

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

UPLAND WILDLIFE HABITAT MANAGEMENT

(acre)

Code 645

Texas Supplement, Zone 4

White-tailed Deer

Habitat Requirements

Food

Deer require a high quality food supply that is usually made up of browse, mast and forbs. Perennial grasses normally make up only a small part of the diet since they usually do not provide adequate nutritional quality. Basic nutritional requirements for good body growth, reproduction and antler development are thought to be: 16% crude protein; 65% TDN (total digestible nutrients); 0.3% phosphorus; and 0.6 % calcium in the diet. Nutritional requirements for maintenance are substantially less than this. Deer will consume about 3.5% of their body weight per day in forage on a dry weight basis. A 100-pound deer would therefore require nearly 1300 pounds of forage per year. One deer is normally considered to be about 15% animal unit (1000 pound cow and calf) or 7 deer per animal unit. Populations with larger than normal body weights and a high ratio of males to females may have a different animal unit equivalent.

Cover

Deer need large parts of their range in protective cover, - usually in the form of moderate to dense woody vegetation. Where woody cover is sparse, tall grass cover (3 feet tall) or rough topography may partially compensate. Prime deer habitat will usually have more than half of the landscape covered by moderate to dense woody vegetation. Deer will occupy land with much less cover, but populations will be considerably less. Prime fawning cover

consists of dense areas of tall grass usually mixed with low growing shrubs to provide concealment from predators. Mature bucks seem to have a need for larger areas of very dense cover as compared to younger bucks or does.

Water

Permanent water is considered a necessary component of deer habitat. Deer normally drink water daily, although at times, their water needs are met with succulent vegetation.

Habitat Arrangement

Cover and food within habitat should be intermixed so that deer can forage in close proximity to protective cover. Deer will readily feed in open areas that are within 100 to 200 feet of woody cover. The more nutritional stress that deer are experiencing, the further from cover they will venture. Deer will sometimes travel a mile or more away from cover to feed, especially during drought, but they will do so primarily at night. Permanent water should be available close to cover and spaced no more than 1 to 1.5 miles apart, preferably closer.

Habitat Size

Individual deer normally range in areas of 500 to 1000 acres. Females have a smaller home range than males. Males have a much larger range during the breeding season (October – January). In general, large areas of habitat are needed to sustain viable populations that have surplus animals

available for harvest. Smaller tracts of habitat will be used periodically as deer travel from tract to tract along corridors.

Habitat Management Techniques

Food

1. The ability of habitat to supply food for deer is accomplished primarily by keeping the number of deer in balance with the stable long-term carrying capacity of the habitat. An estimation of population numbers by some suitable survey technique is very important in habitat management. Control of the population is achieved by hunting, especially of the female segment of the herd. Excessive deer numbers result in overgrazing of choice food plants, degradation of habitat and smaller, nutritionally deficient deer. Field dressed weights of deer in each age class (1.5, 2.5, 3.5, etc.) will reflect the adequacy of the food supply and signify whether or not the population is within the carrying capacity of a particular habitat. A relative weight index chart may be used to assess field dressed weights.
2. Examination of key perennial forbs and browse plants will also indicate whether deer numbers are in balance with the food supply (See table 1). Light use on key forbs and browse would indicate a population that is below carrying capacity. Moderate use (no more than 50% of current year's available production) would indicate a population that is at or near carrying capacity. Heavy use would indicate overpopulation and the need to reduce deer numbers. Refer to practice standard for Prescribed Grazing for guidance on degree of use.
3. The deer food supply is also greatly affected by the kinds and numbers of livestock or exotic wildlife that occupy the same habitat. Cattle, goats, sheep and most exotics have food habits that overlap with deer diets. This overlap in food habits usually leads to competition for preferred food plants. This competition decreases the available food supply for deer. If the objective is to maximize the food supply for deer, allocate forage for the projected deer population first and stock livestock or exotics for light to moderate utilization of the remaining forage. Evaluation of deer weights and examination of key food plants as described above will help determine if changes in kinds or numbers of livestock or exotics are needed.
4. Even though cattle are primarily grass eaters, forbs and browse often makes up 10 to 20% of their diet. Due to the large total forage requirement (estimated to be 26 pounds per day for 1000-pound cow), cattle can consume large amounts of forbs and browse and do compete with deer.
5. Protect mature mast producing trees such as oak and pecan.
6. Utilize prescribed burning to improve the deer food supply by:
 - Removing some accumulations of old grass which inhibits forb growth.
 - stimulating basal sprouting of browse plants.
 - increasing in nutritional value of forbs and browse (short term).
 - stimulating the germination of certain browse and forb species.
7. Timely harvesting of timber stands greatly increases deer forages. Timber stands can be systematically and selectively harvested to promote a sustained deer forage production on a property. That is, dividing up timber stands so they are harvested in consecutive years.
8. Use selective control of less desirable woody species (i.e. sweetgum) to enhance the production of more desirable species (oaks).
9. Use mechanical methods of brush management instead of chemical methods in order to minimize the

