

NC Forest Stewardship News

NC Forest Service—NC Department of Agriculture & Consumer Services

Are You Actively Managing Your Stewardship Property?

By Ron Myers

The purpose of North Carolina's Forest Stewardship Program (FSP) is to encourage the long-term stewardship of important private forestlands, by assisting landowners to more actively manage their woodlands and related resources on their property. The FSP provides landowners with professional planning and technical assistance they need to keep their land in a productive and healthy condition. Your plan is a valuable roadmap that outlines the practices needed to improve or protect important resources on your property. Your plan is also beneficial to help qualify your property for State or Federal financial assistance programs and for enrollment in other conservation or tax incentive programs.



A goal of North Carolina's Forest Stewardship Program is to bring awareness and promote engagement of landowners to implement the recommended practices outlined in their plan. Landowners enrolled in the program that implement stewardship practices or conservation measures on their land in a sustainable manner are eligible to become certified as **"Outstanding Woodland Stewards"**.

How can NC landowners become an "Outstanding Woodland Steward" and what are the benefits?

Any landowner that has been an active participant implementing stewardship practices recommended in their Stewardship plan or have significant "on-the-ground" accomplishments can become certified. Landowners can request a site visit from their local NC Forest Service office to determine if their efforts warrant recognition.

Landowners that have demonstrated exemplary stewardship efforts become certified as an "Outstanding Woodland Steward" and receive a Stewardship sign & post for their property, a bluebird house, and an official recognition certificate. This sign is a symbol to your neighbors and your community that you are managing your property with a Stewardship ethic and you have been recognized by the NC Forest Service for your conservation and management efforts. We invite you to join the 305 NC Stewardship landowners that have become certified within the last 10 years.

Inside This Issue:

Certification	1
Coordinator's Corner	2
Pollinators	3
Forest Health	4-5
Threatened & Endangered Species	6
Pine Silviculture	7
Places	8-9
Stewardship Key Contacts	10

Stewardship Coordinator's Corner

By Les Hunter

A Message from The Forest Stewardship Coordinator:

People, Practices, Places is the new focus of our North Carolina Forest Stewardship News (FSN). In each issue, we will promote efforts to highlight North Carolina's outstanding woodland stewards and provide outreach and educational information for woodland owners to successfully manage their property to meet their objectives. Each season we will highlight some key forest and wildlife topics of interest and share stories about notable people and places where stewardship practices are being implemented to enhance forest resources across the state. In this issue, the FSP features recent forest activities at Dupont Recreational State Forest, highlighting a variable-density hardwood harvest.



We have a new look! Check out the new North Carolina Forest Service (NCFS) Website at <http://www.ncforestservice.gov/>. You'll find information on recent NCFS practices, quick links to popular sites, a section on what we do, relevant "Hot Topics" and where to go for NC Forest Products facts. Recent events and activities can also be found on social activity feeds like Twitter and Facebook. Whether you are a natural resource professional or a forest landowner the site can guide you to some very useful information about resource management and important programs or services that NC Forest Service can provide.

There has been a lot of buzz about pollinators (butterflies, birds and bees) in the news. Many of our foresters and landowners are beekeepers and there is a lot of support from interested forest landowners and professionals. Check out the FSN article on how you can help protect and enhance habitat for pollinators and make a difference!

It seems like every year there is a new threatened or endangered species listing in North Carolina. This issue we focus on 2 candidate species for listing and we will include updated information periodically on species in the news. We get a lot of calls from folks asking, "What's wrong with my trees?", and FSN will try to include current forest health information on common or new tree diseases or insects that can affect our forests.

We hope you enjoy the new look of our Forest Stewardship News newsletter!

If you would like your woodland to be featured in our newsletter, give us a call or send us an email with your unique story or pictures. If you are a currently a Forest Stewardship landowner and wish to get an updated sign, contact your local County Ranger to request the new Stewardship Sign.

