



N.C. DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES



NORTH CAROLINA FOREST SERVICE



ANNUAL LEGISLATIVE REPORT ON DUPONT STATE RECREATIONAL FOREST

October 1, 2017

Steve Troxler, Commissioner
Scott Bisette, Assistant Commissioner

Pursuant to G.S. 106-887 (i), the North Carolina Department of Agriculture and Consumer Services and the North Carolina Forest Service respectfully submits this annual report for DuPont State Recreational Forest.

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STATUTORY REQUIREMENT

The Department shall report no later than October 1 of each year to the Joint Legislative Commission on Governmental Operations, the House and Senate Appropriations Subcommittees on Natural and Economic Resources, the Fiscal Research Division and the Environmental Review Commission on the Department's management activities at DuPont State Recreational Forest during the preceding fiscal year and plans for management of DuPont State Recreational Forest for the upcoming fiscal year (2011-145, s. 13.25(o)).

OVERVIEW OF DUPONT STATE RECREATIONAL FOREST

DuPont State Recreational Forest (DSRF) contains 10,949 acres in Transylvania and Henderson counties. The forest is managed for natural resource conservation, scenic enjoyment and recreational purposes including horseback riding, hiking, bicycling, hunting, fishing and other outdoor recreational activities. DSRF strives to provide an exemplary model of scientifically sound, ecologically-based natural resource management for the social and economic benefit of the forest's diverse community of users. It also works to remain consistent with the grant agreement that designates a portion of the forest as a dedicated nature preserve.

DSRF has nearly 83 miles of multiuse roads and trails used for outdoor recreation. There are four major waterfalls on the Little River, two waterfalls on Grassy Creek and six mountain lakes.

In 2016 the DSRF received funding for nine additional full-time positions to address the management challenges of a forest that has become one of North Carolina's most visited public lands. The forest is operated by 19 full-time employees and four temporary employees. The staff consists of the following positions (* indicates the nine new positions):

- Forest Supervisor – Jason Guidry
- Office Manager – Lillian Birchfield
- Office Assistant* – Sarah Patton
- Assistant Forest Supervisor* – Michael Sweat
- Management Forester – Vacant
- Forest Management Technician – Jeremy Waldrop
- Equipment Operator – Jimmy Patterson
- Facility Maintenance Supervisor – Justin Carpenter
- Maintenance Mechanic* – Buck Jones
- Maintenance Mechanic (Temporary) – Bob Twomey
- Mechanic* – Vacant
- Housekeepers (Temporary) – Edna Hensley and Mary Ann Hamilton
- Communications Director – Bruce MacDonald
- Visitor Center Manager (Temporary) – Jane Dauster
- HESF Supervisor – Susan Fay
- Educational Ranger – Amy Kinsella

- Educational Ranger* – EJ Dwigans
- Recreation Specialist* – Mary Smith
- Recreation Technician – Eric Folk
- Law Enforcement Officers* – Harold Young JR.
- Law Enforcement Officers* – Vacant
- Law Enforcement Officers* – Vacant

The DSRF Forest Supervisor also oversees the operations of Holmes Education State Forest (HESF) in Henderson County, which has three employees. The DSRF Forest Supervisor reports to the Mountain Division Director, Greg Yates, who is based in the NCFS Regional Office in Asheville.

Operations of the forest are coordinated with the DSRF Advisory Committee, which is a group of stakeholders representing a variety of user groups, including the Friends of DuPont Forest, and local governments. Committee members are appointed by the Assistant Commissioner Scott Bissette and typically serve three-year terms.

The Aleen Steinberg Center (ASC)

The ASC, also referred to as the Visitor Center, is one the most important stops at the DSRF, where visitors can find trail maps, directions and check-in for vehicle permits for limited-mobility visitors and picnic shelter reservations. Approximately 92,000 visitors used the Visitor Center in Fiscal Year 2017, a remarkable number given that the parking area can accommodate only 60 vehicles at a time. The Visitor Center's classroom has become a convenient and important space for classes and meetings by various groups. In Fiscal Year 2017, approximately 540 people and students utilized the classroom for an estimated 140 hours of use. There are 54 volunteers that work at the Visitor Center to provide safety and directional information. This group of volunteers has provided the state with over 2,480 hours of service for North Carolina's citizens and visitors.

PUBLIC USE OF THE FOREST: A BALANCE OF PUBLIC SAFETY AND OPPORTUNITY

Visitation estimates leveled off in Fiscal Year 2017, ending six years of successive increases in visitors to the forest (See Figure 1.). The management challenges to maintain safe and clean facilities and protect the natural resources have increased proportionally to the forest visitation.

The increased use of DSRF is an advantage to local businesses and provides a healthy social benefit to North Carolina's citizens. The neighboring communities in Transylvania, Henderson and Buncombe counties often tout the forest as a 'must-see' in their tourism development programs. Similarly, *Visit North Carolina* (www.visitnc.com) has DSRF among many of their recommended destinations in the state and has filmed promotional videos on the forest.

