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Crucial elements of the Sustainable Bobwhite Harvest Project

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For the second year in a row, I have the pleasure of presenting updates from my research at the South Texas Farm and Ranch Show. The research is part of East Foundation's science programs, which serves our mission of promoting the advancement of land stewardship through ranching, science and education.

A key component of quail management in South Texas is managing harvest. This includes total annual harvest (harvest rate) and the distribution of hunting pressure across seasons (i.e. time) and pastures (i.e. space). The recommended harvest rate in

the region is 20% of the fall population, which was derived from population models and not tested in the field.

For this reason, we developed the Sustainable Bobwhite Harvest Project, beginning with baseline surveys in the fall of 2017 on a 15,000-acre hunted site and an 11,000-acre non-hunted control site.

After seven years, we are still collecting annual population and environmental trends along with various hunting metrics. We have also expanded the project to now include three control sites and four treatment sites, encompassing over 70,000-acres in Jim Hogg and Kenedy Counties.

The following are highlights from the Sustainable Bobwhite Harvest Project, which we will discuss on Oct. 23 at the South Texas Farm and Ranch Show.

• **Evaluation of the 20% Harvest Recommendation** — So far, the average quail densities on our hunted and non-hunted sites are similar in both the fall (0.32 vs. 0.30 bobwhites per acre) and spring (0.18 vs. 0.17 bobwhites per acre). Although we have similar densities across sites, we have found consistent differences in over-winter population declines (~from November to March) between hunted (49%) and nonhunted sites (38%). This factor represents the complex relationships between harvest and natural mortality, combined with the underlying influence of quail density on reproduction rate and population dynamics.

• **Key Hunting Metrics** — We have found that hunters spent 50% of their time in the field from mid-December to late January. This period accounted for 53% of covey encounters and 55% of the harvest. The number of coveys found per hour ranged from 2.0 to 3.1 across sites and years, with an overall average of 2.6 coveys per hour. Hunters also retrieved one quail and crippled 0.3 per covey encounter, even when there were no restrictions on the number of quail harvested per covey or pursuits per covey. The average number of gunshots per quail retrieved was 4.7.

• **Spatial Dynamics of South Texas Quail Hunts** — By tracking each dog and hunting party with GPS technology, we found that dogs would double back and cover areas that had been already hunted 33% of the time, and when two dogs were used, their redundancy rate was 40%. On average, the hunting parties effectively covered ~ 60-acres per hour when hunting with two pointing dogs. Hunted areas had an average brush density of 22% and were within 92 yards of an access road.

Non-hunted areas had an average brush density of 45% and were roughly 180 yards from an access road. According to our model, total hunting pressure decreased by 12% for every 5% increase in brush and 11-yard increase in the distance from access roads.

Managers should focus on the strategic placement of road systems and brush management to optimize the huntable area available, which, in turn, will help distribute hunting pressure spatially.

For more topics and details of the Sustainable Bobwhite Harvest Project, join us at the South Texas Farm and Ranch Show, or visit https://eastfoundation.net/science/research-projects/sustainable-harvest-and-management-of-northern-bobwhites/.