



THE Upland GAZETTE

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WILDLIFE CONSERVATION AND HABITAT MANAGEMENT

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A Note from the Editor



BONITA JONES

We are excited to announce that big changes are coming. The Upland Gazette will soon be joining the *Wildlife in North Carolina* (WINC) publications family!

For 20 years, the Gazette has been providing information about bobwhite quail, rabbits, other small game wildlife, songbirds, and many other game and nongame species, and their habitats in North Carolina. Our articles provide land management advice, updates on wildlife species status, and efforts to keep common species common. The Gazette reports on results of recent wildlife research and timely information on issues impacting wildlife. Authors from the N.C. Wildlife Resources Commission, universities, other state and federal agencies, and private organizations provide expert insight for the Upland Gazette. Readers often share their responses as well.

After 20 years of success, the Upland Gazette will transition from a stand-alone publication, available to 4,000–5,000 readers, to become a regular feature of *Wildlife in North Carolina* (WINC) Spring and Fall Guides which are mailed to over 40,000 readers. The seasonal Guides are bonus issues for readers of the award-winning magazine and address important topics and timely issues related to hunting, fishing, and wildlife in our state. Devoted Upland Gazette readers will still be able to access each issue of the Gazette online for free at <http://www.ncwildlife.org/uplandgazette.aspx>. Issues from 1996 through 2015 have been posted on the website, and we plan to continue posting issues in the future. While visiting the website, be sure to sign up for e-mail notices to be sent to you each time a new issue is available.

All subscribers to *Wildlife in North Carolina* receive the Spring and Fall Guides and will now receive the Upland Gazette as part of their magazine subscription. All current Upland Gazette subscribers will receive free WINC Guides until their Gazette subscriptions expire. We encourage all Upland Gazette readers to subscribe to WINC if you are not already receiving this quality publication. We are very excited to add the news and information from the Upland Gazette to the outstanding content of the *Wildlife in North Carolina* seasonal guides, and we trust readers will enjoy the upcoming changes. Thanks for reading the Upland Gazette. Please enjoy our fall issue of the Gazette in WINC's Fall Guide coming later this year.



Manke D. Jones

SUPERVISING WILDLIFE BIOLOGIST
PRIVATE LANDS WILDLIFE HABITAT GROUP

The Conservation Cannon: Reloaded!

New Farm Bill Offers Opportunities for Habitat Management on Private Lands

By John Isenhour, NCWRC Technical Assistance Biologist

In 2009, North Carolina Wildlife Resources Commission (NCWRC) staff wrote an article titled “Conservation Cannon”. That article, printed in the September 2009 issue of *Wildlife in North Carolina* and the Fall 2009 Upland Gazette (Volume 14, Issue 2), focused on the 2008 Farm Bill and opportunities this Federal legislation provided to assist private landowners with habitat management. NCWRC, as a state Fish and Wildlife Agency, provides advice and consults with Federal agencies on conservation provisions of Farm Bills. Through the lifespan of the 2008 Farm Bill, NCWRC staff assisted landowners with plan development (300 plans for 18,312 acres) and program enrollment as well as provided technical assistance with implementing habitat management across the state. After a two-year delay, the anticipated 2012 Farm Bill was signed into law in 2014. Any Farm

requiring that “At least 5% of Environmental Quality Incentive Program (EQIP) funding be used for fish and wildlife habitat projects”. Additionally, a “Wildlife Modifier” was adopted which allows habitat to be included as a targeted objective on any land use type including cropland, pastureland, forestland, or associated agriculture lands. The 5% requirement and Wildlife Modifier criteria validated habitat management as a focus of EQIP and opened the door to continue NCWRC work with willing private landowners.

Following is a quick summary of two major Farm Bill programs and how they might be used to improve wildlife habitat on private lands in North Carolina.