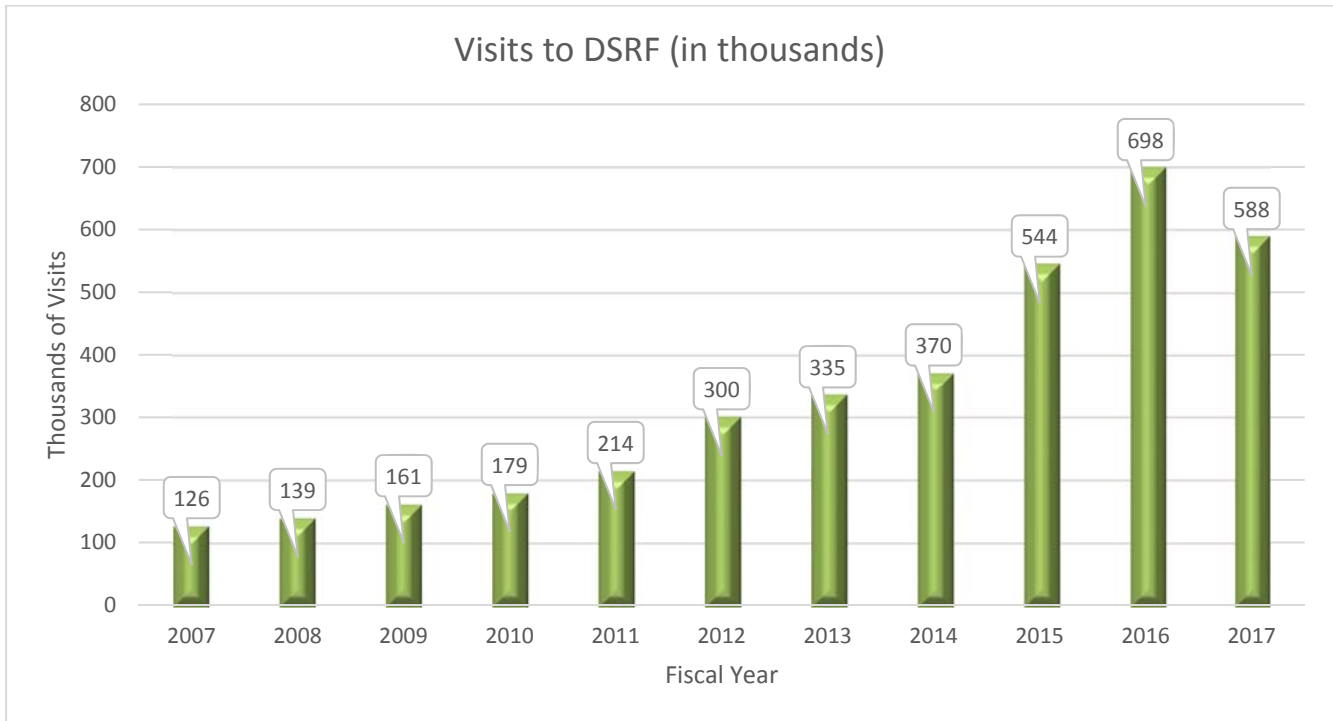


Figure 1- Visits to DSRF per Fiscal Year Since 2007

Incidents Involving the Public

Public safety and natural resource protection challenges accompany the increase of visitors, including the following issues:

- Increased Forest Rule violations (rock climbing, swimming above waterfalls, etc.).
- Social trails created by users that destroy vegetation and accelerate erosion.
- Parking by visitors in unsafe areas (along Staton Road).
- Littering in parking areas and trails.
- Vandalism (at shelters, trail signs, etc.).
- Alcohol and illegal drug use.

DSRF staff and county emergency personnel respond to various emergency incidents in the forest. Incidents may involve trauma, illness, search and rescue, theft, Forest Rule violations and assists with visitors that extend beyond routine assistance by a DSRF ranger. The number of incidents requiring DSRF ranger response has grown markedly between the last two fiscal years where the number of such incidents increased from 102 to 120; a 15 percent increase (See Figure 1.). In fact, the number of incidents has a very high correlation¹ with visitor volume.

