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# South Carolina Forestry Commission

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Fiscal Year 2011-2012

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# Annual Report

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# **South Carolina Forestry Commission Annual Report**

## **FY 2011-2012**

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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 2,192 wildfires that burned 16,690.1 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 2011-2012 wildfires destroyed 21 homes and damaged 9 others. In addition, 40 other buildings were destroyed and 24 buildings were damaged. Agency firefighters saved 486 homes and an additional 72 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 2012\***

<b>Month</b>	<b>Precipitation</b>
July, 2011	4.09
August	4.31
September	4.28
October	2.29
November	2.68
December	1.88
January, 2012	2.19
February	2.17
March	3.49
April	2.52
May	6.07
June	4.69
<b>Total</b>	<b>40.66</b>

\*Source – National Climatic Data Center

### Precipitation Last 5 Years\*

Fiscal Year	Precipitation (inches)	Departure from Normal**
2007-08	37.53	-10.67
2008-09	50.53	2.66
2009-10	50.51	2.60
2010-11	39.81	-8.41
2011-12	40.66	-7.35

\*Source – National Climatic 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:

Region	Coastal	Pee Dee	Piedmont
Readiness 1 (No wildfire danger)	2 days	0 days	0 days
Readiness 2 (Low wildfire danger)	138 days	41 days	212 days
Readiness 3 (Moderate wildfire danger)	220 days	303 days	150 days
Readiness 4 (High wildfire danger)	6 days	22 days	4 days
Readiness 5 (Extreme wildfire danger)	0 days	0 days	0 days

**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 358 missions for 954 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 954 hours (Coastal- 271 hours, Pee Dee-425 hours, Piedmont-258 hours).

**Prescribed Fire**

**Certified Prescribed Fire Manager Program:** Three Certified Prescribed Fire Manager Programs were conducted during the year with 127 participants. This course focuses of planning prescribed burns to comply with mandated air quality standards.

**Prescribed Burning for Forestry, Wildlife, and Agriculture FY12**

REGION	Forest Understory		Forestry Site Prep		Wildlife		Agriculture	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Coastal	2,234	185,774.9	2,082	13,403.5	748	76,535.7	2,218	33,004.3
Pee Dee	1,078	44,339.0	1,091	5,057.1	634	43,607.9	2,293	39,496.0
Piedmont	656	74,738.3	1,412	5,018.0	111	5,913.6	459	5,112.8
<b>State Total</b>	<b>3,968</b>	<b>304,852.1</b>	<b>4,585</b>	<b>23,478.5</b>	<b>1,493</b>	<b>126,057.1</b>	<b>4,970</b>	<b>77,613.1</b>

**Total Forestry, Wildlife & Agriculture Burns: 15,016 for 532,000.8 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 and Georgetown 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' (3-wkshps for 91 people) and various Firewise-related presentations/meetings (4) to interested communities and community leaders. The Firewise mobile exhibit and the table top Firewise Home exhibit were used on 9 different occasions demonstrating how homeowners can mitigate those risks to wildfire. The exhibit was also used in cooperation with the USDI F&WS. Fuels mitigation plans, workdays and assessments were conducted throughout the state. The SCFC has conducted a total of 768 community assessments to date with 709 of those rating at moderate to extreme in regards to wildfire risk. Twenty (20) new assessments were completed covering seventy-nine (79) communities. Community Wildfire Protection Plans were written for four (4) communities with a few at the fire department's request to address their entire coverage area. To date 123 Community Wildfire Protection Plans have been written in which 241 communities have benefitted.

Cooperative Firewise efforts are also occurring within communities around the Sumter and Francis Marion National Forests with Forest Service personnel. Community Wildfire Protection Plans are 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.

**Wildfire Prevention:** A statewide wildfire prevention awareness effort was made across the state prior to the spring 2012 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 775 schools, businesses and public buildings. The distribution of materials included 24,000 TBYB brochures, 425 TBYB posters and about 10,000 magnets with the county 1-800 burn numbers. The posters were posted in rural stores and businesses throughout the rural countryside. Burning notification magnets were also placed on the 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, public service announcements were distributed and billboards placed in areas where debris burns occur to increase public awareness.

<b>Fires by Cause</b>				
			<b>Average Acres</b>	<b>Percent of Total</b>
<b>Cause</b>	<b>Fires</b>	<b>Acres Burned</b>	<b>per Fire</b>	<b>Fires FY10</b>
LIGHTNING	106	1,718.6	16.2	4.84%
CAMPFIRE	18	75.8	4.2	0.82%
SMOKING	42	118.7	2.8	1.92%
DEBRIS BURNING	907	5,477.5	6.0	41.38%
INCENDIARY	521	5,341.4	10.3	23.77%
EQUIPMENT USE	133	532.6	4.0	6.07%
RAILROAD	26	415.8	16.0	1.19%
CHILDREN	126	381.4	3.0	5.75%
MISCELLANEOUS	188	1,145.7	6.1	8.58%
FIREWORKS	27	1,247.3	46.2	1.23%
POWER LINE	59	409.9	6.9	2.69%
STRUCTURE	39	95.4	2.4	1.78%
<b>Totals</b>	<b>2,192</b>	<b>16,960.1</b>	<b>7.7</b>	<b>100.00%</b>

### **Five-Year Summary: All Fires**

<b>Fiscal Yr.</b>	<b>Acres Protected</b>	<b># Fires</b>	<b>Acres Burned</b>	<b>Avg. Acres/Fire</b>	<b>% Area Burned</b>
2007-08	13,657,033	3,678	21,945.7	6.0	0.16%
2008-09	13,657,033	2,001	30,739.6	15.4	0.23%
2009-10	13,657,033	1,639	8,443.9	5.2	0.06%
2010-11	13,657,033	3,100	22,770.6	7.3	0.17%
2011-12	13,657,033	2,192	16,960.1	7.7	0.12%
<b>Five Year Averages</b>		<b>2,522</b>	<b>20,172.0</b>	<b>8.3</b>	<b>0.15%</b>

**Acres Protected and Total Burning Notifications by County, Fiscal Year 2012**

<b>County</b>	<b>Acres Protected</b>	<b>Smoke Mgt. Notifications</b>	<b>Other Notifications</b>
Abbeville	248,551	108	2,732
Aiken	524,743	484	16,182
Allendale	199,005	322	902
Anderson	216,023	189	14,794
Bamberg	202,862	486	2,083
Barnwell	266,959	435	3,677
Beaufort	130,448	365	8,454
Berkeley	595,291	767	20,043
Calhoun	151,294	253	3,290
Charleston	318,526	302	8,305
Cherokee	168,077	99	4,502
Chester	315,565	84	3,165
Chesterfield	416,239	351	8,242
Clarendon	238,952	444	5,798
Colleton	560,896	1,024	14,770
Darlington	176,333	268	10,906
Dillon	163,935	190	3,188
Dorchester	272,524	438	11,037
Edgefield	279,433	200	2,577
Fairfield	408,433	129	2,240
Florence	308,707	572	13,656
Georgetown	400,136	527	9,761
Greenville	296,082	89	12,772
Greenwood	205,593	94	3,431
Hampton	303,663	830	3,448
Horry	493,012	578	22,101
Jasper	341,036	602	3,753
Kershaw	376,376	198	15,880
Lancaster	291,845	100	5,024
Laurens	337,499	105	5,404
Lee	121,735	272	1,899
Lexington	256,939	297	31,170
Marion	226,896	220	6,777
Marlboro	226,676	131	4,567
McCormick	223,394	90	953
Newberry	334,566	178	3,723
Oconee	292,590	112	11,818
Orangeburg	446,887	974	15,363
Pickens	236,029	89	11,557
Richland	352,904	272	7,918
Saluda	196,376	160	1,738
Spartanburg	286,496	131	9,713
Sumter	268,338	290	12,847
Union	277,640	62	515
Williamsburg	407,761	955	8,688
York	293,768	150	12,994
<b>Total</b>	<b>13,657,033</b>	<b>15,016</b>	<b>384,357</b>
<b>Total Smoke Mgt. &amp; Other Notifications</b>		<b>399,373</b>	

