

# South Carolina Forestry Commission Annual Report

## FY 2012-2013



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## **STATE COMMISSION OF FORESTRY**

### **Members of the Commission**

Frank A. McLeod III, Columbia, Chair

Mitchell S. Scott, Allendale, Vice Chair

Dr. Benton H. Box, Clemson

G. Edward Muckenfuss, Summerville

H. Stro Morrison III, Estill

Dr. A.G. "Skeet" Burris, Varnville

James F. Barker, President, Clemson University

Sam Coker, Gilbert

James B. Thompson, Greenwood

### **Administration**

Henry E. (Gene) Kodama, State Forester

Joel T. Felder, 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 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 1,799 wildfires that burned 10,223.4 acres of forestland and grassland during the fiscal year. The number of fires and acres burned were higher than average for the previous five years.

In fiscal year 2012-2013 wildfires destroyed 29 homes and damaged 27 others. In addition, 51 other buildings were destroyed and 27 buildings were damaged. Agency firefighters saved 501 homes and an additional 166 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 FY 2012 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, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia. During this fiscal year, the SCFC mobilized 56 personnel and 15 pieces of equipment to provide wildfire suppression assistance in Texas, North Carolina and support at SACC in Atlanta.

**SC Emergency Management Division:** SC Forestry Commission personnel, including incident management teams, participated in several emergency response training sessions involving hurricanes, earthquakes, weapons of mass destruction, and dam failures. Agency response and contingency plans were evaluated and updated.

**SC Army National Guard:** Under an agreement with the National Guard, 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 SC National Guard and the SC Forestry Commission are held annually to ensure mission readiness.

**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:

- Title II grant funds are for structural and wildland firefighting needs: 60 Fire Departments requested \$276,284 worth of firefighting equipment of which 47 fire departments were funded for \$94,802.
- National Fire Plan Title IV grant funds are for wildland firefighting needs: 90 Fire Departments requested \$453,907 worth of firefighting equipment of which 52 fire departments were funded for \$121,733.

**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, six (6) items were screened under the FEPP program valued at \$551,956 and twenty-five (25) items were screened under FFP. Many of the items were truck tractors that will replace the older single axle truck tractors the SCFC has currently in the fleet. Additional items such as pickup trucks (to be converted into brush trucks) and engines were screened and delivered to rural fire departments under this program. The total value of inventoried FEPP property now stands at \$23.4 million for 1,120 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. Field visits were also conducted to help with the inventory verification and reiteration of the program's intent. As a result, 74 items (valued at \$1.3 million) were returned to the Columbia warehouse where most were sold on auction through GSA. Proceeds from these sales are collected by the USDA Forest Service.

**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 NWS provided spot weather forecasts for several wildfires as requested by the SCFC.

**USDA Forest Service:** A mutual aid agreement between the US Forest Service 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 coordinated with the Corps of Engineers to validate contact information and billing procedures.

**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 SC Forestry Commission, USDA Forest Service, SC Firemen's Association, Department of Health and Environmental Control, SC Division of Emergency Preparedness, 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.

**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 taskbooks 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 four multi-disciplinary (non-SCFC) Type 3 IMTs located in each region of the State.

**Fire Weather**

**Weather Stations:** The Forestry Commission, USDA Forest Service, USDI National Park Service, Department of Defense (Ft. Jackson), and USDI Fish and Wildlife Service share a network of 12 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: FY 2013\***

<b>Month</b>	<b>Precipitation</b>
July, 2012	5.75
August	7.55
September	2.31
October	1.7
November	1.54
December	4.71
January, 2013	2.71
February	6.22
March	3.53
April	4.92
May	3.69
June	8.48
<b>Total</b>	<b>53.11</b>

\*Source: National Climate Data Center

**Precipitation Last 5 Years\***

<b>Fiscal Year</b>	<b>Precipitation</b>	<b>Departure</b>
	<b>(inches)</b>	<b>from</b>
2008-09	50.53	2.66
2009-10	50.51	2.60
2010-11	39.81	-8.02
2011-12	39.94	-8.07
2012-13	53.11	5.52

\*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 FY 2012 are as follows:

<b>Region</b>	<b>Coastal</b>	<b>Pee Dee</b>	<b>Piedmont</b>
<b>Readiness 1 (No wildfire danger)</b>	<b>12 days</b>	<b>10 days</b>	<b>0 days</b>
<b>Readiness 2 (Low wildfire danger)</b>	<b>252 days</b>	<b>187 days</b>	<b>261 days</b>
<b>Readiness 3 (Moderate wildfire danger)</b>	<b>98 days</b>	<b>160 days</b>	<b>101 days</b>
<b>Readiness 4 (High wildfire danger)</b>	<b>3 days</b>	<b>8 days</b>	<b>3 days</b>
<b>Readiness 5 (Extreme wildfire danger)</b>	<b>0 days</b>	<b>0 days</b>	<b>0 days</b>

**Burning Ban and Red Flag Fire Alert:** A Red Flag was in effect from February 10-14, 2012 due to high winds, low relative humidity, and high fire occurrence.

### **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 11 different Federal Excess Property aircraft for a total of 371 missions for 877 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 assistance.

During the year, SCFC pilots flew a total of 877 hours (Coastal- 260 hours, Pee Dee-316 hours, Piedmont -301 hours).

### **Prescribed Fire**

**Certified Prescribed Fire Manager Program:** Four Certified Prescribed Fire Manager Programs were conducted during the year with 141 participants. This course focuses of planning prescribed burns to comply with mandated air quality standards.

#### **Prescribed Burning for Forestry, Wildlife, and Agriculture FY 2013**

<b>REGION</b>	<b>Forest Understory</b>		<b>Forestry Site Prep</b>		<b>Wildlife</b>		<b>Agriculture</b>	
	<b>Number</b>	<b>Acres</b>	<b>Number</b>	<b>Acres</b>	<b>Number</b>	<b>Acres</b>	<b>Number</b>	<b>Acres</b>
Coastal	2,365	198,330	2,024	14,607	779	76,014	2,168	34,177
Pee Dee	1,239	54,931	1,245	6,885	579	40,972	1,962	34,690
Piedmont	629	56,706	1,239	4,907	182	7,808	574	5,377
<b>State</b>	<b>4,233</b>	<b>309,966.3</b>	<b>4,508</b>	<b>26,398.5</b>	<b>1,540</b>	<b>124,794.3</b>	<b>4,704</b>	<b>74,243.9</b>

**Total Forestry, Wildlife & Agriculture Burns: 14,985 for 535,402.9 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 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 843 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 11 times by SCFC and USF&WS personnel during the year to reach over 12,500 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 806 community assessments to date with 748 of those rating at moderate to extreme in regards to wildfire risk. Twenty Eight (28) new assessments were completed covering thirty one (31) communities. Community Wildfire Protection Plans were written for six (6) communities with a few at the fire department's request to address their entire coverage area. To date 172 Community Wildfire Protection Plans have been written in which 293 communities have benefited.

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 being written for communities around USF&WS Refuges in Jasper County with Fish and Wildlife personnel. The Nature Conservancy has also participated in the CWPP development.

Fire staff worked with contractors to complete the development of the Southern Wildfire Risk Assessment Portal, an online tool that describes wildfire risk to communities statewide. This tool is available to landowners, county planners, fire departments, and agency personnel and allows them to view maps, tables, and reports regarding wildfire risk in their area of interest.

National Fire Plan grant funds were awarded to 11 communities for projects in the amount of \$85,885 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 19 tracts (2,711 acres) for \$103,043.

**Wildfire Prevention:** A statewide wildfire prevention awareness effort was made across the state prior to the spring 2013 wildfire season to promote safe debris burning; the number one cause of wildfires in the state. Field personnel utilized trap lines in 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 schools, businesses and public buildings. The distribution of materials included 10,000 TBYB brochures, various other items, i.e. cups, koozies, slap bracelets, pencils and about 5,000 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.

## Fires by Cause

Cause	Fires	Acres Burned	Average Acres per Fire	Percent of Total Fires FY13
LIGHTNING	67	908.9	13.6	3.72%
CAMPFIRE	22	55.1	2.5	1.22%
SMOKING	54	206.5	3.8	3.00%
DEBRIS BURNING	813	3536.9	4.4	45.19%
INCENDIARY	353	3182.3	9.0	19.62%
EQUIPMENT USE	103	713.9	6.9	5.73%
RAILROAD	7	10.4	1.5	0.39%
CHILDREN	108	305.9	2.8	6.00%
MISCELLANEOUS	150	826.2	5.5	8.34%
FIREWORKS	26	163.8	6.3	1.45%
POWER LINE	64	234.6	3.7	3.56%
STRUCTURE	32	78.9	2.5	1.78%
<b>Totals</b>	<b>1,799</b>	<b>10,223.4</b>	<b>5.7</b>	<b>100.00%</b>

## Five-Year Summary: All Fires

Fiscal Year	Acres Protected	# Fires	Acres Burned	Avg. Acres/Fire	% Area Burned
<b>2008-09</b>	13,657,033	2,001	30,739.6	15.4	0.23%
<b>2009-10</b>	13,657,033	1,639	8,443.9	5.2	0.06%
<b>2010-11</b>	13,657,033	3,100	22,770.6	7.3	0.17%
<b>2011-12</b>	13,657,033	2,192	16,960.1	7.7	0.12%
<b>2012-13</b>	13,657,033	1,799	10,223.4	5.7	0.07%
<b>Five Year Averages</b>		<b>2,146</b>	<b>17,827.5</b>	<b>8.3</b>	<b>0.13%</b>

**Acres Protected and Total Burning Notifications by County -- Fiscal Year 2013**

<b>County</b>	<b>Acres Protected</b>	<b>Smoke Mgt. Notifications</b>	<b>Other Notifications</b>
Abbeville County	248,551	114	2,593
Aiken County	524,743	725	15,777
Allendale County	199,005	413	852
Anderson County	216,023	166	14,059
Bamberg County	202,862	513	1,743
Barnwell County	266,959	511	3,632
Beaufort County	130,448	337	8,580
Berkeley County	595,291	590	17,915
Calhoun County	151,294	326	3,014
Charleston County	318,526	261	7,272
Cherokee County	168,077	59	4,064
Chester County	315,565	158	3,222
Chesterfield County	416,239	436	7,460
Clarendon County	238,952	418	5,087
Colleton County	560,896	877	12,896
Darlington County	176,333	321	11,259
Dillon County	163,935	173	3,246
Dorchester County	272,524	341	9,765
Edgefield County	279,433	252	2,475
Fairfield County	408,433	155	2,551
Florence County	308,707	425	12,703
Georgetown County	400,136	460	9,413
Greenville County	296,082	77	12,549
Greenwood County	205,593	77	3,565
Hampton County	303,663	821	3,141
Horry County	493,012	546	19,655
Jasper County	341,036	649	3,530
Kershaw County	376,376	278	14,997
Lancaster County	291,845	89	5,343
Laurens County	337,499	93	5,610
Lee County	121,735	310	1,675
Lexington County	256,939	331	31,706
Marion County	226,896	185	6,058
Marlboro County	226,676	122	4,094
McCormick County	223,394	129	983
Newberry County	334,566	155	3,230
Oconee County	292,590	82	11,642
Orangeburg County	446,887	972	14,594
Pickens County	236,029	64	11,597
Richland County	352,904	187	7,272
Saluda County	196,376	184	1,564
Spartanburg County	286,496	133	8,810
Sumter County	268,338	387	12,400
Union County	277,640	49	409
Williamsburg County	407,761	875	7,691
York County	293,768	159	11,694
<b>Total</b>	<b>13,657,033</b>	<b>14,985</b>	<b>363,387</b>

