

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

UPLAND WILDLIFE HABITAT MANAGEMENT

(ACRE)

Code 645

Texas Supplement, Zone 1

MULE DEER

INTRODUCTION

It is important to realize that mule deer requirements differ from white-tailed deer. Their general behavior, food habits, population dynamics and habitat preferences can differ greatly. It is important for the land manager to realize applying white-tailed deer management principles to mule deer will not generally provide desired results. Most of the mule deer habitat in the High and Rolling Plains (MLRA's 77 and 78) is limited or marginal. High densities of deer are probably not attainable in many areas. This makes it more important to properly manage available habitat and harvest properly.

HABITAT REQUIREMENTS

COVER

Cover requirements include winter thermal cover, summer loafing cover and escape or hiding cover. Summer loafing cover is provided by areas of deciduous trees, such as cottonwood, hackberry and mesquite. These provide overhead shade but are open underneath to allow wind passage. Motts of shrubs, such as sand plum, sand shinnery oak, skunkbush sumac and sand sagebrush, will provide loafing cover when tree species are not available. Winter thermal cover is provided by denser species such as juniper. Where junipers or other dense vegetation is not present the mule deer will utilize canyons and blown up dune areas. Escape or hiding cover is needed year round. Motts or patches of relatively dense vegetation every ¼ to ½ mile are needed to provide this

escape cover for a group of mule deer. These motts or patches should be 10 to 30 acres in size. These dense areas can be shrubs, trees, taller grasses or a combination. For best escape cover a combination of the 3 are needed.

FOOD

The bulk of the mule deer diet is browse and forbs. Fruits, mast and succulents are seasonally utilized. Small grains are very important during the winter. Many areas of the High and Rolling Plains have forb or browse communities that are only fair in meeting nutritional requirements during certain periods of the year. This is especially true during the winter. Mule deer will consume about 3.5 per cent of their body weight per day in dry weight forage. In relation to livestock about 5 mule deer will consume what 1 cow consumes. Important food plants should be protected and management should be carried out to develop a wider variety of forbs and browse plants.

WATER

Available water is a necessary component of the mule deer habitat. Daily consumption varies from 1 to 3 gallons per day. The greatest is during hot weather.

HABITAT ARRANGEMENT

Cover and food within habitat should be intermixed so that mule deer can forage in close proximity to protective cover. Mule

deer will readily feed in open areas up to ½ mile from cover. During winter they may venture several miles from cover to feed in wheat fields. Permanent water should be available close to cover and spaced no more than 3 miles apart on level terrain and closer on rough terrain.

HABITAT SIZE

Research has shown home ranges for bucks in the Panhandle may be as large as 25 square miles. Bucks may travel up to 15 to 20 miles outside their normal home range during the rut. This movement plus their large normal home range makes it difficult for small landowners to effectively manage their deer herd since bucks may easily move across ranch boundaries during the hunting season. The doe's home range averages 2400 acres. These large home ranges may be related to limits in the habitat. The better the habitat the smaller the home range. Smaller tracts of habitat will be used periodically as mule deer travel from tract to tract within their home range. Other factors that may influence home range size are predators, hunting pressure, land use practices and drought.

HABITAT MANAGEMENT TECHNIQUES

1. *Brush management* must be carefully planned and applied if habitat is to be protected and improved. Areas of rough, broken land dominated by juniper species should not be considered for large-scale brush management. These provide excellent hiding and thermal cover and are the key habitat for mule deer. Methods should be chosen that protect quality browse plants (Refer to Table 1). Areas not meeting the preferred or key habitat requirements could have up to 50% of the brush removed. This should be accomplished by controlling brush in alternating strips, checkerboard blocks, random odd sized openings or contoured bands. Cleared areas should be no more than 300 feet

wide and untreated strips 300 to 500 feet wide.

2. *Prescribed burning* can be used to assist in creating small open areas or suppressing brush in existing open areas. Burns should always be carried out using an approved burn plan by experienced burn personnel.
3. For long term herbaceous cover management a *prescribed grazing* program of light to moderate use should be developed. This should include regular rest periods for all pastures. If past heavy grazing has developed inadequate herbaceous cover pastures can be deferred for 1 to 3 years to allow grasses to recover.

FOOD

1. Deer and livestock numbers must be in balanced to provide a stable quality food supply for mule deer. Cattle are primarily grass eaters but forbs and browse can make up to 20 per cent of their diet. Cattle can consume large amounts of forbs and browse which competes directly with mule deer. This can be critical during dry periods and winter months.
2. Heavy use of key perennial food plants (Refer to Table 1) indicates an imbalance of deer numbers. Moderate use (50 per cent or less of current year's production) indicates population numbers are near or at proper levels.
3. Livestock grazing must be carried out using a systematic rotation system. The system must provide for periodic rest during the year. Generally, deer food plants are favored by shorter grazing periods and longer rest periods. Forage use should be moderate to light and avoid any prolonged heavy use.