**Total Land Fires by County & Cause –  
Fiscal Year 2012**

COUNTY	LIGHTNING		CAMPFIRE		SMOKING		DEBRIS BURNING		INCENDIARY		EQUIPMENT		RAILROAD		CHILDREN		MISC		FIREWORKS		POWER LINE		STRUCTURE		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		
ABBEVILLE	1	10.0					4	19.4	17	44.2	2	0.4			1	0.8	1	0.2			2	7.0	6	9.3	26	75.0
AIKEN	11	188.4	1	2.0			41	216.1			5	56.7			19	63.5	17	60.2	3	4.0	2	8.0			105	607.2
ALLENDALE	2	21.2					6	48.7	6	7.4	2	8.0	1	285.0							2	8.0			19	378.3
ANDERSON			1	20.0			8	11.8	1	0.5	1	1.0			1	0.6	3	2.2			3	16.1	1	1.0	19	53.2
BAMBERG	3	75.0			4	10.0	17	127.6			3	4.1			4	51.2	1	0.1			2	2.2			34	270.2
BARNWELL	3	8.9					9	41.2	1	60.0	1	0.1			5	8.5	2	8.0	2	13.0	3	5.0	1	13.2	27	157.9
BEAUFORT							6	27.2	16	80.8	1	0.1			1	1.0	1	5.0	1	10.0	1	2.0			27	126.1
BERKELEY	6	105.6			3	4.7	61	681.7	41	378.8					5	69.0	20	272.5	2	17.8	2	1.6	4	4.7	144	1,536.4
CALHOUN	1	5.0			1	7.0	19	50.7			7	11.3	1	15.0	1	2.0	1	1.0							31	92.0
CHARLESTON			1	1.4	1	0.1	19	219.2	7	30.8	1	8.5					1	1.0			2	1.8			32	262.8
CHEROKEE							3	1.7	2	4.6	1	0.2			3	5.0									9	11.5
CHESTER			1	8.0			2	3.0			1	0.1	4	2.5											8	13.6
CHESTERFIELD	6	115.5	1	3.0	2	13.0	29	445.7	6	28.4	6	6.5			2	1.0	2	8.0			1	2.0	1	0.1	56	623.2
CLARENDON	4	505.3	1	2.0	1	0.5	43	168.6	26	1,559.0	1	15.0			1	2.5	1	2.0	2	2.1	2	10.5			82	2,267.5
COLLETON	2	30.0					52	251.2	35	307.7	9	59.7			2	4.0	3	5.6			3	210.0	3	7.5	109	875.7
DARLINGTON	1	1.0			2	1.1	33	186.4	8	33.2	8	46.1	1	1.5	3	8.4	6	7.3	1	5.0	1	0.1	1	1.0	65	291.1
DILLON	1	5.0					6	32.0	15	97.9	3	2.2			2	2.3	3	1.2					1	0.1	31	140.7
DORCHESTER							27	59.6	15	83.6	2	3.0			6	20.3	1	2.0							51	168.5
EDGEFIELD	2	14.0					8	40.5	1	2.0					3	16.0					1	2.0	1	2.0	16	76.5
FAIRFIELD	6	53.3					5	3.9	1	2.0	5	11.1			6	24.9					1	0.6			24	95.8
FLORENCE	6	129.3	2	1.0	3	30.1	40	224.7	53	329.0	14	11.8			11	12.9	16	44.8	2	12.5	1	4.0	5	2.5	153	802.6
GEORGETOWN	6	185.5					21	262.8	17	168.5	6	108.1	3	45.5	2	0.3	5	19.5	2	7.1	1	1.0	1	1.0	64	799.3
GREENVILLE	2	13.0	1	0.1	1	2.0	7	5.8	6	7.5					2	1.3	6	17.8	1	1.0			1	0.1	27	48.6
GREENWOOD	1	14.0			1	0.5	12	19.0	2	5.0	3	4.0	1	1.0			2	1.3			2	20.5	2	0.9	26	66.2
HAMPTON					1	1.5	27	62.6	23	173.8	3	5.0			1	0.5	1	2.5			1	0.5			57	246.4
HORRY	1	0.2	2	1.2			39	364.4	23	72.2	6	27.9			11	28.3	5	183.2	3	1,162.0					90	1,839.4
JASPER	2	62.0			3	5.1	36	417.9	26	176.2	6	13.7			4	6.8	4	43.0			1	0.5			82	725.2
KERSHAW	7	30.6	1	5.0	2	2.2	18	161.9	7	36.4	3	4.1			1	6.0	6	19.5			1	2.0	1	1.0	47	268.7
LANCASTER	2	24.0					7	4.2	4	7.1	2	2.5					3	1.0			1	1.5			19	40.3
LAURENS	1	7.5			1	2.0	1	0.8	2	8.5	2	39.0									2	7.5			9	65.3
LEE	1	7.0	1	0.1			25	93.8	12	165.7	2	2.2					8	22.7			1	0.8			50	292.3
LEXINGTON	7	25.0	1	5.0			14	18.6	6	6.5	4	7.8	1	0.4	9	12.5	12	10.9	1	3.5	4	15.7	3	3.5	62	109.4
MARION							4	103.7	5	68.2	2	2.0			1	1.5	1	3.5	2	3.2	2	2.0			17	184.1
MARLBORO	1	0.1			1	0.5	12	50.3	8	57.1	5	10.5	1	3.0	2	2.5	2	5.0			1	6.0			33	135.0
MCCORMICK	1	4.2			1	4.0	4	42.8									4	5.5			1	1.9	1	1.0	18	84.6
NEWBERRY	1	0.1					3	1.8	2	21.6	1	5.0					2	0.6					1	0.1	10	29.2
OCONEE	2	0.3	2	8.0	1	2.0	10	250.5	2	0.3	1	1.5					4	4.8	1	1.0	5	9.4	3	1.3	31	279.1
ORANGEBURG	3	5.6	1	18.0	6	24.5	60	221.6	13	127.6	6	32.7			8	26.7	2	15.0	1	1.5	1	35.0			101	508.2
PICKENS	1	0.1	1	1.0			3	2.6	1	1.5					3	3.5	1	0.1	1	0.1	2	3.0			13	11.9
RICHLAND	3	5.6					14	30.1	5	41.5			2	27.5	6	9.3	8	99.8							38	213.8
SALUDA					1	5.0	11	9.7			2	1.2			1	0.2	1	0.2			2	1.7			18	18.0
SPARTANBURG			1	1.0	3		3	3.5	1	1.5							3	5.0	2	3.5	2	7.0	1	0.3	13	21.8
SUMTER	3	41.7	2	0.8			42	134.1	19	38.2			2	2.2	3	6.0	10	12.0							81	235.0
UNION	3	9.6					1	0.2			1	1.5			1	0.8							1	44.8	7	56.9
WILLIAMSBURG	2	13.0			3	1.1	92	347.8	86	1,106.6			3	7.0	3	21.2	8	179.8			1	20.0			202	1,709.5
YORK	1	2.0					3	6.1			1	5.0			1	1.0	2	31.0			1	1.0			9	46.1
State Total	106	1,718.6	18	75.8	42	118.7	907	5,477.5	521	5,341.4	133	532.6	26	415.8	126	381.4	188	1,145.7	27	1,247.3	59	409.9	39	95.4	2,192	16,960.1