Total Smoke Mgt. &

378,372

**Total All Land Fires by County & Cause -- Fiscal Year 2013**

COUNTY	LIGHTNING		CAMPFIRE		SMOKING		DEBRIS BURNING		INCENDIARY		EQUIPMENT		RAILROAD		CHILDREN		MISC		FIREWORKS		POWER LINE		STRUCTURE		Total		
	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Total
ABBEVILLE	2	2.5	1	0.2	18	42.6	4	4.6	1	0.2	1	0.2	1	0.2	3	3.9	1	0.4	3	2.8	2	2.8	2	0.8	37	67.7	
AIKEN	5	33.5	3	6.5	52	420.5	12	110.3	5	20.7	18	119	11	75.6	1	3	1	0.4	4	19	2	21	2	0.8	115	844.5	
ALLENDALE	1	20			5	61	1	40	1	97									1	0.1					9	218.1	
ANDERSON	1	2			6	19.1	3	6	3	6	3	1.5	2	9	2	9	1	5	2	4.2					18	46.8	
BAMBERG			1	0.1	12	89.1	2	6.5	3	56.5	1	2	1	15	1	15	2	2	4.2						22	170.4	
BARNWELL	1	6			13	107.8	1	5	3	16.5	1	2	3	14	1	14	3	3	7	1	0.5	1	0.5	23	151.8		
BEAUFORT	1	6.7			3	3.5	11	38.5	2	3	3	5	3	7	1	7	3	8.3	2	1.8	2	0.8	22	57	745.6		
BERKELEY			2	6.3	28	345.9	37	370.3	2	11	2	11	2	11	2	11	2	4.2							34	67.4	
CALHOUN	3	559.1	1	1	9	15.7	3	22	1	50	1	5	1	4	1	4	1	8	2	4.2					19	656.6	
CHARLESTON					7	11.5	1	2	1	2	1	1	1	1	1	1	1	4	2	1.2	2	0.2	23	40.8	23	40.8	
CHEROKEE	3	17	1	6	6	5.3	1	0.5	6	1.2	1	3	2	7.5	2	7.5	2	8.3	1	0.1	2	0.2	23	40.8	23	40.8	
CHESTER					36	102.8	7	47	4	5.5	1	5	5	49.7	1	71	2	7	2	7					57	289	
CHESTERFIELD			1	1	5	18.5	1	5	4	6.1	1	1	1	1	1	1	1	32.6	3	36.2	1	0.1	62	635.6	62	635.6	
CLARENDON	2	0.6	3	5	41	281.6	12	344.2	6	35.2	1	0.2	3	2.7	4	2.2	1	3	4	2.2	1	0.1	88	495.3	88	495.3	
COLLETON	2	101			41	147.2	30	206.7	5	29	8	14	1	100	1	100	1	10.2	2	6	2	1.1	60	250.9	60	250.9	
DARLINGTON	1	0.5			28	108.6	7	25.7	5	29	1	0.4	1	3	7	14.8	2	10.2	1	2					51	181.4	
DILLON	5	5.5	1	1.5	5	8.8	19	153	1	25	2	3.5	2	3	1	3	1	3	1	12					42	199.2	
DORCHESTER			1	0.5	14	56.2	7	33.1	1	25	3	1.9	1	25	1	25	2	2.3	2	2.3	2	0.2	29	144	29	144	
EDGEFIELD	5	24.2	1	18	5	18.5	1	5	4	6.1	1	1	1	1	1	1	1	32.6	3	36.2	1	0.1	25	145.6	25	145.6	
FAIRFIELD			1	2	15	21.4	15	21.4	2	4.5	1	1	1	1	1	1	1	1	1	3.4	2	16.3	24	50.6	24	50.6	
FLORENCE	3	15.2	1	2	19	31.5	19	77.1	1	3	8	14	1	100	1	100	1	0.2	2	6	2	1.1	60	250.9	60	250.9	
GEORGETOWN	6	29			16	71.6	14	67.4	2	12.1	2	3.5	2	3	1	3	1	3	1	12					44	201.6	
GREENVILLE	2	0.3	2	3.2	2	3	2	6	1	2	2	5.2	1	11	1	11	1	3	2	0.8	2	20	15	60.7	15	60.7	
GREENWOOD			2	3.3	13	29.2	1	2	2	2	1	0.5	3	11.5	1	3	1	3	2	0.8	2	20	25	52.3	25	52.3	
HAMPTON	1	0.1			18	36.9	10	33	1	1	1	2	1	0.5	1	0.5	1	1	5	5	1	0.1	33	78.5	33	78.5	
HORRY			1	0.1	8	32.4	18	81.7	2	13.5	2	3	5	7.2	1	1.5	1	3	3	3	1	0.1	36	139.4	36	139.4	
JASPER	2	5			31	126.9	7	194	3	121	3	3	1	2	1	2	2	25.5	2	2.5	1	0.1	56	482.7	56	482.7	
KERSHAW			1	1	24	49.2	5	34.1	7	16.7	3	3.3	9	25.5	2	25.5	2	25.5	6	22.4	1	0.1	58	179.7	58	179.7	
LANCASTER			2	1.1	12	24.1	2	8	3	16.1	2	1.5	2	1.4	1	1.4	1	1	4	4	1	0.5	25	56.7	25	56.7	
LAURENS	1	10.3			8	23.2	1	5	1	5	2	4.1	2	4.1	2	4.1	2	4.1	1	4	3	4	17	70.7	17	70.7	
LEE	1	10	1	1	30	95.7	7	41.7	1	0.5	1	6	1	0.3	1	0.3	1	0.5	1	1	1	8	44	156.7	44	156.7	
LEXINGTON	4	18.3	5	8.7	18	90.7	14	24.1	2	3.6	2	3.6	10	19.8	1	19.8	1	0.6	1	4.5	1	0.1	69	207.4	69	207.4	
MARION	1	2			6	26.6	7	101	1	15	13	37	10	19.8	1	19.8	1	0.6	1	4.5	1	0.1	15	144.6	15	144.6	
MARLBORO	1	0.3			17	55.6	4	55.1	1	2	1	15	6	93.1	6	93.1	2	18	2	18	2	0.2	32	224.6	32	224.6	
MCCORMICK	1	25.1			1	0.6	1	4	1	0.1	1	0.1	2	20	2	20	2	7	2	7	1	0.3	8	56.8	8	56.8	
NEWBERRY	1	1			3	68	1	39	1	39	1	0.5	4	36.1	1	36.1	1	0.5	1	0.4	1	8	8	117.5	8	117.5	
OCONEE	1	0.1	3	9.5	11	17	2	2.5	18	44.2	1	0.5	2	0.7	4	36.1	1	0.5	1	0.4	1	8	28	67.9	28	67.9	
ORANGEBURG	1	1			66	189	12	26.8	18	44.2	1	1.5	6	16.5	3	2.6	1	1	1	1	1	1	1	117	336.9	117	336.9
PICKENS	1	1			10	11.3	1	20	1	20	1	2	2	2	2	2	2	0.5	1	1	1	1	1	17	38.8	17	38.8
RICHLAND	1	2			11	263.4	4	15.6	1	4	1	8	22.1	9	29.6	1	0.5	1	0.5	1	1	0.5	40	343.2	40	343.2	
SALUDA	1	0.1			10	36	4	4.1	4	4.1	3	48.5	3	48.5	3	48.5	7	59.1	7	59.1	1	0.5	27	150.3	27	150.3	
SPARTANBURG	2	5			6	17.4	1	58	1	58	2	2.1	7	24.5	1	0.1	1	0.1	1	0.3	2	1.5	20	112.1	20	112.1	
SUMTER	2	1.5			50	120.9	17	195.7	3	33	3	1.2	5	39.1	1	6	1	6	1	0.3	1	0.6	86	432.7	86	432.7	
UNION			1	0.1	8	47.2	8	47.2	3	33	1	1	7	59.2	1	1	1	0.5	1	0.5	2	0.6	20	109.1	20	109.1	
WILLIAMSBURG	2	3			43	155.4	40	718	3	2.1	1	1	2	5	2	1.1	1	0.5	2	1.5	2	1.5	98	898.1	98	898.1	
YORK					2	4	2	0.6	2	0.6	4	11.5	4	5	4	5	4	5	4	5	1	1.5	13	22.6	13	22.6	
<b>State Total</b>	<b>67</b>	<b>908.9</b>	<b>22</b>	<b>55.1</b>	<b>813</b>	<b>3,536.9</b>	<b>353</b>	<b>3,182.3</b>	<b>103</b>	<b>714</b>	<b>7</b>	<b>10.4</b>	<b>108</b>	<b>306</b>	<b>150</b>	<b>826.2</b>	<b>26</b>	<b>163.8</b>	<b>64</b>	<b>234.6</b>	<b>32</b>	<b>78.9</b>	<b>1,799</b>	<b>10,223.4</b>	<b>1,799</b>	<b>10,223.4</b>	

**Total All Land Fires by County & Month -- Fiscal Year 2013**

COUNTY	July		August		September		October		November		December		January		February		March		April		May		June		Total Fires	Total Acres
	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres
ABBEVILLE	5	4.4	3	1.1	5	2.6	7	10.3	3	15.9	4	4.9	6	8.2	3	20.2	10	71.1	1	0.1	37	67.7				
AIKEN	10	50.5	1	0.1	16	116.9	7	77.5	15	88.9	8	15	30	335.6	11	36.5	10	71.1	1	0.1	115	844.5				
ALLENDALE	1	0.1	1	0.1	2	0.2	1	0.3	2	0.7	1	0.3	3	93	1	1	1	1	1	1	1	1	1	9	218.1	
ANDERSON	2	2.5	1	1.1	3	6	1	0.3	3	5.7	3	5.7	4	12.1	4	6.6	3	3.5	1	0.8	18	46.8				
BAMBERG	1	5	2	3.1	2	2.1	2	2.1	6	50.5	2	4	6	52.1	1	0.5	2	25.2	1	0.5	22	170.4				
BARNWELL	2	6	2	6	3	26	2	7	3	56	2	5	3	22	4	18.5	2	2.8	1	1.5	23	151.8				
BEAUFORT	2	2	2	1.5	2	1.5	2	1.5	9	18.5	2	5	5	8	1	20	1	20	1	2	22	57				
BERKELEY	5	10.7	1	0.4	7	30.3	4	8.8	9	137	11	39	31	283.3	5	49	2	180.3	1	0.8	77	745.6				
CALHOUN	2	2.3	1	0.2	4	2.2	1	0.1	4	3	3	3	17.2	13	30.9	3	4	3	7.5	34	67.4					
CHARLESTON	4	540.6	3	16.5	1	1	1	1	5	56	3	3	5	41.7	1	0.8	1	0.8	1	0.8	19	656.6				
CHEROKEE	3	17	2	1.7	2	1.1	2	2.2	2	31.2	3	3	9	9.2	1	2	1	0.8	1	0.8	11	23.5				
CHESTER	6	89.2	1	0.1	4	9	1	0.1	6	12	1	0.2	4	5.5	2	6.1	1	0.8	1	0.8	23	40.8				
CHESTERFIELD	5	3.1	1	0.3	10	14.3	11	218.4	9	103.6	2	6	16	275.1	4	6.6	3	3.5	1	0.8	57	289				
CLARENDON	5	105.2	4	7.3	8	27.6	6	21.7	21	100.3	12	82	19	108	5	15	3	3.5	1	0.8	62	635.6				
COLLETON	8	11.7	1	0.1	9	14.8	4	13.6	6	34	1	0.5	16	91.2	4	6.5	1	0.8	1	0.8	51	181.4				
DARLINGTON	12	24.7	3	2.9	3	3.6	5	15.1	4	54.2	11	90.9	2	6.5	1	1	1	0.8	1	0.8	42	199.2				
DILLON	2	2.5	2	0.6	2	0.9	1	0.1	5	31.2	3	15.8	7	31.3	2	1.5	1	0.8	1	0.8	29	144				
DORCHESTER	6	26.2	5	12.5	2	38	1	0.1	4	9	1	22.2	6	32.1	1	5.6	1	0.8	1	0.8	25	145.6				
EDGEFIELD	2	2	4	18.3	2	2.8	1	0.1	2	2.5	1	1	9	19.2	1	0.3	1	0.8	1	0.8	24	50.6				
FAIRFIELD	7	17.1	3	5	5	26	2	0.7	8	53.5	10	8.2	19	127.9	5	10.5	1	0.8	1	0.8	60	250.9				
FLORENCE	8	36.5	1	0.3	4	9.1	2	4.5	3	10	2	1	15	73.6	5	45	3	20.6	1	0.8	44	201.6				
GEORGETOWN	2	0.3	3	18.3	3	18	3	12.2	1	5	1	0.2	3	20	1	2	1	0.8	1	0.8	15	60.7				
GREENVILLE	2	3.5	3	2.7	2	12.5	1	2.3	5	9	3	14.2	5	6.9	3	1	1	0.8	1	0.8	25	52.3				
GREENWOOD	2	1.1	1	1	7	11	3	7.2	5	27.8	2	8	7	25.1	2	2.5	1	0.8	1	0.8	33	78.5				
HAMPTON	5	24.5	1	0.2	2	0.2	1	0.1	10	42.7	2	2.5	16	54.3	3	5	1	0.8	1	0.8	36	139.4				
HORRY	7	17.6	2	11.2	5	12.8	2	6	9	76.6	8	112.8	19	128.1	3	18.2	1	0.5	1	0.5	56	482.7				
JASPER	6	47.5	4	7.3	5	7.3	4	10.3	5	41.7	5	21.5	16	34.4	6	2.9	4	1.2	2	3.1	58	179.7				
KERSHAW	1	0.5	3	10.3	3	10.3	4	3.8	1	6	2	6	9	25.6	2	2.3	2	0.2	1	0.2	25	56.7				
LANCASTER	1	0.5	7	32.2	7	32.2	1	4	4	14.5	2	5.2	2	5.2	2	12.8	2	12.8	1	0.2	17	70.7				
LAURENS	3	1.8	1	10	9	7.9	3	2.8	2	4	5	19	10	48	5	47	2	6	6	1.9	44	156.7				
LEE	6	20.4	1	2.6	8	18.6	6	12.8	7	2.7	6	12.6	15	89.4	3	26.4	3	1.8	2	1.9	69	207.4				
LEXINGTON	2	4	1	4	2	11	1	0.1	4	67.5	1	1	5	50.6	3	70.7	1	3	1	0.5	15	144.6				
MARION	1	0.3	1	2	4	5.6	2	20	4	67.5	1	2	14	96.9	2	27	1	3	1	0.5	32	224.6				
MARLBORO	3	32.1	1	15	1	0.6	1	0.6	1	0.6	1	0.6	1	4	1	0.1	1	0.1	1	0.1	8	56.8				
MCCORMICK	1	1	2	1.5	5	4.6	2	2.1	1	1	1	1	3	110.5	1	4	1	4	1	0.1	8	56.8				
NEWBERRY	2	0.6	2	0.5	5	4.6	2	2.1	1	1	1	1	7	15	7	43.1	2	1	1	0.1	28	67.9				
OCONEE	4	16.7	6	8.3	10	28.5	8	18.6	25	70.1	9	25.4	36	123.9	7	12.1	6	24.6	5	8.2	117	336.9				
ORANGEBURG	1	1	1	1	6	5.8	1	0.5	1	1.5	3	4	3	4	2	22	2	10	1	0.1	17	38.8				
PICKENS	2	6	2	2.5	6	24.6	2	4	2	0.9	3	13.5	14	267	2	3	2	10	1	0.1	40	343.2				
RICHLAND	3	2.7	3	2.5	9	65.3	1	0.5	3	7.3	3	7.3	4	65.5	2	1.5	1	3	1	0.1	27	150.3				
SALUDA	4	7.1	1	2	5	21.5	2	4	2	0.9	1	5	2	60	4	12.2	1	0.3	1	0.1	20	112.1				
SPARTANBURG	9	15.6	1	0.5	13	21.8	4	7	8	24	14	78.1	21	94.6	9	157	2	11.5	2	2.1	86	432.7				
SUMTER	7	19.8	2	2.5	7	57.9	3	35.3	1	0.1	1	3.5	1	1.4	3	5.3	2	3.1	1	0.1	20	109.1				
UNION	1	1	1	1	6	31	2	4.5	19	69.2	12	52.6	41	691.9	5	10.6	4	16.5	1	0.1	98	898.1				
WILLIAMSBURG	3	1.1	1	0.5	1	1	1	0.5	1	1	1	1	2	2.5	3	12.5	3	5	1	0.1	13	22.6				
YORK	171	1203.3	15	36	33	30.1	116	552.4	241	1,327.9	158	745	507	3,878.1	146	754	73	445.6	24	118.6	1,798	10,223.4				

