



the Upland GAZETTE

◆ North Carolina Small Game Notes ◆

What's Inside . . .

- ◆ Avid Hunter Surveys 3
- ◆ Snakedogs! 4
- ◆ A Spotlight on CURE 6
- ◆ Land Manager's Toolbox 7
- ◆ Upcoming Events *Back Page*
- ◆ Upland Game Season *Back Page*

Agricultural Conservation Easements: A Landowner's Tool

OVER THE LAST 20 YEARS, NORTH Carolina's sprawling land use pattern, coupled with a changing agricultural economy, have put pressure on many landowners to sell their farms for development. In response, some farmers have turned to agricultural conservation easements to ensure that the qualities they appreciate about their land will remain for future generations.

Agricultural conservation easements are powerful voluntary legal agreements that allow landowners to achieve multiple benefits from their land. They create a commitment between a landowner and a partner organization that the land will remain permanently available for agricultural use.

Since conservation easements are only concerned with preventing non-agricultural development, landowners can continue using their property for farming, forestry, hunting, recreation, or however they see fit.

Conservation easements can be donated or, based on the availability of funding, sold through a local, state, or federal program. North Carolina farmers who donate or sell conservation easements can take advantage of a variety of tax incentives, including a federal income tax credit, a state income tax deduction, and possible estate tax benefits. Many farmers find easements to be a valuable financial tool for diversifying the assets that they have tied up in the equity in their land.

What is a Conservation Easement?

A conservation easement is a deed restriction landowners voluntarily place on their property to protect resources such as productive agricultural land, ground and surface water, wildlife habitat, historic sites or scenic views. Landowners use conservation easements to authorize a qualified conservation organization or public agency, known as the grantee, to monitor and enforce the restrictions set forth in the agreement.

Agricultural conservation easements are specifically designed to keep land available for farming. Although specifically tailored for each property, they generally limit subdivision, non-farm development and other uses that are inconsistent with commercial agriculture. Some easements allow lots to be reserved for family members. Typically, these lots must be small and located in a place that won't interfere with the farming operation.

Agricultural conservation easements generally permit new buildings related to the farm operation. Most do not restrict farming practices, although some grantees ask landowners to implement soil and water conservation plans.

Agricultural conservation easements are permanent. Landowners can pass the land along to heirs or sell the property as they choose, but future owners must abide by the restrictions laid out in the easement. An agricultural conservation easement can



Imagine there's no subdivision: Ag Conservation Easements keeping farm tracts intact.

potentially be modified or terminated by a court of law if the land or the neighborhood changes and the conservation objectives of the easement become impossible to achieve, but this rarely happens. Easements may also be terminated by *eminent domain* proceedings.

After granting an agricultural conservation easement, landowners retain title to their property and can still restrict public access, farm, use the land as collateral for a loan, and lease or sell their property. Land subject to an easement remains on the local tax rolls. Landowners continue to be eligible for state and federal farm programs.

It is important to work with an experienced appraiser to determine the value of the easement to establish a price or to calculate tax benefits that may be available under federal and state law. The value of an agricultural conservation easement is generally the fair market value of the property minus its restricted value, according to the terms of the easement agreement. In general, more restrictive agreements and intense development pressure result in higher easement values.

Conservation Easements in the Tar Heel State

Over the last 10 years, North Carolina landowners from the coasts to the mountains have begun experimenting with conservation easements as a way to protect farmland. Although most easement transactions have taken in place in the Piedmont, where development pressure is greatest, easements are spreading to other areas of the state as well. To date, about 20,000 acres of farmland have been protected in North Carolina through conservation easements.

Unfortunately, most North Carolina farmers can't take full advantage of the tax benefits associated with donating conservation easements. In order to make

BENEFITS of conservation easements

- Conservation easements permanently protect important farmland while keeping the land in private ownership and on local tax rolls.
- Conservation easements are flexible, and can be tailored to meet the needs of individual farmers and ranchers and unique properties.
- Conservation easements can provide farmers with several tax benefits including income, estate and property tax reductions.

DRAWBACKS of conservation easements

- While conservation easements can prevent development of agricultural land, they do not ensure that the land will continue to be farmed.
- Agricultural conservation easements must be carefully drafted to ensure that the terms allow farmers and ranchers to adapt and expand their operations and farming practices to adjust to changing economic conditions.
- Donating an easement is not always a financially viable option for landowners.
- Monitoring and enforcing conservation easements requires a serious commitment on the part of the easement holder.
- Subsequent landowners are not always interested in upholding easement terms.
- Conservation easements do not offer protection from eminent domain. If land under easement is taken through eminent domain, both the landowner and the easement holder must be compensated.

conservation easements work financially, farmers need to sell development rights to a government agency or a private land trust that is willing to foot the bill.

