



N.C. DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES



NORTH CAROLINA FOREST SERVICE



ANNUAL LEGISLATIVE REPORT ON DUPONT STATE RECREATIONAL FOREST

October 1, 2019

Steve Troxler, Commissioner
Scott Bisette, Assistant Commissioner
David Lane, State Forester

Pursuant to G.S. 106-887 (i), the North Carolina Forest Service, a division of the North Carolina Department of Agriculture and Consumer Services, respectfully submits this annual report for DuPont State Recreational Forest for Fiscal Year 2019.

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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 12,239 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 that are sustainable within the context of natural resource protection. DSRF strives to provide an exemplary model of scientifically sound, ecologically-based natural resource management for the social and economic benefit of a diverse community of users. DSRF is also required to protect and restore natural areas to meet the intent of a grant agreement that designates the majority of the state forest as a dedicated nature preserve.

DSRF has over 40 miles of multiuse roads and nearly 60 miles of multiuse trails that support the forest's overall recreational opportunities. There are four waterfalls on the Little River, two waterfalls in the Grassy Creek watershed and six mountain lakes.

The forest's planning and operation is conducted by 19 full-time employees and four temporary employees. The DSRF staff consisted of the following positions for fiscal year 2019:

- Forest supervisor: Jason Guidry
- Assistant forest supervisor: Michael Sweat
- Office manager: Lillian Birchfield
- Administrative associate: Sarah Patton
- Management forester: Wesley Sketo
- Forestry technician: Jeremy Waldrop
- Recreation specialist: Mary Smith
- Recreation technician: Eric Folk
- Firefighting equipment operator: Jimmy Patterson
- Facility maintenance supervisor: Justin Carpenter
- Mechanic: John Morris
- Maintenance technician: Buck Jones
- Maintenance technician (temporary): Bob Twomey
- Housekeepers (temporary): Edna Hensley and Mary Ann Hamilton
- Communications director: Bruce MacDonald
- Visitor center manager (temporary): Jane Dauster
- Holmes Educational State Forest supervisor: Susan Fay

- Educational ranger: Amy Kinsella
- Educational ranger: EJ Dwigans
- Lead law enforcement agent: Andy Norman
- Law enforcement agent: Daniel Britt
- Law enforcement agent: Vacant

The DSRF forest supervisor also supports 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 Smith, who is based in the North Carolina Forest Service (NCFS) regional office in Asheville.

Forest planning and management are coordinated with the DSRF advisory committee, a group of stakeholders representing a variety of user groups, including hunters, conservationists, the youth camp industry, 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

The Aleen Steinberg Center, also referred to as the Visitor Center, serves important functions at DSRF, where visitors can obtain trail maps, directions and check-in for limited-mobility vehicle permits and picnic shelter reservations. Approximately 72,000 visitors used the Visitor Center in fiscal year 2019. There are 54 volunteers that work at the Visitor Center to provide safety and directional information. This group of volunteers provided over 2,546 hours of service to the State of North Carolina in fiscal year 2019.

PUBLIC USE OF THE FOREST: Balancing safety, natural area protection and recreational opportunities

Visitation estimates are shown in Figure 1. In fiscal year 2019, DSRF installed a more reliable system to estimate visitors at various access areas. The data suggested that previous years had been undercounted, especially in those access areas not directly linked with the popular waterfall locations. The new estimates are approximately 50% higher than the calculations of the previous methodology.

