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the Upland GAZETTE

◆ North Carolina Small Game Notes ◆

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Could Restoring Quail Be as Simple as Weeds, Broomstraw, and Briars?

Past landscape conditions provided quail habitat incidental to the farming practices of the time; farmers were not at all concerned about producing quail, but they produced lots of them. As the farming practices and landscape changed, quail numbers declined. The problem is that our memories from that plentiful quail era often focus on small **high quality** food plots and strips of exotic lespedezas that provided winter food and cover and were the places that our dogs most frequently encountered quail. What we frequently fail to remember is that we also had **high quantities** of native quail habitat in the form of broom straw fields, briar patches, cutovers, and weedy field borders. The small farm fields of lespedeza hay, wheat, or corn and beans definitely added to the overall amount of available habitat and provided some cover with high quality foods, but fields containing high quality food were just a few spokes on the wheel. The hub consisted of vast areas of weeds, broom straw, and briars that connected the small patches of high quality food and cover.

Although consistent effort is required to maintain habitats dominated by weeds, broom straw, and briars, that may not be the biggest obstacle to reestablishing them across the landscape. So what is it? The primary problem may be that most humans just don't like the looks of good quail habitats. We think they're ugly, they are sources of weeds, they harbor all types of vermin, and they cause allergies. We do our best to

eradicate and keep these habitats at bay. We spray them, mow them, and "clean them up". We buy weed eaters and bushhogs to control and remove them and we replace them with pretty green grasses that we mow every week. If we let them grow they become an "eyesore" to our neighbors and our farms are considered not "clean". Then if we desire to do something for quail we think it's better to buy and plant a special seed or mix in a dedicated spot and make a "food plot." We plant magic beans and go to sleep at night dreaming of quail springing from the soil and scurrying through our newly-planted patch. Before our quail management efforts can succeed, we must clear our heads of the "food plot mentality" and convince ourselves and others of the value of establishing and maintaining extensive areas dominated by weeds, broom straw, and briars.

There are many advantages to managing weeds, broom straw, and briars. The first one is that the plants grow here naturally and are adapted to colonize new areas, so they show up fast. They only need a little bit of soil disturbance, sunlight, and some rain to establish themselves. Finally, the seed are free and they don't need any fertilizer. If replacing **habitat quantity** is the answer to restoring quail, then our biggest challenge may be to overcome the social pressures which encourage us to keep the back field looking like the front yard.

—David Sawyer,
District 7 Technical Guidance Biologist

Upland Bird Habitat Buffer

What is a CRP CP33 Upland Bird Habitat Buffer? In short it's a great opportunity for landowners to create wildlife habitat around the perimeter of a crop field and receive competitive rental payments for improving quail habitat.

The habitat buffer must be allowed to grow up in volunteer vegetation "weedy patches." Weedy patches were once plentiful on the North Carolina landscape, but are now missing on most North Carolina farms. When I would go and visit my

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Findings from the Appalachian Cooperative Grouse Research Project

Until recently, most knowledge of ruffed grouse was generated from research conducted in the Great Lakes states—the geographic core of grouse range. In 1996, the Appalachian Cooperative Grouse Research Project (ACGRP) was initiated to study grouse ecology in the central and southern Appalachians. One of 12 ACGRP study sites was in Macon County, North Carolina. The North Carolina research was conducted through the University of Tennessee with funding from the North Carolina Wildlife Resources Commission, Coweeta Hydrologic Lab, Bent Creek Experiment Station, and the Ruffed Grouse Society.

Appalachian grouse habitats differ from those in Minnesota and Wisconsin where deep snows provide secure roosts, aspen thickets afford cover, and aspen buds supply winter food. Without northern habitat characteristics, Appalachian grouse have adapted to survive under much different conditions.

In the absence of aspen, Appalachian grouse rely on a variety of foods to meet their nutritional needs. ACGRP researchers examined 401 grouse crops collected in Kentucky, Maryland, North Carolina, Virginia, West Virginia, and Pennsylvania to determine late-winter food habits. Crop contents varied, depending on what was available to individual birds. General items in the diet included oak and beech mast (26%), herbaceous leaves and flowers of cinquefoil, strawberry, and coltsfoot (25%), buds and twigs of birch, cherry, serviceberry, blueberry, and huckleberry (12%), evergreen leaves (12%), soft mast—predominantly grape and greenbriar—(11%), hard fruit such as witch hazel (5%), birch catkins (4%), fern (3%), and other (2%). Acorns and beechnuts are important high-energy foods for grouse in Appalachia. However, hard mast production is inconsistent and during poor mast years, less digestible items, such as evergreen leaves, are consumed in greater amounts.

