The Wildlife Commission Seeks the CURE

A s we have discussed in previous Upland Gazette articles, the bobwhite quail has seen significant and long-term population declines in North Carolina and throughout its range. Early pioneer settlements and agricultural expansion created ideal quail habitat throughout the Southeast during the 1800s and early 1900s, and quail populations generally remained high through this period. As early as the 1950s, however, declines in quail populations were being documented throughout the species’ range. Based on our best available data, quail populations in North Carolina declined by over 3.5 percent each year from the mid-1960s through 1980 and by over 6 percent each year between 1982 and 1991.

The group’s observations indicate that thin stands of pine, less than 300 tpa (7 ft. x 10 ft. spacing), were being documented throughout the species’ range. Based on our best available data, quail populations in North Carolina declined by over 3.5 percent each year from the mid-1960s through 1980 and by over 6 percent each year between 1982 and 1991. Weakened quail has seen significant...

The Wildlife Commission is initiating a new approach to small game management. This new program includes efforts on state-owned game lands, but much of it involves habitat management on private lands. We are calling the new private lands management program CURE—an acronym for Cooperative Upland-habitat Restoration and Enhancement. Our objective is to increase populations of quail and other wildlife that depend on brushy, woody and grassy habitats. This can be accomplished in only one way—by restoring and enhancing habitats.

Focal Areas

The CURE program rests on some important concepts. First, addressing a problem as significant as declines in small game and their habitats must be targeted at those areas in our state where land use and other habitat conditions offer the greatest potential for successful habitat restoration and enhancement. Second, we acknowledge that changes in land use make it impractical to restore small game and their habitats in some areas of North Carolina. Therefore, our first step in implementing CURE involved defining focal areas where habitat restoration has the greatest chance for success.

To determine where the first three focal areas should be established, division staff used computer analyses to compare all habitat types across the entire landscapes of North Carolina. In conducting these analyses, we defined five habitats—agricultural, pasture, woodland, shrubland and unsuitable. Then we looked for areas where combinations of these habitats exist in proportions that indicate overall suitability as small game habitat. In the Coastal Plain, the best habitat conditions were found where open habitats comprise 60 to 70 percent of the landscape and where woodlands or shrublands comprise 30 to 40 percent of the landscape. In the Piedmont, the most favorable areas were found where open habitats comprise 50 to 60 percent of the landscape and woodlands or shrublands comprise 40 to 50 percent of the landscape. Based on our analyses, we have established three focal areas, two in the Coastal Plain and one in the Piedmont (Figure 1). It is within these focal areas that the CURE program will be implemented.

Cooperatives

Within these three focal areas, we will establish cooperatives, which are simply groups of landowners (and their farm managers) that collectively have at least 5,000 acres of land they wish to enroll in the program. Cooperatives of this size will provide large blocks of connected habitat to manage for quail and associated wildlife. Through the CURE program, Wildlife Resources Commission biologists will establish solid working relationships with private landowners to provide the following:

- Education about the need for this work
- Information about how to enhance
- Continued on page 2...
Advances in the Management of Loblolly Pine Plantations

E. W. Lewis, Jr., J. A. Moore, C. L. Thomas, J. C. Gilchrist, C. L. Sayre, Jr., R. A. Green, D. T. Cobb, and J. M. Snyder

The wildlife resources of North Carolina belong to all citizens, but individual landowners control most of the land on which small game populations can be improved. By involving private landowners, the CURE program is our attempt to refocus and intensify our efforts to address small game declines. The Wildlife Resources Commission approved this new approach last fall and made an initial funding allocation of $1 million, with funding guaranteed for the first five years of the program. Ultimately, however, it will be the private landowners of our state who determine the program's success.

To find out more about the CURE program, contact the commission's Division of Wildlife Management at Raleigh (919) 733-7291.

—Dr. David T. Cobb
Chief, Division of Wildlife Management

Albany Quail Project Research: Intensively Managed Quail Plantations

T. H. ALBANY QUAIL PROJECT (AQP) began in 1992 on Pineland Plantation in southwest Georgia. Designed by the Division of Conservation Education. To become a subscriber, please send your name and address to the following address:

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 future mailings and do not need to reply.)

