

# **South Carolina Forestry Commission Annual Report**

## **FY2016-2017**



July 1, 2016 – June 30, 2017

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# STATE COMMISSION OF FORESTRY

## Members of the Commission

Dr. Walter McPhail, Maudlin, Chair  
James B. Thompson, Greenwood, Vice Chair  
Dr. A.G. "Skeet" Burris, Varnville  
Sam R. Coker, Gilbert  
H. Stro Morrison III, Estill  
Jesse Neville, Walhalla  
Mitchell S. Scott, Allendale  
Eric A. Smith, Charleston  
Dr. George Askew, representative for Dr. James P. Clements, Clemson University

## Administration

Henry E. (Gene) Kodama, State Forester  
Tom Patton, Deputy State Forester

## Mission

The mission of the Forestry Commission is to protect, promote, enhance, and nurture the forest lands of South Carolina in a manner consistent with achieving the greatest good for its citizens.

Responsibilities extend to all forest lands, both rural and urban, and to all associated forest values and amenities including, but not limited to, timber, wildlife, water quality, air quality, soil protection, recreation, and aesthetics.

The Forestry Commission shall have general and specific responsibilities for the promulgation and enforcement of laws and regulations related to protection of the forest and its associated values.

The Commission shall be responsible for promoting and developing the appropriate technologies to accomplish its objectives, and for the development and promulgation of Best Management Practice Guidelines for South Carolina's forest land.

# FOREST PROTECTION

This section encompasses Fire Management, Law Enforcement, Forest Health, and Equipment programs.

## **FIRE MANAGEMENT**

The South Carolina Forestry Commission (SCFC) is responsible for protecting 13,657,033 acres of forestland in South Carolina from wildfire. This total area protected is based on the 2001 Forest Inventory Analysis data with 10% added to cover adjacent non-forest land. This figure includes 101,320 acres of federal land protected under special contract, which includes such lands as the Carolina Sandhills National Wildlife Refuge and the Corps of Engineers land around such lakes as Lake Thurmond, Hartwell, and Russell. Also included is forestland protected by Mutual Aid, which is approximately 824,801 acres of additional federal land that includes lands such as the Francis Marion and Sumter National Forests, National Park lands, and lands owned by US Fish and Wildlife Service.

## **Wildfire Summary**

Agency firefighters recorded 2,062 wildfires that burned 25,709.5 acres of forestland and grassland during the fiscal year. The most significant fire was the Pinnacle Mountain Fire in Pickens and Greenville Counties that burned 10,623 acres over a 28-day period. This fire required assistance from 8 other states, including an incident management team from Utah and aircraft from the US Forest Service. The Pinnacle Mountain Fire was the largest in upstate history.

In FY2016-2017 wildfires destroyed 27 homes and damaged 24 others. In addition, 71 other buildings were destroyed and 33 buildings were damaged. Agency firefighters saved 1,895 structures that were directly threatened by wildfires.

## **Fire Protection Cooperatives**

The Forestry Commission has cooperative arrangements with 12 fire and emergency management entities. Activities for each cooperative agreement during FY2016-2017 are as follows:

**Southeastern States Forest Fire Compact Commission:** Formed in 1954, the Compact allows member states to provide and receive mutual aid in fighting wildland fires. Member states of the Southeastern States Forest Fire Compact include: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia. During this fiscal year, SCFC resources were mobilized to assist Oklahoma and Florida under the Compact. In March 2017, one tractor plow unit and one Type 6 engine (4 personnel total) responded to Oklahoma to conduct initial attack on wildfires. In May 2017, 3 tractor plow units, 4 Type 6 engines, and 2 Strike Team Leaders (16 personnel total) deployed to Florida to assist with initial attack on wildfires.

**SC Emergency Management Division:** SCFC personnel, including incident management teams, participated in several emergency response training sessions involving hurricanes, earthquakes, weapons of mass destruction, dam failures, and nuclear disasters. This year a wildfire response seminar was held with SCEMD, and agency response and contingency plans were evaluated and updated. The SCFC also provided staffing at the State Emergency Operation Center, dozers, saw crews, and IMTs in response to Hurricane Matthew in October 2016. The IMT deployed to Charleston to assist with evacuations and deployed to Dillon County to assist with flood recovery in the wake of Hurricane Matthew.

**SC Army National Guard:** Under an agreement with the SC National Guard (SCNG), helicopter firefighting support is available when requested by SCFC. Requests from SCFC are channeled through EMD and the Governor's Office to activate the Guard. The Guard's primary firefighting mission is providing helibucket service to SCFC Incident Commanders using SCFC's 780-gallon Bambi buckets. Guard helicopters are also available to transport firefighters into rough or inaccessible terrain. Joint training and coordination meetings between the SCNG and the SCFC are held annually to ensure mission readiness. The SCNG provided Blackhawk, Chinook, and Lakota helicopters and ground crews to assist with the Pinnacle Mountain Fire.

**Volunteer Fire Assistance Program:** Pass through funds from the National Fire Plan, Volunteer Fire Assistance funds through the USDA Forest Service were distributed as follows:

- National Fire Plan grant funds are for firefighting needs: 81 Fire Departments requested \$268,197 worth of firefighting equipment of which 60 fire departments were funded for \$187,157.

**Federal Excess Personal Property program (FEPP) and the Firefighters Program (FFP):** The amount of equipment available for screening is limited but with the SCFC enrolled in both programs, we continue to screen items that fire departments have requested. The total value of inventoried federal excess property (including both FEPP and FFP) now stands at around \$22.8 million for 928 items, most of which are on loan to Volunteer Fire Departments. In an effort to improve the program and bring all departments into compliance, SCFC field personnel and the FEPP program manager encouraged fire departments to turn in any equipment that was not being properly maintained or actively in operation. FEPP inventory training was conducted at each of the 3 regional offices as well as the Columbia Office.

**National Weather Service:** NWS provides daily fire weather forecasts and atmospheric dispersion information. During the year, SCFC and NWS work to improve content of daily weather forecasts. The SCFC requested daily spot weather forecasts in November 2017 during the Pinnacle Mountain Fire. For the first time on record, the SCFC ordered an Incident Meteorologist to provide ongoing fire weather predictions at the Pinnacle Mountain Fire.

**USDA Forest Service:** A mutual aid agreement between the US Forest Service (USFS) and SCFC allows both parties to provide initial attack firefighting within one-quarter mile of National Forest boundaries. SCFC provided initial attack on a number of fires on the Francis Marion and Sumter National Forests during the fire season, and SCFC investigators assisted with wildfire investigation.

**DOD Corps of Engineers:** Beginning in 1997, SCFC has provided all fire suppression services on 55,320 acres of Corps of Engineers land. Under the terms of the agreement, actual fire suppression costs are reimbursed to the SCFC. This year the SCFC responded to no fires on lands owned by the Corps of Engineers.

**USDI Fish and Wildlife Service:** Under the terms of a 1992 land acquisition agreement, SCFC provides initial attack fire suppression on the 46,000 acre Carolina Sandhills National Wildlife Refuge. The agreement terminates in 2042. SCFC maintains mutual aid firefighting agreements with the following National Wildlife Refuges: Ace Basin, Cape Romain, Savannah, Pinckney Island, and Santee.

**USDI National Park Service:** Agreements were maintained to provide initial attack wildfire suppression on National Park Service lands; no reportable activity occurred during this fiscal year.

**Wildland Fire Protection Partnership:** Organized in 1991, the Partnership seeks solutions to wildfire management problems in the wildland-urban interface. Membership includes the SCFC, USFS, SC Firemen's Association, Department of Health and Environmental Control, SC Emergency Management Division (SCEMD), SC Fire Marshal, SC Fire Academy, and SC Forestry Association (ex officio).

**Prescribed Fire Council:** Organized in 2003, the goal of the Prescribed Fire Council is to increase the amount of prescribed burning in SC. The Council is working on increasing the capacity to get burning done in SC and in educating the public on the benefits of burning. The SCFC is a charter member and active participant in the council, and provided support for the Council, as well as presentations, for the annual meeting in Edgefield in September, 2016.

**Homeland Security:** Through a grant from the Department of Homeland Security (DHS) and the South Carolina Law Enforcement Division (SLED), the SCFC continued to train incident management teams (IMT) to improve the effectiveness of response to large incidents. Forestry Commission IMTs were staffed, training was conducted for individual team members and teams, and team members participated in training assignments to complete task books to validate their training. Grant funds continued to support an Incident Management Team (IMT) Coordinator position to facilitate the development of nationally-qualified IMTs from within the Forestry Commission and to ensure consistency among three multi-disciplinary (non-SCFC) Type 3 IMTs located in 3 SLED regions of the State. The IMT cooperated with the US Army for an exercise of the National Disaster Medical System and worked with the SC Firefighters Association to manage the Fire Rescue Conference at Myrtle Beach. The SCFC IMT also managed three Wood Magic Events. When Hurricane Matthew occurred in October of 2016 the SCFC IMT was asked to manage a portion of the evacuation in Charleston and the search, rescue and flood response for Dillon County.

## **Fire Weather**

**Weather Stations:** The SCFC, USFS, USDI National Park Service, Department of Defense (Ft. Jackson), and USDI Fish and Wildlife Service share a network of 17 Automated Weather Stations across the state. Data from these stations is used in daily calculations for the National Fire Danger Rating System. Weather readings from these stations are available 24 hours a day for wildfire and prescribed fire management purposes.

**Inches Precipitation: FY2015-2016\***  
**(GHCN-D 5km Data)**

<b>Month</b>	<b>Precipitation</b>	<b>Departure from Normal**</b>
July, 2016	3.78	0.53
August	3.84	-1.4
September	6.83	2.28
October	5.55	1.84
November	0.99	-2.07
December	3.97	0.43
January, 2017	4.88	1.11
February	1.38	-2.04
March	2.34	-1.61
April	5.51	2.26
May	5.15	1.79
June	4.43	-0.29
<b>Total</b>	<b>48.65</b>	<b>1.09</b>

\*Source: National Climate Data Center

**Precipitation Last 5 Years\***  
**(GHCN-D 5km Data)**

<b>Fiscal Year</b>	<b>Precipitation (inches)</b>	<b>Departure from Normal**</b>
2012-13	51.26	4.52
2013-14	50.83	4.10
2014-15	45.61	-1.06
2015-16	60.93	13.97
2016-17	48.65	1.09

\*Source: National Climate Data Center

\*\*Statewide normal, based on previous 30 years

**Readiness Plan:** The daily readiness level of Forestry Commission firefighters is based on fire danger data, available number of firefighters, and status of firefighting equipment. Average readiness levels for each of the three regions for FY2015-2016 are as follows:

<b>Readiness Levels by Region</b>			
<b>Region</b>	<b>Coastal</b>	<b>Pee Dee</b>	<b>Piedmont</b>
Readiness 1 (No wildfire danger)	0 days	0 days	0 days
Readiness 2 (Low wildfire danger)	132 days	68 days	138 days
Readiness 3 (Moderate wildfire danger)	216 days	282 days	203 days
Readiness 4 (High wildfire danger)	17 days	15 days	24 days
Readiness 5 (Extreme wildfire danger)	0 days	0 days	0 days

**Burning Ban and Red Flag Fire Alert:** Four State Forester’s Burning Bans of varying scope were issued just before and during the Pinnacle Mountain Fire in FY2016-17; two statewide Red Flag Fire Alerts were issued in March 2017.

## Dispatch and Air Operations

**Dispatch:** Forestry Commission dispatch is by closest available resource, regardless of political or administrative boundaries. Dispatching was handled by regional dispatch centers located in Walterboro, Florence, and Newberry.

**Aviation** – During the year, SCFC pilots flew 12 different Federal Excess Property aircraft for a total of 408 missions for 948 hours. Reduced aviation budgets have curtailed aerial detection flights and have limited flights to moderate to high fire danger days when aircraft are needed for wildfire suppression, evacuation, or other emergency response assistance.

During the year, SCFC pilots flew a total of 948 hours (Coastal- 123 hours, Pee Dee-258 hours, Piedmont- 350 hours, Columbia- 116 hours).

## Prescribed Fire

**Certified Prescribed Fire Manager Program:** Four Certified Prescribed Fire Manager Programs were conducted during the year with 131 participants. This course focuses of planning prescribed burns to comply with mandated air quality standards.

Prescribed Burning for Forestry, Wildlife, and Agriculture FY2015-2016									
		Forest Understory		Forestry Site Prep		Wildlife		Agriculture	
REGION	Number	Acres	Number	Acres	Number	Acres	Number	Acres	
Coastal	1,929	151,294.2	1,376	12,696.3	1,122	77,595.9	1,194	19,036.8	
Pee Dee	1,037	44,012.4	1,145	5,040.9	712	44,146.0	1,227	20,619.1	
Piedmont	619	70,096.7	1,398	3,848.7	175	5,444.6	357	3,860.0	
<b>State Total</b>	<b>3,585</b>	<b>265,403.3</b>	<b>3,919</b>	<b>21,585.9</b>	<b>2,009</b>	<b>127,186.5</b>	<b>2,778</b>	<b>43,515.9</b>	

**Total Forestry, Wildlife & Agriculture Burns: 12,291 for 457,691.5 acres**

## Fire Prevention Information

**Wildland-Urban Interface (WUI):** Work continued on assessing wildland-urban interface communities' risks to wildfire throughout the state. Primary areas of concern involve communities in Horry, Georgetown and Charleston Counties with increased interest in Oconee, Spartanburg, York and Chester Counties. The communities within the Keowee Fire District of Oconee County continue to thrive with Keowee Key leading the way. The goal of the Firewise program is to increase the awareness of homeowners to their responsibility in helping to reduce the risk of their homes from burning in a wildland fire. This is accomplished by conducting Firewise workshops such as 'How to Have a Firewise Home.' This year, 25 Firewise presentations, community and homeowner workshops with 4,666 in attendance were made at various venues, including community events, fire department open houses, safety expos and the SC Firefighters Association annual meeting. Presentations included information about Firewise and the Ready, Set, Go! Program. Efforts have primarily been concentrated in Oconee County, Charleston County and in Horry/Georgetown Counties where interest has been greatest. The Firewise mobile exhibit (and the Firewise Table Top exhibit) was used 6 times by SCFC, US Park Service and USFS personnel during the year to reach over 2,000 people at such places as fire department open houses, safety days, community festivals and events, and community chipping days demonstrating how homeowners can mitigate those risks to wildfire. Fuels mitigation plans, workdays and assessments were conducted throughout the state. The SCFC has conducted a total of 1291 community assessments to date with 1228 of those rating at moderate to extreme in regards to wildfire risk. 15 new assessments were completed covering 15 communities. Community Wildfire Protection Plans were written for 3 communities with a few at the fire department's request to address their entire coverage area. To date 212 Community Wildfire Protection Plans have been written in which 708 communities have benefitted.

Cooperative Firewise efforts are also occurring within communities around the Sumter and Francis Marion National Forests with Forest Service personnel. Community Wildfire Protection Plans are in progress for communities around USFS land in Berkeley, Charleston, Jasper and Oconee Counties with USFS and US Fish and Wildlife personnel. The Nature Conservancy has also participated in the CWPP development.

National Fire Plan grant funds were awarded to 23 communities in the amount of \$194,830 for various projects including installation of a leaf disposal site, underbrushing of undeveloped lots and common areas such as entrance roads, and assistance with community chipping days to reduce the fuel buildups within their communities. Additional funds were used for fuels reduction and mitigation projects involving prescribed burning, underbrushing and fuelbreak installation on 26 tracts (1,394 acres) for \$67,590.

**Wildfire Prevention:** A statewide wildfire prevention awareness effort was made across the state prior to the spring 2017 wildfire season to promote safe debris burning; escaped debris burns are the number one cause of wildfires in the state. We also initiated a PSA and billboard campaign in areas with high fire occurrence. Field personnel visited counties known to have high numbers of escaped debris burns, the number one cause of wildfires in the state. Also, these types of wildfires are also commonly found near communities putting them at risk (i.e. wildland urban interface). In cooperation with local fire

departments and some Clemson Extension Agents, SCFC field personnel throughout the state distributed "Think Before You Burn" (TBYB) promotional materials to businesses and public buildings. The distribution of materials included TBYB brochures, various other items, i.e. cups, koozies, slap bracelets, pencils and magnets with the county 1-800 burn numbers. Burning notification magnets were placed on the store counters for customers to pick up so they would have the appropriate county outdoor burning notification phone number handy.