¹ $R^2=.92$ with a 95% confidence interval

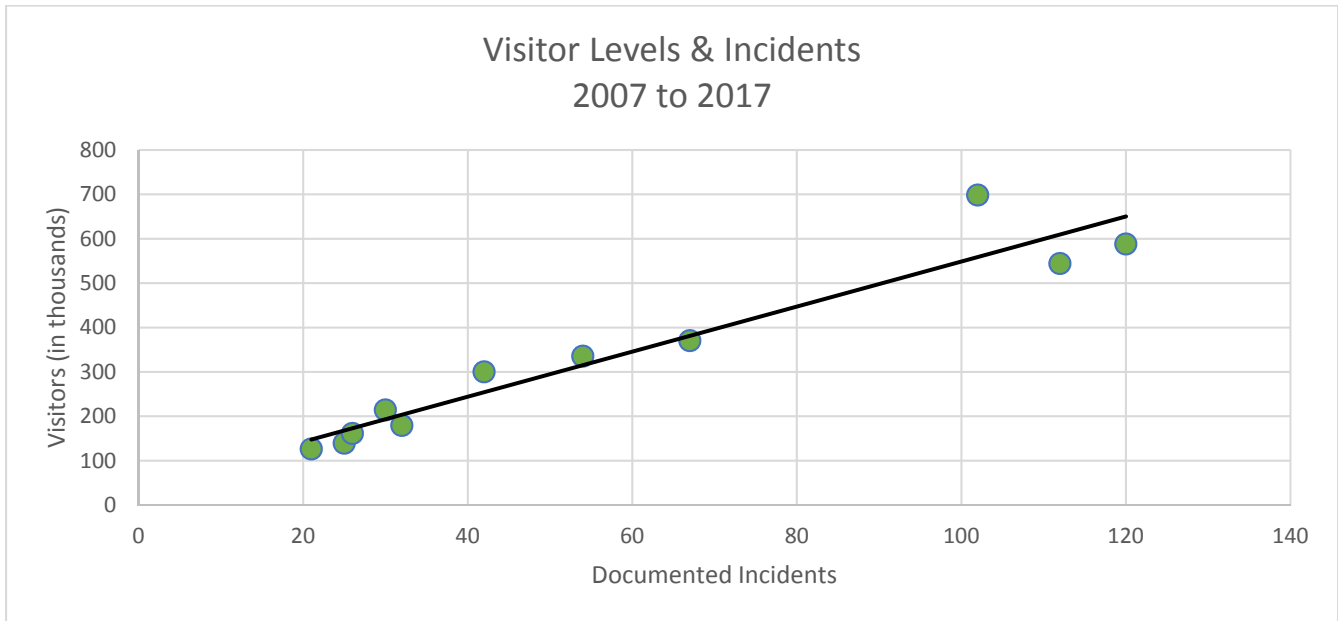


Figure 2- Illustration of Visitor Levels and Documented Incidents

This may be attributed to the fact that many visitors may not be familiar or equipped to deal with the natural hazards of a forest environment. Often visitors from other biogeographical regions of the country and the world may not recognize such hazards typical to a state forest in North Carolina. Examples being slick and wet rocks, humidity and high temperatures contributing to heat stress, or summer afternoon rain events associated with thunderstorms. The DSRF ranger staff documented over 50 assists to visitors, such as non-emergency rides to personal vehicles, which can prevent medical incidents.

A summary of incident types:

- Emergency Response for Medical Issues - 39
- Assists (*e.g.*, transport of elderly, vehicle trouble, disabled visitors, etc.) - 52
- Forest Rule Enforcement - 12
- Search and Rescue - 17

