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## CKWRI Quail eNews



News from the Richard M. Kleberg, Jr. Center for Quail Research at the Caesar Kleberg Wildlife Research Institute

### Richard M. Kleberg, Jr. Center for Quail Research

### Caesar Kleberg Wildlife Research Institute

### CKWRI Quail eNews - March/April 2014

In this edition, Dr. Brennan discusses how rainfall and habitat are key players in the boom and bust cycle of northern bobwhite populations in South Texas.

#### BOOM AND BUST, COLLAPSE AND RECOVERY

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**These are times that try men's souls – Thomas Paine**

Quail hunters and wildlife biologists generally appreciate and understand that bobwhites undergo boom and bust population dynamics in the semi-arid, sub-tropical rangelands of South Texas. The fact that the ups and downs of bobwhite populations in South Texas are closely related to annual rainfall is also well-documented. However, during at least three of the past four years the "bust" phase of South Texas bobwhite populations has been especially troubling. So troubling, in fact that what we have seen is worse than a bust—it has actually been more of a collapse. Since the summer of 2009 when the most recent drought started, it pretty much seems like the bottom has fallen out from under South Texas bobwhite populations. The last summer with decent rainfall for quail production was 2010, and since then, we have seen further collapse of bobwhite numbers in the region.

It is important for hunters and biologists to realize that the quail collapse we have seen during the past four years is not unique to bobwhite population dynamics in South Texas. Val Lehmann documented that bobwhite populations underwent a very similar dynamic during the six-year period from 1947 to 1952 (Figure 1). Based on monthly surveys in the Canelo Pasture on King Ranch, Lehmann documented

***Providing the science  
behind quail  
conservation and  
management.***

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bobwhite densities that ranged from a high of one bird per two acres in 1947 to nearly zero birds during a severe drought and die-off in 1951 (Figure 1). Lehmann's data in Figure 1 clearly illustrate how bobwhite populations boom, bust, and then even worse, collapse, in South Texas.

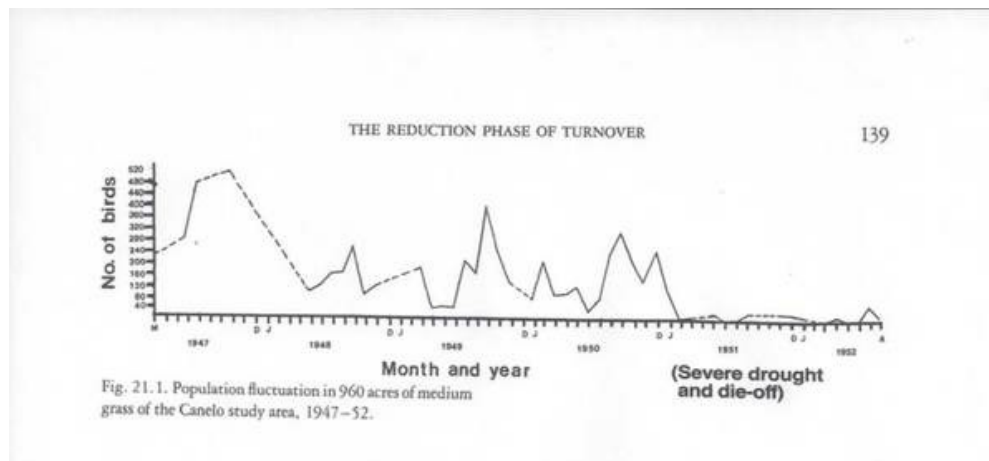


Figure 1. Bobwhite abundance on the Canelo Pasture, King Ranch, 1947-1952. From Val. W. Lehmann, 1984. Bobwhites in the Rio Grande Plain of Texas, Texas A&M University Press.