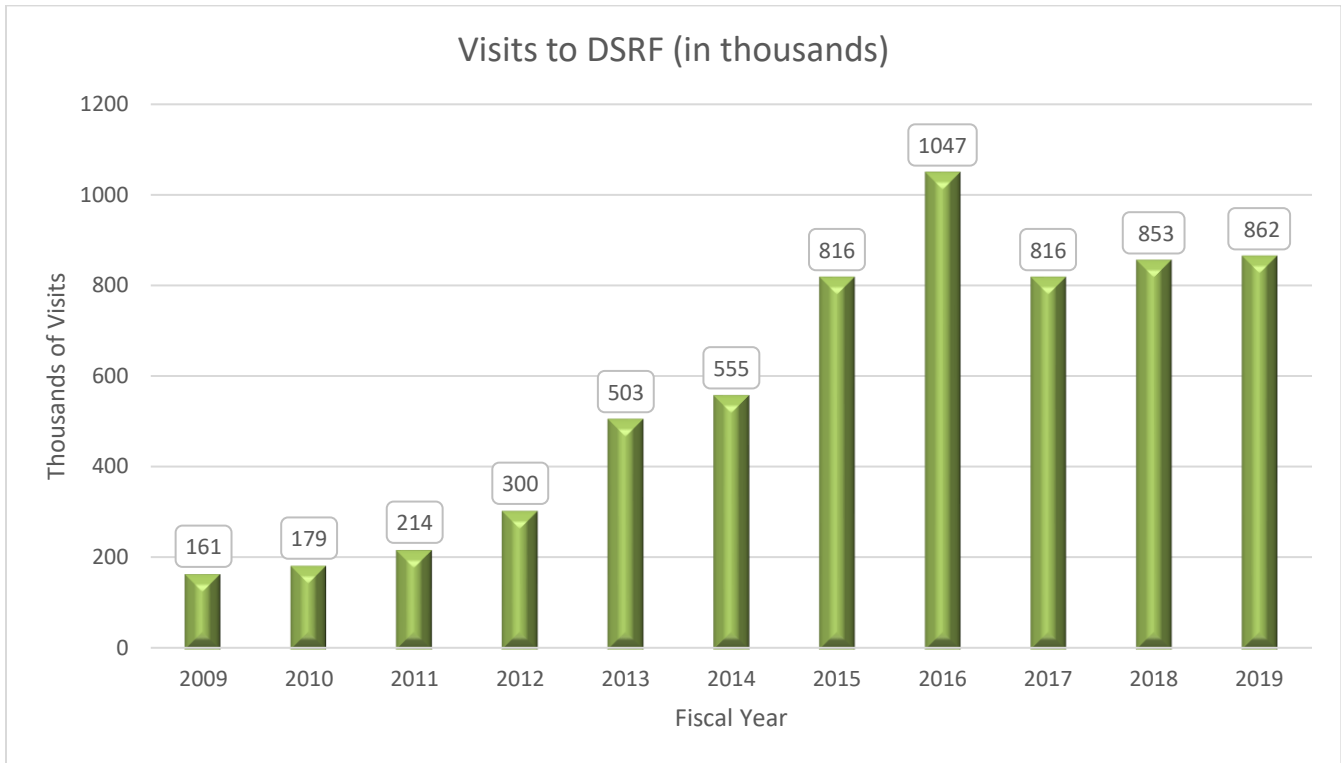


Figure 1. Visits to DSRF per fiscal year since 2009

Incidents involving the public

Challenges with maintaining public safety and natural resource protection have been related to the level of visitors in recent years. DSRF staff and county emergency personnel are dispatched to a variety of emergency incidents in the forest. Such incidents may involve trauma, illness, search and rescue, property damage, medical assists, as well as Administrative Rule and General Statute violations by visitors.

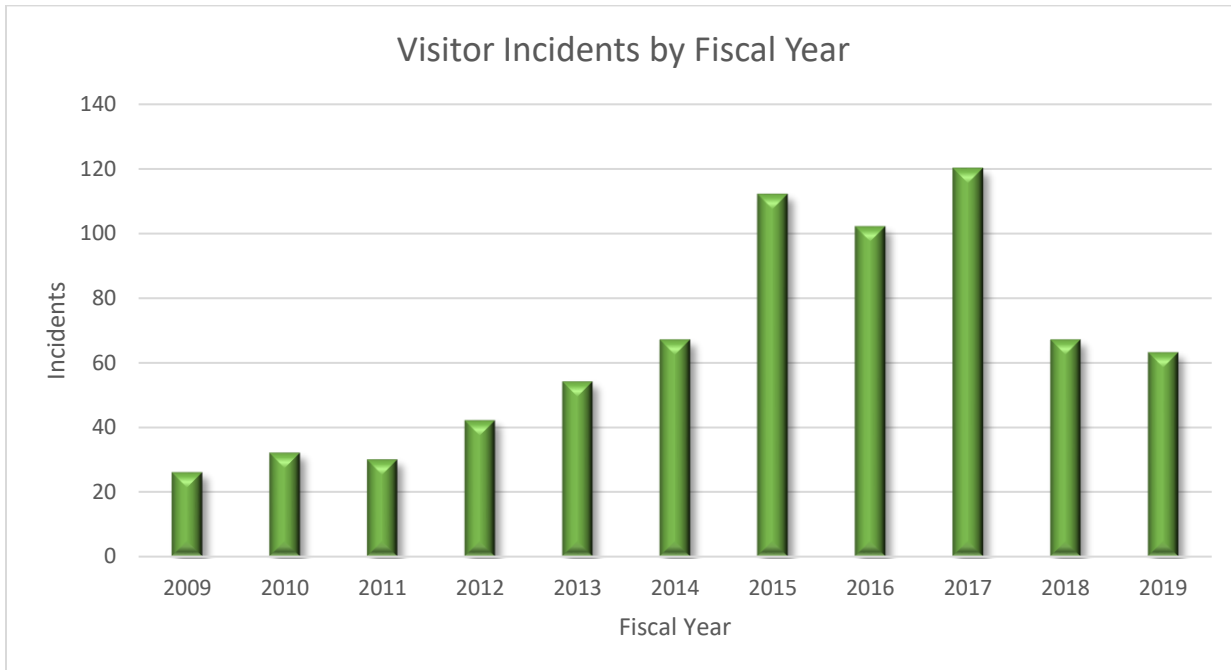


Figure 2. Visitor incidents per fiscal year since 2009

In 2019, DSRF law enforcement agents and forest rangers issued over 700 law enforcement actions; ranging from the issuance of citations, written warnings, verbal warnings and expulsions from the state forest. Figure 3 presents the categories of forest rule violations for the fiscal year. Nearly half of the enforcement activity was in response to visitor behavior around waterfalls. Many of the disorderly conduct violations relate to visitors entering restricted areas delineated with posted warning signs. Similarly, climbing on rocks near waterfalls represented approximately 21% of overall violations.

