

The North Carolina Forest Service

To protect, manage and promote forest resources for the citizens of North Carolina



2015 BIENNIAL REPORT

North Carolina
Department of Agriculture and Consumer Services



A Message from the Assistant Commissioner Scott Bissette



Dear Friends and Colleagues,

The year 2015 marks the centennial anniversary of the N.C. Forest Service, a division of the N.C. Department of Agriculture and Consumer Services. Whether it has been providing emergency management services, fighting wildfires, or helping to grow our forests, the Forest Service has a proud history of protecting, managing and promoting our forests for 100 years, and will continue to do so long into the future.

The aesthetic value of our state's forests is immeasurable; however, their importance to our ecological and economic health can be analyzed and quantified. I am pleased to say the state of our forests is good.

According to the recent U.S. Department of Agriculture Forest Inventory and Analysis, North Carolina's forests are growing more volume each year than is being removed through timber harvesting, conversion to non-forest land uses, and from mortality due to insects, disease, fire, storms and other events.

The growth-to-harvest ratio is commonly used as an indicator of the sustainability of the forest. A ratio of 1.0 or greater means growth exceeds harvest. North Carolina's forests have an overall growth-to-harvest ratio of 2.43. The ratio is 3.65 for hardwood forest types and 1.61 for softwood types.

The forest products industry remains strong. In fact, it contributes more than \$24 billion to our state's economy, supports over 127,000 jobs, and it remains the best renewable resource in the state. Generations of landowners have reaped the benefits of growing trees, which has provided income for their families. Forest-related businesses also profit from these harvests.

New emerging markets also help us sell wood products around the world. Exports of forest products have increased significantly over the last few years, and this trend is expected to continue, especially as Asian demand increases. In addition, new pellet mills are currently under construction to help keep up with increasing European demand. This has led to some concerns that we will lose our pristine forests. However, we are working diligently to encourage private landowners, who own the majority of the timberlands in the state, to reforest their lands following harvests.

All of our forest rangers receive extensive training so they can better serve North Carolina residents through our forest management programs. These programs are designed to assist landowners in managing their forestland from planting to harvest to reforestation, by offering technical advice and some financial assistance. We assist landowners with management plans that meet their goals, and are available to assist them with following those plans.

Every year, our nursery program also grows millions of seedlings of more than 50 different varieties of deciduous and evergreen trees that are native to North Carolina. We also work with communities across the state to assist them with their urban forestry needs. All of these efforts help foster healthier forests and promote our forest products industry.

The N.C. Forest Service also serves the needs of our nation in times of crisis by providing firefighting and emergency response services. Our highly trained staff has been recognized nationally as a premier incident management organization. In addition to responding to other crisis situations here at home, including tornado and hurricane relief, personnel from this organization have worked throughout the country on a variety of incidents.

I would like to thank you for your continued support of this great organization and encourage you to use our forests wisely, so that they can remain the great renewable resource they are today for generations to come.

Sincerely,

Scott Bissette

Assistant Commissioner



FACTS ABOUT NORTH CAROLINA'S FOREST RESOURCES

North Carolina's forests cover 18.6 million acres, or 60 percent of the state's land area. Ninety-seven percent of the forested area (18.1 million acres) is considered available for timber production and classified as timberland. North Carolina's forestland area has declined by almost 1.9 million acres from a high of 20.5 million acres in the mid 1960's but remains slightly greater than in 1938 when the first statewide forest inventory was completed.

Most of the state's timberland (11.3 million acres or 63 percent) is owned by individuals, families and non-corporate entities. About 2.9 million acres is owned by private corporations not involved in forest product manufacturing and about 1.3 million acres is owned by forest industry. Public lands (federal, state and local) total 2.6 million acres, or 14 percent of timberland.

Recent forest inventory data reveal that the state's forests are growing more wood volume each year than is being harvested or lost due to mortality or conversion to non-forest uses. This is true for both hardwoods and softwoods and is a positive reflection on the ability of the state's forests to sustainably supply goods and services for all North Carolinians in addition to supporting existing and emerging markets.

North Carolina's timberland is diverse and includes more than 60 commercially-important tree species. Hardwoods are the dominant forest type, occurring on 68 percent of the state's timberland acres, compared with 32 percent in softwood forest types. The primary forest-type groups in order of occurrence are: oak-hickory, loblolly-shortleaf pine, oak-pine, and oak-gum-cypress.

THE ECONOMIC VALUE OF NORTH CAROLINA'S FORESTS & FOREST RESOURCE-BASED ECONOMY

The wood products industry is a major contributor to North Carolina's manufacturing economy. In 2012, the industry employed more than 53,000 people with a payroll of \$2.8 billion. The majority of these companies are small, employing fewer than 100 people. The value of all shipments totaled \$13.5 billion with North Carolina's ports exporting almost \$1.4 billion of product. The forestry sector contributes more than \$9 billion to the state's gross product and provides more than \$23 billion in economic benefit. The forest products industry is the largest manufacturing sector in the North Carolina economy.

The primary forest products industry consists of mills that process logs or whole trees (roundwood) into a variety of products and include facilities processing lumber, pulp and paper, veneer, plywood, composite panels, posts, logs for log homes, biomass for energy, wood pellets, and other products. North Carolina is a net exporter of roundwood for composite panels, veneer, and other industrial uses, while it is a net importer of pulpwood and saw logs. Wood pellet production, and other emerging bio-energy markets, are expected to increase over the next few years.



THE NORTH CAROLINA FOREST SERVICE STRATEGIC PLAN

Introduction

The N.C. Forest Service Strategic Plan is intended to guide our efforts in meeting the organization's mission. The hard work and effort of over 700 employees in the N.C. Forest Service has resulted in new mission and vision statements and values important to all who wear our patch.

Encompassed within the six major goals of "Protect the Forests, Manage the Forests, Promote the Forests, Leadership in Forestry, Safety, and Business Efficiencies and Effectiveness" are 15 objectives to meet along with over 90 action items. The measures associated with each goal will help track our success in important areas while nine major initiatives in the plan will impact the way we meet the needs of the citizens of the North Carolina, our partners and our employees.

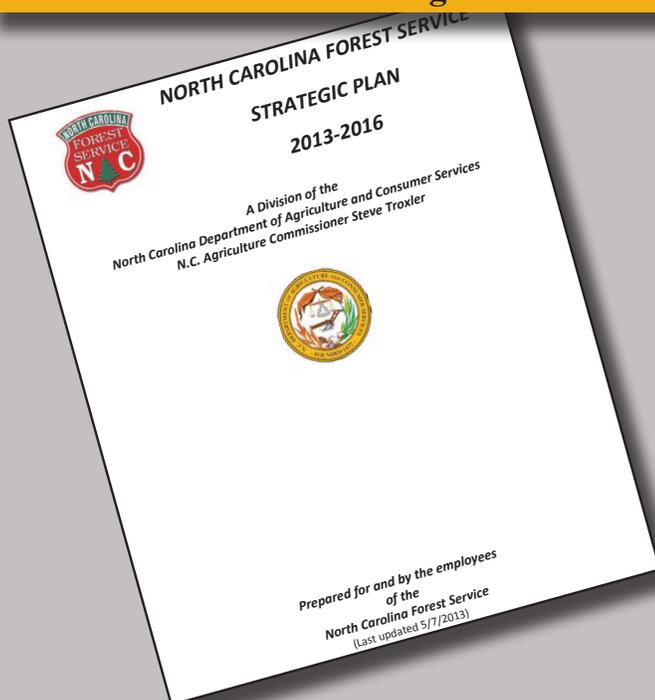
Each employee can see how the strategic plan fits into their day to day work, how they can play a part in meeting our goals and objectives, and how they are a part of a larger effort to serve the people of our state. Join us on this new journey and return often for progress reports on how we are doing.

Relationship to the North Carolina Forest Action Plan

In June 2010, the N.C. Forest Service and numerous partners completed a comprehensive forest resource assessment for North Carolina. This statewide assessment, along with its accompanying strategic plan and priority maps, was titled "North Carolina's Forest Resources Assessment, 2010." It also came to be known as "North Carolina's Forest Action Plan, 2010." This comprehensive effort developed a broad and collective vision for protecting and enhancing North Carolina forest values and benefits over a five-year period.

This plan, developed by and for all partners and stakeholders with an interest in the future of North Carolina's forest resources, goes beyond what a single organization has the ability to influence, let alone accomplish. The N.C. Forest Action Plan identifies numerous objectives and strategies to accomplish seven broad goals. It has also served as a solid foundation and influence on the N.C. Forest Service Strategic Plan. Many of the goals, objectives and strategies in the N.C. Forest Action Plan have been incorporated into the Strategic Plan in ways that are more focused on the strengths, capabilities and legislative responsibilities of the N.C. Forest Service.