Fortunately, the drought of the 1950s was not the death knell for bobwhites in South Texas. Since then, bobwhite numbers have rebounded dramatically, and an important social and economic culture of quail hunting has taken root in South Texas. One reason why the modern quail hunting industry has taken root in South Texas is because there were runs of years in the 1970s through the 1990s that had above-average precipitation, and thus above-average production of wild bobwhites for hunting. The long-term collapse of bobwhite numbers throughout the southeastern United States that was caused by habitat loss from changing land uses also caused many, many quail hunters to migrate to South Texas. South Texas quail hunters were willing to undergo the occasional bust year because the boom years produced the best wild quail hunting in the world. At least it was the best in the world until the 2009 drought hit us right between the eyes.

The South Texas bobwhite collapse in 2009 (Figure 2) was eerily similar to the bobwhite collapse in the 1950s (Figure 1). Juvenile-adult ratios from across South Texas show a very similar pattern to Lehmann's counts from the Canelo Pasture five decades earlier. Compare, for example, the up and down patterns in the numbers from Figures 1 and 2. It does not matter that Lehmann's numbers were total birds present, while the 2002 through 2013 data were juvenile:adult ratios because they show exactly the same thing: boom, bust, collapse.

#### CKWRI Quail eNews:

**Winner of the Outstanding Electronic Media Publication Award from the Texas Chapter of The Wildlife Society, February 2011.**



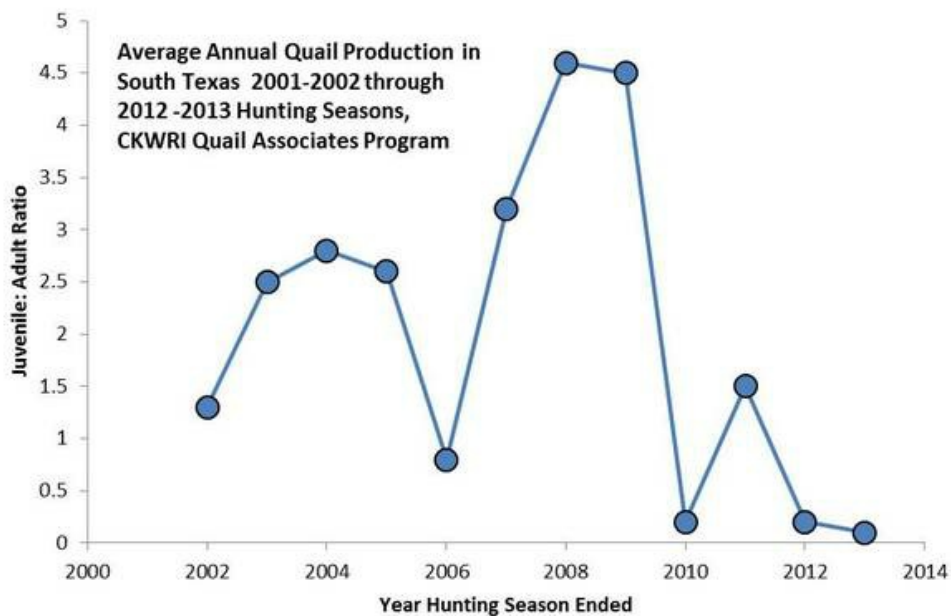


Figure 2. Variation in annual bobwhite production across South Texas 2001-2002 through 2012-2013 hunting seasons. Note the two boom and bust phases followed by the collapse from 2011 to 2013.

The most recent collapse of bobwhite populations in South Texas then begs the question: “Will we see a recovery, and if so, when?” In my opinion, we will certainly see a recovery. Although it is too soon to tell, we may have seen the beginning of a recovery last fall. The late August and early September rains in 2013 resulted in an extremely late bobwhite hatch, as we predicted. Although bobwhites chicks were hatching as late as early-mid October, there have been numerous reports of good bobwhite hunting (seven to ten or more coveys moved per half-day hunt) during January and February 2014. This is the first time in more than three years that there have been more than just isolated reports of good quail hunting in the region. Whether this recent, upward bounce in quail numbers is the beginning of a real recovery, or just a “teaser bump” like the one that happened in 2011 is anyone’s guess.

