year-around basis. Where we can grow weeds, grass will follow.

Today, we have flexibility and the opportunity to manage. In the past I just went for the ride and hoped it rained.

Improvement is not just evident in our pasture conditions. Other animals benefit. The first half of January, 1983, 39 bobcats, 88 coyotes and 41 raccoons trapped on the ranch were rated by hide buyers as the best seen in South Texas; a premium price was paid for the catch. Fur was better, size was larger, and the physical condition of the fur bearers was rated superior.

Last fall I watched my son and two daughters, aged 14, 11, and 6, move 199 grown cows over a mile from one cell to another with no trouble at all. Three years ago I couldn’t have moved cattle through the same area with 7 good cowboys.

There are two main reasons why my children were able to move the cattle so easily. First, lanes connect all 9 central cells on the ranch and no pasture is larger than 400 acres. Prior to 1979 they consisted basically of 4 pastures, 1,500 to 2,900 acres in size along with some small pastures or traps. And second, the cattle are easier to handle now because of the frequent rotations—they have become accustomed to the moving and like it.

The joint meeting of the Range and Wildlife Societies recently held in Austin is a step in the right direction. Next, we need to expand it to include the botanist, the entomologist, and the soil scientist.

A lack of understanding caused the misuse of our rangelands and wildlife in the past. What we think we see is not what we are looking at. I have found that the best wildlife habitat is also my best cattle country.

Mesquite and other woody legumes are among our most valued plants. Future grass production in my pastures may depend upon how much good mesquite timber I can grow, not on how much I can kill.

For those of you in the many fields of research and education, I should like for you to consider me as a resource manager, the end consumer of your product. Share with me your findings and we will all gain by their application.

Al Brothers, not too gently, served me the ball 12 years ago. He started a long time before that, but I am a slow learner. It took me about 8 years to get going and lob the ball back over the net. Kenneth Sparks drove it back down my throat. Today, I am putting the ball on your side of the fence and asking you to join the game. [Bill was speaking to those in attendance at the joint meeting.]

I heard of a man once who built a new home out of lumber he had cut from 19 varieties of native trees. He did all the work using a primitive saw mill.

When a young friend, marveling at the care and effort used in construction, remarked the house would be around longer than its builder, the man replied, "Hell, Tommy, I want it to be here when I come back." I feel the same way about our rangelands and wildlife.

With the grace of God, may we continue to make that with which we are entrusted, better.

Management of Whitetail Deer in South Texas

W.A. Maltsberger

Changing times and social patterns greatly influence land use management and priorities. The ability to grasp a weapon in hand, rear up on two hind legs, objectively view the surroundings and follow through after subjectively reaching a decision enables ranchers to control the land, habitat, and wildlife entrusted to them by the Creator.

Ranchers' interest in production of trophy whitetail deer is commendable. Before embarking on a new project of this magnitude, one must set his or her sights, goals, and objectives and rank the priorities. One should be aware of any tradeoffs.

Published in Texas Tech's "Research Highlights—1981," Volume 12, page 67, is the "Life Table Analysis of the Welder Wildlife Refuge Deer Herd."

These tables reflect studies of a dense, stable, unhunted population of whitetail deer on the Rob and Bessie Welder Wildlife Refuge near Sinton, Texas. I have seen no other tables of their kind and feel these can be used for base line projections until better data are available.

My calculations using the Welder tables project a hypothetical herd of 282 deer. This herd would be made up of 186 does (132 adults does and 54 doe yearlings), and 96 bucks.
with roughly a 1:2 buck doe ratio.

Fetus estimates run 1.78 per adult doe with only 30% of the buck fawns born surviving until they are 1 year old. This herd would contain only 14 or 15 bucks in an age group ranging from 5 to 8 years old. Most likely one-fourth of them would be culls, one-half would be average mature bucks, and one-fourth might be trophy class. If these older bucks are killed, then you’ll have to look to the four-year-old class for next year’s harvest.

Considering the 34% annual buck loss per age class after passing 1 year of age, in an unhunted population, about 6 of the 121 buck fawns born can be expected to become harvestable 5-year-old deer.

Allowing 20 acres of prime South Texas habitat per deer, a person would need 5,640 acres to run this herd and harvest an average of 6, 5-year-old bucks per year, after the best have been selected out.

