



N.C. DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES



NORTH CAROLINA FOREST SERVICE



DuPont State Recreational Forest Fiscal Year 2015 Legislative Report

October 1, 2015

Agriculture Commissioner Steve Troxler

Assistant Commissioner Scott Bissette

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 on DuPont State Recreational Forest (DSRF).

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Statutory Requirement

G.S. 106-887 (i) 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

The N.C. Forest Service (NCFS) DuPont State Recreational Forest (DSRF) contains 10,473 acres in Transylvania and Henderson Counties. It has 83 miles of multi-use roads and trails used by hikers, bikers, equestrians, dog walkers, runners, and others that enjoy outdoor recreation. There are four major waterfalls on the Little River, two waterfalls on Grassy Creek, and five mountain lakes.

DSRF is operated by 8 full-time employees and 4 temporary employees. The DSRF Staff consists of the following positions:

- Forest Supervisor – Jason Guidry
- Assistant Forest Supervisor – Bruce MacDonald
- Management Forester- Michael Sweat
- Facility Maintenance Supervisor- Justin Carpenter
- Office Manager- Lillian Birchfield
- Education Ranger- Eric Folk
- Education Ranger- Jeremy Waldrop
- Equipment Operator- Robert Pace
- Maintenance Mechanic (Temporary)- Buck Jones
- General Utility Worker (Temporary)- Vacant
- Visitor Center Manager (Temporary)- Bob Twomey
- Public Information Assistant (Temporary)- Denver Beddingfield

The DSRF Forest Supervisor also oversees the operations of Holmes Education State Forest, which has two employees. The DSRF Forest Supervisor reports to the Regional Forester, Greg Yates, who is based in the NCFS' Regional Office in Asheville.

The DSRF coordinates its operations with the DSRF Advisory Committee, which is a group of stakeholders representing a variety of user groups and local governments. Committee members are appointed by the Assistant Commissioner Scott Bissette and typically serve three-year terms.

Forest Visitation

Visitation increased dramatically in fiscal year 2015, continuing a 4-year trend of visits well above historical averages (See Figure 1. below). A number of factors may be attributed to the growth:

- World-wide exposure of the DSRF through films such as ‘The Hunger Games’, produced on DSRF in 2011.
- Local and regional tourism development agencies touting the DSRF as a Western North Carolina destination.
- The emergence of social media and blogging networks that can spread and cultivate information well beyond North Carolina and the Southeastern U.S.
- The mountain biking communities’ and Transylvania County’s promotion of the DSRF trail system as “world-class.”

The waterfalls of the DSRF continue to be the main attraction, accounting for an estimated 87% of the visitors’ reason for coming to the Forest. The increased use of the Forest is a benefit to local economies, as well as offering a healthy social benefit to North Carolina’s citizens. As with any growing endeavor, the responsibility to maintain a safe and clean environment at the Forest and protect the natural resources has increased proportionally to the Forest visitation.

