

the Upland GAZETTE



◆ North Carolina Small Game Notes ◆

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The Four B's Bird Hunt

WOULD YOU BELIEVE WE FOUND more than 15 coveys of wild quail and killed more than 20 birds during a single day in the field? I know it sounds like someone reminiscing about quail hunting in the 1960s. But I'm talking about a North Carolina quail hunt in February 2003. Wouldn't you like to know how and where? Now that I have your attention, let me back up a bit.

As upland game bird biologist for the N.C. Wildlife Resources Commission, my duties include analyzing the results of our avid grouse and quail hunter surveys. During the analysis, I have noticed that some hunters consistently seem to find lots of birds when many other hunters are finding very few. What do they do differently? What types of habitats are they hunting? In short, how are they still finding so many birds? These and other questions led me to contact one of our survey participants who reported more successes than others during the 2001–2002 hunting season.

Alan Stephenson has been a survey participant for many years. In fact, he, his uncle and his father are particularly successful quail hunters. I contacted Alan to see if he would take Terry Sharpe and me on a little tour of the areas where he quail hunts. He graciously agreed to do so during March of 2002. Terry and I were impressed by the number of roosts we found and with the type of extremely heavy cover the Stephensons hunt. We quickly came up with an acronym that described a Stephenson hunt—the four B's—which stands for

"Beans, Briars, Blood and Bleepers." Alan subsequently invited me to join him and the elder Stephensons on a hunt, so in early February 2003 I had the pleasure (and the pain) of experiencing quail hunting Stephenson-style. I can now attest to the fact that our acronym was extremely accurate!

By the time we met at noon on Saturday, Feb. 1, the Stephensons had already



A thick cover of briars provides protection for birds.

spooked six coveys and had nine birds in the bag to show for their efforts. After really hurting myself eating far too much lunch at a very fine establishment called Cherry's Bar-B-Q, we started hunting around 1 p.m. We hunted five or six different places around the junction of Wilson, Greene and Wayne counties. By the time we called it a day at a little after 5 p.m., we had hunted just over four hours. We found 11 more coveys and added 12 more birds to the bag for a total of 17 coveys with 21 birds in the bag for the day. Each covey that I saw contained at least 15 birds, some more than 20. These are impressive numbers, to say the least.

The four B's of habitat and hunting techniques produced this success.

Beans

Each area we hunted was associated with a soybean field. These fields had been harvested, and a lot of residual waste beans were on the ground providing an excellent food source for the birds. No-till fields are ideal for providing extra forage for quail and other wildlife.

Briars

Most of these bean fields were bordered by extremely thick cover dominated by briars of every description. This thick cover (and when I say thick, I mean *really thick!*) obviously provided excellent protection for the birds from predators.

Blood

By the end of the day my hands, face and legs (even with briar pants) were bleeding. The dogs' ears, tails and shins were bleeding. At lunchtime when I met Alan, he looked like he had already been on the losing end of a cat fight. Not only was the cover thick, but in many cases it was 10, 15 or even 20 feet tall. Most people would probably consider most of it all but unhunt-able. At times I was unable to bulldoze my way though and had to retreat to take a different route or simply get down and crawl through. This type of hunting is obviously not for the weak-hearted, nor the thin-skinned. But the birds were there. Many of the coveys we found were wild. We were

Conservation Opportunities for Your Land

BACK IN 1999 WE PUBLISHED AN article in the Upland Gazette, entitled "Negotiating the Maze—Federal Conservation Incentive Programs." Its title hinted at the complexities a first-time participant might encounter when

stewardship biologist and a N.C. Forest Service forester, or a consulting forester. Others began as farm wildlife plans written by one of the commission's district technical guidance biologists, a Soil and Water Conservation District technician,



Buffers of native vegetation can be part of a wildlife conservation plan.

trying to take advantage of landowner assistance programs. A couple of years later I was included in a group of people with wide-ranging farm and wildlife interests. Our goal was to reach consensus about needs specific to North Carolina for the 2002 Farm Bill. The first recommendation from this group was unanimous—program delivery needed to be simplified. Well, change comes slowly, and I reluctantly report that participating in state or federal programs today is just as complicated as ever.