Maximize Wildlife Benefits from Loblolly Pine Plantations

MANY ACRES OF FARMLAND ACROSS the Southeast have been converted into loblolly pine plantations. While these plantations offer an economic bonanza to landowners, especially when combined with land retirement programs such as the Conservation Reserve Program (CRP) and Conservation Reserve Enhanced Program (CREP), they present a challenge to wildlife managers and landowners who want to promote healthy, diverse wildlife populations. Loblolly pine plantations quickly develop a closed canopy, and they smother low-growing plants with a dense layer of litter. This discourages the plant diversity needed to provide food and cover for wildlife.

Since then, the project has expanded in both size and scope. Our research now involves five different plantations that make up more than 50,000 acres. The AQP is a unique combination of research, monitoring and management with two objectives: understanding bobwhite quail ecology in southwest Georgia and using this information to produce high-quality quail hunting. Our cumulative sample now includes more than 4,000 radio-tagged birds, with projects conducted on a wide range of topics—all pertaining to practical quail management and hunting.

Management and monitoring projects are ongoing in two different sites: a farming landscape and a pine woodland. We are monitoring how the quail population responds to intensive modification of the row-crop farm landscape and intensive hardwood cleanup in the woodland. The farm study area has shown a dramatic population increase over the last three years after field borders and terraces were established on all agricultural fields. Predator-trapping and supplemental feeding are also practiced on this site.

The pine woodland site has shown dramatic increases in quail populations as well after mechanical removal of hardwoods. This resulted in much better groundcover for the birds. We also believe that it has affected avian, mammalian and reptilian predators negatively. Our research experiments are currently focusing on nest predation and supplemental feeding. For more information, send us your name for inclusion on our newsletter mailing list or visit our Web site at www.quailmanagement.com.

—D. Clay Sisson and H. Lee Stribling
School of Forestry and Wildlife Sciences
Auburn University

Avid Quail and Grouse Hunter Survey Participants Needed

Hunters can provide us with some of our best estimates of game bird population trends. Grouse and quail hunters who may be interested in providing a short summary of their hunting efforts should contact Mike Seamster, Upland Game Bird Biologist, 791 Seamster Road, Providence, NC 27315.

Published two times per year by the North Carolina Wildlife Resources Commission, Division of Wildlife Management. Designed by the Division of Conservation Education. To become a subscriber, please send your name and address to the following address: The Upland Gazette, Division of Wildlife Management, P.O. Box 1722, Raleigh, NC 27699-1722. Comments and suggestions are welcome. Send to the above address.
**Selected Game Lands to Feature Small Game Emphasis**

Portion of the August 2000 Wildlife-Commission-approved Small Game Initiative proposed for inclusion in several state-owned game lands. Implementing this proposal will center around the objective of intensifying quail and small game management on selected portions of game lands owned by the N.C. Wildlife Resources Commission (as opposed to game lands managed under cooperative agreements and leases). Many of the same techniques that will be implemented on private land cooperatives enrolled in the Cooperative Upland-habitat Restoration and Enhancement program (CURE) will be used on game lands.

Division staff has selected portions of four game lands to include in this management scenario: Caswell Game Land (Caswell County), Sandhills Game Land (Richmond and Scotland counties), Suggs Mill Pond Game Land (Bladen and Cumberland counties) and South Mountains Game Land (Rutherford and Burke counties). Wildlife Resources Commission staff will select at least 5,000 acres on each of these game lands for the intensive small game work. Management plans will include forage and field practices aimed at improving early-succession grassland habitat for quail (grouse on the South Mountains Game Land). Quail and rabbits will be the focus. This is the same process used for managing CURE cooperatives, though the private land cooperatives will probably contain more field habitat and less woodland than game land areas. As a result, we anticipate that forestry practices will dominate small game management efforts on the game lands.

**Hunting on Young Pine Plantations**

By year two, the pokeweed plants were gone and the groundcover was more dense. Unless a crop field lay nearby, the dove hunting was over until the next cutting cycle. During that second winter, dove cover improved on the hilltops, and a rabbit or covey of birds might show up most anywhere. My hunting buddies and I watched for clay outcrops and log landings—they often supported a volunteer stand of common lespeidea that held a covey of quail. During midwinter we often walked the thicker areas trying to get a shot at a deer.