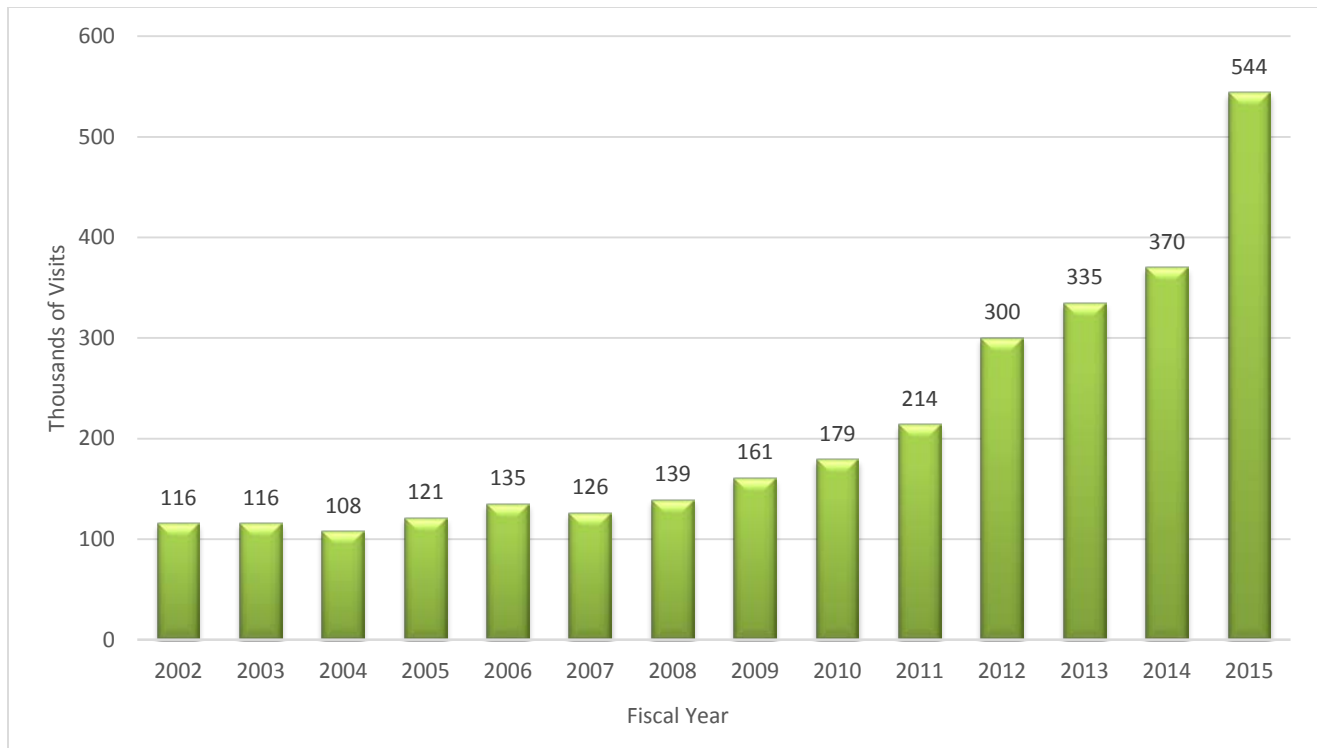


Figure 1. Visits to DSRF per Fiscal Year

Challenges accompanying the increase of visitors to DSRF include:

1. Parking by visitors in unsafe areas (along Staton Road)
2. Littering (trash dumping and pervasive micro-litter)
3. Vandalism (at shelters, trail signs, etc.)
4. Alcohol use on Forest
5. Restroom facilities beyond capacity
6. Gridlock or illegal parking that affects emergency vehicle access.
7. Social trails created by users that destroy vegetation and accelerate erosion.
8. Increased Forest Rule Violations (rock climbing, swimming above waterfalls, etc.)

The Aleen Steinberg Center (ASC)

The ASC, also referred to as the Visitor Center, is one the most important visitor stops at DSRF, where trail maps, directions to waterfalls, permits for vehicles for disabled visitors, and picnic shelter reservations can be obtained. Approximately 160,000 visitors have utilized the center since its grand opening in July of 2013. The Visitor Center's classroom has become a convenient and important meeting space for classes and meetings by various groups. In fiscal year 2015, approximately 957 people utilized the classroom for an estimated 304 hours of use (up almost 105 hours from the previous fiscal year). The Welcome Center Manager has recruited and trained a core group of 44 volunteers to greet visitors and provide information.

DSRF Volunteers

The DSRF relies on volunteer contributions to many aspects of its operations; ranging from trail maintenance, facility maintenance, staffing the information desk at the Visitor Center, and various administrative functions. Over 4,800 hours of volunteer service were contributed to DSRF in FY15. Leading volunteer organizations are Friends of DuPont Forest (FODF), DSRF regular volunteers, Southern Off-Road Bikers (SORBA), Western Piedmont Community College (WPCC), and the Pisgah Trail Blazers (an equestrian group).