To view the complete Strategic Plan, visit:
ncforestservice.gov



To view the complete Forest Assessment Plan, visit:
www.ncforestactionplan.com



Relationship to the NCDA&CS Strategic Plan

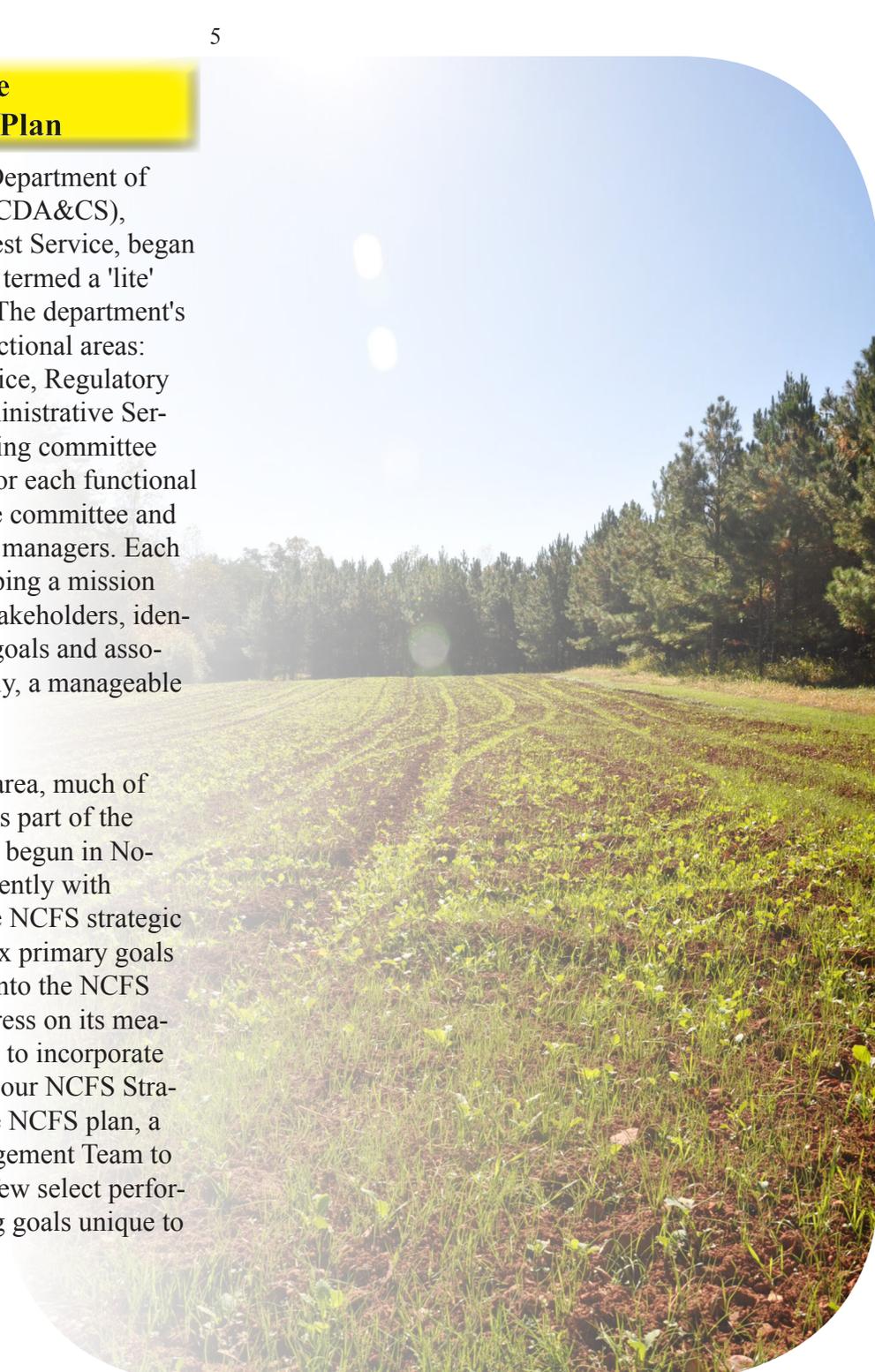
In March of 2012, the North Carolina Department of Agriculture and Consumer Services (NCDA&CS), which oversees the North Carolina Forest Service, began a fast-paced effort to develop what was termed a 'lite' version of a department strategic plan. The department's 21 divisions were grouped into five functional areas: Agricultural Services, N.C. Forest Service, Regulatory Programs, Enterprise Centers, and Administrative Services. The departmental strategic planning committee was comprised of two representatives for each functional area who served as liaisons between the committee and individual division directors and senior managers. Each functional area was tasked with developing a mission and vision statement, identifying key stakeholders, identifying two to three key representative goals and associated performance measures, and finally, a manageable number of strategic initiatives.

For the N.C. Forest Service functional area, much of this work had already been developed as part of the NCFS strategic planning effort that had begun in November of 2010, and continued concurrently with the departmental planning effort. As the NCFS strategic planning effort progressed into 2012, six primary goals emerged and were eventually adopted into the NCFS plan. Since the NCFS is reporting progress on its measures to NCDA&CS, it was a natural fit to incorporate these same departmental measures into our NCFS Strategic Plan. As we worked to finalize the NCFS plan, a decision was made by the NCFS Management Team to follow this same model and develop a few select performance measures for the three remaining goals unique to the NCFS plan.

The two strategic plans mesh and complement each other. The two plans are organized into a consistent format and flow with two notable exceptions.

1.) The NCFS Strategic Plan is more detailed, consisting of six goals and associated performance measures, compared with three NCFS goals in the NCDA&CS Strategic Plan. The three NCFS goals found in the NCDA&CS Strategic Plan: Protect the Forests; Manage the Forests; and Promote the Forests are based on the three cornerstones of the new NCFS mission statement adopted in 2012. In the NCFS plan, each goal is supported by additional objectives and strategic actions that will guide the NCFS priorities through June 2016.

2.) The nine NCFS functional area initiatives featured separately within the Department plan have been woven into the NCFS plan and are incorporated as either objectives or strategic actions.



OUR MISSION: TO PROTECT, MANAGE AND PROMOTE FOREST RESOURCES FOR THE CITIZENS OF NORTH CAROLINA

Vision

We envision a North Carolina with healthy trees and forests that provide essential environmental, economic and social benefits served by a professional workforce recognized as a leader in forest protection, emergency response, resource management and environmental education.

Values

Leadership: We take initiative to influence.

Integrity: Our character is displayed through commitment and ethical performance of our duties and responsibilities.

Unity: Our care for and loyalty to each other creates teamwork, mutual respect and a sense of family.

Professionalism: We maintain and utilize the highest levels of knowledge and expertise to safely and effectively accomplish our mission.

Service: We perform our duties in the best interests of the people we serve and the resources we manage.

Goals

Protect the Forests

The N.C. Forest Service protects North Carolina's forests from wildfire and from insect and disease outbreaks. We accomplish this by suppressing wildfires, conducting fire prevention programs, and responding effectively to large fire incidents, insect and disease outbreaks, and other threats to the forest (Authorized by GS 106-895, 106-920).

Manage the Forests

The N.C. Forest Service assists private landowners to responsibly manage their forest resources. We also monitor The Forest Practices Guidelines (FPGs) Related to Water Quality in order to protect our water resources. We prepare objective-driven management plans for private landowners, assist landowners in implementing recommended management practices, and promote sound management of North Carolina's urban forests. (Authorized by GS 106-870, 106-875, 106-1001/1002, 113A-52.1)

Promote the Forests

The N.C. Forest Service is responsible for promoting the conservation, development and profitable use of North Carolina's forests. We accomplish this by helping forest landowners establish new forests; supporting existing, new, and emerging forest product markets; and educating youth and adults on the benefits of our forest resources. (Authorized by GS 106-895, 106-907)

Leadership in Forestry (Branding and Recognition)

The N.C. Forest Service strives to be the leading authority on issues concerning forest resources in the state. Through a professional, highly trained workforce, we take the initiative to influence the direction of forestry and to serve citizens.

Safety

The N.C. Forest Service will provide a safe and healthy work environment and develop a workforce that is committed to safety. We will strive to reduce the number of workplace injuries to our employees while finding better ways to communicate safety information and train employees. We will also focus on the physical and mental well-being of each employee.

Business Efficiencies & Effectiveness

The N.C. Forest Service will strive to become an organization valued by its internal and external customers for efficient and effective business practices. We will meet this goal by maximizing our funding, hiring and retaining excellent employees, and utilizing technology, innovation, and improved communication.



