



The Bobwhite Post

By *Dr. Fidel Hernandez and
Dr. Lenny Brennan*



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A Fresh New Perspective

By Dr. Fidel Hernandez

Having new team members is always a refreshing experience for any crew. New members bring with them a sense of positive change, new perspectives, and an invigorating enthusiasm. Plus, more often than not, they help lighten up your work load. I am excited to report that Dr. Lenny Brennan, Endowed Chair in Quail Research at the Caesar Kleberg Wildlife Research Institute, will be a regular contributor to this quarterly newsletter.

Lenny will be providing the elbow grease behind our discussion section entitled "On Point...and Counterpoint." This section was designed to discuss research findings on bobwhite management issues that often are controversial, such as fire ants, predators, etc. However, for his premiere writing in this issue, Lenny will not discuss a controversial topic, but rather share with us some thoughts regarding quail research. Lenny's had some time to think about south Texas bobs while acquainting himself with the Lone Star state.

I look forward to working together with Lenny. I'm sure you won't be disappointed with his work.

Quail Biologist: Ph.D., D.V.M., Ed.D., A.I.A., C.P.A.,

By Dr. Fidel Hernandez

During my Ph.D. research, I relied heavily on the cooperation of local landowners for ranch access, and thus developed close working relationships with the local county agent and NRCS district director. As such, from time to time they'd ask me to help out with various wildlife functions that the county was sponsoring. It was during one of these functions that I came across an ingenious way to thicken my resume without any further schooling.

It was the summer of 1997 in Albany, Texas, and I found myself at a wildlife field day for elementary kiddos. The students had just completed 3 days worth of TAAS testing, and the teachers wanted to reward the students with a field day. Rocky Vinson, the local county agent, called me up and asked if I could show the kids how radiotelemetry worked, and I agreed.

I gathered some pen-raised quail, my equipment, and headed to the field day with a presentation dubbed, "Hi-tech Hide-and-go-Seek." The kids really enjoyed the presentation, especially the live birds and "seeking and finding" the hiding students with the telemetry

equipment. Soon after the field day, I received quite a few thank you letters from the grateful students. One in particular, caught my attention. It read, "*Dear Mr. HerPandez, Thank you for your presentation, I really enjoyed it. Before, I didn't know what I wanted to be when I grew up. Now, I know I want to go to college and become like you, a Quail Radiotelemetry Engineer.*" A quail radiotelemetry engineerhmmm.

It has been several years since that third grader conferred my engineering degree, but since then, I have managed to gather quite a few more: an economist, educator, and psychologist. Yes, we quail biologist are all of these. We play the role of economist when discussing the economic impacts of hunting; we become teachers when educating



Photo by Brandi Sparkman

To better understand the characteristics that define good nesting habitat, biologists will need to develop ways to objectively quantify the "habitat architecture" of nesting cover.

Recent Donations

We appreciate your sincere interest in our natural resources, especially for bobwhites. Generous donations have been received from:

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people in quail management; and we become psychologists when pondering why some landowners apply the knowledge they are taught, whereas others do not. Here recently, I've acquired a new degree...that of an architect.

I have become interested in deciphering what constitutes good nesting habitat architecture for bobwhites. This involves answering questions like "Do quail select nest sites based on plant species or plant structure? Are there any structural differences between successful and unsuccessful nests? Does the architecture of the surrounding nesting habitat differ between successful and unsuccessful nests?"

During the 2001 nesting season, we began to collect information that would help to answer some of these questions. Using radiotelemetry to locate bobwhite nests, we collected data on the volume of cover provided by the nesting substrate, the volume of cover of potential nest sites surrounding the actual nest, and the density of potential nest sites surrounding each nest. To calculate the volume of cover for a nest, we envisioned the nesting substrate as a cylinder providing visual obstruction to predators. We took measurements of the average height and width of the nesting substrate, and then plugged these numbers into the mathematical equation for the volume of a cylinder.

We found a total of 62 nests during the 2001 nesting season. The first nest hatched the 12th of May and the last nest hatched on the 25th of October. Average clutch size was 12 eggs, with 82% hatchability. Nest success was lower (37%) compared to previous years (about 70%).

Because our sample size of nests is small and represents only 1 field season, I only will discuss general trends for the volume of cover data. We **cannot** and should not

draw any conclusions from these trends.

Bobwhites nested in a variety of plant species. Everything from little bluestem to old man's beard to tasajillo. The average measurements of the nesting substrate were 10 inches tall and 19 inches wide. The average measurements for potential nest sites surrounding actual nests were about 7" tall and 14" wide. The dimensions (volume of cover) for successful nests translated to 13"x13"x13" as compared to 17"x17"x17" for depredated nests. The density of potential nest sites surrounding actual nests was 1 nest site per 1.5 square meters for successful nests and 1 nest site per 2.3 square meters for depredated nests. In summary, the trends were: (1) actual nest sites had taller and wider nesting substrates than surrounding potential nest sites; (2) nest dimensions were similar between successful and depredated nests; and (3) density of potential nest sites surrounding nests was greater for successful nests compared to depredated nests. It is important to realize these are only general trends; they should not be committed to memory as solid, scientific conclusions.

Our nest-dimension measurements correspond with south Texas research conducted by Val Lehmann. He documented that the average vegetation height for bobwhite nest sites was about 10" with an average width of 15". From a management standpoint, one could speculate that grazing that lowers the stubble

height of grasses below 10" could be detrimental to bobwhite nesting cover. It's important to keep in mind that not only is the height of bunchgrasses important, but also the density.