North Carolina has several opportunities for landowners to receive cash compensation for placing an agricultural conservation easement on their farms. These programs, known as Purchase of Agricultural Conservation Easements (PACE), offer communities the chance to share the cost of protecting land with farmers. Communities can justify the investment in conservation easements, because residents get to enjoy the fresh locally grown foods, green open space, fiscal savings, and wildlife habitat that farmland provides for years to come.

The state government purchases easements through the Farmland Preservation Trust Fund, the Clean Water Management Trust Fund, and the Conservation Reserve Enhancement Program. In most cases, individual landowners don't apply for these funds themselves—a land trust or government organization, such as a soil and water conservation district, applies on the landowner's behalf.

Currently three counties, Orange, Currituck, and Rowan, have set up individual programs that buy conservation easements from landowners. Demand outpaces the supply of funds for both the state and local programs. The federal Farm and Ranch Lands Protection Program provides a source of matching dollars to supplement the state and local funds.

Securing adequate funding is a huge obstacle to the spread of conservation

easements. Since 1998, The NC Farmland Preservation Trust Fund has given out a total of \$2.4 million dollars in five grant cycles, protecting 4,412 acres on 33 farms. But with the state budget crunch, legislators haven't appropriated any money to this program for the last two fiscal years. Unfortunately, the lack of state matching funding is hurting our allocation from the federal Farm and Ranch Lands Protection Program as well.

In November 2003, the Land for Tomorrow Coalition conducted a poll of 400 owners of farmland to learn more about their interest in farmland protection techniques. Only 39% were familiar with the Farmland Preservation Trust Fund. However, when given a brief explanation of PACE, 64% of landowners thought it sounded like a good idea.

Despite these impediments, agricultural conservation easements offer an attractive alternative to development for farmers who continue to stake out a future in agriculture. As more communities realize the lasting value of local PACE programs, more farmers will be able to take advantage of conservation easements to protect their land for future generations. ♦

Gerry Cohn is the Southeast Regional Director of American Farmland Trust. He can be reached at 336-221-0707 or gcohn@farmland.org. American Farmland Trust works with communities and individuals to protect the best land, plan for growth with agriculture in mind and keep the land healthy. For more information, visit www.farmland.org.



Established 1996

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2003–2004 Avid Hunter Survey Summaries

Avid Grouse Hunter Survey Summary

Fifty-one avid grouse hunters reported on 847 hunts during the 2003–04 season. Following the long-term trend, both grouse flush rates and harvest rates were down slightly. Grouse flush rates declined from 4.32 to 3.79 flushes/party trip (–12%) while the harvest rate declined from 0.59 to 0.51 grouse bagged/party trip (–13.5%) (Figure 1). The grouse flush rate in the southern Mountain region—4.09 flushes/party trip; down 14%—was somewhat higher than the flush rate in the northern Mountain region—2.88 flushes/party trip; down 3% (Figure 2). Flush rates were lowest in October (2.45 flushes/party trip) when the leaves were still on the trees, increased in November (2.92 flushes/party trip) and December (4.22 flushes/party trip), and then drop slightly during January (3.77 flushes/party trip) before increasing again in February (4.60 flushes/party trip). Flush rates were considerably higher on private lands (4.39 flushes/party trip) than on game lands (3.27 flushes/party trip).

Avid Quail Hunter Survey Summary

A total of 71 avid quail hunters reported on 1,103 hunts during the season. Although the long-term trend has been significantly downward, during the 2003–2004 season the average flush rate statewide increased 5.6% to 1.90 coveys/party trip while the average harvest rate increased by 7% to 1.19 quail bagged/hunter trip (Figure 3). Regionally, the average flush rate in the Coastal Plain was 2.42 coveys/party trip (+15%), the average flush rate in the Piedmont was 1.22 coveys/party trip (–9.6%), and the average flush rate in the Mountains was 1.37 coveys/party trip (+41.1% but a very small sample size) (Figure 4). Hunter success, both in terms of coveys/party trip and in birds harvested/hunter trip, seems to have leveled off somewhat over the last several years. ♦