For more information about the NC Forest Stewardship Program, contact your local County Forest Ranger or Stewardship Coordinator Les Hunter, or simply fill out our online Stewardship Request Form at:

http://www.ncforestservice.gov/fsandfl/stewardship_request_form.asp

Les Hunter, Forest Stewardship Program Coordinator, Les.Hunter@ncagr.gov, 919-857-4833

Pollinators

By Ron Myers

Protecting Pollinators – What’s All the Buzz About for Landowners?



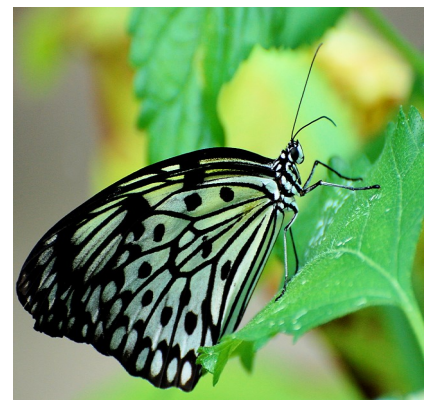
Pollinator beehive by Laura Prevatte

Several Divisions with the NC Department of Agriculture and Consumer Services (NCDA & CS) are helping to protect pollinator habitats and develop new programs to support pollinators. Landowners can find great resources and pollinator protection strategies by visiting the NCDA & CS website at <http://www.ncagr.gov/pollinators/index.htm>

What are pollinators? Pollinators are bees, butterflies, moths, beetles, birds, and other animals that feed from flowers, transferring pollen in the process. More than 2/3 of the world’s crop species, whose fruits and seeds together provide over 30% of the foods and beverages that humans consume, require the presence of a pollinator (Xerces Society 2016). In many areas of the US, pollinators are in decline. Habitat loss, disease and environmental changes have all contributed to the decline of some pollinators.

You Can Help! There are many individuals and groups who are interested in pollinator protection. Your woodland and open land may provide future opportunity to help protect and enhance habitat for pollinators. Important actions for landowners to take include learning about pollinator resources, participating in pollinator protection activities, provide essential food and habitat and use best management practices to protect pollinators. Some helpful tips from “Be a Friend to Pollinators” – USDA-NRCS pamphlet include:

- Use pollinator-friendly plants in your landscape. Shrubs and trees such as dogwood, blueberry, cherry, plum, willow, and poplar provide pollen or nectar, or both, early in spring when food is scarce.
- Choose a mixture of plants for spring, summer, and fall. Different flower colors, shapes, and scents will attract a wide variety of pollinators.
- Reduce or eliminate pesticide use in your landscape, or incorporate plants that attract beneficial insects for pest control. If you use pesticides, use them sparingly and responsibly.
- Leave dead tree trunks in your landscape for wood-nesting bees and beetles.
- Support land conservation in your community by helping to create and maintain community gardens and green spaces to ensure that pollinators have appropriate habitat.



You can help by providing food and habitat for pollinators to help them thrive. **Free planting guides** are available for the Outer Coastal Plain Mixed Province, Southeastern Mixed Forest, and Central Appalachian Broadleaf Forest regions. Interested landowners can find helpful Planting Guides for various regions within our state at the following website: <http://www.pollinator.org/guides>

Forest Health

By Kelly Oten, Ph.D.

Deadly Laurel Wilt Disease Threatens Coastal Plain Ecosystems



Photo: Laurel Wilt Bay Tree Deaths, Ecology Florida

Driving east on I-40, as one gets closer and closer to the sights and sounds of the beach, more and more dead trees can be spotted along the forest edge. Dead redbay trees litter the highway edge in an otherwise lush green forest. **These redbays were killed by laurel wilt disease, a fungal disease carried from tree to tree by a tiny beetle.**

Laurel wilt disease all starts when the tiny, non-native invasive redbay ambrosia beetle attacks a tree. Upon attack, it transmits a fungus which it will cultivate and feed upon within its galleries. Unfortunately, when a susceptible tree detects an invasion by this fungus, the tree overreacts to stop the spread of the pathogen by clogging its own water and nutrient transportation vessels. The tree so effectively stops the spread of the fungus that it also halts all internal movement of life giving water and food, and rapidly begins to decline in health. Laurel wilt disease can kill a tree in as little as 2-3 weeks after initial attack.