Wherever they are found, ruffed grouse are associated with young forests (age 5–20 years). In addition to early successional areas, Appalachian grouse used a variety of forest types as their activities and availability of food and cover changed with the seasons. In North Carolina, broods often used mature forests (age 80–100 years) on sites where herbaceous groundcover and insects were abundant. During years of low acorn abundance, grouse on many ACGRP sites were found along riparian habitats where stem density was high and along forest roads where herbaceous plants (especially clover and cinquefoil) served as an alternative food source. The key to management is interspersion of habitat types. Juxtaposition of young stands with mature mast producing stands places food and cover in close proximity. Prescribed burning and maintenance of forest roads in forb and legume cover (as opposed to grasses) provides additional food sources, including forage, fruit, and invertebrates.

Grouse home range size depends on season, sex, age, and availability of preferred habitats. The ACGRP recorded average home range size for 1,519 grouse during two annual periods, spring-summer, and fall-winter. Overall, juveniles during fall-winter had the largest home ranges (about 70 acres). Average home range of adult females during fall-winter was 65 acres, while adult males averaged 30 acres. The smallest home ranges were those of adult males during the spring drumming season (22 acres).

During drumming, males selected drum logs on mid- and upper slopes. Preferred areas had high midstory stem density (for protection from avian predators), and an open understory (for detection of mammalian predators). On the North Carolina study site, drumming activity peaked during the second and third weeks in April.

The physical condition of hens was a primary factor affecting reproductive success for Appalachian grouse. Depending on winter food availability, females may be nutritionally stressed as they prepare to nest. Low fat reserves in early spring resulted in lower nesting rates, decreased clutch sizes, and decreased chick survival. A positive correlation between chick survival and hard mast production the previous fall stressed the importance of hard mast to Appalachian grouse populations. Overall, ACGRP study sites found lower reproductive success than in northern areas.

Although reproduction was lower than in the Great Lakes states, survival was higher. Across ACGRP study sites, 3,118 radio-tagged grouse were monitored. Annual survival of adults averaged 43%. Most losses were to avian (44%) and mammalian (26%) predation, while hunters accounted for 12% of mortalities. An experimental closure of hunting on three study sites in KY, VA, and WV did not increase survival, suggesting hunter harvest did not add to natural mortality.

In addition to contributing information to a larger data pool, each ACGRP study site had specific research objectives. The focus in North Carolina was grouse use of areas harvested via alternative regeneration techniques (i.e., shelterwood, two-age, and group selection). From a forestry standpoint, these methods can be used to regenerate oaks on certain sites and are most often used by the US Forest Service as an esthetic alternative to clearcutting. For ruffed grouse, shelterwood and two-age methods provide food (acorns from mature oaks) and cover (regenerating stems) in the same stand while small openings created by group selection cuts may promote an herbaceous understory. The structure (stem density) within these stands was comparable to clearcuts of similar age. Radio-tagged grouse in North Carolina began using alternative regeneration areas about five years after harvest, which is similar to use patterns observed in clearcuts of the southern Appalachians.

To make sound decisions, wildlife managers require insight into a species' habitat preferences, food habits, reproduction, and survival. The ACGRP was the first collaborative effort of its kind. The information gathered from 12 study sites across eight states will be used for many years to come in creating management plans for central and southern Appalachian ruffed grouse. A book presenting ACGRP findings and management recommendations will be published in Summer 2005.

