

the Upland GAZETTE



◆ North Carolina Small Game Notes ◆

What's Inside...

- ◆ Grouse Research Underway 3
- ◆ Native Warm Season Grasses 3
- ◆ Bean Dips 4

The Economic Battle for the Bobwhite

WITH THE EXCEPTION OF SOME U.S. Forest Service land, military bases, and a few state-owned game lands, all of the quail habitat in North Carolina is provided by private landowners. Quail habitat on private land occurs in one of two forms: habitat associated with activities on farmland or habitat resulting from management of woodlands. Quail habitat on farmland is provided as a by-product of farming activities. A partial list would surely include: field edges or borders, ditch banks, fallow fields, standing row crops (corn, soybeans, etc.) and hedgerows between fields. Woodland habitat is usually associated with clear-cuts that provide habitat from five to 10 years depending on the type of trees cut and how the area was treated after harvest (was it sprayed with herbicide, burned, replanted etc. However, woodland habitat can also be created by thinning and burning older stands of loblolly or longleaf pine as well as some oaks.

The Key Players

When requested, biologists with the N.C. Wildlife Resources Commission will gladly

provide recommendations for habitat installation and management on both privately owned farmland and forestland. However, because the land is privately owned, biologists do not dictate to the owners how they manage their property. Actually, because the landowners own the land and make the decisions that will influence habitat, quail, quail hunters and biologists are all at the mercy of landowners' management choices.

Why Are We Losing Habitat?

If loss of habitat is the underlying reason for the decline of bobwhite quail, and the private landowners ultimately determine the amount and distribution of the habitat, why have the landowners made choices that resulted in removal of quail habitat from private forest and farmlands? The answer, without question, is economics. If you are a quail hunter then you have already heard about the changes in farm equipment, crop rotations, removal of hedgerows, availability of fertilizers, etc. All of these changes have come about as improvements to farm systems in an attempt to maximize farm income. The farmers did not consciously remove quail

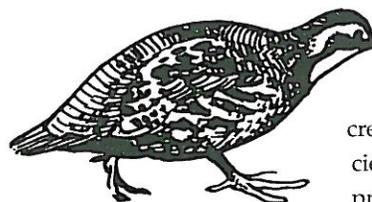
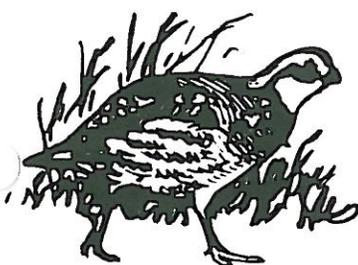
habitat, but they did consciously attempt to increase their efficiency and production.

Economics or, more specifically, maximizing income has also affected quail habitat on forestlands. For example, some current practices applied with intensive production forestry result in limited quail habitat when compared to earlier harvest and planting methods. Again, these management choices are made due to pressures for improvements in efficiency and greater economic returns and not because somebody doesn't care about quail or other wildlife. Finally, we are all aware of the development pressures that are rapidly converting much of rural North Carolina's farm and forestland to urban and suburban landscapes.

Tax Laws and Wildlife

Maintaining and increasing income is also necessary for most private landowners to keep forest and farmland in their families' possession and in its' current rural state. Obviously, maintenance of a rural landscape is a primary requirement for quail and most other wildlife species to survive. In addition to income obtained directly from farming or forestry, there are other economic incentives that influence ownership and management activities on private lands. Several different tax laws have considerable economic implications with regard to continued ownership and management of private lands by current landowners. For quail and other wildlife habitat, these laws have had varied effects. For example, the federal estate tax of the Internal Revenue

continued on page 2



The Economic Battle for the Bobwhite *continued*

Code places economic pressures on traditional farming families, often resulting in changes in land use with damaging consequences for land and wildlife conservation. Bills are currently being considered to phase out this tax over the next 10 years. Moreover, assorted federal natural resource programs have provided cost share payments to landowners as incentives to establish wildlife habitat. However, payments are not what they first seem, as they are taxed as income at the end of the year.

The Real Value of Land

North Carolina's most influential law for maximizing income production and therefore influencing management choices on private lands comes in the form of annual property tax reductions. Through North Carolina's use value assessment program, a landowner may obtain significant reductions in annual property tax if certain requirements are met, and their county of residence participates in the program. This program is rather complicated, but it basically works by enabling county tax departments to consider the present "use value" rather than the "market value" in determining tax assessment. The intent of this law is to give tax relief to farm and forest tracts held by families and to protect these tracts from being sold because of higher taxes caused by appreciating land values and higher market assessments.

