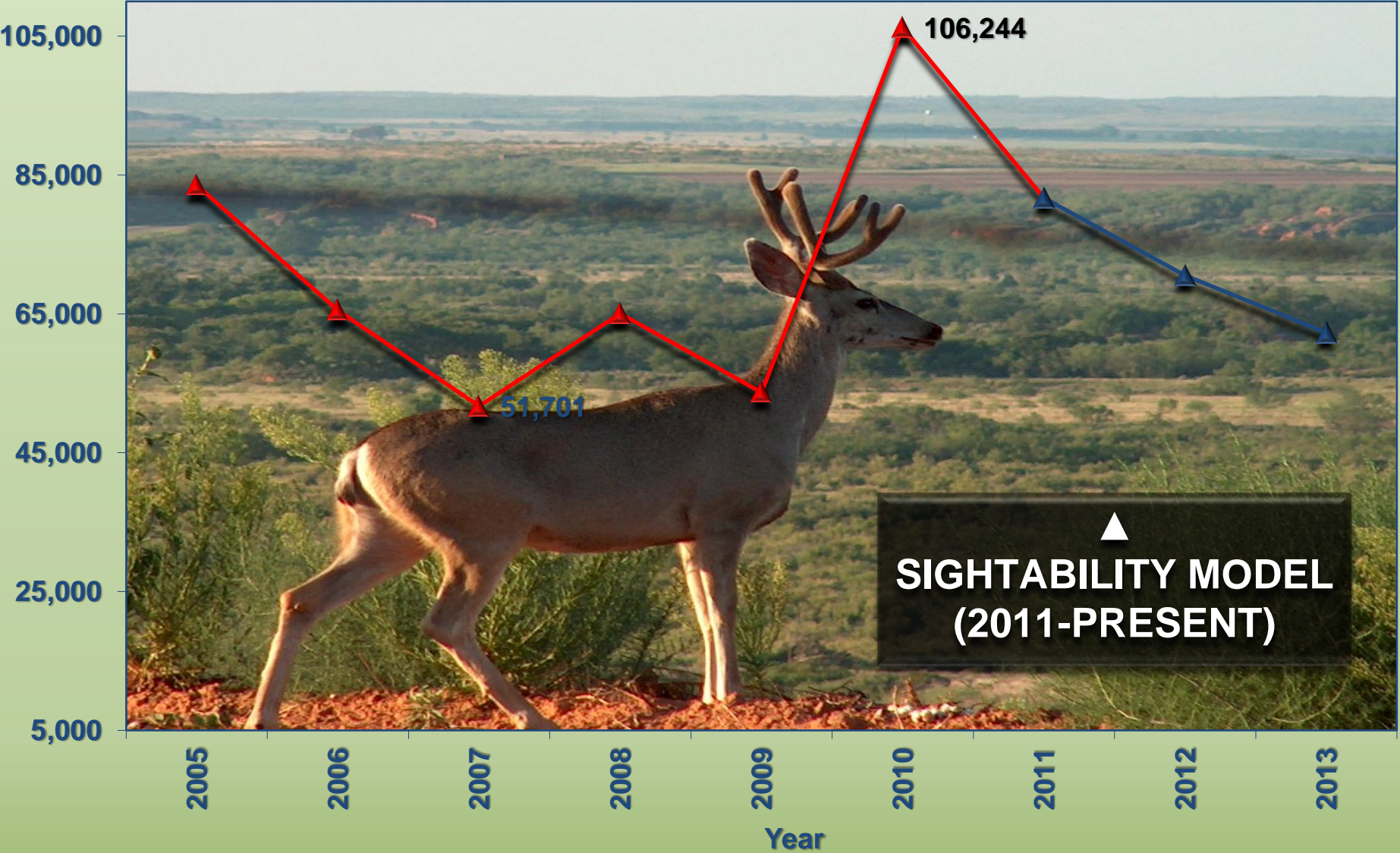
CURRENT MULE DEER DISTRIBUTION



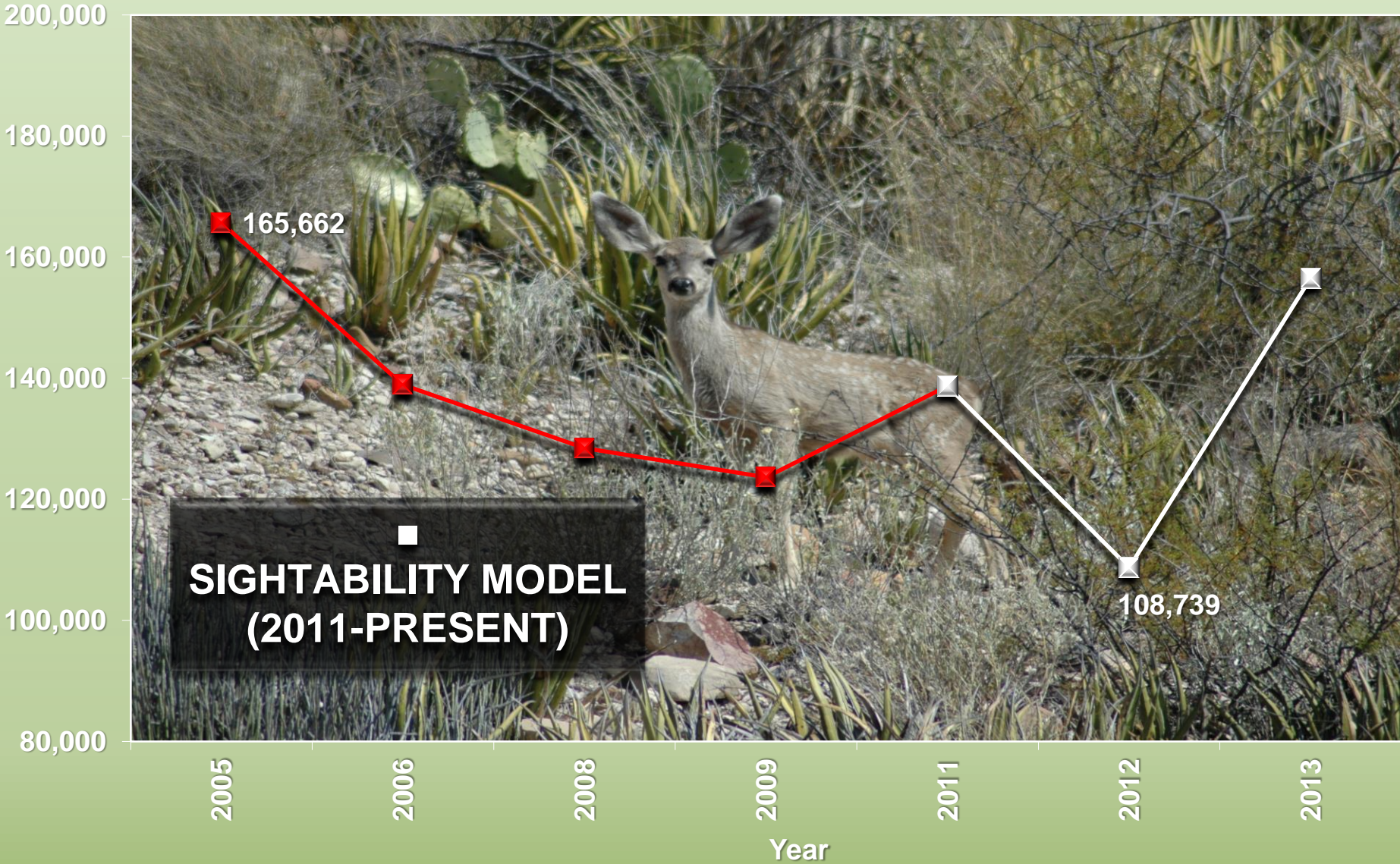
HABITAT PREFERENCE



PANHANDLE MULE DEER TRENDS