Interviews were conducted with local media to increase public awareness.

<b>Fires by Cause</b>				
<b>Cause</b>	<b>Fires</b>	<b>Acres Burned</b>	<b>Average Acres per Fire</b>	<b>Percent of Total Fires FY2016-2017</b>
Lightning	59	956.5	16.2	2.86%
Campfire	33	10,697.6	324.2	1.60%
Smoking	40	124.2	3.1	1.94%
Debris Burning	1023	7,167.5	7.0	49.61%
Incendiary	384	3,885.4	10.1	18.62%
Equipment Use	108	891.6	8.3	5.24%
Railroad	12	14.9	1.2	0.58%
Children	73	180.2	2.5	3.54%
Miscellaneous	198	1,368.8	6.9	9.60%
Fireworks	13	17.6	1.4	0.63%
Power Line	86	270.4	3.1	4.17%
Structure	33	134.8	4.1	1.60%
<b>Totals</b>	<b>2,062</b>	<b>25,709.5</b>	<b>12.5</b>	<b>100.00%</b>

<b>Five-Year Summary: All Fires</b>					
<b>Fiscal Year</b>	<b>Acres Protected</b>	<b># Fires</b>	<b>Acres Burned</b>	<b>Avg. Acres/Fire</b>	<b>% Area Burned</b>
2012-13	13,657,033	1,799	10,223.4	5.7	0.07%
2013-14	13,657,033	1,823	9,425.00	5.2	0.07%
2014-15	13,657,033	1,427	6,637.3	4.7	0.05%
2015-16	13,657,033	989	5,445.7	5.5	0.04%
2016-17	13,657,033	2,062	25,709.5	12.5	0.19%
<b>Five Year Averages</b>		<b>1,620</b>	<b>11,488.2</b>	<b>6.7</b>	<b>0.08%</b>

<b>Total Burning Notifications by County - Fiscal Year 2017</b>			
<b>County</b>	<b>Acres Protected</b>	<b>Smoke Mgt. Notifications</b>	<b>Other Notifications</b>
Abbeville County	248,551	151	2,769
Aiken County	524,743	488	18,134
Allendale County	199,005	377	3,093
Anderson County	216,023	170	12,084
Bamberg County	202,862	321	1,931
Barnwell County	266,959	323	3,502
Beaufort County	130,448	198	11,001
Berkeley County	595,291	551	18,944
Calhoun County	151,294	283	3,577
Charleston County	318,526	273	7,894
Cherokee County	168,077	52	3,196
Chester County	315,565	77	3,264
Chesterfield County	416,239	390	6,925
Clarendon County	238,952	475	6,236
Colleton County	560,896	806	13,099
Darlington County	176,333	181	10,737
Dillon County	163,935	109	3,665
Dorchester County	272,524	241	10,966
Edgefield County	279,433	216	2,469
Fairfield County	408,433	164	2,464
Florence County	308,707	293	13,535
Georgetown County	400,136	398	11,143
Greenville County	296,082	112	12,777
Greenwood County	205,593	52	3,443
Hampton County	303,663	605	2,874
Horry County	493,012	367	23,705
Jasper County	341,036	541	3,784
Kershaw County	376,376	225	14,130
Lancaster County	291,845	169	4,806
Laurens County	337,499	95	4,848
Lee County	121,735	200	1,668
Lexington County	256,939	308	29,170
Marion County	226,896	107	6,100
Marlboro County	226,676	102	3,909
McCormick County	223,394	89	845
Newberry County	334,566	142	3,617
Oconee County	292,590	95	11,378
Orangeburg County	446,887	614	14,483
Pickens County	236,029	92	11,578
Richland County	352,904	253	7,488
Saluda County	196,376	134	1,763
Spartanburg County	286,496	114	9,015
Sumter County	268,338	221	13,334
Union County	277,640	53	453
Williamsburg County	407,761	884	8,909
York County	293,768	180	10,690
<b>Total</b>	<b>13,657,033</b>	<b>12,291</b>	<b>375,395</b>
Total Smoke Mgt. & Other Notifications			<b>387,686</b>

## **FOREST HEALTH**

The Forest Health Program, in cooperation with the state Department of Plant Industry, and the US Forest Service (USFS), maintains a program to detect, evaluate, and suppress forest pests. Through cooperative agreements, these agencies make their technical assistance and advice available to the SC Forestry Commission (SCFC).

The current forest pest detection and reporting system involves the reporting by field foresters of forest pests that are causing abnormal losses, that require control action, or which may present new problems. Aerial surveys are made periodically for specific pests to determine occurrence and the need for suppression action.

### **Major Insect Problems**

#### **Southern Pine Beetle and Bark Beetles**

In FY2016-2017, losses due to the Southern Pine Beetle (SPB) were minimal. On-the-ground and aerial surveys detected no signs of death attributable to SPB.

During the spring of 2017, pheromone traps were deployed in 32 counties to predict southern pine beetle population trends. No counties trapped enough beetles to predict a severe outbreak. Populations of SPB in 2017 continued to be low, except in Oconee and Pickens Counties, where populations were high enough to be in a Static-Moderate Prediction Trend. Little beetle activity has been found statewide. Surveys will continue as needed. *Ips* outbreaks from last summer in McCormick County appear to have calmed down with the wet spring weather.

The SCFC continued to participate in the SPB Prevention and Restoration Program funded by the USFS. This program's objective is to prevent or reduce the potential damage by SPB. SCFC personnel make forest management recommendations known to minimize future beetle damage. These include thinning, prescribed burning, planting at low density, matching planted species to site, and other mitigation measures. This program is managed by a coordinator whose salary is funded by the program. In 2016 2,219 acres of pine planting at a reduced tree density was completed.

#### **Emerald Ash Borer**

In August of 2017 emerald ash borer was found in Oconee, Spartanburg and Greenville Counties. Emerald ash borer is found in Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New York, North Carolina, Ohio, Ontario, Pennsylvania, Tennessee, Quebec, Virginia, West Virginia, Wisconsin and Georgia. We continue to monitor stressed, dying, or dead ash trees in South Carolina brought to our attention by the public.

#### **Walnut Twig Borer/Thousand Canker Disease**

Currently this beetle and the fungus it vectors has not been detected in South Carolina. On the east coast, they have been found in Tennessee, North Carolina, Virginia, Ohio, and Pennsylvania, but it has been three years since a walnut tree in these states has tested positive for the fungus. Clemson's Cooperative Agricultural Pest Survey (CAPS) has placed early detection traps in 12 counties and have not detected the walnut twig beetle.

#### **European (*Sirex noctilio*) Woodwasp**

This woodwasp is currently found in several counties in New York, Pennsylvania, Michigan, Connecticut, Ohio and Vermont. The spread of the European woodwasp has been slow in these regions, but movement of firewood and other solid wood could bring this insect to the southeast sooner than expected. This invasive species has not been found outside the above-mentioned states. Trapping has been discontinued but Southern State Forest agencies have developed recommendations in an action plan in the event it arrives in the southeast.

#### **Redbay Ambrosia Beetle/ Laurel Wilt Disease**

In November 2004, an exotic ambrosia beetle, *Xyleborus glabratus* Eichhoff, was discovered in a dead redbay tree on Hilton Head Island. The beetle attacks redbay trees and introduces a fungus (*Raffaelea lauricola*) into the tree. Since the discovery of *X. glabratus* in 2004, the beetle and its associated fungus have been found in sixteen (16) South Carolina counties: Jasper, Beaufort, Hampton, Colleton, Charleston, Bamberg, Barnwell, Allendale, Dorchester, Orangeburg, Horry, Georgetown, Berkeley, Lexington, Aiken and Sumter. The beetle and fungus have also been found in Georgia, Florida, Mississippi, and Alabama. Unfortunately, in the areas where the beetle has been found, there is a large loss of redbay (up to 90% in some locations). There is a concern that once the fungus has become established, native ambrosia beetles in the genus *Xyleborus* may transmit it to other hosts. However, so far it has only had an impact on redbay populations in South Carolina; decline of sassafras and other potential hosts in the Lauraceae has not been widespread in South Carolina.

## Major Disease Problems

### Oak Wilt

Oak wilt disease has been identified in Aiken, Barnwell, Chesterfield, Kershaw, Lancaster, Lee, Lexington, Richland, and Darlington counties. This disease appears to be static and causing losses only to low value oaks. Since there is potential for loss of valuable trees, including urban trees, surveys and on-call evaluations are made to evaluate the spread.

### Dutch Elm Disease

Dutch Elm disease has been confirmed in the past in Aiken, Anderson, Cherokee, Chester, Chesterfield, Edgefield, Fairfield, Greenville, Greenwood, Kershaw, Lancaster, Laurens, Lexington, Marlboro, Newberry, Oconee, Pickens, Richland, Saluda, Spartanburg, and York counties. It is expected to gradually spread through the state because the primary agent of spread is the smaller European elm bark beetle that occurs statewide. This disease has not been detected in South Carolina for many years and may be on the decline due to loss of susceptible cultivars and planting of resistant hosts.

### Dogwood Anthracnose

In 1988 a new anthracnose disease of dogwood was noted for the first time in South Carolina. This disease is caused by the fungus, *Discula destructiva*. Symptoms include foliage blighting, canker formation, and progressive deterioration. The fungus usually kills infected trees in two to three years. At this time infected trees have been found in Anderson, Greenville, Laurens, Oconee, Pickens, and Spartanburg counties. Dogwoods in those counties are monitored periodically to determine the rate of spread of this potentially devastating disease.

### Sudden Oak Death (caused by *Phytophthora ramorum*)

Sudden oak death is a disease caused by an oomycete in the genus *Phytophthora*. It is presently known to occur only on the West Coast in the United States. This disease kills oaks and causes leaf spots on many other plant species. Testing of eastern species of oaks in California has shown that they could be susceptible to this disease if the disease were to occur in the eastern United States. Unfortunately, several nursery plants infected with *Phytophthora ramorum* were shipped to South Carolina in 2004 from the area of known infestation. No local spread of the disease was detected and the infected nursery stock was destroyed.

As part of a Southeastern project, we are cooperating with Clemson University in a stream baiting survey to determine if the disease occurs in South Carolina. Stream baiting survey to detect the fungus that causes SOD continued in the spring of 2017. The pathogen has not been detected in SC since 2004.

### Cogongrass

Cogongrass, a non-native federally regulated noxious weed, has been detected in 13 South Carolina counties: Anderson, Pickens, Greenville, York, Aiken, Allendale, Hampton, Beaufort, Colleton, Dorchester, Charleston, Williamsburg and Florence. Most infestations are small, comprising a total of less than 2 acres, and all acres have been treated by Clemson University Department of Plant Industry. Seven (7) counties (York, Charleston, Allendale, Hampton, Beaufort, Williamsburg, and Florence) have active cogongrass sites while the sites in the remaining six counties are considered inactive. All sites (both active and inactive) will continue to be monitored to detect re-sprouting in the future.

### Miscellaneous Insect and Disease Checks

Commission foresters and Insect and Disease staff made approximately 40 field checks of insect and disease problems and made recommendations for prevention and control. Other inquiries were handled by telephone, mail, and personal contact.

### Insect and Disease Laboratory

During Fiscal Year 2017, the Insect and Disease Laboratory processed 4 samples submitted by SCFC employees and private individuals. Recommendations for control of various pests identified were given where needed. In addition to these samples, 2,779 southern pine beetles and 6,506 clerids were counted in the lab.

### Forest Health Surveys

The SCFC entered into agreement with the USFS to evaluate permanent Forest Health plots throughout South Carolina. This was done by the Resource Development Section and reported there. As another part of this program, the Forestry Commission also received additional funding for off-plot activity to survey for and report on other forest insects and diseases. 20% surveys for SPB were restricted to counties where trapping indicated SPB populations were high; Oconee, Anderson and Pickens Counties.

## **EQUIPMENT**

<b>Auction Budget</b>	<b>Unit Price</b>	<b>Price</b>
Two Ford F-150 4X4 Pickups (Investigators)	\$31,757	\$63,514
<b>State Forest Budget</b>	<b>Unit Price</b>	<b>Price</b>
One Chevrolet Silverado	\$24,393	\$24,393
One Chevrolet Colorado	\$27,611	\$27,611
One Ford F-150	\$30,978	\$30,978
<b>FIA Budget</b>	<b>Unit Price</b>	<b>Price</b>
One Ford F-150	\$29,116	\$29,116
<b>Total</b>		<b>\$175,612</b>

<b>Act 271</b> (Ordered in FY2016-2017 but not delivered by 6/30/17)	<b>Unit Price</b>	<b>Price</b>
Eleven Dozers w/ Winch	\$158,352	\$1,741,872.00
One Dozer w/ Lift Plows	\$157,386	\$157,386.00
Ten Transports (Automatic)	\$91,168	\$911,680.00
Two Transports (Manual)	\$88,140.00	\$176,280.00
Twelve Truck Bodies	\$21,845.00	\$262,140.00
Twelve ¾ Ton Pickups	\$28,468.00	\$341,812.00
<b>Total</b>		<b>\$3,591,170</b>

The Forestry Commission prepared and organized equipment for auction. The auction process now takes place exclusively online at [www.govdeals.com](http://www.govdeals.com). The sale of equipment netted the Forestry Commission approximately \$557,007.06.

## **LAW ENFORCEMENT**

During FY 2017 the Forestry Commission had 39 sworn Law Enforcement Officers statewide. Three of these were investigators that focused primarily on complex timber theft, timber fraud and woods arson cases.

Officers prosecuted 159 fire cases, 2 litter and environmental cases, 7 violations of state forest regulations, 3 pine straw theft cases, 10 miscellaneous cases and 1 game and fish case. Total fines collected were \$27,903.75. Fines collected from these cases are retained in the county where the offense occurred.

Forestry Commission Law Enforcement Investigators investigated 96 timber theft/ fraud cases which represented a loss of \$391,216.00 to the victims. Investigators collected and returned 54% or \$211,533.00 to the affected landowners. Forestry Commission officers arrested two individuals for woods arson who were responsible for 39 fires. During the year there were 493 fire investigations conducted, including 291 that were escaped debris burns. There were 56 Burn Site Inspections conducted and 44 Smoke Management Investigations completed.

## FOREST MANAGEMENT

There are 12.9 million acres of commercial forestland in South Carolina. According to 2013 National Woodlands Owner data (<http://www.fia.fs.fed.us/nwos/>), 88% of South Carolina's forests are privately owned, 51% of private forests are family-owned, and 82% of these owners live on the land. Forest industry has sold much of their forestland during the last several years and now owns only 169,600 acres (1.3%), which is down 92% since 2001. Public agencies (municipal, county, and federal) control 12.6% of South Carolina's forests.

The Forest Management Section assists South Carolina citizens with management and development of the forest resources of the state. Programs include woodland management assistance, reforestation assistance, forestry services, forest products utilization and marketing assistance, resource conservation and development, and urban & community forestry. These programs assist owners in growing more timber, aid industries in more efficient utilization of the timber resource, and foster conservation and multiple use of the forest resource. The urban & community forestry program strives to help local government, educational institutions and non-profit organizations develop and enhance the benefits provided by trees and greenspace where we live and work.

In addition to programs designed to assist private landowners and local communities, the Forest Management Section also coordinates development and management of over 90,000 acres of forestland included in the state forest system. These lands are owned by the Forestry Commission and provide forest based recreation opportunities and serve as examples of the benefits of active forest management. The State Lands Coordinator also assists other state agencies in the management of their forest resources.

### **FOREST MANAGEMENT ASSISTANCE**

Professional foresters from the Forestry Commission provide forest management advice and assistance to landowners. The land is examined and a written forest management plan is prepared. Recommendations for management may include such silvicultural practices as forest protection, reforestation, harvesting, prescribed burning, wildlife habitat improvement, and recreation.