COUNTY	July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		March		April		May		June		Total	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
ABBEVILLE	1	6.5	10	43.7	3	1.8							1	1.0	5	10.7	4	7.3	1	0.7	1	3.3	26	75.0		
AIKEN	17	152.6	14	33.0	10	92.3	8	31.2	5	15.3	6	13.1	11	104.0	13	30.4	8	63.7	3	3.0	8	58.3	2	10.3	105	607.2
ALLENDALE	2	12.0			1	14.2			1	3.0			2	0.3	3	28.0	5	313.5	3	1.3	1	2.0	1	4.0	19	378.3
ANDERSON	3	36.5	3	3.1	1	0.7							2	2.5	6	7.8	1	1.0			3	1.6			19	53.2
BAMBERG	2	87.0	1	2.0	3	10.4	1	0.1	1	0.2	5	29.1	2	21.0	6	47.1	3	9.0	2	2.1	5	52.0	3	10.2	34	270.2
BARNWELL	1	0.2	2	13.5	2	0.3	1	4.0	3	10.2	1	1.0	8	42.2	2	18.5	4	6.0	3	62.0					27	157.9
BEAUFORT					1	0.1			4	14.0			7	33.2	10	47.5	4	21.3			1	10.0			27	126.1
BERKELEY	18	291.2	4	6.7	4	7.5	3	7.1	7	36.2	4	9.1	26	155.3	44	653.4	12	70.1	16	215.8	6	84.0			144	1,536.4
CALHOUN	2	3.5	2	6.0	4	2.7			2	2.5	4	4.0	8	24.4	3	17.3	2	15.5	2	15.5			2	0.6	31	92.0
CHARLESTON	5	15.1			2	1.5	1	2.9			6	42.0	7	28.7	5	57.7	3	76.9	2	36.5			1	1.5	32	262.8
CHEROKEE			1	0.2	2	3.6	1	1.5			1	0.2	1	2.0	1	1.0	1	2.0			1	1.0	9		9	11.5
CHESTER	1	8.0			1	1.0	1	0.1			1	2.0									3	2.0	1	0.5	8	13.6
CHESTERFIELD	9	78.0			4	3.1	4	31.5	3	8.0	3	2.6	5	4.3	6	57.0	14	415.6	4	5.9	3	7.2	1	10.0	56	623.2
CLARENDON	15	165.6	5	3.0	7	36.6	1	0.5	4	64.1	9	77.1	4	7.6	13	1,300.6	12	98.1	7	7.1	4	402.2	1	105.0	82	2,267.5
COLLETON	10	172.1	2	10.5	3	6.2	1	1.0	6	65.5	5	6.6	19	62.1	25	239.4	15	176.1	8	46.7	12	86.0	3	3.5	109	875.7
DARLINGTON	9	28.8	3	0.8	5	5.2	2		3	0.8	3	16.5	10	17.9	11	61.7	11	122.4	2	2.0	1	1.5	5	13.0	65	291.1
DILLON	4	36.1	4	3.5			1	2.0	1	0.5	5	11.1	3	0.8	3	1.6	5	76.2	1	0.1	1	0.3	3	8.5	31	140.7
DORCHESTER	2	6.0			2	3.0	4	6.6	1	0.1	15	72.2	10	30.0	6	11.7	7	30.6	3	4.3	1	4.0	1	4.0	51	168.5
EDGEFIELD			6	20.5	4	29.0			1	2.0					1	2.0	1	4.0			3	19.0			16	76.5
FAIRFIELD	6	28.4	3	29.8	1	0.6	3	11.0			1	0.5			1	0.5	4	1.8	5	23.2					24	95.8
FLORENCE	13	40.8	5	1.4	7	42.8	7	13.5	13	25.2	15	43.8	22	164.3	25	133.5	24	123.2	10	68.3	8	33.5	4	112.3	153	802.6
GEORGETOWN	9	135.3	4	13.0	5	42.6	3	1.3	5	27.0	4	10.3	9	25.9	12	381.8	6	102.0	3	12.1	3	36.0	1	12.0	64	799.3
GREENVILLE	3	1.1	4	6.3	1	8.0	2	4.5	1	10.0	1	0.2	4	3.5	4	6.7	4	6.1	3	2.2					27	48.6
GREENWOOD	3	20.9	4	5.3	4	8.8	2	1.0			2	3.0			1	2.0	3	3.0	3	5.0	1	2.0	3	15.2	26	66.2
HAMPTON	2	0.6	2	1.5	2	1.5	1	1.0	3	8.0	2	2.5	12	24.6	10	36.5	8	38.5	8	113.0	4	14.6	3	4.1	57	246.4
HORRY	16	1,353.6	4	0.9	1	3.0	4	8.0	6	9.5	12	44.6	10	62.0	17	64.7	6	19.5	7	7.5	5	261.0	2	5.1	90	1,839.4
JASPER	10	40.9	2	54.0	7	108.6	3	6.0	4	19.7	3	7.3	9	48.0	20	321.2	7	33.5	11	70.5	4	11.5	2	4.0	82	725.2
KERSHAW	8	32.1	4	13.0	3	12.0	4	43.5			7	7.7	4	7.8	3	13.0	10	13.6	3	8.5	1	117.5			47	268.7
LANCASTER	6	26.5	1	0.5	2	0.5	2	1.5			1	0.5	1	2.0	4	5.3	2	3.5							19	40.3
LAURENS	1	1.5	2	44.9	1	1.6	1	6.0	1	2.0	1	0.8	1	3.5					1	5.0					9	65.3
LEE	4	5.2	3	77.0	8	12.3	3	1.3	3	5.4	2	9.0	4	13.0	6	11.3	11	103.6	5	53.2			1	1.0	50	292.3
LEXINGTON	5	8.1	9	21.0	6	5.8	4	8.3	6	8.2	3	5.4	6	13.7	3	0.6	2	0.9	7	12.4	5	18.3	6	6.7	62	109.4
MARION	6	17.2			1	0.2					1	0.2	1	2.5	2	2.0	2	155.0	3	5.5			1	1.5	17	184.1
MARLBORO	6	14.1	6	10.6	2	4.1			3	6.0	3	5.1	5	71.6	2	9.0	3	8.5	1	3.0			2	3.0	33	135.0
MCCORMICK			4	9.0	2	8.5					1	27.0			3	6.7	1	4.2	7	29.2					18	84.6
NEWBERRY	1	0.1	1	0.5							1	0.1			2	21.6	3	0.9	1	5.0	1	1.0	1	1.0	10	29.2
OCONEE	1	1.0	7	7.7	1	0.8			1	0.1	4	4.8	4	7.5	4	231.5	8	19.7			1	6.0			31	279.1
ORANGEBURG	17	37.4	1	0.1	5	15.1	3	4.1	5	10.8	2	9.5	18	91.2	21	128.2	13	115.9	8	50.3	8	45.6			101	508.2
PICKENS	2	1.1			1	1.0	1	2.0	1	1.5			1	1.5	3	3.1	1	0.1	2	0.6			1	1.0	13	11.9
RICHLAND	4	4.3	1	4.0	4	29.4	2	10.3	3	2.3	3	3.5	3	30.3	2	75.0	8	32.0	2	15.1	3	4.6	3	3.0	38	213.8
SALUDA	4	5.6	5	3.9	2	1.5			1	0.1			1	0.1	2	5.0	3	1.8							18	18.0
SPARTANBURG	1	0.5	4	6.3	2	3.0			1	2.0			2	6.5	1	2.0					1	1.0	1	0.5	13	21.8
SUMTER	9	8.2	2	1.2	13	21.2	1	0.1	3	45.2	4	6.5	9	13.8	5	14.1	11	48.5	6	15.3	13	24.9	5	36.0	81	235.0
UNION	1	9.0	3	2.4							1	0.2							2	45.3					7	56.9
WILLIAMSBURG	16	60.7	5	5.1	7	14.3	1	4.0	16	51.3	12	72.6	32	466.4	44	298.2	40	571.7	19	135.5	9	29.2	1	0.5	202	1,709.5
YORK					1	30.0							4	8.0	2	3.0			1	0.1	1	5.0			9	46.1
State Total	255	2,953.4	139	456.9	144	588.8	78	242.0	121	465.5	120	397.4	291	1,673.9	355	4,085.3	287	3,125.2	198	1,145.1	132	1,295.2	72	531.4	2,192	16,960.1

## **Forest Health**

The Forest Health Program, in cooperation with the State Division 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, 2012, 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 2011-2012, the losses due to the Southern Pine Beetle were minimal. During that time, aerial surveyors plotted 578 active beetle spots containing 4,264 trees. After ground checking these spots, it was found that Ips engraver beetles were responsible for the tree mortality. These trees contained a volume 242 cords and 0.17 million board feet. This timber had a green stumpage value of \$54,722.64

During the spring of 2012, 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 programs' 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.

### **Hemlock Woolly Adelgid**

An exotic insect pest of hemlock, the Hemlock Woolly Adelgid (HWA) was discovered in South Carolina in 2001. Hemlock Woolly Adelgid is a small insect that feeds by sucking plant juices from the host hemlock tree. Unfortunately, heavy infestations of this pest can kill hemlocks and control is very difficult, especially in the general forest. Clemson University has established an insect rearing facility to raise insect predators of the Adelgid. The laboratory is currently rearing two species of predatory beetles; these beetles are released in HWA infested stands. Unfortunately, we may face the loss of hemlock as an important forest species.

Using funds from the Hemlock Woolly Adelgid Control ARRA grant, 6 temporary applicators treated (via soil injection with imidacloprid) 22,311 individual hemlock trees (both Carolina and Eastern Hemlocks) for a total of 176,487 inches of diameter that were infested with Hemlock Woolly Adelgid.

### **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 York, 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.

### **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 thirteen (13) South Carolina counties: Jasper, Beaufort, Hampton, Colleton, Charleston, Bamberg, Barnwell, Allendale, Dorchester, Orangeburg, Horry, Georgetown, and Berkeley. The beetle and fungus has also been found in 34 Georgia counties, in 38 Florida counties, in one county in Mississippi, and two counties in Alabama. Unfortunately, in the areas where the beetle has been found, there is a large loss of red bay (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 2012. This survey was ongoing at the end of the fiscal year.

### **Miscellaneous Insect and Disease Checks**

Commission foresters and Insect and Disease staff made approximately 203 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 2011-2012, the Insect and Disease Laboratory processed 8 samples submitted by SCFC employees and private individuals. Recommendations for control of various pests identified were given where needed. In addition to these samples, 254 southern pine beetles and 16,673 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 46,675.1 acres. Beaver damages were estimated at 602.8 acres (acreage is based on 20% survey); fire-caused mortality was observed on 441.65 acres of forestland (acreage is based on 20% survey); annosus root rot was identified on 743.7 acres with an estimated value lost of \$25,657.65.

### **Equipment**

#### **Equipment Purchased**

- Nine International 7500 10-Wheel Transports, \$744,210.00
- Nine Truck Bodies for the Haul Units Manufactured by W&W Body Builders of Columbia, \$141,392.25
- Eight Caterpillar D5K LGP Dozers with Winch, \$1,115,912.00
- Two Caterpillar D5K LGP Dozers with Lift-Type Fire Plows, \$278,978.00
- Three Chevrolet Silverado 1500 Pickups for Stewardship Foresters, \$76,014.00
- Two Chevrolet Silverado 1500 Pickups for BMP Foresters, \$50,676.00
- One Dodge 2500 Ram Pickup for Piedmont Forestry Center, \$33,873.00
- Two F-350 Pickups with 200 Gallon Fire Fighting Units and Emergency Lights, \$85,168.57

- One Rubber-Tracked Vehicle, \$171,200.00
- Three Chevrolet Silverado 1500 Pickups for FIA Foresters, \$76,014.00
- One Chevrolet Equinox for Dispatch Manager, \$19,870.00
- One Chevrolet Silverado 1500 Pickup for Manchester State Forest, \$26,712.00
- One Dodge Grand Caravan for Communications Manager, \$19,574.00
- Received 10 Military Freightliner Truck Tractors at no cost to replace aging truck tractor haul units in the field. Repainting and repairing these trucks at a cost of approximately \$4000 per truck.

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 \$82,000. This money will be used to purchase equipment and supplies.

### **Law Enforcement**

During FY 2012 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 245 fire tickets, 24 litter and environmental cases, 103 violations of state forest regulations, 1 tire disposal case, 23 game and fish cases, and 35 miscellaneous cases. Total fines collected were \$59,178.75. Fines collected from these cases are retained in the county where the offense occurred.