## **Forest Health**

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

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**

The Southern Pine Beetle outbreak that began in York County in 1997 collapsed over most of the outbreak zone by 2002. As of June 30, 2013, there were no counties in outbreak status.

The calendar year 2003 was our worst on record for losses to Southern Pine Beetle. In that period, we had over \$255 million in pines killed by the SPB.

In fiscal year 2012-2013, the losses due to the Southern Pine Beetle were minimal. During that time, aerial surveyors plotted 588 active beetle spots containing 5,644 trees. After ground checking these spots, it was found that Ips engraver beetles were responsible for the tree mortality. These trees contained a volume 77 cords and 54,800 board feet. This timber had a green stumpage value of \$17,582.

During the spring of 2013, 32 counties were pheromone trapped for prediction of Southern Pine Beetle population trends. No counties trapped enough beetles to predict a severe outbreak. Aerial surveys were in progress at the end of the fiscal year and little beetle activity was found statewide. Surveys will continue as needed.

The SCFC continued in a SPB Prevention and Restoration Program funded by the U.S. Forest Service. This program's aim is to prevent or reduce the potential damage due to Southern Pine Beetle. In this program SCFC personnel make forest management recommendations for practices known to minimize future beetle damage. These include thinning, prescribed burning, planting at low density, matching planted species to site, and other known mitigation measures. This program funded approximately five full time SPB forester level positions and a coordinator. In 2013, approximately 206 acres of susceptible forest were pre-commercially thinned to lower the risk of Southern Pine Beetle (SPB) infestation on state and private lands in South Carolina. Additionally, 1,409 acres of longleaf (696 acres) and loblolly (713 acres) pine planting at a reduced tree density was completed.

#### **Emerald Ash Borer**

Currently, this exotic beetle is not yet a problem in South Carolina, but it 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, and Wisconsin. We performed checks of stressed, dying, or dead Ash in South Carolina on an on-call basis to certify our lack of infestation.

#### **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. In 2013,

we set 10 Lindgren funnel traps in four (4) counties to detect if the beetle is present. At the time of this report, traps were still active.

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

The Insect and Disease section trapped for an exotic woodwasp (*Sirex noctilio*) that is currently found in several counties in New York, Pennsylvania, Michigan, Connecticut, and Vermont. This invasive species had not been found in South Carolina.

### **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 has been found in fourteen (14) South Carolina counties: Jasper, Beaufort, Hampton, Colleton, Charleston, Bamberg, Barnwell, Allendale, Dorchester, Orangeburg, Horry, Georgetown, Berkeley, and Lexington. The beetle and fungus has 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).

### **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 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.

#### **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 will be monitored periodically to determine the rate of spread of this potentially devastating disease.

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

Sudden Oak Death is an exotic disease caused by a fungus 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 from the area of know 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 2013. This survey was ongoing at the end of the fiscal year.

### **Cogongrass**

Cogongrass, a non-native federally regulated noxious weed, has been detected in 12 South Carolina counties: Anderson, Pickens, Greenville, York, Aiken, Allendale, Hampton, Beaufort, Colleton, Dorchester, Charleston, and Williamsburg. Most infestations are small, comprising a total of less than 20 acres, and all acres have been treated by Clemson University Department of Plant Industry. Six (6) counties (York, Charleston, Allendale, Hampton, Beaufort, and Williamsburg) 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 215 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 2012-2013, the Insect and Disease Laboratory processed 10 samples submitted by SCFC employees and private individuals. Recommendations for control of various pests identified were given where needed. In addition to these samples, 4,673 southern pine beetles and 16,145 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.

In conjunction with the spring 20% beetle survey, the entire state was surveyed for defoliation, beaver damage, fire, and apparent annosus root rot damage.

During the aerial survey, the observed damage due to forest tent caterpillars (defoliators) was found across 9,980.6 acres. Beaver damages were estimated at 604.8 acres (acreage is based on 20% survey); fire-caused mortality was observed on 152.94 acres of forestland (acreage is based on 20% survey); annosus root rot was identified on 794.89 acres.

## Equipment

### FY 13 Equipment Purchases

Nine (9) International 7500 Transports	\$753,345.00
Nine (9) Transport Bodies	\$156,150.00
Two (2) International 7600 Truck Tractors	\$153,459.36
Nine (9) D4K	\$1,165,473.00
Two (2) D6N	\$539,486.00
One (1) Firetrack	\$191,320.00
Knapheide Service Body/Crane	\$55,188.00
Dodge Grand Caravan	\$21,606.00
Two (2) Slip-On Units for Firetrack	\$35,931.00
Five (5) Slip-On Units for Pickups	\$58,737.50
Dispatch Equipment	\$141,000.00
One (1) Ford Explorer	\$24,561.00
One (1) F-350 Short Bed Pickup	\$31,157.00
One (1) F-350 Short Bed Service Body Pickup	\$35,020.00
One (1) F-350 Long Bed Pickup	\$30,905.00
Two (2) Dodge Ram 2500 Pickups	\$50,139.00
Emergency Lights/Sirens for Pickups	\$10,702.35
One (1) Miller Trailblazer Welder/Generator	\$10,098.00

TOTAL AS OF 03/26/2013

Approx \$3,464,278.21

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 \$260,475.21. This money will be used to purchase equipment and supplies.

## Law Enforcement

During FY 2013 the Forestry Commission had 35 sworn officers statewide. Three of these were investigators that focused primarily on complex timber theft, timber fraud, and woods arson cases.

Officers prosecuted 200 fire tickets, 4 litter and environmental cases, 50 violations of state forest regulations, 16 miscellaneous cases and 27 game and fish cases. Total fines collected were \$47,613.50. Fines collected from these cases are retained in the county where the offense occurred.

SCFC Law Enforcement Investigators investigated 91 timber theft / fraud cases which represented a loss of \$544,537.00 to the victims. SCFC collected and returned 88% or \$353,900.00 of that money to the affected landowners. During the year, 13 arson fires were reported and investigated. Agents arrested one individual for arson who was responsible for one fire. During the year, there were 577 fire investigations conducted. Out of these fires 280 were from escape debris burns.

## **FOREST MANAGEMENT**

There are 13.0 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, 65% 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 238,100 acres (1.8%), which is down 89% since 200. Public agencies (municipal, county, and federal) control 12% 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, 1,525 management plans were prepared for 96,768 acres. Beginning in July of 1999, customer satisfaction surveys were sent to every landowner that received a forestry management plan. In FY13, 96% of the landowners that responded to the survey indicated that they were satisfied with the management plan they received. Of these landowners, 100% 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 50 cases were referred to consulting foresters and 29 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.

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

The Conservation Reserve Program (CRP) began with crop year 1986 and was renewed with the passage of the 2002 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.

**Statewide Accomplishments for all Cost-Share Programs**

**2012-2013**

<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	345	12,201	0	1,024	0	0	\$968,961
SPB	41	1,409	0	0	920	263	\$152,654
CRP	321	716	2,290	5,974	2,191	0	\$158,093
<b>Totals</b>	<b>707</b>	<b>14,326</b>	<b>2,290</b>	<b>6,998</b>	<b>3,111</b>	<b>263</b>	<b>\$1,279,708</b>

Reforestation and Timber Stand Improvement

## 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 86% for loblolly pine plantings. Survival rates for longleaf pine plantings were tabulated separately. Plantings with longleaf seedlings had a survival rate of 81% when containerized stock was used. No longleaf plantings with bare root stock were sampled during FY13.

### *Forest Management Assistance 2012-2013*

County	Non Cost-Share		Cost-Share		Forest Stewardship	
	Exams	Acres	Exams	Acres	Plans	Acres
Abbeville	2	80	16	504	1	102
Aiken	16	1142	18	735	8	411
Allendale	0	0	24	1863	1	450
Anderson	23	1195	20	861	8	645
Bamberg	4	100	68	2704	3	908
Barnwell	8	421	25	1318	1	182
Beaufort	1	21	4	462	0	0
Berkeley	8	829	26	1607	4	93
Calhoun	8	658	31	1163	1	11
Charleston	2	165	7	398	0	0
Cherokee	7	492	5	144	2	396
Chester	12	666	12	694	2	751
Chesterfield	9	472	145	6782	3	474
Clarendon	0	0	28	1193	1	55
Colleton	3	117	34	1721	1	127
Darlington	1	47	18	658	1	240
Dillon	2	158	6	397	1	600
Dorchester	2	183	14	456	1	55
Edgefield	0	0	30	2038	0	0
Fairfield	3	366	12	630	5	798
Florence	13	704	27	929	4	798
Georgetown	0	0	10	353	2	670
Greenville	6	201	5	218	1	53
Greenwood	5	195	25	841	1	90
Hampton	3	230	33	1968	6	677
Horry	3	62	17	1179	4	435
Jasper	2	44	16	1507	3	416
Kershaw	6	220	32	1790	5	978
Lancaster	14	650	16	616	1	67
Laurens	3	85	43	4580	5	1011
Lee	0	0	41	2064	0	0
Lexington	13	566	20	676	1	77
Marion	2	72	7	182	3	345
Marlboro	0	0	17	702	1	348
McCormick	0	0	11	796	2	1375
Newberry	4	421	34	1931	5	1813
Oconee	6	258	3	159	1	72
Orangeburg	15	2345	76	2886	1	135
Pickens	11	473	7	176	0	0
Richland	15	461	7	349	1	32
Saluda	0	0	28	1119	2	88
Spartanburg	9	440	8	303	4	635
Sumter	0	0	39	1198	3	271
Union	7	1133	12	991	2	174
Williamsburg	13	810	38	1607	3	100
York	16	3428	21	697	1	885
<b>State Totals:</b>	<b>277</b>	<b>19,910</b>	<b>1,136</b>	<b>56,145</b>	<b>106</b>	<b>17,843</b>

## **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 forestry 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, 139 Stewardship Plans were written in South Carolina on 33,751 acres. South Carolina Forestry Commission foresters authored 106 plans covering 17,843 acres. Private forestry consultants authored 33 plans covering 15,908 acres. Three landowners (comprising 1,904 acres) were recognized as Forest Stewards during FY13.