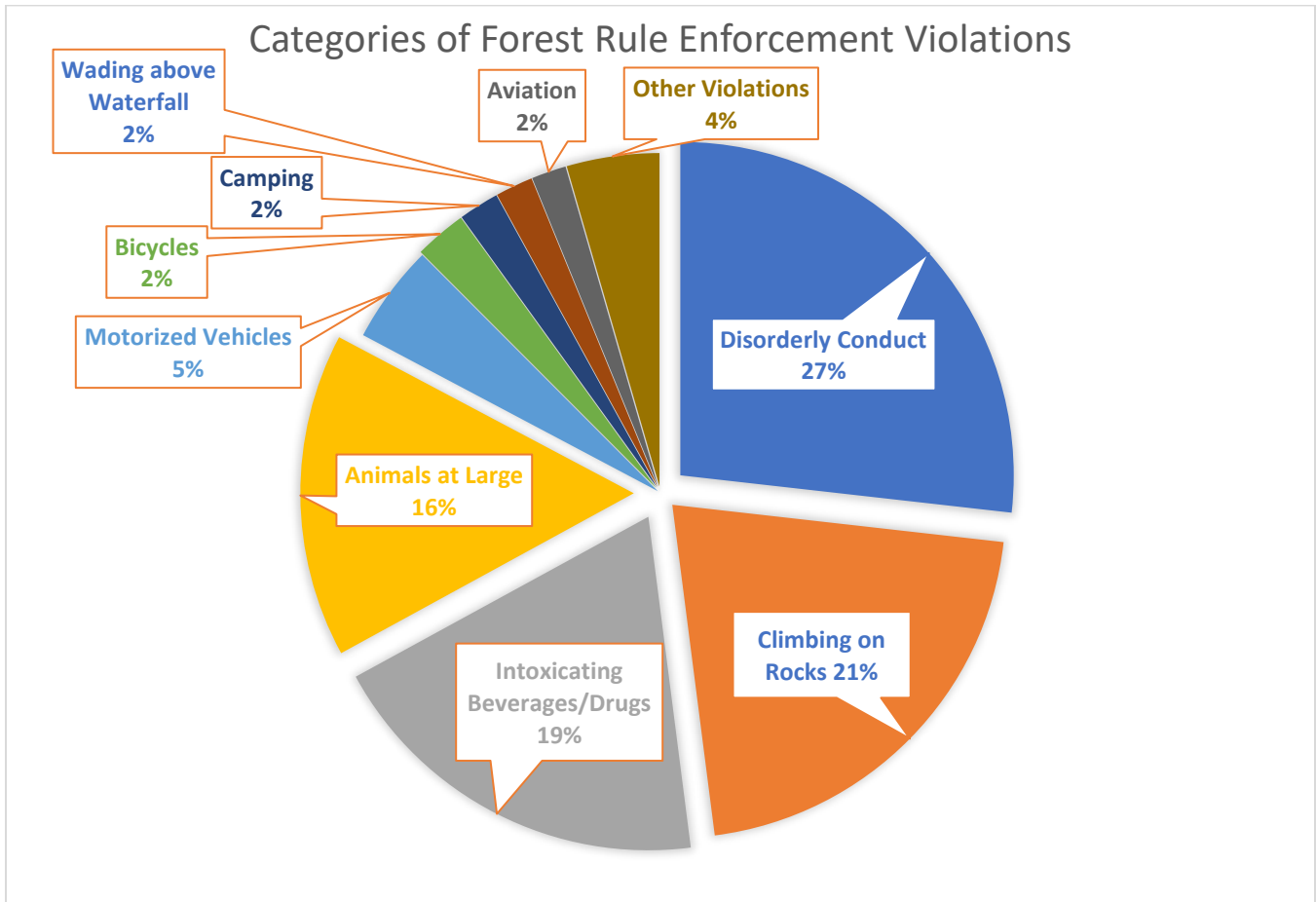


Figure 3: Categories of Forest Rule Violations in 2019

In addition to responding to emergencies and law enforcement incidents, DSRF staff provided a high level of customer service to the general public via 88 assists to visitors such as finding lost animals, providing searches for missing people and giving rides to visitors to mitigate possible emergencies. An assist is recorded for actions that are non-emergency in nature but take the DSRF ranger or law enforcement agent away from their normal duties.

Access to DSRF

DSRF manages certain uses that are prohibited by DSRF's Administrative Rules (02 NCAC 60B .1001-.1032) through the issuance of permits. Each permit request is evaluated by a DSRF ranger to determine impacts to the forest's natural resources, road and trail system, and the general public as described in Table 1.

A notable change in 2019 was the growth of the DSRF commercial use permit program. This program managed 75 different businesses that used the forest for commercial gain. This represented a 20% increase in the number of commercial use permits from 2018 and nearly a 300% increase in these permits issued since fiscal year 2014.

This amount of vehicle access for a public land of DSRF's relatively small size is a significant accommodation and is not without public safety or resource protection

concerns. These programs are continually assessed for sustainability and whether the use supports the mission of the forest.

Table 1. Permits issued in Fiscal Year 2019

Permit type	Permit use	Permits in Fiscal Year 2019
Commercial use	For youth camps and businesses using DSRF as part of a commercial enterprise.	75
Special use	Foot race events, equestrian facility rentals, and research permits.	26
After-hours	Recreational trail use after 10 p.m. and before 5 a.m.	20
Limited mobility visitor	Access to High Falls, Triple Falls and the Covered Bridge; allowed for 204 users and 56 vehicles.	55
Picnic shelter	Picnic shelters at High Falls, Triple Falls, Lake Dense, Lake Imaging and Guion Farm; allowed access to 595 users and 55 vehicles.	21
Limited mobility anglers and hunters	Allowed vehicle access for limited mobility anglers and hunters to select areas of DSRF.	28
	Total	225

Recreation management

In 2011, DuPont State Forest was designated by the N.C. General Assembly to be the State's first recreational state forest, thereby changing its name to DuPont State Recreational Forest and adding to its mission the management of outdoor recreational activities. It was not until the establishment of the DSRF recreation branch that the forest had personnel dedicated primarily to the planning, designing and implementation of recreation initiatives. The DSRF recreation program continued its productivity into 2019 by developing and implementing solutions to the various challenges and expectations of a highly visited state forest. Some examples follow:

