



[Click to view this email in a browser](#)



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 - April/May 2013

Greetings from South Texas!

In this edition, Dr. Leonard Brennan discusses the dynamics of quail populations.

It's been a few months since our last eNews, and there has been a covey shuffle of sorts at Caesar Kleberg Wildlife Research Institute. Damon Williford completed his defense and degree requirements for a PhD in Wildlife Sciences in August. At the same time Dr. Brennan welcomed two new students, Erika Pitzer Dodd and Ryan Piltz, working on summer and overwinter survival of bobwhite populations, respectively. Richie Sinclair finished his undergraduate requirements and started as a graduate student under Dr. Fidel Hernández. This spring, we also welcomed Holley Kline, working on scaled quail under Dr. Fulbright. In June we will be joined by Kelsey Bedford, studying helminth parasites in scaled quail with Dr. Fedynich, and Monica Burchette and Matthew Wojda, working on habitat restoration for bobwhite, under Drs. Fulbright, Hernández, and Wester.

HOW BOBWHITE POPULATIONS WORK

PART I

Leonard A. Brennan

Professor and C.C. Winn Endowed Chair

Richard M. Kleberg, Jr. Center for Quail Research

The basic elements of reproduction and survival are fundamental to understanding the life history of any species. Bobwhites are no exception to this rule. As one of the most well-studied wild birds in the world, we know a great deal about bobwhite reproduction and survival. Therefore, I will use this

Providing the science behind quail conservation and management.

April/May 2013

Visit Our Website

<http://ckwri.tamuk.edu/research-programs/richard-m-kleberg-jr-center-for-quail-research>

Please Join our Mailing List!

* required

Email Address: *

Join Now

[Email Marketing](#) by VerticalResponse

Contact Us

[Leonard A. Brennan](#)
C.C. "Charlie" Winn Endowed Chair for Quail Research

Caesar Kleberg Wildlife Research Institute
Texas A&M University-Kingsville
700 University Blvd., MSC 218
Kingsville, Texas 78363
Phone: (361) 593-5551

leonard.brennan@tamuk.edu

great deal about bobwhite reproduction and survival. Therefore, I will use this brief essay to explore a key aspect of how bobwhite populations work by taking you on a trip down the road of annual bobwhite production in South Texas. For the purpose of this exercise, we will presume that coveys break up in mid to late March and that pairs have formed by about 1 April.

Covey break-up. Bobwhites spend the winter in coveys with basically one goal: survive until they can breed in the spring. As winter turns to spring and day length increases, so do reproductive hormones, which causes males and females to form pairs and thus dissolve the covey structure.

Building the nest. Walter Rosene observed that bobwhite pairs select the site for the nest and build it together. Nest construction typically takes about 5 days. We are now at 5 April.

Laying the eggs. Bobwhites typically lay just under one egg per day. Thus, it takes about 18 days for a hen to lay a clutch of about 12-15 eggs. We are now at 23 April.

Incubating the eggs. Incubation of bobwhite eggs takes 23 days, and begins after the last egg of a clutch is laid. By the time incubation is complete, it is 16 May.



Fig. 1: Bobwhite on a nest. Eric Grahmann

Hatching the eggs. One of the miracles of the bird world is that most clutches of eggs hatch simultaneously (with bobwhites, typically within one day), even though they were laid over a period of more than 2 weeks. The chicks weigh about 6 grams, and are walking around within an hour or so after hatching. This is the “bumble bee” stage people frequently refer to when they see a brood of just-hatched quail.

Brooding and feeding the chicks. Bobwhite chicks grow at a rate of about half a gram per day for their first ten days of life. Feather growth begins almost immediately and it takes two weeks for the chicks to be able to fly. We are now at 30 May.

Growing the chicks. As chicks mature, growth rates increase to 1.5 – 1.75 grams per day through day 55 after hatching, and then 1.75 – 2.0 grams per day through day 100 after hatching. It takes 15 weeks for a bobwhite chick to reach 90% of adult size. We are now at 30 August.

[Fidel Hernández](#)
Alfred C. Glassell, Jr.
Professor for Quail Research

Caesar Kleberg Wildlife Research
Institute
Texas A&M University-Kingsville
700 University Blvd., MSC 218
Kingsville, Texas 78363
Phone: (361) 593-3926

fidel.hernandez@tamuk.edu

CKWRI Quail eNews:

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



Mixing things up. As summer gives way to fall, so-called “family” groups of bobwhites encounter one another and often decide to stay together. By this time, many young bobwhites have perished from predators, lack of food, excess heat and various other factors. Thus, by this time a brood may consist of the hen and only 4 or 5 juvenile birds. The optimal size of a bobwhite covey is thought to be about 11–12 birds. Thus, it makes sense for small groups of broods and adults to coalesce into a larger group of about 12 birds, plus or minus.

Coveys again. Under ideal conditions, bobwhites should be back in coveys by early-mid October. It is important to remember, however, that coveys are not static social units where the same birds stay together all winter. Rather, bobwhite coveys are dynamic social units where individual birds are frequently joining and-leaving. See, for example, Appendix E in *Bobwhites in the Rio Grande Plain of Texas* by Val Lehmann.

