

APPENDIX DD



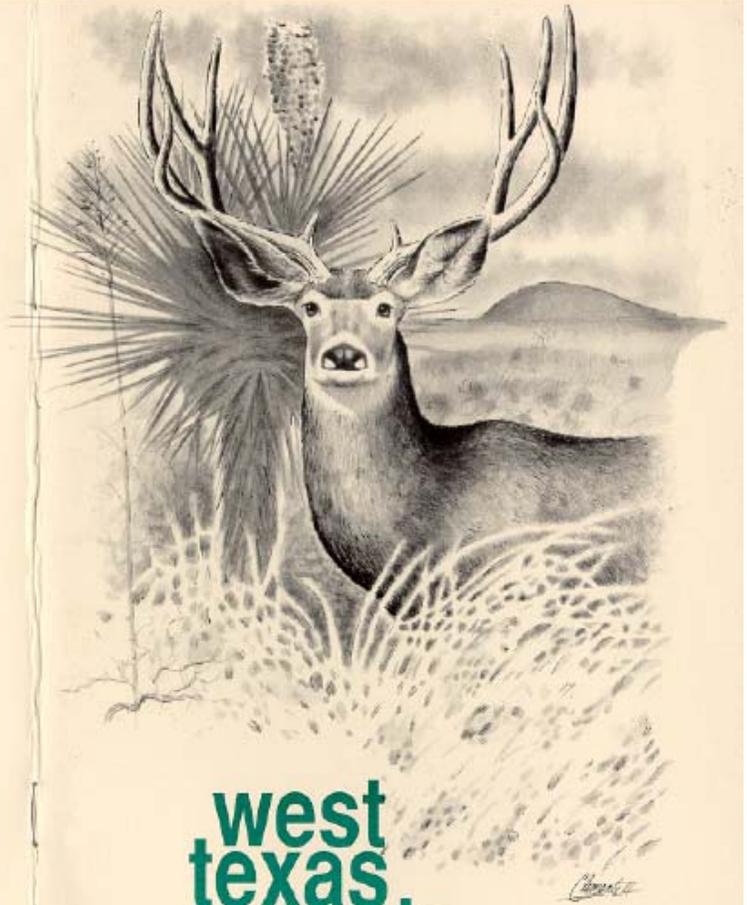
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by
Timothy L. Bone
and
William B. Russ

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When the subject of deer is brought up, most Texans think of white-tailed deer. This is natural because white-tailed deer are by far the most common species of deer in Texas. Many citizens are not aware that another species of deer lives within the boundaries of their state.

The mountains and canyons of west Texas provide habitat for the desert mule deer, one of the most important big game species that the state has to offer. Established populations of desert mule deer are found in the Trans-Pecos and Panhandle regions of Texas.

Many ranchers have discovered that demand for mule deer hunting is high. Among the game species in Texas, mule deer rank 10th in hunting popularity. Hunting lease revenue generated from this game species has become an important component of ranch income.

Aesthetically, mule deer are a popular part of the natural environment in the western portion of the state. Visitors frequently stop in at Texas Parks and Wildlife Department field offices to ask biologists and game wardens where they can go to observe and photograph mule deer.

Research and management projects concerning the mule deer and its habitat requirements are conducted by wildlife biologists of the Texas Parks and Wildlife Department, federal agencies, and many universities in Texas. Research activities by wildlife biologists of the Texas Parks and Wildlife Department are 75 percent funded from federal excise taxes on firearms and ammunition. Research activities are also conducted on National Parks and private ranches.

The Texas Parks and Wildlife Department game warden field force is responsible to provide law enforcement services to protect the mule deer resource. Mule deer occur on four Department owned wildlife management areas.

Interest in mule deer is high. Biologists and game wardens in the western part of the state are often asked questions about desert mule deer. Following are some of most frequently asked questions about desert mule deer in Texas.



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How many kinds of mule deer are there in Texas?

Although the range of the Rocky Mountain mule deer (*Odocoileus hemionus hemionus*) may extend into the northwest Panhandle, virtually all mule deer in Texas are of the smaller subspecies (*O. hemionus crooki*), the Desert Mule Deer.

Where are mule deer located in Texas?

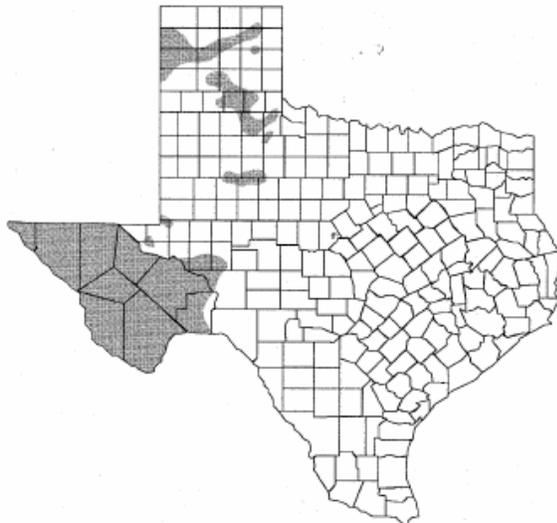
Desert mule deer occur in the Trans-Pecos, Edwards Plateau, High Plains, and Rolling Plains Ecological Regions (Figure 1). The Trans-Pecos population is largely continuous. The Edwards Plateau population is adjacent to the Trans-Pecos population and is confined to the Pecos River drainage. Mule deer in the Panhandle are found in isolated populations associated with the breaks and tributaries of the Brazos, Canadian, and Red Rivers and the caprock escarpment.

How many mule deer are there in Texas?

The mule deer population estimate has fluctuated between 150,000-250,000 during the last ten years. Approximately 90 percent of the mule deer in Texas occur in the Trans-Pecos and western Edwards Plateau.

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Figure 1 Distribution of Desert Mule Deer in Texas—1991



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Do Texas mule deer migrate?

Unlike Rocky Mountain mule deer, desert mule deer are not considered to be migratory. Desert mule deer may shift their home ranges in response to the availability of water and forage or the presence of mountain lions. The home range for most Texas mule deer does not exceed 2 square miles.

Do desert mule deer gather in large herds like Rocky Mountain mule deer?

Desert mule deer in the Trans-Pecos have been observed to form large groups in areas where the population densities are high. Herds of 20-40 deer may form during the January-March period.



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What is the best method of counting mule deer?

Daylight ground counts and aerial counts give the best data for fawn survival and adult sex ratios. Spotlight counts provide information on mule deer density.

What do mule deer eat?

Mule deer primarily eat browse (leaves, twigs, and young shoots of woody plants and vines) and forbs (weeds and other broad-leafed flowering plants). They eat some grass but only when it is green and succulent. Sheep, goats, and exotic big game compete directly with mule deer for preferred foods.

The following plants are examples of some Texas native desert mule deer foods that are readily taken when they are available.

Browse: lechuguilla, sotol, prickly pear pads and fruit, guayacan, oak leaves and acorns, mesquite beans and leaves, acacias, kidney-wood, juniper, condalias, mountain mahogany, silktassel, sumac species, and sand sagebrush.

Grasses: rescue grass, Texas wintergrass, fall witchgrass, panic grass, grama grasses, sedges and rushes.

Forbs: euphorbias, daleas, filaree, bladderpod, bluet, wild onion and wild mercury, mendora, lespedezas, vetches, carelessweed, partridge peas, and engleman daisy.

When is the most stressful period on mule deer?

The late winter period (mid-January through mid-March) is the most stressful for mule deer because of low forage availability. Adequate forage is usually available during spring and fall seasons.

Do mule deer need to drink water every day?

Desert mule deer can survive without drinking water every day. However, a lack of adequate drinking water effects reproduction and body condition. Constructing and adapting water facilities for wildlife use is an effective way to enhance wildlife populations and distribution in areas with limited surface water.

Can the age of a mule deer be determined?

Deer age is determined by tooth replacement and wear of the premolars and molars of the lower jaw. Unlike sheep, deer cannot be aged by their front teeth. Mule deer cannot be aged by antler characteristics.

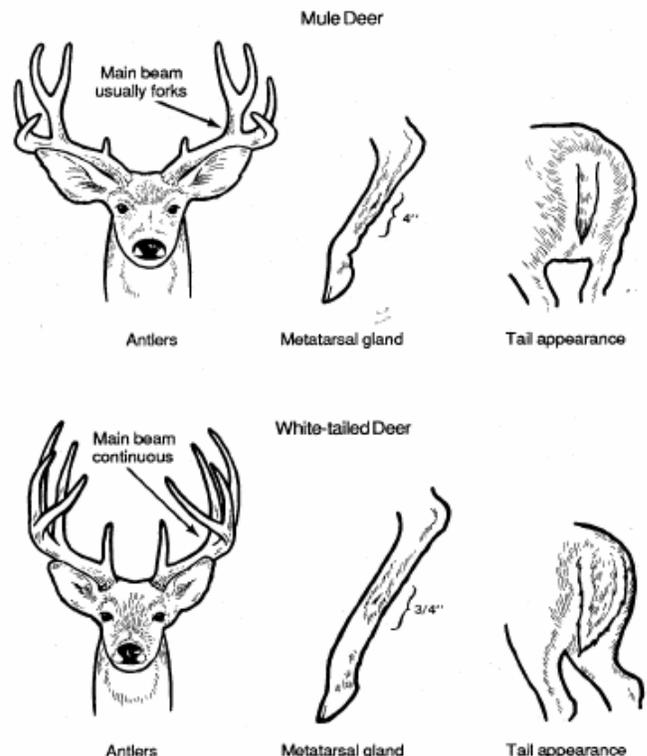
How can mule deer and white-tailed deer be distinguished?

Mule deer have forked antler beams, larger ears, a black tipped tail, and a metatarsal gland approximately four inches long.