The DSRF staff works closely with many individuals and volunteer groups to increase accomplishments and save the State of North Carolina thousands of dollars each year.

Permits and Reservation Accommodations

The DSRF permit programs exist to accommodate 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. Some permits such as Commercial Use have fees associated with levels of use, while the physically disabled visitors may obtain a vehicle pass free of charge.

Table 1: Permits Issued FY15

Permit Type	Permit Use	# Issued
Commercial Use	For camps and business for commercial use of the Forest.	50
Special Use	Disabled hunters, disabled anglers, equestrian facility rental, research permits.	79
After-Hours	Legitimate trail use after 10 p.m. and before 5 a.m.	44
Disabled Visitor	Access to High Falls, Triple Falls, and the Covered Bridge.	112
Picnic Shelter	Picnic shelters at High Falls, Triple Falls, Lake Dense, and Guion Farm.	48
Supervisor Level	Film production, research permits, training by military (U.S. Army, U.S. Air Force, U.S. Marine Corps), the DuPont Rescue Experience.	6

Land and Resource Management

Per the DSRF Land and Resource Management Plan, reviewed by various natural resource agencies and the DSRF Advisory Committee, management of multiple forest resources for the benefit of our citizens remains a high priority for the NCFS and the N.C. Department of Agriculture and Consumer Services.

Wildlife Habitat Improvement and Timber Production

Forest management activities near Lake Julia (a 35-acre shelter-wood harvest) and on Joanna Road (a 25-acre restoration harvest) concluded in late December of 2014. Harvesting reduced the basal area of the stand by approximately 50%, leaving primarily oak and hickory species in the overstory. This stand is expected to change quickly over time as the amount of light that will reach the forest floor will initiate the regeneration of numerous understory and tree species. Depending on the amount of hardwood regeneration present, the stand may be a candidate for subsequent understory burning treatments.

The Joanna Road restoration area, as described in the Natural Heritage Program's (NHP) Nature Preserve Dedication of 1999, was treated with a total harvest in some sections and a heavy thinning in other areas (~50% reduction in basal area). The intent with this former white pine plantation is to return to the model of a Montane Oak-Hickory Complex, a natural community type common to dry, well-drained locations on DSRF. Future treatments may include understory burning. The logging operator was very conscientious of site conditions and visitor safety. The DSRF staff performed daily

inspections with regards to contract administration and the NCFS conducted inspections to ensure compliance with N.C. Forest Practice Guidelines related to Water Quality. Overall, the DSRF staff received almost no negative feedback on the harvest operations throughout the year.

A thinning operation commenced in the Guion Management Area in April of 2015, near Buck Forest Road and Thomas Cemetery. Approximately 88 acres of ~40 year-old white pine plantation is being reduced in density by approximately 40%. The thinning is the first step of a restoration effort to convert a white pine plantation to a more ecologically appropriate mixed hardwood and pitch pine community. This restoration area is identified as the Dry Branch Watershed in the dedication document that created the DuPont Dedicated Nature Preserve in 2002. The NHP provided close coordination during the planning of the thinning and ultimately requested that the removal of the white pine be conducted with specialized equipment, commonly known as a forwarder (pictured below). The DSRF was successful in obtaining a timber buyer and logger equipped with a forwarder. It is a unique operation in that there are almost no skidding trails or temporary forest roads being constructed within the white pine stand, demonstrating that these activities can be accomplished with minimal soil disturbance.

The merchantable timber from the restoration is being sold to Parton Timber Company in Rutherford County. Proceeds from all timber sales were used in the DSRF operational budget for fiscal year 2015 and will continue to be collected throughout fiscal year 2016.



Figure 2: Forwarder Used for Watershed Restoration Thinning

Blue Ghost Fireflies

The popularity and desire of the public to view Blue Ghost Fireflies at DSRF seemed to reach a new high this year. The number of phone calls, emails, and visitors reached an unprecedented level from early May to early June. Similar to DSRF's general popularity, the Blue Ghost's seem to have hit social media networks in a significant way. Informal polling during the weekend visitors pointed towards 'Facebook®' as the most common source of information that ties DSRF to the Blue Ghosts.