In spite of the complexities, however, I see a growing number of North Carolinians accomplishing wildlife conservation goals on their properties. These successful landowners have key traits in common: a commitment to the project, persistence and an effective working relationship with an array of agencies and contacts.

So how can you go from dreaming about having more wildlife on your property to making it happen?

Step one is developing a plan. Your plan can come from a number of sources. Some successful projects started as Forest Stewardship plans prepared by a commission

a Natural Resources Conservation Service district conservationist or a team with participation from several agencies. If species at risk or rare habitats are involved, a U.S. Fish and Wildlife Service biologist may participate in the plan preparation. Some landowners have involved wildlife consultants, Ducks Unlimited, Quail Unlimited or local land trusts in plan writing. The key is to locate resource professionals with whom you can effectively communicate your goals, objectives and abilities and then remain involved in the process.

Your plan can implement a wide range of wildlife projects, from enhancing quail habitat to converting cropland to native grasses or restoring Piedmont seasonal wetlands. Projects can involve a few acres to thousands of acres. The highest priority projects for funding will provide benefits to declining or at-risk wildlife species or habitats. Even projects that primarily address other resource concerns can be designed to provide wildlife benefits. For example, buffers designed to benefit water quality can be managed in "wildlife friendly" vegetation, or croplands converted from row crops to con-

servation use can be planted to perennial native grasses.

After formulating your plan, you can explore the need for funding assistance and the opportunities available. Your plan preparer can facilitate this step. Depending upon the funding program, financial assistance can range from paying a portion of the installation cost to an annual rental payment for five to 15 years. Funding opportunities have expanded in recent years, but with the help of your plan preparer you should be able to narrow down the options for your project.

A list follows of programs that provide funding opportunities. The list does not provide detailed information, but it gives an idea of the opportunities available. Don't let the complexities confuse you. Armed with a sound management plan, clear goals and well-defined objectives, a landowner can work with resource professionals to match objectives with programs and successfully negotiate the maze of conservation opportunities.

National Resources Conservation Service

Environmental Quality Incentives Program (EQIP) funds projects that protect and enhance soil, water or related resources including wildlife on cropland, grassland, pastureland or forestland.

Grazing Lands Conservation Program (GCP) protects and enhances grasslands.

Wildlife Habitat Incentives Program (WHIP) cost-shares habitat improvements for declining wildlife species.

Wetlands Reserve Program (WRP) restores wetlands converted to agricultural use prior to 1985.

Farmland Protection Program (FPP) protects prime farmland from development by purchasing easements.

N.C. Division of Forest Resources

Forest Land Enhancement Program (FLEP) supports forest and wildlife enhancement activities through a cost share program.

Forest Development Program (FDP) supports reforestation projects.

Forest Legacy provides protection for forestland through the purchase of the development rights and other conservation provisions on forest tracts via perpetual conservation easements. Available only within designated focus areas.

N.C. Division of Soil and Water Conservation

Agriculture Cost Share Program cost-shares projects on farms to protect and enhance water quality. Supports best management practices for nonpoint source pollution.

Farm Services Agency

Conservation Reserve Program (CRP) protects highly erodible cropland or offers conversion of cropland to longleaf pine ecosystems during periodic sign-ups. A continuous sign-up is available for buffers between cropland and streams or wetlands.

Conservation Reserve Enhanced Program (CREP) cost-shares the establishment of water quality buffers and provides annual rental payments for those buffers in several of North Carolina's watersheds.

N.C. Wildlife Resources Commission

Cooperative Upland-habitat Restoration and Enhancement Program (CURE) supports creation and enhancement of early succession habitats in selected focus areas. Program is currently closed to new participants.

Red-cockaded Woodpecker Safe Harbor Program supports habitat enhancement for red-cockaded woodpeckers in some areas of the state.

U.S. Fish and Wildlife Service

Private Stewardship Grants Program supports projects that enhance habitat for threatened and endangered species, species-at-risk and at-risk ecosystems.

Partners for Fish and Wildlife Program assists with the restoration and enhancement of priority habitats including wetland, longleaf pine forests and prairies.

Land Trust for North Carolina

Conservation easements promote long-term land protection through a number of mechanisms. Regional land trusts have similar goals.