How to Qualify

This legislation, enacted in 1973, provided some much needed protection for rural land ownership and has worked to

some degree, evident by scattered farm fields and pastures adjacent to many of North Carolina's city limits. However, the requirements for participation unintentionally provided a financial disincentive for management of wildlife habitats, and the program limits inclusion of land owned and managed solely for wildlife habitat. To be eligible, land must be under sound management for such purposes as agriculture, horticulture or forestry. A sound-management program is defined as a program of production designed to obtain the greatest net return from the land consistent with its conservation and long-term improvement.

The "Quail Tax"

Imagine a biologist, while providing guidance to a farmer, suggesting that the farmer establish and manage quail habitat on 20 acres of pasture or farm fields. In this situation the biologist is asking the landowner not only to forego the income received through livestock or crop production (or the lease of the land for these uses), but also to establish and maintain the habitat at his own cost. Finally, because the 20 acres may not qualify for the reduced tax rate, the landowner must also pay higher county taxes for those acres that he has converted. In essence, the landowner must give up potential income, pay for the cost of establishment and management, and pay what amounts to a "quail tax."

A Green Choice at Tax Time

On the bright side of state tax laws, North Carolina has a Conservation Tax Credit Program. A substantial tax credit may be allowed against individual and corporate income taxes when property is donated for conservation purposes. Donation may include conservation easements given to state and local governments and certain qualified nonprofit organizations. As a secondary benefit, conservation easements often provide economic relief in the form of reduced property taxes. From 1983 through 1999 North Carolina was the only state with

a program of this type. As of Jan. 1, 2000 four additional states are also providing a similar tax credit.

What Can Be Done?

It appears that habitat for quail and many other wildlife species has, for the most part, been incidentally supplied through whatever land use and practice is most profitable and efficient at a particular given time. Therefore, if we expect quail and other wildlife to once again be found in significant numbers on private land, we must find and promote forestry, farming and horticulture practices that provide economic gain through both income and time efficiency and—as a by-product—provide the desired habitat. This is not a new idea and is the reason that practices such as prescribed burning, no-till planting and conversion of fescue to switchgrass (see switchgrass article) have been so intensely promoted by southeastern wildlife agencies. We must also establish and support tax laws that provide financial support for those who maintain rural landscapes and create habitat. Finally, as landowners, we must understand that we provide the habitat for wildlife, and we must be willing to shoulder some of the economic responsibility for establishment and maintenance of habitat.

Dollars and Sense

But we can't really blame landowners for choosing continued or improved income production over maintenance of some type of wildlife habitat. We also can't blame the biologists or the wildlife agency for not being able to convince landowners that wildlife habitat is more important than income. We can't fight an economic battle with free technical advice and bags of seed. If we hope to succeed, we must expand our efforts to include those economic considerations that drive landowner's decisions on land management. I recently paid my annual "quail tax." Have you paid yours? ♦

— David Sawyer
District 7 Wildlife Biologist



Established 1996

Published three 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, N.C. Wildlife Resources Commission, 1722 Mail Service Center, Raleigh, N.C. 27699-1722. Comments and suggestions are welcome. Send to the above address.

Grouse Research Underway

RESearchers CRAIG HARPER AND Dave Beuhler with the University of Tennessee, U.S. Forest Service and the North Carolina Wildlife Resources Commission began a study of ruffed grouse this past fall in the mountains of western North Carolina. This study is a first-ever telemetry study of the King of the Game Birds in this area. The main focus of the study is to examine ruffed grouse use of habitat, in particular, to look at how grouse respond to different methods of harvesting timber. We also wanted to look at population levels, nesting ecology, drumming sites and mortality patterns. The first question we had to address, however, was could we even catch enough birds to conduct our study. University of Tennessee and Wildlife Commission staff set out 150 walk-in traps from August to October. Seventy-three birds were caught and 65—38 females, 27 males—had radio transmitters placed on them! (So much for whether or not we could catch birds) By late winter, 11 of the

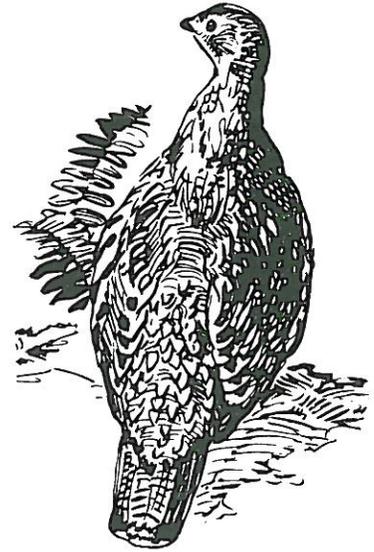
collared birds have been killed by predators and two by hunters. Based on projections, it looks like hunter harvest rates may be about 10 percent out of the total population, which is about what we see in other areas of the Southern Appalachians. The results are very preliminary at this point, however. We have been monitoring birds since September and saw that birds exhibited a “fall shuffle” as broods broke up and wandered around during October. By November, grouse seemed to settle into pretty consistent winter ranges, moving very little.