This year, 1,123 management plans were prepared for 73,078 acres. Beginning in July of 1999, customer satisfaction surveys were sent to every landowner that received a forestry management plan. In FY2017-2017, 89% of the landowners that responded to the survey indicated that they were satisfied with the management plan they received. Of these landowners, 85% also indicated that they intended to complete most or all of the recommendations in their plan. Where practical, the landowner is referred to consulting or industrial foresters for assistance in carrying out management recommendations. This year 114 cases were referred to consulting foresters and 12 were referred to industrial foresters.

### **COST-SHARE PROGRAMS**

#### **Forest Renewal Program (FRP) - State**

In 1982 the program was funded for the first time by a \$100,000 state appropriation. This permitted an assessment of \$400,000 from forest industry, and created a \$500,000 Forest Renewal Fund. The state funding was doubled effective July 1, 1996. This increase permitted an assessment of \$800,000 increasing the program to \$1,000,000. Beginning in 2001, the objectives of the Forest Renewal Program were expanded to include providing funds to help match federal grants that provide financial support for the Forest Inventory and Analysis (FIA) program. This practice was discontinued in 2015.

#### **Conservation Reserve Program (CRP) - Federal**

The Conservation Reserve Program (CRP) began with crop year 1986 and was renewed with the passage of the 2014 Farm Bill. This program provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. CRP reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. CRP is administered by the USDA Farm Service Agency, with the SC Forestry Commission providing technical assistance for forestry practices.

#### **Environmental Quality Incentives Program (EQIP) – Federal**

The Environmental Quality Incentives Program (EQIP) was created by the 1996 Farm Bill. EQIP provides financial assistance to help plan and implement conservation practices that address natural resource concerns and help improve soil, water, plant, animal, air and related resources on agricultural land and non-industrial private forestland. An additional purpose of EQIP is to help landowners meet federal, state, tribal and local environmental regulations.

#### **Southern Pine Beetle (SPB) – Federal**

The SPB Prevention and Restoration Cost-Share Program (SPB Program) was created in 2006 for non-industrial private forest landowners. It seeks to mitigate future loss from SPB by managing pine density through prevention and restoration practices. These practices ensure that a pine stand will be of merchantable size before the stress of being overly dense develops. Receiving income and maintaining vigorous growth are usually enough incentives for landowners to thin merchantable sized pine stands and, in return, reduce the potential loss from SPB.

<b>Statewide Accomplishments for All Cost-Share Programs</b>
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<b>2016-2017</b>							
<b>Reforestation and Timber Stand Improvement</b>							
<b>Program</b>	<b>Number of Landowners</b>	<b>Acres Planted</b>	<b>Prescribed Burning</b>	<b>TSI Acres</b>	<b>Commercial Thinning</b>	<b>Precommercial Thinning</b>	<b>Cost Share Payments</b>
FRP	254	9,726	0	361	0	0	\$821,145
SPB	60	2,461	0	0	0	128	\$243,142
<b>Totals</b>	<b>314</b>	<b>12,187</b>	<b>0</b>	<b>361</b>	<b>0</b>	<b>128</b>	<b>\$1,064,287</b>

The SC Forestry Commission surveyed landowners who received cost-share assistance both at the beginning of the process and at the end. This survey indicated that 93% of customers were satisfied with the assistance they received initially and the follow-up survey indicated that 94% were satisfied with the assistance received at the end of the process.

### **FRP MONITORING**

The purpose of monitoring FRP applications is to fulfill the agency's regulatory responsibility regarding maintenance of FRP practices. SC Code of Laws 48-28-80 requires that landowners who receive FRP cost share assistance must maintain the land in a forested condition for 10 years or until a commercial harvest. SC Code of Laws 48-28-50 requires the SCFC to initiate recollection of FRP cost-share funds if a landowner does not meet the requirements of SC Code of Laws 48-28-80. SCFC Procedure 3214.17 was established to provide guidance regarding the monitoring of FRP practices.

During FY2017 the SCFC completed monitoring of 256 sites for compliance with FRP maintenance requirements. Three sites, comprising 102 acres, were found to be out of compliance and recollection of the cost-share funds was initiated.

### **SEEDLING SURVIVAL**

Survival checks were made on 10 percent of plantings using a row count or tenth acre plot method for determining survival. An average of all survival checks was used to determine the statewide survival of 83% for loblolly pine plantings. Survival rates for longleaf pine plantings were tabulated separately. Plantings with longleaf seedlings had a survival rate of 82% when containerized stock was used. Due to a decline in the use of bare root longleaf stock no bare root longleaf plantings were sampled during FY2016-2017.

<b>Forest Management Assistance, FY2016-2017</b>						
	<b>Non Cost-Share</b>		<b>Cost-Share</b>		<b>Forest Stewardship</b>	
<b>County</b>	<b>Exams</b>	<b>Acres</b>	<b>Exams</b>	<b>Acres</b>	<b>Plans</b>	<b>Acres</b>
Abbeville	1	110	17	944	4	414
Aiken	2	88	17	1105	0	0
Allendale	4	512	15	1165	2	600
Anderson	4	176	8	320	5	141
Bamberg	2	340	18	1061	1	42
Barnwell	7	242	11	555	1	55
Beaufort	0	0	4	253	1	204
Berkeley	6	572	4	138	4	287
Calhoun	0	0	15	872	0	0
Charleston	10	925	5	165	1	38
Cherokee	4	560	6	156	2	1032
Chester	7	833	13	510	2	452
Chesterfield	0	0	95	3398	3	914
Clarendon	0	0	27	2455	6	938
Colleton	3	150	21	930	8	2579
Darlington	1	20	36	2643	0	0
Dillon	2	93	13	511	4	1043
Dorchester	1	15	7	259	1	37
Edgefield	3	219	0	0	3	875
Fairfield	2	348	21	4055	2	634
Florence	26	1338	31	1343	1	130
Georgetown	4	204	18	473	1	72
Greenville	4	229	5	153	0	0
Greenwood	0	0	14	589	3	130
Hampton	1	11	24	1214	2	209
Horry	5	222	63	1845	4	1427
Jasper	0	0	10	632	0	0
Kershaw	0	0	29	1632	5	909
Lancaster	0	0	10	510	0	0
Laurens	1	41	14	1002	5	1576
Lee	3	67	37	1684	1	31
Lexington	11	453	16	721	4	271
Marion	1	9	26	1012	1	95
Marlboro	1	101	21	1196	3	128
McCormick	0	0	2	78	0	0
Newberry	6	480	26	1389	2	392
Oconee	3	79	0	0	2	104
Orangeburg	4	0	36	2166	5	917
Pickens	4	149	2	202	1	102
Richland	15	350	5	213	3	141
Saluda	4	293	12	731	0	0
Spartanburg	7	307	9	213	3	357
Sumter	0	0	14	723	1	16
Union	1	201	9	488	1	81
Williamsburg	9	287	41	1559	4	1160
York	7	352	17	875	1	32

<b>State Totals:</b>	176	10,375	844	44,138	103	18,565
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## **FOREST STEWARDSHIP**

The Forest Stewardship Program is a cooperative effort among the USDA Forest Service, Forestry Commission, other natural resource agencies and organizations, forest industry, and private forest consultants in South Carolina to encourage the long-term stewardship of non-industrial private forest lands. Landowners are provided technical assistance by having a multiple resource management plan developed for their property addressing their management objectives.

During the past year, 103 Stewardship Plans were written in South Carolina on 18,565 acres. South Carolina Forestry Commission foresters authored all of these plans. Thirteen landowners (comprising 4,946 acres) were recognized as Forest Stewards for FY2016-2017.

In addition Forest Stewardship Staff completed FSP Implementation Monitoring conducting on the ground inspections on 41 Forest Stewardship Plans encompassing 10,081 acres. During FY2016-2017 it is estimated that 83% of all Forest Stewardship Plans are being implemented. In addition to adhering to the standard implementation monitoring protocol for FY2016-2017 the SCFC included additional evaluation of specific management outcomes that have resulted from the implementation of Forest Stewardship Plans. Results indicate that Forest Stewardship Plans are having a positive impact on specific management outcomes of interest in SC (see table below). In FY2016-2017 we also evaluated if the landowner being monitored was “highly engaged” at the time of monitoring. The Sustaining Family Forest Initiative (SFFI) classifies a landowner as “highly engaged” if they have reported doing several activities to protect and improve their woodlands. In SC the SFFI classifies that 8% of all family forest landowners owning 10+ acres are highly engaged. Results from Forest Stewardship Implementation Monitoring indicate that 56% of landowners with Forest Stewardship Plans are highly engaged. Thus landowners with Forest Stewardship Plans are significantly more likely to be engaged in the active management of their woodlands than the average landowner.

<b>Forest Stewardship Monitoring Evaluation Results 2016-2017</b>	
<b>Management Outcome</b>	<b>Percent Implemented as Result of Plan</b>
Timber Harvest	54
Tree Planting	44
Prescribed Burning	44
Wildfire Prevention Activity	58
Invasive Species Control	22
Wildlife Habitat Enhancement	66
Utilized Cost Share Assistance	20
Used Stewardship Plan to Qualify for Farm Bill Program	17
Used Forest Stewardship Plan to Qualify for Third Party Certification (Tree Farm, etc.)	8

Of the landowners who returned customer surveys during FY17, 99% of them indicated they were satisfied with the Forest Stewardship management plan they received and 100% of them indicated that they intended to complete most or all of the recommendations in their plan.

## **FORESTRY SERVICES**

Through this program the SC Forestry Commission provides assistance to landowners and other state agency lands with afforestation, reforestation, and maximization of production from their woodlands. The landowner is charged the cost of all services performed.

These services were available to landowners during FY2016-2017:

**Firebreak Plowing** - performed by Forestry Commission employees using agency equipment for \$140 for the 1st hour and \$85 for each additional hour. In FY2006, separate rates were established for firebreaks constructed with a heavy tractor. For FY2016-2017, these rates were \$160 for the 1<sup>st</sup> hour and \$100 for each additional hour.

**Prescribed Burning** - performed by Forestry Commission employees using agency equipment for \$21 per acre for understory burns and \$30 per acre for site preparation burns and for understory burns in mountainous terrain. Firebreak plowing costs are not included. The minimum charge for this service was \$500 during FY2016-2017.

**Prescribed Burning Standby** - an agency tractor and employee on standby at burning site for \$80 for the 1st hour and \$30 for each additional hour while the landowner performs burning under an approved plan. The minimum charge for this service was \$110.

**Equipment Rental Program** – agency-owned tree planters and drum choppers made available to private landowners at rates of \$5 and \$20 per acre respectively. The minimum charges were \$25 and \$100.

**Timber Marking** - performed by Forestry Commission employees at the rate of \$10 per thousand board feet and \$5 per cord.

<b>Forestry Services</b>			
<b>Service</b>	<b>Number of Tracts</b>	<b>Units of Measure</b>	<b>Receipts FY2017</b>
Firebreak Plowing	399	1,166 miles	\$135,878.10
Prescribed Burning	107	10,330 acres	\$226,810.00
Prescribed Burning Standby	21	1,698 acres	\$4,425.00
Equipment Rental	0	-	\$0.00
Water Bar Construction	3	40 bars	\$1,143.00
Timber Marking	0	-	\$0.00
<b>Totals</b>	<b>530</b>	<b>-</b>	<b>\$368,256.10</b>

The SC Forestry Commission sends customer surveys to all landowners who receive forestry services. In FY17, 96% of our customers reported they were satisfied with our forestry services and 96% of those responding indicated they plan to use our services again.

## **URBAN AND COMMUNITY FORESTRY**

The Urban and Community Forestry program exists to provide technical, financial, and educational assistance to municipal and county governments and others for the purpose of creating, maintaining, and enhancing community forest conservation and management within their jurisdictions; to provide for, coordinate and/or conduct information, education and training regarding community forestry, wildland-urban interface issues, and arboricultural best management practices; and to provide grants to local governments, non-profit organizations, and educational institutions of higher learning to create, enhance and support long-term local and regional community forestry programs. This assistance is accomplished through a variety of ways: direct contact, diverse and cooperative partnerships, and the financial assistance grant program.

Expected results include, but are not limited to: improved air quality; energy conservation through reduced heat island effect in downtown areas; local government recognition and management of the community tree resource; sustained financial support on the local level for community tree management; more professional public tree managers to provide safe walkways, streets and parks; and more public trees planted and maintained to beautify, cool, and clean South Carolina communities. These results occur when a community or county government works toward accomplishing a natural resource inventory and management plan, employs professional urban forest staffing, adopts and implements natural resource policy, and works in partnership with local advocacy organizations.

### **Urban and Community Forestry Financial Assistance Program**

The Community Forestry Financial Assistance and Partnership Program is a state program funded with federal-level monies appropriated each year by Congress. When available, these funds are funneled through the US Forest Service to the SC Forestry Commission to administer. South Carolina received \$87,500.00 in federal funding this year through the competitive grant process (Landscape Scale Restoration). The goal of the grant project is to advocate for the use of the urban forest as a Stormwater Best Management Practice (BMP) as part of the required stormwater management (MS4) programs for municipalities. This is a regional effort, with South Carolina as the lead state and North Carolina, Alabama, Florida, Georgia, Oklahoma and Virginia as partners. The project will use land cover data to map project municipality's urban tree canopy, impervious areas, buildings, forest patches, stream buffers and green corridors, and identify areas subject to excessive runoff and flooding risk.

The Urban and Community Forestry program also provided \$10,000 in pass-through funds to Trees SC (urban and community forestry council) to assist with urban forestry and arboricultural training and continuing education for public tree managers and other professionals.

**Tree City/Tree Line USA/Tree Campus**

Sponsored on the national level by the Arbor Day Foundation and others, the Tree City USA program is administered in South Carolina by the SC Forestry Commission. This program seeks to stimulate and promote the management of community trees by recognizing towns and cities which meet the following criteria: (1) establishment of a municipal tree care ordinance, (2) expenditure of at least two dollars per capita on their community forestry program, (3) establishment of a legally constituted tree board or permanent staff to address tree issues, and (4) observance of Arbor Day by a mayoral proclamation and official ceremony. The SC Forestry Commission recognized and awarded 38 municipalities under the Tree City USA program during FY17.

The Tree Line USA program, also sponsored by the National Arbor Day Foundation, seeks to stimulate and promote proper utility line clearing and safety techniques of private and public utility companies. In order to qualify as a Tree Line USA, a utility must meet three criteria: (1) perform quality tree care regarding pruning, trenching and tunneling methods; (2) provide opportunities for annual utility line worker training; and (3) sponsor an ongoing community tree planting program to include an Arbor Day celebration and at least one educational mailing to customers. The Forestry Commission and the Arbor Foundation recognized 2 municipally-owned utilities as Tree Line USA certified in FY17.

The Tree Campus USA program, sponsored by the National Arbor Day Foundation, encourages institutions of higher learning to promote proper management of campus trees. SC maintained 6 Tree Campus USA institutions in FY17.

**Technical Assistance and Educational Program**

Continued funding for a part-time Regional Urban Forester increases our program exposure and assistance to customers across the state of South Carolina. Through the direct technical assistance of the community forestry staff to municipalities, schools and partner organizations, the urban and community forestry program accomplished the following in FY17 (see next page):

<b>Types of Technical Assistance</b>	<b>Program Accomplishments Community Forestry Staff</b>	
	<b># of Entities</b>	<b># of Assists</b>
Program Development/Expansion		
Municipal Government	66	157
Non-profit/trade organizations	15	59
Educational Institutions	6	7
County Government	16	46
State Government	7	20
Others	7	20
<b>TOTAL</b>	117	309

<b>Tree City USA</b>	38
<b>Tree Campus USA</b>	6
<b>Tree Line USA</b>	2

<b>Public Information/Education</b>	<b>Adults</b>	<b>Youth</b>	<b>Total</b>
<b># Programs</b>	16	0	16
<b># People</b>	1,048	0	1,048
<b>#Seat Hours</b>	5,628	0	5,628

## **STATE FOREST / STATE LANDS**

### **HARBISON STATE FOREST**

Harbison State Forest (HSF), located approximately 9 miles from downtown Columbia, encompasses 2,176 acres. The Forest was purchased in 1951 and became the site of the agency headquarters in 1963. Following the adoption of a Master Plan in 1981, the Forest began to be developed as an Educational State Forest. Recreational use grew dramatically in the early 90's with Harbison soon gaining the reputation as a mountain biking mecca for the area. A yearlong vehicle survey conducted during FY17 provided an estimate of 132,000 user visits.