Private Conservation Organizations

Numerous private conservation organizations support habitat improvements. ♦

—Terry Sharpe, Agricultural Liaison Biologist, N.C. Wildlife Resources Commission

Continued from page 1

able to get shots at only about half of the coveys since some flushed wildly while we were getting out of the truck, or from over 100 yards away as we approached. There were birds at every place we stopped—in most cases, multiple coveys. Around one bean field, we found five coveys!

Beepers

The cover we were hunting was so thick, it would have been impossible to keep up with the dogs without some type of sound device. You simply could not see the dogs most of the time. An electronic beeper was attached to one dog, a hawk screamer to the second dog and a bell to the third. The Stephensons have excellent close-to-medium-working-range dogs that enthusiastically dive into briar thickets only the most stout-hearted beagles would challenge. And they find the birds! But finding the birds and getting shots at those birds are two entirely different propositions. The Stephensons have adapted their hunting methods to meet this challenge.

In most cases when we left the trucks, we would circle the heavy cover and take positions ahead of or along the edges of the most likely spots before the dogs were ever released. The hunters moving in with the dogs in the heaviest cover may not even see the birds, much less get a shot. The hunters stationed along the edges of the thickest cover were most likely to get good shooting. Even with this tactic, several coveys were flushed without a single shot being fired. While this tactic doesn't work every time, it certainly worked often enough that we all got plenty of shooting. Only my embarrassing lack of shooting prowess kept me from limiting out. I felt even worse on a couple of occasions when, after missing rather easy shots, Belle and Ole' Sam looked at me rather disgustedly. Finally, I felt a little better when, after connecting on a particularly long shot on the last covey of the day, little Belle gave me a slight smile. She's such a sweetheart!

Hunting in a New Way

I thought other quail hunters might find the results of my hunt with the Stephensons interesting. I was pleasantly surprised at the number of coveys we found and at their size. But hunting technique is key to finding and flushing those coveys. A single

hunter would have had difficulty being effective in these same areas. A pair or trio of hunters using traditional hunting methods in these same areas without "hitting the thickets" would have found only a fraction of the birds we found. Likewise, a hunter with dogs that simply circled the fields without going into the thickest cover would have found very few of the coveys that we found. While I fully realize that quail populations are down in many areas of the state, areas such as the places we hunted may harbor far more birds than many of us realize.

Now, let me add one more B. . . .

Birds

Alan graciously allowed me to share the story of our hunt in the Upland Gazette in the hope that other hunters might find some of the information useful. Alan isn't the only quail hunter finding success in the really heavy cover. Another of our very successful avid quail hunter survey participants, Jack B. Penny Jr., recently wrote "Quail hunting in North Carolina is no longer a walk in the park. If you are not willing to get in the thickets and sacrifice a little blood, you're not going to see many birds."

So during your quail hunts this coming season, try "hitting the thickets." It is extremely hard hunting, so you'll need to keep a positive attitude. You'll probably wear out your briar pants and scuff up your hunting boots. You'll no doubt leave some blood, sweat and tears in the briar patches and be thoroughly exhausted by the end of the day. But if my experience last February is any indication, you'll find more quail. ♦

—Michael H. Seamster, Upland Game Bird Biologist, N.C. Wildlife Resources Commission



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Plan Ahead for Next Spring's Grass Plantings



Land Managers' TOOLBOX

As with most new crops, these grasses present a steep learning curve in our efforts to establish them. Fortunately, we have learned a lot in recent years. If you're prone to take shortcuts and not willing to do some research, don't try this at home. Your energies will be better spent elsewhere.

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Seed Quality

These grasses should be purchased and planted based on pure live seed (bulk weight minus trash, weed seed and unsound seed). Seed labels typically list germination rate as the percent of seed that germinate during the test period plus "hard seed," which are alive but dormant. Seed dormancy staggers germination to reduce risk to the entire grass plot from a catastrophe. But, if you are working to establish a forage-quality stand of grass, dormant seed—which spend the winter in the ground before germinating—can become a problem. Ask vendors the germination rate and the percent of dormant seed contained in the labeled germination rates. By conducting a home germination test (a "ragdoll" test), you can determine the percent of seed that will germinate soon after planting. Place 100 seeds on a damp towel in a jar or Ziploc bag in a warm place, such as behind the refrigerator. Allow 10 to 14 days for the seeds to germinate. Calculate your seeding rate to determine the appropriate planting rate.