- **Providing volunteer opportunities:** In 2019, the DSRF recreation branch planned and implemented trail work on over 25 different trails which equates to approximately 20 miles of trail maintenance or nearly 50% of the DSRF's single-track trails. With these efforts, over 200 water drainage features were reconstructed or maintained and trail corridors were cleared of encroaching vegetation to improve user visibility. This work was accomplished by the DSRF recreation branch through the coordination and contributions of other organizations, such as the Friends of DuPont Forest, Brevard College, and the Pisgah Area Southern Off-road Biking Association. In addition to volunteer organizations, the NCFS B.R.I.D.G.E. program contributed hundreds of hours of trail maintenance work under the direction of the DSRF recreation branch.
- **Trail etiquette education:** The DSRF recreation branch facilitated several trail events with a focus on educating the public on best practices when using a shared and heavily used trail system. These types of events seek to enhance the user experience and expand the common knowledge that DSRF has primarily multiple-use trails (*i.e.*, non-designated) that will benefit from different user groups (horseback riding, bicycling and hiking) better understanding each other. Trail etiquette days were hosted throughout the year and were conducted in coordination with the Pisgah Area Southern Off-Road Biking Association. Other notable trail education events included the Forest Festival sponsored by the Friends of DuPont Forest in September 2018 and National Trails Day in June 2019.
- **Other recreation system improvements:** In addition to regular trail maintenance, DSRF staff closed the Oak Tree and Chestnut Oak Trails to achieve multiple benefits including protecting water quality, reducing overall maintenance requirements and enhancing the visitor experience. The Chestnut Oak Trail was a road constructed by a land developer in the late 1990's and was not properly designed or built to sustainable standards. Oak Tree Trail was closed because it was an under-utilized trail and added to the fragmentation of a Natural Heritage Program Primary Area within the DSRF Nature Preserve. Combined, these two trails were constant sources of soil erosion that required repeated maintenance projects over the past several years. Figure 4 is an aerial photograph of the area prior to the close-out and shows the movement of sediment (lighter colored areas) toward nearby stream systems.



Figure 4. Aerial view of Chestnut Oak Trail prior to closeout

MANAGING THE FOREST: Enhancing wildlife habitat, protecting against invasives

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.

Because of the foundational planning, DSRF has developed a strong program of demonstrating a wide variety of forest management strategies while coexisting with the heavy use of a recreational trail system and popular waterfall attractions. The DSRF forest management program has been actively managing the natural resources through mechanical (harvesting), chemical (pesticide application) and biological (prescribed fire) tools proven effective from generations of forestry research. The overarching objective is to achieve multiple desired conditions within animal and plant communities that in turn benefit our society. Figure 5 displays the practices of forestry across DSRF since 2011, with nearly 445 acres of younger forests generated and over 1,500 acres of natural fire disturbance returned to the forest's landscape.

