



INSIDE DEER RESEARCH

*A newsletter for supporters of the deer research program at the
Caesar Kleberg Wildlife Research Institute
Texas A&M University-Kingsville*

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About this Newsletter

The pathways in which the results of a research organization such as the Caesar Kleberg Wildlife Research Institute (CKWRI) at Texas A&M University-Kingsville percolate out to wildlife managers are numerous and frequently obscure. Research advances are spread by articles, presentations, newsletters, college classes and most importantly, by word-of-mouth.

During the recent development of a strategic plan for deer research at CKWRI, our Deer Advisory Group strongly urged publication of a newsletter highlighting deer research findings. This first issue of *Inside Deer Research* describes what we do at CKWRI, what we have done, and what we are doing. Future issues will report finished deer research, on-going research, and the research findings of other organizations. 🦌

WHAT WE DO: How Deer Research Transforms Deer Management

By Charles A. DeYoung

Someone once said that it takes 10 years for a research breakthrough to be adopted by the general public. In deer management, it may take longer because dogma dies slowly. The origins of new deer management practices are often obscure. They are developed by a ranch owner, manager, or biologist from a complex combination of innovative thinking, research information, word-of-mouth from other managers, dogma, and personal experimentation.

The George Factor

New deer management practices frequently are plagued by what I call the "George Factor." George was a Colorado trapper I worked with in the early 1970s. I have forgotten his last name, but not one of his sage sayings. George enjoyed teaching a young biologist the tricks of his trade. I once asked him why various trappers used such different scents for trap sets but were all successful. His reply has a lot of

relevance to new deer management techniques, and has stuck with me for 30 years. George said that when catching an animal, each trapper did some things that contributed to the desired result and some things that he thought worked but that were actually neutral or even negative. However, George said that when considered together, the whole bag of tricks caught coyotes. Likewise with deer management, many elements influence the tools in a manager's kit. Some are beneficial, some do not make any difference, and some are actually negative, but managers with different tool kits all produce big bucks!

What is the role of CKWRI scientists in the development of deer management techniques? In the context of the George Factor, it is to make management more efficient by exposing the tools in the kit that are neutral or even negative to the intended goal. Our role is to conduct research to directly evaluate techniques and understand why and when they work. Even more fundamentally, we do research to better understand the biological processes on which management is based. Seldom do researchers develop management techniques; by the nature of our work and funding structure, we are reactive, not proactive. We develop comprehen-



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sive theories of how the deer world works, and then try and understand why management works based on the theoretical foundation of deer ecology as we understand it. When we cannot understand why a deer management technique works, based on the explanation of the managers using it, then this is an opportunity to do some research! Either the explanation for why the technique works is wrong, or our understanding of deer ecology is incomplete. If either or both are corrected through better information developed by research, then we have eliminated another neutral or negative management factor predicted by the George Factor. The beneficial result is that management becomes more efficient.

Why don't CKWRI scientists develop new deer management techniques rather than simply evaluate techniques developed by others? We could develop techniques more or less from scratch if someone or some organization wanted to fund the research effort. Research takes time, and it is very expensive. To date, we have not had a direct mission, nor funding to undertake new technique development. And, considering the nature of south Texas deer management, I do not think there is a need for CKWRI to get into this business. This is because there is a large cadre of innovative, motivated, talented, and well-funded ranch owners, managers, and management biologists (including some with Texas Parks and Wildlife Department) that is performing the technique development function. More progress is being made by this largely private sector activity than CKWRI could ever do, even if we had a lot of funding for technique development. This broad and diverse cadre of managers is getting a great deal of fun, satisfaction, and relaxation from doing new things to raise bigger bucks. This is beyond hunting, although hunting is involved. And yes, frequently the new deer management techniques are plagued by the George Factor. That is, the techniques work, but not for the reason the manager thinks. Enter CKWRI to figure out the real reason the technique works, or adjust the basic understanding of deer biology to explain the situation. Deer management then

becomes more efficient.

