Remarkable Circumstances

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The past few years have been a set of remarkable circumstances with respect to quail populations in South Texas. From 2009 through most of 2013 we endured one of the worst droughts on record. Then, during late August of 2013, the rains returned and bobwhites started one of the latest nesting seasons on record. I did not think many quail would be produced during a fall nesting season, but I was wrong. By January 2014, there were many reports of people seeing half-grown quail. It takes about eight weeks for a bobwhite to grow to half the size of an adult bird, which means that there were a large number of quail being hatched in mid-November of 2013. Even though Val Lehmann stated that he had documented bobwhite nests during every month of the year, nests initiated after the summer months are typically not very productive. The fall of 2013 was certainly an exception.

The rains continued through the winter and spring months of 2014, and the resulting bobwhite production was remarkable. Because of the late hatch in 2013, there was excellent recruitment into the breeding season of 2014. The relatively rainy summer of 2014 set the stage for post-drought bobwhite population recovery and an excellent 2014-2015 quail hunting season.

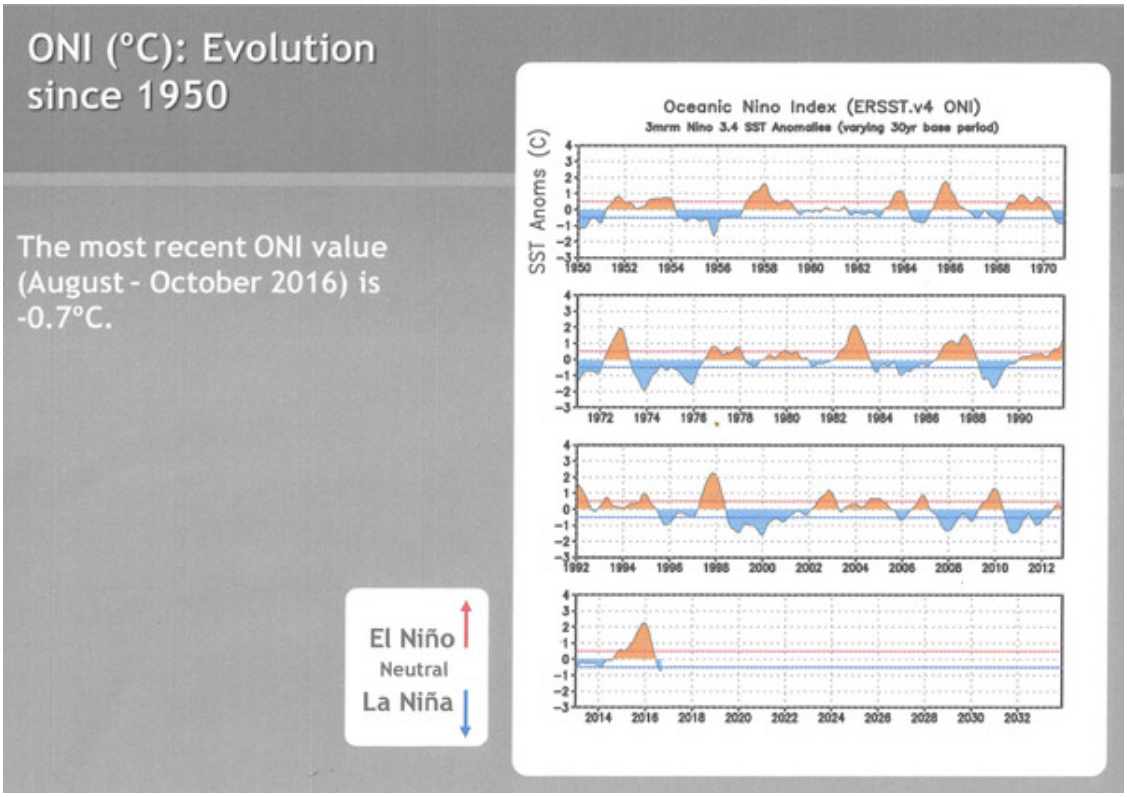
As time marched on to 2015, the precipitation continued, as did the bobwhite population recovery. Another relatively rainy spring and summer set the stage for another excellent quail hunting season in 2015-2016. For the first time in a very long time, we had two consecutive---actually three if you count the late 2013 hatch---rainy nesting seasons. This is exactly what it takes for bobwhite populations to recover after a drought.

During the spring of 2016, things again got off to a good start after a relatively rainy winter and spring. Bobwhites nested during April and were producing chicks again in May and June, for the third year in a row! These were remarkable circumstances, indeed. Our telemetry studies showed that a six-week dry spell from late June until early August put the brakes on nesting and chick production. Fortunately, some mid-August rain

helped avert a disaster, and stem further losses as we moved into the fall.

While the post-drought bobwhite recovery was a welcome development after a set of years with little to no quail production, there were also some developments that gave us pause and forced us to think about what really goes on when multiple years of quail production are well above average. One of the things during the past couple of years that has been a bit curious is the huge variation in juvenile-adult ratios among different pastures and ranches. I wrote about this phenomenon in a 2015 newsletter titled "Strange Ratios" and it is worth revisiting this topic a bit here. Managers are often perplexed when one pasture has a juvenile-adult ratio of 3:1 bobwhites or more, while, during the same hunting season, another pasture only has a ratio of about 1:1 juveniles to adults.

The most likely factor responsible for these strange ratios is density dependence. No population of wild animals can continue to increase year after year after year. At some point, when population density is high, annual production will be relatively low. Paul Errington first observed this with bobwhites in Iowa back in the 1940s. He called this phenomenon "inversity" because when the spring bobwhite population was relatively high, summer production was relatively low, and vice-versa. John Roseberry documented a similar pattern of bobwhite production in southern Illinois during the 1970s and Chris Williams saw a similar pattern in Kansas during the 1990s. The environment, and especially precipitation, in places like Iowa, Illinois and Kansas is much more predictable than South Texas which is typically whip-sawed between droughts and deluges. Thus, in South Texas, where bobwhite populations are almost always rising and falling between booms and busts, there are not many years when density dependence comes into play because populations rarely remain at high densities (a bird or more per two acres or so) for multiple years. The fact that we have had relatively high bobwhite densities for three years in a row in South Texas is highly unusual. The seemingly strange age ratios people have been seeing are most likely a phenomenon of three years of relatively high bobwhite abundance. Remarkable circumstances, indeed.



Graph of El Nino (orange) and La Nina (blue) conditions in the Pacific Ocean from 1950 to present. Note that the years of El Nino conditions generally correspond to excellent quail production in South Texas, especially when El Nino persists for more than one year. Bust years for quail in South Texas generally correspond to La Nina conditions.

Unfortunately, the El Nino conditions in the Pacific Ocean that triggered the rains that triggered the recent bobwhite boom are no longer in place. The National Oceanic and Atmospheric Administration (NOAA) states that La Nina conditions are now present and will be likely to persist into 2017.

For more details, please see: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf