

THE UPLAND GAZETTE

North Carolina Small Game Notes

Winter 1997

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"There is a simple answer to every complex problem, and it is invariably wrong."

Mark Twain is given credit for this piece of wisdom, and it's a good thing to keep in mind when tackling a complex problem like the decline of quail and 17 other bird species associated with farming and weedy, grassy, brushy habitats in North Carolina and other Southeastern states.

A little over seven years ago, Research Manager Carl Betsill and Division of Wildlife Management chief Hal Atkinson, both with the N. C. Wildlife Resources Commission, encouraged me to tackle part of this problem. Were agricultural pesticides the cause of the quail decline? they asked. Perhaps remembering Twain's cautions about simple answers, I enlisted Bill Palmer in my effort to address the question. Bill had come with me to N. C. State University to pursue his doctorate in game bird ecology. (Many readers of this article will recall the articles in *Wildlife in North Carolina* [February 1994] that described Bill's ground-breaking research.) Bill and I set out to study



Answering The Big Questions

the pesticide problem.

At about the same time, Small Game Project Leader Terry Sharpe suggested an additional research topic—drainage ditch bank management as another possible reason for the quail decline. Graduate student Marc Puckett took on that challenge for his masters research. He also broke new ground with the experimental work he conducted at Alligator River National Wildlife Refuge.

What did we learn? Boiling down the advances made by the hard work of Bill Palmer and Marc Puckett into a few general conclusions may not do justice to their work. Bill concluded that the pesticides currently in use in North Carolina were not a major cause of quail decline via direct poisoning. He speculated that habitat simplification by clean farming practices, including the use of herbicides, could help explain decreasing numbers of quail. Through ingenious use of imprinted quail chicks, Bill learned that no-till soybean fields could be equal to fallow fields in providing food for chicks. This explained why so

many quail in the fall population are from late broods, produced after winter wheat has been harvested and the fields have been no-till planted to short-season soybeans.

Meanwhile, Marc Puckett learned that 15-foot borders of lush vegetation located along drainage ditch-

es in large sections of Alligator River National Wildlife Refuge attracted and produced some 4.5 times more quail than nearby refuge farms that were of similar sizes but were farmed more cleanly. With the information generated by Bill Palmer and Marc Puckett, we gained confidence that we were beginning to understand the reasons for the quail decline and were in a position to put our ideas into a larger context.

In 1996, we established an even broader partnership. Extending our efforts to work with our Virginia neighbors, we undertook by far the largest, most complex research project in my 30-year career as a wildlife biologist. Here is what we intend to learn:

(1) Will field border systems increase quail and songbird abundance in upper Coastal Plain, lower Coastal Plain and Piedmont regions?

(2) Will removal of mid-sized mammalian predators in late winter and spring cause a major increase in quail and songbird productivity? Will predator removal be cost-prohibitive to landowners?

(3) Will field-border systems improve water quality from drainage ditches in each of these regions?

(4) Will field-border systems result in insect pest problems to crops grown near them?

(5) Will further testing of no-till systems confirm the idea that plant residue in crop fields is the key to providing habitat to quail broods in mid to late summer?

(6) Providing that water quality and wildlife increase in response to the establishment of field

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Beware of Baiting!

Interest in releasing pen-raised bobwhites continues to be high. Though releasing pen-raised birds will not improve wild quail populations in subsequent years, advances in release techniques have improved to a point that a "covey" of pen-raised birds can frequently be maintained through the fall and winter months. Establishing a pen-raised "covey" for use in training dogs is popular.

Hunters should keep in mind that hunting quail over bait is not legal in North Carolina. Establishing pen-raised coveys usually involves providing feed to keep coveys near the release area. The only legal way to hunt quail over an area where feed is placed is to do so on a Controlled Shooting Preserve. Even there certain restrictions apply. For more information on Controlled Shooting Preserves contact the Division of Wildlife Management, North Carolina Wildlife Resources Commission, 512 N. Salisbury St., Raleigh, N.C. 27604-1188. ♦



ILLUSTRATED BY KIMBERLY K.C. SCHOTT

Answering The Big Questions (continued)

borders, will farmers be willing to establish these "weedy," early-succession habitats on their farms?

(7) Would the income possible from leasing quail-hunting rights be sufficient for at least some farmers to install and maintain field border systems?

(8) Would financial incentives available from state and federal cost-share programs be sufficient to result in establishment of field border systems?

(9) Will farmers, natural resource managers, wildlife enthusiasts and the environmentally concerned public accept our findings and support a new vision of the agricultural landscape, one that may not be as tidy as that generated by clean farming?

Those nine questions are begging answers. And all of us involved in this research effort are working diligently to answer them before the end of this century! Readers of this newsletter are part of our effort, and we are counting on you to carry the excitement of our work to your families, friends and neighbors.

Socrates, that old philosopher, said, "Any fool can ask a question that no one can answer." Are we foolish to ask those questions? Time will tell, but I think we are headed in the right direction and we are going as fast as possible. Here is the basic way we are going about our business.

First, we are working in several regional farm systems in a huge, landscape-scale experimental design. Visualize four blocks of agricultural land, each a mile apart. On one block we are providing a field border system and removing mammalian nest predators. On another block we are removing predators, but providing no additional cover. On the

third we are providing cover, but we are not trapping predators. On the fourth we are neither providing cover nor removing predators. Each of these farm units is on privately owned and managed farm land, which means that agricultural producers are looking over our shoulders each and every day. We are including local county agricultural extension agents in our work to build and maintain contact with producers.

Our complete design has been established in Wilson County on farms producing tobacco, corn, cotton and soybeans, near Lake Mattamuskeet on two large grain and vegetable crops farms, and in Amelia County, Virginia, on several dairy-pasture-grain farms.

On two separate grain farm systems near Kinston, we are testing water quality implications through controlled placement of groundwater wells. At the Alligator River National Wildlife Refuge we are checking water quality from field border systems that are now 10 years old and comparing the results with 1-year-old systems installed there last spring. The insect work is being done in Wilson County, where we sampled 10 cotton fields and 10 soybean fields weekly through the growing season. Half of the fields for each crop are with field border systems and half are without systems.

The economics of field border systems involves determining whether hunters will be willing to pay for excellent quail-hunting opportunities. Many of the readers of *Upland Gazette* were sent a survey last fall to answer this question. Of course when a producer takes part of a crop field out of production to establish a field border, a certain amount of

(continued on page 5)



The Numbers: 1996-1997 Avid Hunter Survey Results

Quail Hunter Survey

Avid quail hunters have reported on almost 40,000 days afield during the past 13 years. This large data set provides our biological staff with a means to compare hunting success through time and across regions. During the 1996-1997 season 157 quail hunters provided data from 2,581 hunts. The statewide reported coveys per trip (cov/trip) dropped to a new all time low, decreasing from 1.83 during the 1995-1996 season to 1.72 during the 1996-1997 season.

Quail hunter success reported on the Coastal Plain continued to decline (Figure 1). The lowest success and greatest decline continues to occur in the southern Coastal Plain counties where cooperators reported 1.25 coveys per trip during 301 trips (an 18 percent decline from 1995-1996). Hunts reporting from the central and northern Coastal Plain counties continue to have the highest success rates in the state. During 1996-1997 hunters in the central Coastal Plain counties reported 2.17 cov/trip on 817 trips while northern Coastal Plain counties reported 2.18 cov/trip on 396 trips.

Reports from the Piedmont region provided a dab of good news as success remained stable or increased slightly (Figure 2). Cov/trip reported from 294 southern Piedmont hunts increased from 1.39 in 1995-1996 to 1.57 in 1996-1997 (13 percent increase). Central Piedmont hunt averages increased slightly (10 percent increase) to 1.17 cov/trip on 239 hunts during the 1996-1997 season. The average from 399 northern Piedmont hunts decreased slightly from 1.35 cov/trip in 1995-1996 to 1.29 cov/trip in 1996-1997 (4 percent decline).

Few hunts were reported from Mountain counties. Southern

(continued on back page)