Across the Southeast, redbay trees are dying at an extraordinary rate. **An estimated 500 million redbays have died since this disease-causing beetle was first found in the U.S. in 2002 near Savannah, GA.** This disease has since spread to nine states, including North Carolina. In 2011, Laurel Wilt was first found in North Carolina near the town of Kelly in Bladen County. It can now be found in nine counties: Bladen, Brunswick, Columbus, Duplin, New Hanover, Onslow, Pender, Robeson, and Sampson.

While redbay trees are the primary host plant, laurel wilt disease also affects other plants in the laurel family (Lauraceae). In North Carolina, this includes sassafras, spicebush, pondspice, and pondberry. The latter two of these species are already suffering from population decline due to drainage ditching and subsequent conversion of habitat to other uses. Pondspice is a species of special concern in North Carolina and pondberry is a federally endangered species. An invading front of laurel wilt disease is within 10 miles of North Carolina's known extant pondberry occurrences. This disease can spread up to 15 miles per year through habitat with high densities of redbay and other lauraceous plants (Mayfield et al, 2009). Additionally, when it arrives, laurel wilt was shown to cause 99-100% mortality in pondberry during ex situ experiments conducted by Fraedrich et al in 2011.

In North Carolina, there are two protected pondberry preserves in Cumberland and Sampson Counties. These sites were purchased by NCDA & CS with the sole intent of rare species preservation. The Plant Conservation Program manages these important plant preserves and their habitat to assist US Fish and Wildlife Service to achieve their species recovery goals while providing some protection from this looming disease.

Kelly Oten, Forest Health Coordinator, Kelly.Oten@ncagr.gov, 919-553-6178 ext. 223

Forest Health Continued:

Forests within 5 - 7 miles of the preserves are monitored regularly for presence of laurel wilt disease. When laurel wilt is spotted within this radius, the pondberry within the preserves will be protected with protective fungicides. Before that occurs, the Plant Conservation Program plans to assess the efficacy and safety of using this chemical on the endangered plants. In addition, removal of large diameter redbay trees within 100 meters of pondberry and pondspice populations within these preserves is being done to effectively protect the imperiled plants from the spread of laurel wilt.

In addition to potentially wiping out several species of plants, laurel wilt disease will likely have cascading effects within coastal plain ecosystems. Of primary concern is the Palamedes swallowtail, a large, black and yellow butterfly which feeds almost exclusively on redbay as a caterpillar. In areas where redbay is lost completely, it is feared the butterfly will also vanish. If spicebush becomes an important secondary host as more and more redbay is lost, we could see the same with the spicebush swallowtail, another large, beautiful butterfly.

Redbay also serves as food and shelter to many animals including song-birds, turkeys, quail, deer, and bears. In addition, increased fire threat may accompany the redbay mortality. Redbays retain their dead leaves for a few years following tree death and these dry, dead leaves could serve as fuel or a potential fire ladder between ground fire and tree canopy, burning too hot or scorching tree tops.

Ultimately, the ecological impacts of laurel wilt disease will be multi-faceted. While the disease can be found in nine counties at the time of this publication, it continues to spread northward, towards the highest density of redbay in the Southeast, found near the Alligator River. The coastal forests there would not only provide ample resources to give the redbay ambrosia beetle and laurel wilt disease a population boost, our coastal forests there would change dramatically. To prevent the human-facilitated spread of this disease, the NC Forest Service recommends using local or heat-treated firewood. Accidental movement of infested materials aid the spread of this invasive insect and disease to non-affected areas. If you suspect you have a tree affected with laurel wilt, contact your NC Forest Service County Ranger or NC State University Cooperative Extension County Extension agent.