—Michael H. Seamster, Upland Game Bird Biologist

Figure 1. Grouse Hunter Survey Summary Data, 1984–2003

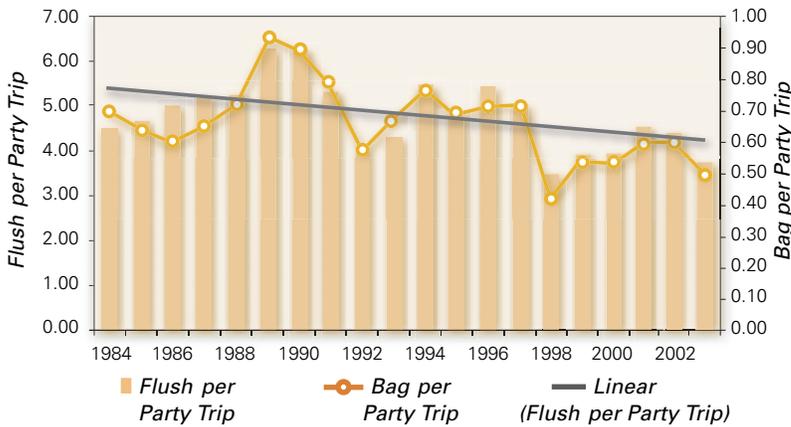


Figure 2. Grouse Hunter Survey Regional Data, 1984–2003

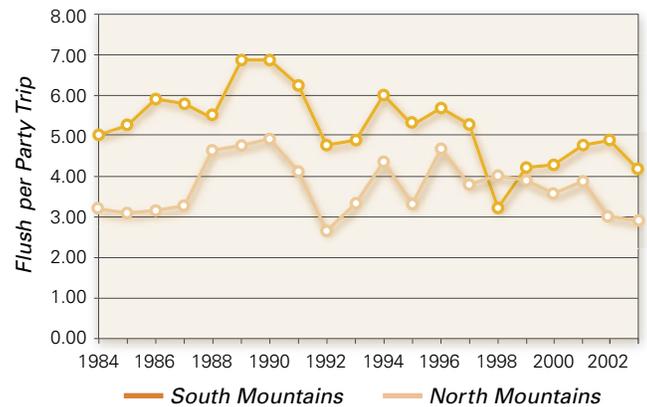


Figure 3. Quail Hunter Survey Summary Data, 1984–2003

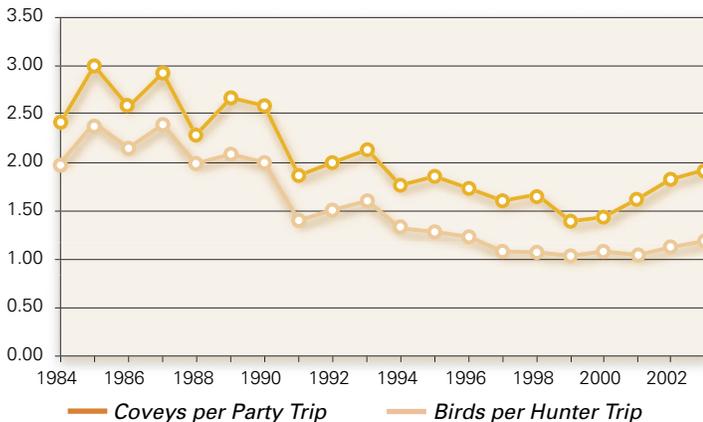
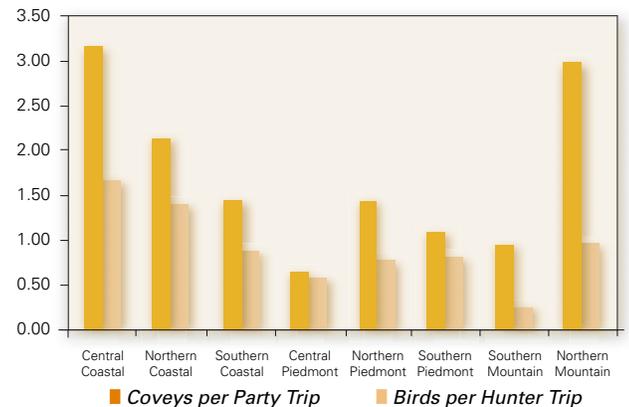


Figure 4. Quail Hunter Data by Climatological Region, 2003–2004 season



Snakedogs!