Craig and Dave also conducted drumming counts in spring, 1999. They found 15 drummers, which equates to a minimum density of about 1.5 birds per 100 acres. This is probably a conservative estimate, as this technique can miss some drummers. The Wildlife Commission plans to conduct drumming surveys across the mountain region to get population estimates in other areas and to compare results with the study.

The results of this landmark study will

help us address the impacts of various cutting methods. In addition we’ll know more about the types of habitat used by the ruffed grouse in our mountains. ♦

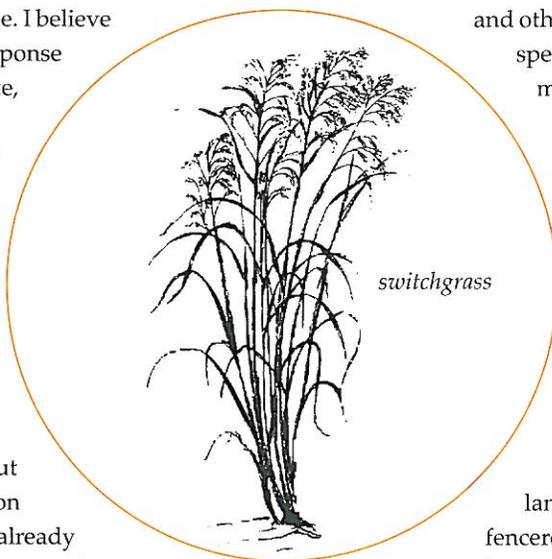
—Gordon Warburton
Supervising Wildlife Biologist



Native Warm Season Grasses vs. Time

NOT LONG AGO, I WAS ASKED WHERE we were in terms of getting native warm season grasses established on private land across the North Carolina landscape. I believe my immediate response was something like, “I think we are short of where we thought and hoped we would be.”

As small game hunters and outdoor enthusiasts you have probably heard or read about native warm season grasses. You may already know that these groups of perennial grasses are native to North Carolina and much of the Southeastern United States and therefore, grow quite



well in our soils and climate. You are also probably aware that these grasses provide excellent nesting and brood habitat and winter cover for bobwhite quail and other grassland bird species. Many small mammals and larger wildlife species also use cover provided by the grasses. Native warm season grasses can provide the habitat that used to be present on the farms in the form of idle land, grassy/brushy fencerows, field borders and other overgrown grassy and brushy areas that are no longer present on most modern farms. Perhaps you have also heard or read that the fescue and other cool

season grasses that are so prevalent on most farms and pastures are not capable of providing the type of nesting, brood habitat and winter cover that native warm season grasses provide. Fescue is suitable for retarding undesirable effects of runoff and erosion because it forms a dense sod, but it is not a wildlife-friendly grass.

As you travel around I would ask that you make a conscious effort to take note of the extent of fescue plantings that you see in the pastures and hay fields on the farms you pass and along the highways. It seems to be everywhere doesn't it? Now contemplate how much excellent wildlife habitat there would be if only a fraction of the fescue were converted to the wildlife-friendly native warm season grasses.

And these grasses can benefit agricultural practices, too. Warm season grasses are much higher in protein and produce weight gains in cattle more than twice what fescue and other conventional grasses

continued on back page

Bean Dips

NO, WE ARE NOT TALKING ABOUT A new Mexican wild game dish. “Bean dips” or “pea swales” are the names that North Carolina botanists have given to an unusual land form found in the North Carolina Sandhills. You will see that these shallow depressions are an important resource for bobwhites in the Sandhills and that learning about them may improve your hunting success.

The Sandhills region of North Carolina is a unique transition area located between the coastal plain and piedmont region. The southern pine forest dominates the Sandhills landscape. Closely associated with the pine forest is a mixture of hardwoods, which are composed primarily of turkey, black jack, blue jack and sand post oaks. But some of the most interesting and least understood plant communities found in the Sandhills are the ones at ground level. This layer of the plant community is often referred to as the ground cover layer or just “ground cover.” It provides a variety of seeds, insects, and browse, nesting habitat and escape cover. Though our attention is drawn by the trees that dominate the landscape, the ground cover is the feature that provides food and cover for bobwhites. And of course, not all ground cover is equal when it comes to meeting the needs of wildlife.