Of the landowners who returned customer surveys during the FY13 fiscal year, 98% of them indicated they were satisfied with the management plan they received and 100% of them indicated that they intended to complete most or all of the recommendations in their plan.

## **FOREST 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 FY13:

**Firebreak Plowing** - performed by Forestry Commission employees using agency equipment for \$140 for the 1st hour and \$85 for each additional hour. In FY 2006, a separate rate was established for firebreaks constructed with a heavy tractor. For FY13, 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 \$500.00 during FY13.

**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 \$110.00.

**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>Service</b>	<b>Number of Tracts</b>	<b>Units of Measure</b>	<b>Receipts FY13</b>
Firebreak Plowing	396	870 miles	\$149,293.50
Prescribed Burning	168	17,380 acres	\$371,505.50
Prescribed Burning Standby	14	1,492 acres	\$2,810.00
Equipment Rental	7	51 acres	\$255.00
Water Bar Construction	5	270 bars	\$5,900.00
Timber Marking	0	-	\$0.00
<b>Totals</b>	<b>590</b>	<b>-</b>	<b>\$529,764.00</b>

Beginning in July of 1999, a customer satisfaction survey was sent to all landowners that received forestry services. In FY13, 98% of these landowners who responded indicated that they were satisfied with the services they had received and 100% of those responding indicated they plan to use our services again.

## **COMMUNITY FORESTRY**

The 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. This program also provides for, coordinates and/or conducts information, education and training regarding community forestry, wildland-urban interface issues, and arboricultural best management practices. As funds are available, the agency's Community Forestry program also provides 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.

### **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 USDA Forest Service to the SC Forestry Commission to administer. Due to a reduction in federal funding in FY13, the Commission was only able to provide \$40,000 in pass-through funds to Trees SC (the 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 37 municipalities, 1 county, and 2 military bases under the Tree City USA program during Fiscal Year 2013.

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 recognized the Gaffney Board of Public Works as South Carolina's only Tree Line USA utility for the tenth consecutive year.

The Tree Campus USA program, sponsored by the National Arbor Day Foundation, encourages institutions of higher learning to promote proper management of campus trees. FY13 brought the addition of 2 more Tree Campus USA institutions for a total of 6 in South Carolina. In addition to Clemson University, the University of SC, Furman University and the University of SC-Upstate, the award was earned by Lander University and the Medical University of SC.

### **Technical Assistance and Educational Programs**

No Financial Assistance Grants for communities were available during this reporting period. However, funding for a part-time Regional Urban Forester increased 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 FY13:

<i>Types of Technical Assistance</i>	<i>Program Accomplishments Community Forestry Staff</i>	
<b>Program Development/Expansion</b>	<b># of Entities</b>	<b># of Assists</b>
Municipal Government	73	83
Non-profit / trade organizations	4	9
Educational Institutions	10	11
County Government	7	10
State Government	3	4
Others	<u>10</u>	<u>10</u>
<b>TOTAL</b>	<b>107</b>	<b>127</b>

<b>Tree City USA's</b>	<b>41</b>
<b>Tree Campus USA's</b>	<b>6</b>
<b>Tree Line USA</b>	<b>1</b>

<b>Public Information/Education</b>	<u>Adults</u>	<u>Youth</u>	<u>Totals</u>
# Programs	6	3	<b>18</b>
# People	307	160	<b>467</b>
# Seat hours	1,991	160	<b>2,151</b>

## STATE FOREST / STATE LANDS

### HARBISON STATE FOREST

Harbison State Forest, located approximately 9 miles from downtown Columbia, encompasses 2,176 acres. The Forest was purchased in 1945 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.

#### **Receipts**

Parking fees were initiated in March 2004 to provide more equity with regard to user fees. Since 1997, bicyclists have been required to purchase daily or annual permits while hikers, runners, picnickers, and other forest users were not required to pay fees. Starting in the fiscal year 2009-2010 all users were required to purchase a parking permit only.

#### **Receipts for Operating Budget**

<u>Activity</u>	<u>Receipts</u>
Timber Sales	\$0
Burn Assist Fee	\$315.00
Shelter Rentals	\$1,370.00
Conference Room Rentals	\$7898.75
Annual Permits	\$47025.00
Daily Permits	\$13,249.41
Special Use Permits	\$1,000.00
Campsite Rental	\$350.00
Trail Donations	\$956.00
<hr/> Total	<hr/> \$ 72,164.16

Note: 25% of all receipts are paid to Richland County School System. This amounted to \$15,393.50 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 in this year for a total of approximately 105 acres.

#### **Forest Protection**

No wildfires occurred on Harbison State Forest during this fiscal year. Trees that were considered hazardous to forest visitors and/or to buildings were felled as workload allowed.

### **Recreation/Education**

Several events were held on the trails at Harbison during the 2012-2013 fiscal year. The Friends of Harbison State Forest held their seventh 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. Harbison was also the site for an Adventure Race as well as a 12k, 50k and two half marathon foot races.

In addition to these events, numerous trail work days were conducted during the 2012-2013 fiscal year. These events included improving the trails by pruning of overhanging branches and brush and the rehabilitation of wet areas and closed trails. Friends of the Forest members have taken on more responsibility in the care of the trail system in response to a smaller state forest staff.

The Friends of Harbison State Forest (FoHSF) continue to meet on a monthly basis to plan events and promote the Forest. They have received recognition from the Secretary of State as a non-profit group and have achieved 501(c) 3 status from the IRS. 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 75 individuals. The FoHSF installed 3,200 feet of trail, rerouting heavily eroded trail on the Midlands Mountain trail. This project was funded by a grant from The Richland County Conservation Commission.

Boy Scouts continue to provide assistance to Harbison through Eagle Scout projects and Cub Scout activities. One Eagle Scout project was completed this fiscal year which consisted of providing four new picnic tables - one at each campsite. Numerous educational programs were conducted for Scouts and others at Harbison State Forest. (See the Environmental Education section of this report for details.)

Scouts and other organized groups continue to use the four primitive camping facilities at Harbison. Harbison's camping facilities were used by 26 groups this fiscal year for a total of 571 users.

The canoe landing at Harbison State Forest provides access to the Broad River. During the 2012-2013 fiscal year, 125 groups used this facility for a total of 350 paddlers. Usage of the Canoe Landing increased more than 40% over last year.

### **Wildlife Management**

Five wildlife viewing areas totaling 2 ½ acres are maintained each year. These areas are planted in cover crops such as wheat, rye, and clover to facilitate the viewing of wildlife by forest visitors.

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

No threatened or endangered species are known to occur on Harbison State Forest. The two vernal ponds that were established in May 2004 have become well-established. These ½-acre wetlands provide habitat for amphibians, reptiles, and many species of insects and are favorite stops on nature hikes by educational groups and other Forest visitors.

### **Research**

No research was conducted on Harbison State Forest this year.

## **NIEDERHOF FORESTRY CENTER**

Niederhof Forestry Center is located just north of the town of Tillman and approximately 9 miles northwest of Ridgeland in Jasper County and encompasses approximately 1,600 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 a future multiple use demonstration forest with current outreach activities.

**Receipts:**

No revenue was generated on Niederhof Forestry Center this year.

**Silvicultural Practices**

Approximately 4 acres of loblolly pine and 7 acres of eucalyptus was chemically site prepared, burned, and planted for research and demonstration. In addition, approximately 190 acres of young longleaf and thinned loblolly pine was controlled burned during FY13.

**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.

**Wildlife Management**

Approximately 10 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.

**Research**

Approximately 4 acres of loblolly pine and 7 acres of eucalyptus was chemically site prepared, burned, and planted for research and demonstration.

**Outreach**

Major outreach activities consisted of special hunts in conjunction with several partnering organizations. Two deer hunts and 3 turkey hunts were conducted during FY13. The Forestry Commission partnered with the Quality Deer Management Association (QDMA), National Wild Turkey Federation (NWTF), and Hunting with a Hero (HWAH) to provide these opportunities. Approximately 135 individuals participated in these hunts.

**Niederhof Hunts FY 2013**

	<u>Number of Hunt Participants</u>	<u>Other Attending</u>	<u>SCFC</u>	Total
<b><u>Deer Hunts</u> 2 hunts</b>				
<b>November Rack Pack</b>	10	25	8	43
<b>November QDMA Mil</b>	11	10	8	29

**Turkey Hunts 3 hunts**

<b>WITO</b>	6	4	8	18
<b>March NWTF</b>	8	8	10	26
<b>March JAKES</b>	3	3	6	12
	<b>17</b>	<b>15</b>	<b>24</b>	<b>56</b>

## POE CREEK STATE FOREST

Poe Creek State Forest is composed of two tracts of land totaling approximately 2,511 acres. The Poe Creek tract is located in Pickens County adjacent to SC Highway 11 and contains 1,806 acres. The 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 that 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 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 Poe Creek.

### Receipts:

<b>Revenue Sources</b>	
Timber Sales	\$32,001
Wildlife Management Area	<b>\$18,481</b>
Rental state property	\$8,165
<b>Total Revenue</b>	<b>\$58,647</b>

**Note: 25% of all forest receipts were paid to Pickens and Oconee County Schools for a total of \$12,620**

### Silvicultural Practices

One timber sale occurred on Poe Creek State Forest during FY13. Two prescribed burns were conducted during the past year on the Piedmont Forestry Center property. These burns were designed to control hardwoods, reduce the risk of wildfire, and improve the aesthetics of three loblolly pine plantations and one white pine plantation. White pine and Virginia pine cones are collected from the orchards for SC Forestry Commission and NC Forest Service (NCFS) nurseries.

### Recreational/Education

Use of the Piedmont Forestry Center during FY13 was heavy, with numerous individuals and groups taking advantage of this beautiful facility.

Use	Days	# of People
Gatehouse Rental	14	
Cabin Rental	74	
Conference Room	4	315
Cub Scout Camp-outs	2	225
BSA Camp-outs	2	130
Fairplay Wilderness Group		14
Fishing Rodeo	1	525
Wood Magic		600
Salem Fire & Rescue		90
Oconee Co. Strike Team Dinner	1	30
Wedding	1	175

The Center was also used for a Fire Law Violation School attended by SCFC and NCFS personnel and taught by SCFC and Georgia Forestry Commission instructors. The Cabin and Gate House are also used by people hunting and/or fishing and by SC DNR personnel for various surveys.

### **Forest Protection**

Harvesting on Poe Creek and on the Piedmont Forestry Center has reduced the density in overstocked loblolly pine plantations. This harvesting has improved forest health and has reduced the hazard of wildfire and infestation by bark beetles.

### **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. During FY13, this field and 14 other food plots were maintained to improve the wildlife habitat on Poe Creek. The Piedmont Forestry Center and Poe Creek State Forest 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. These areas are being protected from human encroachment. Dr. Patrick McMillan, professor at Clemson University, continues to conduct research and assist with protection of these species.

The Cheohee Valley stream reclamation project was finished, but a few issues still remain. These issues include repair work on two structures in the creek and mowing between rows in the hardwoods that still needs to be done.

### **Infrastructure**

Road access at both the Piedmont Forestry Center and at Poe Creek State Forest was maintained during FY13 through mowing of road shoulders and grading where needed. The south end of the pole barn now houses a new Type 6 Pumper. A Fire Cache of tools and water handling equipment are kept for mountain fires in the Chemical Building. The Department of Juvenile Justice / Clemson University still utilizes and manages a facility on the western edge of the property that houses and rehabilitates approximately 35 girls in the juvenile system.

## **MANCHESTER STATE FOREST**

Manchester State Forest, located in Sumter County and Clarendon County, is currently comprised of approximately 29,070 acres. From 1939 to 1955, Manchester 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.

**Receipts**

Activity	Receipts
Timber Sales	424,260.53
Pinestraw Sales	30,706.00
Land Lease Payments	35,854.00
Wildlife Management Area	86,765.32
Trail and Special Use Permits	41,000.00
Year End Refund	1,405.11
Forfeited Monies	510.00
<b>Total</b>	<b>\$ 620,500.96</b>

Note: 25% of all forest receipts are paid to Sumter and Clarendon Counties for a total of \$155,125.24.

Timber sales were concentrated in thinnings in overstocked stands and conversion of older slash pine stands to longleaf plantations according to the harvest planning model.

**Silvicultural Practices:** Due to reduced state forest staffing, only 164 acres were prescribed burned during the fiscal year for wildlife, hazard reduction, hardwood control, aesthetic, and site preparation purposes.

Two hundred forty-three (243) acres were sold for final harvest cuts and 680 acres were sold for improvement cuts (thinnings).

Two hundred ninety-six (296) acres were sold for pinestraw raking.

The following species and number of seedlings were planted during FY13:

	<u>Acres</u>	<u>Seedlings</u>
Containerized longleaf pine	824	513,000

**Forest Protection**

Four (4) wildfires occurred on Manchester State Forest consuming approximately 56 acres during the 2012-13 fiscal year. Manchester personnel also assisted regional personnel as well as the local fire departments with several fires which were adjacent to the Forest as well as in-state and out-of-state assignments.