Environmental Quality Incentive Program

The EQIP program is designed to improve

technical committee, the 5% wildlife funds have been directed towards practices and projects which will offer significant wildlife habitat benefit. Several EQIP practices that can directly benefit wildlife are summarized below:

- **Establishing Native Plant Species for Habitat** – The conservation cover practice allows establishment of native warm season grasses (NWSG) and forbs to improve wildlife habitat. NWSG such as switchgrass, little bluestem, and indiangrass are planted at low rates to allow growth of planted and volunteer forbs. The resulting stands provide diverse habitat for grassland and early successional wildlife species as well as declining pollinator species.
- **Early Successional Habitat Development and Management** – This practice promotes enhancement and management of wildlife habitat. Funding is available for disking habitat areas, heavily thinning forest edges, creating forest openings, and selectively applying herbicides with this practice.
- **Prescribed Burning** – This is the most cost-efficient wildlife habitat management practice funded under EQIP. Prescribed burning promotes early successional habitat as well as browse quality and plant species diversity. Burning is especially effective in heavily-thinned forest stands. Necessary firebreaks can be funded as well.
- **Establishing Buffers** – Field and pasture buffers planted to a mixture of native warm season grasses, forbs, and shrubs provide habitat for various wildlife species. Combining fencing and buffers can protect aquatic habitats by restricting livestock from surface water and reducing nonpoint source pollution.
- **Native Warm Season Grass Conversion for Forage** – Forage grasses such

The good news is that not all change is bad and plenty of opportunities exist in the “new” Farm Bill for wildlife habitat management on private lands.

Bill is far-reaching legislation, and political changes occur with each Reauthorization. The good news is that not all change is bad and plenty of opportunities exist in the “new” Farm Bill for wildlife habitat management on private lands.

At first glance, you might assume that the elimination of the Wildlife Habitat Incentive Program (WHIP) and the removal of “Wildlife” as a land use category in the 2014 Farm Bill would be detrimental to habitat management opportunities. Many in the wildlife community shared this fear during the Farm Bill’s final “Mark-Up” process. Luckily, several Federal legislators insisted wildlife habitat concerns were addressed by

natural resources on working lands by implementing various conservation practices. The basic structure and administration of EQIP stayed much the same in the 2014 Farm Bill. Applications are accepted at the local U.S. Department of Agriculture’s (USDA) Natural Resources Conservation Service (NRCS) offices throughout the year. EQIP contracts are awarded once a year based on competitive ranking criteria with the highest ranking applications receiving funding first. Selected EQIP participants are reimbursed at a rate based on 75% of a predetermined average cost for contracted practices. Through efforts of conservation partners and the North Carolina NRCS state



MARK D. JONES

A Wildlife Commission Biologist leads landowners and land managers on a tour of a property being managed for wildlife with partial assistance of Farm Bill programs.

as tall fescue and Bermuda grass offer little value for wildlife. Converting these grasses to NWSG provides high quality livestock forage that can be managed to provide cover for grassland wildlife species. NWSG are more drought-resistant than fescue and require less nitrogen fertilizers than Bermuda making them economically wise in a forage production system.

- **Reforestation Clear Cuts with Longleaf or Shortleaf Pine** – longleaf and shortleaf pine have declined in North Carolina over the past century. As stands of these trees have declined, the associated ecosystems containing desirable understory plants have disappeared as well. This has had an enormous impact on a variety of high priority wildlife

species. Young stands of longleaf and shortleaf provide quality habitat for a longer period of time than loblolly pine stands because the canopies of longleaf and shortleaf pine stands typically do not close as quickly as loblolly stands. This allows sunlight into the stands thereby extending the lifespan of beneficial groundcover.

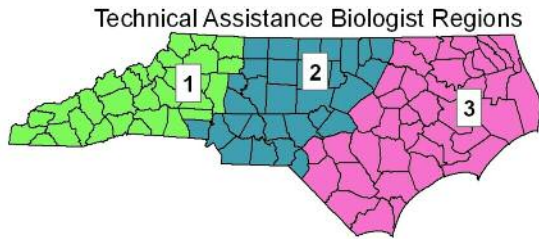
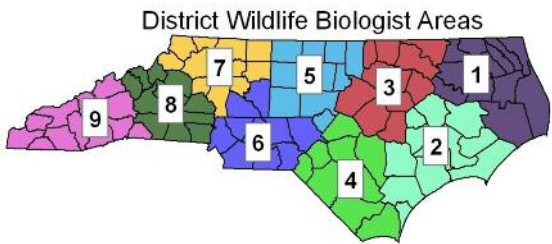
The Conservation Reserve Program

The Conservation Reserve Program (CRP) has been described as “the original Farm Bill conservation program” and has treated millions of acres across the United States since its beginning in the 1985 Farm Bill. CRP contracts provide reimbursement for a percentage of vegetation establishment costs and pay an annual rental payment.