TRANS-PECOS MULE DEER TRENDS

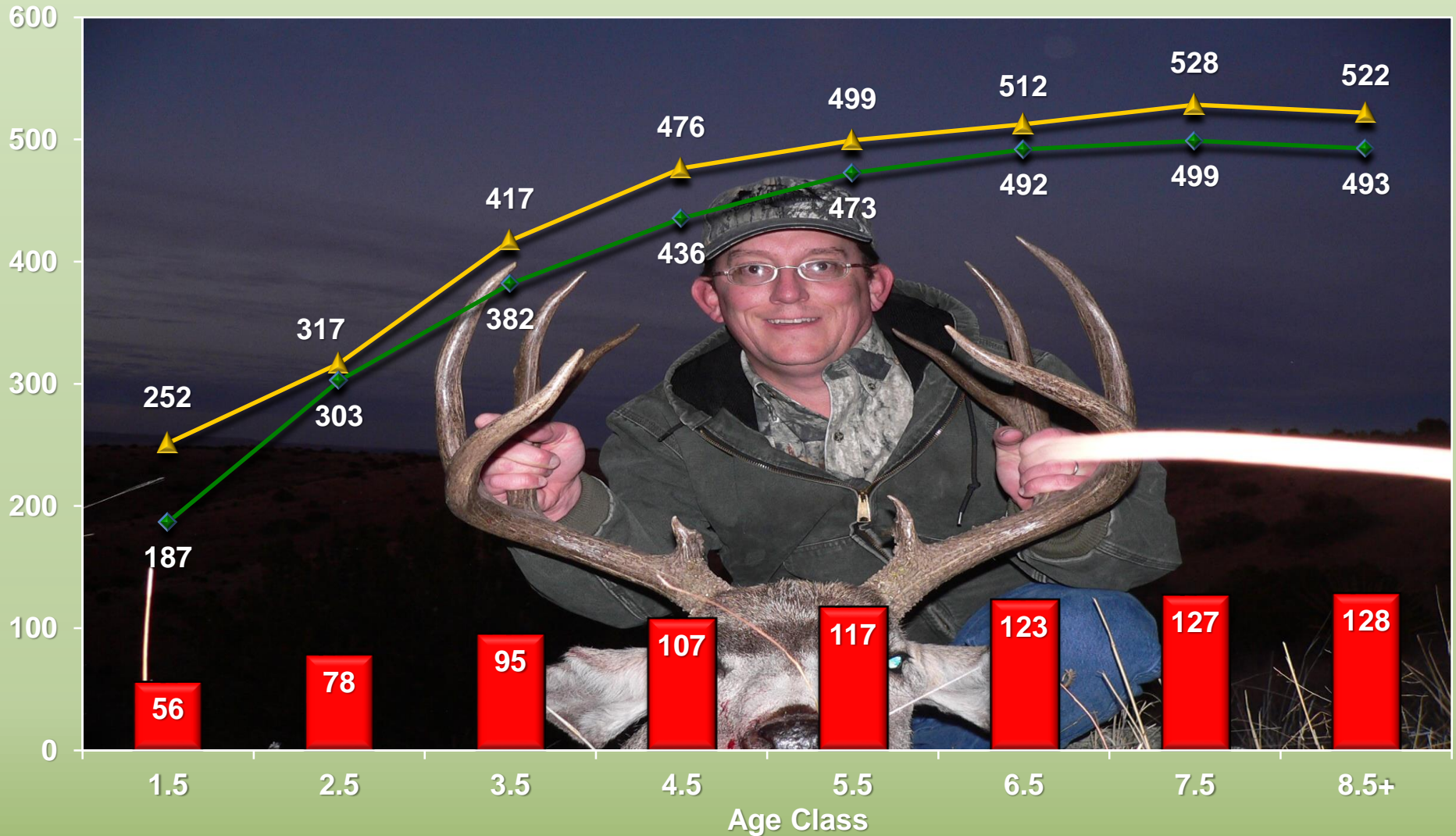


TRANS-PECOS ANTLER MEASUREMENTS

■ Base (mm)

▲ Main Beam (mm)

◆ Spread (mm)