The N.C. Forest Service

Protecting, Managing and Promoting North Carolina's Forests For 100 Years



BUDGET: FISCAL YEAR 2013-2014

Program Title	Appropriation	Receipts	Total
Forestry Field Operations	\$35,180,720	\$11,015,368	\$46,196,088
Dare Bomb Range	\$0	\$1,729,007	\$1,729,007
Young Offenders Program	\$1,165,108	\$300	\$1,165,408
Federal Grants	\$0	\$10,156,323	\$10,156,323
Bladen Lakes State Forest	\$0	\$1,049,639	\$1,049,639
Nursery	\$0	\$1,389,669	\$1,389,669
Forest Development	\$0	\$1,951,470	\$1,951,740

* This includes county cooperative contracts, fees and other receipts.

The Forestry Council (G.S. 143A-66.1)

The Forestry Council is an advisory council consisting of 18 members appointed by the Governor, President Pro Tempore of the senate and Speaker of the House. The Council provides advice to the Commissioner of the Department of Agriculture and Consumer Services with respect to all matters concerning the protection, management and conservation of state-owned, privately-owned, and municipally-owned forests in the state. A list of Council members is available on the NCFS website. ncforestservice.gov.

Forestation Program (G.S. 106.1001)

The Forestation Program provides site preparation, prescribed burning, fuel mitigation, timber stand improvement, invasive species control and soil stabilization services on a fee basis to landowners where these services do not exist. While we focus on serving private landowners, we have been able to help other state and federal agencies, on a fee basis, to accomplish their management goals. This directly relates to accomplishing the directives, missions and goals in all program areas. This is all provided by a receipt-supported program.

ORGANIZATION:

The North Carolina Forest Service is mandated to protect, manage and conserve North Carolina's forest resources efficiently and effectively. The NCFS is organized as follows:

- Assistant Commissioner's office: Assistant Commissioner and the State Forester (Raleigh)
- Five Divisions: Administrative Services, Forest Protection, Forest Management/Forest Development, Safety, Planning and Analysis, and Aviation.
- Three Regions: Coastal (Kinston), Piedmont (Chapel Hill) and Mountain (Asheville).
- 13 Districts headquartered at Asheville, Lenoir, Rockingham, New Bern, Rocky Mount, Fayetteville, Elizabeth City, Whiteville, Sylva, Lexington, Hillsborough, Mount Holly and Fairfield.
- There is a county ranger office in all 100 counties.

Each county signs an agreement with the NCFS and shares in the cost of the county program. The county share varies from 30 to 40 percent depending on the tax base of the county. All personnel employed in the counties are state employees.

The county ranger is responsible for coordination and delivery of all the NCFS programs at the county level. The county ranger is a forest technician who has completed either a two-year forest technician course at a technical school and/or a comparable in-service training program administered by the NCFS.

Professional assistance in technical areas is provided by foresters, specialists and the district staff who are responsible for managing all programs administered by the counties in that district.

FOREST PROTECTION PROGRAM (GS 106-895, 106-920)

The North Carolina Forest Service (NCFS) is mandated by the North Carolina General Statutes to detect and suppress all forest fires under the jurisdiction of the state. There are approximately 23 million acres that fall under the jurisdiction of the state where a fire may occur that will require suppression action. A combination of ground and aerial resources are required to provide for the safety of firefighters and the public and to minimize the loss of forestland, homes, and personal property to wildfires.

The NCFS has agreements in place and works cooperatively with our federal partners and other agencies to achieve our goals. The program is managed on a cooperative basis with the state's counties. All 100 counties participate in the forest fire protection program.

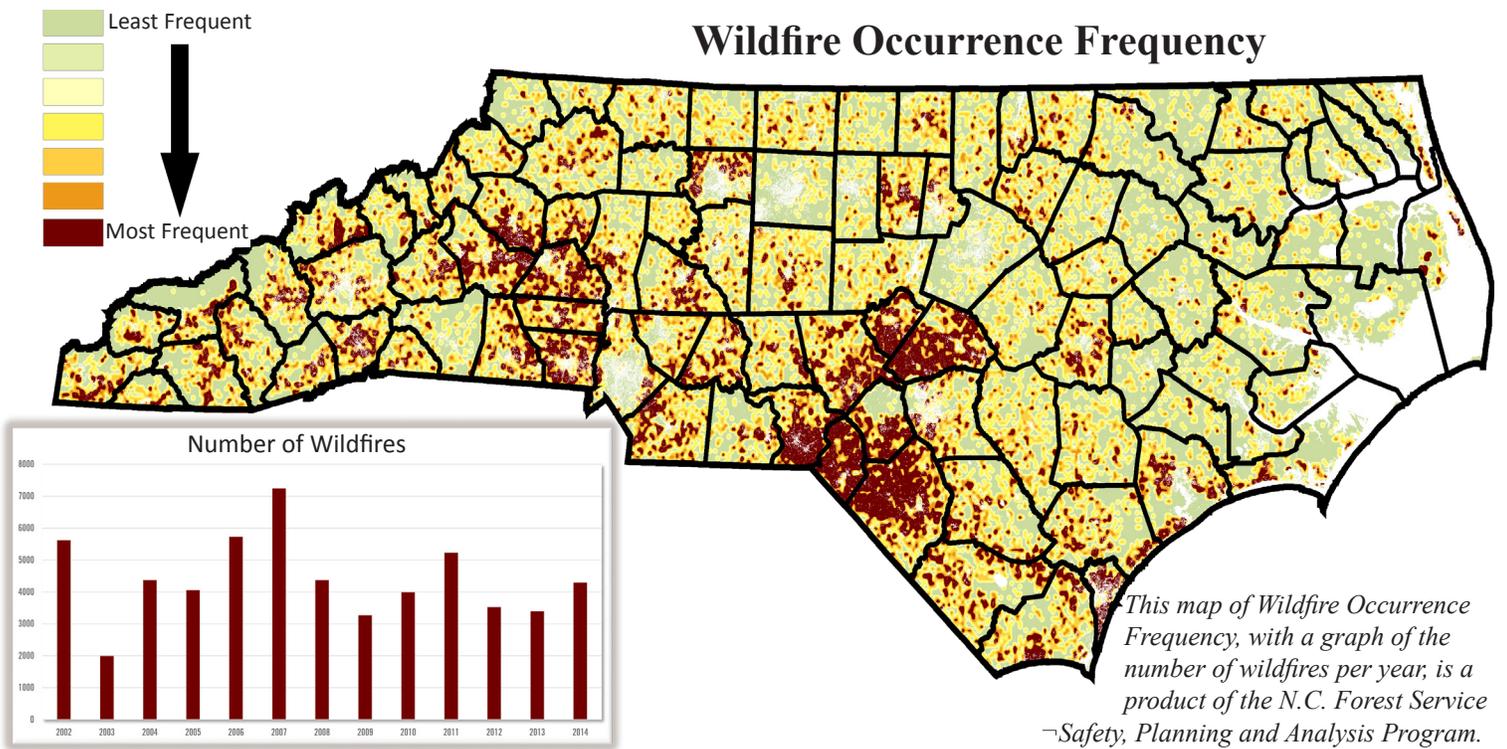
Emphasis in the fire program includes fire prevention efforts, pre-suppression activities (including extensive training of NCFS and non-agency personnel), aggressive suppression efforts on all wildfires, and law enforcement. The NCFS aviation program has helped North Carolina develop aggressive initial attack strategies for wildfires that allow the state to have one of the lowest fire size averages and one of the best firefighter safety records in the nation. The NCFS has a variety of aircraft that fill a role in ensuring that we maintain the ability to keep fire sizes at a minimum.

FY 2013-2014 Accomplishments:

- **Fires: 4,593 Acres Burned: 13,327**
- **Homes and Structures Destroyed: 178 (\$2,095,937)**
- **Homes and Structures Damaged: 244 (\$1,050,475)**
- **Homes and Structures Protected: 8,278 (\$748,174,782)**
- **Value of Timber Destroyed: \$901,055**
- **Value of Other Losses: \$1,570,880 (vehicles, livestock, crops, etc.)**

(10 Year Average: 4,561 fires, burning 25,047 acres annually)

Wildfire Occurrence Frequency



Wildland Urban/Interface & Firewise

The NCFS strives to raising awareness, prevent and mitigate the wildland urban/Interface hazards in North Carolina through initiatives that include Firewise, Southern Wildfire Risk Assessment Portal (SouthWRAP), Community Wildfire Protection Plans (CWPP), and the Community Protection Program.

The Wildland/Urban Interface is the area where the wildland and development meet and intermingle. North Carolina ranks first in the country in the number of acres of wildland urban interface. It also ranks fifth in the number of homes in the wildland urban interface. These and other factors contribute to North Carolina leading the nation with the number of homes at risk from wildfires.