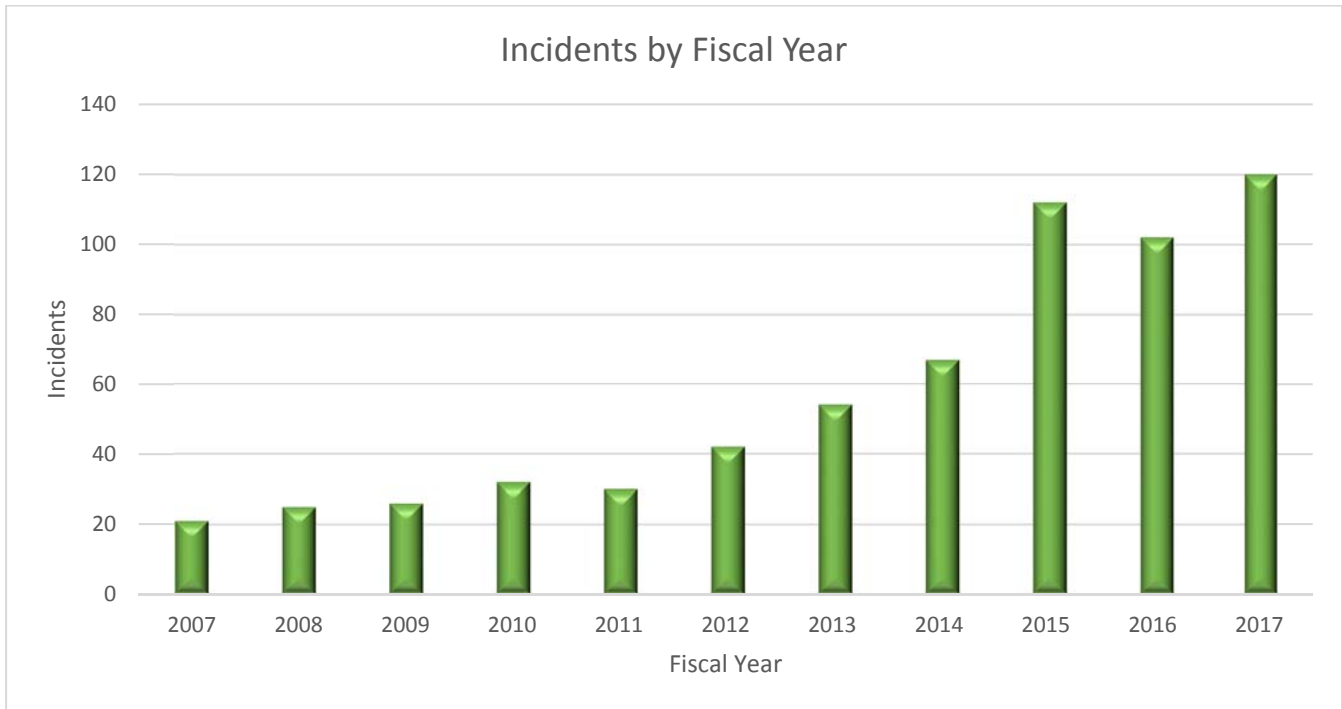


Figure 3- Incidents requiring ranger response per Fiscal Year

To enhance public safety and adequate emergency response, the DSRF is staffed seven days per week and has Rangers on patrol after normal working hours. The addition of three law enforcement officers in 2017 is expected to have positive influence on the public's behavior and awareness of DSRF's Administrative Rules, the majority of which are intended to enhance public safety and natural resource protection.

Access to the Forest

The DSRF permits certain uses that are typically excluded by the DSRF's Administrative Rules (02 NCAC 60B .1001-.1032). Each permit request is evaluated by a DSRF ranger to determine impacts to the forest's natural resources, road and trail system and fellow users (Table 1.). Visitors with limited mobility may obtain a vehicle pass free of charge or reserve one of DSRF's five picnic shelters for a fee of \$25 to \$60 per reservation (Table 2.). The Commercial Use permit program oversaw the use of close to 14,000 users, some of which obtained access with vehicles depending on the type of business using the forest.

This amount of vehicle access for a public land of DSRF's size is fairly intensive and not without public safety concerns. All programs will be continually assessed for sustainability and whether the use supports the mission of the forest and the North Carolina Forest Service.

Table 1- Permits Issued in Fiscal Year 2017

Permit Type	Permit Use	# Issued
Commercial Use	For camps and businesses using the forest for a commercial use.	62
Special Use	Disabled hunters, disabled anglers, equestrian facility rental and research permits.	72
After-Hours	Legitimate trail use after 10 p.m. and before 5 a.m.	45
Limited Mobility Visitor	Access to High Falls, Triple Falls and the Covered Bridge.	69
Picnic Shelter	Picnic shelters at High Falls, Triple Falls, Lake Dense, Lake Imaging and Guion Farm.	27
Supervisor Level	Film production, research permits, training by military (North Carolina National Guard, U.S. Army) and the DuPont Rescue Experience, as examples.	4

Table 2- Detail of Permits Allowing Vehicular Access

2017 Fiscal Year by Month	Picnic Shelter			Limited Mobility Access		
	Permits	Users	Vehicles	Permits	Users	Vehicles
July:	4	225	11	11	47	11
August:	4	165	15	9	34	9
September:	2	22	4	7	20	7
October:	4	65	9	17	55	17
November:	3	100	15	6	21	6
December:	-	-	-	-	-	-
January:	-	-	-	3	12	3
February:	1	20	-	-	-	-
March:	-	-	-	4	22	4
April:	4	102	16	2	8	2
May:	1	30	-	6	17	6
June:	4	107	7	4	16	5
Total:	27	836	77	69	252	70

MANAGING THE FOREST: WILDLIFE HABITAT, NATURAL COMMUNITIES AND FOREST PRODUCTS

The DSRF Land and Resource Management Plan, developed in 2011 by various natural resource agencies and the DSRF Advisory Committee, drives the management of multiple forest resources for the benefit of our citizens.

Forest management activities were spread out across DSRF during Fiscal Year 2017, with timber sales conducted in both Transylvania and Henderson counties. The clearcut harvest on the Henderson County side of DSRF was planted in the spring of 2017 with shortleaf pine in an effort to reintroduce this tree species into mixed pine hardwood stands across the forest.

A white pine thinning was conducted on 60 acres near Stone Mountain on the Henderson County side of DSRF. The objective of this thinning is to improve growing conditions and reduce the density of the stand to prevent insect and disease problems. This will also let sunlight reach the forest floor, allowing development of plant species that are beneficial to a number of wildlife species including wild turkey and white tail deer. The thinning operation was conducted using specialized machinery that minimizes soil disturbance.

Two new treatments were introduced to the forest management scheme in 2017. The first was a white pine seed tree harvest near the Guion Farm access area. The seed tree harvest was conducted on 15 acres of a 65-year-old white pine stand. The stand produced a very high volume per acre and will be naturally regenerated by the seed trees, which were left throughout the stand in groups of four to five trees to help prevent wind throw.

The second new harvest approach was patch harvesting. This harvest will implement a different technique to develop a stand composed of a variety of hardwood and pine species. The objective is to increase structural diversity and introduce a new successional stage to this area by mimicking more natural disturbance size openings. It was conducted on the Transylvania County side of the forest near the Rock Quarry. Figure 3 illustrates the areas where timber was harvested since 2011, with a total of six individual sales.