Planting Depth

Recommended seeding depth for small-seeded species is less than 1/2 inch. Wildlife Commission game land crews have had good success planting the seeds into a conventional seedbed using a cultiseeder. Alternately, you can prepare the seedbed by cultipacking the site, sowing the seed on the soil surface and then using the cultipacker to press the seed into the soil.

No-till planting is frequently recommended to establish these grasses into a sod previously killed by herbicide. The availability of no-till drills that will handle and accurately place fluffy-seeded species in the top 1/4 or 1/2 inch of the soil surface is very limited,

NATIVE WARM-SEASON GRASSES have been a topic of much discussion among quail and rabbit hunters, forage producers and grassland restoration enthusiasts. Their growth form benefits quail and rabbits by providing concealment from predators, travel corridors between grass clumps and room for food-producing plants between grass clumps. The grasses produce an impressive quantity of high-quality forage during the summer, when fescue production typically wanes. Additionally, they are native to North Carolina, persist in Piedmont prairie remnants and are keystone species in some of our most diverse plant communities.

but may be increasing slowly within the state. Efforts are currently underway by several Soil and Water Conservation Districts to purchase Truax drills (with fluffy-seed boxes) to increase our ability to plant a diversity of grass species.

Weed Control

Anticipating and addressing competition problems is critical to success. Competition can range from virtually no grassy weeds in recently cleared woodlands to severe problems when planting into weedy rowcrop fields or converting fields established in fescue, Bermuda or Bahia grass. It is important to control existing stands of fescue and common Bermuda grass. The right combination of RoundUp and Plateau herbicides allows the establishment of Indiangrass, big bluestem and little bluestem into treated Bermuda and fescue sod. Follow label instructions for proper herbicide application.

Attention to Detail

Tracking down and purchasing good seed, controlling competition and precise planting require attention to detail. One of the Wildlife Commission's district technical guidance biologists or the local Natural Resources Conservation Service's district conservationist can help you develop a plan. Additional resources are available from the prairie.com Web site and the publication "Native Warm Season Grasses for Virginia and North Carolina," available from the Division of Wildlife Management, (919) 733-7291.

Patience

Once established, the stands persist for 20 or more years. Don't compromise your investment by aggressively haying or grazing before the stand has time to become established. Young stands need a full growing season the first summer to pump energy into the root system. So resist the temptation to begin using your new stand during the first summer. If you ensure a vigorous stand entering its first winter, the stand will be more competitive with weeds in the future.

Weather

Unless you have the capability to irrigate, weather is beyond your control. Timely rains can make the difference between a stand producing seed by the end of the first planting season and one producing only sparse stubble that you have to be on your knees to find.

Now is the time to begin planning for next spring's plantings and those future hay crops, quail hunts or restored prairies. If you purchase quality seed, plant at the proper depth and control competition, native warm-season grasses can become investments that pay dividends for years. ♦

—Terry Sharpe, Agricultural Liaison Biologist,
N.C. Wildlife Resources Commission

See the spring 2002 issue of Upland Gazette, available on-line at www.ncwildlife.org, to read about more native grass species.

What's Wrong With That Squirrel?

LA TE FALL INTO EARLY WINTER IS squirrel hunting season. It's a popular activity in rural North Carolina, as hunters challenge themselves with small-arms accuracy. In addition, many hunters and their families prepare their harvest. Indeed, not too far in our state's past, squirrel was a reliable feature on the dinner plate of many rural families.

Sometimes, however, once the squirrel is in hand, it doesn't look quite right, and hunters may be concerned. The Upland Gazette interviewed the Wildlife Commission's furbearer and wildlife disease biologist, Perry Sumner, about some common squirrel diseases and their human health implications.

U.G. Perry, every fall wildlife biologists talk to hunters concerned about warbles. What exactly are warbles?

P.S. Cutaneous warbles, also called "bots" or "wolves," are larvae of bot flies in the genus *Cuterebra*. An adult bot fly is about the size of a small bumblebee and is similar in color and shape, but less hairy.