BELIEVE IT OR NOT, SNAKES CAN be difficult to find when you are intentionally looking for them. Researchers have tried all kinds of methods to trap snakes, and in recent decades they have even started tracking them with radiotelemetry. No method yet exists, however, for reliably finding snakes in a variety of habitat patches in a short period of time.



English pointer

I believe that dogs may provide the answer.

In early articles from *Forest and Stream* magazine (circa 1903–1905) hunters wrote about using dogs to find snakes, essentially as a hobby. An English pointer in Missouri would find a timber rattlesnake and bark until its owner came and dispatched it. Owners of other bird dogs in Florida noted their dogs regularly found diamondback rattlesnakes in thick cover.

In an epic thousand-page book on rattlesnakes published in 1956, Laurence Klauber wrote a brief paragraph on the intentional use of dogs to find snakes. Klauber included pictures from a man in Florida who trained a hound of some sort, “Yaller Gal”, to find diamondback rattlesnakes for commercial sale. Yaller Gal reportedly found 500 eastern diamondback rattlesnakes in only two years!

Although I was unable to locate more recent accounts of using dogs to find snakes in the wild, beagles and Jack Russell terriers have been used to sniff out exotic brown tree snakes at the airport on the Pacific island of Guam. The brown tree snake has driven many of Guam’s native bird species to extinction, and biologists are worried that the snake will stow away on an airplane and establish itself on Hawaii. The dogs have proven very successful at

finding snakes hidden in luggage and shipping containers.

It appears that out of North Carolina’s 37 species of snakes, roughly 10 are very sensitive to human alteration of habitat. The rare snake list includes species like the eastern diamondback rattlesnake, timber rattlesnake, northern pine snake, coachwhip, southern hognose snake, scarlet kingsnake and the coral snake. I have chosen to study these rare snakes for my Ph.D. dissertation at Duke University’s School of the Environment. My research will focus on determining how much habitat these animals need to maintain their populations and avoid extinction. The best way to do this is to compare places where the snakes still hang on in good numbers with other locations where they appear to have been extirpated. Using trained snake dogs would be the perfect way to rapidly survey habitat patches on a gradient from pristine landscapes to dense urban centers.

So far my dog training efforts have been slow but steady. I started with two English Pointer puppies in July 2003. With the help of a professional trainer, I started the dogs on quail and pigeons, with the idea that switching the dogs from quail to snakes would be a simple process. Now I am regretting the decision to start with birds, as



Eastern diamondback rattlesnake

the dogs are of course completely obsessed with finding anything with wings. Although they have proven capable of smelling snakes out in the woods, they are much more enthusiastic about finding birds and rats. In fact, after a few promising early points, the dogs seemed to figure out that snakes were not as much fun to find as quail. For a while they tended to ignore snakes I planted in the woods in favor of searching for warm-blooded game. I am struggling at the moment with methods of building up the dogs’ enthusiasm for snakes, so that when they do find a snake, they will actually bother to stop and point it. Positive reinforcement with treats seems to be working, but if anyone out there in the bird dog training world has any good ideas on how to get a dog to point snakes, I would love to hear from you. My dogs should be finding wild snakes this fall. By next spring I can start with the real research agenda of surveying new habitat blocks for snake populations. ♦

—Ron Sutherland,
Duke University, rws10@duke.edu

LIP Grant in the Works

The Wildlife Commission is planning a new private Cooperative Upland habitat Restoration and Enhancement (CURE) area focused on at-risk wildlife species using a \$534,500 grant from the U.S. Fish and Wildlife Service Landowner Incentives Program.

This new CURE cooperative will be up to 10,000 acres in size, located in one of the 22 counties located in the northern or southern Coastal Plain CURE focal areas. Inside the cooperative the Commission will work with landowners to restore or enhance grassland, shrubland and savannah habitat on at least 2% of each property, with a goal of directly managing >10% of the cooperative. The new program will use the CURE approach of working with a group of landowners to address landscape scale habitat changes. Practices implemented will include groundcover restoration through thinning, prescribed burning, and planting to restore native plant communities.

Initial field surveys will identify key at-risk species which inhabits grassland and pine savannah habitat, including birds (e.g. Bachman’s sparrow, loggerhead shrike, and northern bobwhite), mammals (e.g. eastern fox squirrel), reptiles (e.g. northern pine snake), amphibians (e.g. pine barrens treefrog, and tiger salamander) as well as insects and plants.