Figure 4- View of a Seed Tree Harvest of a White Pine Stand on DSRF

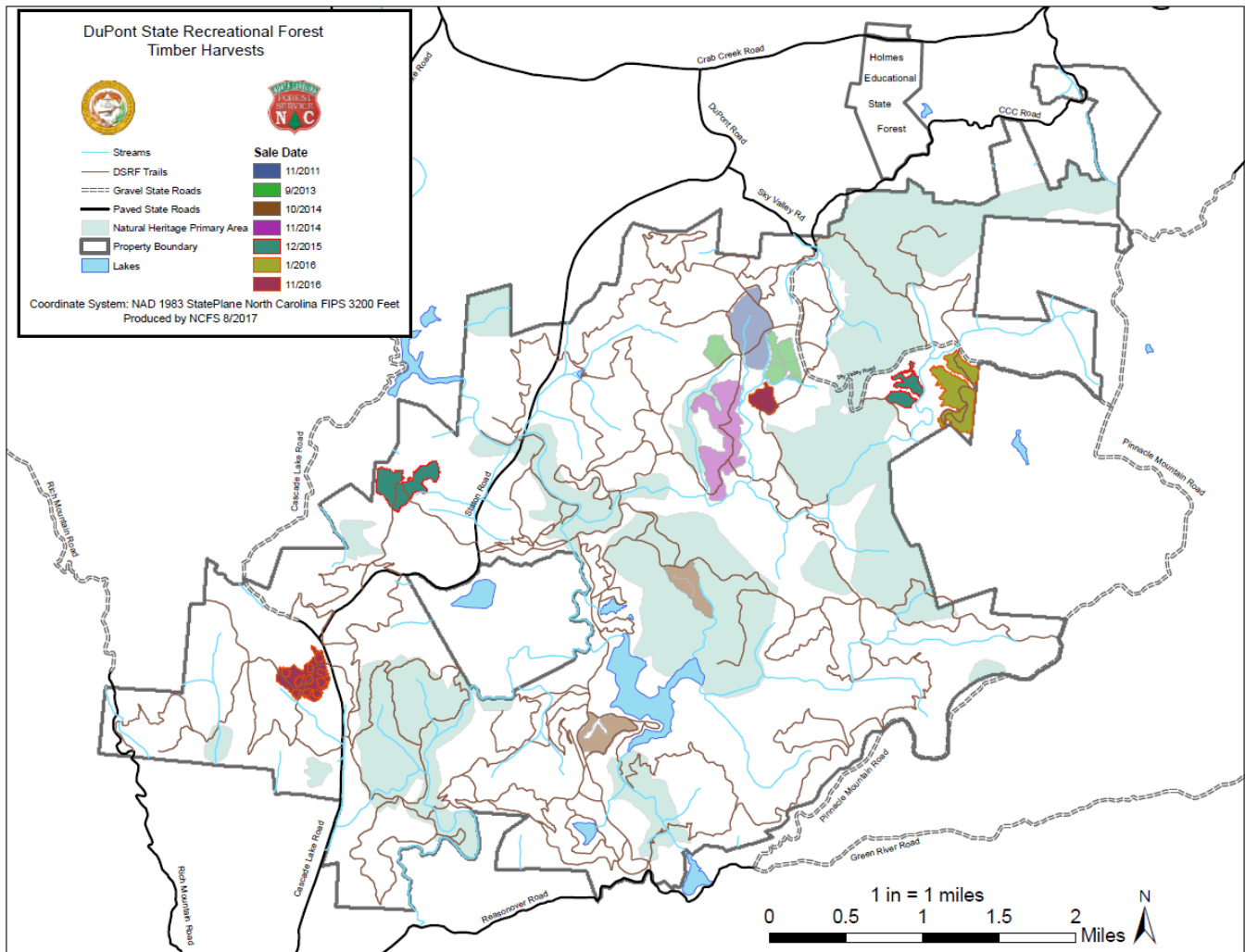


Figure 5 - Timber Harvests on DSRF Since 2011

In cooperation with the North Carolina Wildlife Resources Commission (NCWRC) Game Lands program, the DSRF helps to maintain wildlife food plots, assist with wildlife law enforcement and encourage wildlife education programming. The NCWRC issues seasonal hunting permits through a lottery system for various game species, while the DSRF provides access for disabled hunters and anglers. The NCWRC maintains nine wildlife food plots throughout the forest by planting high-quality forage and maintaining edge habitat for game species. Despite increasing visitation to DSRF over the last three years, deer harvest numbers have remained relatively steady. Fiscal Year 2017 did show an increase in deer harvest by reaching a level not recorded since 2009 (Figure 3). While there are numerous variables related to game harvests, it is thought that deer and other wildlife populations are benefiting from forest management treatments that diversify our plant communities in both forest structure and age ranges. A spectrum of forest age classes offers a wide variety of habitat niches for songbirds, reptiles, plant species reliant on natural disturbance events, and by extension, our endemic mammal species.