U.G. How do squirrels get them?

P.S. Adult female bot flies deposit eggs near squirrel nests or dens, where they will attach to a squirrel's feet or fur. As the squirrel grooms itself, it ingests the eggs into its mouth or inhales eggs into the nasal cavity, where the eggs hatch in response to increased moisture and temperature. The larvae migrate to locations just under the skin (subcutaneous), cut a breathing pore through the skin and continue to develop there. Larval development lasts from three to seven weeks, depending on the fly species, after which they drop off the squirrel and over-winter in the forest litter.

U.G. What animals are infected by warbles?

P.S. Although gray squirrels are the most common primary host of bot fly larvae, they also afflict fox squirrels, red squirrels and cottontail rabbits. Infestations become apparent in squirrels by August, reach a peak around the end of September and decline rapidly in October. As cooler temperatures arrive in fall, the last of the larvae emerge, and the squirrel's skin quickly recovers.

U.G. Can a squirrel with warbles be eaten?

P.S. Since the lesions associated with cutaneous warbles are restricted to the skin and do not penetrate into the flesh, the squirrel can be consumed as any other squirrel would be. Unless the warbles have caused a secondary infection in the muscle tissue, the squirrel meat is suitable for human consumption.



Squirrels don't need unnatural feeding to thrive. To reduce squirrel diseases, avoid practices that attract several squirrels to one place.

A tremendous waste of squirrels can occur when hunters discard perfectly edible gray squirrels infested with cutaneous warbles.

U.G. What about the lumps which sometimes appear on squirrels that look like warts? Is that the same thing?

P.S. No, these lumps are called "fibromas"—a poxvirus infection that causes benign tumors. They normally disappear with time. A squirrel can have just one tumor or many covering its body. The squirrel will generally lose the hair at the tumor sites. The squirrel fibroma virus is known to be infectious only to gray squirrels and woodchucks and probably is transmitted by blood-sucking arthropods, such as mosquitoes. Squirrel fibromas are reported infrequently and have not been associated with health problems at the population level. Very infrequently, individual squirrels may die from secondary mortality factors (primarily predation) when fibromas interfere with normal functions such as eyesight or hearing.

U.G. Are squirrels with fibromas safe to eat?

P.S. Squirrel fibromas affect only the skin, and there are no human health implications because the poxvirus is not infectious to people.

U.G. Some years reports of squirrel fibromas are higher than others. Why is that?

P.S. Squirrel fibromas can be confused with tick infestations or warbles. Reports of figroma outbreaks in gray squirrels involving more than a few individuals are extremely rare. If there is an outbreak of fibroma in squirrels involving numerous individuals, it is likely that this is due to high population densities of either squirrels, mosquitoes or both. It is also possible that concentrations of gray squirrels around bird or squirrel feeders could increase the likelihood that multiple individuals become infected. In addition, it is likely that as squirrels with multiple fibromas become more dependent on artificial food sources, they will frequent feeders more often than normal squirrels.

U.G. Do all squirrel species get fibromas?

P.S. Fibromas have been reported only for gray squirrels and occur infrequently.

U.G. I know rabies is dangerous to humans. Can squirrels get rabies?

P.S. Yes, but it is highly unlikely that a squirrel will pass rabies onto another animal. Often when a rabid animal bites a squirrel, the squirrel dies immediately. It is also more susceptible to predators once the rabies virus causes the squirrel to lose its normal mental functioning.

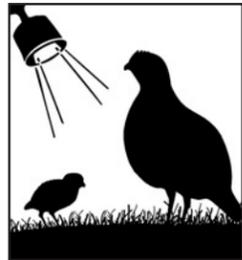
U.G. Can I get rabies from eating an infected squirrel?

P.S. It would be best not to eat any animal infected with rabies. It would be extremely rare, however, for a human to come into contact with a rabid squirrel since so few squirrels develop rabies. Unless a person is bitten by a squirrel acting abnormally, it is unusual for post-exposure rabies treatment to be prescribed even when the status of the squirrel cannot be determined.

U.G. What can I do on my property to reduce squirrel diseases?