The third winter found young pines peaking above the weeds, but the area was still good for quail. In many locations, the number of rabbits as well as frequency of deer use continued to increase. By year four, the bobwhites were hard to hunt because the trees made it difficult to keep up with the dog, and the turkeys tended to avoid the plantations because of the heavy cover. As the years progressed, we began noticing changes in the way the plantations were prepared for planting. Site preparation with heavy disks and fire was abandoned for new technology. Herbicides, often in combination with fire, are now used to control competition for the young plantings. The combinations of herbicides used often still produced good pokeweed stands and dove hunts, particularly when burning was used in combination with the herbicides. The long vistas offered by the clear-cuts continued to be attractive for deer hunting, and the gibblers still used them to display for the hens each spring. But the weedy and native plant community that followed dishking and burning, and provided food and cover for the quail and rabbits suffered. In particular, plants in the bare family—beggar’s-lace, lespeidea, and wild peas and beans—became scarce. Additionally, the new treatments failed to provide a dense, uniform weed cover, especially on poor upland soils. Where once we could count on good hunts for quail and rabbits, we now had to hunt harder to find our quarry. Site preparation and management of young pine plantations continues to evolve based on research, availability of management tools and economics. Today, few plantations are burned or disked, so the bare ground that stimulated pokeweed and ragweed stands—and attracted doves—is gone. Many young plantations in the southern Piedmont are sprayed with herbicide the spring after planting to control herbaceous weeds. The weed development that provides food and a canopy of cover for bobwhites and rabbits is delayed. Young pines grow faster, and the weedy stage ends a year or two earlier.

Our pine plantation hunts have evolved with these changes in management. We still look forward to watching for deer in the young forest stands, chase wild turkeys around them in the spring and occasionally hear or see examples of the elusive Carolina parakeet in the remaining stands. But the Cover Plantation Initiative is gone and the groundcover was more dense. Many young plantations in the southern Piedmont are providing a less diverse plant community and less protective cover from weeds and grasses. As pine growth is enhanced, the productive weed and native plant community changes with these new management practices. We still look forward to watching for deer in the young forest stands, chase wild turkeys around them in the spring and occasionally hear or see examples of the elusive Carolina parakeet in the remaining stands. But the Cover Plantation Initiative is gone. So we kept moving, scouting new pine plantations for dove hunting. By year four, these young pine plantations are providing a less diverse plant community and less protective cover from weeds and grasses. As pine growth is enhanced, the productive weed and native plant community changes with the new growing season. By year four, the bobwhites and rabbits were usually restricted to moist soil areas where taller weeds, cane and shrubs provided cover.

We were able to monitor five hens that monitored birds for two field seasons. The following briefly describes our accomplishments through late winter 2001.

We conducted drumming surveys in the spring of 1999 and 2000 to provide estimates of population density and to locate drumming logs. The grad students found another 16 logs and took a variety of measurements associated with each log. The average drum log is located in a period of high hunting pressure, though the drumming logs are still valuable to our intensive small game work.

We continued to catch birds for radio monitoring, 4 in the spring of 2000 and 7 in the fall. Our capture success rate was a little lower in the fall, but we still ended with a dense mid-story. The key feature to be observed is wildlife-Commission-approved Small Game Initiative proposed for inclusion in several state-owned game lands. Implementing this proposal will center around the objective of intensifying quail and small game management on selected portions of game lands owned by the N.C. Wildlife Resources Commission (as opposed to game lands managed under cooperative agreements and leases). Many of the same techniques that will be implemented on private land cooperatives enrolled in the Cooperative Upland-plantation Initiative is gone. So we kept moving, scouting new pine plantations for dove hunting. By year four, these pine plantations are providing a less diverse plant community and less protective cover from weeds and grasses. As pine growth is enhanced, the productive weed and native plant community changes with the new growing season. By year four, the bobwhites and rabbits were usually restricted to moist soil areas where taller weeds, cane and shrubs provided cover.

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**Research Roundup**

Southern Appalachian Ruffed Grouse Research

In 1999, researches Craig Harper and Dave Beuhler at the University of Tennessee and Gordon Warburton with the N.C. Wildlife Resources Commission began the first comprehensive study of ruffed grouse nesting and brood habitats in the moun-tains of western North Carolina. We designed the study to examine ruffed grouse habitat use, in particular how grouse respond to different methods of harvesting timber. Our study suggested that ruffed grouse management on ruffed grouse is our primary focus, we are also learning a great deal about population densities, nestling and brood ecology, drumming sites and mortality patterns.

Graduate students Carrie Schumacher and Jennifer Fettinger, along with technicians from the Wildlife Resources Commission's Andrews and Franklin crews, have captured and monitored birds for two field seasons. The following briefly describes our accomplishments through late winter 2001.

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