The NCFS and its cooperating agencies consider the Firewise program an essential resource to prepare the more than 3,900 communities at risk from wildfire and mitigate the hazards preemptively. Twenty-nine communities have received national recognition under the Firewise Communities/USA program and more than a dozen communities across the state are currently participating in the Firewise program in an attempt to receive national recognition in the Firewise Communities/USA program.

The NCFS, in coordination with its neighboring state forestry agencies, completed the SouthWRAP project. This Geographic Information System(GIS) assessment allows the NCFS and its partners at the national, state and local levels to obtain a clearer picture of what the overall potential is for wildland fire and its associated challenges. The NCFS is using SouthWRAP to identify high hazard areas and for educating the public about the risk to their community from wildfires. The NCFS plans to customize the portal to provide for maximum exposure to our wildfire history and its associated challenges.

The NCFS is taking the lead to complete CWPPs in all fire districts in the state. A CWPP brings together diverse local interests to discuss their mutual concerns for public safety, community sustainability, and natural resources. It offers a positive, solution-oriented environment in which to address challenges such as: firefighting capability, the need for defensible space around homes and subdivisions, and where and how to prioritize land management.

FY 2013-2014 Accomplishments:

- CWPPs completed: 109
- Cumulative CWPPs completed: 654



Law Enforcement

(G.S. 106.900)

The N.C. Forest Service is charged by general statute with the responsibility of preventing and controlling forest fires and enforcing forest laws. GS 106-900 was amended in the 2014 legislative session to broaden the authority of forest law enforcement officers and allow them to investigate and enforce any violation of the laws within the authority of the N.C. Department of Agriculture & Consumer Services, or which occur on Department property. Law enforcement is an essential tool in forest fire prevention with a remarkably low rate of repeat occurrences of violations of less than 5 percent. Escaped fires from debris burning account for 45 percent of all forest fires; woods arson accounts for an additional 15 percent. The agencies four full-time law enforcement officers, in addition to conducting or supervising complex investigations, serve as technical supervisors to eight law enforcement district rangers as well as coordinating the enforcement activities of the 580 forest rangers in the state and providing specialized training in arson investigation, fire cause and origin determination and forest fire laws.

This house was one of two that were heavily damaged in Warren County when the adjacent landowners burning pile of leaves escaped and spread through the dead winter grasses to the adjacent properties. The fire was only about 2 acres in size but caused total loss or near total loss to two nearby homes.

FY 2013-2014 Accomplishments:

- Burning Permits Written: Total – 198,629 (Online – 74,408 Paper – 124,221)
- Warning Tickets: 2,297
- Citations: 57
- Warrants: 48
- Juvenile Actions: 109
- Other LE Actions: 499

Forest Health: Insect and Disease Monitoring and Management (G.S. 106.920)



Insects and diseases are the biggest threats to the survival and growth of trees. Insects cause the most tree mortality and diseases cause the greatest growth loss compared to fire, weather, and other threats. The Forest Health Branch of the NCFS, made up of four foresters and two technicians, serves North Carolina landowners in addressing insect and disease threats through pest detection and management. This is mostly accomplished through field visits and diagnoses, intra-agency and public education, regular surveys (both trapping and aerial), and collaborative efforts and research with cooperating agencies and universities. Currently, the NCFS Forest Health Branch is the sole state and private forest resource for forest entomology and pathology information in the state.

In many cases, native insects and diseases threaten tree health and require frequent monitoring, surveying, and management. The most significant of these is the southern pine beetle, which is considered the most destructive pest in the South. Each year, the NCFS conducts trapping to predict the upcoming population levels, biannual aerial surveys to detect and monitor outbreaks, and administers the Southern Pine Beetle Prevention Program (cost-share program).

In recent years however, non-native invasive species have increasingly become the focus – and for good reason. The number of non-native invasive species found in North Carolina are increasing and will likely continue to do so. They have the potential to cause irreparable devastation to our forests, and they are challenging or impossible to control. The Forest Health Branch participates in widespread efforts to monitor many of these invasive threats through species-specific trapping, ground and aerial surveys, and by training NCFS field personnel identification techniques. By understanding where these populations are spreading, measures can be taken to minimize their spread (e.g., quarantines). The Forest Health Branch also manages these pests when possible directly through pesticide applications and/or participation in biological control programs and indirectly through recommendations and education to landowners.

FY 2013-2014 Accomplishments:

- Acres aerially surveyed for insect, disease and storm damage: 23.4 million
- Pests and stress agents requiring special surveys, trapping or monitoring: Southern pine beetle, emerald ash borer, thousand cankers disease/walnut twig beetle, laurel wilt/redbay ambrosia beetle, ice storm and tornado damage, forest tent caterpillar (and other defoliators), and hemlock woolly adelgid
- 2,359 acres were pre-commercially thinned to improve forest health and prevent SPB
- 1,201 acres of longleaf pines were planted during reforestation projects in the coastal plain as they are less-SPB susceptible
- Number of emerald ash borer parasitoids released: 37,475 (approximately 45,000 to date)
- Number of insect traps installed & monitored: 234

Emerald Ash Borer Galleries



Training

The NCFS has extensive training programs in forest management, forest fire protection and all-hazard incident management and response. The NCFS uses over 100 training courses from the National Wildfire Coordinating Group and National Incident Management System wildfire, prescribed burning and incident management training courses, as well as approximately 20 agency specific courses. Training targets NCFS personnel as well as state and federal cooperators and local fire departments. More than 50 classroom and functional training courses were conducted in 2014. More than 900 NCFS and other agency personnel were trained. Our training and use of the all-hazard Incident Command System(ICS) enables the NCFS to be one of the primary responders to natural and man-made disasters in the state, including hurricanes, tornadoes, blizzards and other emergencies.



Training Facilities



The NCFS operates three training facilities. The facilities in Crossnore and Kinston offer overnight accommodations, dining facilities and classrooms with multimedia capabilities. The third facility, at Jordan Lake does not have overnight accommodations. These facilities are available to state agencies or other organizations at reasonable rates.

Fire Department Assistance

The N.C. Forest Service provides assistance to more than 1,300 North Carolina fire departments through several programs. These programs offer a variety of fire training courses, equipment by loan agreements, as well as equipment and supplies for purchasing by fire departments.

FY 2013-2014 Accomplishments:

- **VFD Firemen Trained: 686**
- **The NCFS donated more than \$3.5 million in Department of Defense equipment to VFD's throughout the state.**
- **148 fire departments were awarded \$115,871 through the VFA Program.**

Young Offenders Forest Conservation Program (BRIDGE)

The BRIDGE (Building-Rehabilitating-Instructing- Developing-Growing-Employing) Program is a cooperative effort between the N.C. Forest Service and the N.C. Department of Public Safety, Division of Adult Corrections designed to prepare and utilize young, non-violent inmates for wildfire suppression and community related projects. The primary goal of the BRIDGE program is to provide well trained and equipped forest firefighting crews ready for immediate dispatch. The program offers rehabilitation and educational opportunities while providing essential services in the protection and management of the state's natural resources. In addition to forest firefighting and management, chainsaw operation, and portable sawmill operation, BRIDGE offers a variety of vocational opportunities from carpentry, landscaping, painting, sandblasting, sign construction, masonry to plumbing. Projects include community service such as disaster relief, educational programs, and special projects to support search and rescue training and fisheries stocking. BRIDGE crews indirectly provide services for all 100 North Carolina counties through involvement with the Nursery, Tree Improvement, and Stewardship Programs completing seed collection, tree planting, seedling lifting, chainsaw work, timber stand improvement, and trail construction/maintenance projects.



FY 2013-2014 Accomplishments

- **BRIDGE crews have contributed a total of 2,531,979 man-hours through June 2014.**
- **BRIDGE crews contributed 86,257 man-hours in FY 2013-14.**
- **Fire control accounted for 19,115 man-hours, which consisted of direct fire suppression, pre-fire firebreak construction, and prescribed hazard reduction burns.**
- **Inmate labor costs have remained at \$1/day per crewman, (12½ cents per hour), since the inception of the program versus local firefighters \$9.21/hour, and federal firefighters \$17.60/hour.**
- **Five man crew daily rate is: BRIDGE = \$5.00, Emergency Firefighter = \$368.40, and Federal Firefighter = \$704.00.**
- **NCFS saved more than \$783,000 in FY2014 utilizing BRIDGE crews versus Emergency Firefighter crews.**
- **BRIDGE program recidivism rate is 7.3 % versus NCDPS 37.5% recidivism. NCDPS figures are based on the NCDPS publicized recidivism rate for general population inmates and a 2008 recidivism study conducted by the NCFS.**

Natural Disaster Assistance

(G.S. 106.930-106.934)

The NCFS has a distinguished reputation for assisting the public during or following natural disasters within North Carolina or wherever needed throughout the country. Having three Type Two, highly trained and nationally certified Incident Management Teams (IMT) is a significant accomplishment within the Southeast. The training and equipping of personnel makes NCFS ready to assist with tornadoes, hurricanes, floods and other events. The Incident Command System allows us to quickly mobilize and organize large forces on the ground anywhere in North Carolina or throughout the country. Working with the State Division of Emergency Management, the NCFS is often the first called and last to leave many disasters.