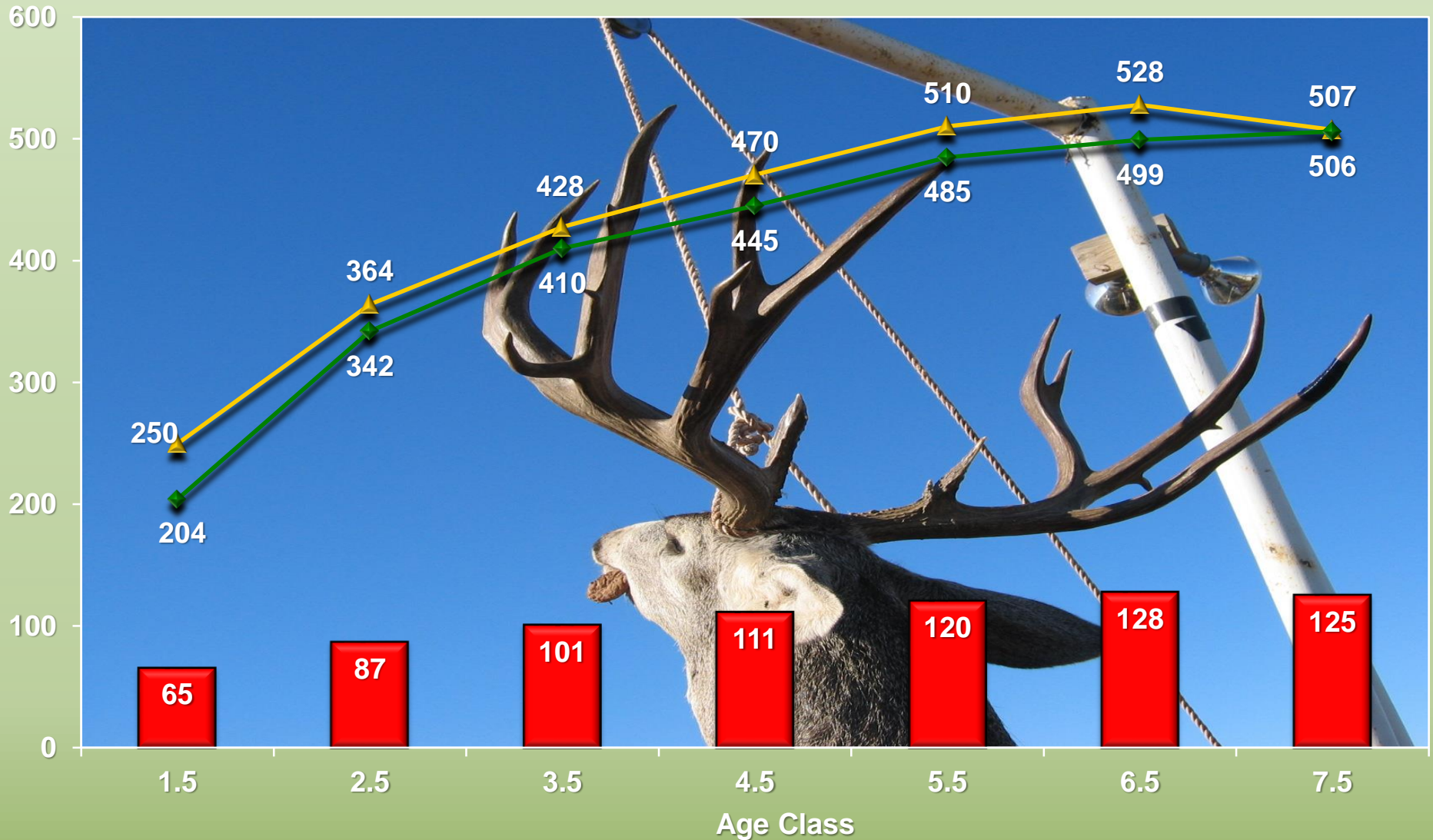


PANHANDLE ANTLER MEASUREMENTS

■ Base (mm)