<b>Receipts for Operating Budget – FY17</b>	
<b>Activity</b>	<b>Receipts</b>
Timber Sales	\$0.00
Conference Room Rentals	\$2,491.00
Trail Permits	\$66,233.10
Campsite Rentals	\$1,080.00
Trail Donations	\$949.84
Other	\$0.00
<b>Total</b>	<b>\$70,753.94</b>

Note: 25% of all receipts are paid to the Richland County School System. This amounted to \$16,558.28 for the fiscal year. (Donations and rental income are not included when calculating the total to be dispersed to the school system.)

#### **Silvicultural Practices**

Five prescribed burns were conducted during FY17 totaling 264 acres. No timber sales took place.

#### **Forest Protection**

No wildfires occurred during this fiscal year. Trees that were considered hazardous to forest visitors and/or to buildings were felled.

#### **Recreation/Education**

Several events were held on the trails at Harbison during the 2016-2017 fiscal year. The Friends of Harbison State Forest (FoHSF) held their 11th annual "Take a Kid Mountain Biking" day. This event helped raise awareness of the sport to a younger generation and increased awareness of the state forest. HSF was also the site for seven races: two 10k, one 50k, two half marathon foot races, and two mountain biking races. HSF was the host site of the "Blues, Berry, and BBQ Festival" for the second year in a row

In addition to these events, several trail work days were conducted during FY17. These events included improving the trails by pruning of overhanging branches and brush and the rehabilitation of wet areas and closed trails. FoHSF members have taken on more responsibility in the care of the trail system with reduced SCFC staffing. This group continues to meet on a monthly basis to plan events and promote the Forest. The mission of the Friends group is to "preserve and promote the recreational and educational aspects of this urban forest resource." Current membership of this group is estimated at 100 individuals.

Scouts and other organized groups continue to use the four primitive camping facilities at Harbison. Harbison's camping facilities were used by 24 groups this fiscal year for a total of 540 users. One Eagle Scout project took place on Harbison, which consisted of rebuilding two foot bridges that had been destroyed by the flood in 2015.

The canoe landing at Harbison State Forest provides access to the Broad River. During the 2016-2017 fiscal year, 62 groups used this facility for a total of 149 paddlers.

#### **Wildlife Management**

Five wildlife viewing areas totaling 2 ½ acres are maintained each year.

#### **Rare, Threatened, and Endangered Species Management**

No threatened or endangered species have currently been found on Harbison State Forest.

#### **Research**

DNR collected survey samples for the North American Bat Monitoring Program.

## MANCHESTER STATE FOREST

Manchester State Forest (MSF), located in Sumter County and Clarendon County, is currently comprised of 28,764 acres. From 1939 to 1955, MSF was leased by the State of South Carolina from the federal government and managed by the South Carolina Forestry Commission. The State received title to the property on June 28, 1955.

<b>Receipts for Operating Budget – FY17</b>	
<b>Activity</b>	<b>Receipts</b>
Timber Sales	\$873,587.73
Pine Straw Sales	\$ 76,000.00
Land Lease Payments	\$36,851.72
Wildlife Management Area	\$92,778.80
Trail and Special Use Permits	\$24,155.00
Year End Refund	\$1,708.88
<b>Total</b>	<b>\$1,105,082.13</b>

Note: 25% of all forest receipts are paid to Sumter and Clarendon County School Systems for a total of \$275,843.31. (Donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems.)

### Silvicultural Practices

A total of 637 acres were prescribed burned for wildlife habitat enhancement, hazard reduction, hardwood control, aesthetic, and site preparation purposes; 470 acres were sold for final harvest cuts and 221 acres were sold for improvement cuts (thinning); and 459 acres were sold for pine straw raking. Inventory data was collected on 361 plots which covered 818 acres on 36 different stands.

The following species and number of seedlings were planted:

	<u>Acres</u>	<u>Seedlings</u>
Containerized longleaf pine	0	0
Bareroot loblolly pine	0	0

### Forest Protection

No wildfires occurred this year. Personnel assisted regional personnel as well as local fire departments with several fires which were adjacent to the Forest as well as in and out of state assignments.

### Recreation:

Recreational use continues to be heavy. Hunting, fishing, horseback riding, motorcycle/ATV riding, and use of the rifle/pistol range continue to be favorite activities. Mountain bike riding has all but ceased due to the increase of free mountain bike riding offered at Poinsett State Park which is managed by SCPRT.

Recreational permit sales consisted of 2,782 daily permits and 421 annual permits for a total of 3,203 permits. This does not include hunting or fishing users. Revenue from trail use permits totaled \$24,155.00

Four special use permits were issued for organized events.

1. Manchester Trail Riders Fall Ride on October 29, 2016; 161 riders
2. SERMA AMA East Hare Scramble Championship on January 29, 2017; 327 riders
3. SERMA 47<sup>th</sup> Annual Sumter National Enduro on February 5, 2017; 827 riders
4. Manchester Trail Riders Spring Ride on April 04, 2017; 105 riders

### Education:

The MSF director is a member of Central Carolina Technical College's Natural Resource Management (NRM) Committee. The committee makes curriculum suggestions and works with school administration to improve the NRM program. Manchester also hosts some of the classes for field training labs (timber cruising, seedling planting density and survival, ecology, etc.)

MSF personnel participated in the Wood Magic Forest Fair conducted by the SC Forestry Commission and partners.

### Wildlife Management:

23,135 acres of MSF are presently included in the Wildlife Management Area Program through a cooperative agreement between the SC Department of Natural Resources (DNR) and the South Carolina Forestry Commission.

Four public dove fields consisting of 220 acres were planted in sunflowers, corn, and wheat. Six hundred forty acres are maintained as wildlife openings. MSF has a duck impoundment that consists of 297 acres.

Wildlife surveys are conducted in conjunction with DNR for fox squirrels, turkey, deer, quail, and other species.

**Rare, Threatened, and Endangered Species Management:**

Currently five clusters of red-cockaded woodpeckers are maintained. Colony sites continue to be monitored along with scouting for new cavity and start trees in cooperation with biologists from the neighboring Poinsett Weapons Range (US Air Force).

**Research:**

In coordination with the SCFC Nursery Section a number of sites are provided for clone banks, seed orchards, and progeny tests.

One research special use permit was issued for a study comparing the genetic make-up of common hackberry to dwarf hackberry.

Infrastructure maintenance continued on approximately 106 miles of unimproved dirt roads on MSF including grading and mowing.

**WEE TEE STATE FOREST**

Wee Tee State Forest (WTSF), located on the Santee River in lower Williamsburg and Georgetown Counties, was acquired by the South Carolina Forestry Commission in November of 2003 through the partnership of eight participants. These partners included the South Carolina Forestry Commission, South Carolina Department of Natural Resources, The Conservation Fund, USDA Forest Service, Forest Legacy Program, US Fish and Wildlife Service, North American Wetlands Conservation Act Grant, Ducks Unlimited, National Wild Turkey Federation, and Anheuser-Bush. WTSF contains 12,394 acres of which 770 acres is comprised of planted loblolly pine plantations and upland pine-hardwood types and the remaining 11,624 acres is comprised of bottomland hardwood types with the associated oxbow lakes and creeks. Being in the Santee River Focus Area of Ducks Unlimited's Lowcountry Initiative, it is a very significant, unfragmented bottomland hardwood forest. Its significance lies in its watershed and water supply protection, habitat for wildlife and a number of threatened and endangered species, and the opportunities it provides for recreation, forest practices demonstration, and education.

<b>Receipts for Operating Budget FY17</b>	
<b>Activity</b>	<b>Receipts</b>
Timber Sales	\$0.00
Wildlife Management Area	\$48,347.44
<b>Total</b>	<b>\$48,347.44</b>

Note: 25% of all forest receipts were paid to Williamsburg and Georgetown Counties for a total of \$12,086.86. (Donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems.)

**Silvicultural Practices:**

No timber sales occurred this year. No prescribed burns were conducted this year.

**Forest Protection:**

Gates have been constructed and placed on all known entrances into WTSF to control access for the protection of the property and infrastructure.

**Recreation:**

Hunting, fishing, canoeing, and kayaking continue to be the main recreational activities.

**Wildlife Management:**

All of WTSF is included in the Wildlife Management Area Program through a cooperative agreement between the SC Department of Natural Resources and the South Carolina Forestry Commission.

**Research:**

No research special use permits were issued.

**SAND HILLS STATE FOREST**

Sand Hills State Forest (SHSF) covers 46,838 acres with 45,338 acres in Chesterfield County; 1,000 acres in Darlington County; and 500 acres in Kershaw County. The Forest was operated under a use agreement with the federal government from 1939 until 1991. In July of 1991, title to SHSF was transferred to the South Carolina Forestry Commission.

**Receipts for Operating Budget – FY17**

Since 1967, SHSF has been totally self-supporting.

<b>Receipts for Sand Hills Operating Budget</b>	
<b>Activity</b>	<b>FY17</b>
Timber & Stump Sales	\$350,095.73
Pinestraw Sales	\$1,298,593.15
WMA Payment	\$36,349.55
Rent State Owned Property	\$4,964.00
Rent Farmland (CRP)	\$0.00
User Fees	\$4,163.00
Prior Year Refund	\$2,469.27
Donations	\$0.00
<b>Total</b>	<b>\$1,698,934.70</b>

Note: 25% of receipts were paid to Chesterfield, Darlington and Kershaw County School Systems. Donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems.

<b>County Payments</b>	
<b>County</b>	<b>FY17</b>
Chesterfield	\$407,798.75
Darlington	\$10,336.14
Kershaw	\$4,165.47
<b>Total</b>	<b>\$422,300.36</b>

### **Silvicultural Practices**

A total of 1,363 acres were prescribed burned for wildlife habitat enhancement, hardwood control, and fuel reduction and 42 acres were planted with longleaf pine seedlings.

### **Forest Protection**

One wildfire occurred on SHSF during FY17, encompassing 35 acres.

### **Pinestraw and Timber**

In 1999 SHSF started a pinestraw enhancement program. Under this program, an individual from the public can enter into a multi-year contract with the Forestry Commission to rid longleaf pine stands of scrub oaks for pinestraw production. The individual agrees to control 90% of all hardwoods on a tract of land using herbicides. In exchange, they may harvest all of the pinestraw that falls during the contract period. When the contract expires, the acreage becomes part of SHSF's quality straw production program. The straw from these areas is offered for sale on a lump sum, sealed bid basis.

In FY17 SHSF had 1 timber sale. This sale consisted of approximately 507 acres and generated \$294,627.50.

FY17 SHSF issued 3 enhancement contracts which in 5 pine stands for a total of 117 acres. Revenue from these contracts was \$8,775.00. At the end of FY17 there were a total of 32 active enhancement contracts which consisted of 121 pine stands that totaled 5,117.9 acres.

SHSF sells pinestraw through bid sales and negotiated sales. In FY17 there were 5,106 acres sold on bid sales for \$597,658.75 and 4985.8 acres sold on negotiated sales for \$665,640.40.

As a result of increased pinestraw activity on Sand Hills State Forest, a vehicle registration system was implemented to ensure that only licensed, insured vehicles were operating on the Forest. The registration stickers provide a visible means to those patrolling the Forest that the participant has complied with the program. The registration stickers are used for pinestraw sales and for state forest users that want to access the "authorized vehicles only" truck trails. In FY17 Sand Hills State Forest issued 359 stickers.

### **Recreation**

Recreational use of the Forest continues to be fairly heavy. Hunting, fishing, hiking, bird watching, and camping continue to be favorite activities. Equestrian use on SHSF remains low due to the free riding that is offered at H. Cooper Black Recreational Area under the management of SCPRT.

Sugarloaf Mountain provides seven primitive camping sites for family camping and eight primitive equestrian campsites. Personnel booked 155 reservations for these sites this year. An estimated 3,299 visitors used the campsites and trails. Campsites rental rates are \$15 per site for sites with shelters and \$10 per site for those without shelters. SHSF received \$4,964.00 in revenue from camping during FY17.

Trail use permits for horseback riding decreased to 106 permits in FY17. Revenue from trail use permits totaled \$4,163.00

*\*Number of visitors does not include day users nor does it include any visitors from any other user group (i.e. hunters, fishermen, birdwatchers, pinestraw workers, etc.).*

Free-use permits are issued for any activity at SHSF that does not have a fee. Personnel issued 27 free-use permits this year. Eleven of the permits were for raking pinestraw for personal use, 15 for gathering firewood, and one for gathering pine cones.

Four special-use permits were issued for organized events.

1. SHSF Stampede Endurance Ride on October 29, 2016 had 130 riders and volunteers and received \$1,255 in fees.
2. Rally Racing Clinic on March 2, 2017 had 25 participants and received \$75 in fees.
3. Sand Blast Rally on March 4 2017 had 100 competitors' entries with 50 cars, 31 motorcycles and received \$1,500 in fees.
4. Spring Fling Endurance Ride on April 8, 2017 had 82 riders, volunteers and received \$410 in fees.

These events bring many visitors to Sand Hills State Forest and surrounding areas and have a positive economic impact on the area. The local involvement and sponsorship have increased each year that these events have been held.

### **Education**

Personnel visited and presented programs to the Darlington County Institute for Technology (9<sup>th</sup>-12<sup>th</sup> Grade), Long Middle School, McBee High School and the Palmetto Learning Center. In addition to visiting classrooms, SHSF personnel also spoke to several civic clubs and participated in the Wood Magic Forest Fair.

### **Wildlife Management**

47,174 acres of the Forest is included in the Wildlife Management Area Program. This is a cooperative agreement between the SC Department of Natural Resources (DNR) and the SC Forestry Commission. SHSF has two public dove fields. The Wilkes Chapel field is 57 acres and planted in corn, sunflowers, and bicolor. The Davis Field is 40 acres and is planted in corn, sunflowers, and bicolor.

Sixty acres (50 plots) were planted as wildlife food plots. These plots were planted in wheat. All plantings were fertilized at the recommended rates. All manageable bicolor patches in Compartments 11, 12, 13 & 14 were bush hogged.

SHSF continues to conduct surveys for DNR. Ducks, turkey and quail were surveyed to track population trends.

### **Rare, Threatened and Endangered Species Management**

Population Trends: There are currently 91 managed red-cockaded woodpecker clusters on SHSF. Eighty-one clusters were active during FY17. One new cluster was formed. Of those 81 active groups, 76 can be considered potential breeding groups, 5 are solitary males. Seventy-four first nesting attempts were made; 72 were successful. One hundred eighteen chicks fledged in FY17. Two new trees were found, 6 inserts were installed, and only 3 trees died.

### **Law Enforcement**

Officers issued no citations during FY17. Both officers assisted with hurricane evacuations.

### **Research**

A longleaf pine natural regeneration research project in conjunction with the US Forest Service is still ongoing and has been in effect since 1978.

### **POE CREEK STATE FOREST**

Poe Creek State Forest (PCSF) is composed of two tracts of land totaling 2,511 acres. The Poe Creek tract is located in Pickens County adjacent to SC Highway 11 and contains 1,806 acres. This property was purchased from Crescent Resources, Inc. on April 6, 1999. Approximately 800 acres is under forest management with 610 acres of planted pine and 190 acres have been clearcut and allowed to regenerate naturally to native hardwood species. The remaining 1,006 acres are in natural upland hardwood type and a mixture of white pine and hardwoods. The steep terrain in this area limits the forest management activities that can be implemented. The Piedmont Forestry Center (PFC) tract, located 5 miles north of Salem in Oconee County, encompasses 705 acres. It includes a conference center, picnic shelter, and two houses that are available for rental groups. The timber on this property is managed along with that on PCSF.