Information and Education (G.S. 106.907)

The Information and Education Branch is responsible for the production and distribution of educational materials and programs used by the NCFS for public awareness. The NCFS maintains an active public outreach program designed to heighten the public awareness about the division's services and the importance and need to protect and manage our state's vital forest resources.

This branch also provides staff support to seven Educational State Forests operated by the NCFS. The primary purpose of the Educational State Forests is to educate the public, primarily school children, about forest management practices, the forest resources of the state and the need to properly manage these resources. All classes taught at the Educational State Forests are correlated to the N.C. Department of Public Instructions current standards. The forests have demonstration and research area that show visitors a variety of management principles. These forests now receive more than 201,000 visitors per year. To learn more, visit www.ncesf.org.

FY 2013-2014 Accomplishments

- **Educational State Forest attendance: 201,864**
- **Total ESF students taught: 22,005**
- **Total ESF correlated classes given: 835**
- **Other school programs given: 979**
- **Other I&E events: 1,035**

Landowner Hazard Reduction

Prescribed Burning Program

(G.S. 106-968)

The Landowner Hazard Reduction Prescribed Burning Program trains landowners to safely conduct prescribed burning on their forestland in an effort to reduce forest fires and property losses caused by forest fires. This is accomplished by reducing fuel buildup (litter, leaves, twigs, etc.) on their property through the use of prescribed burning.

FY 2013-2014 Accomplishments:

- Understory Burning Projects: 712
- Understory Burning Acres: 68,738

Fire Environment (G.S. 106-895)

The Fire Environment Branch provides decision support services to the state's wildland fire community. In general, the branch consists of assimilating intelligence, fire behavior, and fire weather information to produce state and area-wide fire weather / fire danger / fire behavior outlook products. In addition, program specific products are developed ranging from weather station monitoring, and weather forecasting to fuel moisture and fire behavior analysis. Extensive training on fire danger and fire environment areas is provided to fire fighting interagency partners and the natural resource community. Research is conducted on subjects such as smoldering potential and smoke management in deep organic coastal soils, the effects of smoke on wildland firefighters and the development of scientific based decision tools for go/no-go calls on prescribed burning and burning bans.

Smoke Management (G.S. 106-968)

Smoke from forestry prescribed burns throughout the state is managed through a voluntary Smoke Management Program. The volume of fuel that can be burned is determined by atmospheric conditions and by the distance the burn will take place from a smoke sensitive area, such as a major highway or a populated area.

AVIATION (G.S. 106.895)

The NCFS operates multiple fixed-wing aircraft and helicopters statewide. These aircraft are paramount to forest fire detection and suppression programs throughout the state, including assisting on national forests, national parks and military installations. The NCFS's aircraft are critical for firefighters on the ground who rely on the aerial view of the pilot to keep them in as safe a working environment as possible. With the dynamic and unpredictable nature of fire, firefighter safety is the highest priority. The fixed-wing/rotary-wing aircraft also operate in support of the NCFS's forest management, pest control and water quality programs. The aircraft may also be used for emergency management, coastal and land management activities. These aircraft support the NCFS by providing aerial survey platforms to ensure that all established guidelines for programs are adhered to in the state. Five of the aircraft were obtained through the Federal Excess Personal Property (FEPP) program, thus are technically owned by the U.S. Forest Service. Federal law requires that FEPP aircraft be used for fire control and limits the non-fire use of these aircraft to 10 percent of their normal flight time.

Aviation Assets

- We have a total of 24 Full Time Aviation Personnel and 23 aircraft, including:
 - Three 500 gallon and one 250 gallon Single Engine Air Tankers
 - T-34 Lead Plane,
 - Three Huey and two AStar Helicopters,
 - Nine Full Time Patrol/Air Attack fixed wing aircraft.



The NCFS's aviation assets are critical in maintaining our readiness and ability to safely and quickly suppress wildfires.

FOREST MANAGEMENT PROGRAM (G.S. 106.870-106.1032)

The objective of the Forest Management program is to assist private, non-industrial forest landowners with sustainable management of natural resources on their property and assist them with leaving a legacy for future generations. The N.C. Forest Service provides a wide range of technical forest management assistance to the public including forest establishment assistance, forest stand improvement practices, recommendations on proper harvesting and thinning methods, and providing updated listings of service providers that can assist them. We provide assistance with managing for non-timber benefits, as well as water quality protection and wildlife habitat improvement during forestry operations. We also provide landowners with information on forest taxation, forestry herbicides, prescribed fire, invasive species, insects and diseases, forest fertilization, and other common and unique forestry practices.

The NCFS helps to coordinate and administer federal cost-share programs, as well as the state's Forest Development Program (FDP) that provides financial assistance to landowners in the form of cost-share funds for reforestation and forest stand improvement. Our agency is responsible for assuring that any recommendations proposed for private lands within woodland plans submitted to NCFS are technically sound, meet program requirements, and serve the best interest of the public.

FY 2013-14 FM Accomplishments:

- 6,990 Total Woodland Plans were prepared or reviewed for landowners on 372,519 acres. These plans included the following:
 - 4,126 Forest Management Plans on 247,081 acres
 - 2,864 Practice Plans on 125,438 acres
 - 543 Agent Plans (Non-NCFS) on 34,945 acres
- 67,955 acres of Forest Establishment
- 16,827 acres of Stand Improvement
- 80 Urban Plans were prepared impacting 441 acres
- 404 Urban Assists provided that included 355 Shade Tree Assists for 1,038 acres
- 2,732 Referrals to private forestry consultants on 142,227 acres
- Best Management Practices (BMP's) were recommended on 3,636 tracts to protect soil & water quality on 200,754 acres

Technical Development, Planning and Utilization

(G.S. 106.965-106.1032)

The agency's Technical Development, Planning and Utilization Program conducts applied forestry research that improves resource management knowledge. Our focus is on developing and applying new techniques that enhance productivity and sustainability of the state's natural resources. Demonstration, technology transfer, staff training and outreach are key components of this effort. Forest-based economic development and marketing efforts support and promote traditional forest products industries, emerging markets such as woody biomass for energy, ecosystem services and carbon sequestration, and forest product exports, currently the state's largest agricultural export sector.

The N.C. Forest Service is involved in efforts to conserve and re-establish declining or threatened tree species and ecosystems such as longleaf and shortleaf pine, Atlantic white cedar, bald cypress, American chestnut, bottomland hardwoods and spruce-fir, among others. Collection and analysis of vital forest inventory and resource utilization data is a critical component of the agency's strategic planning efforts to address forest sustainability issues.

Forest Tree Seedling Nursery Program

(G.S. 106.965-106.1032)