**Recreation/Education**

Hunting, fishing, horseback riding, motorcycle/ATV riding, mountain biking, and use of the rifle/pistol range continue to be favorite activities. Manchester personnel also participated in both sessions of the Wood Magic Fair.

Nineteen (19) special use permits were issued during the year for organized events which featured bicycle, equestrian, motorcycle and rifle pistol range use. Approximately 1,284 paid participants were served which generated \$6615.00 in revenue.

As the popularity of the rifle and pistol range continues to grow, six (6) temporary employees were hired on a rotating basis to provide a safe environment for the shooting public. All of the temporary employees and a number of the FTE's at Manchester were qualified as NRA (National Rifle Association) Range Safety Officers.

### **Wildlife Management**

Approximately 26,000 acres of the forest are presently included in the Wildlife Management Area Program through a cooperative agreement between the Department of Natural Resources (DNR), and the South Carolina Forestry Commission. DNR provided technical assistance with game food plot establishment monitoring and dove fields. They also agreed to plant the 150 acre dove field on the Oak Lea Tract. The draw hunts at Oak Lea also increased in popularity as evidenced by the increased number of applications.

Nine (9) public dove fields were opened on Manchester and Oak Lea. Data was collected on five (5) fields which showed an overall participation on opening day of three hundred seventy-nine (379) hunters. One thousand five hundred and sixty (1,560) doves were harvested on opening day with a total of 7,507 shots being fired.

Manchester also hosted its annual youth dove hunt on the Bland Tract, which was attended by 33 youths. One hundred thirty-six (136) doves were harvested during this event with 6,153 shots being fired.

Quail and turkey data were carefully tracked on Bland, Tuomey, and Oak Lea tracts with a total of 13 quail harvested and 12 gobblers killed.

During the year, DNR also provided technical assistance with deer herd dynamics with 233 deer being harvested from Manchester and Oak Lea. They also assisted Manchester in tracking various game and non-game species including quail, turkey, and fox squirrels and pond management. DNR also assisted in law enforcement on the forest through interagency cooperation.

Planting and maintenance was conducted on 542 acres of wildlife areas. Corn, popcorn, Egyptian wheat, sunflowers, sorghum-brown top-millet-benne mix, wheat, rye, clover, vetch and bicolor were utilized to diversify the food supply. Several of the plantings were donated by the Department of Natural Resources and planted by Manchester and DNR personnel.

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

Manchester currently maintains 6 clusters of Red-Cockaded Woodpeckers (RCW). Colony sites continue to be monitored along with scouting for new cavity and start trees in cooperation with biologists from the neighboring Poinsett Gunnery Range (US Air Force). An agreement was reached with the USAF that would allow them to monitor and work on the colony sites only with prior agreement with the Manchester State Forest Director. A meeting with DNR, Poinsett Weapons Range, and US Fish & Wildlife Service personnel resulting in an emergency recovery plan for the RCW.

### **Research**

Manchester continues to cooperate with the SCFC Nursery Section by providing 8 sites for clone banks, seed orchards, and progeny tests. A new test site was established at the Creech Seed Orchard using various planting densities, clones, and SCFC Best Family trees for the purpose of biomass research.

### **Infrastructure**

Maintenance continued on approximately 100 miles of unimproved dirt roads on Manchester including grading and mowing.

## **WEE TEE STATE FOREST**

Wee Tee State Forest 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, U. S. Forest Service, Forest Legacy Program, U. S. Fish and Wildlife, North American Wetlands Conservation Act Grant, Ducks Unlimited, National Wild Turkey Federation, and Anheuser-Bush. Wee Tee 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 as well as the opportunities it provides for recreation, forest practice demonstration, and education.

### **Receipts**

During the past fiscal year \$55,377.63 were collected on Wee Tee State Forest as payment for participation in SC DNR's WMA program. Note: 25% of all forest receipts were paid to Williamsburg and Georgetown Counties for a total of \$13,844.41.

### **Recreation/Education**

Fishing in the Wee Tee Lakes was opened in April, 2004 on Wednesdays and Saturdays from sunup to sundown.

A hunting season was planned with SCDNR and was implemented starting in September 2004. Harvest data was not collected, nor required; however, hunters indicate successful seasons during FY13 for both deer and turkey.

Plans have been initiated in cooperation with Palmetto Conservation Foundation to allow canoeing and kayaking in the Wee Tee Lakes in conjunction with the Berkeley County Blueways with an information center being opened in nearby St. Stephens.

### **Forest Protection**

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

### **Wildlife Management**

An agreement was reached in FY05 with SCDNR to place Wee Tee under the WMA program according to a pre-closing cooperative arrangement. Hunting and fishing schedules were agreed upon and implemented.

In 2012-13, a new agreement was made with the South Carolina Department of Natural Resources to allow the South Carolina Forestry Commission to set the fishing regulations.

### **Infrastructure**

Manchester State Forest personnel made improvements to approximately 45 miles of roads on Wee Tee during FY13. Improvements included grading, mowing and drainage improvements due to existing beaver dams, culvert replacements, and bridge replacements.

Wee Tee State Forest has one permanent employee with maintenance responsibilities to roads, buildings and other infrastructure at Wee Tee.

## SAND HILLS STATE FOREST

Sand Hills State Forest (SHSF) covers approximately 46,500 acres with 45,000 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 Sand Hills State Forest was transferred to the South Carolina Forestry Commission.

### Receipts

Since 1967, Sand Hills has been totally self-supporting.

<b>RECEIPTS FOR SAND HILLS OPERATING BUDGET</b>	
<b>Activity</b>	<b>FY13</b>
Burn Assist. Fee	\$ -
Timber & Stump Sales	\$ 698,445.29
Pinestraw Sales	\$ 1,252,852.12
WMA Payment	\$ 40,458.92
Rent State Owned Property	\$ 3,650.75
Rent Farmland (CPR)	\$ 390.00
Farm Products	\$ 1,240.00
User Fees	\$ 5,058.00
Prior Year Refund	\$ 3,911.46
Donation	\$ 160.00
<b>Total</b>	<b>\$ 2,006,166.54</b>

Note: 25% of \$1,997,204.33 was 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 PAYMENT</b>	
<b>County</b>	<b>FY13</b>
Chesterfield (97.6%)	\$ 482,155.30
Darlington (2.4%)	\$ 12,220.79
Kershaw	\$ 4,924.99
<b>Total</b>	<b>\$ 499,301.08</b>

### Silvicultural Practices

The following species and number of seedlings were planted:

Containerized Longleaf Pine	38 Acres	27,588 Trees
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### Forest Protection

A total of 2,333 acres were prescribed burned for wildlife habitat enhancement, hardwood control and

fuel reduction.

Sand Hills State Forest had no wildfires in FY13.

### **Pinestraw and Timber**

In 1999 Sand Hills 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 eradicate 90% of all hardwoods on a tract of land using herbicides. In exchange, that person may harvest all 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 FY13 Sand Hills issued 13 enhancement contracts for a total of 609 acres. There were a total of 4,011 active enhancement acres at the end of FY13.

Sand Hills State Forest sells pinestraw through bid sales and negotiated sales. In FY13 there were 5,083.6 acres sold on bid sales for \$884,684.62 and 2937.5 acres sold on negotiated sales for \$351,007.50.

FY13 saw a decrease in timber sales over last year with 1,860 acres for a total of \$698,445.29. FY12 timber sales encompassed 2,209 acres for a total of \$1,046,469.97. Product volumes and dollar amount by product for FY13 are:

<b>Product</b>	<b>Volume (Tons)</b>	<b>Dollar Amount</b>
Pine Pulpwood	8,383.50	\$73,481.56
Pine CNS	7,846.40	\$112,481.96
Pine Sawtimber	15,271.00	\$450,779.16
Hardwood Pulpwood	970.20	\$8,050.79
Hardwood Sawtimber	2,466.50	\$53,651.82
Pine Chips	0.00	\$0.00
<b>Total</b>	<b>34,937.60</b>	<b>\$698,445.29</b>

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. Red registration stickers are used for 2-week or 60-day pinestraw sales, yellow registration stickers are used for the pinestraw enhancement program, and green registration stickers are used for state forest users that want to access the "authorized vehicles only" truck trails. The majority of the green registration stickers are issued to hunters.

In FY13, Sand Hills State Forest issued 246 green stickers, 272 red stickers, and 241 yellow stickers.

### **Recreation**

Recreational use of the Forest continues to increase. 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.

Geo-caching is a new activity that is becoming popular at Sand Hills. Geo-caching is a game of hiding

and seeking treasures by entering the location using a GPS system and then putting the location online for individuals to find the geo-cache. There are 15 geo-caches on Sand Hills, 249 within 25 miles of Sand Hills and over 2,155,877 geo-caches worldwide.

At Sugarloaf Mountain, there are seven primitive camping sites for family camping and eight primitive equestrian campsites. Sand Hills personnel booked 145 reservations for these sites this year. An estimated 3,019 visitors used the campsites and trails. FY13 fees ranged from \$10 per site without shelters to \$15 per site for sites with shelters. Sand Hills received \$3,650.75 in revenue from camping.

Trail use permits for horseback riding decreased to 194 permits in FY13. Eighty-two (82) annual/daily permits were sold online. One hundred ten permits (110) were purchased through the drop box outside the SHSF office. There were 2 All State Forest permits sold this year. Revenue from trail use permits totaled \$5,058.00. The permit holders came from South Carolina, North Carolina, and Georgia.

Free-use permits are issued for any activity at Sand Hills State Forest that does not have a fee. SHSF personnel issued 40 free-use permits this year. Eighteen (18) of the permits were for raking pinestraw for personal use and 22 were for gathering firewood.

**\*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.).**

Sugarloaf Mountain shelters accommodated Boy Scout troops, church events, family reunions, birthdays, and retreats. Sugarloaf Mountain camping areas also accommodated a large number of sportsman who hunted on SHSF and Carolina Sandhills National Wildlife Refuge.

Three special-use permits were issued for organized events.

1. AERC National Championship Endurance Ride on October 10-20, 2012: 64 Riders, volunteers and received \$320 in fees.
2. Sand Blast Rally on March 2, 2013: 68 competitive entries with 98 people racing, 30 cars, 38 motorcycles and received \$990 in fees.
3. Spring Fling Endurance Ride on April 12-13, 2013: 146 Riders, volunteers and received \$730 in fees.

These events brought many visitors to Sand Hills State Forest and surrounding areas and had an estimated economic impact of \$100,000. The local involvement and sponsorship have increased each year that these events have been held.

### **Education**

SHSF personnel visited and presented programs to the following schools: Spalding Middle School (6<sup>th</sup>-8<sup>th</sup> Grade)-80 students, Darlington County Institute for Technology (9<sup>th</sup>-12<sup>th</sup> Grade)-50 students, Long Middle School (8th grade)-125 students, FFA Forestry Competition -50 students, Job Shadow from Chesterfield High School -1 student, Darlington County Disabled Children Class- 15 students, Darlington County Arbor Day – 200 people and various high schools and FFA clubs. In addition to visiting classrooms, SHSF personnel also spoke to several civic clubs as well as participated in the Wood Magic Forest Fair.

### **Wildlife Management**

Approximately 46,000 acres of the Forest is included in the Wildlife Management Area Program. This is a cooperative agreement between the Department of Natural Resources (DNR) and the SC Forestry Commission. SHSF has two public dove fields. The Wilkes Chapel field is 57 acres and is planted in corn, sunflowers, and bicolor. The Davis field is 40 acres and is planted in corn, sunflowers, and bicolor. Both the Wilkes Chapel field and the Davis field were recognized by the S.C. Sportsman Magazine as

being in the top five public dove fields in the state for the number of birds harvested per hunter. Sixty acres (50 plots) were planted as wildlife food plots. These plots were planted in wheat, corn, sunflower, spring game mix, dove mix, dove proso, wild turkey mix, quail mix, and sorghum. All plantings were fertilized and limed at the recommended rates. All manageable bicolor patches in Compartments 15, 16, 17, 18 & 21 were bush hogged, fertilized, and limed.

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 89 managed Red-cockaded Woodpecker clusters on SHSF. During the past fiscal year, 78 clusters were active. Of those 78 active groups, 69 can be considered potential breeding groups.

Seventy-two nesting attempts were made by 67 groups in 2013; 50 of those attempts fledged offspring.

Management Implications: In FY13, 18 inserts were installed as new areas were surveyed to assess how many inserts needed to be put in to bring new groups up to recovery standard. During FY 2012-2013 it is hoped that 25 inserts will be installed to improve some existing clusters as well as provide for recruitment areas on SHSF. Recruitment clusters are to be provided at a rate of 10% of the group number per year. A new group was found in Compartment 12 this year and may be a budded PBG.