The deepest sands have a hard time meeting the nutrient and moisture demands for all but the most drought-hardy plants. A relatively simple plant community dominated by turkey oaks, longleaf pines, and wiregrass usually inhabit the sandy ridges. On the opposite end of the scale are the many narrow drains that offer an abundance of moisture and dark thick organic soils. Here, only those plants with root systems that can tolerate saturated and highly acidic soils can survive. Pond pines, hardwoods,

and an impenetrable layer of shrubs characterize this wetland plant community.

However, many of the most productive communities for bobwhites occur across a range of mediums between these extremes, and one of these is found in small depressions scattered throughout the sandhills. The subtle depressions are usually less than 5 acres and were given the name “pea swales” or “bean dips” when botanists began noticing the rich variety of native plants from the bean family that grow in them. The many species of beans in the ground cover community are accompanied by prairie grasses and plants in the sunflower family. Nine plant species considered to be



rare at the state and/or federal level commonly occur in this type of habitat.

Bruce Sorrie, a botanist, recently completed an inventory of the Sandhills Game Land (SGL), located in south central North Carolina, and documented a number of “bean dips” in both Richmond and Scotland County. When asked what makes these areas so attractive to so many varieties of plants he indicated that the bean dips “have a loamier mix of soils than the surrounding areas,” he said. “The depression like shape may have contributed to the concentration of nutrients, allowing them to build up in the soils.”

To the untrained eye, these small depres-

sions are barely noticeable, but the many native beans found on the Sandhills Game Land have certainly exploited them. According to Mr. Sorrie’s 1998 inventory of the SGL, of the 56 native bean species encountered on the area, more than 20 have been recorded in one bean dip. “Many of these plants require higher nutrient levels than the surrounding soils can provide,” Sorrie says. “These depressions create a sort of oasis effect where small pockets of soils supporting a rich diversity of legumes, grasses and other herbaceous plants are surrounded by vast acres of lower diversity.”

Though the botanical significance of these areas is without question, no one has documented their importance to wildlife. On one occasion while recording the locations of these sites with Bruce, we flushed a hen turkey. It was mid June and upon closer inspection we found she was sitting on a nest. We quickly finished up our work and left. The area had taller grasses and waist-high shrubs that made ideal nesting habitat. The availability of the rich herbaceous plants probably helped meet the nutrient demands of her young poults after they hatched, as well as proved escape cover from aerial predators.

We can speculate on the role of the bean dip communities to bobwhites in the Sandhills. First, most of the bean species found in them produce seeds on which bobwhites feed. Additionally, the diverse groundcover produces a greater abundance of insects than the more sparsely vegetated surroundings. The greater soil fertility contributes to better cover for bobwhites. Currently, research on the distribution of native legumes and how soil texture, nutrients, and litter influence them is being conducted by Mary James. Ms. James is a graduate student at UNC Chapel Hill. She is also interested in

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 future mailings and do not need to reply.)

Name _____

Name _____

Address _____

Address _____

City _____ State ____ Zip _____

City _____ State ____ Zip _____

finding out what role these depressions play in providing habitat for wildlife species like bobwhite quail.

Ms. James' study of the conditions that have created the diversity found within the bean dips will help land managers better understand nutrient and soil requirements of the many native legumes found throughout the sandhills. This knowledge will be important to ecologists as they work to understand the process of restoring this component of the longleaf ecosystem.

Hunters who frequent the sandhills can benefit by learning to recognize the bean dips. In years when pine seed and acorns are scarce the dips act as naturally occurring food plots. During some years, bobwhites use the areas heavily as evidenced by frequency of seeds from bean dip plant species such as beggars lice, partridge pea, butterfly pea, wild lespedezas and milk peas located in the crops of quail harvested by hunters. So hunters who can recognize and frequent the bean dips can increase their success rates.