Rental payments are based on the soil rental rates established in each county for each soil type. The 2014 Farm Bill caps nationwide enrollment at 24 million acres.

CRP requires a 10-year minimum contract, and applications can be submitted at local USDA Farm Service Agency offices. Three different programs are housed under the CRP umbrella including General CRP, Continuous CRP, and Enhanced CRP. The specific program, conservation practice (CP), vegetation established, payment framework, and required management depends on landowner objectives and the history of the land they are enrolling. Some popular habitat-oriented conservation practices are listed below:

- **Habitat Buffers for Upland Birds CP 33** – Establishes buffers to enhance



District Wildlife Biologists		
District	Name	Phone Number
1	Chris Turner	252-221-9961
2	Jonathan Shaw	910-324-3710
3	Greg Batts	919-269-9731
4	Tom Padgett	910-645-4115
5	Jason Allen	336-524-9801
6	Rupert Medford	910-571-9747
7	James Tomberlin	336-526-1914
8	Danny Ray	828-433-8880
9	Justin McVey	828-273-7980

Forest Stewardship Biologists		
Region	Name	Phone
1	Stephen Thomas	828-803-9794
2	Kelly Douglass	919-621-3317
3	Deanna Noble	252-522-3440

Technical Assistance Biologist		
Region	Name	Phone
1	Patrick Farrell	828-456-6341x5
1	Jason Smith	336-830-9794
2	John Isenhour	704-637-2400x101
3	John Henry Harrelson	910-866-4636

early successional habitat along the perimeter of eligible cropland. These buffers are 30 to 120 feet wide and can be fallow or planted with native vegetation. Periodic management with fire, herbicides, or disking is required to maintain early successional benefit.

- **Longleaf Pine Establishment CP36** – Establishes and manages longleaf pine forests on cropland within the longleaf conservation priority area. This practice focuses on ecosystem restoration and allows native vegetation to be planted between the rows of longleaf.
- **SAFE Habitat Initiative CP-38e** – Establishes and maintains early succession habitat on cropland within a geographical focal area of Bertie, Bladen, Cumberland, Duplin, Edgecombe, Halifax, Hertford, Johnston, Martin,

Nash, Northampton, Sampson, Wayne, or Wilson Counties.

- **Marginal Pastureland Wildlife Buffer CP 29** – Restores native shrubs and herbaceous vegetation in pastureland riparian buffers and excludes livestock to stabilize stream banks, reduce flood damage, and enhance wildlife habitat. Buffers must be 20 to 120 feet wide and planted with a mixture of native grasses and forbs. This program can benefit quail, songbirds, rabbits, and other species needing early successional habitats.
- **Shallow Water Areas for Wildlife CP 9** – Develops or restores shallow-water areas (6 to 18 inches deep) to improve wildlife habitat. Fallow vegetation can be managed with disking and burning in these impoundments. This practice is available only on cropland.

The 2014 Farm Bill provides a strong collection of tools to assist private landowners with implementing their habitat management objectives and improving natural resources management. NCWRC and other conservation partners have done all they can to shape the conservation programs of the 2014 Farm Bill legislation at the national, state, and local level. To reap habitat benefits from the Farm Bill, private landowners must be willing to implement habitat conservation practices on their property. NCWRC has technical assistance biologists stationed across the state whose primary goal is to assist in planning habitat management on private lands, and they can help landowners best utilize Farm Bill funds for habitat conservation. If you would like a NCWRC biologist to assist you with your habitat management efforts, please contact your closest biologist using the map above. 📍



JASON SMITH

A landowner uses a versatile, 110 gallon, 3-point hitch sprayer to control tree encroachment and invasive species adjacent to a managed field.