**Law Enforcement**

Officers issued 25 citations for various crimes on the state forest. Most prevalent was Rules & Regulations of Commission violations. The use of an unmarked vehicle for law enforcement on the state forest continues to enhance surveillance of possible violators.

**Research**

A longleaf pine natural regeneration research project in conjunction with the USDA Forest Service is still ongoing and has been in effect for 25 years.

**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. The Department of Natural Resources hired their own forester to conduct management of the agencies timberlands, therefore greatly reducing their need for SCFC services. However, the State Lands Coordinator still assist in advertising their timber sales as well as providing assistance when requested. During the 2012-13 fiscal year, the State Lands Coordinator provided timber sale assistance to 6 agencies on 10 different tracts. This assistance consisted of cruising, marking, management assistance, and administering timber sales. The agencies and facilities assisted were as follows:

DNR Timber Sales	Acres	Total tons
Woods Bay	65	
Victoria Bluff (mgt. asst. only)		
Donnelley (mgt. asst. only)	609	
Mason (mgt. asst. only)	155	
Webb	900	108,816

<b>PRT Timber Sales</b>	<b>Acres</b>	<b>Total tons</b>
Cheraw	350	7,771

<b>Other State Lands Timber Sales</b>	<b>Acres</b>	<b>Total tons</b>
U.S.C. Wedge (mgt. asst. only)	1500	
D.O.C. (mgt. asst. only)		
Dept. of Mental Health (Crafts Farrow) (mgt. asst. only)	15	
John De La Howe School (mgt. asst. only)		

**Other Activities**

In addition, the five state forests (Manchester, Sand Hills, Wee Tee, Harbison, and Poe Creek) became dual certified under the Sustainable Forestry Initiative (S.F.I.) and American Forest Foundation (A.F.F.) standards of sustainability. The State Lands Coordinator attended meetings with the National Enduro planning committee for Manchester State Forest, attended state trails committee meetings, began attending the State Implementation Committee (S.I.C.) meetings, and facilitated timber marking with regions where possible.

**EDUCATION**

**Forestry Education Coordinator Highlights**

- Assumed the SC PLT Coordinator position
- Facilitated 8 Project Learning Tree workshops or presentations
- Coordinated 1 Wood Magic Forest Fair event
- Co-coordinated another Wood Magic Forest Fair event with an outside group.
- Conducted 26 education programs, reaching over 950 people (not including the Wood Magic Forest Fair events).
- Assisted with the South Carolina Teachers Tour

**Project Learning Tree**

Beginning in FY 2013, the forest education coordinator took over as the SC PLT Coordinator. In FY 2013, 16 workshops reached 342 educators. Also, 7 presentations and/or booths were conducted by SC PLT, reaching 253 people. Eleven of these workshops and presentations had SCFC employees involved. For the first time in 5 years, SC PLT held a new facilitator training workshop. Seventeen new facilitators were trained at this 2 day event.

**Teacher's Tour**

The 2013 South Carolina Teacher's Tour was held for 7 days in June with 36 participants. Many more applications were received than the Tour could accommodate. Many SCFC employees helped make the tour possible by being speakers, handling logistics, and conducting demonstrations.

**Wood Magic Forest Fair**

During FY13, the Wood Magic Forest Fair was held in more than one location, a first in three years. A 4-day event was held in September 2012 at the Piedmont Forestry Center on Poe Creek State Forest. The forest education coordinator also co-coordinated a second event in November at the Hobcaw Barony Discovery Center in Georgetown. That event was 3 days. Over 1,000 students, teachers, and chaperones attended the events. Thirty-one SCFC employees volunteered at the two events.

**Educational Activities at Harbison State Forest**

	Date	School/Organization	Grade Level/Age	# of Children	# of Adults
1	7/10/2012	Palmetto Place Emergency Children's Shelter	7-16 yr. olds	10	2
2	8/8/2012	Flying High Academy	4- 12 yr. olds	20	1
3	9/11/2012	Center for Advance Career /Tech Studies Chapin	9-12th	30	2
4	9/12/2012	Center for Advance Career /Tech Studies Chapin	9-12th	52	2
5	10/10/2012	HE Corley Elementary	K	45	5
6	10/11/2012	HE Corley Elementary	K	45	4
7	10/12/2012	Batesburg-Leesville High	9-12th	21	1
8	10/17/2012	Heritage Christian Academy	1	9	5
9	10/23/2012	Longleaf Middle	7	60	3
10	10/24/2012	Midlands Tech	college		21
11	11/14/2012	Midlands Tech	college		23
12	10/25/2012	Seven Oaks	K	36	8
13	10/26/2012	Seven Oaks	K	36	8
14	11/16/2012	Arrows Academy Homeschool	3-8th	16	8
15	12/8/2012	Arbor Day Event	all	45	30
16	3/19/2013	SC Commissioner's School for Ag	10-12th	17	2
17	3/20/2013	Midlands Tech	college		16
18	3/26/2013	Heathwood Hall	2nd	46	6
19	3/27/2013	White Knoll High	9-12th	45	10
20	4/8/2013	Arrows Academy Homeschool	8-12 yr. olds	8	3
21	4/10/2013	Midlands Tech	college		16
22	4/23/2013	Ballentine Elementary	1st	63	18
23	4/25/2013	Ballentine Elementary	1st	63	18
24	June	Teacher's Tour	adult		36
		<b>TOTALS</b>		<b>667</b>	<b>248</b>
		<b>Total Participating (Adults +children) =</b>	<b>915</b>		

**Educational Activities Outside of Harbison**

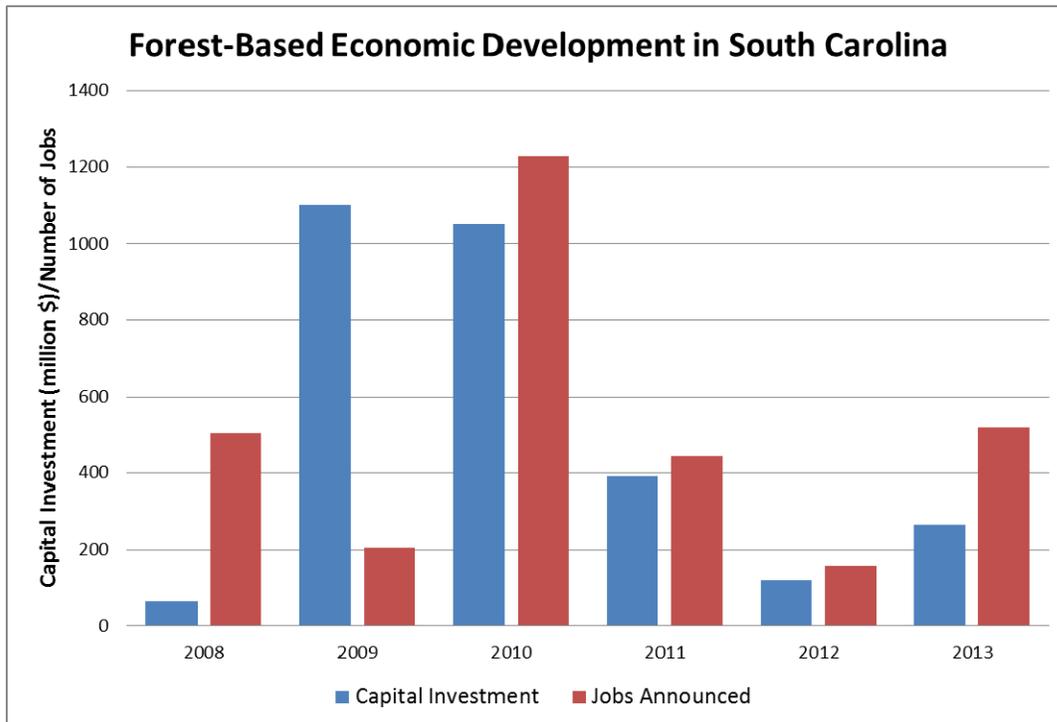
		<b>School/Organization</b>	<b>Grade Level/Age</b>	<b># of Children</b>	<b># of Adults</b>
	<b>Date</b>				
1	9/25-28/12	Wood Magic Forest Fair	4	462	80
2	10/9/2012	Batesburg-Leesville High	9-12th	21	1
3	11/7-11/9/12	Wood Magic Forest Fair	4	396	68
4	2/22/2013	Central Carolina Tech	college		15
		<b>TOTALS</b>		<b>879</b>	<b>164</b>
	<b>Total Participating (Adults +children) =</b>		<b>1043</b>		

## RESOURCE DEVELOPMENT

### **BUSINESS DEVELOPMENT**

Interest in forestry-related economic development was steady throughout the year and the announced capital investment and the number of jobs recovered from a four-year low. A total of 23 different forestry-related projects were active during fiscal year 2013. Fourteen of the 23 projects were biomass energy related, either involving the production and export of wood pellets or the domestic production of steam or electricity from biomass. Other projects involved the manufacture of traditional products such as veneer, lumber and log exports. 74% of the active projects were dependent on export markets.

Ten forestry projects were announced during fiscal year 2013. Enova Energy Group made the largest forestry investment in South Carolina this year by announcing plans for the construction of a \$120 million wood pellet plant in Edgefield County. Other new biomass fuel announcements include Integro Earth Fuels in the Upstate and LDH-ECI Biomass in Hampton County. Existing companies, Canfor Southern Pines, Kapstone, and Chester Wood Products, each announced plans for expansion and equipment upgrades. Traditional forestry-related projects also announced new projects manufacturing interior doors, hardwood lumber, sanitary tissues and laminates.



During FY 2013, the SCFC Resource Development Division represented the agency and the forestry community through 42 statewide and regional economic development organizations. The agency participated in a regional effort to grow new markets by participating in foreign trade shows. Forestry Commission staff attended the KH Trade Show in Seoul, South Korea. The Forestry Commission and the SC Department of Commerce signed an MOU to bring focus to forestry economic development in South Carolina and the Forestry Commission provided partial funding for an agribusiness project manager. The Utilization Forester position within the Resource Development Division was filled in summer, 2012. By January 1, 2013, the primary forest products mill directory was updated and work was begun updating the secondary forest products mill directory. Finally, during FY 2013, 151 individual business assists were made to address single-issue requests.

Forestry's 20/15 Initiative continued making progress toward meeting program goals during FY '13. Major accomplishments included: (1) working on industry recruitment with the agribusiness project manager with the SC Department of Commerce, (2) drafting an article on the completed wood availability study for a peer-reviewed journal, (3) establishing 3 biomass demonstration stands for landowner technology transfer, (4) providing leadership for a national forest markets committee, (5) completing a wood supply study for South Carolina, and (6) completing an IMPLAN study to compare North Carolina and South Carolina's forestry-related industries.

## **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. Previously, this portion of FIA was referred to as the Phase 3 portion of FIA field data collection. However, due to Federal budget reductions this part of the program is now referred to as Phase 2+. Phase 2+ plots are one-eighth the intensity of the standard FIA plot grid where additional measurement 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. US Forest Service personnel conduct quality assurance and quality control checks to insure the accuracy of the data collected by Forestry Commission field crews. During FY 2012-2013, the average accuracy for all crewmembers was 93.36% with each crewmember exceeding the 87% yearly average required by SRS.

During fiscal year 2012-2013, field crews completed one panel of plots that began in fiscal year 2011-2012 and began the next panel. For the fiscal year, a total of 578 Phase 2 sample plots were completed by Forestry Commission crews. SRS completed 101 plots, consisting of 66 nonforest plots identified in the office and not sent to the SCFC field crews and 35 plots that were classified as census water. The FIA program completed data collection on the first panel in the Cycle 11 inventory and has completed 52% of the second panel of the Cycle 11 inventory of data collection. The FIA program completed 3 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, 42 FIA plots were installed on the Sumter and Francis Marion National Forests as intensification plots.

The Forestry Commission FIA program is 30% complete with the 11<sup>th</sup> inventory of the state through fiscal year 2013. 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), and the 10<sup>th</sup> inventory (2011). Subsequently, South Carolina is the first state in the nation to initiate the 11<sup>th</sup> inventory. The SCFC FIA program is on schedule to complete the 11<sup>th</sup> inventory measurements in five years, with December 2016 as a target date for

completion. Data for the 10<sup>th</sup> inventory are available online and the published report is expected to be released by SRS in 2014.

## **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 FY 2012-2013, 52,266,695 pines and 1,075,893 hardwood and other seedlings were planted in South Carolina for a total of 53,342,588 seedlings from all nursery sources. This number is 12% higher than the 47.47 million seedlings reported planted in FY 2011-2012. However, the number of seedlings planted in South Carolina remains about half the number of seedlings planted in FY 1999-2000 due to fewer acres of final harvest, lower timber stumpage prices and a slowdown in government cost-share funding.

