

QUAIL NEWS

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The newsletter of game bird research and management from the Bollenbach Chair in Wildlife Ecology, Oklahoma State University.

RHYTHMS IN TEXAS QUAIL POPULATIONS

Analyses of long-term (1978–2002; 25 years) population data collected by the Texas Parks and Wildlife Department suggest bobwhite populations in vast reaches of Texas experience population cycles with a 5–6-year period between population lows or highs.

This population behavior is technically called *cycling*. Cycles imply that peaks or troughs in abundance come at more or less regular intervals.

Fluctuations, on the other hand, imply irregular (not predictable) peaks or troughs in abundance.

Wildlife cycles have been known for several hundred years. According to reports, in the Sixteenth Century “men of great probity” observed Norwegian lemmings falling from the sky in great numbers on a 4-year cycle.

In North America, a 10-year cycle of ruffed grouse, snowshoe hares and predators has long been recognized in the boreal forest of interior Canada.

Likewise, an 8-year cycle for bobwhites in Illinois has been convincingly established by John L. Roseberry and Willard Klimstra, Southern Illinois University.

But, heretofore, the possibility of cycles in southern latitude quail populations has not been assessed.

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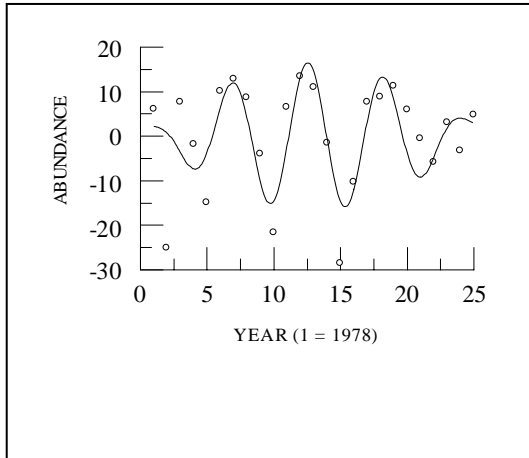
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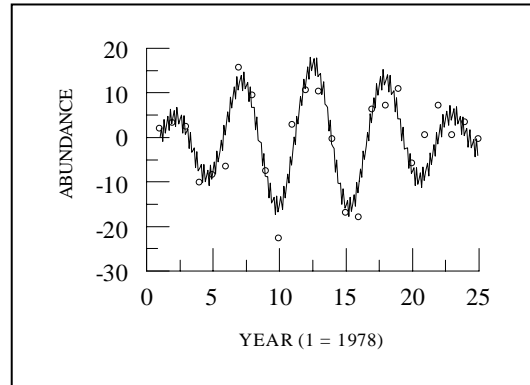
Bobwhite population cycles in the South Texas Plains, 1978–2002.

(Permit a brief excursion up Wheeler Branch, then we'll get back to the Paluxy. How do we search for cycles? Like the man said about carving decoys, you get a block of wood and cut away everything that doesn't look like a duck. In searching for cycles, you get a block of population data and cut away everything that might not be cycles. Then you apply a technique owing to Joseph Fourier (1768–1830), a French mathematician and trouble-maker who accompanied Napoleon's army into Egypt.)

The analysis indicated bobwhite populations were cyclic in the Rolling Plains, Edwards Plateau, and South Texas Plains during 1978–2002. These 3 regions total about 68 million acres.

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The period of the cycles (time from 1 peak to the next) was about 5 years. Moreover, the cycles were synchronous in this vast region. Synchrony implies peaks and troughs in abundance occurred in the same year among regions.



Bobwhite population cycles in the Rolling Plains of north Texas, 1978–2002.

Grey-bearded hunters in this readership will recall good-to-boom bobwhite populations in 1982, 1987, 1992, 1997, and 2003.

Why do population cycles occur? A good guess at this time is because of associated wet-dry cycles. The Palmer Index of drought severity showed a 5-year cycle during the period of record (1978–2002). Bobwhite and Palmer cycles were roughly synchronous over the Rolling Plains, Edwards Plateau, and South Texas Plains.

The apparent presence of bobwhite cycles during 1978–2002 does not prove that their populations are truly cyclic. The weather cycle that seemed to drive the quail cycle might have occurred at 5-year intervals by chance. Another 25

years of data will be needed for further evaluation of this population behavior.

If the cycles hold into the future, look for good hunting in 2008, 2013, and 2018, and 2023, plus or minus a year or so.

Markus Peterson, Texas A&M University, Steve DeMaso, Texas Parks and Wildlife Department, and Jeff Lusk, Oklahoma State University, have collaborated in this research.