Who cares if deer management practices work for the wrong reasons? They still work, don't they? Whereas, this is true in the narrow sense, it is also dangerous when false information is projected to new situations. An example is in order. Biologists commonly recommend harvest of 20% of bucks and does counted on an annual helicopter survey. This is a tried and true rule of thumb in south Texas, and managers will seldom get in trouble following this formula. However, the 20% harvest rule was developed during a time when it was assumed that nearly all the deer were being counted on a helicopter survey. When CKWRI research showed only one-third were actually being counted, the natural assumption was that more could be harvested because there were more deer than previously thought. Subsequent Texas Parks and Wildlife Department research showed this to be false and that increased harvest caused populations to decline. The 20% rule is a deer management practice that works, but the assumption that 20% of the actual population was being harvested was false. Extending the practice resulted in a negative result, namely significant population decline.

Politics, Policy, and Ethics

In order for deer research to be an ingredient in transforming deer management, the research results must be widely credible. Scientists at CKWRI are often pressured, sometimes indirectly, sometimes not, to take public positions on deer management issues that have political or policy implications. Factions in controversies sometimes take a "if you are not with us, you are against us" attitude toward CKWRI. Our scientists do have personal opinions on issues in deer management, and it is impossible to keep all human bias out of such situations. However, we go to great lengths to remain "above the fray," neutral, and objective. Sometimes we suffer because of this stance. However, it is essential to the credibility of a research organization to remain objective, even though this may frustrate certain factions. If we took positions publicly on political and policy issues in deer management, we could immediately be accused of slanting our research to produce a result that supported a certain position. Being a skeptic and looking for the George Factor in issues is sometimes about as welcome as a skunk in church, but it is essential to being a credible research organization.

Partnerships

Deer research at CKWRI has a strong and ongoing history of partnerships with other organizations. Partnerships allow us to leverage our research dollars and talents into bigger and more comprehensive projects than we could conduct alone. When it comes to active involvement in research, our strongest partner has been and continues to be the Texas Parks and Wildlife Department. We also have strong partnerships with the Faith Ranch, King Ranch, Inc., Comanche Ranch, and many other private ranches in south Texas. We

partner with the Texas Agricultural Experiment Station by an exchange of faculty appointments. We have even partnered on south Texas deer research with out-of-state organizations, such as the University of Georgia.

Funding

We receive important infrastructure support from Texas A&M University-Kingsville. However, our deer research program is entirely privately funded. We could not exist without the confidence and funding of south Texas foundations, ranches, and individuals.

WHAT WE HAVE DONE: Research Since “Producing Quality White-tails”

The 1975 book, *Producing Quality White-tails*, by Al Brothers and Murphy Ray, Jr. has been rightly acclaimed as a benchmark for quality and trophy deer management. How deer research has transformed deer management since then is no way a criticism of the original, trail-blazing book. It is merely a way of looking at the progress in the last 30 years. Following are page numbers and quotations from “*Producing Quality White-tails*” along with updates caused by CKWRI research. The examples are certainly not exhaustive, but illustrate the impact CKWRI research has had on deer management.

Page 205: “Where terrain and habitat permit, a helicopter census is best. Ninety percent of all deer present can be observed.”

Extensive CKWRI research on helicopter surveys, still the primary deer census tool in south Texas, has revealed a range in accuracy of 17–67%. Most south Texas deer surveys by helicopter count about one-third of the deer.

Page 185: “In areas of low deer populations within habitat capable of sustaining higher populations, control of predators can usually increase populations at a faster rate through increased fawn survival.”

CKWRI researchers killed over 700 coyotes on 2 study areas of 10,000 acres over a 3-year period. No increase in the fawn survival or the deer populations was observed. There are still things to learn, but we can say that sometimes coyote control works in deer management and sometimes it does not.

Page 169: “Planting of fields for use by deer is quite common. ...Spring and summer plantings could consist of almost any legume.”

The original CKWRI research showing the advantages of the lab lab legume led to its widespread use in south Texas.