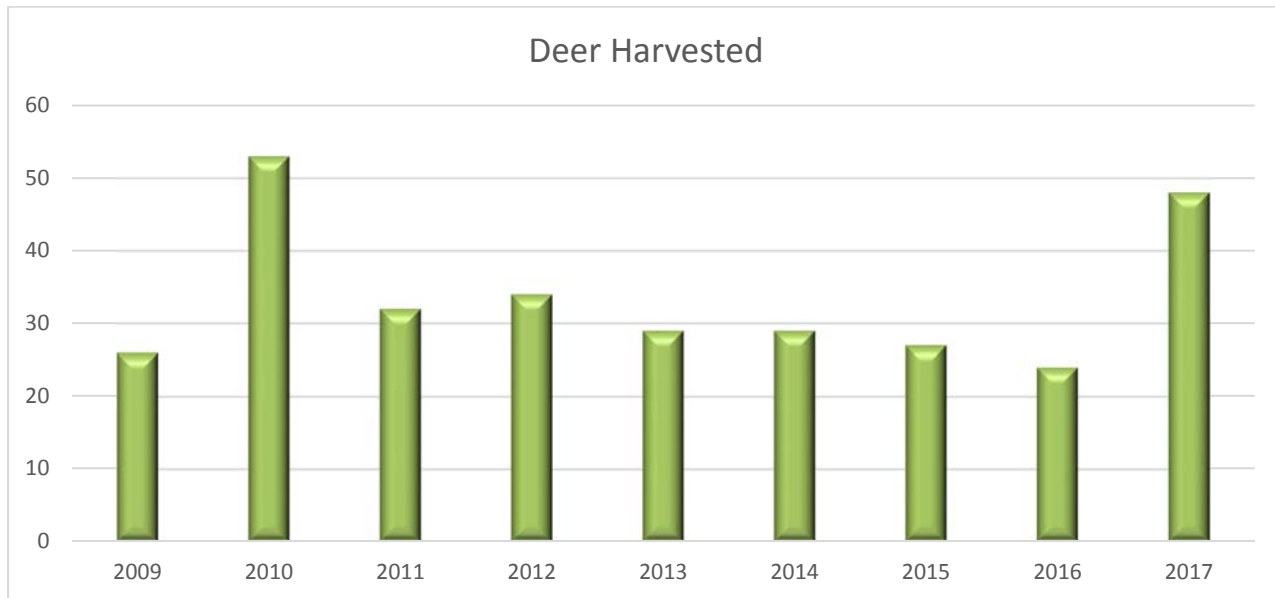


Figure 6 - Deer Harvest at DSRF (data provided by the North Carolina Wildlife Resources Commission)

PROMOTING THE FOREST: THE PATHWAY TO KNOWLEDGEABLE USERS

Central to the NCFS mission is promoting forest resources through education. Sustainable natural resource management is reliant on a public that understands and values what forests provide to natural systems and society. DSRF has the opportunity to enhance the enjoyment of hundreds of thousands of visitors through learning.

At DSRF the educational programming has been a broad-based effort with several partners, including the Friends of DuPont Forest, the non-profit educational provider Muddy Sneakers and the N.C. Wildlife Resources Commission.

In the Fiscal Year 2017, a wide variety of topics regarding forest management, values and history were offered to schools and visitors. Examples of topics and a summary of offerings follow (See Table 3.).

- Silvicultural Tours
- Spring Wildflower Identification
- Birding Hikes
- Geology of Transylvania County
- Trout Stocking
- Flyfishing Classes
- Historic Tours of Cemeteries on State Forests
- The Cherokee Nation's Use of Forests
- Wildfire: Fuels and Weather
- Skins and Skulls
- Winter Tree Identification
- Pollinators

- Forest Wildlife Habitats
- Smokey Bear Programs
- Woodsy Owl Recycling Programs
- Salamanders and Amphibians
- Waterfall Safety
- Forest Soils and Water Investigations

Presenter	Educational Offerings	Students or Guests
HESF Staff	103	3,005
Friends of DuPont Forest	21	149
Muddy Sneakers	21	1,151
N.C. Wildlife Resources Commission	24	235
DSRF Staff	10	158
Total	179	4,698

Table 3- Educational Offerings Associated with DSRF

PROTECTING THE FOREST: NORTH CAROLINA'S WESTERN FALL FIRE SEASON

In November 2016, a summer drought extended into the fall fire season, setting up critical burning conditions across western North Carolina. All DSRF and HESF Rangers were called to duty in various roles, many of whom worked 32 days in a row. State forest employees performed roles as firefighters, incident commanders, ordering managers, buying team leaders, equipment operators, public information officers and GIS specialists. Remarkably, a historic amount of forest acreage burned while the NCFS provided protection for over 2,300 homes and structures.

During the extended personnel dispatches, DuPont State Recreational Forest remained open to the public while several other state lands closed. This was due primarily to the abilities of experienced temporary employees and volunteers who maintained forest operations. Over 40,000 people visited the forest during November 2016.