HOW TO! Choose Proper Herbicide Equipment for Effective Habitat Management

By Jason Smith, Technical Assistance Biologist, NCWRC

Herbicides are useful and often overlooked tools that can be used for a variety of wildlife habitat management applications. They control woody plants to reduce competition in native grass fields, herbaceous field borders, food plots, and along road edges. Herbicides are preferred over mowing because mowing eliminates cover while herbicides only target specific weeds and leave residual cover for wildlife. Details about the best herbicide formulations to use in various management scenarios can be found in the article “Spare the Herbicides and Spoil the Habitat” (Upland Gazette’s Spring 2008, Volume 13, Issue 1).

Our focus here is the equipment used to apply herbicides because landowners, sportsmen, and land managers often struggle with the best way to use herbicides in different situations. There are many styles of sprayers available for managing wildlife habitat. The array of choices can sometimes be overwhelming including 12 volt ATV-mounted sprayers, gas-powered skid sprayers for UTVs or pickups, and sprayers mounted on tractors that operate using PTOs or hydraulics. Sprayers come in many different sizes and typically hold 15 to 300 gallons of liquid. Some sprayers broadcast chemicals using booms while other are “boomless”.

If you must purchase only one sprayer, a versatile sprayer is best. A versatile economical sprayer that fits most people’s needs is a 110 gallon, 3-point hitch sprayer. A 110 gal-

lon sprayer can be used on compact or larger tractors. The sprayer should be equipped with independently controlled left and right boomless nozzles. Independently controlled nozzles allow for targeted herbicide application and save money. Each boomless nozzle should spray approximately 17 feet providing 34 feet of total coverage. Boomless nozzles are recommended because they perform well on rough terrain and effectively apply herbicides along field and road edges without catching booms on obstructions. Herbicide jobs that require precise application rates may be best applied with a boom sprayer.

Sprayers should also be equipped with an adjustable-pattern spray gun that can be removed to prevent damage in rough terrain and during transport. This is a versatile setup since the boomless nozzles can be used for broadcast applications while the spray gun can target specific plants or even spray water for fire suppression.

Sprayers are commonly fitted with a PTO roller pump. A seven-roller herbicide resistant pump with quick coupler PTO hook-up is an excellent choice. Winterizing and proper maintenance are vital to the life of your sprayer. Installation of cam lock, quick hose connections will allow easy maintenance to flush and oil the pump in preparation for storage. Sprayers with manual control valves and pressure regulators are preferred for open cab tractors. These are less expensive and easier to use than electronic control compo-

nents. Remote electronic control valves and pressure regulators allow for adjustment from the operator’s seat in enclosed cab tractors. Pressure gauges are required to ensure accurate and consistent herbicide application. High-quality, liquid-filled gauges buffer needle movement and allow the operator to maintain consistent pressure.

The sprayer just described will weigh about 250 lbs. empty and 1300 lbs. when filled with water and typically cost \$1,500-\$2,500. Many people choose to build their own at a reduced cost. Depending on the pump, spray pressure, tractor speed, and nozzles, a 110 gallon sprayer should treat four to five acres per tank. Smaller acreages can be effectively managed using an ATV-mounted sprayer with similar features. ATV sprayers will cost about \$200 but will take longer to cover large areas and are difficult to calibrate accurately. Smaller landowners may choose ATV sprayers, but typically tractor sprayers are better for projects over 10 acres.

Herbicide application can be effective for management of a wide range of habitats from early successional grasses to forests. Whatever choice a land manager makes in terms of sprayer types and sizes, the benefits of herbicides should not be overlooked. Selecting a sprayer that is versatile, easily maintained, durable, size appropriate, simply calibrated, and one that you are comfortable operating will allow for more efficient and successful habitat management. 🌿

Preparing a Fire Prescription to Maximize Deer Forage Quality

By Marcus A. Lashley, M. Colter Chitwood,
Christopher S. DePerno, and
Christopher E. Moorman,
North Carolina State University

You may have heard from biologists, researchers, or friends that “if you burn your woods and fields, you will produce more deer forages and they’ll be higher quality.” Part of this statement is known to be true. Extensive research has shown that fire increases the abundance of deer forages, particularly when you burn areas that receive adequate sunlight like fields or thinned forests. In fact, research has shown that you can expect up to a 10-fold increase in forage production lasting for more than 5 years when applying fire in these situations.