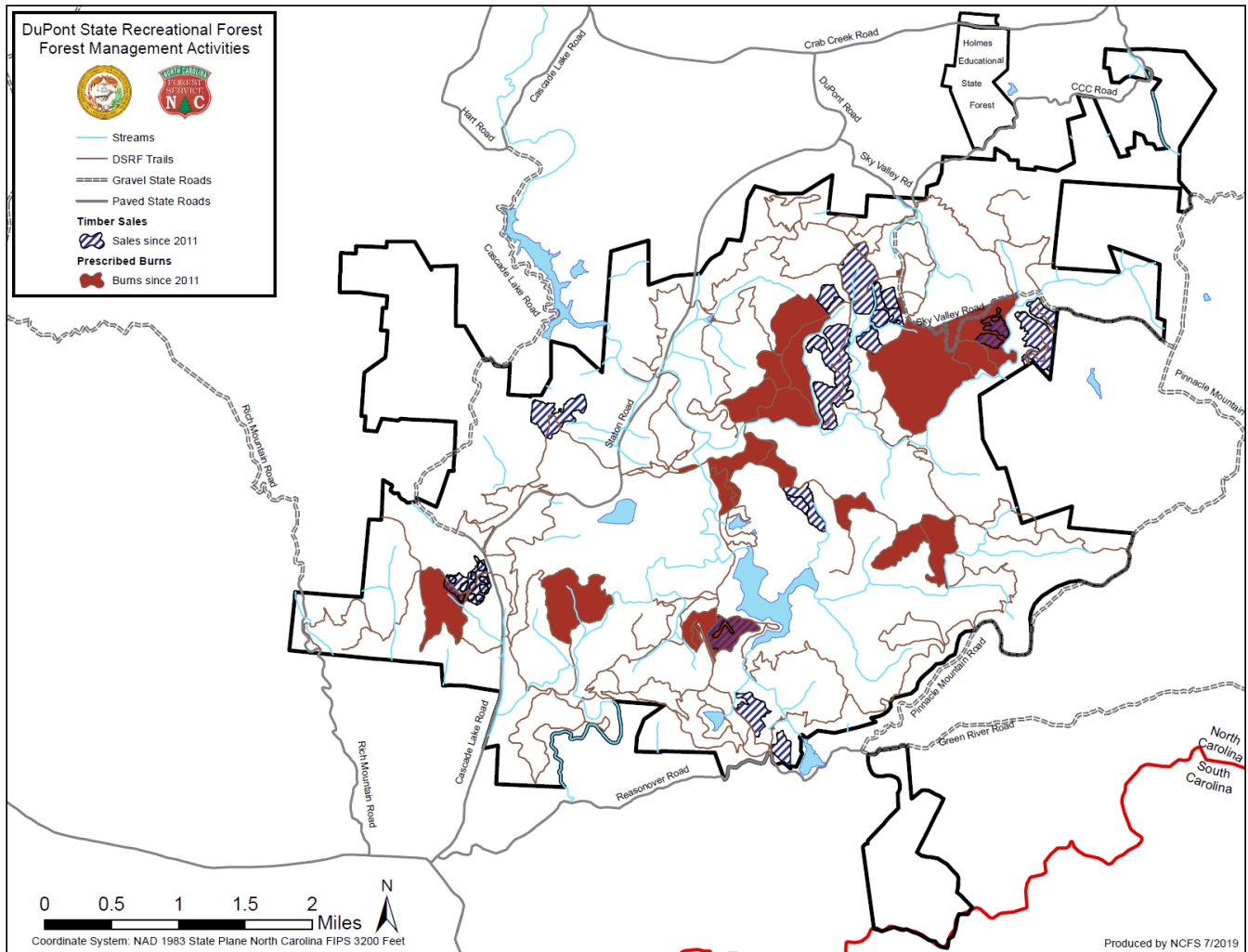


Figure 5. Forest management on DSRF since 2011

In fiscal year 2019, a timber sale brought activity to the far southern end of the forest, near Reasonover Road. Harvest objectives centered on the removal of a 5-acre hilltop concentration of white pine, behind the roadside deck location depicted in Figure 6. This forest stand had suffered ice damage over the years and was experiencing mortality due to competition and crowding between trees. Once the entire harvest is completed, shortleaf pine will be planted on the hilltop and on a connecting spur ridge. This will be the third planting of shortleaf pine at DSRF in recent years, contributing to the regional restoration efforts of this species. The surrounding hardwood forest is being thinned to improve age distribution and species composition. Older scarlet oaks (a shorter-lived oak species) are being targeted for removal, along with yellow-poplar and Fraser magnolia. Trail closures were installed on Conservation Road, advising visitors to use Fawn Lake Road to access the interior of the forest. Traffic in this area was limited to log trucks, horse trailers and other large vehicles. Harvesting on a second, smaller cutting unit will resume in November 2019, after the seasonal operational pause for high-volume recreation traffic. The treatment area totaled 42 acres and sold for a lump sum of \$51,100, all of which was deposited into a Department capital account.



Figure 6. Logging Deck on Conservation Road and Temporary Trail Closures

In cooperation with the North Carolina Wildlife Resources Commission (NCWRC) Game Lands program, the DSRF helped to maintain wildlife food plots, assist with wildlife law enforcement and host wildlife educational programming. The NCWRC issues seasonal hunting permits at DSRF through a lottery system for various game species, while DSRF provides access to the forest's interior for disabled hunters and anglers. Overall, the DSRF Game Lands provided approximately 1,488 hunting opportunities for deer and turkey in 2019.

The NCWRC maintains nine wildlife food plots throughout the forest by planting high-quality forage and maintaining edge habitat for game species. Fiscal years 2017-2019 show a period where deer harvests remained higher than previous years (see Figure 7). While there are numerous variables related to game harvests, it is thought that deer and other wildlife populations are responding to forest management treatments that diversify the plant communities in both structure and age.

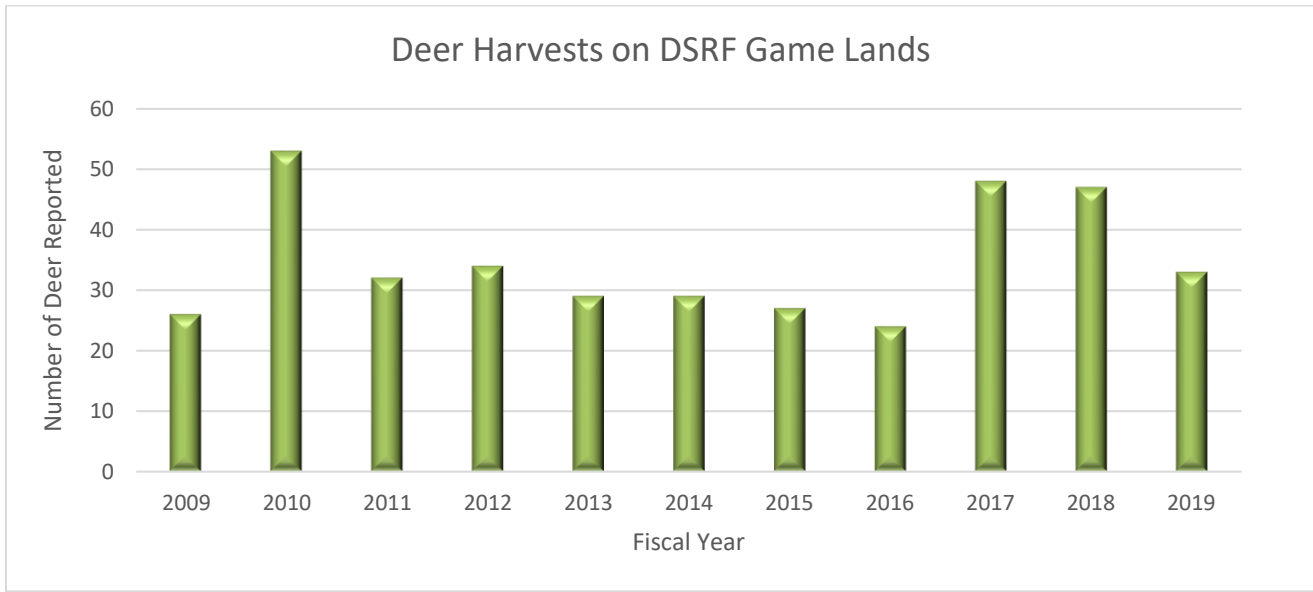


Figure 7. Deer harvest levels at DSRF since 2009

Hemlock wooly adelgid: chemical and biological control of a forest pest

Throughout fiscal year 2019 the chemical control of the hemlock wooly adelgid continued to make significant progress on DSRF. Since 2007, the NCFS has been effectively treating hemlock trees to avoid mortality along areas of high visitation and high ecological value. Along with the efforts of the NCFS in recent years, an additional 50 acres were treated with pesticide by the Hemlock Restoration Initiative, a non-profit program that provides cost-share and technical services to private landowners and assists public lands in efforts to control the hemlock wooly adelgid. Figure 8 shows the extent of treatment in 2019 and previous treatments dating back to 2007.