Once these target species are documented, the Commission will set cooperative population goals and work toward population restoration. Through this project, the Commission will demonstrate mechanisms and techniques to restore early-successional habitat and ecosystems on a landscape scale and encourage other agencies, companies, and individuals to participate in similar practices. It will also document the impact of the project on wildlife populations and fire-dependent plant communities through surveys which will be initiated prior to management and throughout the project.

Pass It Along...

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
1722 Mail Service Center
Raleigh, NC 27699-1722

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

Name _____
Address _____
City _____ State _____ Zip _____

Name _____
Address _____
City _____ State _____ Zip _____

Small Game Awards

2004 Lawrence G. Diedrick Award for Excellence in Small Game Management—organization Pee Dee National Wildlife Refuge, Anson and Richmond Counties

The Pee Dee National Wildlife Refuge, located in the southern Piedmont of North Carolina, is 8,500 acres in size with approximately 5,000 acres in a complex of farm fields, fallow land and open canopy upland forests. The refuge is catching the attention of quail hunters as extensive habitat improvements on upland fields and forests have begun to produce some pretty good hunting for bobwhites.

Management practices on the refuge in the mid-1980's allowed many fields not needed for waterfowl food production to revert to woodlands. Today the uplands on the refuge are a mosaic of cropland with field borders, fallow fields, and open regularly-burned woodlands. The long-term negative population trends of the whole suite of bird species that share the bobwhites' need for grassland and brushy habitat instigated the change in management philosophy in the 1990s. Refuge biologists and managers recognized the contribution that uplands on National Wildlife Refuges could make toward the long-term health of declining species of upland birds.

The refuge staff uses a combination of cropland leases with local farmers—disking, dozing, planting and burning to maintain uplands in excellent cover for bobwhites and the more than 20 other declining bird species which share similar habitat requirements. Fallow fields are managed by disking, planting or burning the roughest one-third each year, woodlands are burned on a three-year rotation and field borders are managed by disking and planting or by leaving a portion of the refuge's share of crops standing to provide wildlife food or cover.



Accepting for Organization winner Pee Dee NWR:
Mark Rogers (2nd from left) and J.D. Bricken (2nd from right) with Chairman John Pechman (l.) and Commissioner Steve Windham.

2004 Lawrence G. Diedrick Award for Excellence in Small Game Management—individual Bill Webb, Richmond County

Bill Webb manages a 1,200 acre farm along the western fringe of the Sandhills near Ellerbe, North Carolina. The property is composed of a patchwork of small row-crop fields planted to tobacco and milo, old fields managed by disking and rotation of wildlife food plots, open pine woodlands, and hardwood stands.

The Webb farm has a rich history of excellent bobwhite hunting stretching back to the days when the farm was worked by numerous tenants. Webb began taking quail management activities seriously on the farm in the mid 1980s. Initial efforts consisted of planting of bicolor strips, annual food plots, and sporadic prescribed burning. In spite of these efforts, quail populations continued the same long slow decline experienced across the region.

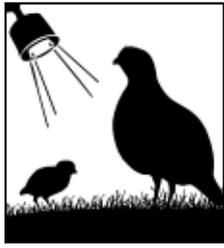
About three or four years ago Webb increased the intensity of his management activities by planting several large fields to longleaf pine, under provisions of the Longleaf Pine Conservation Priority Area. Areas supporting low-quality timber were clear-cut, site-prepared and planted to longleaf pine. More significantly, he initiated a timber thinning program that has spread across 500–1,000 acres of upland forest stands. This heavy thinning to create an open canopy forest stand, along with prescribed burns, has created groundcover conditions that allow bobwhites to utilize most woodland stands on the property.

Bill has recently entered his property into the Natural Resources Conservation Service's Wildlife Habitat Incentives Program and is using this program to help recapture a portion of the costs of burning the woodlands on a 3-year rotation. ♦



Individual award winner Bill Webb (center)
with Chairman John Pechman (l.) and Commissioner Steve Windham.

Have we CURED the Birds?



Spotlight on C.U.R.E

Within most North Carolina farms, the cycle of planting, growing and harvesting of agricultural crops takes place on an annual rotation. Wildlife resources are similar to an agricultural crop. With proper cultivation, care, and evaluation, wildlife populations have the ability to grow and to be improved. Since the inception of the CURE program in the year 2000, the program's focus has been creating and maintaining early-successional habitats to generate a positive response from bobwhite quail and songbird populations that are dependent on these grassland/shrubland habitats.