—Ben Jones and Craig Harper, University of Tennessee

Logging Roads and Ruffed Grouse

From 2000–2002, as part of the Appalachian Cooperative Grouse Research Project, 53 ruffed grouse were collected during March in western North Carolina to determine their physiological condition and to see what grouse were eating during this critical time of year. Crop contents from all birds were identified, weighed, and preserved. All of the grouse were killed from gated roads that were initially planted in an orchardgrass/white-dutch clover mixture. Leaves and flowers of herbaceous plants were found in 92 percent of the 53 crops examined and comprised 40 percent of the material in the crops over the three-year period. Other foods included evergreen and deciduous leaves, acorns, ferns, buds and twigs, soft fruits, etc. Of the herbaceous material eaten, cinquefoil and clover represented the vast majority, followed by avens and ragwort. The interesting thing was that orchardgrass, which was the dominant cover on most of the roads, was not present in any of the grouse crops. In fact, Bob Long, the West Virginia University graduate student who sorted through the crops of 326 grouse collected from NC, VA, WV, KY, MD and PA reported, "Grasses were not eaten much at all at any site in any year. I did get a few (very few) grasses in crops, but their quantities were very minimal (usually not measurable) and were classified as 'trace' (<0.1 gram dry mass). Apparently grouse ate grass incidentally while foraging on the forbs."

Because erosion is such an important factor, many land managers have been led to the false assumption that it is necessary to include tall fescue or orchardgrass in a mixture sown on woods roads. This is not true and certainly counterproductive for wildlife!

Germination and growth of annual cool-season grains (e.g., oats, wheat, and rye) are considerably faster than perennial cool-season grasses, which is important for reducing run-off from winter rains. White-tailed deer prefer oats, wheat and rye as forage over fescue and orchardgrass. Wheat seed and the resulting brood habitat is beneficial for grouse, wild turkeys and bobwhite quail.

Many of the same forages used in food plots can be planted on woods roads; however, some are better suited than others. For example, crimson clover, subterranean clover and white clovers are all relatively shade-tolerant. Ladino white clover persists well on roads traversing through bottomlands and on hillsides with an eastern or northern exposure. Ladino white clover does not, however, do well on southern or western exposures. Red clover and alfalfa do not respond to traffic as well as the white clovers. Taller forages, such as sweetclover an arrowleaf clover, are not usually desirable on roads and do not stand up to traffic well. With proper site preparation, planting logging roads to forages preferred by wildlife can control erosion and improve wildlife habitat.

Dr. Harper has produced an excellent publication entitled *Growing and Managing Successful Food Plots for Wildlife in the Mid-South*. The Division of Wildlife Management has a limited supply of the publications available while supplies last. Contact the Division of Wildlife Management, NCWRC, 1722 Mail Service Center, Raleigh, NC 27699-1722.

—Craig Harper, University of Tennessee

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childhood hero, Granddaddy, on his small Nash County tobacco farm. I would ask him how the farm looked when quail and rabbits where plentiful. My granddaddy would tell me about farming with a mule and a plow and how the weedy patches where scattered across all the farms in the county. As the tractors and mowers got bigger and better and effective herbicides were developed the weedy patches began to disappear. The loss of these "weedy patches" on the farm is one of the main reasons bobwhite quail and other grassland bird populations have declined. Reestablishing the weedy patches as field borders of volunteer vegetation will provide valuable food and cover for quail, rabbit, turkey, and many species of songbirds.

With the creation of the CP33 practice in the Conservation Reserve Program (CRP), landowners have an incentive to recreate some of the missing weedy patches field edges. North Carolina can enroll 11,300 acres of the CP33 upland bird habitat buffer practice. The ten year program pays the landowner the annual soil rental rate, a one-time signing incentive, maintenance payment, and practice incentive for the habitat management and installation. The borders must average between 30 and 120 feet wide and be located on one or more edges of the field. The borders will be maintained in volunteer vegetation by one of the following methods: fall disking or burning one-half to one-third of the border each year, or spot-application of herbicide on woody plants. The fall disked area may be seeded in a small grain such as wheat, seed rye, and/or oats to protect soil from erosion. The program requires and will pay for border markers. The markers should be 1 and one-half inch by five foot plastic pipes driven at least one foot into the ground. To sign up for the program, landowners should go to their local USDA Farm Service Agency office.

WILDLIFE HABITAT

—Bill Edwards, Wildlife Biologist, USDA Natural Resources Conservation Service

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Voice of America: A Unique Opportunity for Grassland Birds

Eastern North Carolina is host to two Voice of America sites in Pitt and Beaufort counties. These sites approach 3,000 acres each of extensive moist grasslands. The sites are located on two facilities maintained by the federal government for the Voice of America (VOA) radio transmissions to points overseas. These sites were established in 1962 on land that had supported forested wetland. Both sites had been under cultivation or otherwise disturbed at some point in time, and are bordered by industrial forestland, cropland and state maintained highways. These huge grassland fields are mowed each year on varying schedules and support very large populations of area-sensitive grassland bird species.