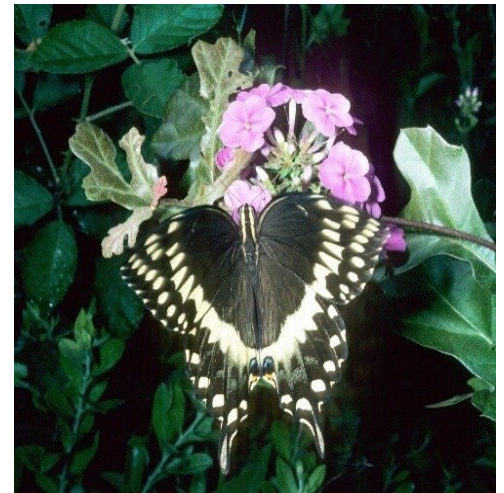


Image: S. McKeever, Georgia Southern University, Bugwood.org.

FSP Staffing Update

Jaimee Cappelletti joined the Forest Stewardship team as our Forest Stewardship Program Assistant in 2016. In her career, Jaimee has worked closely with program administrators and program directors for local non-profit agencies providing program and budget support. Jaimee attended Johnston Community College in Smithfield, NC, where she got her education in health care administration. She has a beautiful family, including a husband of 14 years, a 12-year-old daughter, and a 9-year-old son. Jaimee is active in her community, and enjoys spending free time with her family, which admittedly, generally revolves around sports (soccer, cheer, basketball, and baseball). Jaimee can be contacted at 919-857-4823 or Jaimee.cappelletti@ncagr.gov.



Threatened and Endangered Species

By A.J. Lang , Ph.D.

NCFS Update On New Threatened & Endangered Species Listings

In 2011, the US Fish and Wildlife Service (USFWS) began a review process of hundreds of petitioned riparian, aquatic, and wetland species from across the southeastern US for potential additions to the Threatened & Endangered Species List. About 21 of those species are thought to exist in aquatic or semi-aquatic environments within North Carolina. The North Carolina Forest Service (NCFS) interactions with USFWS has been, and continues to provide the best possible research-based information to accurately describe the effects of forest management on water quality and aquatic wildlife habitat. NCFS does not advocate for or against the listing of any species under consideration.

Carolina madtom (*Noturus furiosus*)



Photo: naturalsciences.org

In 2016, USFWS requested information on current forestry Best Management Practice (BMP) application and research to evaluate the effect of forest operations on four species in the petition. The Water Resources Branch (WRB) of the NCFS sent general comments to the USFWS about the impacts of forest management on hydrology and water quality based on scientific literature. As found in the majority of published scientific literature specific to silviculture, properly executed forest management utilizing effective BMPs adequately protects the integrity of water resources. In North Carolina, BMPs are implemented at high rates in order to comply with mandated performance standards (Forest Practice Guidelines Related to Water Quality [abbreviated as FPG]). **NCFS conducts about 3,000 to 4,000 forestry site inspections to monitor compliance with FPGs each year.** Compliance has been sustained at high levels since the adoption of the FPG rules in 1990. For more information on forestry as it relates to water and NCFS, visit http://www.ncforestservice.gov/water_quality/water_quality.htm

In 2017, the WRB staff provided a review on the forest management aspects of a species status assessment for the Carolina madtom and commented on the potential listing of the Yellow Lance mussel in the Federal Register. Both USFWS documents listed forest management as an 'environmental stressor', specifically citing stream temperature and sedimentation. Forestry research in conjunction with NCFS inspection data does not support these claims. Overall, it is within reason to associate forest management as a solution to maintaining high quality water rather than an environmental stressor.