White-tailed deer usually have major antler points coming off a continuous main beam, smaller ears, a long broad tail that is white underneath, and a small circular metatarsal gland (Figure 2).

Mule deer usually run with the tail held down. White-tailed deer tend to run with the tail held up. Mule deer often escape in bounding leaps when they are frightened, compared to the white-tailed deer's more traditional running gait.

Figure 2 Morphological differences between mule and white-tailed deer.



Can mule deer and white-tailed deer interbreed?

Yes, both types of parental matings have been documented (i.e., mule deer buck x white-tailed doe and mule deer doe x white-tailed buck). Hybrids can be recognized by the size of the metatarsal gland that is located on the outside of the rear leg between the hock and hoof. The metatarsal gland is typically about $\frac{3}{4}$ inch long in white-tails and about 4 inches long in mule deer. Hybrids tend to have metatarsal glands about 2 inches long.

Will white-tailed deer "drive out" the mule deer?

White-tail deer do not physically "drive out" mule deer. White-tailed deer have expanded their range and population densities into some areas that were once the sole domain of mule deer. The expansion of white-tailed deer range appears to be correlated with an increase in brush density over the last 25 years. As brush density increases, the habitat becomes more suitable for white-tailed deer and less desirable for mule deer. When occupying the same area the two species tend to segregate themselves as mule deer prefer the rougher canyons and breaks while white-tailed deer are more common in the brushy draws.

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What is a good buck to doe ratio?

The proper buck-doe ratio depends on overall herd numbers. Fawn production and survival is often low in a desert environment. A 1:3 ratio is desirable where the population is stable and within range carrying capacity. In areas where natural mortality is high and deer densities are low, more does may be necessary to maintain the population.

When is the breeding season?

The mule deer breeding season in Texas extends from mid-November through mid-February with the peak occurring in late-December. The gestation period is about seven months. Therefore, most fawns are born in July and August.



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Do doe mule deer always have twin fawns?

No. Mule deer does generally breed the first time at the age of two and give birth to a single fawn. Older does may produce twins when forage conditions are adequate.

Should spike bucks be harvested to increase the number of trophy bucks in the herd?

Deer living in a desert environment are typically on a lower nutritional plane than those from a higher rainfall zone. Spike bucks are products of youth and/or poor nutrition and/or poor genetics. Preliminary results of ongoing research indicate that most bucks that were spike antlered as yearlings will produce desirable antler growth as age increases. Culling of yearling spike mule deer should be approached with caution.

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When do mule deer bucks reach their greatest antler potential?

Mule deer age and antler data collected during the hunting season indicates that antler characteristics continue to improve through 7.5 years of age. If increased antler size is a management goal, then the majority of harvested bucks should be at least 5.5 years old.

Has the length of the hunting season resulted in over-harvest of mule deer bucks?

No. The percentage of bucks in the Trans-Pecos mule deer herd that have been removed by hunters has remained below 11 percent for the last 10 years with both 9-day and 16-day season lengths.



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Should supplemental feed be provided to mule deer?

Providing additional feed may improve antler growth, reproduction, and overwinter survival. However, feeding programs are expensive and may be cost-prohibitive for most landowners. The best way to provide proper nutrition for deer is through good range and domestic livestock management practices. If a supplemental feeding program is contemplated, contact your local biologist.

Does the Texas Parks and Wildlife Department restock mule deer?

The deer trapping and restocking program was initiated in 1938 by the Game, Fish and Oyster Commission, predecessor of the Texas Parks and Wildlife Department and continues to the present. Restocking of mule deer is done only in approved areas judged as potentially good mule deer habitat that presently has no broodstock.

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What can I do to increase mule deer numbers and quality?

1. Learn the habitat requirements of mule deer and become familiar with the preferred mule deer foods.
2. Learn proper range and livestock management practices and their relationship to wildlife populations.
3. Obey state laws and rules established by landowners. Do not abuse the land on which you hunt or trespass where you do not have permission.
4. Landowners and hunters can provide a significant service to the game management programs of Texas by completely and accurately providing harvest data. Accurate harvest information is vital to the formulation of effective hunting regulations, whether it is solicited by mail questionnaire or in person by biologists in the field, at check stations or cold storage facilities. These regulations will allow the maximum harvest of surplus animals without endangering the broodstock necessary to replenish those populations.



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To obtain assistance with mule deer management, contact the nearest Texas Parks and Wildlife Department Technical Guidance Biologist. Technical Guidance Biologists serving West Texas are listed below:

Ruben Cantu
1800 West Hwy. 90
Alpine, Texas 79830
(915) 837-5609

Gene Miller
3409 South Georgia, Suite 25
Amarillo, Texas 79109
(806) 353-3141

Fielding Harwell
309 Sidney Baker So.
Kerrville, Texas 78028
(512) 896-2500

Tommy Hailey
Ivan Star Route, Box 67
Breckenridge, Texas 76024
(817) 362-4463