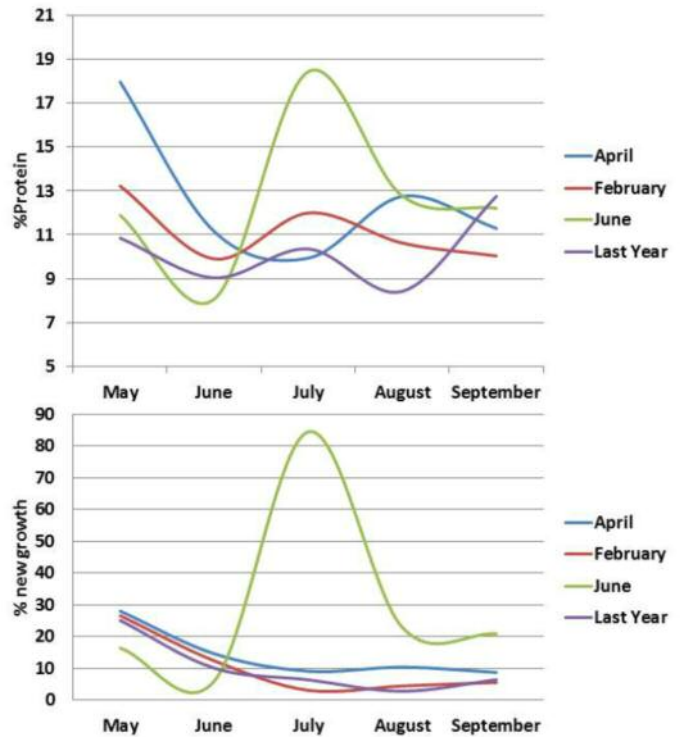


MARCUS LASHLEY

Plus, prescribed fire is more cost-efficient than planting warm-season food plots, and the abundant vegetation in the years following fire provides high quality fawning cover. The unknown about burning woods and fields is that forage quality has

not been well-studied. Virtually no data are available to determine what happens to forage quality following fire. Our objective was to address that gap in knowledge, so we initiated a study designed to evaluate forage quality in response to fires set at different times of the year. Studying fire at different times of the year allowed us to address how forages respond to fire and to address the timing of burning to maximize forage quality benefits when deer need it the most (i.e., during the summer when females are producing milk for fawns and males are growing antlers).

We collected deer forage samples from five plant species in areas that were burned one year prior and during the spring, summer, and winter of the same year at Fort Bragg, North Carolina. After collecting samples of each forage for each summer month (May-September), we sent the samples to a forage lab to test their nutritional quality. Deer are characterized as “concentrate selectors” which means they select certain parts of certain plant species to maximize foraging efficiency. Thus, we broke plant samples into 2 parts: 1) new growth - plant parts that deer readily eat; and 2) old growth - plant parts deer eat when higher quality foods are not available. Separating plant parts allowed us to look at nutritional quality in the new growth most commonly eaten by deer and to look at the relative proportion of the plants that were new growth. To visualize the selection of young plant parts by deer, notice the difference between the picture of a plant with new and old leaves present on the left compared



Responses of protein (top) and new plant growth (bottom) to timing of prescribed fires (colored lines) at Fort Bragg Military Installation, North Carolina, 2014. The months listed along the bottom of the graph (x-axis) represent the month measurements were taken from the plants.

with another photograph of the same plant after a deer had selectively browsed the plant. As you can see, the deer did not eat all the leaves but instead selected the new growth.