▲ Main Beam (mm)

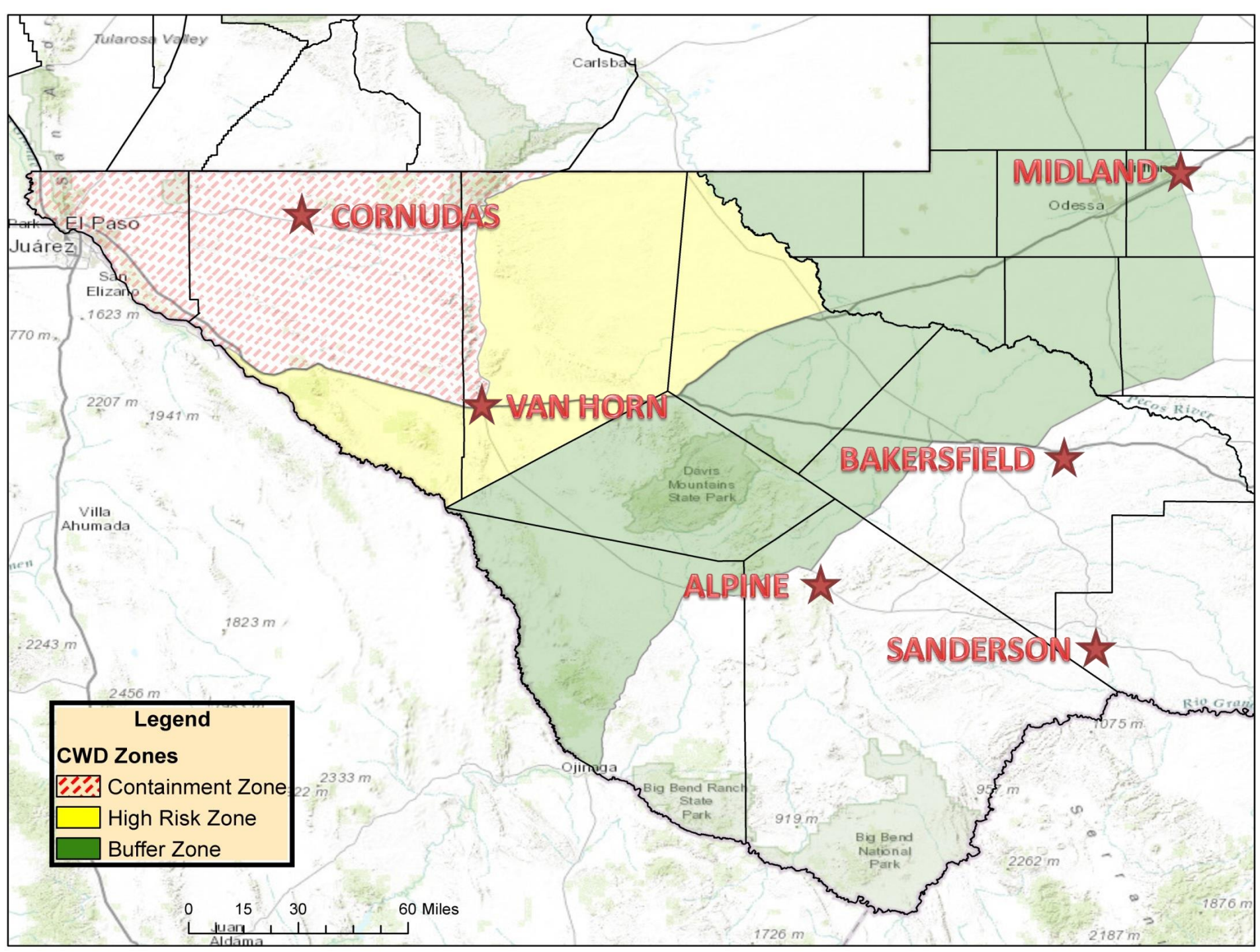
◆ Spread (mm)








