

# How to Manage Deer Habitat: South Texas

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## Summary

The Rio Grande Plain of Texas has long been noted for its abundant populations of wildlife and a thriving cattle industry. This 20-million-acre area, lying south of San Antonio and extending to the Rio Grande Valley, provides excellent habitat for both white-tailed deer and cattle. The variety of shrubs, trees, forbs and grasses that make up the vegetative complex is unequalled anywhere in the state.

Although the dense stands of brush and mesquite that dominate the vegetation provide valuable food and cover for wildlife, it can pose problems for cattle ranching. Management of livestock calls for increased grass for forage and open areas for ease in handling animals. Conflicts between deer and livestock management soon arise, and the ranch manager seeking to optimize his production in both areas must decide on a suitable compromise. Habitat management decisions should be based on proven range management practices for both wildlife and livestock production.

## Habitat Requirements

Every animal has the basic needs of food, cover and water in order to exist. Some animals live well, others barely exist and still others live briefly and die, depending on the degree in which these needs are provided. Much research has been done on the food habits and nutritional requirements of the white-tailed deer, and we know what must be provided by the habitat for them to exist. For example, we know deer require a diet of approximately 16 percent protein and calcium plus phosphorus in a ratio of 2:1 to be well nourished, although they can subsist on a lower quality diet. Numerous studies have shown they prefer weeds, forbs and the leaves and fruit of woody browse species, with very little grass in their diet. Indeed, deer cannot exist on an exclusive diet of grass.

Their food supply should be distributed evenly throughout their range, as deer do not migrate en masse to seek food as some animal species do. Availability of surface water is also an important consideration. Although deer do obtain some water through certain plants in their diet, well distributed sources of permanent water on a ranch will allow animals to use all of the existing habitat. Lack of water can be a limiting factor to deer numbers in some areas. Construction of dirt tanks and/or windmills with storage tanks and adjacent dirt tanks to catch overflow should be considered if additional water is needed.

We also know deer are selective foragers, preferring to feed on a wide variety of plants rather than a few specific ones. For these reasons, the mixed brush habitat found in much of South Texas is excellent deer range. Management recommendations for habitat improvements emphasize the even distribution of food, cover and water and the production of a wide variety of each. Thus, solid stands of brush may be broken up by cleared strips or a mosaic of brush interspersed by clearings. This provides the greatest abundance of weeds, forbs and brush species, while retaining adequate cover for hiding and protection from the elements. A monoculture, such as large fields of buffalograss, is fine for cattle, but does not meet the basic needs of deer.

One reason South Texas has historically produced large, antlered deer is the variety and quality of the plants that make up the habitat. For instance, research has shown that South Texas comes nearer providing adequate levels of protein during all seasons of the year than any other region of the state. Spring and winter weeds and forbs are usually present, but the backbone of subsistence lies in the variety of brush species that occur. Many of these plants are nutritious legumes and some are semi-evergreen, persisting into the winter. Fruit crops of the various species ripen at different seasons, thus a source of good quality food is provided on a year-round basis, which is the key to producing high quality animals.

Some of the important deer food plants found in South Texas are mesquite, guayacan, granjeno, coma, prickly pear, vine ephedra, wolfberry, brazil, lote-bush, chapote, guajillo, blackbrush, ceniza, lime prickly ash, desert yaupon and most weeds and forbs, whenever they are present. This is only a partial list and points out the importance of managing for a variety of species in deer habitat. A land manager should become familiar with key food plants in order to recognize important areas of habitat for wildlife consideration.

## Habitat Management

The land manager must understand the differences in food habits of deer and cattle to provide a food supply that will sustain both types of animals. When considering brush control in a management program, one must remember deer are primarily browsers – dependent upon the green leaves, tender shoots and fruits of woody plants, prickly pear and weeds as their main source of food. Brush also provides deer with

cover for escape and loafing. Any brush control program will have some effect on white-tailed deer. If too much brush is removed or controlled, the effect will be detrimental and deer numbers, along with the quality of animals, will decline.

The amount of brush to remove is dependent on many variables such as vegetative types, soil types, previous clearing operations and other such factors that may influence wildlife. Any management schemes should be planned on a ranch-to-ranch basis. It should be kept in mind that additional brush can always be removed later if desired, but replacing destroyed habitat may require years. Generally, 25 to 50 percent of the brush can be removed (where strip clearings are used) without detrimental effects to wildlife. Cleared strips should be alternated with native brush in varying widths, depending on brush density. Brush strips should always be wide enough to allow adequate cover and browse for deer. Cleared strips varying from 100 to 300 feet in width have been used with success in many areas.

The most common and widely used pattern of brush control is strip clearing. This pattern is generally the most acceptable from the standpoint of both economics and benefits derived for deer and cattle. In this pattern, cleared strips are alternated with strips of brush. Care should be taken not to make the openings too wide, so deer will freely move from one strip of cover to another. Cleared strips of 100 to 300 feet in width are most suitable. Creating an edge effect (where the brush line meets an opening) generates a variety of brush, forb and grass production. Clearings also can be seeded with desired foods such as grain sorghums or improved grasses to provide a quick source of food. Seeding with a mixture of sorghum album and any of several grasses such as buffalograss, plains bristlegrass and panic is currently popular. Variety can be maintained in future years by periodically disturbing (discing) a strip of soil near the brush line to promote forb production.

