CAESAR KLEBERG
WILDLIFE RESEARCH INSTITUTE
TEXAS A&M UNIVERSITY - KINGSVILLE®



Dear Quail Associates,



Steve Lindley and his son Matthew.

Rain is always welcomed in South Texas. In the past few days, scattered showers and cooler temperatures have started to replace our usual 100° F weather of summer. With my mind on this year's quail crop, I can only hope that these late season rains continue to fall. Weather in South Texas can be unpredictable. The bulk of our rainfall generally occurs during the spring (March–April) and early fall (August–October). On rare occasions, the region is impacted by extreme weather events, such as hurricanes, and sometimes even hailstorms. During November of 2025, a strong weather system moved across parts of South Texas bringing large hail and wind damage to portions of Kleberg and Kenedy counties. How did bobwhites fare?

In this issue, we explore this topic with Dr. Abe Woodard, East Foundation research scientist, and Amanda Montemayor, his graduate student. Through their research, they were able to document how bobwhites and other wildlife were impacted by the November 2025 hailstorm.

As I close, I thank all of our members and property owners who form CKWRI's Quail Associates 2.0 program. Your participation is invaluable and help us better conserve and manage South Texas quail populations. Please remember to send in your roadside surveys if you haven't yet. Also, this year, we're asking Quail Associates to collect 1 quail wing from at least 30 harvested birds (per ranch) so we can gauge productivity at the end of the season. If you can spare more, we'll take them! It was a pleasure visiting with you during our Quail Associates luncheon this past August. I sincerely appreciate your participation. I hope you found the presentations and research results enlightening and helpful.

And a special thank you to Kristyn, Alejandro, and Fidel for leading the charge and continuing to develop the QA 2.0 program.

Wishing you all the best and looking forward to a safe, fun, and great quail season!

Steven J. Lindley
Quail Associates 2.0 Chairman

Program Update

Autumn Storm Systems: Blessing or Curse?

Abe Woodard and Amanda Montemayor

As most quail enthusiasts are aware, rainfall is the driver of bobwhite production in South Texas. Research has shown that rainfall from April–August has a 94% correlation with bobwhite production (Tri et al. 2013). Late summer and early fall precipitation can also trigger reproduction, with cases of bobwhite abundance increasing by 30% following rainfall in September and October (Woodard et al. 2019).

For most managers in South Texas, dry spells and drought conditions become common throughout the late summer. Any 10-day forecast that includes a chance for rainfall is seen as heaven-sent. So, what is the downside? Can the late season storm systems have negative side effects for bobwhites?

The answer is yes! Weather events can have severe impacts on wildlife (Vasseur et al. 2023), especially when those systems include hail (Narwade et al. 2014). Hail-induced mortality is often the result of storms with hail that is 1 inch or greater in diameter, large enough to become fatal to smaller species. It's often assumed that hail has attributed to mass mortalities of bobwhites and other Galliformes, but such events are not well documented (Piehl 1979). Unfortunately, South Texas was exposed to such an event on November 1, 2025. The damage occurred across Kenedy and Kleberg Counties, areas that were boasting of excellent bobwhite numbers and poised for a great hunting season. The storm began around 5:00 PM and continued throughout the night, producing hail that ranged from 1 to 3 inches in diameter (NOAA 2025). Reports began circulating early of high winds and some minor damage, with a few ranches reporting complete defoliation and bird mortalities, which included portions of the East Foundation's Santa Rosa Ranch (**Figure 1**).

Fortunately, the East Foundation Quail Research Program was poised to measure the impacts of the storm and provide clarity for evaluating future events. The total area of the ranch damaged by the hailstorm was 2,120 acres. We assessed the magnitude of the event using two approaches; (1) comparing pre- and post-hailstorm bobwhite estimates from helicopter surveys (October 21 vs November 21), and (2) distance sampling estimates of mortality from walk-line transects and bobwhite carcasses. We compared those results to undamaged areas within the Santa Rosa ranch, serving as reference locations.



Figure 1. Left) Vegetation was heavily defoliated following a severe hailstorm in South Texas during November 2025 and Right) Evidence of a bobwhite mortality post-hailstorm that was observed on our walking transect on the Santa Rosa ranch. (Photo by Abe Woodard).

According to our helicopter surveys, we found an 85% reduction in bobwhite abundance on the hail damaged area, as compared to a 31% reduction on the reference pasture (**Figure 2**). For our mortality estimate, researchers walked over 96 miles of transects (n= 28) and found 35 bobwhite carcasses along with 13 carcasses from 7 other avian species. Despite high variability, we estimated 819 bobwhite mortalities according to the walk-line distance sampling, compared to 244 mortalities within the reference area (**Figure 3**).