**After managing deer herds intensively** for several years, we still harvest less than 1 good mature buck per 1,000 acres. Some of our best individuals are left for breeding stock.

It is much easier to shoot a producing herd down than to ever bring one back.

The compounded effect of 2 consecutive dry years that reduce conception and survival can be devastating. In the fall of 1980, the surviving La Salle County fawn crop was estimated to be 7% of the doe herd. In a normal year a 320-doe herd on 12,000 acres should be expected to produce 1.8 fetuses per doe and give birth to roughly 288 buck fawns of which 15 might survive until they are 5 years old.

A single dry year that lowers conception to 1.24 fetuses per doe, followed by normal conditions could be expected to produce 10 bucks in the 5-year-old age class.

Because of the complexity of weather related production and survival, I base harvest on the presence of specific deer, not on fawn crop, herd size, or total census.

Using a 12.5% opportunity cost in calculating the net present value of my dollar and the data contained in the Welder Life Table Analysis, the deer I’ve been marketing at 5 years old could have been sold at 2 years of age for 22 cents on the 5-year-old dollar and netted the same profit.

A 3-year-old buck can be sold for 38 cents on the 5-year-old dollar. A 4-year-old buck can be sold at 62 cents on the 5-year-old dollar.

Back to management. Building a high fence and saying, “I’m going to produce trophy whitetail deer,” is not enough. One must know the odds, understand the risk, and weigh the rewards.

If killing a big buck is your ambition, book a hunt on a ranch producing quality whitetail. You may shoot a buck of your choice for a lot less than the cost will be to produce a deer of equal quality on your own ranch.

A good hunting lease will net more profit than most Trophy Deer programs. Obviously, some of us are not in quality white-tail production for the money. There are other rewards.

**Cost of managing a deer herd** can run from a few dollars spent on ammunition to a small fortune. One level of management will be no more effective than the other, unless one follows through with dedication and good judgement.

The secret of trophy whitetail production is fawn management. Without a high reproduction and survival rate one will never have a significant number of trophy bucks or make appreciable genetic progress.

Manipulation of herd age structure will yield the fastest returns to management. Controlling buck drain off by fencing, predator control and selective harvesting will insure that more bucks will survive to maturity.

Habitat management is one of the most important aspects of whitetail deer production. Management goals will be elusive if not impossible to obtain without proper nutrition. Rumen samples from deer in South Texas can fluctuate from a low protein content of 7.75% in bad times to 20% in seasons of good forage production.

Buck fawns need a much higher quality diet than doe fawns. In a border line starvation situation, buck fawns will die and doe fawns will survive. This will further spread a poor sex ratio and add to over-population.

Maintenance, growth, and antler development place high nutritional demands on a young buck. In a population lacking mature breeding bucks, the added strain of servicing many does in a short period of time can further weaken young bucks making them easier prey for predators.

Nutrition influences conception, survival, and quality. Conception varies from 1.24 fetuses per doe in bad years to 1.8 per doe in more normal times. Surviving fawn crop may fluctuate from 77% of the adult doe population in a dry year to nearly 100% in good years.

Antler size may vary 1/2 inch in circumference 1 inch above the base and 2 1/2 inches in the outside spread from a good year to a year of poor antler growth and make full recovery following the next growth period of proper nutrition.

The old adage that feeding is 80% of breeding holds true for wildlife as well as for livestock.

**Genetics control the direction** of future generations. Any long-term improvement or loss will be governed by the deer herds’ gene pool makeup. By selectively harvesting deer their direction can be influenced.

An individual can only be expected to breed to the average of the population in which it is born. One should not expect a breeding herd to produce characteristics not in their gene pool.

As a rancher increases the culling rate of a breeding population and improves their average quality, the average quality of their offspring should improve to the same degree. Work with the hunters. One should insist on a balanced harvest consistent with obtainable objectives and goals.

Consider the outcome if one never sold a cow or a heifer calf. And what would happen if a rancher and all his friends spent 2 months just before and during a 65-day breeding season trying to kill off all the good bulls on the ranch.

When ranchers see others going to the trouble and expense of game management, they should support these efforts. Some day, who knows, they may benefit from newly developed management techniques and be able to share superior seed stock developed by their gene combinations not existing in today’s wild populations.