The formula for a sustained recovery in South Texas bobwhite populations is based on two key factors: rainfall and habitat. We are at the mercy of Mother Nature when it comes to rainfall. Everyone knows this. What people do not appreciate quite as much is how blessed we are in South Texas when it comes to quail habitat. A recent inventory using geo-spatial mapping and extensive ground-truth checking revealed that South Texas supports more than 4,700,000 hectares or about 12,100,000 acres of rangeland habitat that will support wild quail (Figure 3). Although the variability in soil types exerts great influence on how productive these habitats are when it comes to growing wild quail, nearly all of this region will grow quail if it rains. The 2013 summer rains in Webb County attest to this; ranches in that county witnessed historic highs in quail numbers in a part of South Texas that is typically not known for producing quail.

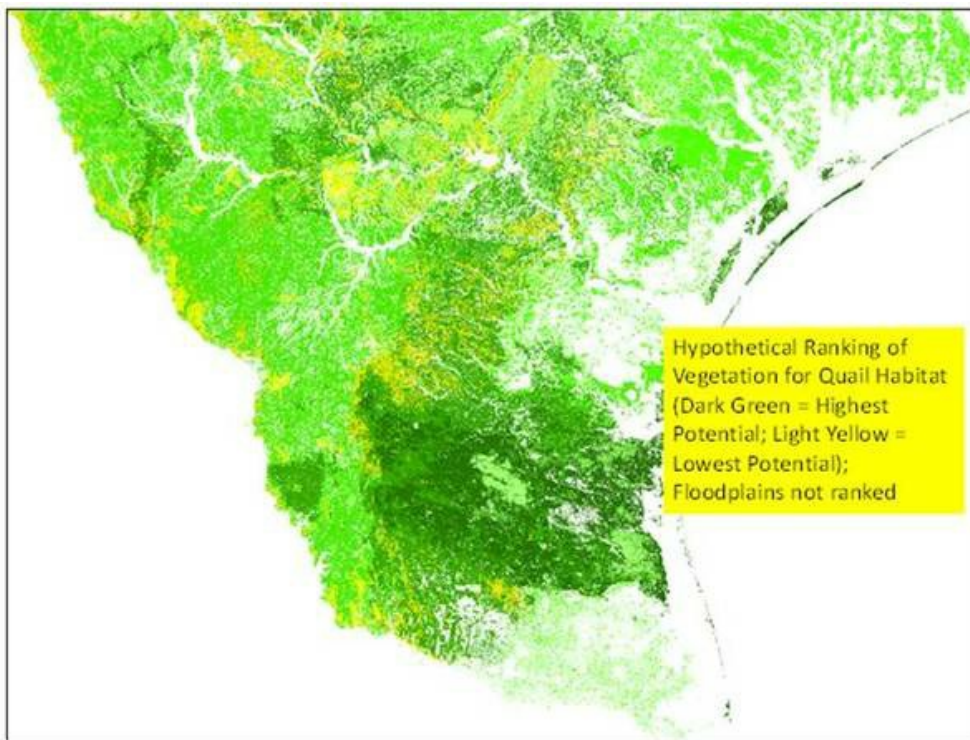


Figure 3. Rankings of quail habitat in South Texas, based on potential for productivity. Dark green areas represent the sand sheet and deep sandy soils, light green represents clay-sand soil shrublands, and yellow represents heavier clay soils. Rankings based on Figure 24.1. Soils and production potential of the Rio Grande Plain for bobwhites in Lehmann (1984) Bobwhites in the Rio Grande Plain of Texas.

The vast areas of quail habitat that are still present in South Texas will be the key to sustaining quail in South Texas. Huge blocks of habitat that do not suffer from fragmentation and isolation allow quail the opportunity to disperse and re-colonize areas where die-offs occurred. The cycle of boom, bust, collapse and recovery of quail populations in South Texas has been happening for millennia. If we conserve the habitat, they will keep happening, and we will have opportunities to hunt quail during the boom and recovery phases of these cycles.

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*The mission of the Richard M. Kleberg, Jr. Center for Quail Research is to develop a scientific basis for the sustainable management and harvest of wild quail populations throughout South Texas and elsewhere.*



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