<b>Receipts for Operating Budget – FY17</b>	
<b>Revenue Sources</b>	<b>Dollar Amount</b>
Timber Sales	\$0
WMA Payment	\$15,932.00
Rentals	\$4,320.00
<b>Total</b>	<b>\$20,252.00</b>

Note: 25% of all forest receipts were paid to Pickens and Oconee County Schools for a total of \$3,982.99 (Donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems).

**Silvicultural Practices**

No timber sales occurred on PCSF Forest during FY17 and no prescribed burns were conducted. White pine and Virginia pine cones were collected from the orchards for SC Forestry Commission and NC Forest Service nurseries.

**Recreational/Education**

Use of the PCSF during FY17 was heavy, with numerous individuals and groups taking advantage of this beautiful facility.

<b>Poe Creek State Forest Use, FY17</b>		
<b>Use</b>	<b>Days</b>	<b># of People</b>
Gatehouse Rental	9	22
Cabin Rental	62	164
Conference Room	1	35
Scouts	9	65
Wood Magic Forest Fair	4	624
Dove Shoots	7	217
Other & Fishing Rodeo	54	~728
<b>TOTALS</b>	<b>146</b>	<b>1855</b>

**Forest Protection**

No wildfires occurred on PCSF this fiscal year.

**Wildlife Management**

The SC Forestry Commission and the Department of Natural Resources cooperate on the planting and management of a 40-acre dove field at the Piedmont Forestry Center. The PFC and PCSF are both in DNR's Wildlife Management Area program and are open to public hunting. DNR fisheries also stocks one mile of Cheohee Valley Creek that runs through the Piedmont Forestry Center property.

**Rare, Threatened, and Endangered Species Management**

Poe Creek State Forest continues to provide habitat for several populations of federally endangered plants.

**Infrastructure**

Road access at both the Piedmont Forestry Center and the Poe Creek tract was maintained through mowing of road shoulders and grading where needed.

**Research**

Dr. Patrick McMillan, professor at Clemson University, continues to conduct research on Poe Creek.

**NIEDERHOF FORESTRY CENTER**

Niederhof Forestry Center (NFC) is located just north of the town of Tillman and approximately 9 miles northwest of Ridgeland in Jasper County and encompasses 1,594 acres. The SCFC Nurseries Section manages some of the property for tree improvement and as a production seed orchard. The remaining acreage is managed as multiple use demonstration forest and for outreach activities that include specialized hunts.

**Receipts**

No revenue was generated this year.

**Silvicultural Practices**

Twenty-five acres were controlled burned during FY17.

**Forest Protection**

Controlled burning has improved the health of the young longleaf pine, stimulating height growth and reducing the incidence of brown spot needle disease. No wildfires occurred on NFC this fiscal year.

**Wildlife Management**

Approximately 18 acres of wildlife food plots were maintained with funding provided by Quality Deer Management Association (QDMA), National Wild Turkey Federation (NWTf), and Lowcountry RC&D.

**Rare, Threatened, and Endangered Species Management**

No rare, threatened, or endangered species are known to occur on Niederhof Forestry Center.

**Infrastructure**

Road access was maintained at the Niederhof Forestry Center through mowing.

**Outreach**

<b>Niederhof Hunts FY17</b>				
	<b>Number of Hunt Participants</b>	<b>Others Attending</b>	<b>SCFC</b>	<b>Total</b>
<b>Deer Hunts (2 hunts)</b>				
December Rack Pack	8	21	8	37
November QDMA Military	10	12	10	32
<b>Total</b>	<b>18</b>	<b>33</b>	<b>18</b>	<b>69</b>
<b>Turkey Hunts (3 hunts)</b>				
WITO April	5	8	9	22
March Military NWTf	7	6	7	20
March Youth	3	3	4	10
<b>Total</b>	<b>15</b>	<b>17</b>	<b>20</b>	<b>52</b>
<b>Total: 5 Hunts</b>	<b>121 people</b>			

**STATE FOREST REVENUE**

<b>State Forest General Accounting Summary</b>						
	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>	<b>FY 11</b>	<b>FY 12</b>
<b>Gross Revenue</b>		\$2,700,045	\$3,542,463	\$4,077,269	\$3,126,490	\$3,072,999
<b>Operating Expenses</b>		\$2,017,499	\$1,984,055	\$2,053,605	\$1,905,164	\$1,813,109
<b>Payment to County Schools</b>		\$668,182	\$877,430	\$980,462	\$750,485	\$747,630
<b>Back to SCFC</b>			\$409,493		\$837,065	
<b>Annual Carry Over</b>	\$219,227	\$14,365	\$271,485	\$1,043,203	\$366,224	\$512,260
	<b>FY 13</b>	<b>FY 14</b>	<b>FY 15</b>	<b>FY16</b>	<b>FY 17</b>	<b>Average</b>
<b>Gross Revenue</b>	\$2,846,075	\$2,363,876	\$1,979,540	\$2,972,549	\$2,956,143	\$2,963,745
<b>Operating Expenses</b>	\$1,996,717	\$2,084,033	\$1,848,539	\$1,921,155	\$1,879,296	\$1,950,317
<b>Payment to County Schools</b>	\$699,817	\$581,427	\$477,609	\$734,796	\$731,757	\$724,959
<b>Back to SCFC</b>		\$53,385				\$433,314
<b>Annual Carry Over</b>	\$149,540	\$354,970	\$346,608	\$316,599	\$345,090	\$163,997
<b>Total Current Carryover: \$1,803,966</b>						

## **STATE LANDS MANAGEMENT PROGRAM**

The State Lands Forest Management Program was created to provide professional forest management assistance to South Carolina state agencies that own timberlands. This assistance consisted of cruising, marking, management assistance, and administering timber sales. The agencies and facilities assisted were as follows:

<b>State Lands Forest Management Assistance</b>		
<b>Agency</b>	<b>Acres</b>	<b>Tons</b>
<b>DOC</b>		
Tyger River Correctional	40	
Broad River Corrections #1	80	1,319
Kirckland Corrections		
Leed Corrections	54	
Lieber	62	
McCormick	40	
Walden Farm (Broad river #2)	60	
<b>DNR</b>		
Lewis Ocean Bay	294	10,315
McDowell Creek	206	
Tillman Sand Ridge	184	12,042
Woodbury	820	32,800
Yawkey	50	1,710
<b>PRT</b>		
Barnwell	275	
Cheraw ( Management)		
Colonial Dorchester	70	3,068
Edisto (Management)		
Hunting Island (Management)		
Givhans Ferry	329	6,974
<b>Other</b>		
<b>Totals</b>	<b>2,564</b>	<b>68,228</b>

### **Other Activities**

In addition, the five state forests (Manchester, Sand Hills, Wee Tee, Harbison, and Poe Creek) maintained dual certification under the Sustainable Forestry Initiative (SFI) and the American Forest Foundation (AFF) standards of sustainability.

The State Lands Coordinator:

- Serves as primary contact and coordinator for all state forest certification activities
- Adheres to applicable reporting and data management requirements
- Serves as the primary contact and coordinator for State Forest harvest scheduling, modeling, mapping, and inventory collection
- Serves as lead instructor for Teachers Tour maintaining adjunct professor status with SACS accredited college
- Serves on the State Trails Committee
- Serves on the SFI State Implementation Committee (S.I.C.)
- Facilitates timber marking with regions where possible
- Serves as a forest management / timber sale resource for all other agencies as well as counties and municipalities as requested

# COMMUNICATION & PUBLIC INFORMATION DIVISION

## **PUBLIC RELATIONS & OUTREACH**

The Communication & Public Information (CPI) Division plans and implements communication strategies and long-range public information, marketing, and educational programs for the South Carolina Forestry Commission. These activities are designed to enhance the agency's and forestry's image while promoting the agency's mission and goals. Playing the lead role in communication and public information for the agency, CPI staff coordinate media interest in and public relations for the agency; prepare appropriate responses to media requests; coordinate FOIA requests/responses; prepare news releases, articles, scripts, speeches, letters and reports; support agency departments, programs and personnel with forestry-related promotional items and information; and design original publications, fact sheets and other collateral material for agency personnel, programs and departments.

## **Communication & Public Information Highlights**

### **Drone deployment**

CPI staff received official approval from the Federal Aviation Administration (FAA) to fly the agency's unmanned aerial system (UAS), or drone. One Public Information Coordinator took and passed the FAA's Part 107 test to earn the appropriate operator's license. The drone was immediately put into service for a wide range of promotional and instructional purposes, shooting photography and videography of state forests, landowner and other demonstration sites, nursery operations, prescribed burning and BMP activities, among others.

### **Forestry Day / 90<sup>th</sup> anniversary**

In recognition of the agency's 90<sup>th</sup> anniversary, a "Forestry Day" event was held at the State House April 26, nine decades to the day of the Commission's inception. The celebration combined a recognition of the 90<sup>th</sup> anniversary from legislators and other natural resources partners, a press conference announcing the updated economic impact of the forestry sector in South Carolina and a ceremonial planting of a loblolly pine tree on the capitol grounds. In addition to widespread media coverage of the event, particularly of the \$21 billion contribution of forestry to the state's economy, a governor's proclamation and a concurrent resolution of the General Assembly honoring the agency, its mission and its accomplishments were secured in support of the "Forestry Day" event.

### **SGSF Communications Committee meeting**

Hosted the 2016 summer meeting of the Southern Group of State Foresters' (SGSF) Communications Committee meeting in Charleston July 25-28. The Committee, of which the CPI Division Director is a standing member, met to review and update its strategic plan for the coming year and begin work on several new regional outreach projects promoting forestry and its contributions to communities throughout the southern U.S.

### **Pinnacle Mountain Fire**

CPI staff members were instrumental in providing the demand for public information about the 10,623-acre Pinnacle Mountain Fire in Pickens County in November and December 2016. Two CPI staff members continually served in the Public Information Officer (PIO) role during the fire and led what eventually became a Joint Information Center (JIC) as the incident grew in size and scope.

### **Geocaching Trail**

In recognition of the Forestry Commission's 90th anniversary, a geocaching course was created on Harbison State Forest. Geocaching is a great family-friendly activity for all ages to get outside and explore our beautiful forests. The purpose of this course is to offer a family-friendly activity for all ages to get outside and explore the forest while also educating the public about the agency and the importance of forestry in our state.

The course follows the established 0.7 mile "Learning Trail" and 0.5 mile "Discovery Trail," which both start at the Harbison Environmental Education Center. There are seven individual geocaches hidden along the trail, which can be found in 50-caliber ammo boxes. Each cache contains a log book and information regarding the divisions and duties within the Forestry Commission. There is an accompanying set of seven questions (one for each cache) that can be completed and turned into the Environmental Education Center. Those who answer all seven questions correctly receive a commemorative SCFC 90th anniversary coin. The coordinates for the caches can be found on Geocaching.com or on the downloadable answer sheet.

### **SAF Tree Farmer book distribution partnership**

Partnered with the Society of American Foresters (SAF) and the American Tree Farm System (Tree Farm) on a project to place copies of the children's book, *The Tree Farmer*, in all 299 private elementary school libraries in South Carolina. The book tells of a grandfather leading his grandson to understand how he can grow trees with care, to one day cut them down, sharing the story of conservation with elementary-age children in a way they can understand. Promotional, informational and educational materials were included with every shipment. In addition press releases were tailored for local media every time a shipment was made.

**VFA check presentations**

Assisted with check presentations to rural/volunteer fire departments as part of the Volunteer Fire Assistance (VFA) grant program administered by the agency. Check presentations were made to the Fair Play and Pine Ridge Fire Departments in Fair Play and Summerville, respectively. The check presentations are held as community events to which legislators, residents and firefighters are invited to learn about not just about the VFA program, but about the agency’s mission and current budget requests.

**Other highlights:**

- Upgraded select Wood Magic collateral materials, including signage for several of the learning stations.
- Sent promotional media kits (containing forest products and their derivatives) to print and broadcast media to entice them to cover the Wood Magic Forest Fair at all three locations.
- Developed a full-page ad about Taylor Nursery for publication in SCFA’s bi-monthly journal.
- Produced and/or updated several new agency publications, fact sheets and collateral materials:
  - EAB Detected In SC, Seedling Price Guide, Forest Market Profile: Costa Rica, By The Numbers, Economic Impact, FRP Annual Report, Forest Health Manual, Cost-Share Rates, SPB Pheromone Trapping Report, Why Plant Loblolly, Oak Wilt, Landowner’s Guide To Forestry BMPs, BMP Monitoring Report, Forest Laws Of SC,
- Wrote and distributed 23 press releases on a wide range of topics, including Red Flag Fire Alerts, Wood Magic Forest Fair, State Forests Checkoff Fund, BMP compliance, Firewise program, agency personnel (accomplishments and awards), payments to county school systems, law enforcement arrests, prescribed burning, Governor’s proclamations, seedling sales and promotion, stewardship recognition, training exercises, VFA grants and Tree Farm activity.
- Exhibited at Forestry Association of South Carolina (FASC) annual meeting
- Secured a proclamation from the governor designating the third week in October SC Forest Products Week, a campaign that was supported with promotion to statewide media.
- Exceeded target of one daily social media message/post on Facebook and Twitter promoting agency, forestry and industry news, events and people.
- Updated list of local/rural/volunteer fire departments for the Red Flag Fire Alert system.
- Worked with SCFC Protection Chief and SC Prescribed Fire Council to promote March as Prescribed Fire Awareness Month by distributing a press release to media and coordinating media visits to prescribed fire sites in their areas. An official proclamation designating the month-long occasion was obtained from the governor’s office as well.

**ENVIRONMENTAL EDUCATION**

**Environmental Education Coordinator & Assistant Coordinator Highlights**

- Facilitated 15 Project Learning Tree workshops or presentations
- Coordinated 3 Wood Magic Forest Fair events
- Conducted 37 education programs, reaching 3,262 people (not including the Wood Magic Forest Fair event, Project Learning Tree participants, or Teachers Tour participants).
- Co-ordinated and taught South Carolina Sustainable Forestry Teachers Tour
- Held a forestry skills competition for the SC FFA program at the Piedmont Forestry Center

**Project Learning Tree**

In FY2016-2017, 14 workshops reached 224 educators. A total of 273 copies of the PLT modules were distributed at these workshops.

<b>Project Learning Tree Workshops</b>				
<b>Workshop Type</b>	<b># Of Workshops</b>	<b>% Of Workshops</b>	<b># Of Participants</b>	<b>% Of Total Participants</b>
PreK-8	4	22%	48	18%
Focus On Forests	3	17%	33	12%
SE Forests & Climate Change	1	6%	5	2%
Forests of the World	1	6%	21	8%
Pre-service Early Childhood	3	17%	49	18%
Pre-service PreK-8	15	28%	95	35%
E-Unit Carbon & Climate	1	6%	20	7%
Online PreK-8	NA	NA	2	1%
<b>TOTALS</b>	<b>18</b>	<b>N/A</b>	<b>273</b>	<b>N/A</b>

*In order to show how many of each PLT module was distributed and how many workshops were conducted for each module, workshops that covered more than one module are shown as separate workshops for each module, making the total number of workshops 18.*

### Teachers' Tour

The 2017 South Carolina Teacher's Tour was held for 5 days in June with 35 applicants and 21 participants. Selection for participation was more focused on the target audience of full-time certified K-12 teachers with an interest in environmental studies, life sciences, biology, tech-prep, and/or natural resource education. The Tour was modified to 5-days with registration solely for 3 hours of graduate credit instead of the past option for either graduate credit or continuing renewal hours. Online pre-Tour coursework about forestry and Project Learning Tree was another modification. SCFC employees and forestry partners made the tour possible by being speakers, handling logistics, and conducting demonstrations.

