

# QUAIL NEWS

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

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## THE STRANGE WINTER OF '05-'06

The wife and I cranked up a fire in the insert for a few days in early December. Thereafter, we sat on the deck in shirtsleeves and watched wildfires raging to the north. What a strange winter it has been.

The fall-winter drought gripping most of Oklahoma and a lot of north Texas is one of the top five most severe since weather records began. In some regions of Oklahoma, it *is* the worst.

The news reports that hundreds of thousands of acres have burned in Oklahoma and Texas.

The question germane to quail hunters is what the strange winter portends for bobwhite populations next year.

Hand me that crystal ball, Laverne.

The balmy temperatures we have experienced since early September would be expected to enhance winter survival. The great majority—well over 95%—of the energy that bobwhites burn on a winter day goes to maintaining body temperature at or near 108 F. The warmer the weather, the less energy they have to burn and the lower quantity of food they have to eat. So other conditions being equal, we would expect fairly good fall–winter survival. This would imply fairly good breeding populations, given strong fall populations.

The lack of rain, though, might bode ill for the breeders. In my recent outings, I

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have seen few sprouting greens. This includes excursions to the Sutter and Selman ranches in the vicinity of Woodward, OK. Despite the lack of greens, the bobwhite populations were strong (if easily spooked) on both ranches.

Years ago when I did research on the Pitchfork Ranch out of Texas Tech University, good harbingers of strong production were raucous stands of peppergrass and bladder pod about this time of year or a little later. Perhaps these winter annuals somehow gave a boost to the early breeding effort. They wouldn't affect late-season breeding because they would be shriveled and dry. If my anecdotal experience is worth anything, the lack of winter greens is problematic.

Effects of the wildfires likely will range from neutral to positive. Some of the burns took out country that didn't have good habitat to begin with because there was little or no woody cover. Bobwhite density in these areas will hold steady at zero.

On the other hand, some wildfires moved through cross timbers forest (blackjack and post oak) choked with eastern red cedar. This type of reclamation burn would be a prescription for improving bobwhite habitat. These sites will grow sumac and oak sprouts for a few years and provide excellent habitat during that time. However, if not

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managed with fire, they will return to jungles unsuitable for bobwhites.

## BREAKTHROUGH IN HABITAT ANALYSIS AND MANAGEMENT

The purpose of studying bobwhites and other quail is to learn what they do and how they adjust to the good and the bad that nature offers up. This knowledge may, in turn, be applied in management to increase and/or stabilize populations.

One type of study wildlife biologists have done with several species is use-availability analysis. The purpose of such studies is to get an idea of cover types that receive low, neutral or high use relative to the availability of the type.

If quail exhibit neutral use of cover types, their relative occurrence in types would be proportional to the area of the type. For example, if mixed brush, sandsage and tall grass occupied 40, 40, and 20% of an area, we would expect quail to spend 40% of their time in mixed brush, 40% in sandsage and 20% in tall grass under neutral use. The birds would be wandering about like particles in Brownian motion. There are theoretical reasons to suspect neutral use denotes an *area* with perfect composition and arrangement of cover types.

We often say "habitat" when we mean "area." "This is good habitat" often means "this is a good area."

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If quail do not exhibit neutral use of the cover types on an area, then we say they use some cover types less than expected by chance and others more than expected by chance (chance being what a bobwhite in Brownian motion would use).

Recent theoretical developments have allowed researchers to derive additional information from use-availability data. One development is a method of estimating usable space, or, approximately, the amount of functionally perfect habitat on an area.

In 2 usable space analyses, we found about a quarter of each area was usable space. This finding implies the average population on the areas could be tripled if the entire area was converted to usable space through habitat management.

The second development is a method for determining how much of a cover type to remove or add to achieve usable space throughout an area. Essentially, the development allows prescriptions for cover management, if use-availability data are available.

Like all new theoretical developments, application will lag behind capability. Application entails some form of use-availability data, such as that obtained with telemetry (use) and Geographic Information Systems (availability). Nonetheless, the breakthroughs take cover management deeper into the realm of science and further out of the realm of art. It is now possible to develop logical,

data-based prescriptions for habitat management on specific areas.

For further information, contact Fred S. Guthery, Department of Forestry, 8C Ag Hall, Oklahoma State University, Stillwater, OK 74078. Ask for a reprint of *Quantifying Usable Space for Wildlife with Use-availability Data*.