SCFC Law Enforcement Investigators investigated 101 timber theft / fraud cases which represented a loss of \$632,733.03 to the victims. SCFC collected and returned 55% or \$491,568.00 of that money to the affected landowners.

During the year, 12 arson fires were reported and investigated. Agents arrested 2 individuals for arson who were responsible for a total of 5 fires, including one firefighter arsonist that was responsible for four of these fires. Arson is historically hard to prove, and these arrests represent an impressive 46% arrest rate. During the year, there were 758 fire investigations conducted.

## **FOREST MANAGEMENT**

There are 13.1 million acres of commercial forestland in South Carolina. According to 2010 forest inventory data, 88% of South Carolina's forests are privately owned, 67% of private forests are family-owned, and 74% of these owners live on the land. Forest industry owns 1.2 million acres (9%), which is down 60% since 2001 and public agencies 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 South Carolina 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, 1,524 management plans were prepared for 82,663 acres. Beginning in July of 1999, customer satisfaction surveys were sent to every landowner that received a forest management plan. In FY 12, 92% 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 52 cases were referred to consulting foresters and 36 were referred to industrial foresters.

## **COST-SHARE PROGRAMS**

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

In 1982, the Forest Renewal Program was funded for the first time through 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 Services Agency, with the SC Forestry Commission providing technical assistance for forestry practices.

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

The SPB Prevention and Restoration Cost-Share Program (SPB Program) was created in 2006 to provide assistance to 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.

### **Seedling Survival**

Survival checks were made on 10% 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 81% for loblolly pine plantings. Survival rates for longleaf pine plantings were tabulated separately. Plantings with longleaf seedlings had a survival rate of 65% when bare root stock was used and 67% when containerized stock was used.

## Statewide Accomplishments For All Cost-Share Programs 2011-2012

### Reforestation and Timber Stand Improvement

Program	Number of Landowners	Acres Planted	Prescribed Burning	TSI Acres	Commercial Thinning	Precommercial Thinning	Cost Share Payments
FRP	358	11,056	0	598	0	0	\$905,121
SPB	98	3,337	0	0	0	1,065	\$381,637
CRP	519	1,546	1,571	0	3,663	0	\$408,013
<b>Totals</b>	<b>975</b>	<b>15,939</b>	<b>1,571</b>	<b>598</b>	<b>3,663</b>	<b>1,065</b>	<b>\$1,694,771</b>

**Forest Management Assistance 2011-2012**

<b>County</b>	<b>Non Cost-Share</b>		<b>Cost-Share</b>		<b>Forest Stewardship</b>	
	<b>Exams</b>	<b>Acres</b>	<b>Exams</b>	<b>Acres</b>	<b>Plans</b>	<b>Acres</b>
Abbeville	2	93	21	862	5	394
Aiken	5	373	34	1726	2	419
Allendale	1	60	32	1561	1	293
Anderson	30	1411	29	1320	4	243
Bamberg	7	188	45	1773	0	0
Barnwell	7	220	46	2580	1	58
Beaufort	4	1224	1	175	0	0
Berkeley	6	430	4	338	0	0
Calhoun	3	357	16	587	1	32
Charleston	13	228	8	509	6	113
Cherokee	8	404	12	191	0	0
Chester	16	1515	12	648	6	1677
Chesterfield	7	253	51	1876	2	836
Clarendon	0	0	12	365	2	156
Colleton	15	1338	42	1350	1	47
Darlington	1	40	19	971	1	1337
Dillon	3	100	15	581	2	1294
Dorchester	5	323	6	299	1	27
Edgefield	0	0	17	966	2	112
Fairfield	6	712	8	477	1	95
Florence	10	673	37	1366	4	424
Georgetown	3	65	3	56	1	174
Greenville	11	387	8	146	0	0
Greenwood	0	0	22	1145	0	0
Hampton	15	1646	37	2416	0	0
Horry	5	1116	24	705	6	677
Jasper	4	168	12	847	0	0
Kershaw	17	967	38	1641	5	426
Lancaster	6	219	9	236	0	0
Laurens	13	962	10	514	2	309
Lee	3	78	26	976	0	0
Lexington	18	865	23	784	2	251
Marion	1	4	20	639	3	570
Marlboro	5	283	13	818	1	371
McCormick	0	0	7	287	0	0
Newberry	6	508	40	1303	0	0
Oconee	11	432	7	178	0	0
Orangeburg	7	325	72	2918	4	432
Pickens	4	155	3	86	5	745
Richland	19	708	16	887	3	758
Saluda	0	0	25	1036	0	0
Spartanburg	32	1833	13	391	4	558
Sumter	0	0	26	1142	6	532
Union	7	372	7	299	0	0
Williamsburg	15	925	120	4205	2	907
York	15	1096	11	422	3	270
<b>State Totals:</b>	<b>366</b>	<b>23,055</b>	<b>1,059</b>	<b>44,597</b>	<b>89</b>	<b>14,537</b>

## **FOREST SERVICES**

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

Below is a description of the services that were available to landowners during FY12:

**Firebreak Plowing** - performed by Forestry Commission employees using agency equipment for \$140 for the 1st hour and \$85 for each additional hour. For firebreaks constructed with a heavy tractor, 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 \$400 during FY12.

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

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

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

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<b>Service</b>	<b>Number of Tracts</b>	<b>Units of Measure</b>	<b>Receipts FY 12</b>
Firebreak Plowing	418	895 miles	\$160,195.00
Prescribed Burning	143	16,847 acres	\$364,573.00
Prescribed Burning Standby	23	2,841 acres	\$5,985.00
Equipment Rental	10	168 acres	\$865.00
Water Bar Construction	10	327 bars	\$5,640.00
Timber Marking	1*	30 acres	\$3,755.33
<b>Totals</b>	<b>605</b>	<b>-</b>	<b>\$541,013.33</b>

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\*Timber marking conducted on state lands is summarized in the State Lands Management section

Beginning in July of 1999, a customer satisfaction survey was sent to all landowners that received forestry services. In FY12, 92% of the landowners who responded indicated that they were satisfied with the services they received.

## **FOREST STEWARDSHIP**

The Forest Stewardship Program is a cooperative effort among the USDA Forest Service, SC 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.

A goal of the South Carolina Forestry Commission is to conserve and manage working forest landscapes in our state to achieve multiple objectives. The Forest Stewardship Program is our primary vehicle to promote the informed management of private forestlands and to provide landowners with the technical assistance they need to successfully manage their forests. The South Carolina Forestry Commission continues to emphasize forest stewardship plan development and landowner recognition programs, focusing efforts on priority areas identified in the state's Forest Action Plan. Private forestry consultants have historically played a very active role in producing Stewardship plans for private landowners across the state. However, decreased funding for the program has not allowed the Commission to keep up with the demand for consultant written plans. Thus, the number of new and revised plans completed by consulting foresters has decreased significantly over the past few years.

On the positive side, the agency continues to develop its ability to capture and report program accomplishments. This year, a project was initiated to create a spatial database that contains polygon data for all current Forest Stewardship Plans. Polygons were digitized for all current Forest Stewardship Plans created during the period 2004 – 2008. Note that South Carolina has maintained a spatial database with polygon data for all new or revised Forest Stewardship Plans created since 2008. Thus, we now have a complete spatial database to cover the time period 2004 – 2012.

During the past year, 139 Stewardship Plans were written in South Carolina on 35,228 acres. South Carolina Forestry Commission foresters authored 87 plans covering 14,083 acres. Private forestry consultants authored 51 plans covering 19,437 acres. Forest industry Landowner Assistance Program foresters authored 1 plan covering 1,708 acres.

Five landowners (comprising 1,586 acres) were recognized as Forest Stewards during FY12.

Of the landowners who returned customer surveys during the 2011-2012 fiscal year, 100% 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.

## **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; to provide for, coordinate and/or conduct information, education and training regarding community forestry, wildland-urban interface issues, and arboricultural best management practices; and to provide grants to local governments, non-profit organizations, and 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 means: direct contact, diverse and cooperative partnerships, and the financial assistance grant program.

Expected results include such benefits as 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**

With Federal funds limited, SCFC Urban Foresters provided technical assistance to communities through a three-level educational program and a Forest Resource Institute. At the basic level, for communities with no professional tree care or horticultural staff, a 6-hour workshop was provided on the basics of tree care. Participating communities received a reference and training library of books and electronic media covering basics of arboriculture. Thirty-one communities received this assistance. For communities with tree care staffing, a Certified Arborist Exam Preparation course was offered, with a similar reference library. The course consisted of sixteen lessons in eight, two-hour sessions. Sixteen individual representing sixteen communities participated in this course. Eleven new Certified Arborists resulted. For communities with a Certified Arborist on staff, a Tree Risk Assessment Course and Exam was offered, in partnership with the Pacific Northwest Chapter of the International Society of Arboriculture. Twenty participants from sixteen communities took part, resulting in eighteen Certified Tree Risk Assessors.

The SC Forestry Commission also conducted a three-day Forest Resource Institute for city and county planners and landscape architects, with a focus on community forestry, forestry-related economic development and wildland-urban interface issues. This event, held in February 2012, included 34 participants from 25 communities. Trees SC and several corporate sponsors partnered with the Forestry Commission to provide this conference.

### **Tree City/Tree Line USA**

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 3 military bases under the Tree City USA program during FY 12.

The Tree Line USA program, also sponsored by the 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.