Taylor Nursery distributed 2,047,725 pines and 124,466 hardwood and other seedlings in FY 2012-2013 for a total of 2,172,191 seedlings. Of this total, 80,935 seedlings were sold out of state. The total amount distributed represents 60% of the total number of bareroot and containerized seedlings grown at Taylor Nursery. The SCFC sold 3.9% 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 476 surveys e-mailed out, 204 (43%) customers responded. The 2013 survey indicated that 95.6% of our customers were satisfied with our seedling quality and service. Of the customers who had a problem with their seedling order, 81% of the customers were satisfied with our response. Of the customer comments on returned survey forms, 60% of the comments were 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. In order to help restore the native ground cover plants of the longleaf pine ecosystem, a seed production area was established at the nursery in cooperation with the US Forest Service. As the plants become established the seed will be harvested and grown as container plugs or sold to interested land owners. Seedlings planted include *Coreopsis*, *Helianthus*, and *Liatris*.

## 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 Warden 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 60,665+ 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 115.2 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.

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 2012 yielded 1,591 bushels 2<sup>nd</sup>-generation loblolly pine, 25 bushels 3<sup>rd</sup>-cycle loblolly pine, and 760 bushels 1.5 generation longleaf pine. 26 bushels of cones were collected from the Commission's Virginia pine orchard at Piedmont Forestry Center. Seed processing generated 1,017.95 pounds 2<sup>nd</sup>-generation loblolly seed, 31,95 pounds of 3<sup>rd</sup>-cycle loblolly seed, and 610.45 pounds of longleaf seed. Virginia pine collected at Piedmont Forestry Center yielded 10.50 pounds of seed.

NFC's annual sale of seed and pine cones generated \$71,130.34 in revenue: to date, Niederhof's 2<sup>nd</sup>-generation orchards have created additional revenue in the amount of \$1,779,815.60 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.

NFC staff continued a focused tree breeding effort this year to identify highly-productive crosses that will maximize timber production for landowners who are interested in intensive forest management. Utilizing NCSUCTIP data, crosses will be made among the top-rated selections from the Coastal and Piedmont orchards. The seedlings that result from these crosses will be field tested before decisions are made about marketing the selections to the public.

Grafting began this spring to enable the establishment of elite orchard blocks in both provinces of our 3<sup>rd</sup>-cycle loblolly orchards. Utilizing cooperative data, the top 3-4 selections from the Coastal and Piedmont provinces were grafted to allow up to a five-acre block of additional orchard to be established for use in controlled mass pollination for optimum genetic gain. Elite orchard block establishment will begin winter 2013-14 with the out-planting of these grafts while grafting will continue in the spring of 2014.

### Tree Seedlings Planted by Landowner Classification 2012-2013

<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>
Non-Industrial Private Landowners	37,073,762	313,952	37,387,714	70.1%
Forest Industry	7,938,130	366,267	8,304,397	15.6%
Corporate	5,685,724	390,881	6,076,605	11.4%
Government	1,569,079	4,793	1,573,872	3.0%
<b>Total</b>	<b>52,266,695</b>	<b>1,075,893</b>	<b>53,342,588</b>	

### **Source of Seedlings Distributed in South Carolina**

<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)	22,948,125	614,675	23,562,800	44.2%
Weyerhaeuser	14,817,422	17,250	14,834,672	27.8%
South Carolina Forestry Commission	1,986,480	104,776	2,091,256	3.9%
<b>Total</b>	<b>39,752,027</b>	<b>736,701</b>	<b>40,488,728</b>	<b>75.9%</b>

#### **Nurseries Outside of South Carolina**

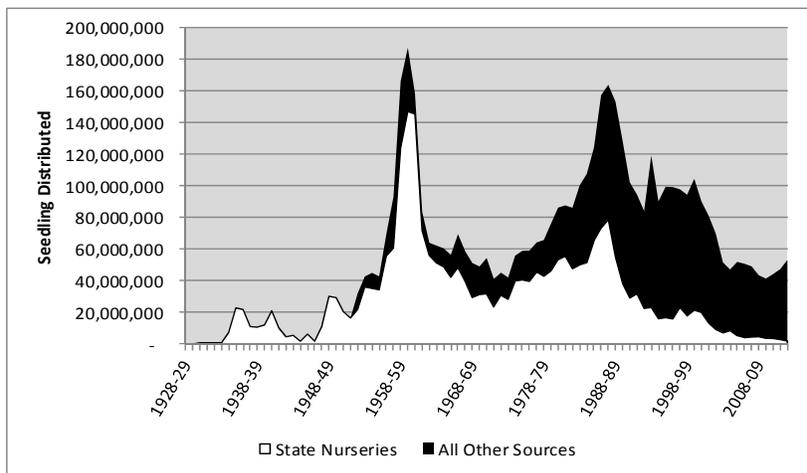
International Forest Company	4,145,810	334,792	4,480,602	8.4%
Plum Creek	4,000,000	0	4,000,000	7.5%
ArborGen (Bellville, GA)	2,168,304	2,250	2,170,554	4.1%
Bodenhamer Farms & Nursery	1,000,000	0	1,000,000	1.9%
Georgia Forestry Commission	545,000	0	545,000	1.0%
Bell Brothers	400,000	0	400,000	0.7%
North Carolina Forest Service	254,054	2,150	256,204	0.5%
Zellner Farms	1,500	0	1,500	0.0%
<b>Total</b>	<b>12,514,668</b>	<b>339,192</b>	<b>12,853,860</b>	<b>24.1%</b>
<b>Grand Total</b>	<b>52,266,695</b>	<b>1,075,893</b>	<b>53,342,588</b>	<b>100%</b>

**State Nursery Seedling Production & Sales for FY 2012-2013**

<u>Species</u>	<u>Seedlings Produced</u>	<u>Seedlings Sold</u>	<u>% Sold</u>
Ash, Green	50	50	100%
Atlantic White Cedar CTR	8,000	8,000	100%
Baldcypress	15,000	10,868	72%
Carolina Sapphire CTR	306	306	100%
Cedar, Eastern Red	30,290	30,290	100%
Clemson Greenspire CTR	1,512	1,512	100%
Crabapple, Southern	480	480	100%
Dogwood	2,510	2,510	100%
Leyland Cypress CTR	16,002	11,142	70%
Loblolly Pine, Coastal 2nd gen.	350,000	52,910	15%
Loblolly Pine, Coastal 3rd gen	50,000	49,700	99%
Loblolly Pine, Coastal Best Family	375,000	205,120	55%
Loblolly Pine, Piedmont 2nd gen.	200,000	104,495	52%
Loblolly Pine, Piedmont 3rd gen.	77,200	77,200	100%
Loblolly Pine, Piedmont Best Family	400,000	154,060	39%
Longleaf Pine	300,000	199,055	66%
Longleaf Pine Natural Stand CTR	900,000	434,700	48%
Longleaf Pine Improved CTR	695,750	695,750	100%
Native Grasses, CTR	500	500	100%
Oak, Cherrybark	5,000	3,270	65%
Oak, Gobbler	10,000	7,683	77%
Oak, Live	11,000	2,030	18%
Oak, Northern Red	8,000	1,400	18%
Oak, Sawtooth	25,000	12,780	51%
Oak, Swamp Chestnut	10,000	3,280	33%
Oak, White	15,000	4,100	27%
Oak, Willow	8,000	4,030	50%
Persimmon	3,200	3,200	100%
Plum, Chickasaw	4,030	4,030	100%
Redbud	2,275	2,275	100%
Shortleaf Pine	33,035	33,035	100%
Sycamore	1,500	1,500	100%
Virginia Pine Christmas Tree Stock	27,770	27,770	100%
Walnut, Black	2,090	2,090	100%
White Pine	13,930	13,930	100%
Wire Grass CTR	2,460	2,460	100%
Yellow Poplar	5,000	4,680	94%
	<b>3,609,890</b>	<b>2,172,191</b>	<b>60%</b>

### Seedling Distribution 1928-2013

Year	Total State		Year	Total State	
	Nurseries	Total All Sources		Nurseries	Total All Sources
1928-29	142,000	142,000	1970-71	31,940,000	54,541,000
1929-30	148,000	148,000	1971-72	23,678,000	41,357,000
1930-31	986,000	986,000	1972-73	30,978,000	45,239,000
1931-32	976,000	976,000	1973-74	28,443,000	42,306,000
1932-33	996,000	996,000	1974-75	40,082,000	55,997,000
1933-34	1,031,000	1,031,000	1975-76	40,664,000	59,063,000
1934-35	7,529,000	7,529,000	1976-77	39,795,000	59,238,000
1935-36	23,000,000	23,000,000	1977-78	45,735,000	64,380,000
1936-37	22,000,000	22,000,000	1978-79	43,010,000	65,937,000
1937-38	11,192,000	11,192,000	1979-80	46,375,000	76,207,000
1938-39	10,854,000	10,854,000	1980-81	53,513,000	86,420,000
1939-40	12,244,000	12,244,000	1981-82	55,728,000	87,793,000
1940-41	21,165,000	21,165,000	1982-83	47,799,000	86,265,000
1941-42	10,275,000	10,275,000	1983-84	50,170,000	100,394,000
1942-43	4,742,000	4,742,000	1984-85	51,636,000	107,718,000
1943-44	5,663,000	5,663,000	1985-86	65,465,000	124,381,000
1944-45	1,963,000	1,963,000	1986-87	73,555,000	157,523,000
1945-46	6,402,000	6,402,000	1987-88	78,788,000	164,095,000
1946-47	1,963,000	1,963,000	1988-89	55,052,000	153,450,000
1947-48	11,357,000	11,357,000	1989-90	38,356,000	128,475,000
1948-49	30,389,000	30,339,000	1990-91	29,297,000	102,384,000
1949-50	29,502,000	29,502,000	1991-92	31,984,000	94,710,000
1950-51	20,615,000	20,615,000	1992-93	22,665,000	84,287,000
1951-52	16,619,000	16,619,000	1993-94	23,286,000	119,311,000
1952-53	22,036,000	32,246,000	1994-95	16,154,000	90,336,000
1953-54	36,210,000	42,852,000	1995-96	16,841,000	99,549,000
1954-55	35,373,000	45,182,000	1996-97	16,058,000	99,439,000
1955-56	34,414,000	42,932,000	1997-98	23,278,000	97,963,000
1956-57	55,754,000	69,659,000	1998-99	17,955,000	94,539,000
1957-58	60,846,000	93,369,000	1999-00	21,524,000	104,594,000
1958-59	123,985,000	166,351,000	2000-01	20,095,000	90,346,000
1959-60	147,146,000	187,516,000	2001-02	13,500,000	81,431,000
1960-61	145,609,000	158,331,000	2002-03	9,376,000	69,989,000
1961-62	71,892,000	83,844,000	2003-04	7,202,000	51,823,000
1962-63	56,191,000	64,202,000	2004-05	8,563,000	47,243,000
1963-64	51,446,000	62,424,000	2005-06	5,437,000	52,165,000
1964-65	49,010,000	60,683,000	2006-07	4,206,000	50,900,000
1965-66	42,311,000	56,529,000	2007-08	4,539,842	49,320,517
1966-67	48,575,000	69,598,000	2008-09	4,739,783	43,692,314
1967-68	39,970,000	58,812,000	2009-10	3,762,989	41,549,345
1968-69	29,529,000	51,453,000	2010-11	3,629,610	44,374,915
1969-70	31,415,000	49,203,000	2011-12	2,922,880	47,468,239
			2012-13	2,091,256	53,342,588
<b>Total State Nurseries</b>		<b>2,583,284,360</b>			
<b>Total All Sources</b>		<b>5,118,424,918</b>			



**SCFC Active Seed Orchards**

<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	68.3
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>212.4</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	12
Virginia Pine 1.0	1993	3
Northern Red Oak Seedling Seed Orchard	1993-1995	2
<b>Total</b>		<b>17</b>
<b>Grand Total</b>		<b>296.4</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**

Compliance with Best Management Practices (BMPs) related to timber harvesting was 93.4% for 2012, demonstrating successful protection of water quality during forest operations. Compliance for harvesting BMPs was 84.5% in 1990, 84.7% in 1991, 89.5% in 1994, 91.5% in 1999, 94% in 2001, 98% in 2005, and 98.6% in 2008. The overall implementation rate of BMP practices was 92.1% for 2012, compared to the regional average of 92% among southern states.

### **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, 20 training programs were held across the state reaching 683 loggers, landowners, contractors, and forest resource professionals. Included in these meetings were nine 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 966 visits to 464 sites and completed 231 courtesy exams. BMP Foresters also conducted 20 hours of aerial observation for active forestry operations and responded to 37 complaints.