USABLE SPACE: A SIMPLE, EFFECTIVE MANAGEMENT PRINCIPLE

Suppose a house will hold 10 people. We can take this house and add cabinets and cornices, caulk the windows and weather strip the doors, paint the trim to match the bricks, fertilize the lawn and plant tulips in the flowerbeds, and it will still hold 10 people. If we want to accommodate more people, we are going to have to add rooms or build another house.

By building another house, we are creating more usable space.

The same type of thinking works as a philosophy of managing cover for bobwhites. In a black-and-white sense, there are 2 types of quail areas: those that have them and those that don't. Areas that have them don't need management. Embellishing such areas with cornices and cabinets (e.g., edge, habitat diversity, disced strips, food

plots) does not increase space in the quail house.

On the other hand, building quail houses where none exist stands a good chance of increasing the average quail population on a management area. Indeed, in the history of management research, about the only practices that have resulted in increased abundance are practices that increased the amount of suitable permanent cover (usable space).

It may be surprising how much space is not usable on a specific area. OSU researchers have developed a method of collapsing available space to usable space with radio telemetry data.

On a ranch in Texas and in a managed forest in Arkansas, usable space represented 25–30% of available space (65–70% of these areas was not usable). These percentages imply it would be possible to have 3–4 times as many quail on each area by managing for usable space.

The Arkansas area provides a good example of how to manage for usable space. The mature forest must first be thinned. Then thinned plots need to be burned on a 3-year rotation to maintain usability (set back the rolling-thunder invasion of woody sprouts). To the extent that an entire area of concern is managed under this regimen, usable space—and bobwhite populations—will be maximized.

To the extent that thinned and burned areas are embellished with the cornices and cabinets of habitat management, quail abundance probably will not change.

Write for a free copy of *Bobwhites on Oklahoma Farms and Ranches: Management Options for Landowners*. This pamphlet lists techniques of managing for usable space in different types of countryside. (Send request to Department of Forestry, 008C Ag Hall, Oklahoma State University, Stillwater, OK 74078.)

BOBWHITE HARVEST IS ADDITIVE IN KANSAS

Recent research in Kansas indicated bobwhite harvest mortality was fully additive to natural mortality during the fall-to-spring period.

Chris Williams and associates worked 12 square-mile areas in Kansas. On half of them, they took off 60% of the bobwhites in each covey. The other six areas served as experimental controls for the effects of harvest on populations and covey behavior.

“Estimated winter survival was 47.9% on the unharvested areas and 20.9% on the harvested areas.” Put differently, about 50% of the birds died on the experimental controls versus about 80% in the harvested areas.

The researchers noted that harvest did not affect average covey size because birds from smaller, fractured coveys coalesced with those from other small coveys. Thus, the number of birds in coveys gave no information on losses the population experienced.