\$

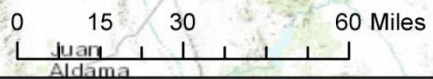




Legend

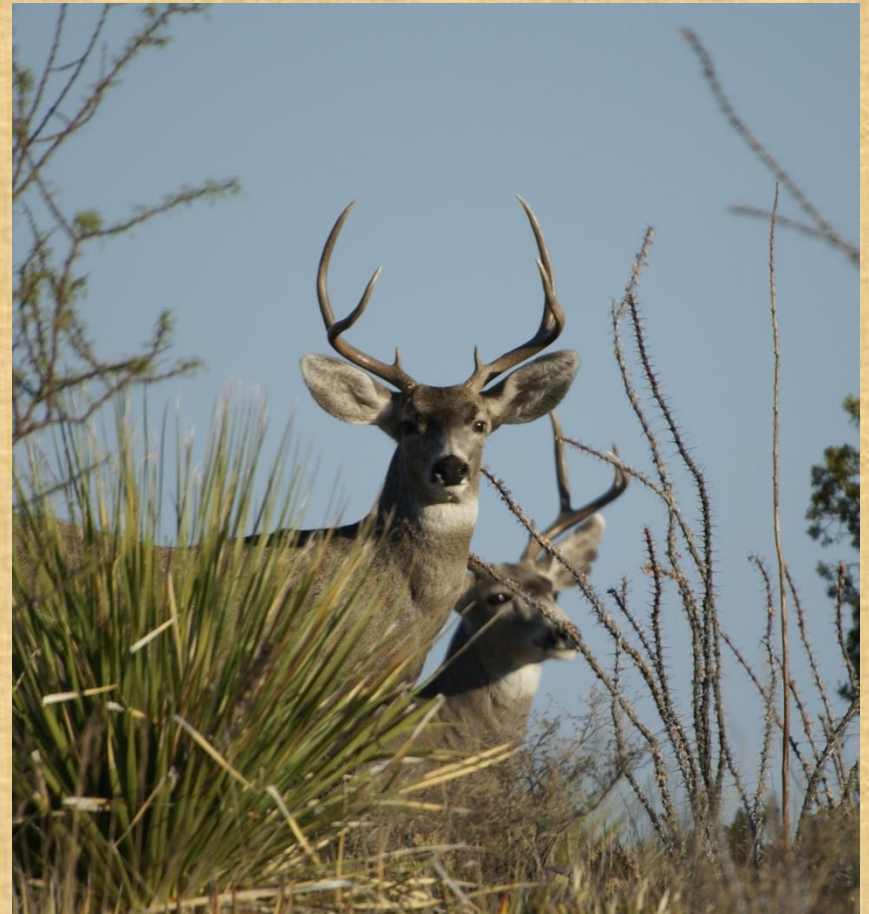
CWD Zones

-  Containment Zone
-  High Risk Zone
-  Buffer Zone



BRI's Role in Conservation

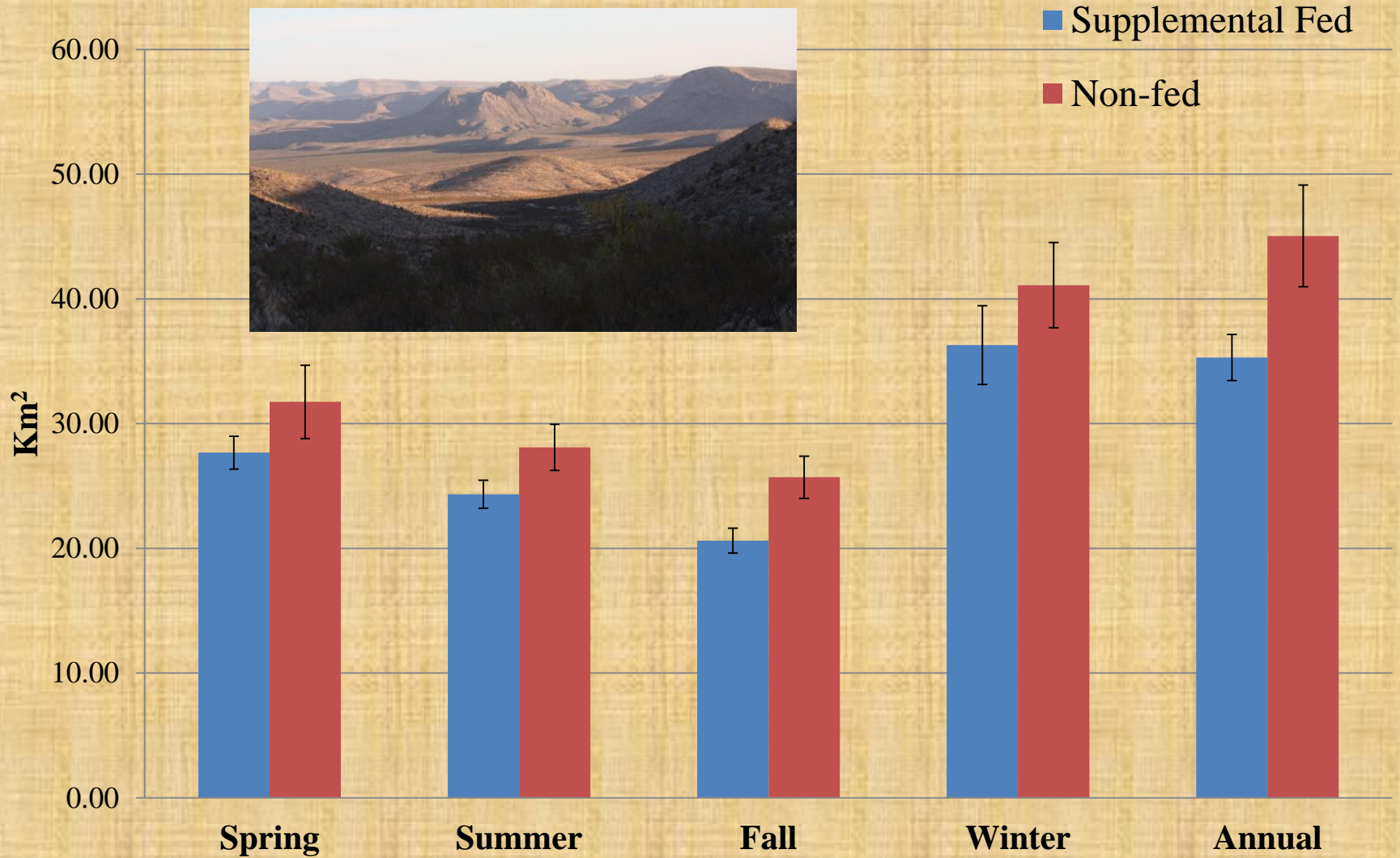
- Identify conservation and management priorities of stakeholders
- Conduct research projects relevant to those priorities
- Provide landowners with the best information available so they can be the best stewards they can