The support of the FODF continued from last year's organized efforts to inform the public about the Blue Ghosts. FODF volunteers and AmeriCorps volunteers assisted DSRF by attending the High Falls parking lot for 13 nights. This amount of help assisted the DSRF staff in having more communication with the visiting crowds, along with providing an educational experience. DSRF estimates that ~6,000 people were on the Forest and near the Visitor Center on weekend nights alone. The FODF volunteers handed out red-light filters, suggested to visitors to keep bright lights and loud noises to a minimum, and to stay on designated trails.

Next year's strategy for the Blue Ghost visitors may involve changes to the current set up because of the potential impact to the Blue Ghost Firefly habitat by foot traffic. This unique insect is found primarily on forest floors and appears to be extremely sensitive to disturbance.

Educational Programming

In cooperation with the N.C. Wildlife Resources Commission's (NCWRC) Game Lands program, DSRF staff help 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. The NCWRC, through the Pisgah Center for Wildlife Education, also hosted 43 fishing programs at Lake Julia, Lake Imaging, and the Little River, providing education for 511 participants.

Prescribed Burning

In late-March and early-April, the NCFS completed approximately 250 acres of controlled burning in the understory of the following units: Pitch Pine Trail burn for 19 acres, Locust/Isaac Heath Trails burn for 69 acres, and the Buck Forest Road/Thomas Cemetery burns for 161 acres.

These controlled burns were visible to the public and provided numerous opportunities to educate our visitors to the benefits of controlled burning, such as reducing fuel loading to prevent severe wildfires and enhancing wildlife habitat. The NCFS dispatched personnel and equipment resources from across western North Carolina to assist DSRF with the burns.

Hemlock Woolly Adelgid (HWA)

The HWA Control Program has been treating eastern and Carolina hemlocks in DSRF since 2006. The HWA control program is coordinated with NCFS and U.S. Forest Service pest control foresters.

A main goal is to maintain a population of treated trees until a sustainable natural control method is discovered and to provide the potential for research on DSRF. Over 780 hemlocks have been treated for HWA, many more than once. In 2014-15, DSRF treated 163 hemlock trees and collected data on tree mortality. This program also has public safety facet by attempting to reduce hazard trees throughout DSRF. Many untreated hemlocks are starting to die and fall creating a safety hazard along forest trails. DSRF have cut many dead and dying hemlocks along roads and trails in high use areas.

Additionally, the DSRF issued a permit for the U.S. Forest Service to develop experimental plots to study silvicultural practices needed to regenerate hemlocks in degraded stands. The plots are 30 meters by 18 meters, within which planted bare-root hemlocks will receive different levels of treatment involving weed control and fertilization. The goal is to determine an optimal strategy for establishing viable hemlock trees, which can then be used in long-term strategies for species restoration and control of the HWA.

DSRF Infrastructure

Trail System

A large section of the trail system near the northern section of DSRF received maintenance work via professional trail building contractors. Popular trails such as Ridgeline Trail, Jim Branch, and Hooker Creek trails received improvements that will make the trail system more sustainable, either by improving the trail tread to withstand high use or re-routing trails away from stream systems. The re-route designs were collectively determined by a group of trail designers, including FODF members and SORBA. The entire project resulted in ~23,000 feet (almost 4.5 miles) of improved trails. The NCFS has provided matching labor for the project in trail close-out work. Funding for the construction was provided by the Friends of DuPont Forest, resulting in a total of ~\$17,000 for these improvements.

Facility Improvements

From April to May of 2014, the North Carolina National Guard (NCNG) and NCFS continued a long-standing partnership for the construction of a new access road into the Forest. The NCFS and NCNG have responded to natural disaster emergencies such as hurricanes, tornadoes, flooding, and wildfires; often working side by side in assisting citizens or in Incident Command Posts across North Carolina. Over the years at DSRF, the NCNG has conducted numerous training scenarios and various aircraft operations.