A variety of surveys and sampling techniques have been established to estimate the biological responses to the CURE program. Each year, wildlife staff and volunteers have surveyed fall and spring quail populations, and spring and winter songbird populations. These surveys have taken place on the three private CURE Cooperatives, the four CURE game lands, and on reference areas which are located nearby but are not managed for habitat. The initial surveys in 2001 provide a baseline as we evaluate population trends responding to CURE management practices.

Habitat improvements started on the private CURE cooperatives in the spring of 2002. Cropland converted to field borders developed into useable habitat rapidly, but 2004 represents only the second year of potential biological response. While it is still too early to draw definitive conclusions about population trends, the 2004 summer quail population index indicates that populations on all the private CURE areas may have increased over initial levels, and suggests a more positive population trend than quail counts on the reference routes (Figure 3). Fall covey counts conducted on the private CURE areas also indicate that populations may be responding positively to habitat improvements (Figure 4). The Rowland CURE area in Robeson County supported a fair bobwhite population when our work began and has demonstrated the most encouraging early response. The quail population has increased and will now support a limited hunt this fall. Hunters may apply for permits for the 2004 Rowland CURE hunt through the Commission's Special Hunt Opportunities.

On the forest-dominated game land CURE areas, suitable habitat will develop more slowly. Commission staff completed major habitat improvements in 2003, so the 2004 surveys are premature for forecasting trends. While spring quail counts suggest improvements over the previous year, more time will be required for CURE habitat improvements to develop and for the quail and songbird population response to become evident. Hopefully, this year's results foreshadow the growth of quail populations as habitat improvements continue on game lands. ♦

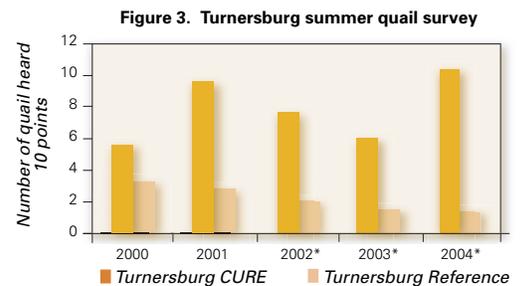
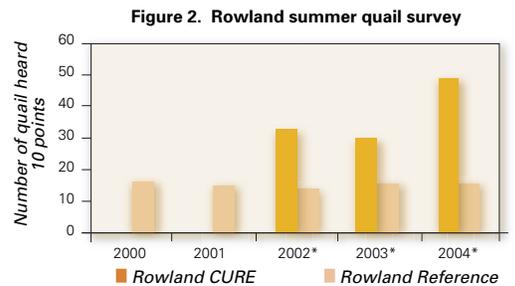
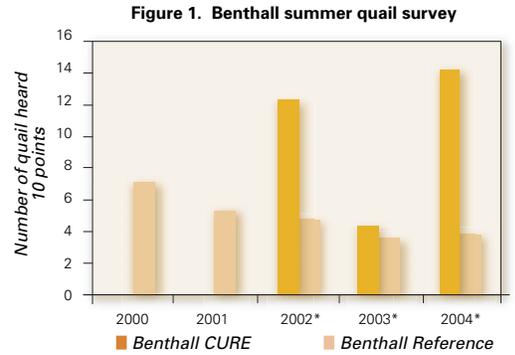
—Ryan Myers, CURE biologist

Bobwhite Buffers

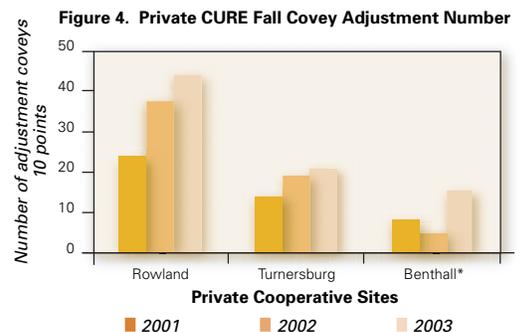
This October, the Farm Service Agency implemented a new program that could translate into thousands more acres of quail habitat in North Carolina. State biologists hail the Northern Bobwhite Quail Habitat Initiative—known more simply as “bobwhite buffers”—as one of the best things to happen for this bird in decades.