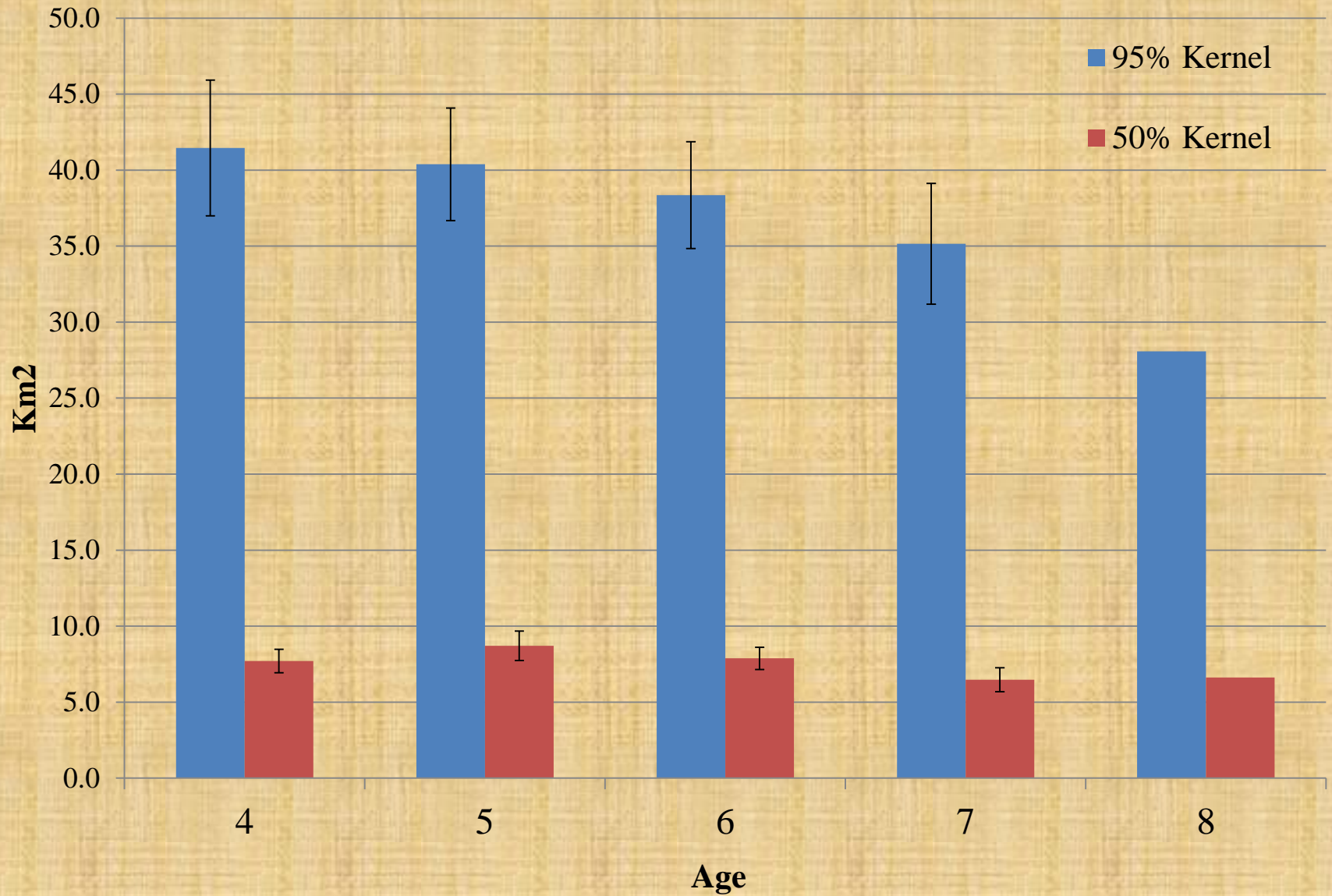
Mule Deer Research Program

- Goal: Identify causative factors associated with decline
 - Explore relationships between mule deer demography and precipitation indices
 - Assess season change on mule deer populations
 - Evaluate behavioral interactions between mule deer and white-tailed deer
 - Quantify landscape changes effects on mule deer populations
 - Restore mule deer to historic range in Mexico
 - Evaluate movements of restored populations in Mexico
 - Compare survey techniques for estimating population size
 - Evaluate use of supplemental food and water on herds and antlers
 - Monitor mule deer use of herbicide-treated habitats
 - Evaluate effects of herbicide on mule deer foods
 - Document adult buck behavior and movements

Supplemental-Fed vs. Non-Fed Seasonal Mule Deer Home Range Size (95% kernel)



Annual Home Ranges of Mature Mule Deer Bucks by Age From 2006-2010.



Current Research