Yellow Lance Mussel (*Elliptio lanceolate*)



Photo: www.watershedcouncil.org

The take-home point from NCFS recent efforts emphasizes the importance of complying with FPGs, riparian buffer rules, and the 15 federal BMPs for roads in forested wetlands. BMPs continue to play a vital role in protecting water quality, which in turn protects aquatic habitats and ultimately the species.

The NCFS continues to offer educational opportunities, tools, and resources to promote and improve implementation of forestry BMPs for water quality protection. You can keep up with the latest NC forestry water quality information, tools, and resources through NC Forest Service's [Quarterly BMP Newsletters](#).

A listing of Endangered and Threatened Species and Species of Concern for your county can be found here at: https://www.fws.gov/raleigh/species/cntylist/nc_counties.html. Another good source for T&E species in North Carolina is the US Fish & Wildlife website at: https://www.fws.gov/raleigh/es_tes.html

Pine Silviculture

By Sarah Crate

North Carolina is the “land of the longleaf pine...where the sun doth shine...”

Longleaf pines once grew in 51 out of 100 North Carolina counties, on approximately 9.4 million acres. Today an estimated 5% of the original longleaf pine acres remain in North Carolina, a similar statistic across the entire 9-state range of the longleaf pine.

Why is Longleaf Pine Important?

In the Southeast, the longleaf pine ecosystem was historically the dominant forest type. These forests provided significant contributions to our nation’s early economy while also containing some of the most important natural areas for plants and wildlife in the United States. Fire suppression and conversion to other land uses or forest types drastically reduced longleaf acreage to less than 3% of its original extent. Today the remaining longleaf pine forests provide cultural, natural, and economic values – all on the same acres.

