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Scholarship Update

Tracking South Texas Quail Hunts: Preliminary Research Findings

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The northern bobwhite, one of America's premier gamebirds, has been studied for over a century. There are, however, many unanswered questions regarding the influence of a hunting on the species. The Caesar Kleberg Wildlife Research Institute is currently studying some aspects of hunting on a northern bobwhite (*Colinus virginianus*) population in South Texas. This research is being conducted in partnership with the East Foundation, a nonprofit organization that promotes the advancement of land stewardship through ranching, science, and education.

Our study sites are in Jim Hogg County, on East Foundation lands within the South Texas Sand Sheet. We designated a single contiguous 15,030 acre tract for the hunted area of the study, and we have three tracts totaling 10,813 acres for a non-hunted comparison. Hunting cooperators are implementing a 20 percent harvest rate, prescribed following a November helicopter survey. Additional surveys are repeated monthly (December–March) to evaluate the impacts of the harvest. The hunting methods are standard for South Texas. Hunters follow dogs in vehicles until a covey is pointed, then approached by foot. Hunting is ongoing throughout the hunting season until designated harvest quotas are met.

One objective of the study is to analyze the spatial aspects of quail hunts. To collect the spatial hunting patterns, we are using GPS tracking systems to record locations of hunters and dogs during each hunt, along with a detailed hunting activity log. We are recording the time each brace (e.g., pair of dogs hunting) starts and ends, dogs in each brace, and all pointing activity (e.g., pointing quail or false points). The covey size and number of shots per covey rise are recorded when quail are found.

The 2018–2019 quail hunting season was the first year of our controlled harvest. The prescribed harvest quota was 422 northern bobwhites. To meet this quota, hunting cooperators conducted 59 half-day hunts, spending over 167 hours hunting. In total there were seven different dog handlers, 193 braces of dogs, 78 individual dogs, and over 600,000 GPS locations recorded.

The hunting logs and GPS locations collected from the 2018–2019 hunting season has given us some preliminary insight into several quail hunting variables. Here are some things we have learned so far:

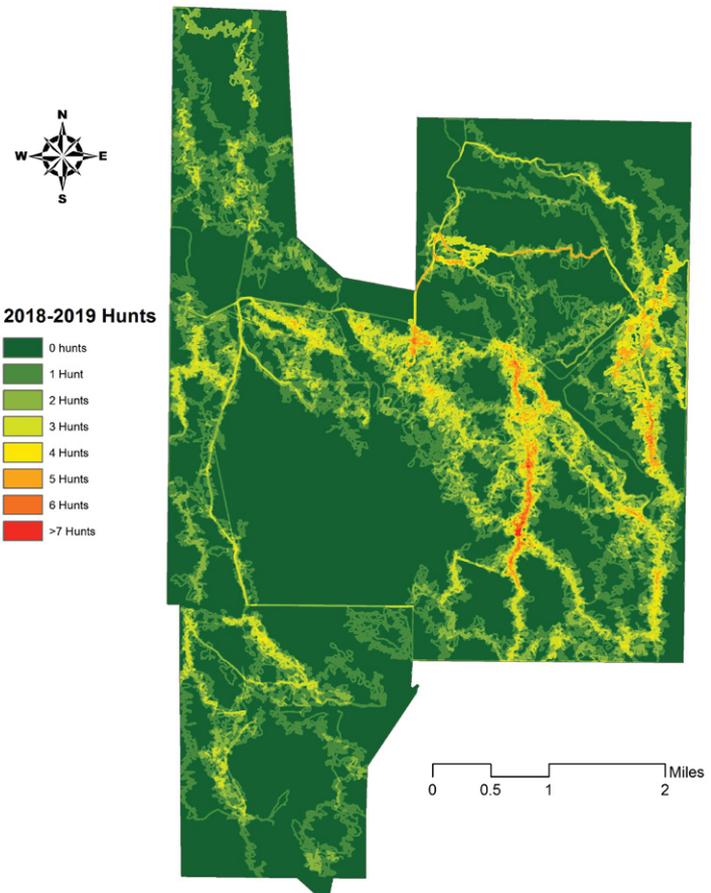


FIGURE 1: Total hunting pressure distribution for 59 quail hunts during 2018-2019 hunting season on Buena Vista Ranch, Jim Hogg County, Texas.

ACREAGE COVERED.