A photograph of two mule deer in a natural, grassy environment. The deer are positioned in the center of the frame, looking towards the camera. The background is filled with tall green grass and various shrubs, including a cholla cactus on the right. The scene is brightly lit, suggesting a sunny day.

- Known Age Mule Deer Study
- Mule Deer Translocation Study

Known Age Deer

- 2 Ranches
- 1 year into a 5 year study
 - Feb/March captures
- 20-25 Deer / Ranch / Year

Objectives

- Observe long-term antler development
- Observe body characteristics on a long term scale
- Better refine aging techniques using tooth wear and replacement method.
- Using marked deer to better estimate deer densities
- Longevity of deer

Methods



Helicopter

- Captured ~30 mule deer bucks at each site
 - ~25 Yearlings
 - ~ 5 Mature deer for collaring purposes
- Process
 - Antler measurements
 - Ear tags
 - Body weights
 - Radio telemetry
 - GPS Collars (2014 - 10 between ranches)
(2015 – 9 between ranches)

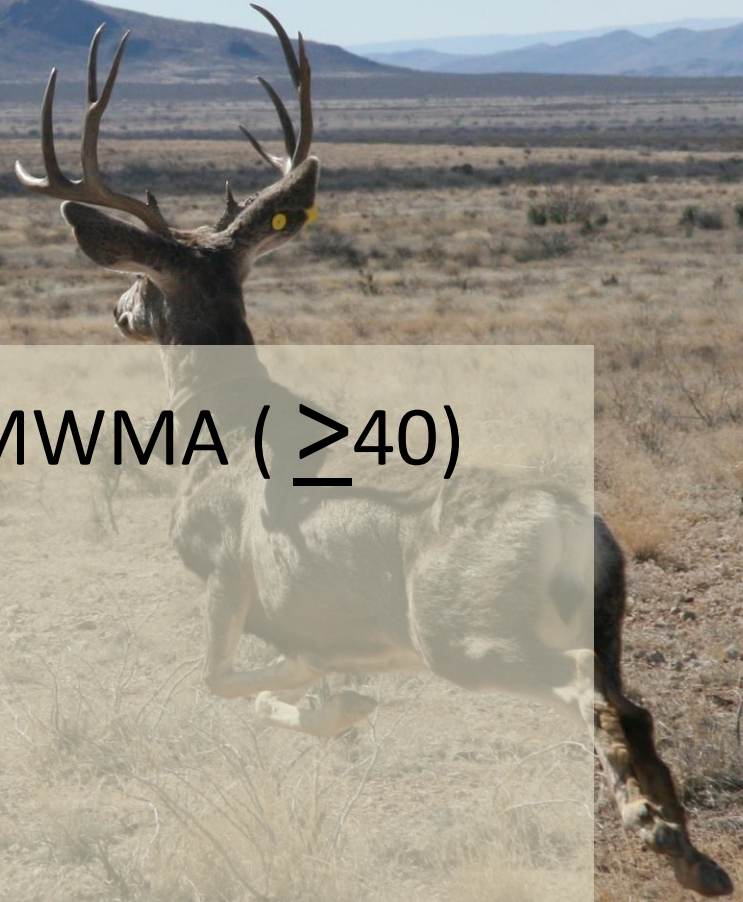






Mule Deer Translocation

- Capture Mule deer on EMWMA (≥ 40)
- $\frac{1}{2}$ Adams Ranch
 - Hard Release
- $\frac{1}{2}$ Black Gap WMA
 - Soft Release