P.S. Avoid creating situations that concentrate squirrels into a small space by providing multiple den sites and eliminating any unnatural food sources. Either leave older hardwood den trees when managing timber, or erect squirrel den boxes where natural cavities are scarce. Feeding squirrels is unnecessary since squirrels are capable of obtaining sufficient natural foods throughout the year. Seek out squirrel-proof bird feeders. ♦

CURE—A Midterm Update



Spotlight on CURE

THE CURE PROGRAM IS MIDWAY through its first five years, and much has happened. When we first began, we didn't know what to expect, but the response from participants and outdoors enthusiasts has been universally positive.

Since the first identification of focal areas in 2000, CURE has evolved into three fully operating cooperatives, expanded to special areas on four game lands and engaged its first corporate partner.

Phase I—Private Cooperatives

For many years, Wildlife Commission biologists worked one on one with landowners, at each landowner's request. Biologists wrote plans for small plots and large farms—some were carried out with great care while others fell to the wayside. We knew the potential for quality early-successional habitat was there on these private areas, but the haphazard nature of our system was not turning the tide for early-successional species.

Enter the cooperative concept. By concentrating efforts on a landscape-level scale and forming contracts with landowners, we could overcome the pitfalls of our earlier attempts to increase populations of quail, rabbits, songbirds and associated wildlife in North Carolina.

Commission biologists have written 42 management plans for private landowners on three cooperatives. As it turns out, our landowners are a pretty enthusiastic bunch. Ten percent—1,632 acres—of their land is managed using wildlife enhancement practices, which exceeds our initial expectations. By using creative solutions, we've found that wildlife habitat can be integrated on a working farm, whether it means converting fescue field borders to native plants or thinning an overgrown pine stand.

Each cooperative has its unique characteristics as noted below. At Rowland field borders worked well. Forested areas have good potential there as well. The challenge has been to thin out crowded pines so fire can be used as the primary management tool. Burning is quite popular down at Rowland with some of the landowners using this management tool outside the CURE program.



Controlled burning

The folks up at Benthall like burning quite a bit, too, but rely more on commission staff to carry out the burns. One farm was already signed up in the U.S. Department of Agriculture's Conservation Reserve Program, which gave a head start to the field borders implemented through CURE.

Turnersburg is the only cooperative to employ fencing, as it did on one farm under a USDA Wildlife Habitat Incentive Plan. Only in Turnersburg is the Wildlife Commission converting fields of nonindigenous grasses to wildlife-friendly plantings.

Phase II—Game Lands

When we started the CURE program, we knew that involving private landowners was key to solving the quail conundrum. But as a public landowner, the commission could increase early-successional habitat as well. After establishing the private CURE cooperatives, we identified four game lands that we wanted to follow parallel tracks—Sandhills, Suggs Mill Pond, Caswell and South Mountains. These game lands would create or enhance early-successional habitat on as much acreage as possible within the 21,266 acres set aside for the program. Over the course of several years, as much as 75 percent of this acreage will be under CURE management.

Although this phase is still quite new, the wildlife management crews are off to a good start. They applied timber treatments—usually thinning or burning—to 3,073 acres in the 2002–2003 fiscal year alone.

Phase III—Corporations

Our first corporate partner signed up in August 2003. Murphy-Brown LLC, a subsidiary of Smithfield Foods, will implement small-game habitat on at least 5 percent of their total acreage starting with a 12,000-acre target area in Bladen County. Located only a few miles from the Suggs Mill Pond Game Land, we feel that this new CURE area will boost overall early-successional habitat in that part of the state.

Future directions

We are proud to see the CURE program induce funding synergy. To begin, the CURE program started with funding from the Wildlife Commission's Wildlife Endowment Fund, but soon we secured a National Wildlife Federation grant to offset some costs. Then landowners associated with the CURE area enrolled their property in the USDA's Wildlife Habitat Incentive Program (WHIP). After that a special WHIP endeavor further lessened the commission's financial burden and enabled us to extend the private cooperators' plans until 2006. Finally, interest from Murphy-Brown has enabled us to expand the program onto new properties, but without shouldering the entire burden.