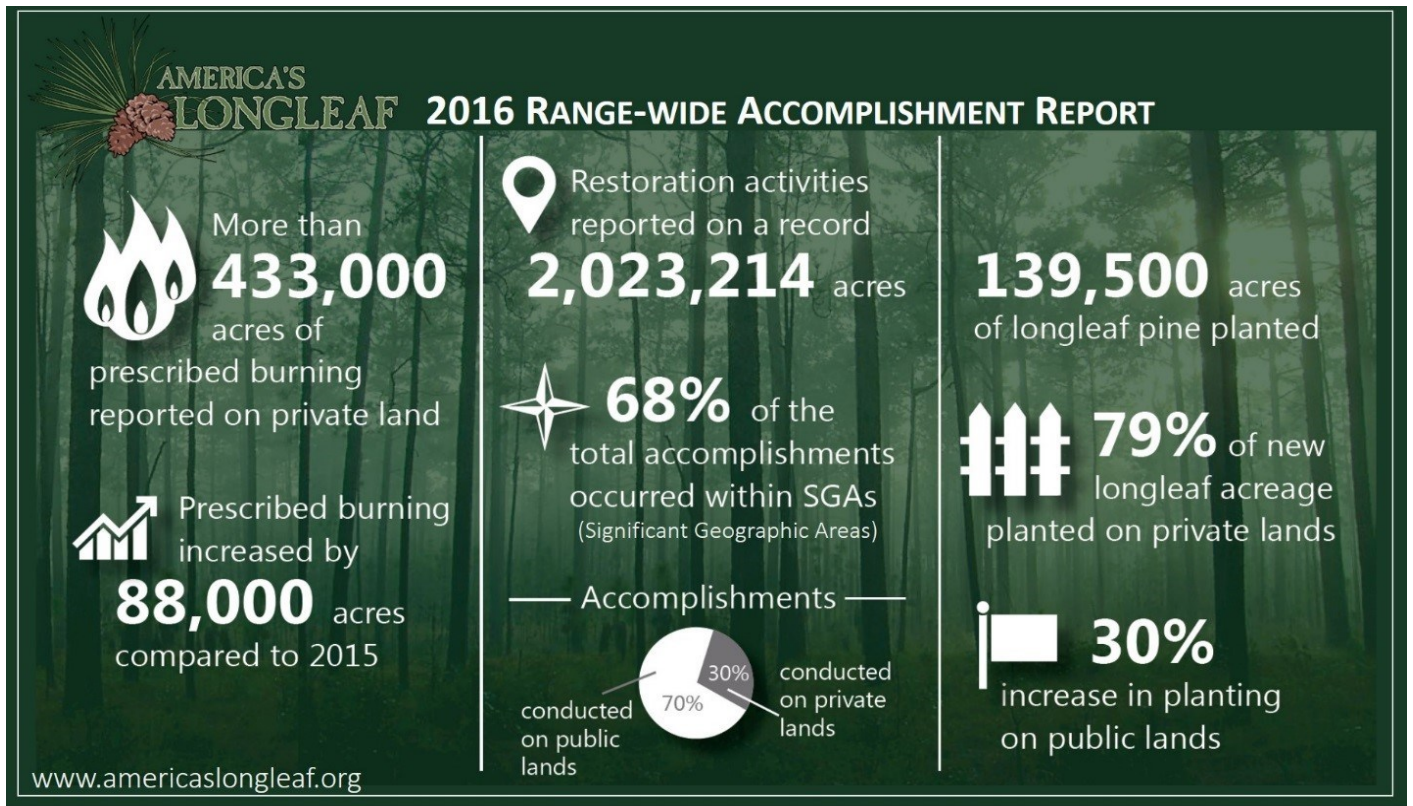
Bringing Longleaf Back

Here in North Carolina, and across the south, efforts to restore longleaf continue. Since 2013, America’s Longleaf Restoration Initiative has documented longleaf conservation progress and accomplishments in an annual report. In 2016, a reported 2 million acres of longleaf restoration activities occurred on private and public lands throughout its range in the Southeastern US. The full report can be found here at:

<http://www.americaslongleaf.org/resources/2016-range-wide-accomplishment-report/>

Is Longleaf Right for You?

As a landowner, longleaf pine may be a good fit for your woodlands. If you are interested in establishing longleaf pine or need assistance managing your existing longleaf, forestry and natural resource professionals can help. Visit www.nclongleaf.org for longleaf information, landowner resources, and technical assistance contacts.



NC Places:**By Michael Sweat****Variable-Density Harvest at DuPont State Recreational Forest**

"The plan for this harvest was to improve structural diversity while providing viable size openings to initiate regeneration development of desired hardwood species."

DuPont State Recreational Forest (DSRF) is an almost 11,000-acre state forest located in southern Henderson and Transylvania Counties. The forest is uniquely managed for outdoor recreational use as well as forest management. Forest management practices are implemented following the guidelines laid out in the DSRF Land and Resource Management Plan. The plan follows an ecological approach to forestry, the driver behind silvicultural activities on the forest is the concept of using natural communities as a model for management. Management activities are planned in a way that they support or develop a desired natural community type while protecting soil structure and productivity.

A 45-acre harvest was recently conducted in the Sheep Mountain area of the forest that consisted of a variable-density hardwood harvest. The plan for this harvest was to improve structural diversity while providing viable size openings to initiate regeneration development of desired hardwood species. All trees that were removed during the harvest were marked based on species and canopy opening size. All mature white pine in the harvest area were selected for removal. Snags were retained where possible throughout the entire harvest area to maintain existing habitat potential for mammal and bird species. The overstory species prior to the harvest were: scarlet oak, yellow poplar, white pine, white oak, and chestnut oak. The stand averaged 110 square feet of basal area per acre. There was very little understory development prior to harvest, while steeper slopes of the harvest area near creeks contained a dense layer of rhododendron and mountain laurel.



Post Treatment following Variable-Density Harvest at DuPont State Recreational Forest. Photos by Jason Guidry

The goal of the Variable-Density harvest is to provide increased structural diversity of the existing vegetation and regeneration. This can be accomplished by leaving variable groups of residuals along with removing groups of merchantable trees and undesirable trees to create groups of open areas for regeneration while retaining portions of the stand in variable densities.