These VOA sites support the largest known populations of breeding Henslow's Sparrows east of the Mississippi River. Henslow's Sparrows require extensive grasslands and have experienced long-term range wide population declines as large grasslands have been broken into smaller patches. Surveys in the 1990's documented extensive numbers of singing males for several years after the birds were first discovered in 1980. This bird is a species of high conservation concern in North Carolina according to the U.S. Fish & Wildlife Service and Partners in Flight.

Henslow's Sparrows are most productive in very large grasslands, weedy moist meadows or overgrown pastures. Grasses are the predominant vegetation present, mixed with smaller plants and often scattered small saplings or tall weedy stems that serve as perching sites for the birds. At the VOA sites, the rough terrain does not allow for even mowing (as is often seen at airports) and some areas are only mowed once per year, serving as secure breeding areas. The sheer size of the areas also helps make these VOA grasslands suitable habitat for Henslow's Sparrows and other area-sensitive species like Grasshopper Sparrows.

In late 2004, the Wildlife Commission and the U.S. Fish & Wildlife Service under the direction of the North Carolina Partners in Flight Program, approached staff at the VOA sites to open a dialogue to discuss management strategies that would best benefit Henslow's Sparrows and other grassland wildlife species. The VOA staff was excited about the grassland birds supported by their mowing management on these unique areas, and was eager to develop positive partnerships to help continue and improve conditions that benefit these birds.

As a result of this initial meeting it was decided by all parties involved to develop a Memorandum of Understanding (MOU) to formalize the partnership and help guide future management of the VOA sites to benefit grassland birds. This formal arrangement would also be used to help control site access and also organize and promote future research related to monitoring, habitat management, fire management, and research related to grassland wildlife and vegetative ecological relationships. This MOU has been developed and sent on by local VOA staff to headquarters in Washington, D.C. for approval.

Obviously this is a very important step to help conserve significant grassland bird populations at these unique VOA sites, which can in turn serve as priceless learning laboratories via formal collaborative research projects in the future while long-term grassland bird monitoring continues.

—Mark Johns, Partners in Flight Biologist, North Carolina Wildlife Resources Commission

Rowland CURE Cooperative Hosts First Special Quail Hunt Opportunity

Last fall four parties of quail hunters participated in the first permit hunt on one of our private lands CURE areas. The eight lucky hunters were chosen from 47 individuals who applied for the hunts through the Commission's Special Hunt Opportunities permit hunt application process. Hunts were held on the first two Saturdays of the quail season on the Rowland Cooperative in Robeson County. A Commission employee met with each group of hunters on the morning of the hunt to provide an orientation to property boundaries.

Unseasonably warm weather conditions cut hunts short on opening day as hunters and dogs gave out early, but conditions improved for the second set of hunters. The four hunting parties used one to seven dogs, hunted five to eight hours, located four to seven coveys of quail, and harvested three to ten birds per party. Post-hunt interviews indicated that hunters were pleased with the hunting opportunity.

Permit hunts on the Rowland area will be offered again next November and on other Game Land and private CURE Cooperatives as populations reach levels that will provide quality hunts. Details on the 2005 hunt and application procedures will be published in the *2005–2006 Special Hunt Opportunities in North Carolina* booklet.

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

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

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City _____ State ____ Zip _____

Name _____
Address _____
City _____ State ____ Zip _____

Plan Now for Fall Dove Hunting

Dove hunting is a traditional, fun fall event for North Carolina's farmers and their guests. The N.C. Wildlife Resources Commission offers advice to promote a successful and legal dove hunt.

All hunters should know that it is a federal and state crime to hunt doves over bait. As written in the N.C. General Statutes, "No wild birds may be taken with the use or aid of salt, grain, fruit or other bait. . . ." However, birds may be hunted over fields planted and harvested as part of normal agricultural operations.

Crops preferred by doves include: rye, oats, millet, sunflowers, corn, sorghum, and wheat. All can be planted in late spring, with the exception of oats, rye and wheat which should be planted in the fall.