### Wood Magic Forest Fair

The 2016 Wood Magic Forest Fair was planned for 3 locations. The first event was held for 4 days in September at the Piedmont Forestry Center. The second event was planned for 5 days in October at Harbison State Forest but 3 days were canceled due to Hurricane Matthew. The third event was held for 4 days in November at Hobcaw Barony Discovery Center. Almost 1500 students, teachers, and chaperones attended the events. Fifty-five SCFC employees and 89 volunteers worked at the three events.

<b>Wood Magic Participation</b>						
<b>Location</b>	<b>Applications Received</b>	<b>Classes Applied</b>	<b>Classes Attending</b>	<b>Children Attending</b>	<b>Teachers &amp; Other Adults</b>	<b>Total Participants</b>
Piedmont	14	42	22	438	88	526
Harbison	47	133	19	307	67	374
Hobcaw Barony	17	55	24	486	70	556
<b>TOTALS</b>	<b>78</b>	<b>230</b>	<b>65</b>	<b>1,231</b>	<b>225</b>	<b>1,456</b>

<b>Students Participating in SCFC Educational Activities at Harbison State Forest</b>					
	<b>Date</b>	<b>School/Organization</b>	<b>Grade Level/Age</b>	<b># of Children</b>	<b># of Adults</b>
1	8/10/16	Camp 4-H2O	6 <sup>th</sup> -8 <sup>th</sup>	14	5
2	9/24/16	Boy Scout Forestry Merit Badge Workshop	6th-11 <sup>th</sup>	21	8
3	9/28/16-9/29/16	Rosewood Elementary	1st	60	16
4	10/4/16	Richland County Master Gardeners	Adult		25
5	10/20/16	Midlands Tech Ecology	college		16
6	10/27/16	Midlands Tech Ecology	college		16
7	11/9/16	Midlands Tech Ecology	college		9
8	12/2/16	Heyward Career & Technology Center	9th-12 <sup>th</sup>	27	7
9	2/22/17	Midlands Tech Ecology	College		18
10	3/8/17	Heritage Christian Academy	4th-5 <sup>th</sup>	13	6
1	3/10/17	Heyward Career & Technology Center	9th-12 <sup>th</sup>	16	2
12	3/23/17	Midlands Tech Ecology	college		17
13	4/1/17	Girl Scout Naturalist: Trees Badge Workshop	6th-8 <sup>th</sup>	9	4
14	4/20/17	Heritage Christian Academy	1st	7	3
15	5/26/17	Clemson University Midlands Master Naturalist	adults		20
16	5/16/17-5/24/17	Meadow Glenn Elementary	3rd	176	32
		<b>SUBTOTALS</b>		<b>343</b>	<b>204</b>
		<b>TOTAL</b>			<b>547</b>

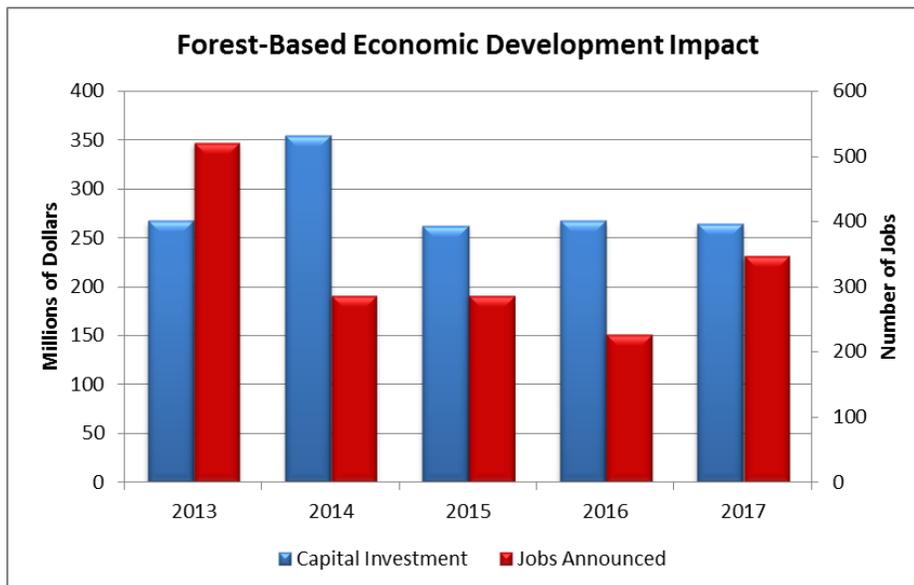
<b>Students Participating in SCFC Educational Activities Outside of Harbison State Forest</b>					
	<b>Date</b>	<b>School/Organization</b>	<b>Grade Level/Age</b>	<b># of Children</b>	<b># of Adults</b>
1	8/27/16	Girls Scouts	all ages	10	40
2	10/19/16	Red Bank Elementary	K-5 <sup>th</sup>	150	7
3	1/2/17	St. David Lutheran Men	adult		30
4	1/3/17	Sunshine House Preschool	PreK	8	1
5	2/10/17	Central Carolina Tech College	college		10
6	3/15/17	JP Thomas Elementary	K-5 <sup>th</sup>	200	11
7	3/24/17	Deerfield Elementary	1st	110	8
8	3/28/17	A.C. Moore Elementary	Kinder	50	6
9	3/28/17	Lexington One Center for Agribusiness	9th-12 <sup>th</sup>	8	15
10	3/29/17	Clemson University Parks & Conservation Area Management	college		10
11	4/2/17	Playcard Environmental Center	PreK-1 <sup>st</sup>	300	30
12	4/6/17	Deerfield Elementary	Kinder	100	8
13	4/7/17	Meadowfield Elementary	1st	90	9
14	4/19/17	Lewis Greenview Elementary	1st	50	6
15	4/20/17	Dutch Fork Elementary Envirofest	all ages	50	50
16	4/21/17	Pine Grove Elementary	2nd-3 <sup>rd</sup>	90	4
17	5/5/17	SC FFA Forestry Competition	9 <sup>th</sup> -12 <sup>th</sup>	64	16
18	5/6/17	Lynches River County Park River Jamboree	all ages	550	400
19	5/11/17	SC Conservation District Employees Association	adult		15
20	5/12/17	Richland Recycles Day	4th	100	16
21	6/7/2017	Museum of York County	all ages	62	31
		<b>SUBTOTALS</b>		1,992	723
		<b>TOTAL</b>		<b>2,715</b>	

# RESOURCE DEVELOPMENT DIVISION

## BUSINESS DEVELOPMENT

Interest in forestry-related economic development was steady throughout the year and the announced capital investment for FY2016-2017 was comparable to FY2015 and FY2016. A total of 12 different forestry-related projects were active during FY2016-2017. There was continued interest in South Carolina by sawmill projects looking for available resources. Companies making mass timber products, such as cross-laminated timber (CLT) and laminated veneer lumber (LVL), increased in activity. Consolidation of the forest tree seedling nursery industry resulted in three active projects in South Carolina. Together, the SYP lumber, mass timber and nursery projects accounted for 10 of the 12 forestry-related projects in South Carolina. The remaining projects included a SYP MDF plant and a wood pellet plant.

Seven forestry projects were announced during FY 2016-2017. The announced projects totaled \$264 million in capital investment and 347 new jobs. The single largest investment was announced by Roseburg Forest Products who plans to build a Laminated Veneer Lumber (LVL) plant in Chester County (\$200 million, 145 jobs). The improved lumber market led West Fraser to invest an additional \$33 million to modernize their Newberry County plant. Likewise, Dempsey Wood Products in Orangeburg County has invested \$7 million in plant modernization. James Hardie Building Products has reopened their board plant in Dorchester County with a \$15 million investment which will create 100 jobs. Other investments in forest products included flooring, molding, and wood pellets.



During FY2016-2017, the SCFC Resource Development Division represented the agency and the forestry community through contacts with 48 statewide and regional economic development organizations. Division staff took leadership roles through the Southern Group of State Foresters by chairing the Services, Utilization & Markets (SUM) Committee, and speaking to outside audiences including the National FIA User Group meeting in Madison, WI and the Biometric Working Group in Atlanta, GA. Staff planned and implemented a SUM annual meeting and technical workshop in Huntsville, AL. Staff served on a national review team for the Wood Innovation Grants. During FY2016-2017, 140 individual business assists were made to address single-issue requests.

In Spring 2017, the Resource Development Division completed an updated analysis of the contribution of forestry to the South Carolina economy. This update documented the success of the agency's "20 by 2015" Initiative which sought to grow forestry's economic impact from \$17.4 billion to \$20 billion by 2015. Using 2015 IMPLAN data, forestry had a total economic contribution of \$21 billion to the state's economy and supported a total of 84,425 jobs with an associated labor income of \$4.5 billion. By fiscal year end, there were 98 primary and 750 secondary forest product businesses in the state. In support of industry growth, division staff attended Mass Timber Conference in Portland, Oregon and the LIGNA trade show in Hannover, Germany.

The SC Forest Products marketing program continued to grow in FY2016-2017. The highlight of the year was the success of the Southern Forest Product Export Conference in Charleston, SC in the fall of 2016. 130 people from 10 countries registered for the conference. Two forest product market reports were completed for Costa Rica and Guatemala during the

year. An exploratory trip to Costa Rica was made by staff for market research and in preparation for a mission trip for South Carolina forest product companies. Resource Development staff made 68 contacts while exhibiting at IWF 2016 in Atlanta, GA. Finally, SC forest product export statistics were updated for 2016.

### **FOREST INVENTORY & ANALYSIS**

The Forest Inventory and Analysis (FIA) program is a cooperative program with the US Forest Service – Southern Research Station (SRS) to collect forest inventory and forest health monitoring data from a network of permanent sample plots. Funding for the program is provided through a 75% federal grant and a 25% state match of the federal grant funds. There are 3,452 total forest inventory plots located in South Carolina. Plots are sampled in 20% increments of the total, referred to as panels. Plots are measured for growth projections, mortality and harvest assessments, and land-use classification. In addition, FIA provides information about South Carolina's forest resources including forest acreage, timber quality, timber volume, timber growth, forage, water, and recreation. This network of plot data collection is referred to as the Phase 2 portion of FIA field data collection. The information provided by FIA Phase 2 allows the evaluation of both quantity and quality of these important resources. The US Forest Service furnishes data analysis and reporting for this program.

Each year, during the summer growing season, a subset of the standard FIA plot grid is selected to collect forest health attributes. This part of the program is referred to as Phase 2+. Phase 2+ plots were set at one-sixteenth intensity of the standard FIA plot grid for the summer of 2016 and 2017. Phase 2+ plots include additional measurements that are collected to provide data on forest vegetative structure, down woody material, and tree crowns.

Currently, three full-time inventory crews, consisting of two employees each, are stationed throughout the state with field offices in Newberry, Florence, and Walterboro. The program coordinator is stationed in Columbia. All crewmembers are required to exceed a minimal accuracy average of 87% for all inventory plots. U.S. Forest Service personnel conduct quality assurance and quality control checks, on a sample of plots, to insure the accuracy of the data collected by Forestry Commission field crews. During FY 2016-2017, the average accuracy for all crewmembers was 92.76%% with each crewmember exceeding the 87% yearly average required by SRS.

During fiscal year 2016-2017, field crews completed one panel of plots that began in fiscal year 2015-2016 and began the next subsequent panel. For the fiscal year, a total of 579 Phase 2 sample plots were completed by Forestry Commission crews with 40 Phase 2+ plots being a subset of these plots. SRS completed 74 plots, consisting of 49 nonforest plots and 25 plots classified as census water, identified in the office and not sent to the Forestry Commission field crews. The FIA program completed data collection on the fifth panel, closing out the Cycle 11 inventory. The FIA program has completed 48% of the first panel of the Cycle 12 inventory of data collection. The FIA program completed 30 product utilization studies on active logging operations across the state to develop factors for logging residues, logging damage, and utilization of the unmerchantable portion of harvested trees. In addition to the standard FIA plot grid, 16 FIA plots were installed on the Sumter and Francis Marion National Forests as intensification plots.

The Forestry Commission FIA program completed the 11<sup>th</sup> inventory of the state this fiscal year. Of the 13 southern states, South Carolina was the first state to complete the 8<sup>th</sup> inventory (2001), the 9<sup>th</sup> inventory (2006), the 10<sup>th</sup> inventory (2011), and the 11<sup>th</sup> inventory (2017). Subsequently, South Carolina is the first state in the nation to initiate the 12th inventory. The SCFC FIA program is on schedule to complete the 12th inventory measurements in five years, with December 2022 as a target date for completion. Data for the 11th inventory are available online and the published report is scheduled to be released by SRS in late 2017.

### **NURSERY AND TREE IMPROVEMENT**

The South Carolina Forestry Commission operates two Nursery and Tree Improvement (N&TI) facilities: Taylor Nursery in Edgefield County and Niederhof Forestry Center in Jasper County. The goal of the N&TI Program is to provide landowners with the highest-quality seed and seedlings available for timber production, wildlife habitat improvement, Christmas tree production, and restoration of valuable forested ecosystems.

#### **TAYLOR NURSERY**

Taylor Nursery, located one mile east of Trenton, SC in Edgefield County, produces bare-root and containerized seedlings for South Carolina landowners. Originally named Ridge Nursery when built in 1958, the facility was renamed Taylor Nursery in 1981 when the main office complex was rebuilt following a fire. The new name was in honor of A. Brandon Taylor Jr., an Upstate industrial leader in wood treatment, who served as a Commissioner from 1961-1982 and Commission Chairman from 1975-1981. The nursery property, including office complex, roads, & irrigation pond, consists of 345 acres. 106 acres are under irrigation and used for seedling production.

The SCFC conducts a nursery survey annually to determine the number of seedlings planted in South Carolina. During FY2016-2017, 71,665,251 pines and 306,560 hardwood and other seedlings were planted in South Carolina for a total of 71,971,811 seedlings from all nursery sources. This number is 10.7% higher than the number of seedlings planted the

previous year. However, the number of seedlings planted in South Carolina remains about 69% the number of seedlings planted in FY1999-2000 due to fewer acres of final harvest, lower timber stumpage prices and a slowdown in government cost-share funding.

Taylor Nursery distributed 2,545,100 pines and 107,752 hardwood and other seedlings in FY2016-2017 for a total of 2,652,852 seedlings. Of this total, 750,232 seedlings were sold out of state. The total amount distributed represents 99.5% of the total number of bareroot and containerized seedlings grown at Taylor Nursery. The SCFC sold 2.6% of the seedlings distributed in South Carolina this year from all public and private sources. Taylor Nursery is one of the primary producers of hardwood and longleaf pine seedlings in the state. The nursery has the capacity to grow over 2 million containerized longleaf seedlings, depending on germination rates.

In past years, the SCFC has surveyed at least a 10% sample of seedling customers to determine general satisfaction with our seedlings and to target areas for improvement. This year the survey was e-mailed to all customers who supplied us with an e-mail address. Of the 345 surveys e-mailed out, 216 (63%) customers responded. The 2017 survey indicated that 96.6% of our customers were satisfied with our seedling quality and service. Of the customers who had a problem with their seedling order, 80% of the customers were satisfied with our response. Nursery employees earned their highest rating ever received for courtesy and professionalism (99% satisfied). Of the customer comments on returned survey forms, 79% of the comments were very complimentary of the nursery program.

Taylor Nursery keeps up-to-date with technology through association with the Auburn University Forest Nursery Management Cooperative, the Southern Forest Nursery Association and the Longleaf Alliance. Currently, Auburn University has three herbicide trials underway at Taylor Nursery. Two trials are testing pre-emergent herbicides and one trial is testing a post-emergent herbicide. Taylor Nursery also works in conjunction with the National Wild Turkey Federation in the planting of dove fields and wildlife plots to assist with their mentored hunting programs. In FY2016-2017, Taylor Nursery held three dove hunts with the NWTf that involved a total of 108 participants and volunteers.

#### **NIEDERHOF FORESTRY CENTER**

Niederhof Forestry Center (NFC) is located on a 1,593-acre tract of land that the SCFC purchased on December 1, 1983. Originally part of the Hoover Plantation, a 3,950-acre plantation north of Tillman, SC, Niederhof was acquired to establish second-generation seed orchards and to provide areas for future advanced-generation orchards. NFC was located in an area of the state that is well known for good seed production and minimal frost and ice damage. The facility was named for Cam Niederhof, a Westvaco executive, who served as a SCFC Commissioner for 24 years.