### **Partnership Development and Educational Programs**

Through the direct technical assistance of the community forestry staff and implementation of the financial assistance projects, the program strives to develop partnerships with a variety of organizations and units of local government. Often these partnerships result in educational programs regarding the economic, ecological, and social value of community forest resources. During FY 12, twelve (12) partnerships were developed and 54 different educational sessions were presented to approximately 1,966 South Carolinians.

<i>Types of Technical Assistance</i>	<i>Program Accomplishments Community Forestry Staff</i>			<i>Program Accomplishments Financial Assist. Grants</i>		
	<b># of Entities</b>	<b># of Assists</b>		<b># of grants awarded</b>		
<b>Program Development/Expansion</b>						
Municipal Government	74	229		8		
Non-profit / trade organizations	21	86		7		
Educational Institutions	9	20		0		
County Government	15	35		2		
State Government	6	19		2		
Others	<u>42</u>	<u>42</u>		N/A		
<b>TOTAL</b>	<b>167</b>	<b>431</b>		<b>19</b>		
<b>Tree City USA's</b>		<b>41</b>		<b>N/A</b>		
<b>Public Tree Ordinances Developed</b>		<b>N/A</b>		<b>2 public tree ordinances written under 2 grant projects</b>		
<b>Public Trees Inventoried</b>		<b>N/A</b>		<b>15,167 trees inventoried under 7 grant projects</b>		
<b>Public Tree Management Plans</b>		<b>N/A</b>		<b>4 plans developed by 4 grantees</b>		
<b>Public Trees Planted</b>		<b>N/A</b>		<b>251 trees planted under 8 grant projects</b>		
<b>Professional Certification</b>		<b>N/A</b>		<b>4 people certified as ISA Arborists under 2 grant projects</b>		
<b>Partnership Development</b>		<b>N/A</b>		<b>12 partnerships developed under 5 grantees</b>		
<b>Volunteers</b>		<b>N/A</b>		<b>20 people volunteered a total of 930 hours under 5 grant projects</b>		
<b>Public Information/Education</b>	<u>Adults</u>	<u>Youth</u>	<u>Totals</u>	<u>Adults</u>	<u>Youth</u>	<u>Totals</u>
# Programs	44	3	<b>47</b>	7	0	<b>7</b>
# People	1,492	96	<b>1,588</b>	378	0	<b>378</b>
# Seat hours	1,980	158	<b>2,138</b>	3,210	0	<b>3,210</b>

## State Forest System:

### 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 users were required to purchase a parking permit only.

#### Receipts for Operating Budget

<u>Activity</u>	<u>Receipts</u>
Timber Sales	\$98,500.00
Burn Assist Fee	294.00
Shelter Rentals	1,360.00
Conference Room Rentals	7,314.00
Annual Permits	47,625.00
Daily Permits	14,682.74
Special Use Permits	1,400.00
Campsite Rental	540.00
Trail Donations	500.85
<b>Total</b>	<b>\$172,216.59</b>

**Note: 25% of all receipts are paid to the Richland County School System. This amounted to \$40,688.68 for FY 12. (Donations and rental income are not included when calculating the total to be dispersed to the school system.)**

#### Silvicultural Practices

One 130-acre timber harvest was sold in FY 12 and will be cut in FY 13. One prescribed burn was conducted this year of approximately 14 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 FY 12. The Friends of Harbison State Forest held their sixth 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 FY 12. These events included improving the trails by pruning 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 staff.

The Friends of Harbison State Forest 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.

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 for the Education Center. 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 29 groups this fiscal year for a total of 749 users.

The canoe landing at Harbison State Forest provides access to the Broad River. During the 2011-2012 fiscal year, 89 groups used this facility for a total of 197 paddlers. Usage of the Canoe Landing is up more than 100% over the last two years.

#### **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**

Harbison State Forest is being used as a test site for a research project comparing survey quality GPS units to consumer grade GPS units.

## **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 1600 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:**

<b>Revenue Sources</b>	
	\$0
<b>Total Revenue</b>	<b>\$0</b>

### **Silvicultural Practices**

During FY 12, approximately 51 acres of loblolly pine were spot planted, 28 acres of mid-story release treatments were carried out (10 acres of loblolly pine and 8 acres of longleaf pine), and 10 acres of overstory release were accomplished on 2-year old planted loblolly pine. Controlled burning was conducted on 82 acres (52 acres in longleaf pine stands and 30 acres of site preparation, old fields, and other areas).

### **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 20 acres of food plots were planted and maintained.

### **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**

A grant funded the site preparation and planting of an approximately 18-acre loblolly pine flex stand to eventually be used as a study site and to conduct landowner demonstration tours.

### **Outreach**

Major outreach activities consisted of special hunts in conjunction with several partnering organizations. Four deer hunts and 3 turkey hunts were conducted during FY 12. 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 100 individuals participated in these hunts.

<b>Niederhof Hunts FY 2011-2012</b>			
	<b><u>Number of Hunt Participants</u></b>	<b><u>Others Attending</u></b>	<b><u>SCFC</u></b>
<b><u>Deer Hunts</u></b>			
4 Hunts			
<b>September Youth</b>	8	13	6
<b>December QDMA</b>	11		5
<b>November HWAH</b>	8	3	7
<b>October QDMA</b>	9	8	7
	<b>36</b>	<b>24</b>	<b>25</b>
<b><u>Turkey Hunts</u></b>			
3 Hunts			
<b>WITO</b>	4	2	5
<b>April TF</b>	4	1	5
<b>April</b>	4	2	7
	<b>12</b>	<b>5</b>	<b>17</b>
<b>Totals</b>	<b>Hunts</b>	<b>Participants</b>	
	7	119	

### **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	\$0
Wildlife Management Area	\$17,852
Rental state property	\$85,000
Cabin / conference center rentals	\$6,130
<b>Total Revenue</b>	<b>\$108,982</b>

**Note: 25% of all forest receipts were paid to Pickens and Oconee County Schools for a total of \$25,713**

**Silvicultural Practices**

No timber sales occurred on Poe Creek State Forest during FY 12. 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 FY 12 was heavy, with numerous individuals and groups taking advantage of this beautiful facility. Over 400 scouts and 350 high school and middle school students utilized the facilities in differing capacities. The grounds were also made available for the Salem Fire and Rescue Annual Picnic. The Conference Center and grounds were used for the second wedding held there with 250 in attendance. 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 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 FY 12, 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 provide 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 FY 12 through mowing of road shoulders and grading where needed. The south end of the pole barn is now housing 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 still utilizes the facility, on the western edge of the property, to house and rehabilitate approximately 35 girls in the juvenile system.

**MANCHESTER STATE FOREST**

Manchester State Forest, located in Sumter County and Clarendon County, is 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:**

<b>Revenue Source</b>	
Timber Sales	\$379,749
Pine Straw Sales	\$89,905
Land Lease Payments	\$28,535
Wildlife Management Area	\$83,294
Trail and Special Use Permits	\$45,135
<b>Total</b>	<b>\$626,618</b>

**Note: 25% of all forest receipts were paid to Sumter and Clarendon County Schools for a total of \$155,404.**

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

**Silvicultural Practices:** Due to drought conditions only one hundred and two (102) acres were prescribed burned during the fiscal year for wildlife, hazard reduction, hardwood control, aesthetic, and site preparation purposes. Three hundred sixty-four (364) acres were sold for final harvest cuts and six hundred fifty-two (652) acres were sold for improvement cuts (thinnings). Nine hundred twenty-four (924) acres were sold for pinestraw raking.

The following species and number of seedlings were planted during FY12:

	<u>Acres</u>	<u>Seedlings</u>
Containerized longleaf pine	270	157,000
Bare root loblolly pine	85	47,000

**Forest Protection**

No wildfires occurred on Manchester State Forest during the 2011-12 fiscal year. Manchester personnel assisted regional personnel as well as the local fire departments with several fires which were adjacent to the Forest as well as on 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 Forest Fair. Six special use permits were issued during the year for organized events which featured bicycle, equestrian and motorcycle use.

A restroom facility was constructed at the rifle and pistol range using funds from the tax checkoff on the SC Income Tax Return. Manchester also hosted a number of field exercises with the Natural Resource curriculum students of Central Carolina Technical College, and provided for a summer internship with Central Carolina Tech.

### **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 dove field and game food plot establishment and monitoring. They also agreed to plant the 150-acre dove field on the Oak Lea Tract. The draw hunts at Oak Lea grew in popularity as evidenced by the increased number of applications.

Five (5) public dove fields were opened on Manchester and Oak Lea with an overall participation on opening day of three hundred twenty-nine (329) hunters. One hundred and fifty-three (153) doves were harvested on opening day with a total of 881 shots being fired.

Manchester also hosted its annual youth dove hunt on the Bland Tract, which was limited to 38 youths who were required to register in advance. Ninety-two (92) doves were harvested during this event with 1,346 shots being fired. Quail and turkey data were carefully tracked on the Bland, Tuomey, and Oak Lea tracts with a total of 42 quail harvested and 8 gobblers killed. During the year DNR also provided technical assistance with deer herd dynamics with 188 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 with pond management. DNR also assisted in law enforcement on the forest through interagency cooperation. Planting and maintenance was conducted on 587 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 six (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 Air Force 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 resulted in an emergency recovery plan for the RCW.