For further information, contact Chris Williams, Department of Wildlife

Ecology, University of Wisconsin, 226 Russell Labs, 1630 Linden Drive, Madison, WI 53706. As for a reprint of *Winter Survival and Additive Harvest in Northern Bobwhite Coveys in Kansas*.

~~~~~ *Editorial: were the good ol' days really that good?*

When I first arrived in Oklahoma back in 1997, somebody sent me a news clipping about bobwhite hunting in the good ol' days—before the Dust Bowl here. Now I am by nature a skeptic. What I read implied that the hunters probably couldn't have shot and gathered birds at the rate claimed unless they were ground-sluicing and riding rocket bikes between covey flushes.

Here is another doubtful claim:

“In Oklahoma, an old market shooter told Captain Charles Askins of taking 110 dozen birds off one quarter section, in 1904, in the Indian Nation.”

A quarter section is 160 acres and 110 dozen equals 1,320 bobwhites. This figures out to a known harvest of 8.25 birds/acre! I don't buy it.

Source of the quote? Aldo Leopold (*Game Management*, Charles Scribner's Sons, 1933:59).

Leopold believed that bobwhites reach a “saturation density” of about 1/acre. He reported second-hand information of 2 birds/acre in South Texas and 7/acre in Mississippi.

I would tend not to think that a day or two of hunting would be damaging, given that harvest has been reasonable up to this point. But if harvest has not been reasonable up to this point, the damage already is done.

I can only say this with some confidence: the energetic consequences of hunting per se shouldn't be a cause of worry. Those consequences will add trivially to the energy burden of bobwhites living at cold temperatures.

(I checked Walter Rosene's book, *The Bobwhite Quail: Its Life and Management*, Rutgers University Press, 1969. On page 156 he discusses the possibility of fine snow accumulating and melting under the feathers of bobwhites in Iowa. I suspect it is extreme cold per se, not the nature of snow or melting ice, that leads to problems for bobwhites.)

*I am an avid hunter in South Texas. This year I have seen a ton of quail and am wondering how I can learn to keep them around. Can you please point me into a direction of what I can do to keep them around and let me know how many birds we should kill.... Some believe we can't kill too many and that 80% of them would die anyway.—***Marshall McSpadden.**

The current state of knowledge is that bobwhite populations in semiarid environments are going up and down, despite our best management intentions and practices. Indeed, bobwhites in South Texas may go up and down in cycles (see opening article). So far as we know, management can only raise the lows and bring them back a little faster.

A primary issue in much of South Texas is herbaceous ground cover (grasses, weeds). It is important to keep this cover at least as high as the top of a Wellington boot during good and bad times alike.

The notion that "80% of them are going to die anyway" is one part fact and two parts folklore. In South Texas, a more factual statement is "70% of them are going to die anyway." Bobwhites in southern climes survive better but reproduce worse in comparison with birds from northern climes (where the "80% of them" hokum arose).

One way to view harvest is on a take-per-acre basis. The take includes birds put in the bag plus those downed and lost. An extremely conservative take is 1 bird/10 acres. Take of a bird/5–6 acres probably is reasonable during average years. Given high populations (boom years), you probably don't need to worry about over harvest.

*If we kill all the quail we find in a remaining covey, what impact does it have on our quail crop for next year?—***Milton Menking.**

Though a widely held belief, the notion that shooting coveys down below some minimum number (usually 6 or 8) is damaging does not hold up to scientific scrutiny. Bobwhites in smaller coveys will join birds in other smaller coveys to maintain an optimal covey size of about 11 birds (see earlier article on harvest in Kansas). You really can't tell too much about what's happening to the population based on covey size.

For example, we did some research on the Randado Ranch near Hebbbronville, Texas, back in the Eighties. From fall to spring, the population suffered about 50% loss, which is fairly normal. However, covey sized averaged about 11 birds in fall and about 10 birds in spring. Despite substantial population loss, covey size remained about the same because small coveys coalesced.

This may be a 1st for you. My hearing has gotten progressively worse over the years. I now have a new set of hearing aids which can be programmed to enhance different frequencies. Please tell me the frequency range of the different quail sounds.—Verlin “Doc” Koper.

Here is some information from *The Ontogeny of Vocalizations in the Bobwhite Quail*, a thesis done at the University of Nebraska in 1971:

- Covey (separation) call (“hoy”): 1–4 KHz.
- Contact calls (“took,” “pitoo”): 2–3 KHz.
- Food-finding call (“ciew”): 2–8 KHz.
- Alarm call (“toil-ick-ick”): 2–8 KHz.

KHz (kilohertz) gives the number of cycles/second in thousands.

BITS AND PIECES.....

- Job-related mortality of wildlife biologists, 1937–2000: “Aviation accidents, drowning, car and truck accidents, and murder were the most common causes of death” (*Wildlife Society Bulletin*, 2003). Three of the

four murders were biologists on law-enforcement duty. The fourth occurred when a biologist walked in on a robbery in progress at a convenience store.

- ***On Bobwhites*** by Fred S. Guthery (Texas A&M University Press, 2000) is available from the Department of Forestry, 008C Ag Hall, Stillwater, OK 74078 for \$25, including shipping and handling.
- ***The Technology of Bobwhite Management—The Theory Behind the Practice*** by Fred S. Guthery (Iowa State University Press, 2002) is available from the Department of Forestry for \$60.
- ***Bobwhites on Oklahoma Farms and Ranches: Management Options for Landowners*** by Fred S. Guthery, Ronald E. Masters, and Michael D. Porter is available free from the Department of Forestry.
- ***A Field Guide to Oklahoma Plants*** by Ronald J. Tyrl, Terrence G. Bidwell, and Ron Masters is now available. The book (515pp.) will be useful for hunters and ranchers as far west as the Texas Panhandle. It contains hundreds of line drawings and range maps. Contact Cindy Neal (405/744-6421) to order a copy (\$25 + \$5 shipping and handling—a real bargain).

Support quail research. Send a tax-deductible contribution made payable to “OSU Foundation/Game Bird Research Fund” in care of Fred S. Guthery, Department of Forestry, 008C Ag Hall, Stillwater, OK 74078. Contributors receive *Quail News* and *Quail Flash*.