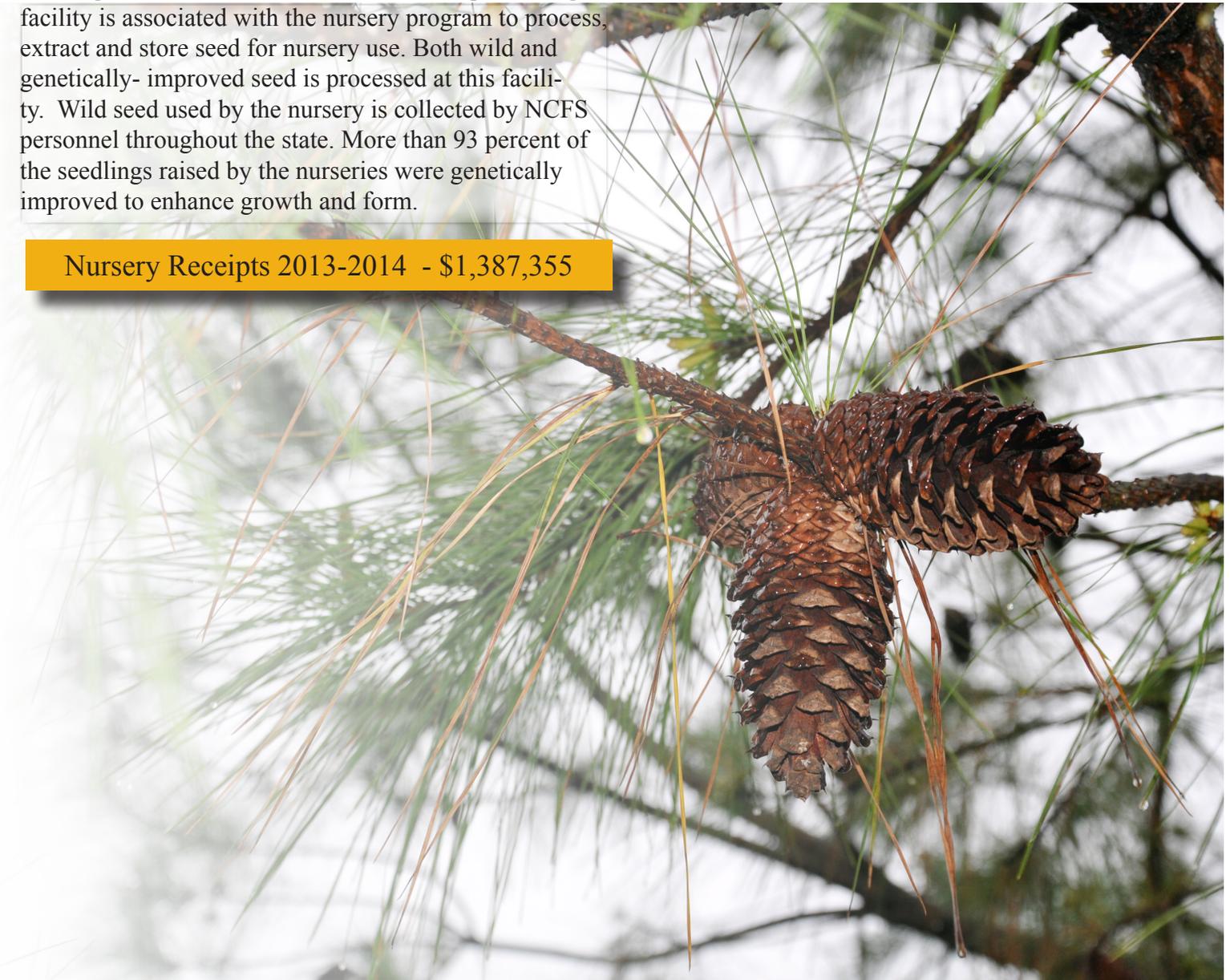
The Forest Tree Nursery Program is a receipt-based program. The goals of the program are to produce and sell seedlings of native forest tree species for afforestation and reforestation planting, wetland mitigation, stream bank restoration, and for research efforts related to the program. This program is essential in ensuring a wide variety of tree species are available to North Carolina landowners. Several species, including Fraser fir are also grown for the Christmas tree industry. Seedlings are grown at cost as bare-root, container and greenhouse plants and may include 40 to 50 species of conifers and deciduous hardwoods in any given year. In recent years, there has been an increased focus on production of long-leaf seedlings and understory plant material in support of the NCFS Longleaf Initiative. More than 12.9 million seedlings were sold in FY 2013-14. A seed- processing facility is associated with the nursery program to process, extract and store seed for nursery use. Both wild and genetically- improved seed is processed at this facility. Wild seed used by the nursery is collected by NCFS personnel throughout the state. More than 93 percent of the seedlings raised by the nurseries were genetically improved to enhance growth and form.

Nursery Receipts 2013-2014 - \$1,387,355

Tree Improvement Program

(G.S. 106.965-106.1032)

The Tree Improvement Program ensures that seed of the best genetic quality is available to the state nurseries so that seedlings of the highest productivity, form, wood quality and disease resistance are available for use throughout the state. This helps North Carolina landowners obtain the greatest return from planting these seedlings. Tree improvement activities include selection, breeding and testing of numerous species. Establishment of seed production areas, genetically improved seed orchards and clone banks include the southern yellow pine species, eastern white pine, Atlantic white cedar (Juniper) and Fraser fir. Several hardwood species are also being improved. Third-cycle loblolly pine and second-generation Fraser Fir seed orchards are now producing seeds for commercial use from our nurseries.



Forest Development Program (G.S. 106.1011)

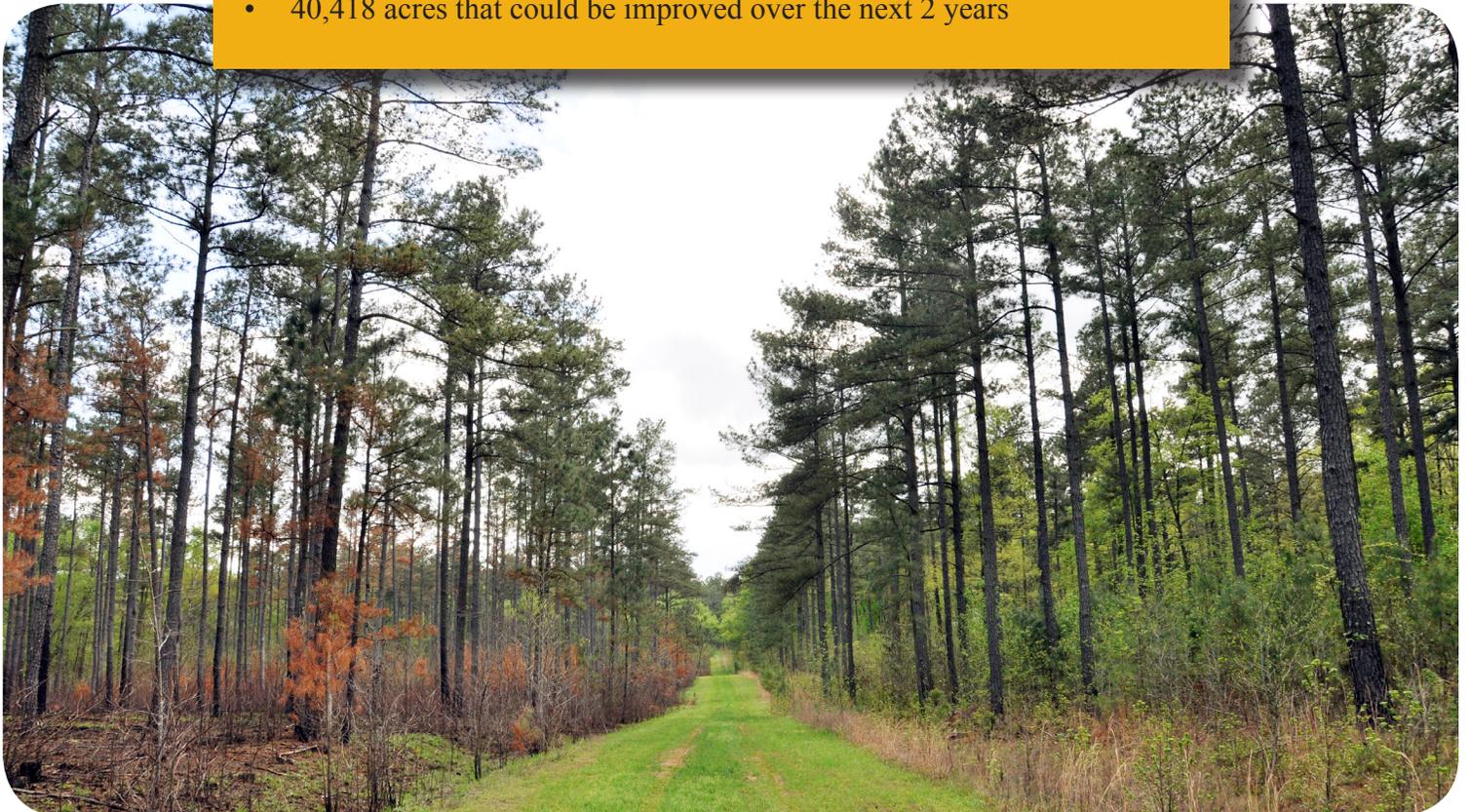
The Forest Development Program (FDP) is a cost-share assistance for landowners created in 1977 to encourage private woodland owners to reforest their land after harvest, and to put idle or unproductive land into trees, thus ensuring future timber supplies while providing environmental protection to the state's forest land. Since 1977, the FDP has helped landowners to establish and improve more than 1.3 million acres of forests in North Carolina.

FDP typically offers 40 percent cost-share assistance to private landowners as an incentive to encourage reforestation and forest stand improvement. To make restoration of longleaf, hardwood and wetland species more equitable and attractive, the cost-share reimbursement rate for the planting of these species was raised to 60 percent (as opposed to the 40 percent for all other practices). Additional practices were added to the program in 2006, such as prescribed burning, stand improvement, fertilization and crop tree release. These are used by landowners in order to improve existing forests.