Figure 1. Coastal Plain N.C. Quail Hunter Success, 1984-96

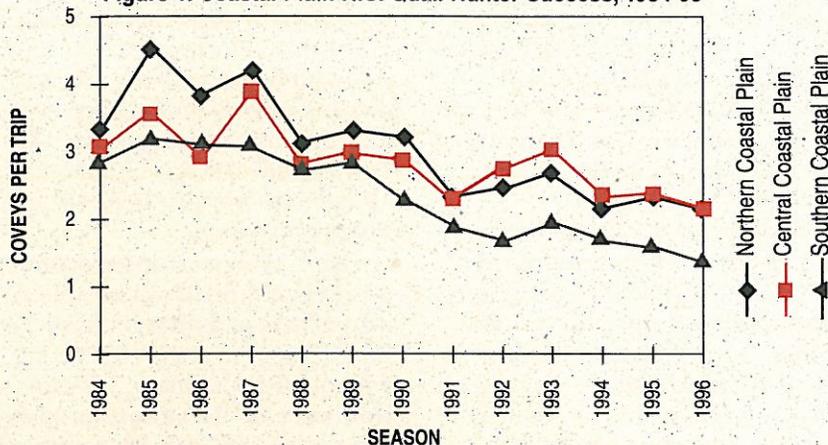


Figure 2. Piedmont N.C. Quail Hunter Success, 1984-96

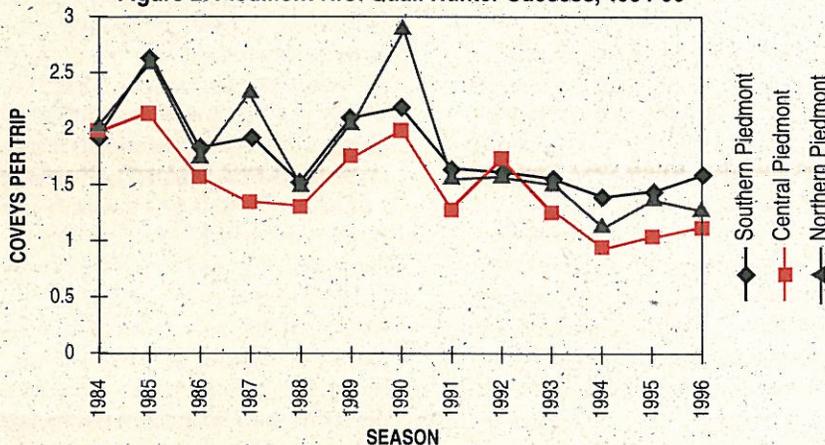
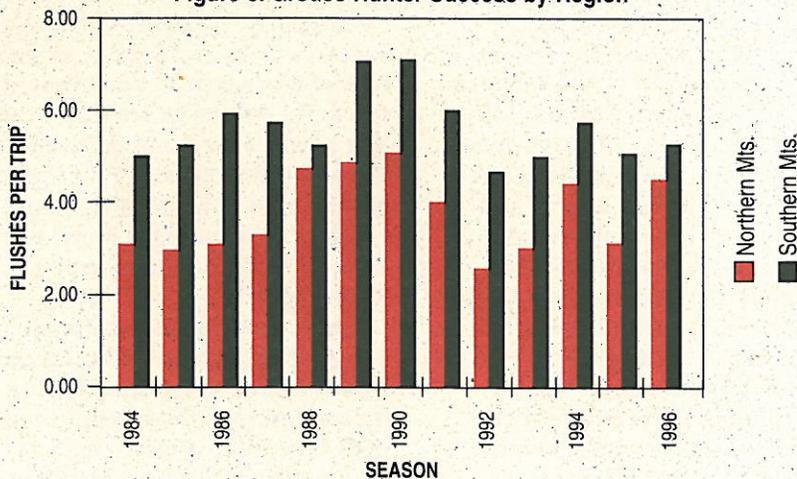


Figure 3. Grouse Hunter Success by Region



Pen-Raised Quail: A Response

The manufacturer of the Anchor Covey Release system, a variation of a "soft" release system that has been around for more than 20 years, has provided the following response to an article in the Summer 1997 Upland Gazette addressing "The Pen-Raised Bird Issue" written by Terry Sharpe, small game project leader.

The editors of the Gazette view the Anchor System, when used to restore populations, as another quick fix attempt which will only serve to draw attention away from the only solution to the quail problem—habitat restoration. Though we do not agree with the views expressed by the manufacturer, we do appreciate his interest in reestablishing quail populations. We only differ in the mechanisms that we feel will be necessary to accomplish the objective.

"The Pen-Raised Bird Issue" began with an opinion, "The greatest threat to wild quail are pen-raised birds." It then proceeded to put The Anchor Covey Release System in its cross hairs.

The Anchor Covey Release System is a product of Quality Wildlife Services, Inc. The company was formed by a certified wildlife biologist with 20 years field experience and maintains a national consulting network.