Results of our study showed nutritional quality of new growth increased substantially following fire, but the response was short lived lasting only a single growing season. Likewise, much more of the plant was new growth immediately following fire, but the effects were lost just weeks after fire. This does not mean you cannot use fire to improve your deer’s forage quality in the long term; however, it means the timing of fire is important. As depicted in the Figure, nutritional peaks occurred the month following April and June fires, and differences in the availability of new growth lasted for a couple months. For simplicity, we only included a graph depicting protein, but all the nutrients needed by deer responded similarly.

So, what does this mean if you want to use fire to improve forage quality for deer on your property? It is pretty simple: fire at any time of the year will likely lead to more food and cover in years following fire, but timing is critical to maximize nutritional benefits. Male and female deer generally need the most nutritious forages from May through August, so burning in April, May, and June will increase nutritional quality during these most important months. Ideally, if you can break your property into several burn blocks, burning some of them in each of those months will maximize the nutritional benefits to deer across your landscape and for longer periods of time. Because the nutritional benefits last less than one growing season, burning some areas each year, rather than all in the same year, will further increase the nutritional benefits of your burning program. Even on small properties, burning patches a few acres at a time may yield great benefits. Moreover, even if you cannot burn large acreages every year or in the best months, you still can gain other benefits, including increased forage production and improved fawning cover, by burning whenever you can! 🍂

A Day Hunting Rabbits on CURE Properties in Bladen County

By Wendell W. McInnis

Unique Small Game Hunting Opportunities You May be Missing

Many of our state's small game hunters are missing out on some great opportunities. It is a little known fact, that the N.C. Wildlife Resources Commission (NCWRC) offers special hunts for small game on properties managed under the agency's Cooperative Upland habitat Restoration and Enhancement (CURE) program. Hunters can apply for special permits to hunt on NCWRC Game Lands and on private properties enrolled in our CURE program. Last winter, one of the lucky permit winners offered us the story below after spending a day hunting rabbits on private Corporate CURE properties in Bladen County.

Mr. Wendell McInnis was the first rabbit hunter we have hosted even though we have offered permit rabbit hunts on the Ammon Complex for several years. Despite the unique opportunities available on the area, Mr. McInnis was the first permit winner to show up. Those whose names have been drawn for a permit and did not come to hunt really missed out! Like many of the quail hunters we have hosted, Mr. McInnis was overwhelmed by the amount and quality of the habitat and was excited to get started with the hunt. He told our staff "I feel like a kid in a candy store". Read the story below and then check out the Wildlife Commission's permit hunting opportunities on our website at www.ncwildlife.org/Licensing/PermitHuntingOpportunities.aspx

— Mark D. Jones, Editor

Our party was drawn to participate in a rabbit hunt on properties managed as part of the Cooperative Upland habitat Restoration and Enhancement (CURE) program. The other two members of my party did not make the trip, so this would be a solo hunt. My particular area of interest is rabbit hunting with beagles. The hunt took place on the Murphy-Brown Ammon Complex in Bladen County. Due to the nature of the hunt and biosecurity regulations required by the landowners, I was escorted around the property by Benjy Strope, a N.C. Wildlife Resources Commission Technical Assistance Biologist.

I was to meet Benjy at 8 a.m., so I left Charlotte about 4:30 that morning and arrived some 15 minutes late having been turned around within ten miles of my destination. Benjy was waiting for me at the restaurant/meeting place where we had a bite to eat while I was introduced to the hunt procedures, rules, and opportunities.

I was driven around the property to select my hunting terrain and must admit that I was somewhat overwhelmed with the selection of prime habitat, so I told Benjy to "just put me out somewhere". I brought six beagles and at 9:55 a.m., started collaring the hounds. While doing this, the first beagles on the ground opened on rabbit scent. Within just minutes,

the line was opened and the hunt was on. As luck would have it, the rabbit took us off the CURE area, so we picked up the pack and moved further into the property.

At 10:48 a.m., we started a marsh rabbit and trailed it for three hours without bringing it to bag so we picked up the pack when given the opportunity. We had observed the rabbit four times during the run, and after about two hours I was able to get in a very long shot which failed to connect. The rabbit ran long after the shot making me believe I did not harm it in any way. During the last hour or so of the hunt, a light rain dropped on us but Benjy had ponchos to ward off most of the moisture. We finished just before 2 p.m., having hunted almost four hours.