4. Include high value forbs and shrubs in seeding mixtures. Refer to Tables 1 and 2.
5. Utilize *prescribed burning* to remove accumulations of old grass, stimulate basal sprouting of browse plants, improve nutritional value (short lived) of food plants and stimulate germination of certain species.
6. Roller chopping, chaining or shredding can stimulate basal sprouting and increase availability and production of woody plants.
7. Mechanical methods of brush management minimize losses of forbs and damage to desirable shrubs and trees. Chemical methods can reduce forb production and damage shrubs and trees.
8. Food plots can be utilized to increase food supplies. Food plots must be planted and maintained properly to have success. This may include weed control and fertilization. The best option for food plot development is the use of wheat or rye. The nutritional level of deer diets can be increased substantially by providing wheat or rye during the winter. Size of the wheat or rye plots should be based on ½ acre per deer. This will provide supplemental forage for a 150 day winter season. Twenty acres is a good size for each plot. If wheat fields planted for livestock are also grazed by deer actions can be taken to increase value for deer. Defer livestock until March 1, if possible. If grazed earlier reduce numbers or rotate to other forage when wheat growth does not meet the deer's requirements. Twenty acre areas can be fenced exclusively for deer. They should be close to escape cover. If these enclosures become overgrown livestock can be used to flash graze them and keep the best nutritional quality. Food plots are not a habitat management

practice and should not be used to artificially carry an excessive number of deer. Population control will still be needed.

9. Supplemental feeding of deer is not a habitat management practice but it is used to enhance the quality of the deer diet. This does not include the feeding of corn during deer season. This is considered baiting and not supplemental feeding. It can be a tool to improve harvest numbers. Protein and minerals, especially phosphorus, are the most common feed. Care must be taken to not allow supplemental feeding to increase numbers above carrying capacity of the habitat. Proper harvest must be practiced.

WATER

1. Deer use livestock watering facilities. When livestock are removed from a pasture maintain water supply for deer.
2. Refer to Wildlife Watering Facility, Code 648, for selected designs for furnishing water for deer.

REFERENCES

- Bryant, F.C. and B. Morrison. 1985. Managing plains mule deer in Texas and Eastern New Mexico. Management Note 7, Texas Tech University, Lubbock. 6pp.
- Brownlee, S. L. 1979. Water development for desert mule deer. TP&W, Austin. 13pp.
- Cantu, R. and C. Richardson. 1997. Mule deer management in Texas. TP&W, Austin. 13pp.
- Rollins, D. 1990. Managing desert mule deer. TAEX, College Station. 9pp.

APPROVAL

/s/Gary Valentine
 State Wildlife Biologist
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TABLE 1
IMPORTANT MULE DEER FOOD PLANTS

High Preference Forbs

Bladderpods	Trailing Ratany
Primroses	Sagewort
Half-shrub Sundrop	

Medium/Low Preference Forbs

Globemallow	Silverleaf Nightshade
Croton	Spectaclepod
Camphorweed	Ragweed
Milkwort	Groundcherry
Plains Zinnia	Western Ragweed

High Preference Browse

Skunkbush Sumac	Hackberry
Mountain Mahogany	Littleleaf Sumac

Medium/Low Preference Browse

Sand Sagebrush	Junipers
Shinnery Oak	Mesquite
Four wing Saltbush	Pricklypear cactus
Yucca	Half-shrub Sundrop

High Preference Grasses

Wheat	Rye
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Medium/Low Preference Grasses

Sand Bluestem	Blue Grama
Silver Bluestem	

TABLE 2
Planting Information for Commercially Available Seed
Used for Food Plots or to Enhance Deer Food Supply

	Seed Rate Lbs/Acre ¹		Planting Dates	Planting Depth In.	Minimum Rainfall ³	Comments
	Broadcast or Drilled	Rows ²				
Perennials ⁴						
Illinois bundleflower ⁵ (W)	13.6	NR	12/1 - 5/31	¼ - ½	18	
Maximilian sunflower (W)	3	NR	12/1 - 5/31	¼ - ½	20	shred to improve leafiness
Engelmann daisy (C)	15	NR	9/1 - 2/28	¼ - ½	18	needs cold stratification
Alfalfa ⁵ (CW)	4	NR	9/1 - 4/15	¼ - ½	18	short-lived (4 - 8 yr.)
Fourwing saltbush (CW)	15.5	6	12/1 - 5/31	¼ - ½	10	evergreen shrub
Skunkbush Sumac (W)	17.8	6.2	12/1 - 5/31	¼ - ½	16	

Warm Season Annuals

Cowpea ⁵	15	5	4/1 - 6/31	1 - 2	20	usually dies late summer
Mungbean ⁵	15	5	4/1 - 6/31	1 - 2	20	
Grain sorghum ⁶	12	4	4/1 - 6/31	1 - 2	18	seedheads eaten

Cool Season Annuals

Wheat	60	20	9/1 - 11/15	1 - 2	18	more cold hardy
Oats	60	20	9/1 - 11/15	1 - 2	20	less cold hardy
Rye	60	20	9/1 - 11/15	1 - 2	20	
Triticale	60	20	9/1 - 11/15	1 - 2	18	
Ryegrass	4.6	NR	9/1 - 11/15	0 - ¼	24	can overseed
Yellow sweetclover ⁵	3.4	NR	9/1 - 11/30	¼ - ½	16	biennial, "Madrid"
White sweetclover ⁵	3.4	NR	9/1 - 11/30	¼ - ½	20	"Hubam"
Hairy vetch ⁵	26	9	9/1 - 11/30	1 - 2	20	

Footnotes:

- 1 Seeding rates based on PLS when available, otherwise, use good quality commercial seed.
- 2 Row planting (20 - 40 inch rows) should be used only when weed control will be carried out between rows. NR - Row planting not normally recommended.
- 3 Approximate annual rainfall zone recommended for successful establishment. Irrigation recommended when planting west of this line.
- 4 (W) – warm season forage production. (C) – cool season forage production. (CW) – provides some forage during both cool and warm season.
- 5 All legumes should be inoculated with the proper strain of Rhizobium for best production.
- 6 White or yellow seeded varieties with lower tannin content are preferred.