After reading the abundance of misinformation in the previously mentioned article I had greater understanding of why it was left unsigned. Now, let us separate the wheat of fact from the academic chaff of fiction. *Chaff:* The article states that the Anchor Covey System does not put an emphasis on habitat improvements. *Wheat:* Quality Wildlife from the beginning has indicated in all of its written and video material that habitat management is the most important ingredient in landowner and hunter success. It does not appear that the author of The Pen-Raised Bird Issue article has researched the company's position on this matter. In the seminars conducted nationwide we tell everyone that there is

no quick fix and that nothing works in a parking lot. What our company is now seeing uniformly is the following phenomenon: When a landowner's dog points birds, the landowner's interest and passion to improve his habitat gains significant altitude. He has birds to use his habitat—not just hope for a future population.

Chaff: "Well-meaning sportsmen have released millions of quail costing millions of dollars in unsuccessful attempts to restore declining wild quail populations." *Wheat:* This is not so. The vast majority of pen-raised quail have been released by managers of commercial preserves under pressure to provide hunting six days a week—not landowners attempting to restock birds. This is like pointing your finger at a man growing buffalo on his farm for meat production and stating that it is a bad practice because it is doing nothing to reestablish a herd of 20 million on the western plains.

Chaff: "Though pen-raised birds survive the winter, few have ever been documented to nest successfully." If the author is a layman I would say he is misinformed. If the author is a biologist, I would have to say this statement is intellectually deceptive and without basis in fact. *Wheat:* Besides the research I have documented with hundreds of hours of remote video footage and observation there have been three independent studies (DeVos, '91, Sisson, '95, Mueller, '97) conducted in Alabama, Georgia, and South Carolina respectively which all documented successful nesting by released quail that survived the hunting season. When the landowner is informed of this fact it only serves to motivate him to manage for brood rearing and nesting habitat—not discourage it!

Chaff: "Good quail habitat, on a large scale (scattered across thousands of acres) and a sound plan for sustaining it through time, must both be in place before the first bird is released." *Wheat:* My bird

dog and I (as well as many other sportsmen) can say with great certainty that this is not so! Many of the people our company works with have spent mega bucks on habitat but they still have no quail! Reason—there are no quail to repopulate. Land fragmentation has isolated much of the southeastern quail population. Consider the fish bowl. Now—let's see how long it takes for the fish to appear! Historically this was not so, but in the context of today's land management schemes, this is often a good analogy.

Chaff: "However, working with the farm and forestry communities to change land use is the only way that we can have a lasting impact on quail populations." *Wheat:* Realistically, we cannot expect our farm and forestry industries to change what they do on their own property until growing quail becomes more economically beneficial than growing pine trees or irrigated crops. It would be great to see us go back to the days of small patchwork farms across the countryside, but this is forever gone.

Further, the article we have been discussing assumes all pen-raised quail are equal. This is not so. The quail we recommend are quality quail—not tame, meat birds. Quality Wildlife stresses the selection of bird growers who grow them right, (i.e., inoculated, flight-conditioned, raised in isolation, etc.). This is just one ingredient in a formula designed to make the landowner successful.

In summary, I am satisfied that we have separated the wheat from the chaff on the pen-raised bird issue. I am convinced that the greatest threat to wild quail is not the pen-raised bird but it is the loss of interest in managing for quail. We must get people back into quail hunting to revitalize this interest. Biologically sound use of released quail serves as a mechanism to accomplish this goal.

—Jim Evans

We are working to expand our mailing list to include other interested landowners and sportsmen. Please pass along your copy to friends who may be interested. Send names of others who may find the information useful to: *The Upland Gazette*, Division of Wildlife Management, N.C. Wildlife Resources Commission, 512 N. Salisbury Street, Raleigh, N.C. 27604-1188.

(Note: Hunters who participated in last season's Avid Quail and Grouse Hunter Survey will automatically be included in future mailings and do not need to reply.)

Name _____

Address _____

City _____ State _____ Zip _____

Name _____

Address _____

City _____ State _____ Zip _____

Answering The Big Questions *(continued)*

grain yield will be lost. The bottom line is profitability, however. If it turns out that field edges along drainage ditches and wood lines produce less than field interiors, then the producer might be more willing to take advantage of income from hunting and incentives from government water quality and wildlife programs to establish field borders. To assess the economics of these field border systems, we are using data from computerized yield monitors linked with satellite locations (Geographic Positioning Systems) to detail actual yields at edges and centers of fields.