An interesting trend we observed was that depredated nests had a greater volume of cover than successful nests. However, potential nest site density was greater surrounding successful nests compared to depredated nests. Based on these data trends, one could speculate that nest success is influenced more by the surrounding nesting cover architecture, and less so by the mere structure of the actual nest. Several studies have indicated that as bunchgrass density increases, nest success also increases.

We need to realize that we are measuring habitat from a human perception of what bobwhites need, which can lead to errors. We have found nests located in almost bare ground, when adequate, lush bunchgrasses were available < 5 feet away. Why quail chose to nest there, I don't know. Years of research will help to decipher the implications of these data trends.

Given the complexity of mother nature, it is not difficult to understand why quail biologists have to play the roles of economists, psychologists, and architects. Fortunately, I have realized this right before my annual evaluation. Given my self-conferred degrees, come evaluation time, I think somebody will be up for a raise!



On Point



... and Counterpoint

*By Dr. Lenny Brennan,
Endowed Chair for Quail Research*

South Texas Quail Research Plans

My quail research career began 20 years ago in California when I worked on a research project to develop a mountain quail habitat model. During 1989, I made the leap from California to Mississippi, to do research on bobwhites. I used what I had learned about mountain quail to figure out why bobwhites were declining in Mississippi. From 1993 until this past year, bobwhites in southern Georgia and northern Florida figured prominently in my duties as Research Director at Tall Timbers Research Station.

This past August, I moved to south Texas and joined the faculty at the Caesar Kleberg Wildlife Research Institute. During the past few months, I have been learning about quail in the south Texas landscape, and formulating ideas about quail research projects. As I travel around Texas and talk to people who are passionate about quail, I frequently reflect on my quail experiences in California, Mississippi, Florida, and Georgia. I can't help but ask questions like "What are the similarities between bobwhites in Texas and the other states where I have worked?" "What are the differences?" "Are there any management strategies that work in the southeastern US that can be applied to quail in Texas?" "What have I learned by working on quail in other states that I can apply in Texas?" The purpose of this brief article is to touch on some of these

connections and share some preliminary ideas for research projects that we will develop over the next few years.

Quail Associates Program: Snapshot of South Texas Quail

The Quail Associates Program is designed to provide quail enthusiasts an opportunity to support quail research at the Caesar Kleberg Wildlife Research Institute, and work with us to collect information on quail density, overwinter changes in body weights, as well as sex and age ratios, from more than 50 properties in south Texas. Ranch owners, lease holders, etc. will have an opportunity to see how quail on their property compare to others in south Texas. This will be 1 of the most comprehensive efforts to assess the condition of quail across the south Texas landscape.

Using GIS to Assess Quail Hunting Dynamics

Geographic Information System (GIS) technology has revolutionized how we map and analyze wildlife movements and their use of habitat. With the cooperation of the GIS lab, Jason Hardin is designing a thesis project to assess aspects of quail hunting dynamics by applying satellite trackers on both the quail hunting wagons and the bird dogs while hunting. The data from this study will provide managers with precise information on not only where quail are found, but also how well the ground is covered during a

hunting session, providing a precise measurement of how hunting pressure is distributed across a single pasture or an entire lease.

Understanding the Quail Predator Context

Predation is always a dramatic event. However, wildlife managers need to understand predation as a process, which requires analyzing many individual predation events. New infrared video technology allows us to compile a complete inventory of all predators that attack quail nests on a given area.

Over the past few years, we have learned that the quail predator context varies according to different locations and different years. The basic idea here is that predator management is an expensive activity that might or might not result in a positive quail population response. It is absolutely critical to understand the context of quail predations before effective predator reduction programs can be designed and implemented.

Quail Genetics

New molecular technology provides us tools to ask questions about quail biology that were never before possible. For example, are members of a quail covey brothers and sisters, cousins, aunts and uncles, or all of the above? Does the violent boom-and-bust population dynamics exhibited by quail in south Texas influence their genetic diversity?

These basic biology questions

have unknown management implications. However, like all basic research, such questions are essential if we are to move into new areas of quail management and applications.

A Team Effort

This article is just the tip of the iceberg with respect to quail research in south Texas. I look forward to collaborating with Dr. Fidel Hernandez, Eric Redeker, Jason Hardin, and other graduate students and technicians who work on quail research at the Institute. This will truly be a winning team that will advance our understanding and management of the last great remaining quail habitat in Texas.



Covey Calls

Upcoming symposiums, banquets, and meetings for Quail Enthusiasts

Second Call for Quail Talk: The Fifth National Quail Symposium (Corpus Christi, TX)

By Dr. Fidel Hernandez

Just a reminder that Quail V Symposium is coming soon to Texas. Quail V is a national quail symposium that highlights recent

research on the various quail species.

The Fifth National Quail Symposium will be held in Corpus Christi, Texas on 23-27 of January 2002. The program for Quail V will include 6 technical sessions: survival of wild and pen-raised bobwhites, weather influences on bobwhite populations, quail reproduction and brood-rearing habitat, quail populations dynamics, habitat management, and quail management. There will be an optional King Ranch tour where participants will be able to see first hand quail management south Texas style. For more information on the program you may contact Mr. Steve DeMaso, Upland Game Bird Program Leader for Texas Parks and Wildlife Department at (512) 389-4975.

If you are interested in attending, you can receive registration information by contacting Dr. Terry Blankenship, Welder Wildlife Refuge, at (361) 364-2650. Early registration is \$125 (\$50 student rate) through January 4, 2002. Afterwards, late registration increases to \$175 (\$75 student rate). All symposium participants who preregistered by November 15, 2001 were included in a drawing for a guided nilgai antelope hunt on the King Ranch.

Quail V will have information for everyone: landowners, hunters, biologists, researchers, etc. We hope to see you there!

Until next time--

Fidel Hernandez

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