The project centered on improving the conditions at High Falls Access Area by building a gravel road above the current parking lot to provide a circular, one-way route for vehicles (Figure 3. below). The new road has alleviated the bottleneck of vehicles near our main entrance thereby improving access for emergency vehicles and DSRF staff needing to

enter or leave the Forest. The FY15 increase (up by ~40% from FY14) in medical and law enforcement incidents on the Forest adds weight to the argument that access by local first responders needed to be as efficient as possible.

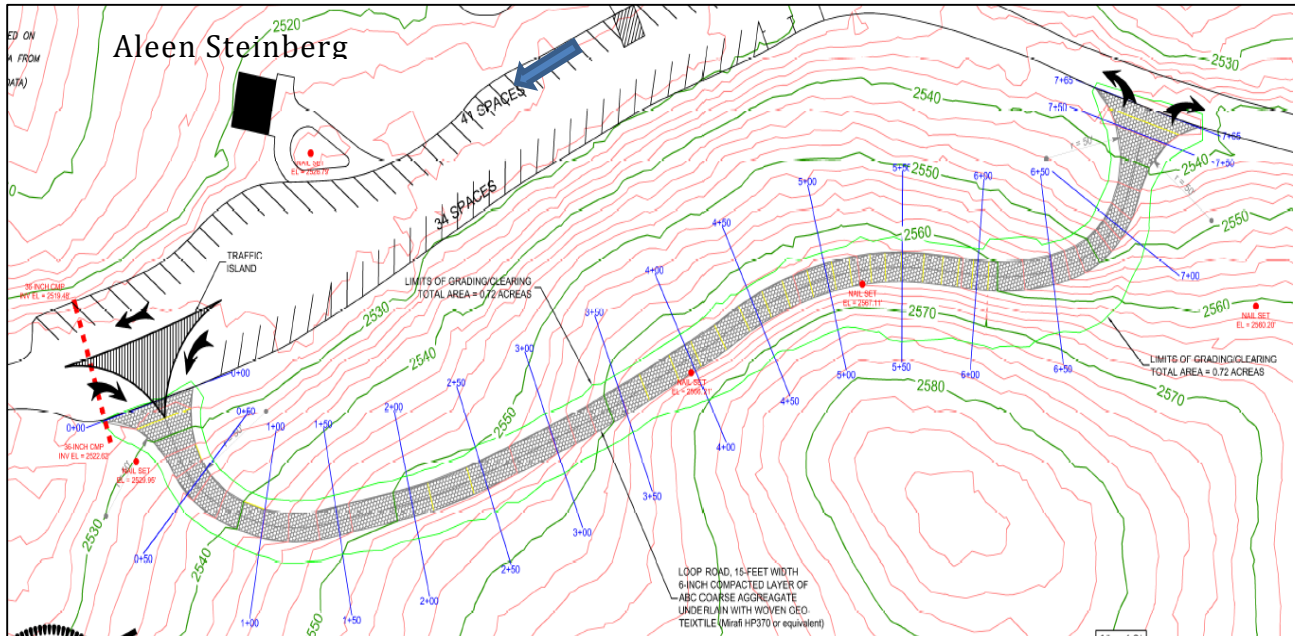


Figure 3: Plan view of new road near the Aleen Steinberg Center

The NCNG provided specialized equipment and qualified personnel to construct the road as part of their annual training requirements. The team consisted of heavy equipment operators, construction managers, and the NCNG's 875th Engineering Company of the 505th Engineer Combat Battalion, based in Gastonia, NC.

The Friends of DuPont Forest agreed to provide \$6,000 towards the project, a critical contribution that allowed for more gravel, erosion control fabric, and directional signage than could have otherwise provided from DSRF's local budget. With an estimated 70,000 vehicles set to use this road on an annual basis, DSRF needed to best possible outcome and eventually got it from this partnership.