Any pattern that creates more edge effect and provides a greater variety of forage would be desirable, whether a parallel or zigzag strip pattern, the patchwork or mosaic type or a contour system. Total clearing of an area or clearing of large blocks is least desirable and is detrimental to white-tailed deer.

Fire, nature's brush control method, is slowly gaining popularity as a management technique in South Texas. It has the advantage of being economical to implement and results in a mosaic or contour type pattern of clearing that is attractive to wildlife. Nutrient values and palatability of most plants generally increase after burning. Some disadvantages of using this method are the lack of ground fuel in some areas to carry the fire adequately and for a long enough time to produce desirable results.

The major problem facing wildlife populations today is loss of habitat. With the advent of mechanized brush control in the 1930s, landowners acquired an economical tool to increase grazing capacity for livestock by clearing brush and reseeding in improved pastures.

Many brush control programs were implemented without regard to the effects on wildlife populations and were detrimental to wildlife such as white-tailed deer. Large blocks of land were cleared by the use of steel cables and chains, rolling choppers and root plows. Chemical poisons were introduced later. Brush control programs eventually reached a magnitude that attracted attention to the overall effect such practices were having on wildlife habitat and wildlife populations.

Various methods of brush control are available to the land manager, and each person must determine the most practical method suited to his objective. Mechanical clearing, such as chaining or roller chopping, removes brush overstory and increases ground forage while minimizing soil disturbance. Discing with a heavy disc will temporarily thin out brush and disturb the soil more than chaining or chopping. Root plowing or dozing kills a higher percentage of brush and disturbs the soil, resulting in a slower recovery of brush species. Chemical or herbicide treatment will control brush, but the long-term effects of this treatment are unknown. All of these methods set back plant succession and promote forb and grass growth.

Roller chopping or discing appears to be the best choice for a brush control method when wildlife needs are the primary consideration. These methods are less destructive to the natural turf, and encourage the greatest variety of regrowth. Root plowing, especially when followed by raking, destroys a higher percentage of native vegetation and reduces the variety in regrowth plants.

Any degree of brush control will have an effect on deer, since it results in the removal of cover and partial destruction of their food supply. Browse and fruit provided by drought-resistant woody brush species, along with prickly pear, are the most dependable sources of wildlife food available on a year-round basis. Even livestock benefit from these food sources during stress periods. In addition, brush provides escape cover and necessary shade for relief from the summer heat. When this vegetative type is removed on a large scale, the results can only be detrimental to wildlife.

Proper brush clearing can result in increased food availability to both deer and cattle. Setting back plant succession and opening the ground to sunlight by brush control increases forb production. Deer will be attracted to these openings the first 1 to 2 years after treatment, much as they would be to a winter cover crop. However, management of cleared areas for improved grasses soon decreases production of wildlife forage. If these areas are not managed for a mixture of forbs, weeds and browse, their value for wildlife will decrease rapidly.

Just as important as brush control in any management program is the type of livestock grazing system

used and the stocking rates of animals. Since the objective of most landowners is to achieve maximum sustained income from their property, providing adequate amounts of good quality food is a primary concern. Ranchers of South Texas have initiated and used various grazing systems, the most common being continuous grazing or some form of a deferred rotation system.

Continuous grazing, or unrestricted livestock access to any part of a pasture or ranch throughout the year, is the least compatible system with wildlife. Since the tendency is to stock to capacity or overstock, the most palatable range plants invariably suffer under this system. More desirable would be a deferred rotation system whereby pastures are rested successively during the growing season. This allows for improved seed production, establishment of seedlings and restoration of plant vigor. This periodic rest from livestock grazing improves range and generally benefits both livestock and deer. Some types of rotation grazing systems are the one-herd, two-pasture switchback system; the three or four-pasture, one-herd system; and various forms of short duration grazing. These systems have been applied successfully on many South Texas ranches.

The number of animal units, both deer and cattle, a given acreage will support is dependent on many

variables. It is impossible to apply a uniform stocking rate for either livestock or deer to South Texas in general. Depending on habitat quality, each ranch will support a different number of animals. The range manager must be able to recognize signs of forage over-utilization and adjust animal numbers accordingly, as this will vary from season to season and year to year.

In an area noted for erratic rainfall and periodic droughts, range conditions constantly change and optimum stocking rates vary with these changes. For this reason, stocking rates of both deer and cattle should be flexible so they can be adjusted to stay in balance with forage production. The key to providing high quality forage is maintaining this balance between animal density and forage production.

Landowners interested in planning wildlife and habitat management programs can obtain assistance from the Texas Parks and Wildlife Department. The department has several wildlife biologists available upon request. Assistance can be obtained by contacting a local wildlife biologist or through the Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744.