### **Research**

Manchester continues to cooperate with the SCFC Nursery Section by providing eight (8) sites for clone banks, seed orchards, and progeny tests.

### **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 2003 through the partnership of eight participants. These partners included the South Carolina Forestry Commission, South Carolina Department of Natural Resources, The Conservation Fund, USDA Forest Service Forest Legacy Program, U. S. Fish and Wildlife, Service, North American Wetlands Conservation Act Grant, Ducks Unlimited, National Wild Turkey Federation, and Anheuser-Busch.

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, and the opportunities it provides for recreation, forest practices and education.

### **Receipts**

<b>Revenue Sources</b>	
Timber Sales	\$74,740
Wildlife Management Area	\$53,493
<b>Total Revenue</b>	<b>\$128,233</b>

**Note: 25% of all forest receipts were paid to Williamsburg and Georgetown Counties for a total of \$32,581.**

### **Silvicultural Practices**

One hundred thirty-one (131) acres of bottomland hardwoods were harvested for regeneration purposes.

### **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 for both deer and turkey. Plans have been initiated in cooperation with the 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 2004-05 with SCDNR that placed Wee Tee under the WMA program according to a pre-closing cooperative arrangement. Hunting and fishing schedules were agreed upon and implemented. During the 2011-2012 fiscal year, 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 on Wee Tee State Forest.

**Infrastructure**

Manchester State Forest personnel made improvements to approximately 45 miles of roads on Wee Tee during FY 12. Improvements included grading, mowing, drainage improvements due to existing beaver dams, culvert replacements, and bridge replacements.

One Manchester employee is assigned to Wee Tee State Forest full-time with primary responsibilities of infrastructure maintenance and law enforcement.

**SAND HILLS STATE FOREST**

Sand Hills State Forest (SHSF) covers approximately 46,500 acres with approximately 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>FY 12</b>
Timber & Stump Sales	\$ 1,006,789.13
Pinestraw Sales	\$ 781,616.34
WMA Payment	\$ 39,081.96
Rent State Owned Property	\$ 3,943.75
Rent Farmland (CPR Payment)	\$ 390.00
Farm Products	\$ 1,090.00
Permit User Fees	\$ 6,009.50
Prior Year Refund	\$ 5,319.69
Donation	\$ 5.00
<b>Total</b>	<b>\$ 1,844,245.37</b>

Note: 25% of \$1,833,886.93 was paid to Chesterfield, Darlington and Kershaw County School Systems (see below). Donations, prior year refunds, and rental income are not included when calculating the total to be dispersed to the school systems.

<b>COUNTY PAYMENT</b>	
<b>County</b>	<b>FY 12</b>
Chesterfield (97.6%)	\$ 447,468.41
Darlington (2.4%)	\$ 11,003.32
Kershaw (25% of sales in Comp 22)	\$ -
<b>Total</b>	<b>\$ 458,471.73</b>

## Sand Hills Revenue

Product Volume (tons)	Revenue	
Pine Pulpwood	6,119.50	\$56,598.91
Pine CNS	7,097.00	\$109,962.44
Pine Sawlogs	28,066.10	\$719,743.56
Hardwood Pulpwood	838	\$6,155.31
Hardwood Sawlogs	106	\$1,938.79
Pine Chips	10,086.07	\$152,070.96
<b>TOTALS</b>	<b>52,312.67</b>	<b>\$1,046,469.97</b>

## Silvicultural Practices

The following species and number of seedlings were planted:

Containerized Longleaf Pine ---29,040 Trees --- 40 Acres

## Forest Protection

A total of 1,409 acres were prescribed burned for wildlife habitat enhancement, hardwood control and fuel reduction.

No wildfires occurred on Sand Hills State Forest during FY 12.

## 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 of the pinestraw that falls during the contract period. When the contract expires, the acreage becomes part of SHSF's quality straw production program. The straw from these areas is offered for sale on a lump sum, sealed bid basis. In FY 12 Sand Hills issued 15 enhancement contracts for a total of 1,264 acres. There were a total of 5,172 active enhancement acres at the end of FY 12.

Sand Hills State Forest sells pinestraw through bid sales and negotiated sales. In FY 12 there were 4,082.7 acres sold on bid sales for \$589,697.39 and 1,407.6 acres sold on negotiated sales for \$148,795.00.

FY 2012 saw an increase in timber sales over previous years with 2,209.0 acres for a total of \$1,046,469.97. Below are the product volumes and revenue by product:

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 the 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 FY 2012 Sand Hills State Forest issued 163 red stickers, 161 yellow stickers, and 246 green 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 the SC Parks, Recreation, and Tourism Department.

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, 247 within 25 miles of Sand Hills and over 1,815,136 geo-caches worldwide.

At Sugarloaf Mountain, there are seven primitive camping sites for family camping and eight primitive equestrian campsites. Sand Hills personnel booked one hundred thirty five (135) reservations for these sites this year. An estimated 3,055 visitors used the campsites and trails. FY 12 fees were \$15 for sites with shelters and \$10 for sites without shelters. Sand Hills received \$3,943.75 in revenue from visitors using these facilities.

Trail use permits for horseback riding increased to three hundred three (303) permits in FY 2012. One hundred thirteen (113) permits were sold online. One hundred eighty-four permits (184) were purchased through the drop box outside the SHSF office. This year a new permit for access to all the state forests was introduced. The cost of this type of permit is \$40. There were six (6) All State Forest permits sold this year. Revenue from trail use permits totaled \$6,009.50. The permit holders came from South Carolina, North Carolina, Georgia, Tennessee, Texas, Maryland, Florida, and Canada.

Free-use permits are issued for any activity at Sand Hills State Forest that does not have a fee. SHSF personnel issued fifty-five (55) free-use permits this year. Thirteen (13) of the permits were for raking pinestraw for personal use, twenty-four (24) for gathering firewood, and eighteen (18) for picking up scrap metal.

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

Three special use permits were issued for organized events.

1. AERC National Championship Endurance Ride on October 22, 2011: 81 riders and volunteers; received \$455 in fees.
2. Sand Blast Rally on February 4, 2012: 54 competitive entries with 72 people racing, 23 cars, 31 motorcycles, 135 volunteers; received \$875 in fees.
3. Spring Fling Endurance Ride on April 20-22, 2012: 127 Riders, volunteers; received \$625 in fees.

These events brought many visitors to Sand Hills State Forest and surrounding areas. They had an estimated economic impact of \$100,000.00 for the area. The local involvement and sponsorship have increased each year that these events have been held.

### **Education**

SHSF had classes from the following schools visit for educational purposes: Governor's School of Science and Mathematics and Francis Marion University. SHSF personnel visited and presented programs to the following schools: Spalding Middle School (6<sup>th</sup>-8<sup>th</sup> Grade) - 45 students, Petersburg Elementary School (kindergarten) - 30 students, Darlington County Institute for Technology (9<sup>th</sup>-12<sup>th</sup> Grade) - 40 students, Long Middle School (8th grade) - 150 students and Society Hill Library - 20 students. In addition to visiting classrooms, SHSF personnel also spoke

to several civic clubs and participated in the Wood Magic Forest Fair.

### **Wildlife Management**

Approximately 40,000 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 in size and is planted in corn, sunflowers, and lespedeza. The Davis field is 40 acres in size and is planted in corn, sunflowers, and lespedeza. Both the Wilkes Chapel field and the Davis field were recognized by the SC Sportsman Magazine as being in the top five public dove fields in the state for the number of birds harvested per hunter.

Eighty one acres (110 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 11, 12, 13, 14, 19 and 20 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 81 managed Red-Cockaded Woodpecker clusters on SHSF. During FY 12, 72 clusters were active with one new cluster being found in an area being marked for harvest. Of those 72 active groups, 69 can be considered potential breeding groups. Seventy-eight nesting attempts were made by 65 groups in 2012; 51 of those attempts fledged offspring.

Management Implications: During the 2011-2012 fiscal year, 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 13 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 potential breeding group.

### **Law Enforcement**

Officers issued 40 citations for various crimes on the state forest. The most prevalent was Rules & Regulations of Commission violations. Starting in May officers responded to an increase in pinestraw theft which presently continues. Officers conducted aerial surveillance for marijuana eradication with SLED in June. 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 U.S. 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. During the 2011-12 fiscal year, the State Lands Coordinator provided timber sale assistance to 4 agencies on 13 different tracts consisting of ~2,020 acres. This assistance consisted of cruising, marking, and administering timber sales. The agencies and facilities assisted were as follows:

<b>DNR Timber Sales</b>	<b>Acres</b>	<b>Total tons</b>	<b>Revenue generated</b>
Palachucola Stage Coach	76	7458.34	\$182,000.00
Palachucola Turkey Parker Black Swamp	258	36716.3	\$570,938.00
Belfast Plantation	714	36578	\$543,914.86
Donnelley	327	12441	\$182,683.00
Crosby	32	0	\$10,304.00
Woods Bay	65	6763	\$110,473.00
Jocassee	237	5674	Not available
<b>Totals</b>	<b>1709</b>	<b>105631</b>	<b>\$1,600,312.86</b>

<b>PRT Timber Sales</b>	<b>Acres</b>	<b>Total tons</b>	<b>Revenue generated</b>
Chester State Park	35	4073.9	\$72,000.00
<b>Totals</b>	<b>35</b>	<b>4073.9</b>	<b>\$72,000.00</b>