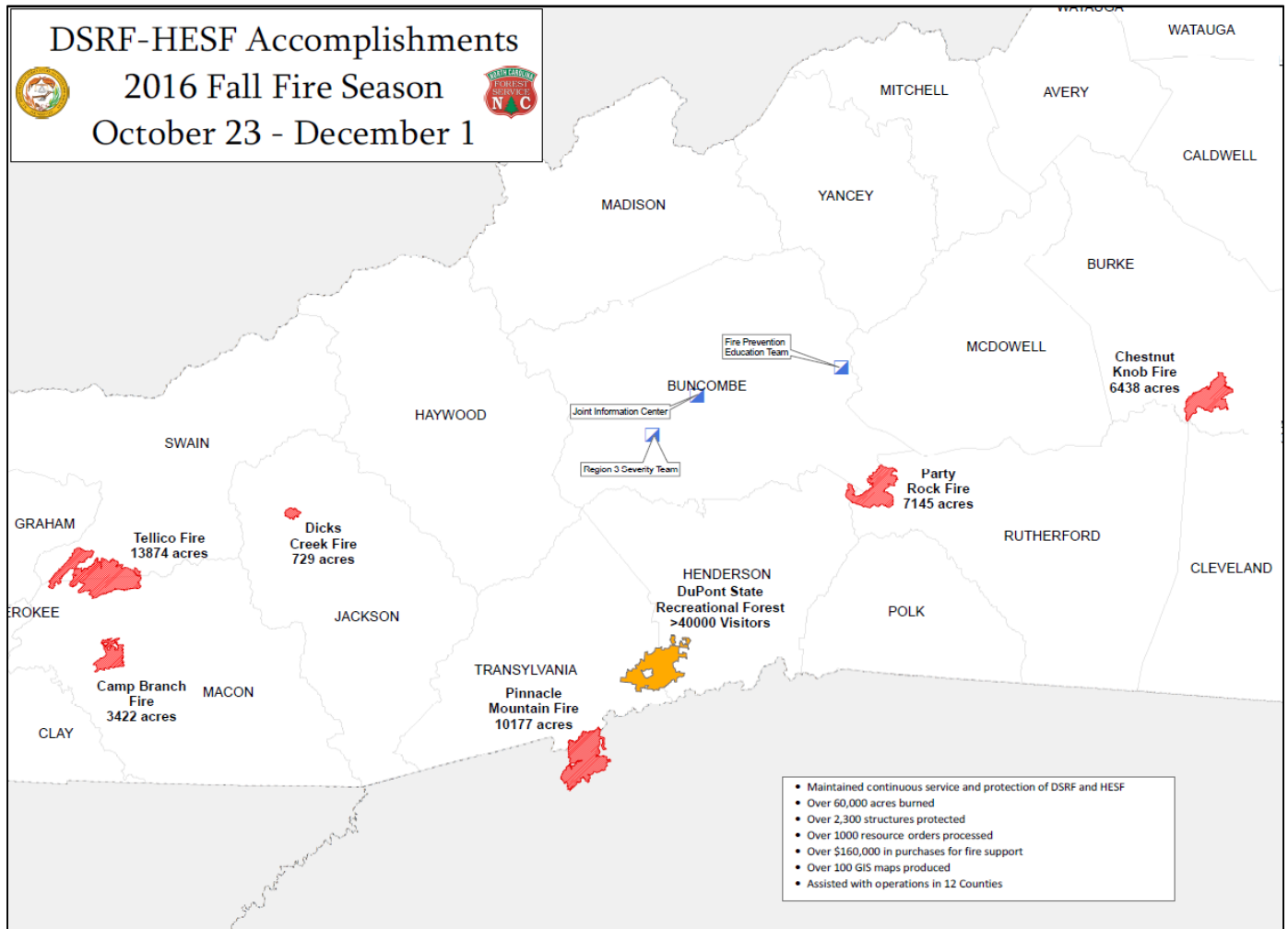


Figure 7 - Wildfire Assignments by DSRF and HESF Staff

IMPROVING THE FOREST: ADDITIONS TO THE DSRF FACILITY

A 540 square-foot facility is designed and planned for construction in the fall of 2017. This will provide a public service to one of DSRF's most visited areas, where an estimated 200,000 people park and enter the state forest.

The construction of the building, along with associated utilities such as security lighting and drinking water, will be funded by a portion of the \$3 million provided to the state forest in early Fiscal Year 2017.



Figure 8 - Architectural Rendering of Hooker Falls Bathroom (courtesy of Form & Function Architecture; Asheville, NC)

Land Acquisition

In December 2016, the Forest acquired 476 acres previously owned and managed by the DuPont Corporation since the 1950s. Approximately 70 acres of the site was once a facility that produced silicon-based computer components and then later X-ray film. In 2004, the facility was demolished by the DuPont Corporation and remained as secured private property within the middle of the state forest and was often referred to as the 'Donut Hole.'

Through years of negotiation between the North Carolina Department of Agriculture and Consumer Services, DuPont Corporation and the North Carolina Department of Environmental Quality, agreements to donate the property to the state along with a Remedial Action Plan were completed. The property will remain closed to the public as the DuPont Corporation completes the Remedial Action Plan and the North Carolina Forest Service develops the site for recreational and natural resource management.