damage to desirable forbs and browse and to stimulate forb production.

10. High fences are often used to enable more intense management of deer numbers. Where deer populations are excessive, high fences can be effectively used to reduce the deer population within the fenced habitat and prevent immigration of deer from surrounding areas. Adequate harvest must take place within fenced areas to ensure a proper balance between deer numbers and high quality habitat.
11. Where native food plants are not present in sufficient quantities to accomplish management objectives, food plots may be used (See table 2). Food plots are feasible if suitable soils are present, the correct species are used and the level of management is sufficient. The acreage of food plots in relation to the number of deer is an important consideration. Too few acres will insure that deer will concentrate on the plots, grazing them short before they are well established, thus providing only limited forage. A rule of thumb is to plant between 0.25 and 0.5 acres of food plots per deer to significantly increase the food supply. This usually amounts to 2 to 10% of the area in food plot production. There are three primary kinds of food plots used for deer.
 - Perennial food plots using perennial forbs or certain woody species do not require annual tillage and planting, but do require closer management. These species are slower to establish than annuals and they cannot tolerate continuous heavy use by deer or livestock. With proper management, they can provide large amounts of high quality forage all year long.
 - Cool season annual food plots are planted in late summer or early fall and provide forage for late fall, winter and early spring. They usually consist of one or more small grains often in combination with one or more legumes.
 - Warm season annual food plots are planted in spring and provide forage for late spring, summer and early fall. They usually consist of one or more legumes or other warm season forages.
12. Fertilization of areas that contain key deer food plants is sometimes used to boost the production or quality of foliage or mast. This practice may increase the utilization on desirable plants to the point of excessive and detrimental use.
13. Supplemental feeding of deer is not normally considered a habitat management practice, but it is commonly used to enhance the quality of the deer diet. Protein and minerals, especially phosphorus and calcium are the most commonly supplemented nutrients. If deer numbers are kept within carrying capacity, of the habitat, then the feeding of deer to boost their nutrition should have little or no adverse effect on the habitat. Without proper harvest, supplemental feeding may allow the deer population to increase above the natural carrying capacity of the habitat.
14. The feeding of corn is commonly practiced prior to and during the deer hunting season as a means to attract deer and increase the harvest. This practice is considered baiting and not supplemental feeding. It can be a valuable habitat management tool since it can facilitate harvest and help keep a population within carrying capacity.

Cover

1. Do all brush management in a pattern to retain woody cover interspersed between clearings. Patterns of openings within woody cover can be in the form of alternating strips, checkerboard blocks, random odd sized openings or contoured bands.
2. Key cover areas such as creek bottoms and draws should be left intact.
3. Clearings should normally be 150 to 400 feet wide in order for deer to make good

use of clearings. Smaller and/or narrower clearings favor better deer habitat. Selective clearing where more desirable trees and shrubs are left will provide some cover within cleared areas.