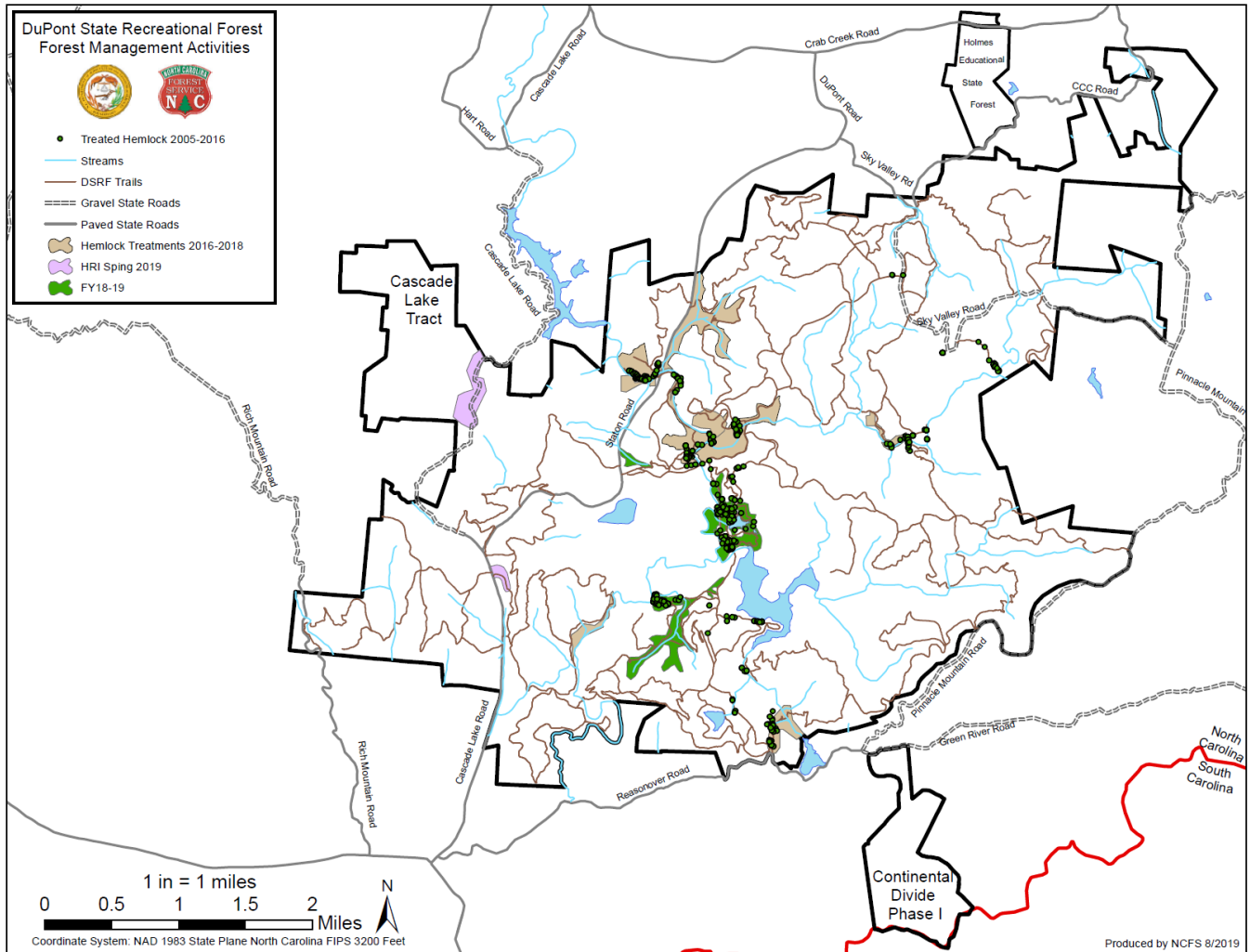


Figure 8. Hemlock wooly adelgid treatments on DSRF

In 2019, DSRF partnered with the USDA Forest Service Southern Research Station on the release of a species of silver fly (*Leucopis argenticollis*) that is expected to be an effective predator against the hemlock wooly adelgid. Silver flies are abundant in the northwestern United States and have performed well as a biological control of western hemlock adelgids. DSRF is among the first sites in the southeastern United States to receive silver flies as part of a collaborative research project between the USDA, Cornell University and Oregon State University. This introduction of silver flies also seeks to understand if they can successfully reproduce in this area and by using the hemlock wooly adelgid as a viable food source. Note the mesh bags in Figure 9 that contain silver flies as part of the study.



Figure 9: Images of silver fly research plots, signage and photograph of the insect.

PROMOTING THE FOREST: Protecting our forests through education

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 potential to enhance the enjoyment of hundreds of thousands of visitors through education. Educational programming at DSRF has been a broad-based effort with several partners, including the Friends of DuPont Forest and the North Carolina Wildlife Resources Commission. These accomplishments are listed in Table 2.