The FDP has been funded most years by both timber assessments (paid by primary processors of wood products) and state appropriations. Since 2009, no state appropriations have been dedicated to the FDP program for funding. Each year there continues to be a \$2-2.5 million dollar demand for additional program funding from landowners requesting funds. Landowner demand for project funding continues to be greater than program funding with an annual waiting list of 500-600 landowners.

FY 2013-2014 FDP Accomplishments:

- \$4.2 million total dollars allocated for project completion and funding
- 1,342 tree planting and forest stand improvement projects completed
- 47,446 acres that were improved
- \$1.71 million dollars paid out to landowners
- \$2.49 million dollars of new projects funded
- 977 tree planting and forest stand improvement projects funded
- 40,418 acres that could be improved over the next 2 years



Forest Legacy Program

The Forest Legacy Program helps landowners, state and local governments, and private land trusts identify environmentally significant forest lands for long-term conservation benefits. The Forest Legacy Program costs are shared between the federal government (75 percent) and the landowner (25 percent) in-cash or in-kind. The responsibility of conservation easement monitoring rests with the state and local governments. Once voluntarily enrolled, the program permanently ensures the forest land is conserved for future generations and remains a “working forest.”

FY 2013-2014 FLP Accomplishments

- \$2.85 million dollars of Funding acquired for Phase I of Headwaters State Forest on 1,898 acres
- Since the program began in 2000, 14 North Carolina tracts have been added to the Forest Legacy program involving 10,147 acres and \$13,817,428

Forest Stewardship Program

The Forest Stewardship Program (FSP) is a federally-funded, NCFS administered program to provide natural resource management, education, technical assistance and landowner recognition for multiple use management. The Forest Stewardship Program assists landowners with meeting their woodland objectives in environmentally sensitive and ecologically sound ways.

The program provides landowners with on-the-ground technical assistance and woodland planning. The NCFS, the NC Wildlife Resources Commission and other partner organizations work together to help landowners enhance and protect wildlife, timber, soil and water, recreational, and aesthetic values of their forests.

FY 2013 – 2014 Accomplishments

- 114 Stewardship Plans
- 12,884 Stewardship Plan acres
- 14 Certifications on 4,948 acres



Urban & Community Forestry Program

The NCFS's Urban and Community Forestry (U&CF) Program promotes the health and management of urban forests in North Carolina by offering technical assistance, education opportunities and program support to municipalities, organizations, agencies, industries and private landowners. Urban forests can be individual trees along a street, scattered trees in a park, or a private or public forested area affected by urban and suburban surroundings. The federally-funded U&CF Program strives to help the state's citizens and communities realize the importance of urban trees in environmental protection, economic development and the environmental benefits they provide such as clean air and water, cooling effects and recreational opportunity. The U&CF Program works closely with the NC Urban Forest Council to promote tree care professionalism and education statewide.

FY 2013-2014 Accomplishments:

- During the 2014 U&CF grant cycle, twelve grant projects were awarded totaling \$139,716 in financial support given to North Carolina communities and non-profit organizations. These are 50/50 match grants.
- In 2013, there were 78 Tree City USA communities in the state; 6 Tree Campus USA participants; and 2 Tree Line USA utilities.
- Was awarded funding for 3 competitive grants relating to urban wood use education efforts in VA, NC and GA; an assessment of urban wood management in Raleigh; and planning tools for small communities working in Chatham County.
- Training for NCFS staff and the public: 4 grant writing workshops; 5 Management workshops; 3 Community Forest Workshops; 3 Urban Plan Workshops and 2 presentations; 2 Green Infrastructure workshops; 1 EAB regional meeting; 1 Tree Inventory workshop; 1 Urban Wood Group workshop.
- Participation in the Urban Forestry Conference: in partnership with NC Nursery & Landscape Association.



Water Quality Program and Nonpoint Source Branch

(G.S. 113A-52.1; G.S. 77-13; G.S. 77-14; SL2011-394(S.21))

The Water Quality Program and Nonpoint Source Branch collectively work to protect water in North Carolina's forests. Through our Water Quality Program, rangers and foresters inspect logging jobs and other forestry sites for compliance with statewide performance standards and provide technical assistance to customers. The receipt-funded Nonpoint Source Branch supports NCFS field personnel and directs training of loggers, students, and others on using Best Management Practices (BMPs) to protect soil and water resources when undertaking forestry activities. In addition, branch personnel manage multiple BMP-related studies and monitoring projects in the interest of continuous improvement for forestry practices, as well as stream and watershed restoration projects on agency-managed properties. Annual accomplishments are summarized in a "Year in Review" brochure available from the NCFS website.

FY 2013-2014 Accomplishments:

- 4,119 forestry sites were inspected to monitor compliance with the state water quality regulations of the Forest Practices Guidelines (FPGs). An additional 2,873 follow up inspections were also conducted. The overall state FPG compliance rate was 98 percent, while three cases were referred to cooperating state agencies for enforcement action.
- 101 FPG site inspections were made in response to complaints received by the NCFS regarding forestry operations. Of those sites, 86 were in compliance upon initial inspection.
- NCFS-owned portable bridgemats were used on 62 logging sites to protect or establish 79 stream crossings. This provided environmentally sound access to more than 2,900 acres of timber harvest.
- 99 loggers were trained through our ongoing partnership with the N.C. ProLogger Program.
- 62 forestry college students received instruction on BMPs, stream buffers, harvest planning, and watershed protection.

New publications were developed and distributed on:

- proper road construction and maintenance in the mountains
- timber harvest planning for woodland owners
- methods of planting trees along streams and wetlands

SAFETY, PLANNING AND ANALYSIS PROGRAM

The Safety, Planning and Analysis Program supports the NCFS by promoting a safe and healthful work environment by assisting and encouraging employees and by providing safety research, education, and training; and by providing timely and relevant data to aid in planning, decision making, accountability, effectiveness, and efficiency.

Safety (G.S. 95-148)

The NCFS's safety program promotes safe and healthy working conditions. It provides managers, supervisors, and employees with a clear and firm understanding of the agency's concern for protecting employees from job-related injuries and illnesses; preventing accidents and fires; planning for emergencies and emergency medical procedures; identifying and controlling physical, chemical, and biological hazards in the workplace; communicating potential hazards to employees; and maintaining a sanitary environment.

Geospatial Services (G.S. 113-29, 106-895)

Geospatial technologies such as GIS, GPS and remote sensing have become critical to decision-making in forest protection and forest management. Geospatial technology is used to determine priority areas in which the NCFS will work, and demonstrate accountability in program delivery. To this end, the Geospatial Services branch facilitates spatial technology accompanied with knowledge, theory and hands-on experience in activities related to mapping, GIS data collection and analysis.

Data Analysis (G.S. 106-22)

The NCFS collects data from numerous sources that may be used to assess such things as the health of our forest, fire suppression resource locations and manning requirements, as well as budgetary efficiencies and effectiveness. The data analysis branch is responsible for data integration which involves combining data residing in different sources and providing users with a unified view of the data. Analysis of data is also conducted through a process of inspecting, cleaning, transforming, and modeling data with the goal of highlighting useful information, suggesting conclusions, and supporting decision-making.

Incident Business Management

(G.S. 166A-19.77)

Incident business oversees the development and implementation of incident practices consistent with state and departmental fiscal guidelines, authorizes and establishes budget centers for emergency response spending, tracks cost and seeks eligible reimbursement from federal and other state agencies when applicable.

Forest Inventory Analysis (FIA) Program

(106-895)

The Forest Inventory and Analysis (FIA) Program is a cooperative project funded by the U.S. Forest Service. The program provides the information needed to assess the health, productivity, and species composition of North Carolina's forests. Measurements of the forest are taken at more than 5,800 fixed plots located randomly throughout the state. The data collected is analyzed and then used by private industry to determine the availability of feed stock for biomass and/or conventional wood products for new and existing mills. Federal, state, and local governments also use the data as a tool to gauge the success of present and future policy, forest products impact to the state's economy in a given area and the economic/ecological impact of natural disasters. The data has been collected since 1930s and provides temporal and spatial trends in forest ecosystems.

Facility & Property Management

NCFS occupies 583 structures, totaling 766,518 gross sq feet. The majority of these structure are office space, shops, and equipment shelters that are located in every county in the State. Facility & Property Management provides the oversight for repair and renovation, lease management, building code issues, insurance, acquisitions, and disposal. Many of the structures were built by NCFS between the 1940s and the 1960s and some were built by the Civilian Conservation Corps in the early 1930s.