The acreage covered is an important variable for researchers and hunters alike. Adequate spatial distribution of harvest is an important management consideration. Recording where you have hunted and the average coverage rate per hunt allows managers to schedule

FIGURE 2:
Guide
approaching
dog on
point.
Credit: Abe
Woodard



FIGURE 3:
English
pointer on
point wearing
tracking unit.
Credit: Butch
Gerke



and distribute hunting pressure evenly across properties.

We calculated the area covered per hunt using the GPS locations of hunters and dogs. On average, morning hunts covered twice the acreage of evening hunts. However, the average morning hunt lasted 1.5 hours longer than evening hunts. A more accurate evaluation is the rate of coverage per hour. Morning hunts covered the hunting areas at a rate of 67 acres per hour, while the evening hunts covered 61 acres per hour. Here we can see that the actual hunting coverage is similar, despite a slight decrease in the acreage covered in the afternoon.

All hunting activity took place on 6,271 acres, leaving 58% of the total acreage un-hunted throughout the season. However, 19% of the hunted acreage was hunted on multiple occasions throughout the season (see Figure 1).

QUAIL ENCOUNTER RATES

The encounter rate or number of coveys found per hunt is considered to be the true measurement of quality for a quail hunt. Modern sportsmen value this figure over the amount of quail shot per hunt. It has also been found to reflect population density.

During the 59 hunts, hunters had a total of 455 covey encounters. These figures included all coveys pointed by the dogs and those jumped by the vehicle undetected by the dogs. The average covey size was 9.2 quail, estimated by researcher or dog handler when necessary.

Hunting parties averaged 9 coveys per morning, and 4.5 coveys per afternoon. Quail were found in the morning at a rate of 2.8 coveys per hour, and in the evening at 2.5 coveys per hour. Quail encountered while hunting totaled at 4,226 (e.g., total quail during the 455 encounters) which includes an unknown amount of multiple encounters throughout the season.

The average annual encounter rate for many camps in South Texas is around 3 coveys per hour. Our results indicate an average year on the study area. However, we do not allow any baiting, so 2018–2019 may have been a slightly better than an average year. Additional years of encounter rate estimates will help further evaluation of hunting efficiency and population health.

HARVEST RATES

In this study, no limit is placed on the number of birds harvested per covey or on the pursuit of singles following the covey rise, rather, the regulatory method of controlling harvest is our total quota. Therefore, when the total harvest quota for the property is reached, all hunting is stopped.

Shots were fired during 89 percent of the covey encounters. Encounters that did not include gunfire were due to the following: nature of flush (e.g., flushed by dog, beyond gun range), size of covey (e.g., singles and pairs), age structure of covey (e.g., half-grown chicks), hunter experience, and brush densities around encounter locations.

Harvest mortality (e.g., retrieved and crippled) occurred during 67 percent of the covey encounters when shots were fired. Covey encounters that were pursued with a firearm presented a total of 3,941 targets (e.g., individual quail). At the end of the year our hunters were effectively harvesting 1 quail per covey on average (0.83 retrieved & 0.21 crippled) when guns were fired.

Harvest per covey ranged from 0 to 4 quail. Three quail were harvested from individual coveys during 9 percent of the encounters, and four quail during 3 percent of encounters. A common practice in most quail camps is to limit the harvest per covey to one or two quail. Hypothetically, if all of the 2018–2019 encounters were limited to a maximum harvest of two quail per covey, the total annual harvest from last year would be reduced by 15 percent (63 quail). Therefore, a limit to the harvest per covey may be a good consideration depending on harvest management objectives.

SHOOTING PERCENTAGES

The number of shots fired was recorded for 285 of the covey encounters (recorded during 46 of the 59 hunts). When shots were fired, the average number of shots per encounter was 4.7. The hunters retrieved a quail for every 5.6 shots and crippled one quail for every 3.7 retrieved quail.

Various rates have been previously reported that ranged from two to four quail retrieved per shot. Our rates were higher; however, when comparing the experience and age of hunters in other studies, these shooting percentages may be more representative of modern quail hunters.

IN CONCLUSION

The preliminary findings from the 2018–2019 hunting season have shed some light on many key variables. The next phase of the study is a repeated harvest application during the 2019–2020 hunting season. We will continue with a controlled harvest based on November surveys, while monitoring each hunt using the GPS tracking systems and detailed hunting logs. The long-term findings from this research will assist managers to strategically plan hunts spatially and temporally across properties and hunting seasons. ★