Bobwhite buffers are a new component of the U.S. Department of Agriculture's Conservation Reserve Program, with a continuous sign-up for interested landowners. Each agreement lasts 10 years, with annual rental payments based on soil fertility and established rental rates. The initiative is intended to create 250,000 acres of early-successional grass and forb buffers along agricultural field borders, mainly in the Midwest and Southeast. USDA estimates that this nesting and brood-rearing cover, with average widths from 30 to 120 feet, will increase bobwhite quail numbers by 750,000 birds annually. Planted buffers will also benefit reptiles, amphibians, aquatic species and upland birds, many of which are being considered for listing as endangered species.

North Carolina has the largest allotment of acres under this program in the Southeast—11,300. Interested landowners can apply for the initiative at local Farm Service Agency offices starting October 1, 2004. There is a \$100 bonus for each acre enrolled, a \$5 per acre per year maintenance payment and up to \$100 per acre management payment over the 10 year lifetime of the agreement. Although landowners are not required to plant the buffers, they must agree to manage the acres in the program. In order to be eligible, the buffers must be adjacent to row crop land with active cropping history four out of six years from 1996 to 2001.



Turnersburg: Total number of quail heard per ten survey points on CURE and CURE reference areas. Values are number of quail heard per ten listening stations during three minute, unlimited distance counts. CURE area surveys were initiated in 2002 on Benthall Plantation and Rowland. (Note: asterisk (*) are years of CURE management.)



Private CURE: Adjusted number of coveys heard during 2001–2003 fall quail covey surveys on private CURE areas, providing an index of fall population size. Counts are adjusted for call rate and standardized per ten survey points. (*Note: Only Rowland and Turnersburg sites provided averages adequate for adjustment formula for all years.)

How wide is wide enough?



Land Managers' TOOLBOX

ROAD TRIPS OFFER AN OPPORTUNITY to discuss issues in depth. I remember well one trip and the discussion that took place in August 1993. N.C. State Wildlife Professor Pete Bromley, former Wildlife Management Chief Frank Barick, and I were traveling to Delaware to participate in a bobwhite workshop. As we pulled out of Raleigh, Frank asked a simple question. "How wide does a field border need to be to benefit bobwhites?"

I think we were still debating the issue four hours later when we crossed the Chesapeake Bay.

A lot of research relating to field borders and bobwhites has occurred on eastern N.C. farm land since that long discussion on the trip to Delaware. We are beginning to zero in on an answer to Barick's question, but the answer always comes with a few "ifs and buts".

In 1995 Mark Puckett reported on the first of a series of large scale studies of field borders and bobwhites on eastern North Carolina farm land. Puckett radio-tracked bobwhites on two large farm units (1,000-plus acres each) on Alligator River National Wildlife Refuge in Dare County. On half of each farm unit, 30-foot buffers of volunteer vegetation occurred along field ditches. Puckett compared quail densities and ecology between these areas and those where row crops were planted up to the ditch bank.

Result? Fields with borders supported higher quail densities and birds living around fields with borders had smaller home ranges. Flush counts and radio tracking revealed that the borders were heavily used by bobwhites in early summer, prior to row crops developing a canopy. In late summer when row crop fields of soybeans began to canopy out, quail dispersed their nesting efforts and increased nesting success. Even though early season nest success was low, the farmed areas with field borders supported incredibly high quail populations.

Following up on Puckett's research, the Commission worked with NCSU from 1997 to 2000 on a series of Coastal Plain farms that were 300 to 500 acres each. Researchers compared farms with no borders, and farms with 10 to 16-foot borders on all field roads, wood lines, and ditch banks. As in the previous study, 6-foot wide ditches bordered on both sides yielded a habitat strip 26 to 38 feet wide, so these farms had a variety of border widths ranging from 10 to 38 feet wide. Fall bobwhite populations were significantly higher on farms with borders as compared to farms without borders. Research on North Carolina farmland has consistently found that field borders work to increase quail populations, but we haven't yet been able to hone the formula down to identify minimum widths.

North Carolina's Cooperative Upland habitat Restoration and Enhancement (CURE) program has prescribed field borders ranging from 24 to 50 feet in width and Georgia's Bobwhite Quail Initiative borders are a minimum of 30 feet wide. Both programs are finding positive population responses from bobwhites where sizeable chunks of farmland are buffered with 24 to 50-foot wide borders. Where increasing quail populations is an important

management objective for landowners, wildlife biologists currently recommend a minimum border width in the 20 to 30-foot range. Even wider borders are recommended along woodland edges where border vegetation competes for sunlight, water, and nutrients with adjacent trees.