Normal agricultural operations include planting, harvesting and standing crops. Practices that fall outside the definition of normal agricultural operations and may be perceived as baiting are: seeding a field more than once, post-harvest seed concentrated in rows or piles, and top-sowing.

It's not difficult to attract doves to your farm in most areas of North Carolina. However, to keep doves on your property, limit shooting to one or two days a week. Too much shooting will cause the doves to move on to alternate foraging areas.

More information about the guidelines for attracting doves and baiting regulations is available at: http://www.ncwildlife.org/pg04_HuntingTrapping/pg4f1.htm.

***Doves** prefer rye, oats, millet, sunflowers, corn, sorghum, and wheat.*

CURE Management on the Sandhills Game Lands

It is early January and the familiar smell of diesel fuel, gasoline and wood smoke will soon permeate my truck, cloths, and according to my wife my hair and skin. All my friends say I remind them of their youthful camping trips. It is early January and the beginning of another prescribed burning season that will extend into June. It is a long season briefly interrupted by rainy days and weekends. We already have a block prepared and ready to burn, but before we head out I need to check on a logger who just moved onto a sale. As I cross over U.S. Highway 1 and head east on the Old Laurel Hill Road, I enter Scotland County and one of the four CURE sites on state-owned game lands. As I drive slowly down the road I begin to recall all the work that has gone into this program.

The implementation of the CURE program on the Sandhills Game Land is now in its fourth year. The technicians, biologists and foresters assigned to design and implement the plan have been very busy. What began as an idea shared among managers who recognized the need for a change in land management is beginning to take form. The landscape, once dominated by thick stands of pines and midstory hardwoods, is giving way to an open pine forest with grasses and forbs carpeting the ground. The evergreen shrub drains that had become choked with poplar, gum and maple are being converted back to pond pine canopies and a diverse ground cover of switch cane, grasses and flowering shrubs and herbs. The many small openings, totaling over 200 acres, have also seen a change in management. They are being planted into thick stands of warm season bunch grasses such as Atlantic coastal panic grass or food plantings. Over 30 acres of new open land have been created by removing poor growing stands of loblolly pines. The goal is to create over 5000 acres of open pine/grassland forest habitat and to restore species like the bobwhite quail in the Sandhills of North Carolina.

Spotlight on C·U·R·E

Some of the most intensive management has taken place in converting over 450 acres of longleaf pine plantation into open pine/grassland habitat. Most of these stands were established over 70 years ago and have been managed to produce pine straw for the landscape industry for the past 30 years. They were stocked with as many as 70–100 trees per acre. An absence of ground cover made these stands less than desirable habitat for most species of wildlife. To date we have thinned six pine plantations, removing over two million board feet of timber to create an open pine canopy. Such conditions are necessary for creating ground cover. Instead of waiting for nature to seed in these areas on her own, we devised several strategies to speed up the process. Where logging debris was heaviest dozers were used to windrow and pile limbs and tops from the trees that were harvested. An innovative method of applying seed and fertilizer was devised and used by wildlife management technicians. Leaf blowers designed to apply granular herbicides were modified to make quick work of the job. Types of seed applied included Atlantic coastal panic grass, ragweed, partridge pea, wiregrass and native flowering herbs found in the Sandhills. The results are looking very promising. Thick clumps of panic grass and broom straw are creating a dazzling array of vertical structure. Exactly what the prescription called for. If I had the money I would buy a bird dog.

***Midstory hardwoods** are removed from a stand of pines.*

Stands of natural longleaf have been thinned where needed. Many of the more open pine stands where choked with thick stands of midstory hardwoods. While not wanting to eliminate all the oaks from the CURE area we realized we had to regain control of our uplands if we were to create the type and amount of habitat needed to make the CURE program a success. Last year we prescribed burned over 1200 acres on the CURE area. Where fire has proven ineffective we have resorted to herbicides to remove dense hardwood midstories. To date we have treated between 240–250 acres. These upland sites though low in productivity do cover a large area and will connect the more productive sites with moderate to good habitat.