NFC is staffed by a full-time Seed Orchard Manager with assistance as needed by Coastal Region staff. A Forestry Technician I is assigned to NFC as part of his work duties when scheduled on-call on normal workdays. Additional personnel from the Edisto Unit assist as needed with seed orchard establishment and management. NFC attempts to operate solely based upon revenues generated through cone/seed sales and funding from research agreements.

Second-generation loblolly pine orchards were established from 1985-1989, totaling 322 acres; 30 acres of 1.5-generation longleaf pine were established from 1988-1992. NFC's loblolly orchards came into production in 1993 with some 4,542 bushels collected from both Coastal and Piedmont province orchards and the longleaf orchard has been in production since 2008. To date, some 70,981+ bushels have been collected. In 2004, as a result of budget cuts, a strategic change in goals for NFC resulted in the reduction of 2<sup>nd</sup>-generation orchards to 131.4 acres. It is worthy to note that during the years 1993-2005, NFC orchards consistently produced 25% of all second generation seed within the cooperative. In 2016, a 15 acre block of 2<sup>nd</sup> Generation Coastal loblolly pine orchard was harvested to provide some buffer area and expansion for 3<sup>rd</sup> Cycle Coastal loblolly pine seed orchard elite selections. Current 2<sup>nd</sup> Generation loblolly pine seed orchard acreage stands at 116.4 acres, which permits continuing interest in premier selections to be harvested for internal use and seed/cone sale revenue.

Third-cycle orchard establishment occurred between 2005-2011. These new orchards represent the culmination of over 40 years' breeding and testing work by our agency as part of the NCSU Cooperative Tree Improvement Program (NCSUCTIP) and will provide landowners in South Carolina with very high-quality genetically-improved seedlings that are specifically adapted to our state. There are 17.6 acres of coastal 3<sup>rd</sup> cycle loblolly pine orchard and 12.4 acres of piedmont 3<sup>rd</sup> cycle loblolly pine orchard.

Cone collection for 2016 yielded 1,119.5 bushels 2<sup>nd</sup>-Generation Coastal loblolly pine, 239 bushels 3<sup>rd</sup>-Cycle Coastal loblolly pine, 228.5 bushels 3<sup>rd</sup>-Cycle Piedmont loblolly pine and 1,040 bushels 1.5 generation longleaf pine. An additional 18 bushels of cones were collected from the Commission's Virginia pine orchard at Piedmont Forestry Center. Seed processing yielded 841.5 pounds of 1.5-Generation Improved Longleaf pine seed, 120.2 pounds of 3<sup>rd</sup>-Cycle Coastal loblolly pine, 120.25 pounds 3<sup>rd</sup>-Cycle Piedmont loblolly pine, 258 pounds of 2<sup>nd</sup>-Generation Coastal loblolly pine, and 4.05 pounds of 1.5-Generation Virginia pine seed.

NFC's annual sale of seed and pine cones generated \$129,452.28 in revenue: to date, Niederhof's 2<sup>nd</sup>-generation orchards have created additional revenue in the amount of \$2,121,535.47 from cone and seed sales. The value of seed and pine cones sales is in addition to the value of seed delivered to Taylor Nursery for internal seedling production.

Over the night of October 7 through October 8, Hurricane Matthew skirted the coast of South Carolina; a Category 2 hurricane at the time of its passing Jasper County. Niederhof Forestry Center received in excess of 13" rain and prolonged periods of upper-tropical storm force winds. This resulted in loss of electricity, flooding along hardwood drains, the overtopping of Pickens and Staley ponds, moderate treefall along hardwood drains, and minor damage to orchard trees and buildings. Taylor Nursery staff assisted the Seed Orchard Manager with transporting seed for temporary storage at Taylor Nursery; Edisto Unit personnel assisted Seed Orchard Manager in clearing downed trees from the orchards and roads. The start of cone harvest was delayed by approximately 9 days, resulting in a compressed window of time for cone collection operations.

<b>Tree Seedlings Planted by Landowner Classification 2015-2016</b>				
<b>Land Ownership</b>	<b>Pines Planted</b>	<b>Hardwoods &amp; Others Planted</b>	<b>Total Number of Trees Planted</b>	<b>Percent of Total</b>
Private Forestlands	69,902,001	302,740	70,204,741	97.5%
Public Forestlands	1,763,250	3,820	1,767,070	2.5%
<b>Total</b>	<b>71,665,251</b>	<b>306,560</b>	<b>71,971,811</b>	

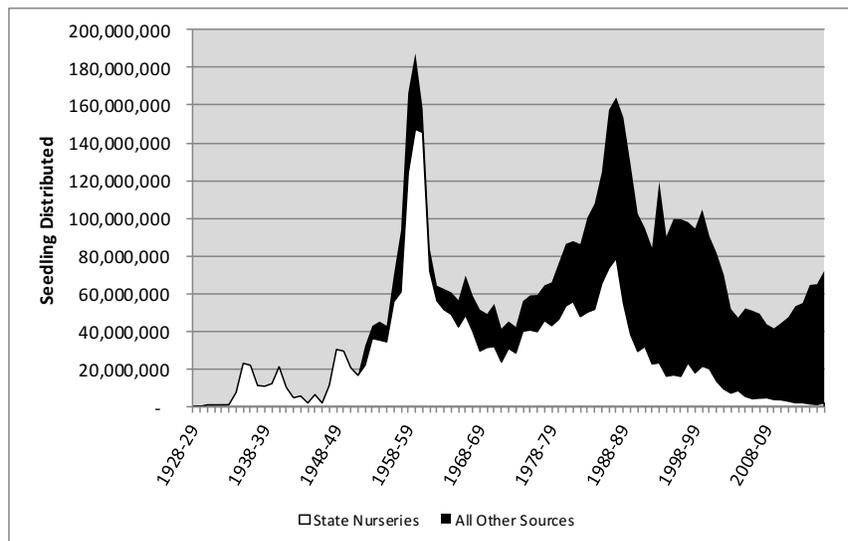
<b>Source of Seedlings Distributed in South Carolina</b>				
<b>Nurseries in South Carolina</b>	<b>Pines Distributed</b>	<b>Hardwoods &amp; Others Distributed</b>	<b>Total Number of Trees Distributed</b>	<b>Percent of Grand Total</b>
ArborGen (Bleinheim, SC)	38,232,958	216,550	38,449,508	53.4%
Weyerhaeuser	17,248,900	1,800	17,250,700	24.0%
South Carolina Forestry Commission	1,825,280	77,340	1,902,620	2.6%
<b>Total</b>	<b>57,307,138</b>	<b>295,690</b>	<b>57,602,828</b>	<b>80.0%</b>
<b>Nurseries Outside of South Carolina</b>				
Weyerhaeuser (GA)	9,232,152	0	9,232,152	12.8%
International Forest Company	2,159,809	0	2,159,809	3.0%
Bodenhamer Farms & Nursery	1,000,000	0	1,000,000	1.4%
Georgia Forestry Commission	926,600	3,050	929,650	1.3%
Meeks Farm & Nursery	773,000	0	773,000	1.1%
Whitfield Farms & Nursery	125,000	0	125,000	0.2%
K&L Forest Nursery	100,000	0	100,000	0.1%
Florida Forest Service	40,000	0	40,000	0.1%
North Carolina Forest Service	1,552	7,820	9,372	<0.1%
<b>Total</b>	<b>14,358,113</b>	<b>10,870</b>	<b>14,368,983</b>	<b>20.0%</b>
<b>Grand Total</b>	<b>71,665,251</b>	<b>306,560</b>	<b>71,971,811</b>	<b>100%</b>

<b>State Nursery Seedling Production &amp; Sales for FY2016-2017</b>			
<b>Species</b>	<b>Seedlings Produced</b>	<b>Seedlings Sold</b>	<b>% Sold</b>
Ash, Green	830	830	100%
Baldcypress	3,920	3,920	100%
Blue Ice CTR	384	384	100%
Carolina Sapphire CTR	1,472	1,472	100%
Catalpa, Southern	2,730	880	32%
Cedar, Eastern Red	18,800	18,250	97%
Clemson Greenspire CTR	1,312	1,152	88%
Crabapple, Southern	6,780	4,810	71%
Dogwood	4,290	2,290	53%
Leyland Cypress CTR	6,816	6,816	100%
Loblolly Pine, Coastal 3rd gen	940,810	940,810	100%
Loblolly Pine, SCFC-C1, CTR	10,000	10,000	100%
Loblolly Pine, Piedmont 3rd gen.	591,510	591,510	100%
Longleaf Pine	115,160	115,160	100%
Longleaf Pine Improved CTR	840,750	840,750	100%
Magnolia, Southern	2,810	2,810	100%
Murray Cypress CTR	7,040	6,048	86%
Oak, Cherrybark	1,060	1,060	100%
Oak, Chestnut	1,910	1,910	100%
Oak, Chinkapin	920	920	100%
Oak, Gobbler	3,570	3,430	96%
Oak, Live	990	990	100%
Oak, Northern Red	1,650	1,050	64%
Oak, Nuttall	710	710	100%
Oak, Overcup	900	600	67%
Oak, Pin	1,950	950	49%
Oak, Sawtooth	4,490	4,490	100%
Oak, Shumard	5,000	4,610	92%
Oak, Swamp Chestnut	4,510	4,510	100%
Oak, White	2,670	2,670	100%
Oak, Willow	5,770	5,620	97%
Persimmon	6,920	6,160	89%
Plum, Chickasaw	2,660	2,660	100%
Redbud, Eastern	2,720	2,220	82%
Shortleaf Pine	11,650	11,650	100%
Shortleaf Pine	2,000	2,000	100%
Sycamore	3,120	3,120	100%
Virginia Pine Christmas Tree Stock	27,710	27,310	99%
Walnut, Black	2,130	1,150	54%
White Pine	5,910	5,910	100%
Yellow Poplar	9,260	9,260	100%
	<b>2,665,594</b>	<b>2,652,852</b>	<b>99.5%</b>

### Seedling Distribution 1928-2017

Year	Total State		Year	Total State	
	Nurseries	Total All Sources		Nurseries	Total All Sources
1928-29	142,000	142,000	1972-73	30,978,000	45,239,000
1929-30	148,000	148,000	1973-74	28,443,000	42,306,000
1930-31	986,000	986,000	1974-75	40,082,000	55,997,000
1931-32	976,000	976,000	1975-76	40,664,000	59,063,000
1932-33	996,000	996,000	1976-77	39,795,000	59,238,000
1933-34	1,031,000	1,031,000	1977-78	45,735,000	64,380,000
1934-35	7,529,000	7,529,000	1978-79	43,010,000	65,937,000
1935-36	23,000,000	23,000,000	1979-80	46,375,000	76,207,000
1936-37	22,000,000	22,000,000	1980-81	53,513,000	86,420,000
1937-38	11,192,000	11,192,000	1981-82	55,728,000	87,793,000
1938-39	10,854,000	10,854,000	1982-83	47,799,000	86,265,000
1939-40	12,244,000	12,244,000	1983-84	50,170,000	100,394,000
1940-41	21,165,000	21,165,000	1984-85	51,636,000	107,718,000
1941-42	10,275,000	10,275,000	1985-86	65,465,000	124,381,000
1942-43	4,742,000	4,742,000	1986-87	73,555,000	157,523,000
1943-44	5,663,000	5,663,000	1987-88	78,788,000	164,095,000
1944-45	1,963,000	1,963,000	1988-89	55,052,000	153,450,000
1945-46	6,402,000	6,402,000	1989-90	38,356,000	128,475,000
1946-47	1,963,000	1,963,000	1990-91	29,297,000	102,384,000
1947-48	11,357,000	11,357,000	1991-92	31,984,000	94,710,000
1948-49	30,389,000	30,339,000	1992-93	22,665,000	84,287,000
1949-50	29,502,000	29,502,000	1993-94	23,286,000	119,311,000
1950-51	20,615,000	20,615,000	1994-95	16,154,000	90,336,000
1951-52	16,619,000	16,619,000	1995-96	16,841,000	99,549,000
1952-53	22,036,000	32,246,000	1996-97	16,058,000	99,439,000
1953-54	36,210,000	42,852,000	1997-98	23,278,000	97,963,000
1954-55	35,373,000	45,182,000	1998-99	17,955,000	94,539,000
1955-56	34,414,000	42,932,000	1999-00	21,524,000	104,594,000
1956-57	55,754,000	69,659,000	2000-01	20,095,000	90,346,000
1957-58	60,846,000	93,369,000	2001-02	13,500,000	81,431,000
1958-59	123,985,000	166,351,000	2002-03	9,376,000	69,989,000
1959-60	147,146,000	187,516,000	2003-04	7,202,000	51,823,000
1960-61	145,609,000	158,331,000	2004-05	8,563,000	47,243,000
1961-62	71,892,000	83,844,000	2005-06	5,437,000	52,165,000
1962-63	56,191,000	64,202,000	2006-07	4,206,000	50,900,000
1963-64	51,446,000	62,424,000	2007-08	4,539,842	49,320,517
1964-65	49,010,000	60,683,000	2008-09	4,739,783	43,692,314
1965-66	42,311,000	56,529,000	2009-10	3,762,989	41,549,345
1966-67	48,575,000	69,598,000	2010-11	3,629,610	44,374,915
1967-68	39,970,000	58,812,000	2011-12	2,922,880	47,468,239
1968-69	29,529,000	51,453,000	2012-13	2,091,256	53,342,588
1969-70	31,415,000	49,203,000	2013-14	2,125,576	54,971,881
1970-71	31,940,000	54,541,000	2014-15	1,473,558	64,582,487
1971-72	23,678,000	41,357,000	2015-16	1,146,389	64,998,195
			2016-17	1,902,620	71,971,811

<b>Total State Nurseries</b>	2,589,932,503
<b>Total All Sources</b>	5,374,949,292



<b>SCFC Active Seed Orchards</b>		
<b>Orchard Type</b>	<b>Years Established</b>	<b>Acres</b>
<b>Creech Seed Orchard/Manchester State Forest</b>		
Genetic Diversity Archives (Clone Banks)	1977-1983	25
Coastal Loblolly Pine 1.0 Rust Resistant	1971	5
Longleaf Pine 1.0	1971	12
Virginia Pine 1.0 (Creech)	1980	1
Virginia Pine 1.0 (Manchester)	1986	2
Sawtooth Oak 1.0 Seedling	1990	2
<b>Total</b>		<b>47</b>
<b>Niederhof Seed Orchard</b>		
Genetic Archives, 3rd Cycle	2008-2009	4.2
Coastal Loblolly Pine 2.0	1985-1988	53.3
Piedmont Loblolly Pine 2.0	1985-1988	63.1
Longleaf Pine 1.5	1988-1990	30
Longleaf Pine 1.5 Expansion	2010-2011	1.6
Loblolly Pine Breeding Orchard 3.0	1997-2003	7.2
Longleaf Pine Seedling Seed Orchard	1998	8
Coastal Loblolly Pine 3.0	2005-2011	17.6
Piedmont Loblolly Pine 3.0	2005-2011	12.4
<b>Total</b>		<b>197.4</b>
<b>Coastal Seed Orchard</b>		
Sycamore 2.0	1992-1995	4
Sweetgum 2.0	1992-1995	6
Willow Oak Seedling Seed Orchard	1992-1995	1
Swamp Chestnut Oak Seedling Seed Orchard	1992-1995	1
Green Ash Seedling Seed Orchard	1992-1995	3
Red Maple Seedling Seed Orchard	1992-1995	1
Southern Red Oak Seedling Seed Orchard	1992-1995	2
White Oak Seedling Seed Orchard	1992-1995	2
<b>Total</b>		<b>20</b>
<b>Piedmont Seed Orchard</b>		
White Pine 1.5	1991-1993	4
Virginia Pine 1.0	1993	3
Northern Red Oak Seedling Seed Orchard	1993-1995	2
<b>Total</b>		<b>9</b>
<b>Grand Total</b>		<b>273.4</b>