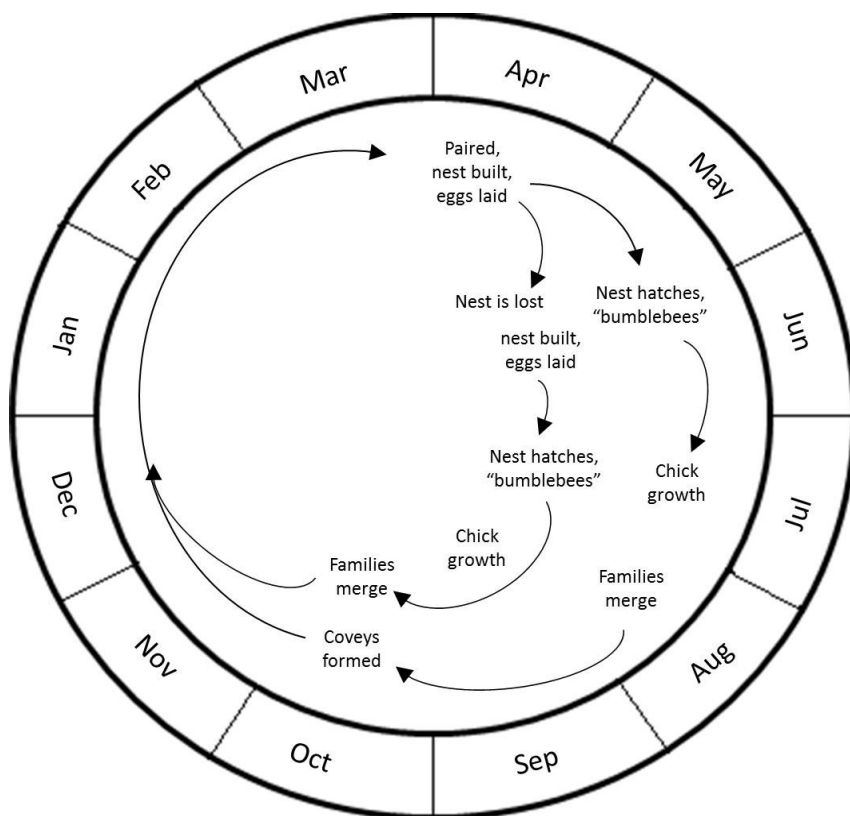


Fig. 2: A year for a bobwhite. Northern bobwhite nest as early as April, resulting in offspring that are fully grown by August. However, if a hen's nest is lost, she must rebuild, renest, and raise young all over again, resulting in offspring that are not fully grown until mid-October.

Limiting factors. It is important to remember that the reproductive scenario outlined above, while grounded in biological reality, neglects to mention the myriad factors that are constantly operating to disrupt it. For example, in South Texas, about half of all nests are lost to predation. This means that after laying a full clutch of eggs, the female must start over (assuming there is sufficient time left on the calendar). Thus, if a nest is lost in mid-May, and the hen renests, it will take until mid-October for that brood to be fully grown. It

is important to note here that many of these late broods are often mistakenly considered “second” broods, when actually they are not second broods at all!

Another critical factor along the road of bobwhite reproduction is that bobwhite pairs typically take a “wait and see” approach to their nesting. For example, during at least 7 of the past 10 years in South Texas, we have had exceptionally dry springs where bobwhites did not even attempt to start nesting until a tropical storm rolled through the region in late June or early July. Such a scenario happened in 2006 and 2008. Because the reproductive biology of bobwhites is hard-wired—it is impossible for them to shorten the time it takes to lay eggs, incubate them, and grow the chicks—this means that under these circumstances, the first groups of fully-grown juveniles will appear in late October or early November *at the earliest*. Hens that lose nests to predators and attempt to renest will, if they are lucky, have fully grown juvenile offspring by early to mid December.

Things can get even more complicated. In 2009, we entered the bobwhite breeding season with excellent environmental conditions in May, only to be devastated by record drought and heat through June, July and August. By late August 2009, more than 90 percent of the bobwhite hens in our study population in Brooks County were dead and did not produce any chicks. There was virtually no production in 2009. In 2010, we saw an impressive rebound because we experienced above-average winter, spring and summer rains, and bobwhites rallied in an impressive manner. Unfortunately, the 2011 and 2012 summers again saw record drought and excessive heat, and little or no bobwhite production. Scattered July thunderstorms in 2012 produced isolated pockets of bobwhite production in South Texas, but these were few and far between. What lies ahead in 2013? *“April and May will be wetter than normal, with temperatures below normal in the north and above normal in the south [Texas]. Summer will be cooler and a bit rainier than normal...”* <http://www.almanac.com/weather/longrange/region/us/11> We certainly hope this is the case!

Further reading:

Lehmann, V. 1984. Bobwhites in the Rio Grande Plains of Texas. Texas A&M University Press, College Station.

Rosene, W. 1969. The Bobwhite Quail: Its Life and Management. Rutgers University Press, Brunswick, New Jersey.

Miss an eBlast?

Archived CKWRI Quail eNews Issues are available [here](#).

[Forward this message to a friend](#)

[Visit Our Website](#)

[Gift Giving Opportunities](#)

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.



[Click to view this email in a browser](#)

If you no longer wish to receive these emails, please reply to this message with "Unsubscribe" in the subject line or simply click on the following link: [Unsubscribe](#)

Texas A&M University-Kingsville
Caesar Kleberg Wildlife Research Institute, Texas
MSC 218, 700 University Blvd.
Kingsville, Texas 78363
US

[Read](#) the VerticalResponse marketing policy.