DuPont State Recreational Forest

(G.S. 106.870-106.887)



The 10,473-acre DuPont State Recreational Forest (DSRF) is located between Hendersonville and Brevard. The forest's mission is to provide an exemplary model of scientifically sound, ecologically-based natural resource management for the social and economic benefit of its diverse community of users. This includes protecting soil and water quality, unique plant communities, and cultural resources, providing recreational opportunities and improving forest health and wildlife habitat.

The DSRF Visitor Center (the Aleen Steinberg Center) was completed and opened in 2013. Since opening, approximately 120,000 visitors have passed through its doors to receive forest information and be informed about the NCFS mission. A new pedestrian bridge was constructed across the Little River in 2013, resolving a long-standing public safety issue of hundreds of thousands of visitors crossing a highly-used highway to access the forest.

The forest contains four major waterfalls on the Little River and five mountain lakes. There are 82 miles of roads and trails open to recreational use by hikers, mountain bikers and equestrians. The DuPont Dedicated Nature Preserve contains 2,584 acres with unique plant communities. The forest is in the N.C. Wildlife Resources Commission's Game Land Program. Hunting is allowed with a Game Land permit.

Visitation has spiked over the last three years, setting records for visitors to the forest, with 2014 culminating in 443,000 visitors; this, compared to the ten-year average of 270,000 visitors per annum. To meet the needs of visitors, a master plan is being developed to address long-term infrastructure and management needs.

The DSRF Land and Resource Management Plan, finalized in 2011, has resulted in increased activity in forest management and wildlife resource management. Demonstrations of stand thinning, shelterwood cuts, clear-cuts, and tree plantings have been accomplished since 2013. Large areas of white pine plantation are targets for thinning and clearing to restore to a more natural forest plant community. As with all forest management, other resources are addressed during harvest operations, including recreation, aesthetics, water quality, and public safety.

DSRF's multi-use trails continue to be among the best maintained and designed system in the nation. Due to support from the Friends of DuPont Forest, a non-profit group, the DSRF trails receive a high level of maintenance that protects aquatic resources and enhances recreation opportunities. Volunteer work remains an important fixture of the DSRF, accounting for about 6,000 hours of service per year.

The forest averages about 8,000 people per year that come in for special events. These include training by NCFS, N.C. Division of Water Quality, search and rescue units, Department of Defense, law enforcement, educational programs, tours, shelter and handicap reservations, work project participants, as well as meetings and other events. Scenes for three major motion pictures were filmed in the forest in the past three years generating a positive economic impact to local communities and the state. The forest was featured in an 18-page photo essay in Our State Magazine, and has also been featured in numerous regional and national publications.

Bladen Lakes State Forest

(G.S. 113-22, 113-29, 113-34, 113-35)

Bladen Lakes State Forest (BLSF) is a 32,945 acre forest, operated by the NCFS as a commercial demonstration forest. The forest is 100 percent supported by receipts derived from the sale of forest products and hunting. It is part of the North Carolina Wildlife Resources Commission Game Land Program.

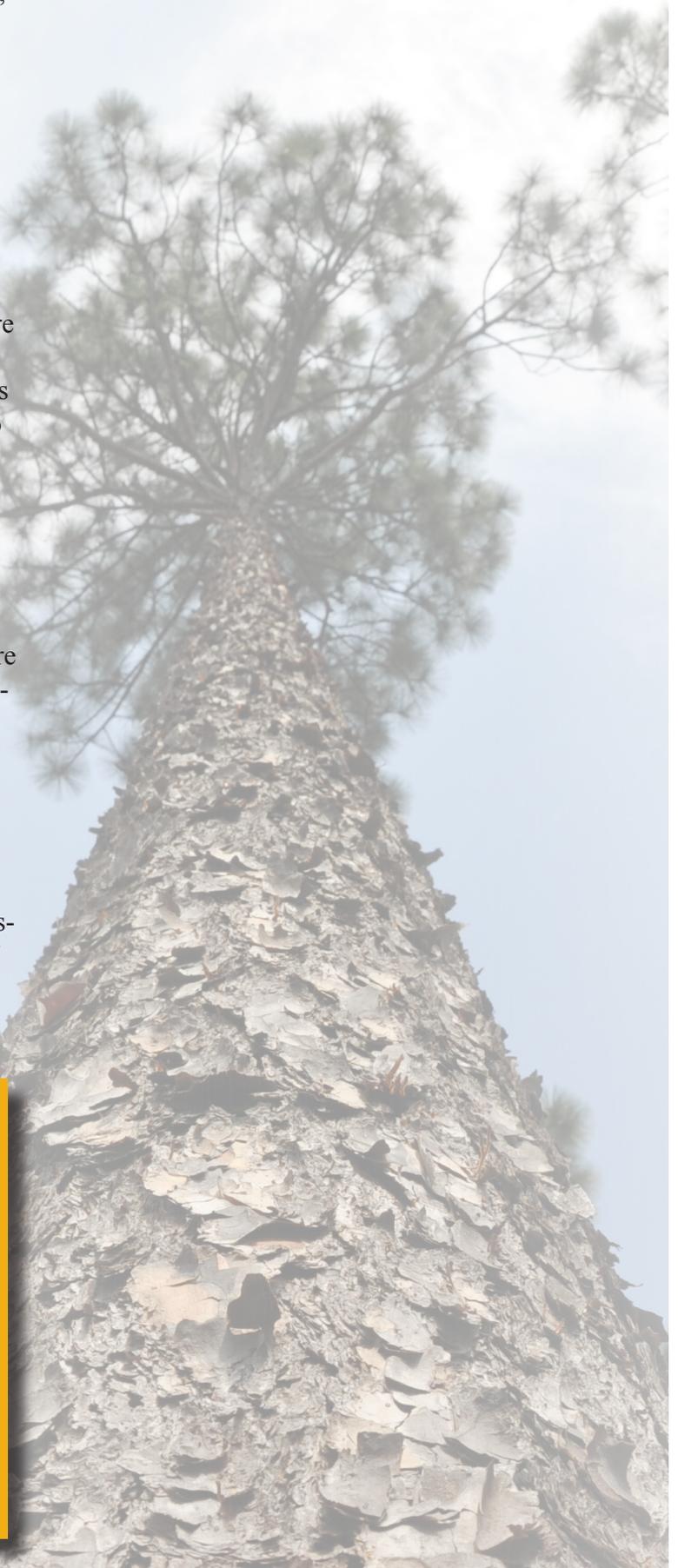
The forest is located just northeast of Elizabethtown in Bladen County. Because the land was poor for farming it was acquired by the federal government from 1936 to 1942. Families were then relocated to other areas where farming was more profitable. The land was deeded to the state on October 19, 1954, but the federal government has the reversionary right to retake the property if it ceases to be used for public purposes.

Since then, forest stand development, tree planting, cultural practices and harvesting of timber and longleaf pine straw have taken place on the forest, as well as considerable amounts of forestry research and development of innovative silvicultural management procedures. Tours are conducted by forest staff demonstrating silvicultural practices as well as production and sales of forest products.

More than 5,000 acres of rare ecosystems have been set aside to be managed as natural areas. Accomplishments that satisfy the Longleaf Pine Initiative include the doubling of longleaf pine plantation acreage on the forest since 1998, and enhancements to the longleaf pine ecosystem that have benefited native and endangered species of plants and animals on many more acres.

FY 2013-2014 Accomplishments at BLSF

- Prescribed Burning Acres: 523
- Plantation Thinning Acres Sold: 536
- Total Harvest acres sold: 487
- Total acres leased for Straw raking: 808
- Acres released: 331
- Acres site prepared: 442
- Total Acres Planted: 484
- Break Down of Acres Planted:
 - o Longleaf: 294
 - o Loblolly: 190





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Safety, Planning & Analysis

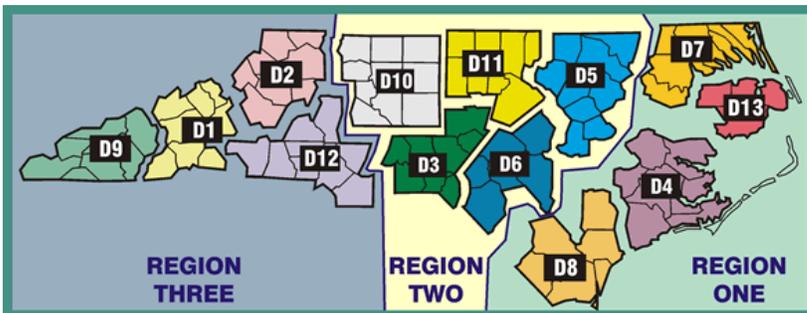
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Geospatial Services:
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**North Carolina Department
of Agriculture and Consumer Services
Steve Troxler, Commissioner**

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