We continue to refine our knowledge about the relative value of varying spatial arrangements of habitat blocks on farmland. NCSU researchers are cooperating with Murphy Brown, a large hog producer and landowner in southeastern N.C., and the Wildlife Commission to compare farms with blocks of fallow habitat to farms with an equal percent of the cropland in 10-foot-wide borders. Twenty-four farms are project sites, 12 in landscapes dominated by croplands and 12 in landscapes dominated by forests. Their research should tell us a lot about the value of narrow 10-foot borders relative to blocks of habitat.

Biologists and landowners work through a multitude of factors in addition to quail biology when planning field borders systems. They consider crop yields (research has shown that often crop yields make farming on field edges unprofitable or marginally profitable), pests (volunteer vegetation filed borders have not been found to be significant sources of insect or weed pests), soils, compensation programs, and adjacent habitats. We know a lot more about field borders today than we did in back in 1993 and we hope to continue to refine our knowledge about quail biology and field borders. Perhaps the most important factor is to encourage landowners to install and maintain borders and habitat patches on their farms. ♦

—Terry Sharpe, Agriculture Liaison Biologist

"Stretching" Field Borders

Recently, District 6 Technical Guidance Biologist Ken Knight, Quail Unlimited Regional Director Wade Teague, and I visited PeeDee NWR in Anson County. The refuge manager, J. D. Bricken, showed us recent efforts to improve habitat for quail and upland songbirds that require grass and brush. The 8,500-acre refuge had earlier installed 15-foot-wide field borders between crop fields and woodlands, and was in the process of stretching the field borders by developing wide transition zones that reached into the trees along the edges of their 1,100 acres of crop fields. The refuge is using commercial logging operations to remove the limby trees along the field edge and thin the timber in a 100 foot zone around each of their crop fields. These thinned woodlands quickly develop a lush groundcover that complements the existing 15-foot wide field borders. They plan to manage the woodland border which still supports a low density pine stand with fire and the field border with a program that includes disking and planting portions of the borders to food plots every couple of years. The refuge turned a profit by selling the lower-quality trees while releasing the best quality trees to grow without competition, and increased the availability of sunlight, water, and nutrients available to crops growing adjacent to borders. Does it work? The refuge conducts no standardized surveys, but quail hunters using the refuge are reporting greatly improved success in recent years.

Division of Wildlife Management
N.C. Wildlife Resources Commission
1722 Mail Service Center
Raleigh, NC 27699-1722

ADDRESS CORRECTION REQUESTED

Upcoming events

February 2–4, 2005
The Southern Farm Show
N.C. State Fairgrounds
1025 Blue Ridge Rd., Raleigh
Hours: 9am to 4pm each day

The Southern Farm Show is the largest agricultural exposition in the Carolinas and Virginia, with participation by commercial vendors, government agencies and many private agricultural groups. The N.C. Wildlife Resources Commission has a booth at the show to inform landowners about the possibilities for creating wildlife habitat on a working farm. Wildlife biologists will be at the booth each day of the show to answer landowner questions.

Contact for More Information:

1-800-849-0248 or 1-800-851-2990
<http://www.southernshows.com/sfs/>

2004–2005 Seasons and Bag Limits for Small Game in North Carolina

Species	Season Dates	Daily Bag	Possession Limit	Season Limit
Dove	Sept. 4 to Oct. 9; Nov. 22 to Nov. 27; Dec. 20 to Jan. 15	12	24	None
Woodcock	Dec. 16 to Dec. 25 Dec. 27 to Jan. 15	3	6	None
Quail	Nov. 20 to Feb. 28	6	12	None
Ruffed Grouse	Oct. 18 to Feb. 28	3	6	30
Pheasant (males only)	Nov. 20 to Feb. 1	3	6	30
Rabbit	Nov. 20 to Feb. 28	5	10	75
Grey and red squirrels	Oct. 18 to Jan. 31	8	16	75
Fox squirrel*	Oct. 18 to Dec. 31	1	2	10

*Fox squirrel hunting is permitted only in the following counties: Anson, Bladen, Brunswick, Cumberland, Duplin, Greene, Harnett, Hoke, Johnston, Jones, Lenoir, Moore, New Hanover, Onslow, Pender, Pitt, Richmond, Sampson, Scotland, Wayne.