I had a wonderful time hunting a great property and wish to thank Benjy Strope, the landowner Murphy-Brown who allowed the land to be enrolled in the Permit Hunting Program, and the North Carolina Wildlife Resources Commission for having such a program. This was a chance to participate in a unique and high quality hunting experience on excellent habitat. I truly hope I have the opportunity to participate in this hunt again very soon! 🍀



MARK D. JONES



BENJY STROPE

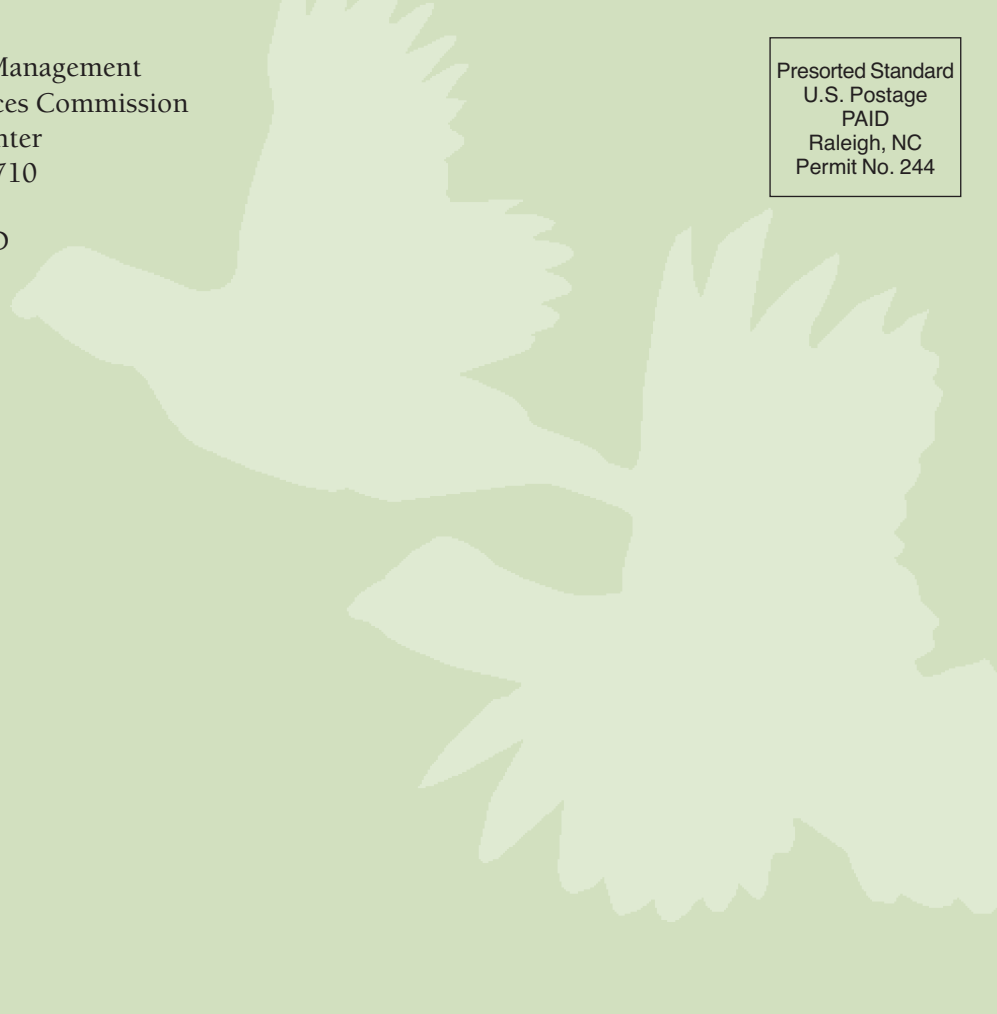
Mr. McInnis waits on his beagles to bring a rabbit across an opening on his Corporate CURE hunt.



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