Most of our timber sales include both upland and wetlands. As mentioned earlier one of our major goals is the restoration of our drains to a pond pine/switch cane/grass type habitat. Most of our drains currently have a mixed pine/hardwood canopy. Removing the larger merchantable hardwoods has proven to be very effective in producing high quality habitat for ground nesters. The remaining pine-dominated, evergreen/switch cane plant community can be managed with prescribed fire. Past experience and research tells us these wetlands will play a major role in determining how many birds can be produced in the sandhills. This canopy conversion of over 750 acres of wetlands within the CURE area will help assure an abundance of nesting and escape cover.

***Spring** is the season for prescribed burns.*

We still have two years of logging and habitat restoration work left to do. After that we hope to use prescribed fire to maintain the majority of the acres, but where fire can not maintain the desired result mowing and herbicides will be used. Many challenges still lay ahead of us and the maintenance will have to be aggressive and ongoing. Quail are a product of disturbance. If the cycle of disturbance is broken the habitat needed for survival will disappear.

As I leave my logger on the designated deck I point my truck toward the depot and an eagerly awaiting burning crew.

—Bill Parsons, Wildlife Forester

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NC Wildlife Resources Commission Biologists Join Natural Resources Conservation Service Area Offices

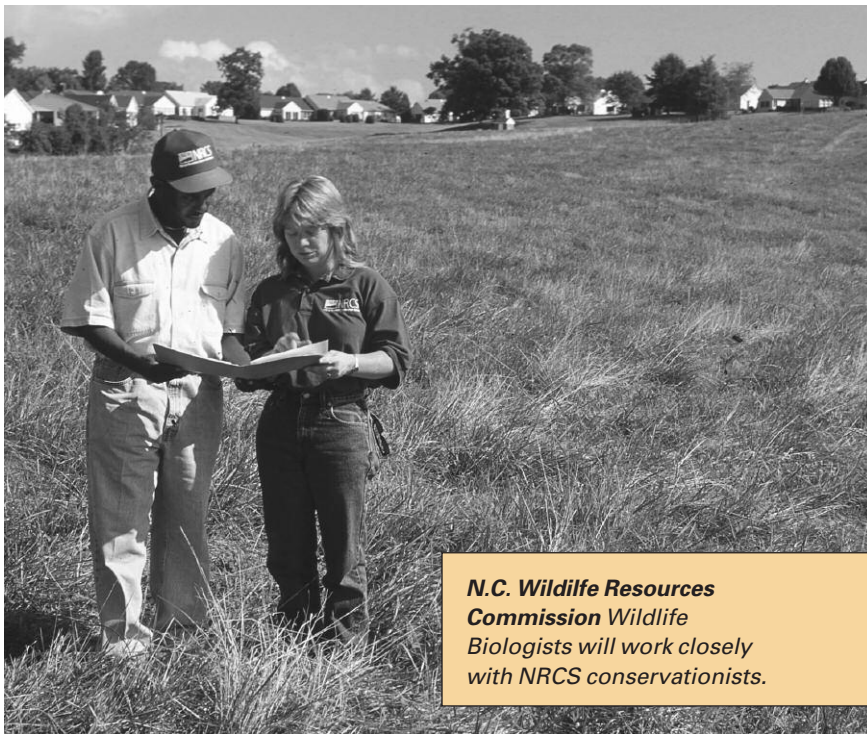
Thanks to a new agreement between the Natural Resources Conservation Service (NRCS) and the North Carolina Wildlife Resources Commission, private landowners will receive additional wildlife conservation assistance.

A full-time wildlife biologist is joining NRCS Area Offices in Goldsboro, Salisbury, and Waynesville. They will dedicate their time to enhancing the capabilities of NRCS and Soil and Water Conservation Districts to provide landowners with technical assistance in wildlife management.

Wildlife Biologists Don Barker, Patrick Farrell, and John Isenhour have reported to NRCS Area Offices in Goldsboro, Waynesville, and Salisbury. Don and Patrick each have gained years of wildlife management experience working as Wildlife Technicians on North Carolina Game Lands. John comes to WRC having experience with the N.C. Forest Service and a degree in Wildlife Management from N.C. State University.

Both the Commission and NRCS look forward to the increased capability to provide technical assistance to landowners.

—Matt Flint, NRCS State Biologist



***N.C. Wildlife Resources Commission** Wildlife Biologists will work closely with NRCS conservationists.*

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