### *Editorial: Quail Forever saddles up*

On 1 February 2006, I had the pleasure of joining Mark Herwig, editor of *Pheasants Forever* and *Quail Forever* magazines, on a hunt on the famous Sutter Ranch west of Fargo, OK. You have never seen *Quail Forever* magazine because the first issue is yet to appear. That's because Quail Forever is a new conservation organization birthed by the long-established *Pheasants Forever*.

"Quail Forever, a non-profit organization dedicated to quail conservation and education, was started in the summer of 2005 by its parent organization, Pheasants Forever (PF). Quail Forever will build on PF's track record of successful local chapter development, localized habitat initiatives, and national public policy leadership and advocacy. Plans for the new organization include recruitment of additional wildlife biologists and a phased chapter development plan," according to the QF website (<http://www.quailforever.org/>).

Like other sportsmen's organizations, QF raises funds through banquets with auctions and drawings. Net proceeds return entirely to local chapters.

Pheasants Forever has developed more than 2,000,000 acres of habitat for these birds. Let us hope QF can match this record in the near future.

In viewing the QF literature and visiting with some of the principals, I see QF as a conservation organization with its feet solidly on the ground. The organization works on policy development at the national and state level, education and habitat development.

Visit the QF website (address given above) to learn more about the organization and join if that is your desire.

The hunt on the Sutter Ranch, graciously hosted by Ken and Karen Merrill, was successful, despite abominable scenting conditions. Two gunners, Herwig and James Deitsch, chairman of the Oklahoma City Chapter of QF, brought 18 birds to bag (2 shy of the Oklahoma limit) with time out for beef stew and jalapeño cornbread for lunch.

**Fred S. Guthery**  
**Bollenbach Chair in Wildlife Ecology**  
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## COGNITIVE PROCESSES OF QUAIL HUNTERS

Perhaps you have received a questionnaire from a state game department that asks how many days you hunted and how many birds you bagged in the last hunting season. The results of such surveys are used to estimate total harvest in a state and trends in harvest. The results also are used to examine the effects of harvest regulations such as bag limits. The quality of the results depends to some degree on the memory of hunters and how they go about reconstructing events after the fact.

If a respondent hunted only 1 or 2 times, memory might serve fairly well.

When a respondent has hunted more frequently, he or she might resort to cognitive (thinking) processes that yield approximations of what actually happened.

One danger is that a memorable hunt is, er..., *remembered* better than a dull hunt. Thus, a respondent might quite unintentionally report a rosier experience than on average occurred.

When hunts are numerous, similar and frequent, respondents might resort to a sort of rule-based means of answering the questionnaire. "Let's see. I probably went hunting somewhere between 18 and 22 times. I'll say 20. I usually average about 3 birds/hunt so that figures out to 60 harvested."

In recall of numbers, there is a strong human tendency to heap on numbers that end in 0 or 5: 0, 5, 10, 15, 20, 25.... This happens not only in recall of hunting seasons but in routine activities such as pacing distances.

A recent analysis of hunter surveys from Illinois revealed evidence of rule-based recall and heaping on 0, 5 numbers. This implies that estimates of total harvests are biased, which means the estimates derived from the survey probably did not reflect what happened.

However, further evidence indicated the bias was the same from year to year. This latter finding suggests that questionnaire surveys give valid annual trends in harvest.

For further information, contact Jay Beaman, Auctor Consulting Associates, Ltd, Cheyenne, WY 82009. Ask for a reprint of *Cognitive Processes in Hunters' Recall of Participation and Harvest Estimates*.

## NATURAL RESOURCES DEPARTMENT PLANNED FOR OSU

Oklahoma State University will be better able to serve managers and conservationists with interests in fisheries, forestry, range and wildlife with the planned formation of the Department of Natural Resource Ecology and Management. The department will start up in July 2006.

The new department will bring together scientists from the College of Arts and

Sciences and the Division of Agricultural Sciences and Natural Resources. The department will be housed in DASNR.

The department is expected to consist of more than 20 faculty, 150–160 undergraduates and more than 50 graduate students.

The department will have a full extension complement (fisheries, forestry, range, wildlife) to assist landowners and managers in their activities, and to provide a conduit between research and application.

## HUNTER-COVEY INTERFACE TESTED

*The Technology of Bobwhite Management* (Iowa State University Press, 2002) contains a theoretical analysis (read equations) on the hunter-covey interface. The logic is intended to show the variables that influence the number of birds reduced to possession on a quail hunt. This number varies with such things as speed of travel, time spent hunting, hunter skill, quail density, and the quail propensity to learn from experience and avoid hunters.