### **Environmental Issues and Ecosystem Services**

The Environmental Management Section monitored issues related to endangered species, wetlands, carbon sequestration, and biomass harvesting. New BMPs for Forest Biomass Harvesting were published. 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. 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

An internal reorganization in FY07 established the Technology Division. This Division comprises of 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; Eight (8) Windows Server 2003 servers; six (6) Windows Server 2008 R2 servers (to replace 6 of the above Server 2003 servers); network storage devices; computers and laptops in use by over 150 employees; software applications; and implementation of various initiatives to support agency operations and programs.

A major accomplishment this fiscal year was installing six (6) Windows Server 2008 R2 servers and moving the agency to a Server 2008 R2 domain. Included in this migration were servers associated with the agency's mission critical computer aided dispatch and fire records management systems.

The agency purchased 4 rack mount PCs, 25 desktops and 84 laptops in FY 2013. These were associated with a new communications console system for the dispatch centers, replace laptops that were over 6 years old; desktop models experiencing a high failure rate due to a defective component on their motherboard; severely damaged by lightning; 22 semi-rugged laptops for Fire Supervisors, 40 semi-rugged laptops for field foresters, and to upgrade mission critical workstations to Windows 7 OS.

Microsoft is ending support for Office 2003 in April, 2014. The IT Section began migrating users to Office 2012 if they accessed the agency's email server or to Office 2013 if they were remote users. Once the agency upgrades its email server, all users will be upgraded to Office 2013.

Fire Supervisors attended a one day training session covering the operation of their new laptop, Windows 7 Operating System and Office 2013. Training covered the features and basic operation of the semi-rugged laptop; an introduction to Windows 7, Office 2013 and Internet Explorer 10; making network connections; security software; basic maintenance; setting up e-mail, the docking station and all-in-one printers.

One (1) new Windows Server 2012 servers was purchased at the end of the fiscal year to replace a 9 year old Windows Server 2003 server running the agency's e-mail application. Migration of the agency's in-house email system to Microsoft Exchange Server 2013 is scheduled for the 1<sup>st</sup> quarter of Fiscal Year 2014. Three (3) file servers for the regional offices were also replaced to work on the agency's new Server 2008 R2 domain.

To support Radio over IP and Voice over IP systems to be installed at the Regional Dispatch Centers, Regional Complex Offices and Columbia Headquarters, new Cisco network hardware was installed and configured. The new equipment replaced 5-8 year equipment or provided additional capacity and functionality required by these new systems.

In response to the hacking of the Department of Revenue computer system and the loss of taxpayers' personal identifiable information (PII), Governor Haley requested the Inspector General to look into computer security of PII at other state agencies. The IT Section performed a data security analysis and applied short term remediation steps as directed by the Inspector General. The state awarded a contract to Deloitte, LLP to conduct a security assessment of State IT systems. It is anticipated the agency will be required to implement various additional security practices and systems based on the findings of assessments of 18 state agencies over the next two years.

## **GIS**

The agency's computer aided dispatch system (CADS) utilize commercial and county 9-1-1 roads and address layers for locating and calculating the closest available resources to wildfires and other incidents. The GIS Section was involved in testing the new county 9-1-1 roads and address data and making the various modifications to incorporate it into CADS. With assistant from the GIS Coordinating Council, the agency is receiving parcel data from a majority of 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 will save the agency time and money by allowing personnel to identify property ownership and boundary lines without having to visit individual county tax offices.

Development of an Enterprise GIS System to support USDA Forest Service Spatial Accomplishment Reporting requirements and BMP program continued this year. GIS Server software was upgraded to version 10 to better support a spatial database and mobile GIS application for field personnel to capture forest management activities and to develop management plans and maps. As time and funding permits, this Enterprise GIS System will also be utilized for agency property management; wildland and urban interface planning; fire management applications; state forest and state lands management; natural disaster survey and recovery work; and possible an agency GIS presence on the Internet.

A major need of the Fire Supervisors is the ability to view current aerial photos and other mapping data to help make wildfire suppression decisions or in providing services to the landowners of South Carolina. A mobile GIS application developed for the BMP Foresters was modified to provide this capability on the Fire Supervisors' new semi-rugged laptops. This application does not require a network or Internet connection to use and includes a tool to draw polygons and calculate acreage. Parcel data (and ownership when available), location of schools, pipelines, fire departments, and a wealth of other map layers are also available for viewing with this application.

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 FY13, the intern position was entering stewardship plan data for the agency's geodatabase; updating layers for the agency's computer aided dispatch system; and GIS support of various forest and fire management programs. The intern also assisting in the development of training material associated with upgrading users to ESRI ArcGIS 10.1.

## **COMMUNICATIONS**

The agency maintains approximately 555 mobile radios, 7 base stations, 28 repeaters, and 300 portable radios. All FCC licenses and equipment in the field were reprogrammed to narrowband VHF radio frequencies in FY 2012 to meet a Federal Communications Commission's January 1, 2013 narrowbanding deadline. In conjunction with reprogramming radios to narrowband frequencies, numerous other changes were implemented to help reduce known interference issues. Six (6) statewide frequencies were identified to be used as tactical channels to replace individual region tactical channels.

Two repeaters were relocated to taller SCETV tower sites to provide greater coverage area and better security than their current locations. The Barnwell Repeater was relocated to SCETV tower in Allendale County and the Big Knob Repeater to SCETV tower in Ware Shoals.

The agency maintains 46 Palmetto 800Mhz radios for Law Enforcement Officers; Hurricane Evacuation; and Incident Management Teams for better interoperability with other Federal, State, and local agencies. One mobile radio is being used as a base station that is incorporated with the agency's dispatch centers. Two 800Mhz radios are installed in agency aircraft that are utilized to monitor Hurricane Evacuation routes along the coast.

The Communications and Dispatch Section replaced the agency's "end-of-life" analog radio dispatch consoles, telephone and communications recording systems with Radio over IP and Voice over IP digital dispatch consoles system. After receiving and a panel evaluation of proposals from seven (7) vendors, a contract was awarded to Avtec, Inc. of Lexington, SC for their Scout system. Scout is an all IP-based, digital system which offers more flexibility and redundancy to reduce critical single points of failure. This new console system combined both radio and telephone communications and provided additional capabilities.

The Regional Dispatch Centers and Regional complex offices telephone systems were replaced with telephone using SPIRIT Telecom VoIP system under State contract. Moving to the VoIP telephone system reduced the agency's 1-800 call charges to the Dispatch Centers from 4¢/minute to 2¢/minute, provided individual phone numbers, added voice mail capability, ability to transfer calls, ability for conference calling, and 100 minutes of agency pooled, free, long distance minutes per phone line per month.

## **DISPATCH OPERATIONS**

The Forestry Commission operates three (3) dispatch centers that handle about 40,000 phone calls for burn notifications and reporting of wildfires. On July 1, 2005 (i.e. FY 2006), the agency went "live" with a new computer aided dispatch and records management systems. These systems replaced a custom developed application implemented in 1996. Federal funds from the National Fire Plan and other grants were used to fund this new system.

Utilizing commercial, "off-the-shelf" dispatching software from Logistic Systems, Inc., the 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; allows for the utilization of automated vehicle location (AVL) technology; and automates the compliance issues with smoke management regulations on forestry, wildlife and agricultural burn notifications.

A new automated burn notification system hosted by SPIRIT Telecom was implemented November 1, 2010 to replace an in-house, 16 year old, "end-of-life" system. This new system generates an e-mail with the individual's notification information attached as a .wav audio file. The e-mail subject line contains the caller's phone number and caller ID information allowing for easier search capability. A copy of each notification can also be sent to an e-mail address for local access by fire departments or 9-1-1 Centers. Other key improvements are the ability to quickly add or modify messages used in the system, system management through a secure web portal, and increased call capacity. This new system handled a record setting 452,224 calls in Fiscal Year 2012.

Four (4) Verizon wireless phone lines have been added to each dispatch center's phone system. Three (3) lines are for making mobile-to-mobile calls to other agency Verizon phones and long distance calls. This will save "peak" and pool minutes under existing agency cell phone plan and savings on long distance charges with landlines. One (1) line is a backup for 9-1-1 and Fire Dispatch Centers to use if they can't get through on the regular phone lines. These lines also server as backup to the main wired phone lines in the case of cables being cut or other local phone company equipment failures.

The agency's "end-of-life" analog radio dispatch consoles, telephone and communications recording systems were upgraded this fiscal year with Scout Radio over IP, digital, dispatch console system from Avtec, Inc. of Lexington, SC. The new console system combined both radio and telephone communications and provided additional capabilities to dispatchers.

A dispatcher representing each center, dispatch managers and communications managers worked with Avtec on designing the dispatch console screens. The console incorporates telephone systems in

addition to repeaters and other radio channels. The new system has speed dial buttons that will greatly improve efficiencies of dispatchers in calling agency personnel and emergency numbers. It also contains a contact database and dialer to “auto dial” other phone numbers entered in the system. By incorporating the State’s Voice over IP telephone system, dispatchers now have the capability to transfer callers to other dispatch centers or to the automated burn notification system.

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 almost 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 36% 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.

TIMES	Fiscal Year Average Dispatching Times (Minutes)									
	2004	2005	2006*	2007	2008	2009	2010	2011	2012	2013
Dispatching	5.10	6.33	4.18	3.56	3.53	3.22	3.13	3.39	3.28	3.57

**SUMMARY AND COMPARISON OF DISPATCH TIMES  
FOR FISCAL YEAR 2004 through 2013**

\*New software implemented in FY 2006

**SUMMARY AND COMPARISON OF SMOKE MANAGEMENT NOTIFICATIONS PROCESSING**

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

**TIMES  
FOR FISCAL YEAR 2004 through 2013**

\*New software implemented in FY 2006

The dispatching software includes applications that allow for remote, real-time access to wildfire, prescribed fires, and resource activity. Fire Managers and Fire Information Officers have access to current information for command and control functions and media requests. Using virtual private network (VPN) connections through the Internet or cellular wireless broadband services, agency personnel in the field have real-time access to dispatching activity throughout most of the state or nation.

An interface was added to the computer aided dispatch system that generates an export file containing current smoke management burn notifications and wildfires every 5 minutes. This export file is uploaded every 10 minutes to the agency’s website and incorporated in a web mapping application for public access. Data is also exported to the US Forest Service Southern High Resolution Modeling Consortium for use in air quality, fire control, smoke modeling, and impact mitigation work. Copies are also uploaded to the SC Geographic Information Council to share with state agencies like DHEC (Air Quality Division), the SC Emergency Management Division and others. Several counties and consulting firms

are interested in this information for various situation awareness applications they are developing in-house.

In addition to new CAD and RMS servers being installed this year, ten of the 24 dispatch centers' Windows XP workstations were replaced with Windows 7 workstations. These workstations were no longer under warranty and the new ones served as a test bed for compatibility of dispatch operation software with Windows 7. The remaining 14 Windows XP workstations will need to be replaced before April, 2014 when their warranty and Microsoft support for Windows XP ends.

## ADMINISTRATION

### FINANCIAL STATEMENT -FISCAL YEAR 2012 - 2013

<b>Carry Forward - July, 1 2012</b>	\$ 3,368,797
<b><u>REVENUES</u></b>	
<b>State Appropriations</b>	\$ 12,869,812
<b>Supplemental State Appropriations - Equipment</b>	\$ 3,500,000
<b>Federal Grants</b>	\$ 4,356,941
<b>Earmarked Funds</b>	
Hunting & Fishing License	\$ 201,084
Refund of Prior Year Expenditure	20,537
Burning Assistance Fee	408,646
Fire Lane Fee	148,191
Timber Marking Fee	-
Training Conference - Registration Fee	9,770
User Fee - State Park & Forest	107,632
Forest Product Assessment	974,411
Construction of Water Bar	5,900
Stand By for Prescribed Burning	3,185
Sale of Seedlings	445,163
Sale of Timber	2,473,518
Conviction Surcharge	17,045
Miscellaneous Revenue	1,624
Rent - Residence	16,250
Rent - Farm Land	51,161
Rent - State Owned Property	53,476
Rent - Equipment	2,025
Contributions & Donations	3,686
Insurance Claims	22,138
Sale of Services	27,127
Sale of Nursery and Farm Products	1,240
Sale of Recycling Material	1,105
Sale of Vehicles (Capitalized)	162,308
Sale of Machinery and Equipment (Capitalized)	188,234
Sale of Buildings (Non-Capitalized)	3,645
Sale of Land (Capitalized)	76,898
Sale of Other Assets	3,690
<b>Total Earmarked</b>	<b>\$ 5,429,689</b>
<b>Total Revenue</b>	<b>\$ 26,156,442</b>
<b><u>EXPENDITURES</u></b>	
State	\$ 12,607,608
Supplemental State Appropriations - Equipment	\$ 1,334,075
Federal	\$ 4,374,152
Other	\$ 5,471,367
<b>Total Expenditures</b>	<b>\$ 23,787,201</b>
<b>Balance as of June 30, 2013</b>	<b>\$ 5,738,037</b>

# South Carolina Forestry Commission