Table 2. Educational offerings associated with DSRF in Fiscal Year 2019

PRESENTER	EDUCATIONAL OFFERINGS	STUDENTS OR GUESTS
HESF staff	117	5,411
DSRF staff	54	1,140
N.C. Wildlife Resources Commission	19	284
Friends of DuPont Forest	13	600
Total	203	7,435

IMPROVING THE FOREST: New properties, public facilities, land remediation

Additions to the State Forest

In February 2019, DSRF acquired an additional 1,180 acres through two land transactions (Figure 10). The Cascade Lake Tract (formerly known as the Picklesimer Tract) added 778 acres near the western boundary of DSRF. This property was received as a donation facilitated by The Conservation Fund. The Continental Divide Tract formed a new 402-acre area to the southern edge of the forest and along the North Carolina and South Carolina state boundary. This tract was initially acquired by the land trust Conserving Carolina and made possible with funding by N.C. Clean Water Management Trust Fund and the N.C. Parks and Recreation Trust Fund.

The new acquisitions will not be immediately open to the public in order for the NCFS to evaluate natural heritage communities, forest management plans, and recreational plans. It is expected that these areas can offer a different recreational experience than the more highly visited areas of DSRF by having minimal trail development and by enrolling them into the N.C. Wildlife Resources Commission's Game Lands Program.

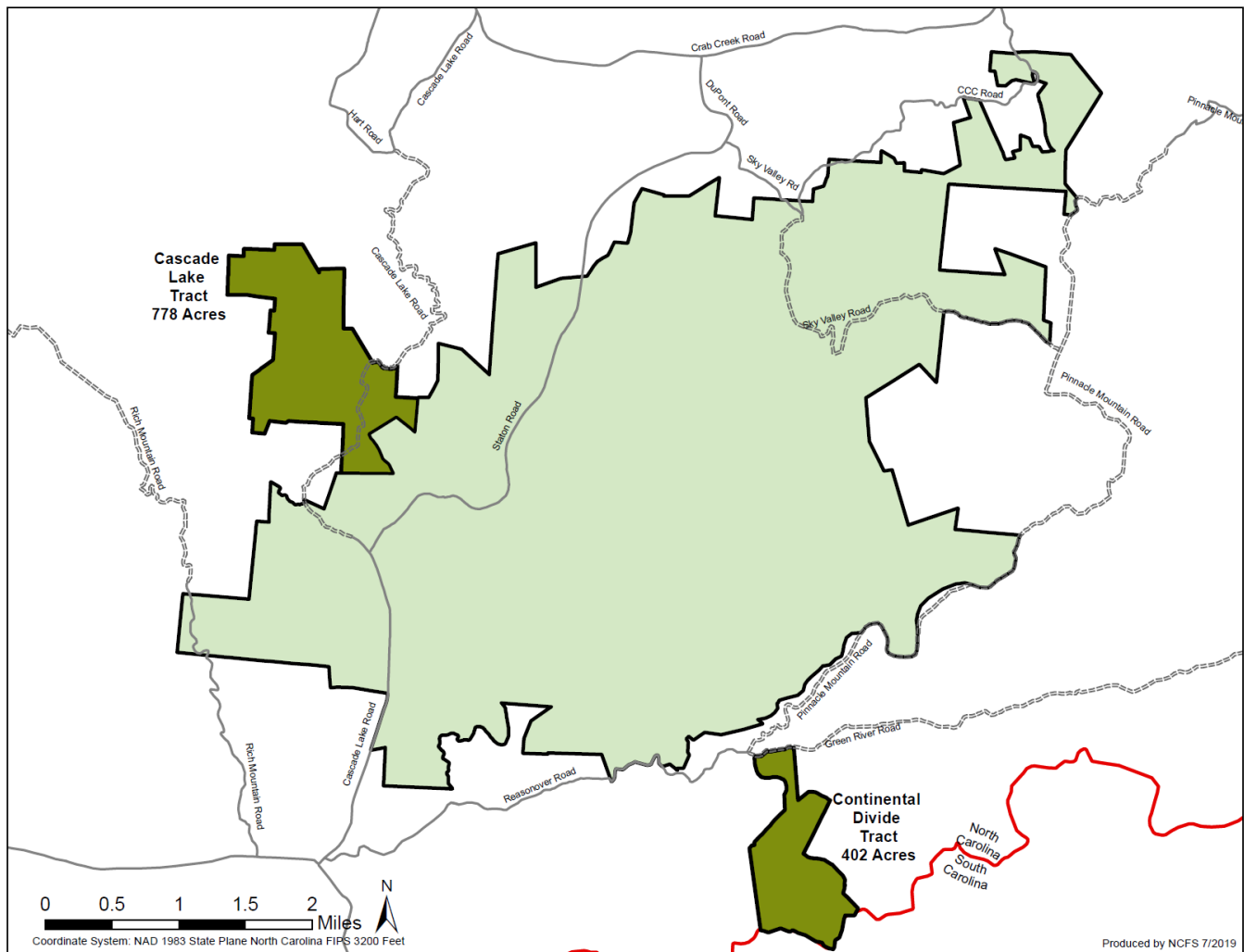


Figure 10. Map of new land acquisitions in fiscal year 2019

Hooker Falls restroom

In May 2019, the Hooker Falls restroom facility was opened to the public (Figure 11). This building immediately provided public services to one of DSRF's most visited areas, where over 200,000 people enter the state forest each year. The new restroom replaces portable toilets at this access area and improves the visitor experience. The impacts of littering and human waste being introduced into the natural systems in this area are also expected to be reduced by these facility improvements. The building was funded by a portion of the \$3 million provided to DSRF by the N.C. General Assembly in fiscal year 2017.



Figure 11. Hooker Falls restroom facility in May 2019

The former DuPont Corporation plant site

In December 2016, the forest acquired 476 acres which was previously owned and managed by the DuPont Corporation since the 1950s. Approximately 70 acres of the site were once the site for a facility that produced silica-based computer components and X-ray film. In 2004, the facility was demolished by the DuPont Corporation and remained as secured private property near the middle of the state forest and was often referred to as the “Donut Hole.”