I wrote the logic several years ago and it has languished as “pi-in-the-sky” speculation until recently put to a field test by researchers at the Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville.

The research took place in South Texas. The researchers put GPS units on dogs and hunting vehicles and they had radioed birds to determine how many were missed and flushed.

Holy smoke!

“We found it difficult to meet basic assumptions of [Guthery’s] theory. For example, hunting pressure was potentially redundant, coveys were not always randomly distributed in space, and the extent to which quail were naïve [about hunters] at the beginning of hunting season was unknown.”

Hunting dogs traveled at 6 mph or a little higher on average. They averaged about 35 yards from the hunting truck.

Hunters bagged, on average, slightly less than 2 birds per covey flush.

Bird dogs (2 or more on the ground) found between 30 and 50% of the coveys within 100 yards of the hunting path.

Despite the fact that assumptions underlying the theoretical models did not hold, the models proved to be robust in application. This means predictions of the models were reasonable when compared with measurements on actual hunts.

For further information, contact L. A. Brennan, Caesar Kleberg Wildlife Research Institute, Texas A&M University, Kingsville, TX 78363. Ask for a reprint of *Empirical Tests of Hunter-Covey Interface Models*.

## BITS AND PIECES.....

- Keep your eyes peeled for further information on the **Red River Quail Symposium**, to be held in Wichita Falls, TX, 11–13 October 2006. Tentative plans call for a field trip on 11 October, a sit-down session on 12 October, and a field tour on 13 October. Dale Rollins, Texas Agricultural Experimentation, and Fred S. Guthery, Oklahoma State University, are co-sponsoring the event. Visit <http://teamquail.tamu.edu/> and click on “calendar” for updates.
- Readers of this newsletter have seen evidence that putting radio transmitters on wild quail might handicap them. This disposes them to higher mortality than birds without radios. Recent research from Texas Tech University suggests the act of capture itself may dispose quail to higher mortality rates. These authors injected some captured birds with vitamin E and selenium to reduce or prevent muscle problems associated with capture. They injected other birds with saline water as experimental controls. The birds injected with vitamin E and selenium survived at higher rates than the controls upon release. A practical implication of these results is that survival of transplanted birds might improve if they are injected with vitamin E and selenium. For further information, contact C. Brad Dabbert, Department of Range, Wildlife and Fisheries Management, Mail Stop 2125, Texas Tech University, Lubbock, TX 79415. Ask for a reprint of *Does Muscular Damage During Capture and*

*Handling Handicap Radio Marked Northern Bobwhites?*

- Research out of Texas A&M University indicates pen-reared Attwater's prairie-chickens (APC) were more naïve about predators and flew shorter distances when flushed than wild greater prairie-chickens. The Attwater's race is endangered in the wild and occurs in prairies along the Texas Gulf Coast. Reintroduction of pen-reared birds might help in saving the species. "If the recovery of APC is to succeed, the behavioral deficiencies of pen-reared birds should be addressed." For further information, contact Nova J. Silvy, Department of Wildlife and Fisheries Science, Texas A&M University, College Station, TX 77843-2258. Ask for a reprint of *Differences in Flight Characteristics of Pen-reared and Wild Prairie-chickens*.
- Texas A&M scientists also evaluated the survival, movements and reproduction of pen-reared APCs released in the wild. The ranges of wild and released birds were similar. The 2-week, post-release survival rate ranged between 51 and 62%, which implies virtually a total loss over a year. Some hens nested but no chicks survived. Fire ants appeared to have killed chicks in some nests before they could escape pipped shells. For further information, contact Nova J. Silvy at the address given in the above bullet. Ask for a reprint of *Survival, Movements, and Reproduction of Released Captive-reared Attwater's Prairie-chicken*.
- For more than 70 years, biologists have used so-called mark-recapture methods to estimate the numbers of

animals in wildlife populations. The idea is to mark a known number of animals, allow them to shuffle like a deck of cards and then do another count where marked and unmarked animals are totaled up. The proportion marked in the second sample is taken as an estimate of the proportion marked in the population. Biologists in western Washington have used paintballs fired from helicopters as a method of marking elk. The technique has some glitches, but it also shows promise as a census too.

- ***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 \$20, including shipping and handling. The book is in its second printing and available only in paperback.
- ***The Technology of Bobwhite Management—The Theory Behind the Practice*** by Fred S. Guthery (Iowa State University Press, 2002) is out of print and no longer available.
- ***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.

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*.