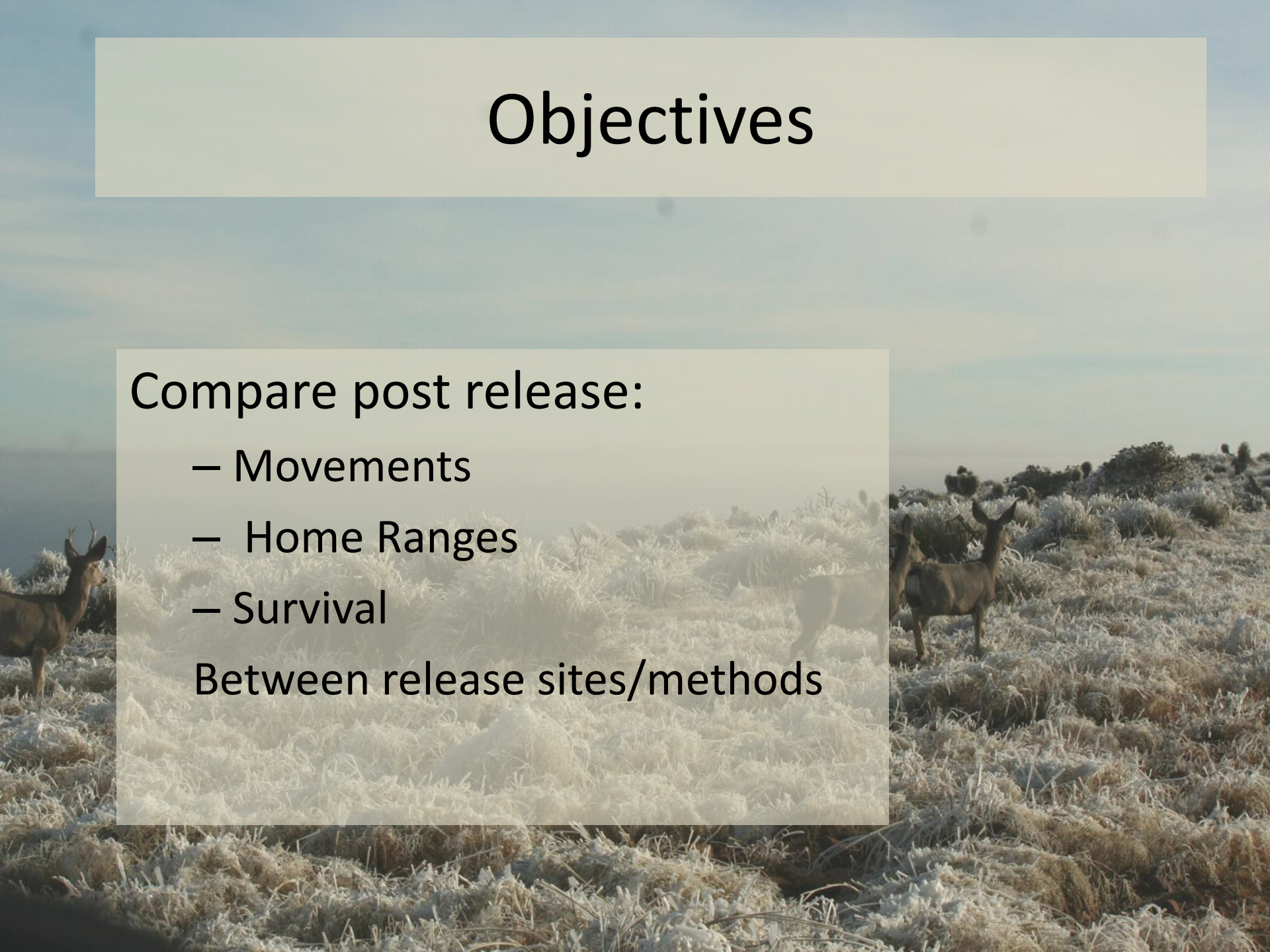


Objectives

Compare post release:

- Movements
- Home Ranges
- Survival

Between release sites/methods



Capturing Method

- Helicopter/Net gun
- Sling to a staging area
- Process
 - Ear tag
 - Age
 - Sex
 - Body condition
 - Pregnancy check
 - Collars
- Treat injuries as need
- Load into trailer
- Haul to release sites and release



Monitoring Methods

- Weekly monitoring
 - Ground Telemetry
 - Aerial Telemetry
- GPS and VHF Collars
 - Location every 3hr for 450 day
 - VHF will be on for the life of the animal
 - 4hr mortality switch
- Investigate mortalities
 - Estimate causes and time of mortalities

Future Research Initiatives

- Evaluate the effects of feed programs on mule demography, habitat utilization, range size, and dispersal distances (pre- vs. post-treatment)
- Evaluate the effects of expanding elk populations on mule deer herds
- Document the effects of habitat management practices on mule deer food and cover
- Understand antler development as it relates to genetics, nutrition, and harvest management
- Assess mule deer behavior and movements relative to reproductive behavior
- Refine mule deer survey techniques
- Understand the prevalence, distribution, and movement of Chronic Wasting Disease in mule deer



Thank You!!