Page 133: “On the particular ranch illustrated in the above table, the carrying capacity is 300 deer with 100 bucks and 200 does present. If the fawn survival rate is 30%, the result will be 60 fawns. Therefore, 60 mature deer should be harvested to maintain the total herd at 300 deer.”

This example by Brothers and Ray did not take into account natural deer mortality, which was assumed to be very low. Subsequent CKWRI research has shown annual buck mortality rates can range from 8–25%, depending on rainfall and age of the buck.

Page 133: “Every effort should be made to minimize the harvest of middle-age class bucks with desirable antler characteristics because these bucks will be the eventual trophies.”

No one realized at the time the large number of inferior mature bucks that looked just like desirable middle-age class bucks, at least in antler size. CKWRI research and drive-net and net-gun capture of large numbers of deer brought this fact out to managers. CKWRI and its partners pioneered use of the drive-net (along with Ernie Davis) and net-gun (along with Jimmy Zachry) in south Texas.

Page 133: “If deer numbers are sufficient to justify an annual harvest, the harvest should consist of both males and females.”

Whereas, this statement remains true in some situations, CKWRI research has shown that some south Texas properties should be harvested very conservatively for does, if at all.

Page 167: “Generally, feeding is done prior to and during the hunting season. Rarely is supplemental feeding done after the deer season closes.”

Supplemental feeding has exploded as a deer management tool in south Texas since this statement was written by Brothers and Ray. It is largely a technique developed by private managers and ranchers. However, CKWRI began working on protein feeding of free-ranging deer in the 1970s and continues to research this topic today. 🦌

South Texas Deer Facts

- Grasses make up less than 10% of a deer’s annual diet.
- Gestation period for white-tailed deer is 195 to 205 days.
- A small percentage of white-tailed deer have canine teeth on the upper jaw.
- Does may carry twins sired by different bucks.
- In addition to the normal pedicles, a few bucks grow extra antlers from the front of the skull.
- A few wild deer in south Texas may attain the age of 14 years or more.
- Under good nutrition, female fawns may mature and breed in their first year.
- Deer have been known to eat unusual items like dead fish and quail eggs.

WHAT ARE WE DOING? Huge New Project Begins

By Charles A. DeYoung, Timothy E. Fulbright, and
David G. Hewitt

What is the best deer density for intensive supplemental feeding? What effects do high deer numbers and supplemental feeding have on the native deer forage plants? In response to these and related questions frequently asked by deer managers, CKWRI researchers along with the Faith and Comanche ranches have undertaken an aggressive, long term project.

Six high-fenced enclosures of 200 acres each have been established adjacent to each other on each ranch. On each ranch, there are a pair of enclosures with 10 deer, a pair with 25 deer, and a pair with 40 deer. One of each pair of enclosures will have supplemental feed available while the other will not.

We are studying the responses of vegetation and antler size to deer density and supplemental feed. Also, being studied are feed consumption and deer behavior at feeder sites at differing deer densities, as well as the role of nutrition in white-tailed deer reproduction. The research enclosures are also being used by the Texas Parks and Wildlife Department to test the validity of the browse survey that is being widely used by department biologists. The first phase of the research is funded for 5 years, but a much longer effort is envisioned. 🦌

People News

All CKWRI deer researchers have been honored by their peers in the last few months. David Hewitt was honored as *Outstanding Faculty Researcher* in the College of Agriculture and Human Sciences, TAMUK. At the January 2004



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Drs. Charlie DeYoung (left) and Randy DeYoung with awards they received at the Southeastern Deer Study Group meeting.

national meeting of the Society for Range Management, Timothy Fulbright received the *Outstanding Achievement Award*. At the February 2004 meeting of the Southeastern Deer Study Group, Charles A. DeYoung received the *Deer Management Career Achievement Award*. Also at the meeting, Randy DeYoung was awarded the *Best Student Presentation Award*, sponsored by the Deer Committee, Southeastern Section of The Wildlife Society. Randy has recently completed a Ph.D. at Mississippi State University and has joined the CKWRI team for a 2-year post-doctoral appointment. He will get the CKWRI up and running in the use of DNA analysis for deer and other wildlife species. 🦌



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