Repair and Renovation Projects

DuPont State Recreational Forest received funding for repair and renovation of four facilities: the Hangar near the old airstrip, the Guion Farm classroom, and two Ranger residences that are over 50 years old. New roofing was installed as well as new exterior painting and improved site drainage was installed. The most dramatic change involved the hangar which received a complete overhaul with roofing and siding, as well as structural improvements to the interior. The building will serve as a heated storage space for equipment and building supplies.



Before R&R

After R&R

Figure 4: Hanger Repair and Renovation Projects

Other DSRF Facilities

The Boys Dining Hall and the Cart House, approved for demolition by the N.C. Council of State, was burned down as part of joint training exercise with Cedar Mountain Volunteer Fire Department.

Other facilities include:

- 21 buildings
 - o 5 houses,
 - o 5 storage sheds,
 - o 2 offices,
 - o 2 public restrooms
 - o 7 other buildings
- 7 picnic shelters
- 7 piers
- 6 information kiosks
- 6 parking lots
- 5 dams
- 3 vehicular bridges
- 6 pedestrian bridges
- 3 viewing platforms

Incident Reports

DSRF staff and local 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 actions by a DSRF Ranger. The number of incidents requiring DSRF Ranger response has increased as visitation has increased (See Figure 5).

A summary of incident types:

- Trauma/Severe Injury- 30
- Assists (e.g., transport of elderly, vehicle trouble, disabled visitors, etc.) -30
- Forest Rule Enforcement- 24
- Routine Medical/First Aid - 9
- Search and/or Rescue- 7