We need this synergy to continue if we are to take advantage of new opportunities to establish habitat. Currently, our ability to expand is limited by financial considerations and personnel time. ♦

—Kate Pipkin, Public Information Biologist, Wildlife Resources Commission

Turnersburg Cooperative

- located in Iredell County, north of Statesville
- 24 cooperators
- 5,820 acres
- good opportunity for native warm season grass production

Benthall Cooperative

- located in Northampton County, near Scotland Neck
- 7 cooperators
- 5,650 acres
- high use of field borders around crops

Rowland Cooperative

- located in Robeson County, close to S.C. border
- 11 cooperators
- 5,331 acres
- focus on timber thinning and prescribed burns

Mourning Dove Banding Study Starts this Fall



The mourning dove, *Zenaida macroura*, is one of the most widely distributed and abundant birds in North America.

Mourning doves are a popular game bird in 36 of the lower 48 states with more individual doves harvested than all other migratory birds combined. In North Carolina about 41,000 hunters harvested more than 688,000 mourning doves last year.

Information on dove survival and harvest rates is key to understanding the effects of hunting regulations on dove populations. Because banding is one of the most important tools used to obtain this information, the U.S. Fish and Wildlife Service (FWS) launched a nationwide banding study this past summer. In North Carolina and 26 other states, more than 85,000 doves will be banded during the next three years. The states and the FWS hope to determine dove harvest rates, estimate annual survival, gather information on the geographical distribution of the harvest and develop and refine techniques for a future dove banding program.

Biologists capture doves in wire ground traps baited with grain or sunflower seeds. They target agricultural fields, bare earth or gravel where doves forage for food and grit. After removing each dove, the biologist will record its age and sex, determined by color and patterns of feather replacement and wear. Each dove gets a leg band inscribed with an identification number and the telephone number of the National Bird Banding Laboratory.

Hunters are critical to the success of this mourning dove banding study. The information hunters provide can be used to improve management of doves. Better management ensures the sustainability of dove populations and future hunting opportunities. See page 8 for information on reporting banded birds. ♦

—Dennis Luszc, Migratory Bird Biologist, N.C. Wildlife Resources

2002–2003 N.C. Avid Hunter Survey Summaries

Grouse

A total of 68 avid grouse hunters reported on 956 hunts during the season. Following the long-term trend, the 2002–2003 season grouse flush rates were down slightly to 4.32 flushes/party trip (-2.5 percent) while the harvest rate remained unchanged at 0.59 grouse bagged/party trip (Figure 1). The grouse flush rate in the southern Mountain region (4.75 flushes/party trip; up 1.7 percent) was somewhat higher than the flush rate in the northern Mountain region (2.96 flushes/party trip; down 22.9 percent) (Figure 2). Flush rates were lowest in October (3.22 flushes/party trip) when the leaves were still on the trees, increased in November (5.83), and then seemed to drop down and level off during December (4.61), January (3.90) and February (3.95). Flush rates were considerably higher on private lands (4.92 flushes/party trip) than on game lands (3.67 flushes/party trip).

Figure 1. Grouse Hunter Survey Summary Data, 1984–2002

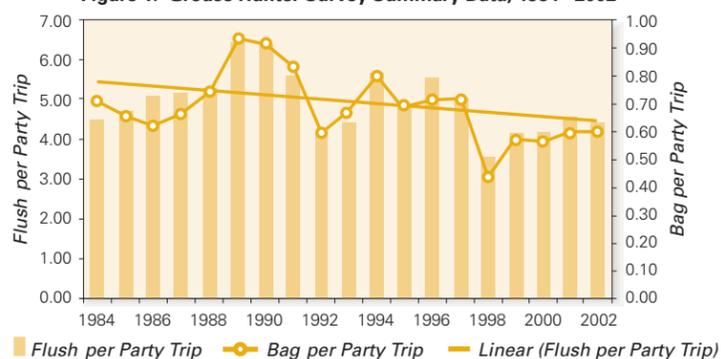
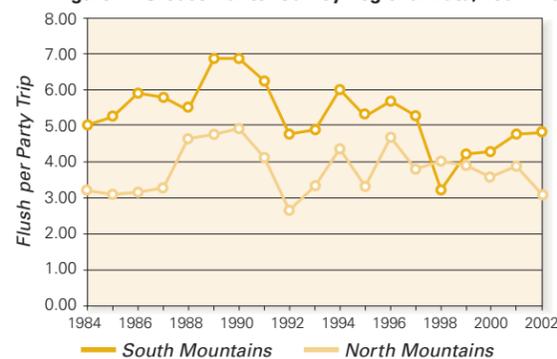