In 2019, progress was made to improve an existing landfill located next to the Little River and between Bridal Veil Falls and High Falls. The project encompasses nearly 14 acres and will address the site's susceptibility to erosion near the Little River. A new earthen cap will be constructed over the site and toe-slopes will be reinforced (Figure 12). Per the 2016 agreement between the N.C. Department of Agriculture and Consumer Services and the DuPont Corporation, all remediation work on the former manufacturing facility will be the responsibility of the DuPont Corporation.

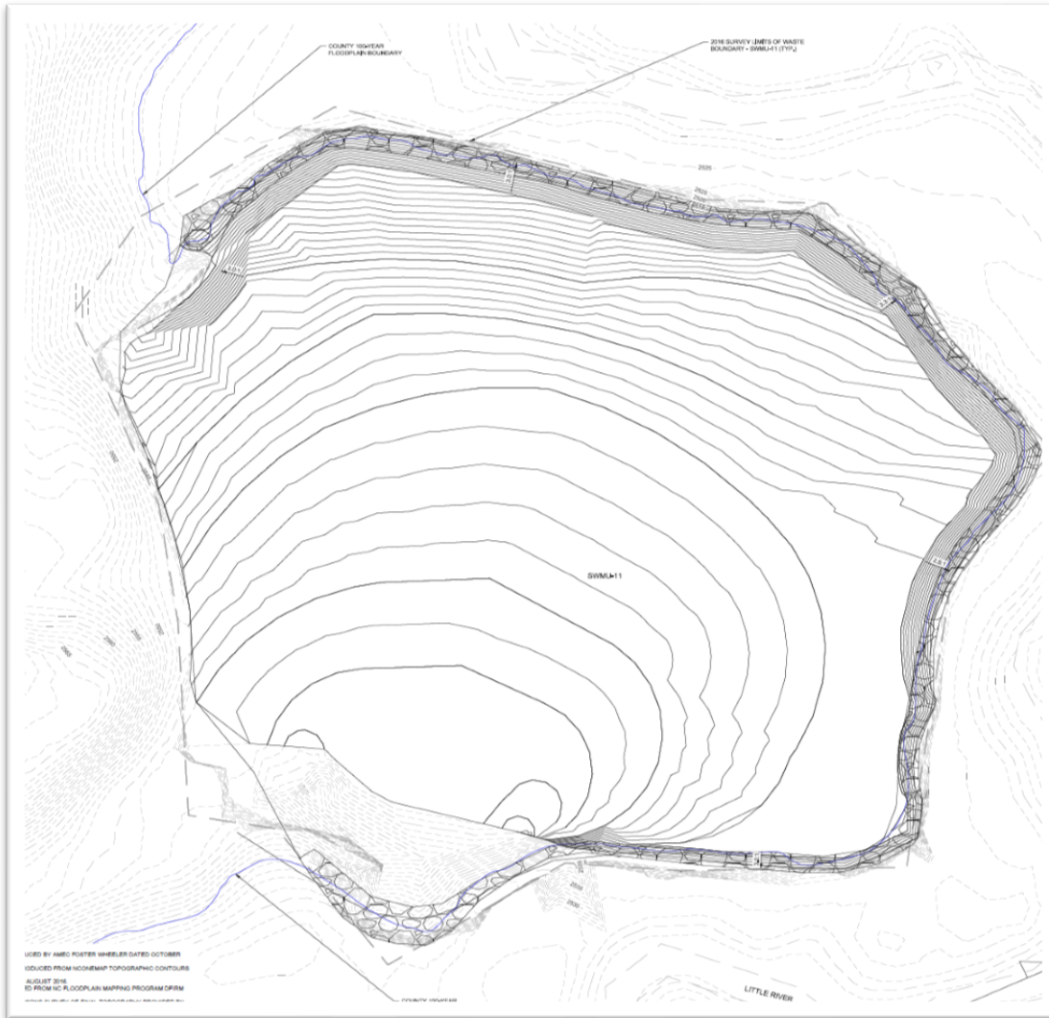


Figure 12. Plan view of grading project on a former landfill area

PLANS FOR FISCAL YEAR 2020

N.C. Parks and Recreation Trust Fund

In fiscal year 2017, the North Carolina General Assembly authorized access to the North Carolina Parks and Recreation Trust Fund for the purposes of capital improvements, repair and renovation of facilities and land acquisition. The DSRF allocations in fiscal years 2019 and 2020 are planned to address resource protection and public safety issues around more heavily impacted and high-profile areas of the forest, including the waterfall attractions along the Little River.

Continuing capital improvements

The remaining portion of the \$3 million in capital improvement funding, after the Hooker Falls restroom project, will be used to improve other parking areas, restroom facilities and associated utilities across DSRF. The next project will be at the Guion Farm access area in Henderson County where a new restroom facility will be constructed along with a new parking area to accommodate visitors with a variety of recreational interests (Figure 13).



Figure 13. Preliminary design concept for the Guion Farm Access Area in Henderson County

CONTACT INFORMATION

For any questions regarding this report or about DSRF, please contact:

Jason I. Guidry
North Carolina Forest Service – DuPont State Recreational Forest, Forest Supervisor
N.C. Department of Agriculture and Consumer Services
Jason.Guidry@ncagr.gov
828-877-6527, ext. 201
89 Buck Forest Road, Cedar Mountain, NC 28718

Greg Smith
North Carolina Forest Service – Region 3, Mountain Division Director
N.C. Department of Agriculture and Consumer Services
Greg.Smith@ncagr.gov
828-665-8688
14 Gaston Mountain Road, Asheville, NC 28806