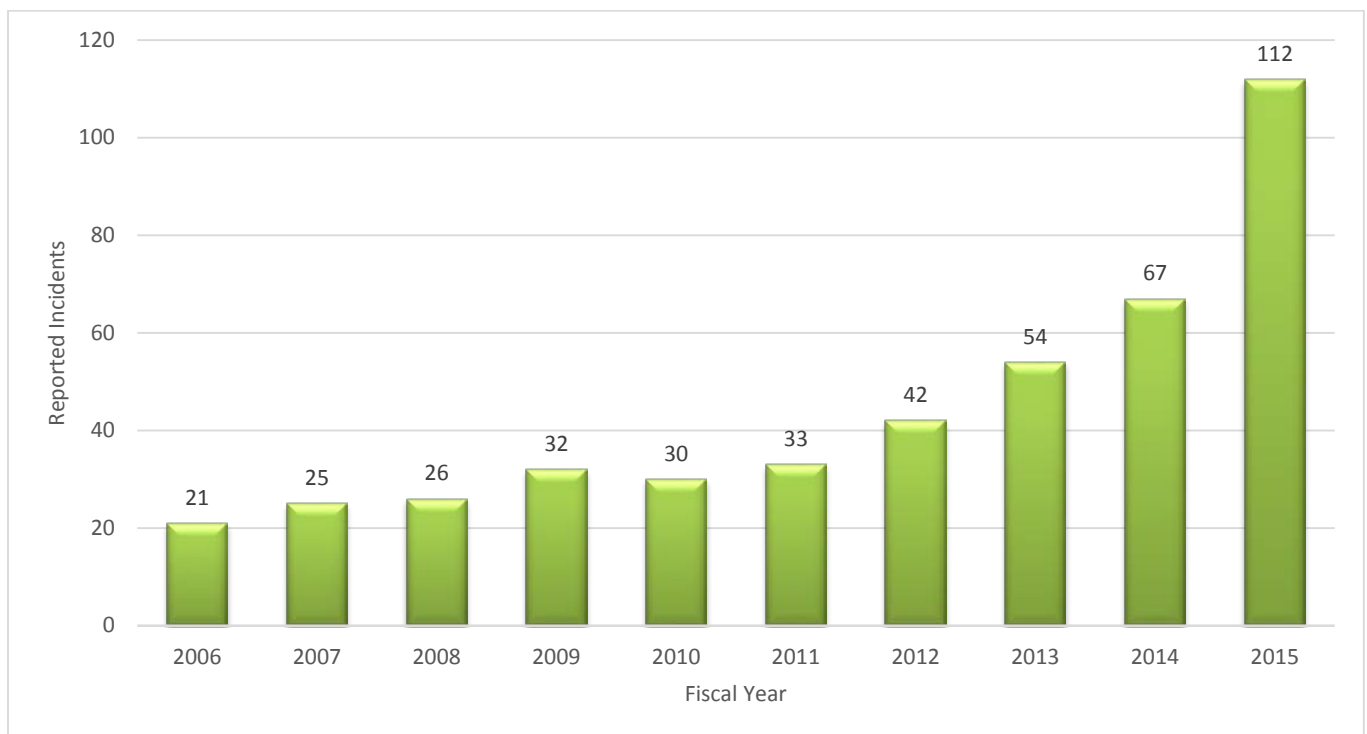


Figure 5- DSRF Incidents per Fiscal Year

To ensure public safety and adequate emergency response, DSRF is staffed seven days per week, as well as having Rangers assume on-call schedules after normal working hours.

Holmes Educational State Forest (HESF)

HESF is managed as part of DSRF, carrying out the education and promotion of forest resources as part of NCFS' mission. HESF has historically been the third most visited Educational State Forest in North Carolina. The HESF is staffed by two NCFS Rangers, who provide educational programs to schools and other groups from March through November. The HESF staff maintains the facilities and trails at the Forest with assistance from the DSRF maintenance staff. They also maintain a picnic area and group campground.

Below are the statistics for HESF for fiscal year 2015.

- 1,568 Students in organized groups
- 27,602 Individual visitors
- 1,870 Campers using group camp
- 31,190 in Total attendance
- 83 Correlated classes
- 29 Other classes
- 116 Total classes
- 1,568 On-site students taught
- 136 Off-site students taught
- 89 Total teaching hours

Plans for Fiscal Year 2016

Wildlife Habitat Improvement

The DSRF will continue to implement the Land and Resource Management Plan by conducting timber stand improvement on ~50 acres of mixed hardwood forest in the Sheep Mountain Management Area. Treatments in hardwood stands are designed to stimulate improved growth of important mast-producing species (*e.g.*, oaks and hickory) in the understory and mid-story of these locations.

Thinning is planned for approximately 120 acres of white pine plantation near Sky Valley Road in Henderson County to maintain forest health. An additional 22 acres of white pine will be clearcut in 2016 and replanted with a yellow pine species mix in the spring of 2017. As with most white pine plantations on DSRF, the objective is to create a multi-age stand of various species of trees to create more habitat complexity for woodland animal and invertebrate species.

Master Plan

It is anticipated that the DSRF Master Plan will be completed in 2015 and the DSRF staff will implement new programs and projects associated with the planning. One particular aspect of the planning is the need to explore additional revenue programs on the Forest that could supplement operating and personnel budgets. This reinvestment will help to continually improve the DSRF facility for the public's use.

Trails

With increased use and widespread popularity of the DSRF trail system, the staff will continue to address trail maintenance and sustainability issues on an annual basis with the support and input of the FODF and local stakeholders. Other trails will be receiving maintenance on their current alignments to address water drainage, rider safety, and erosion. Several trails will be candidates for relocation away from high-quality streams to reduce sedimentation into the Forest's watersheds.

Mobile Website for Visitor Information

The DSRF is planning to update the Forest's website to be more interactive and enhance the visitor experience at DuPont. Features will include interactive maps, portals for reservations, Forest information, safety alerts, and the ability to apply for permits on-line. The responsive website will be designed for compatibility with mobile devices, to be used for both planning trips and used while on the Forest.

CONTACT INFORMATION

For further information, please contact:

Greg Yates
N.C. Forest Service – Region 3
Regional Forester
Greg.Yates@ncagr.gov
828-665-8688
12 Gaston Mountain Road
Asheville, NC 28806

Jason I. Guidry
N.C. Forest Service – DuPont State Recreational Forest
Forest Supervisor
Jason.Guidry@ncagr.gov
828-877-6527, ext. 201
89 Buck Forest Road
Cedar Mountain, NC 28718