<b>Other State Lands Timber Sales</b>	<b>Acres</b>	<b>Total tons</b>	<b>Revenue generated</b>
DOC Wateree Corr. Inst.	125	24500	\$404,868.75
DOC Wateree Corr. Inst.	150	N/A	Not available
DOT I-26 (30 mile long medium)	N/A	N/A	Not available
<b>Totals</b>	<b>275</b>	<b>24,500</b>	<b>\$404,868.75</b>

**State Lands Timber Sales Summary**

<b>Product</b>	<b>Total Tons</b>	<b>Bid Value/Product</b>
Pine Pulp	76,269.2	\$842,840.66
Pine CNS	20,280.0	\$419,887.00
Pine Saw	14,037.7	\$483,037.52
Hwd. Pulp	12,367.7	\$124,106.12
Misc. Hwd. Saw	11,250.0	\$262,077.07
<b>Total:</b>	<b>134,204.5</b>	<b>\$2,077,181.61</b>
<b>Received Composite Price (\$/ton):</b>		<b>\$15.48</b>

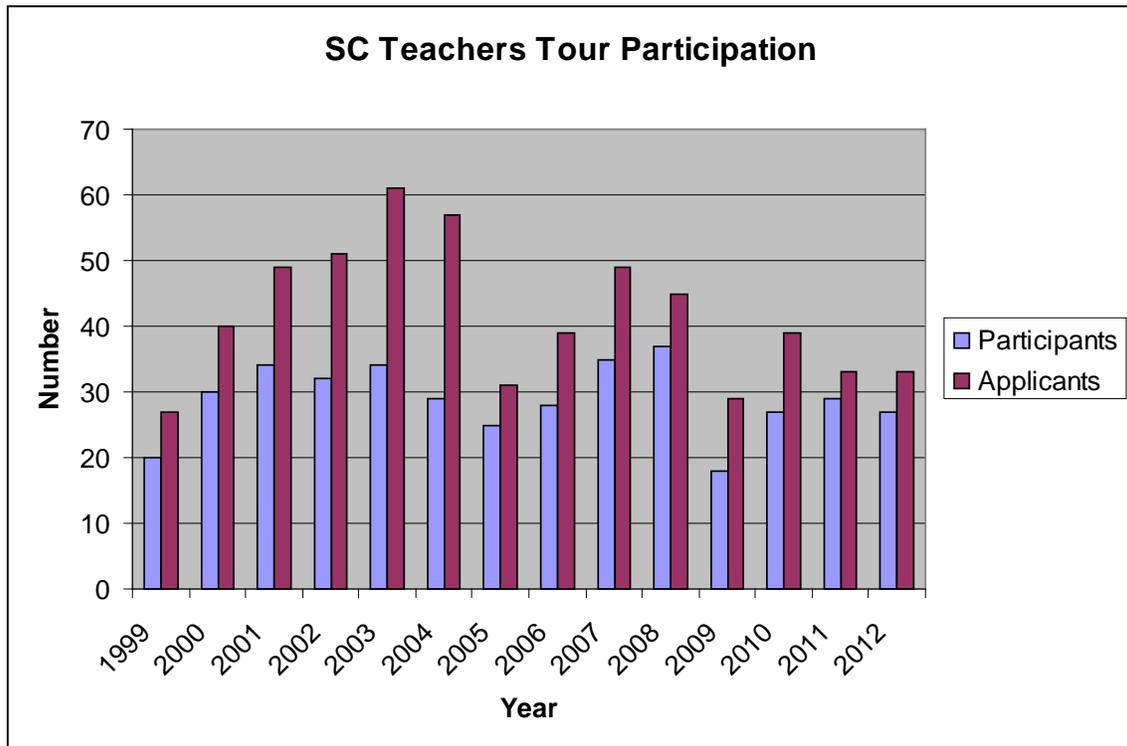
**Other Activities**

In addition, the State Lands Coordinator attended meetings with the National Enduro planning committee for Manchester State Forest, attended state trails committee meetings, and facilitated timber marking with regions where possible.

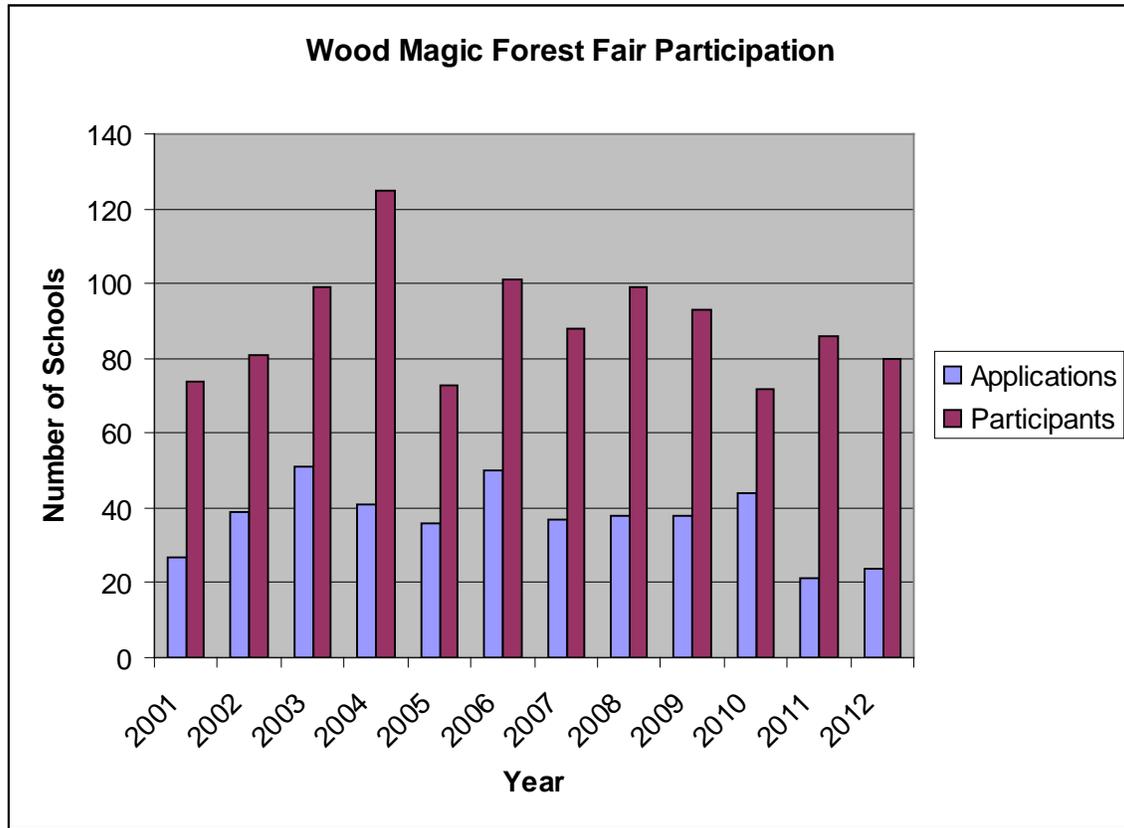
## FORESTRY EDUCATION COORDINATOR HIGHLIGHTS

- Participated in two Project Learning Tree steering committee meetings
- Staffed an informational booth at a statewide science teacher's conference
- Conducted 30 education programs, reaching over 1,500 people. Each program was adapted to the needs of that group.
- Organized and conducted the Future Farmers of America (FFA) Statewide Forestry competition at Harbison State Forest
- Conducted numerous educational programs on state forests as well as at other locations.

### Teachers' Tour



### Wood Magic Forest Fair



**Educational Activities at Harbison State Forest**

	<b>School/Organization</b>	<b>Grade Level/Age</b>	<b># of Children</b>	<b># of Adults</b>
1	Around the World Summer Camp	K-2nd	17	4
2	Forestry Queens	3-6 yr olds	7	10
3	New Heights	2nd	6	4
4	Palmetto Homeschool	2nd-6th	14	5
5	SC Wildlife Federation Family Hike	families	15	8
6	Batesburg-Leeville High	9th-12th	11	2
7	Spartanburg Schools Gifted/Talented	4th-5th	31	3
8	Burea Junior	K-8th	10	4
9	White Knoll High	11th-12th	31	8
10	GLAD Homeschool	preK-6th	12	6
11	Nursery Road Elementary	K	47	6
12	Nursery Road Elementary	K	49	6
13	Midlands Tech	college		20
14	Hammond	K	33	5
15	Hammond	K	32	5
16	Commissioner's School for Ag	10-12th	15	2
17	Midlands Tech	college		25
18	Irmo Elementary	1	76	33
19	Longleaf Middle	7th	49	3
20	Midlands Tech	college		25
21	Heathwood Hall	2nd	42	7
22	Lexington Elementary	1st	42	14
23	River Springs Elementary	K	38	14
24	River Springs Elementary	K	57	21
25	Ballentine Elementary	1st	60	21
26	Ballentine Elementary	2nd	60	24
	<b>TOTALS</b>		<b>754</b>	<b>285</b>
	<b>Total Participating (Adults +children) =</b>		<b>1039</b>	