A wise, Forester once said....

"Good forestry is like Jiu-Jitsu. Instead of fighting with nature you need to work with nature. If you understand which way the system wants to go—then you can work with natural systems. And every time you fail you have the opportunity to re-think your approach." Fred White

Places Continued:

By Michael Sweat

The harvest was conducted using a forwarder and tracked processor, which minimized the soil disturbance and allowed for a mostly intact duff layer throughout the tract. The irregularity of the harvest provides a wide range of shading to the forest floor allowing various species to benefit.

Since 2014, the implementation of the management plan has resulted in several other harvest types being completed on the forest, including hardwood shelterwood, clearcutting, white pine thinning, white pine shelterwood, white pine seed tree, and mixed pine-hardwood patch cutting. Additionally, 1,000 acres of prescribed burning has taken place to

also work toward supporting and developing natural communities on the forest. DuPont has strived to be active and progressive with its management approach while simultaneously being one of the most highly visited public lands in North Carolina. Overall, the goal is to demonstrate that forests can meet multiple and seemingly disparate objectives.

Contact Information: DuPont State Recreational Forest, Voice: 828-877-6527, Email: dupontsf.ncfs@ncagr.gov



In-Woods Forwarder at a White Pine Thinning at DSRF

Upcoming Landowner Outreach Events & Meetings

Forest Stewards Guild

Southeast Regional Meeting: Innovative Silviculture in Piedmont Hardwood Forests

A two-day gathering showing demonstrations of innovative silviculture in the southern Piedmont region focusing on hardwood management and mixed oak-shortleaf pine.

Event Dates and Location: September 15-16, 2017, Durham NC

Agenda: <https://www.forestguild.org/node/418>

Contact: info@forestguild.org or halleydave@aol.com

The Longleaf Alliance

Longleaf Academy 201: Understory Restoration

Expert botanists and ecologist from The Longleaf Alliance and partners will teach attendees in the subject areas of native plant identification, seed selection, understory restoration techniques and management methods.

Event Dates and Location: September 26-28th, 2017, Lake Waccamaw, NC

Registration Fee: \$200.00

Agenda: <http://www.longleafalliance.org/events/longleaf-academy-understory-restoration-201>

Contact: Karen@longleafalliance.org or Sara.Crate@ncagr.gov

NC Tree Farm

2017 Annual Meeting & Field Tour

Meeting focus will be on forest management for wildlife. More information coming soon

Event Date and Location: October 14, 2017, McKay Tree Farm in Wagram, Scotland County

Contact: nctreefarm@gmail.com

Outstanding Woodland Stewards

North Carolina “Outstanding Woodland Stewards” — By Region

(July 1, 2016—June 30, 2017)

Clarendon Plantation	Brunswick County	Coastal Region
Anthony Davis	Hyde County	Coastal Region
George & June Farmer, Tract 1	Columbus County	Coastal Region
George & June Farmer, Tract 2	Columbus County	Coastal Region
George & June Farmer, Tract 3	Columbus County	Coastal Region
Marvin Barham	Chowan County	Coastal Region
Ted Winslow	Bertie County	Coastal Region
Weyerhaeuser Company	Craven County	Coastal Region
Allen & Isla Wiles	Caswell County	Piedmont Region
Leonidas & Linda Holt	Moore County	Piedmont Region
Bentley Stephenson	Nash County	Piedmont Region
Ed Mar Farms, LLC	Moore County	Piedmont Region
The Walthour Moss Foundation	Moore County	Piedmont Region
Wrenn Properties III, LLC	Person County	Piedmont Region
James A. Phillips, Jr.	Avery County	Mountain Region
LKT Approved Special Assets	Watauga County	Mountain Region
Owl Crest Farm, LLC	Watauga County	Mountain Region

NC Stewardship Key Wildlife Contacts:

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Additional Contacts can be found at:

http://www.ncforestservice.gov/fsandfl/stewardship_contacts.htm