Figure 2. Grouse Hunter Survey Regional Data, 1984–2002



Quail

A total of 99 avid quail hunters reported on 1,405 hunts during the season. Although the long-term trend has been significantly downward, during the 2002–2003 season the average flush rate statewide increased 6.5 percent to 1.80 coveys/party trip while the average harvest rate increased by 7.8 percent to 1.11 quail bagged/hunter trip (Figure 3). Regionally, the average flush rate in the Coastal Plain was 2.10 coveys/party trip (+10.5 percent), the average flush rate in the Piedmont was 1.35 coveys/party trip (-1.5 percent), and the average flush rate in the Mountains was 0.97 coveys/party trip (-17.1 percent) (Figure 4).

—Michael H. Seamster, Upland Game Bird Biologist, N.C. Wildlife Resources Commission

Figure 3. Quail Hunter Survey Summary Data, 1984–2002

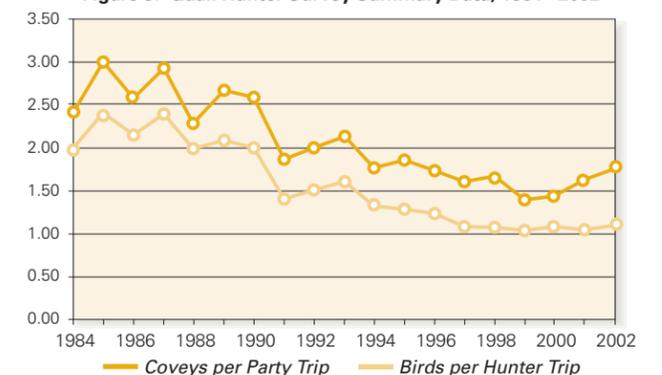
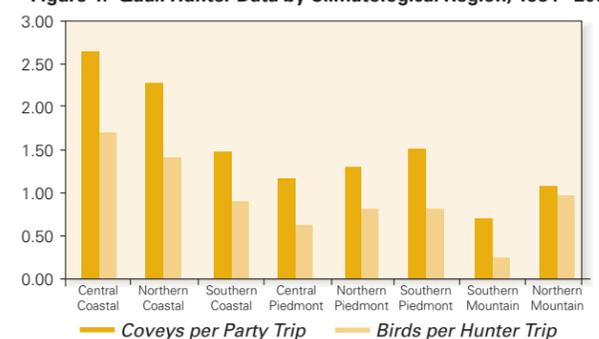


Figure 4. Quail Hunter Data by Climatological Region, 1984–2002



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

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Report Banded Birds

Call 1-800-327-BAND (2263) to report banded birds. This is a 24-hour-a-day hotline during hunting seasons, Monday through Friday. During the off-season, hours are 7 a.m. to 4:30 p.m. Voice mail is available. Hunters can report harvest birds through the Internet at www.pwrc.usgs.gov. Select "Bird Banding Lab." Hunters can keep the bands and will be provided a certificate identifying the bird's age and sex, and the date and location where it was banded.

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2003–2004 Seasons and Bag Limits for Small Game in North Carolina

<i>Species</i>	<i>Season Dates</i>	<i>Daily Bag</i>	<i>Possession Limit</i>	<i>Season Limit</i>
Dove	Sept. 1 to Oct. 4 Nov. 24 to Nov. 29 Dec. 17 to Jan 15	12	24	None
Woodcock	Dec. 17 to Jan. 15	3	6	None
Quail	Nov. 22 to Feb. 28	6	12	None
Grouse	Oct. 13 to Feb. 28	3	6	30
Pheasant (males only)	Nov. 22 to Feb. 1	3	6	30
Rabbit	Nov. 22 to Feb. 28	5	10	75
Grey and red squirrels	Oct. 13 to Jan. 31	8	16	75
Fox squirrel*	Oct. 13 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