Maintaining productive field borders is as important as creating a field border system. We are testing an innovation in vegetation management called the Weed Sweep Machine. The Weed Sweep applies herbicide selectively on tall vegetation, usually woody vegetation like sweetgums, that farmers do not want along their ditches. We are finding that this machine is at least 50 percent cheaper than

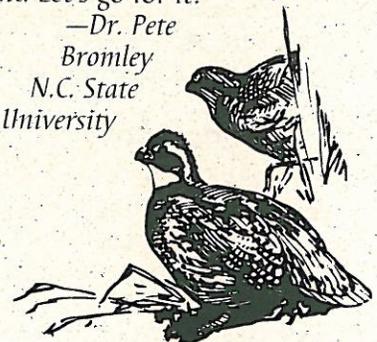
mowing ditch banks with a side-boy rotary mower, and its use can result in what appears to be excellent wildlife habitat. Even if this works for quail and songbirds, will landowners and renters adjust to having weedy, viney, grassy edges along their fields? In some land rental agreements, it is stipulated that the ditch banks must be mowed clean annually. Will the results of our work be strong enough to merit renegotiating those standing agreements?

For scientific work to be significant, the research must demonstrate statistical significance. Yet for practical application, the results of our experiments must be ecologically wise, economically viable and sociologically sensitive. Only then will they encourage widespread adoption of practices that will clearly work. As doctoral candidate Ted Morris stated in his 1996 presentation at the North American Wildlife and Natural Resources Conference, our work must reduce uncertainties about both the ecological and economic consequences of proposed changes in agricultural practices before

landowners and managers will risk changing their farming practices. Our approach uses scientific designs that should produce reliable information. Working across regions and on private lands at the landscape scale is much more difficult than focusing all the work on a single demonstration farm. But unless landowners and natural resource management professionals see the results in their own back yards, adoption of these new ideas will be slow.

How long can we afford to wait before generating the kind of information that actually will be used by private landowners to reverse the three-decade long decline in farm wildlife? This may be our last, best shot at doing it right. Let's go for it!

—Dr. Pete
Bromley
N.C. State
University



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The Numbers: *(continued)*

Mountain hunters reported finding 1.43 cov/trip on 46 hunts. Northern Mountain hunters averaged 1.09 cov/trip on 89 hunts.

As in the past, those hunters who got out early were rewarded with better hunting. Reported cov/trip and birds harvested per trip (birds/trip) peaked during November at 1.90 cov/trip and 3 birds/trip. Success dropped during December and remained steady during the remainder of the hunting season. December through February hunting success averaged 1.70 covey/trip and 2.33 birds/trip.

Grouse Hunter Survey

During the 1996-1997 season 92 grouse hunters provided data from 1,647 hunts. Statewide, flushes per trip (flush/trip) increased by 25 percent and birds harvested per trip (birds/trip) increased

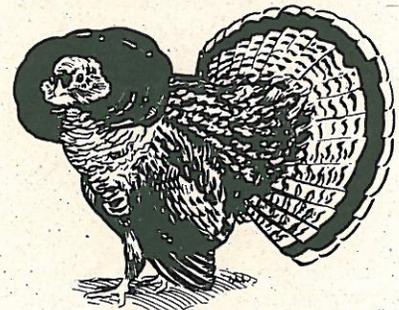
5 percent over rates reported during the 1995-1996 season. Cooperators reported an average of 5.4 flush/trip and 0.70 birds/trip. Average flush rates for 1996-1997 were 6 percent over the long term average while birds/trip was 1 percent below the long-term average.

Hunters reporting from the southern Mountain region averaged harvesting 0.75 birds/trip during 882 hunts, down 3 percent from the 1995-1996 season. In the northern Mountain region the harvest averaged 0.57 birds/trip during 471 hunts, up 30 percent from the 1995-1996 season. (Figure 3)

Flush rates and harvest rates peaked in February, when hunters reported flushing 6.03 birds per trip and harvesting 0.83 birds/trip during 768 hunts. Poorest success rates were in October when hunters reported flushing only 3.47

birds per trip and bagging 0.4 birds/trip on 285 hunts.

Hunters reported on 725 hunts on game lands open to public hunting and 868 hunts on private lands. Flushes per trip averaged 4.99 on game lands and 5.70 on private lands (14 percent higher on private lands). Hunters on game lands averaged harvesting 0.64 birds/trip while private lands hunts averaged 0.74 birds per trip. ♦



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