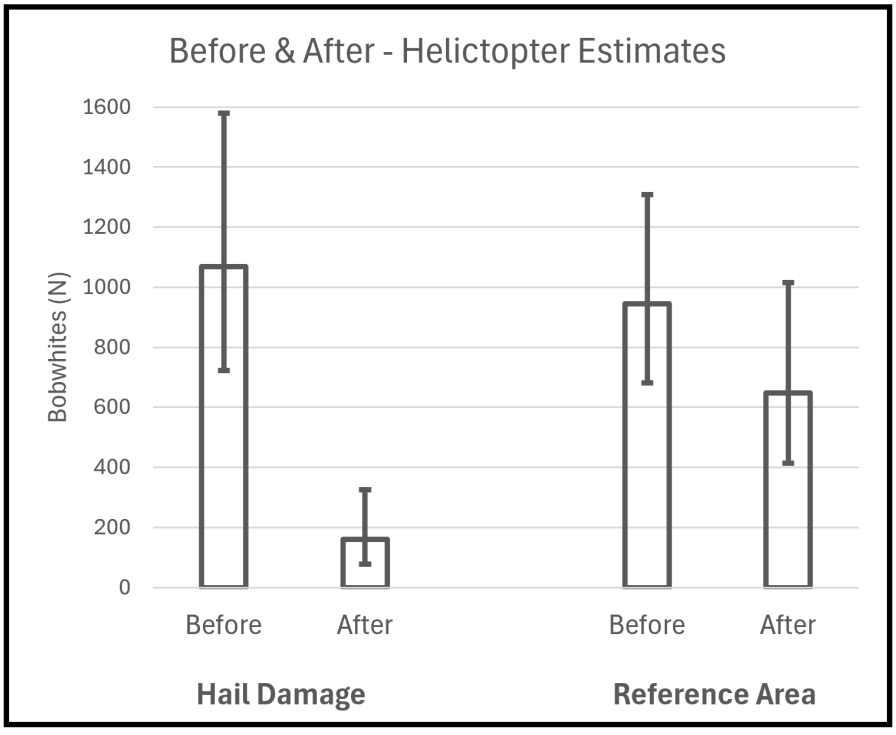


Figure 2. The reduction in bobwhite abundance was greater in our hail damage pasture (85%) than in our reference area (31%). The % reduction was calculated from the difference of abundance before and after the hailstorm. The solid black line shows that associated variability for each abundance estimate.

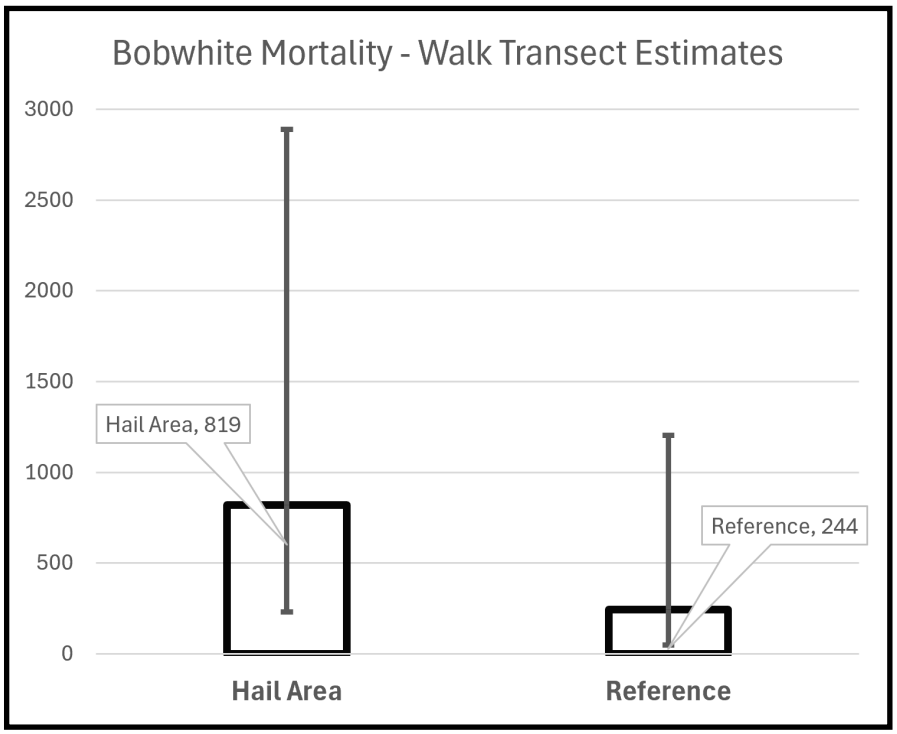


Figure 3. Our walking transects estimated 819 mortalities for our hail-effected area and 244 mortalities for our reference area. The estimates are high with each bar. The solid black line shows the associated variability for each mortality estimate.

As many assumed, the hailstorm had a catastrophic effect on our bobwhite population. The size and density (hail strikes per sq. yard) were severe enough to cause a mass mortality event for bobwhites, and many other bird species. Although preventing natural catastrophes is impossible, having reliable survey data is important for measuring the effects of such extreme weather events, and making adaptive management decisions following mass mortalities, such as reducing harvest, supplemental feeding, or limiting habitat manipulation.

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The People Behind the Research



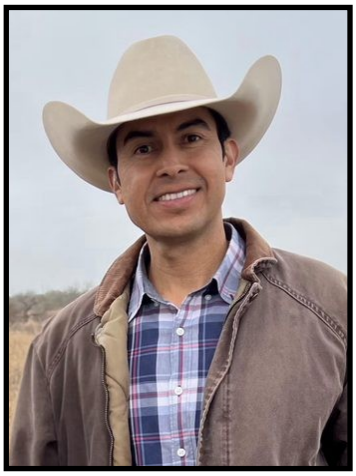
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