## **ENVIRONMENTAL MANAGEMENT**

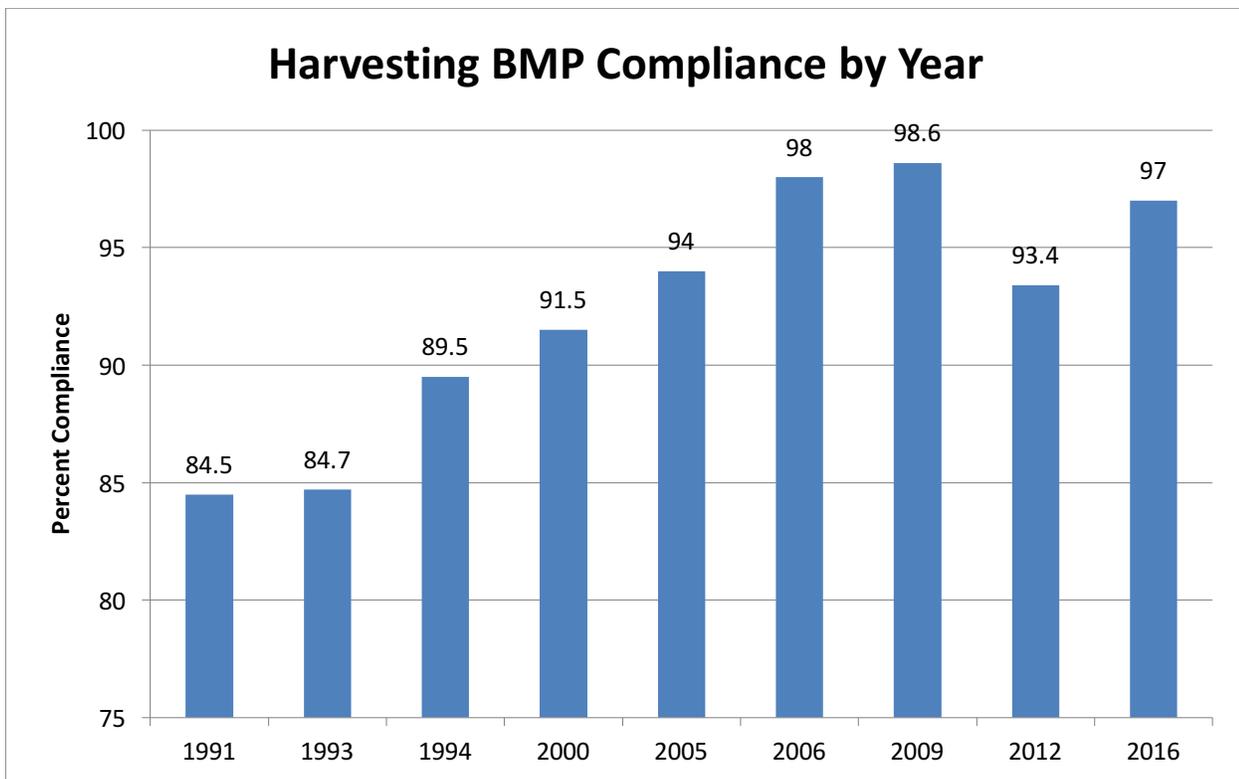
The Environmental Management Section is responsible for the development and implementation of South Carolina Forestry Commission programs that are related to the environmental protection of forest and associated natural resources. Issues that are addressed include the protection of water quality, site productivity, endangered species, and unique ecosystems.

### **BMP Compliance and Implementation Monitoring**

BMP monitoring in South Carolina is conducted in accordance with the Southern Group of State Foresters Water Resource Committee's *Silviculture Best Management Practices Implementation Monitoring – A Framework for State Forestry Agencies* published in 1997 and revised in 2002. This ensures consistency among the thirteen states in the southeastern United States.

The latest monitoring survey was conducted in the spring of 2016. Rather than using aerial detection, survey sites were located using LandSatFACT, a forest cover change detection tool developed by the North Carolina Forest Service. This method saved the agency approximately \$5,000 in flight time alone.

One hundred ninety-nine visits were made to sites that had been harvested within the prior year to evaluate BMP compliance and implementation. BMP Compliance for timber harvesting was found to be 97% which marks an improvement over the 2012 survey. During this fiscal year, the monitoring survey report was compiled, printed, and distributed to interested parties.



### **BMP Education/Training Program**

BMP training and education are essential to the success of the Forestry Commission's non-regulatory BMP program. During this fiscal year, 36 training programs were held across the state reaching 1,154 loggers, landowners, contractors, and forest resource professionals. Included in these meetings were thirteen workshops for the Timber Operations Professional (TOP) logger training and education program.

### **Courtesy Exam Program**

The S.C. Forestry Commission's BMP Foresters, located in each of the three operating regions of South Carolina, offer courtesy BMP exams to landowners, foresters, and timber buyers. The BMP Forester makes site-specific BMP recommendations to follow while conducting forestry activities. During this fiscal year, the BMP Foresters provided assistance during 824 visits to 447 sites and completed 251 courtesy exams. BMP Foresters also conducted 17.3 hours of aerial observation for active forestry operations and responded to 23 complaints.

**Environmental Issues and Ecosystem Services**

The Environmental Management Section monitored issues related to endangered species, wetlands, ecosystem services, EPA's proposed waters of the U.S. (WOTUS) rule and biomass harvesting. In a joint letter with the Forestry Association of South Carolina to Gov. Henry McMaster, we addressed concerns over the Obama Administration's proposed WOTUS rule and supported its' repeal and replacement.

BMP Foresters are available to provide information and assistance to SCFC personnel, forestry professionals, and landowners. This assistance may include site visits, cooperation with other agencies, and assistance on state lands. BMP Foresters also provide forestry expertise to organizations and agencies addressing policy and regulation related to these issues.

**Cooperation with Other Agencies**

Programs related to environmental protection of forest resources require close cooperation with other agencies. The S.C. Forestry Commission has a Memorandum of Understanding with S.C. Department of Health and Environmental Control (DHEC) addressing cooperation on water quality issues. The Environmental Management Section serves as technical authority on silvicultural activities, and cooperates with DHEC on evaluation and remediation of possible impacts. In March 2010 SCFC entered a Memorandum of Understanding with the US Army Corps of Engineers to better serve forest landowners and jointly address silvicultural issues in jurisdictional wetlands. BMP Foresters often work with DHEC and the U.S. Army Corps of Engineers when those agencies have regulatory authority over issues which may affect forestry operations, such as wetlands and navigable waterways. BMP Foresters also provide assistance with planning and implementation of Best Management Practices on public lands managed by other agencies.

# TECHNOLOGY DIVISION

## FY 2017 Accomplishments

This Division comprises the Information Technology Section, Geographic Information Systems (GIS) Section, Communications Section, and Dispatch Operations Section.

### INFORMATION TECHNOLOGY

The Information Technology Section is responsible directly and indirectly for the maintenance, support, and security of the agency's local and wide area networks; seventeen (17) Windows servers; network storage devices; 315 computers and laptops in use by over 190 employees; software applications; and implementation of various initiatives to support agency operations and programs.

Major accomplishments this fiscal year was the evaluation and continued rollout of Microsoft new operating system Windows 10, the installation of a mobile device management solution, rollout of smartphones, support to the agency's Incident Management Team, and work associated with the state mandates for implementation of policies, procedures, roles and responsibilities associated with information security and data privacy.

Due to limited funds, the agency only purchased 3 desktop, 5 laptop, and 9 tablet computers in FY 2017 to support newly filled positions, refresh older equipment, or to support field personnel activities. Funding was devoted instead to new network switches and telecommunications equipment at the Columbia Office Complex to support the migration from the State's PBX telephone system to SPIRIT Telecom's Voice over IP telephone system.

In response to the hacking of the Department of Revenue computer system, thirteen (13) information security policies have been implemented by the agency as required by a Budget Proviso. This Budget Proviso also required the agency to complete an information and security technology survey to the Division of State Technology by October 1, 2016. Each employee was tasked to complete an online cybersecurity awareness training course. To maintain employees' awareness of cybersecurity, the Technology Division sent periodic reminder emails and warnings of current cybersecurity threats.

One of the thirteen information security policies deals with Physical and Environmental Security. This policy deals with controls to prevent unauthorized physical access to information assets to protect them from damage, interruption, misuse, destructions and/or theft. Security camera systems were installed at all the regional dispatch centers, offices and shop complexes. To better protect information assets from power interruptions, preventative maintenance was performed on the main battery backup units at the Columbia Office and regional dispatch centers and their 5 year old batteries were replaced this year.

### GIS

With assistant from the GIS Coordinating Council, the agency is receiving updated parcel, ownership and 911 address and road data from all of the counties in the state. The GIS Section merged individual county data into Unit administrative area layers in the agency's GIS Server and in formats to be utilized in other GIS applications. This information saves the agency time and money by allowing personnel to identify property ownership and boundary lines without having to visit individual county tax offices.

Leaf-off, color infrared aerial photography was acquired during the winter of 2016 for 12 counties in South Carolina. In cooperation with these counties and the vendor, the Forestry Commission acquired a copy of imagery for Allendale, Bamberg, Barnwell, Clarendon, Greenville, Hampton, Jasper, Kershaw, Lee, Pickens and Beaufort counties this year. Anderson, McCormick, Sumter, Orangeburg counties and change detection imagery in Greenville County is scheduled to be acquired during the winter of 2017.

A graduate level GIS internship program with the University of South Carolina was established in 2006. This program provides an opportunity for students to be exposed to state government activities and utilize GIS technology in a real world setting. During FY 2017, the intern position was collecting longleaf pine information and entering it into a spatial database; updating layers for the agency's computer aided dispatch system; and GIS support of various forest and fire management programs.

In collaboration with the Southeastern Partnership for Forests and Water, the GIS section provided analysis for the selection of priority watersheds in South Carolina that will target stakeholders in those watersheds for conservation efforts.

South Carolina is the pilot for LandSatFact, a project using satellite data for quick detection of landscape change. Working with the BMP section we have analyzed 340 sample sites across the state.

The GIS section deployed with the IMT for the Pinnacle Mountain fire and assisted with other team deployments throughout the year.

### COMMUNICATIONS

The agency maintains approximately 555 mobile radios, 7 base stations, 29 repeaters, and 300 portable radios. The Communications Section also supports the 19 communications consoles and related systems in the 3 regional dispatch centers and at Columbia Headquarters.

Most of the agency's repeater sites have been in service for over 20 years. Utilizing Federal grant funds, the antennas and coax cables at key sites were replaced or upgraded. Sites completed this fiscal year included the Huger and Neeses repeater sites and the Lodge communication site. The Florence repeater was relocated to a Department of Transportation tower due to space vacated by the Department of Natural Resources. The antenna for this repeater went from 220' on a Forestry Commission tower to 400+' above ground at this new location. This greatly expanded the coverage area for this repeater and will serve as a backup to a number of other Pee Dee Region repeaters.

Field Radio Repair Kits were provided to each Fire Supervisor and Unit Forester. The goal of these kits is to enable field personnel to quickly fix common, easily repairable mobile and portable radio issues and get the unit back in service faster. In the kit are replacement antennas, microphones, horn speakers, fuses, electrical tape, cable ties and splice connectors.

An effort was made to test and calibrate every Kenwood portable radio this year. These radios were purchased in 2008 and reports were being received of possible transmitting and reception issues with them. Surprisingly, only 4 radios were putting out less than 3 watts (4.7 to 5.3 watts being normal). The receiver sensitivity was opened up more on tested radios to help improve signal reception. Users were also encouraged to hold the radio head high when using it instead of leaving it in their vest or on their belt where their body would be impacting its performance.

## **DISPATCH OPERATIONS**

The Forestry Commission operates three (3) dispatch centers that handle between 26-55,000 phone calls annually for burn notifications and reporting of wildfires. The agency's dispatch operations utilizes commercial, "off-the-shelf" dispatching software from Logistic Systems, Inc. This system incorporates many of the features and functionality of 9-1-1 dispatch systems. This system determines the closest available resource based on road mileage and travel speeds; automates the notification of personnel of wildfires; alerts dispatchers when certain dispatching timeframes are exceeded; and automates the compliance issues with smoke management regulations on forestry, wildlife and agricultural burn notifications. All other burn notifications are handled by an automated systems that takes an additional 350,000 to 450,000 notifications each year. As a performance measure in the Forestry Commission's Accountability Report, the average time from receiving the wildfire call and assigning a firefighter (i.e. Dispatching) has been cut in half compared to the old software average -- prior to FY 2006 (see table below). The processing of smoke management notifications has also decreased by 40% compared to the FY 2005 average. These time savings can be attributed to the new dispatch software's automation of dispatching and compliance with smoke management guidelines.

### **SUMMARY AND COMPARISON OF DISPATCH TIMES FOR FISCAL YEAR 2004 through 2017**

TIMES	Fiscal Year Average Dispatching Times (Minutes)													
	2004	2005	2006*	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Dispatching	5.10	6.33	4.18	3.56	3.53	3.22	3.13	3.39	3.28	3.57	3.38	3.23	2.37	2.10

\*New software implemented in FY 2006

### **SUMMARY AND COMPARISON OF SMOKE MANAGEMENT NOTIFICATIONS PROCESSING TIMES FOR FISCAL YEAR 2004 through 2017**

TIMES	Fiscal Year Average Notification Processing Times (Minutes)													
	2004	2005	2006*	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Processing Time	4.16	4.61	3.49	2.81	3.00	3.13	3.21	2.97	2.94	2.99	2.70	2.98	3.06	2.96

\*New software implemented in FY 2006

The computer-aided dispatch system (CADS) also allows for real-time access to wildfire, prescribed fires, and resource activity by Fire Managers and Fire Information Officers for command and control functions and media requests. Current smoke management burn notifications and wildfires are available to the public on the agency's website in a web mapping application. This information is updated every 10 minutes.

**SOUTH CAROLINA FORESTRY COMMISSION  
FINANCIAL STATEMENT  
FISCAL YEAR 2016 - 2017**

**Carry Forward - July 1, 2016** **\$9,489,100**

**Revenues**

**State Appropriations** **\$16,348,627**

**Federal Grants** **\$4,147,855**

**Earmarked Funds**

Hunting & Fishing License \$193,408

Refund of Prior Year Expenditure \$5,212

Burning Assistance Fee \$231,284

Fire Lane Fee \$145,224

Timber Marking Fee -

Training Conference - Registration Fee \$27,795

User Fee - State Park & Forest \$94,551

Forest Product Assessment \$884,558

Construction of Water Bar \$1,143

Stand By for Prescribed Burning \$4,825

Sale of Seedlings \$388,562

Sale of Timber \$2,602,218

Conviction Surcharge \$15,350

Other Penalties, Cost & Settlements \$61

Rent - Residence \$15,034

Rednt - Farm Land \$53,936

Rent - State Owned Property \$51,994

Rent - Equipment \$695

Contribution & Donation \$8,566

Insurance Claims \$3,757

Sale of Services \$24,082

Sale of Nursery and Farm Products -

Sale of Recycling Material \$19

Sale of Vehicles \$167,835

Sale of Machinery and Equipment \$388,333

Sale of Buildings -

Sale of Land \$385,251

Sale of Other Assets -

Insurance Premium Taxes - Firefighting Equipement \$3,443,799

Capital Reserves Fund - Firefighting Equipment \$1,000,000

**Total Earmarked** **\$10,137,493**

**Total Revenue** **\$30,633,975**

**Expenditures**

State \$16,595,555

Federal \$3,952,310

Other \$7,828,705

**Total Expenditures** **\$28,376,569**

**Balance as of June 30, 2017** **\$11,746,505 (1)**

(1) Firefighting equipment ordered during Fiscal Year 2017 was not received by the end of the Fiscal year, therefore those expenditures will reflect in Fiscal Year 2018 increasing the year end balance for Fiscal Year 2017

# South Carolina Forestry Commission

## Organizational Chart