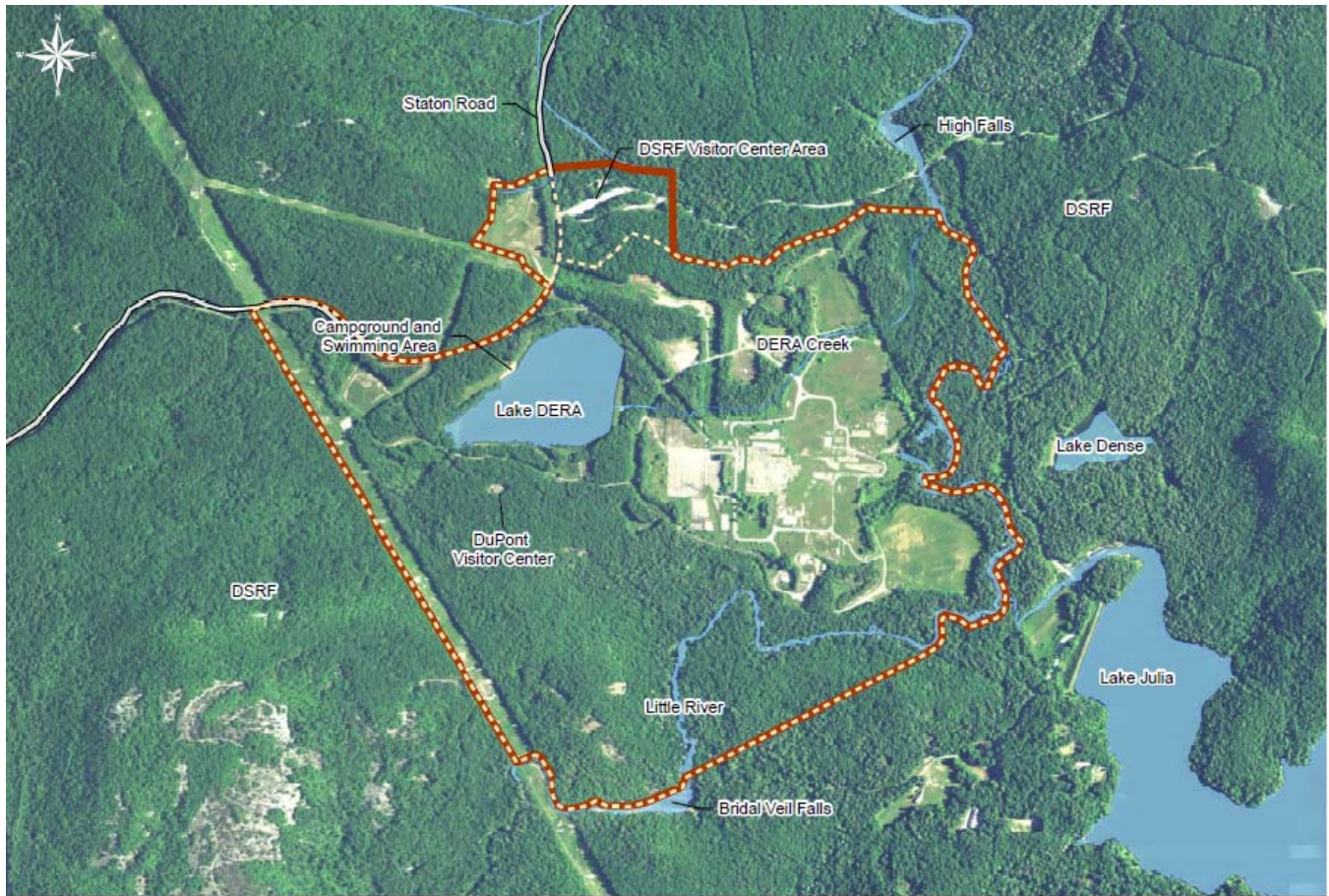


Figure 9 - Aerial Image of the 476 Acres Acquired in Fiscal Year 2017

PLANS FOR FISCAL YEAR 2018

Capital Improvements

In July 2016, the North Carolina Legislature appropriated \$3 million for infrastructure improvements at DSRF. Plans are to design and construct new restroom facilities at various access areas, improve the surfaces and flow of parking lots and install related utilities.

Preliminary plans are to improve parking area design to mitigate current issues with vehicle and user conflict. There is also an intent to more clearly designate parking for large vehicles associated with equestrians and summer camps.

Bathroom facilities are expected to be designed for all six parking areas at DSRF with the intent to replace portable toilets in those locations. The expectation with the construction of the Hooker Falls restroom and future new facilities is that they will enhance customer satisfaction and reduce littering and other impacts to the forest, such as public urination and off-trail use.

Improvements to the Donut Hole

The newly acquired 476 acres will undergo a planning process with DSRF rangers and stakeholders on the DSRF Advisory Committee. This will also include the North Carolina National Guard as a partner who has plans to use the site for training in the future. An example of possible improvements is the design and construction of swimming and fishing piers at the seven-acre lake, known as Lake DERA, on the site.

Education

Ranger-led programming, environmental education and promotion of the benefits of managed natural resources at DSRF is expected to dramatically increase in 2018. The addition of new staff has made possible the expansion of programs that will have a tremendous benefit to visitors, but also compliment management objectives such as waterfall safety, trail etiquette and natural resource protection.

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