The moral of the story can be applied elsewhere. No matter what habitat type we hunt in, the more we learn about bobwhites and the way they interact with habitat to find food and cover the better our hunting success and more enjoyable our experiences afield. ♦

— Bill Parsons, Wildlife Forester
Mary James, Botanist

CREP Available in Neuse, Chowan, Tar Pamlico and Jordan Lake Watersheds

LANDOWNERS IN THE ABOVE WATERSHEDS have an unparalleled opportunity to benefit wildlife and water quality. The Conservation Reserve Enhanced Program offers lucrative annual rental payments and generous cost share rates to

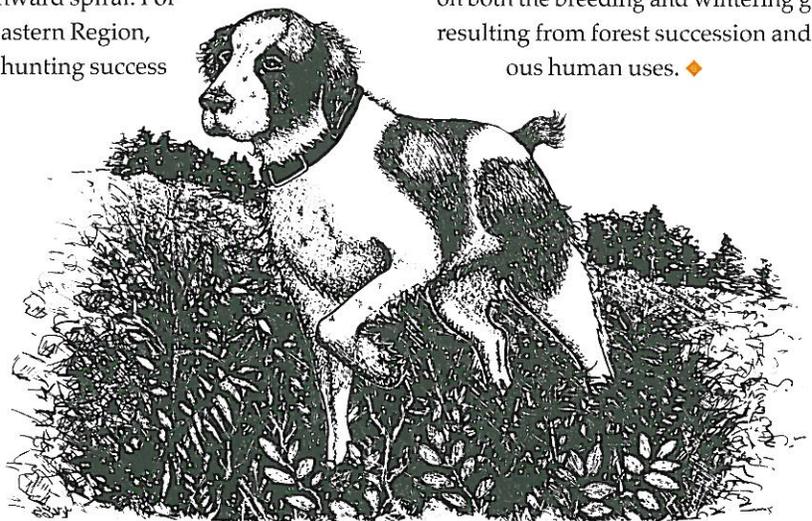
protect ditchbanks and streams with vegetated buffers. If you have farmland in the affected watersheds contact your local Natural Resources Conservation Service office for details. ♦

Dismal News for Woodcock

THE US FISH AND WILDLIFE SERVICE reports a continued decline in populations of this woodland "shorebird." The most recent figures on hunting success, recruitment and singing grounds surveys are all in agreement that populations are still in the midst of a long-term downward spiral. For the Eastern Region, 1998 hunting success

declined by 4 percent, while the recruitment index equaled the long-term average, and singing grounds surveys showed no detectable change in 1999.

The major cause for the long-term decline and depressed populations are considered to be degradation and loss of suitable habitat on both the breeding and wintering grounds, resulting from forest succession and various human uses. ♦





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

ADDRESS CORRECTION REQUESTED

Native Warm Season Grasses vs. Time *continued*

produce. In other words, native warm season grasses can provide positive economic opportunities for cattlemen. We then began a technical guidance effort aimed at farmers and cattlemen to introduce them to the benefits of native warm season grasses, hoping that they would adopt the grasses by converting a portion of their fescue pasture and hay acreage to the wildlife-friendly native warm season grasses. Our plan has not yet worked as we had hoped.

It appears that *time* is the greatest obstacle we have toward gaining the acceptance of native warm season grasses as a modern agricultural practice. Farmers need to be sold on the attributes, and wildlife biologists must somehow find more *time* to pitch the product.

Illustrating the tremendous benefits of native warm season grasses as cattle forage during summer droughts when cool season

grasses are dormant will require more *time*. Enlisting the help of cooperative sportsmen like yourself to help us promote native warm season grasses to the owners of the property where you hunt will help us save *time*. We need to get sportsmen and land-

owners to understand that predators

are not the problem. Instead, small game populations are hampered by the lack of adequate acreages of nesting and brood-rearing habitat.

Most of you have heard the old adage that "good things come to those who wait." We believe that

time is running out for some of the wildlife species that depend upon grassland habitats. We are hopeful that bobwhite quail and other species which depend on quality grassland habitats can wait, or hang on, until such *time* as native warm season grasses are established on sufficient acres of farms across the state to enable their populations

to increase from their current dangerously low levels. If we would all *think habitat* we could save a lot of *time* and be much more successful in our efforts to gain widespread acceptance of native warm season grasses. When we provide adequate habitat on a landscape-scale basis, the *time* will be right for our grassland wildlife species to rebound to their formerly abundant levels. ♦

—Denny Baumberger
Small Game & Migratory Bird
Research Program Coordinator

Contact the Division of Wildlife Management at (919-733-7291) if you would like to obtain more information on native warm season grass forages to benefit livestock and wildlife. The Division has several booklets on establishing and managing the grasses as well as personnel experienced in their planting and use.

This publication was printed on recycled paper. 3,000 copies of this public document were printed at a cost of \$945.52, or \$.32 per copy.