4. Wooded areas left for cover should be wide enough to fully conceal deer from either side during the winter after leaves have fallen. Depending on the density of cover, this will often need to be 300 to 800 feet wide.
5. The percentage of an area that should be left in woody cover will vary depending on landowner objectives, the deer density desired, the method of clearing and the density of woody cover. Generally, clearing of 25% to 50% of the acreage will allow good deer habitat if the remaining acreage has moderate to thick cover.
6. Leave some large continuous tracts of moderate to dense woody cover to serve as sanctuaries for mature bucks.
7. Grazing management that retains at least moderate amounts of taller grass maximizes fawning cover.

Water

1. Deer usually use water developments that were installed for livestock. When livestock are moved out of an area, be sure to keep water maintained.
2. If a high fence is constructed which alters the availability of water, new water sources may need to be installed.

References

_____. 1994. The use and management of browse in the Edwards Plateau of Texas; USDA-NRCS, Temple. 7 pp.

Armstrong, W.E. 1991. Managing habitat for white-tailed deer in the Hill Country area of Texas. TPWD, Austin.

Brothers, A. and M.E. Ray, Jr. 1998. Producing quality whitetails. Texas Wildlife Association, San Antonio. 226 pp.

Gee, K.L., et.al. 1991. White-tailed deer: their foods and management in the Cross Timbers. Samuel Roberts Noble Foundation, Ardmore, OK. 118 pp.

Ramsey, C.W., *editor*. 1996. Supplemental feeding for deer: beyond dogma. Symposium Proceedings, TAEX, College Station. 151 pp.

Rollins, D., D.N Ueckert and C.G. Brown, *editors*. 1997. Brush sculptors: Innovations for tailoring brushy rangeland to enhance wildlife habitat and recreational value. Symposium Proceedings, TAEX, San Angelo.

Wilkins, N., *editor*. 1999. Deer management 101 from the ground up. Symposium Proceedings. TAEX, College Station.

Table 1 Important Native Deer Food Plants

Woody Plants (browse or fruit)	Grasses and Sedges	Forbs
Ash		Ragweeds
American Beautyberry	Beaked panicum	Poorjoe
Black cherry	Longleaf Uniola	Sunflower
Blackberry	Crabgrass	Pokeberry
Dewberry		Blue vervain
Dogwoods		Butterfly pea
Elm		Wildbeans
Grape		Asters
Greenbriar		Blackeyed susan
Hackberry		Common goldenrod
Hawthornes		Common lespedeza
Honeysuckle		
Jessamine		
Pecan		
Rusty Blackhaw		
Persimmon		
Possumhaw		
Rattan		
Red mulberry		
Rusty Oaks		
Sassafras		
Wild Plum		
American Beech		
Elderberry		
Prickly Ash		
Blackgum		

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

	Seed Rate Lbs/Acre		Planting Dates	Planting Depth In.	Comments
	Broadcast [commercial seed]				
Cool Season					
Arrowleaf clover	3-8		Sept-Nov.	1/4	Well drained - not deep sand
Crimson clover	10-20		"	1/4	Well drained - not deep sand
Red clover	10-20		"	1/4	Well drained - not deep sand
White/La.S-1 clover	1-3		"	1/4	Good for wet sites
Elbon Rye	40-80		"	1	Does well in sandy sites
Oats	40-80		"	1	Well drained not deep sand
Wheat	40-80		"	1	Well drained not deep sand
Ryegrass	15-30		"	1/4	Grows good on many sites
Austrian winter pea	15-35		"	1/2	
Hairy vetch	10-20		"	1/4-1/2	Will grow on deep sands
Singletary Pea	10-20		"	1/4--1/2	Adapted to wet sites - bottoms

Warm Season Annuals

Cowpeas	20 - 40	April-June	1/2	Iron/Clay with Alyceclover best combination 40/10 lbs.
Soybeans	40-60	"	1	
American Jointvetch	10-20	"	1/4	Deer may over browse - Plant in combination with Iron/clay and alyce clover 40/10/5 lbs.
Rape	10	"	1/4	
Common Sunflower	20	Fall	1/2-1	Best to plant in fall
Peanuts	25	April - May	1	All well drained soils
Alyceclover	10	April - June	1/2	Provides good late forages

Approval

/s/ Gary Valentine, State Wildlife Biologist

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