**Educational Activities Outside of Harbison State Forest**

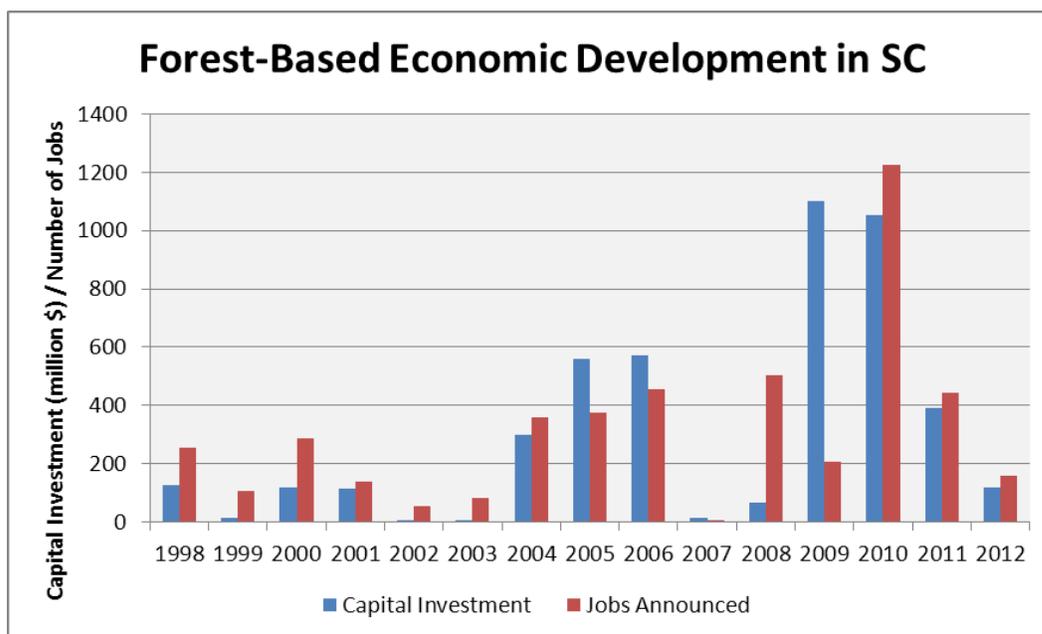
	<b>School/Organization</b>	<b>Grade Level/Age</b>	<b># of Children</b>	<b># of Adults</b>
1	Lake Murray Child Development	preK-5	45	5
2	Batesburg Leesville High	9th-12th	13	1
3	Irmo Elementary	1st	73	6
4	St. Joesph Catholic	2nd	30	3
5	Camp Bob Cooper Staff	adult		6
6	McCracken Middle	middle	45	3
7	Pine Grove Elementary	2nd	60	3
	<b>TOTALS</b>		<b>266</b>	<b>27</b>
	<b>Total Participating (Adults +children) =</b>		<b>293</b>	

## RESOURCE DEVELOPMENT DIVISION

### BUSINESS DEVELOPMENT

While interest in forestry-related economic development was strong throughout the year, the announced capital investment and the number of jobs created were at a four-year low. A total of 27 different forestry-related projects were active during fiscal year 2012. Sixteen of the 27 projects were biomass energy projects, 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 products as varied as chopsticks and potting media. 59% of the active projects were dependent on export markets.

Four forestry projects were announced during fiscal year 2012. Sonoco made the largest forestry investment in South Carolina this year by announcing the construction of a \$100 million biomass boiler at its Hartsville plant. An investment of this magnitude is a vote of confidence in their South Carolina operations. Sonoco also announced a \$1 million expansion of a corrugated container recycling center in North Charleston. Lowcountry Biomass near Ridgeland announced a \$16 million investment in doubling the size of their current pellet operation. Finally, Dillon Furniture announced a \$3 million expansion in the production of their line of furniture for the hospitality industry.



During FY 2012, the SCFC Resource Development Division represented the agency and the forestry community through 32 statewide and regional economic development organizations. The Forestry Commission and the SC Department of Commerce signed an MOU to bring focus to forestry economic development in South Carolina. By January 1, 2012, the state's first directory of secondary forest product businesses was completed. Both the primary and secondary mill databases were made available online in a spreadsheet and Google Earth application. In Spring 2012, we hosted a Chinese delegation in a successful effort to resolve a trade dispute. Finally, during FY 2012, 163 individual business assists were made to address single-issue requests.

Forestry's 20/15 Initiative picked up momentum during FY 2012 after receiving funding from a USDA Forest Service Redesign Grant. Major accomplishments include: (1) establishing an agribusiness project manager position within the SC Department of Commerce, (2) creating a forester virtual job shadowing module for workforce recruitment, (3) completing a wood availability study for South Carolina, (4) establishing a flex stand demonstration planting for landowner workshops, (5) providing leadership for a national forest markets committee, and (6) achieving passage of the Property and Firefighter Protection Bill that will generate \$3+ million annually for 5 years for firefighting and firefighting equipment.

## **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.

A subset of the FIA plots are selected to provide data on forest health, referred to as the Phase 3 portion of FIA field data collection. A total of 204 sample plots are located in South Carolina. Each year, during the summer, 20% of these plots, referred to as panels, are measured to provide forest health data, such as, soil chemistry, tree health, tree carbon fixation, tree nutrient storage, and potential for tree survival and reproduction. Phase 3 data provides a quantitative assessment of current tree conditions and provides an integrated measure of site conditions, stand density and influence of external stresses. In addition, bioindicator sample plots are taken to detect the presence of ozone pollution. Ozone detection sample plots are not a part of the Phase 2 and Phase 3 sample grid, but are on a separate polygon grid system across the state.

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 2011-2012, the average accuracy for all crewmembers was 93.33% with each crewmember exceeding the 87% yearly average required by SRS.

During fiscal 2011-2012, field crews completed one panel of plots that began in fiscal year 2010-2011 and began the next panel. For the fiscal year, a total of 566 Phase 2 sample plots were completed by Forestry Commission crews. SRS completed 77 plots, consisting of 48 nonforest plots identified in the office and not sent to the SCFC field crews, 25 plots that were classified as census water, and 3 nonforest and 1 forest field plots collected by SRS staff. The FIA program completed data collection on the final panel in the Cycle 10 inventory and has completed 55% of the first panel of the Cycle 11 inventory of data collection. The FIA program completed 16 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, 39 FIA plots were installed on the Sumter and Francis Marion National Forests as intensification plots. Ozone detection sample plots were not installed for fiscal year 2011-2012 due to federal budget restrictions.

The Forestry Commission FIA program completed the 10<sup>th</sup> inventory of the state in fiscal year 2012 under the National FIA plot design. 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 will be released by SRS in early 2013.

## **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 2011-2012, 46,409,224 pines and 1,059,015 hardwood and other seedlings were planted in South Carolina for a total of 47,468,239 seedlings from all nursery sources. This number is 7% higher than the 44.37 million seedlings reported planted in FY 2010-2011. 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 3,129,015 pines and 185,417 hardwood and other seedlings in FY 2011-2012 for a total of 3,314,432 seedlings total. Of this total, 391,552 seedlings were sold out of state. The total amount distributed represents 94% of the total number of bareroot and containerized seedlings grown at Taylor Nursery. The SCFC sold 6.2% 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 552 surveys e-mailed out, 203 (37%) customers responded. The 2012 survey indicated that 95% of our customers were satisfied with our seedling quality and service. Of the customers who had a problem with their seedling order, 77% of the customers were satisfied with our response. Of the customer comments on returned survey forms, 66% 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. Recent research studies conducted at Taylor Nursery include a herbicide toleration study to improve chemical control of hard-to-control weeds such as spurge, nut sedge and Poor-Joe.

## **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 59,074+ 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. The 2011 cone crop was the second crop harvested, primarily from 2 acres per orchard, yielding 10.5 bushels of cones.

Cone collection for 2011 yielded 2,059 bushels 2<sup>nd</sup>-generation loblolly pine, 10.5 bushels 3<sup>rd</sup>-cycle loblolly pine, and 215 bushels 1.5 generation longleaf pine. Seed processing generated 1,645.4 pounds 2<sup>nd</sup>-generation loblolly seed, 13.8 pounds of 3<sup>rd</sup>-cycle loblolly seed, and 161.95 pounds of longleaf seed. The 5.5 bushels of Virginia pine cones that were collected at Piedmont Forestry Center yielded 1.81 pounds of seed. NFC's annual sale of seed and pine cones generated \$121,068.83 in revenue: to date, Niederhof's 2<sup>nd</sup>-generation orchards have created additional revenue in the amount of \$1,708,685.30 from cone and seed sales.

Our six-year relationship with Cellfor provided the Forestry Commission with additional revenue opportunities while promoting valuable research through tree breeding activities. Cellfor was a full member of the NCSUCTIP and continued Cooperative breeding and testing at NFC, and had renewed their research agreement with the Forestry Commission through 2015. Unfortunately, in December 2011, Cellfor filed for creditor protection under the Companies' Creditors Arrangement Act, a Canadian court process analogous to the Chapter 11 process in the USA. Our relationship with Cellfor thus came to an end midway through this fiscal year.

NFC staff began 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.

### Tree Seedlings Planted by Landowner Classification 2011-2012

<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	33,946,899	642,714	34,589,613	72.9%
Forest Industry	8,076,425	39,400	8,115,825	17.1%
Corporate	4,001,000	351,715	4,352,715	9.2%
Government	384,900	25,186	410,086	0.9%
<b>Total</b>	<b>46,409,224</b>	<b>1,059,015</b>	<b>47,468,239</b>	

### Source of Seedlings Distributed in South Carolina

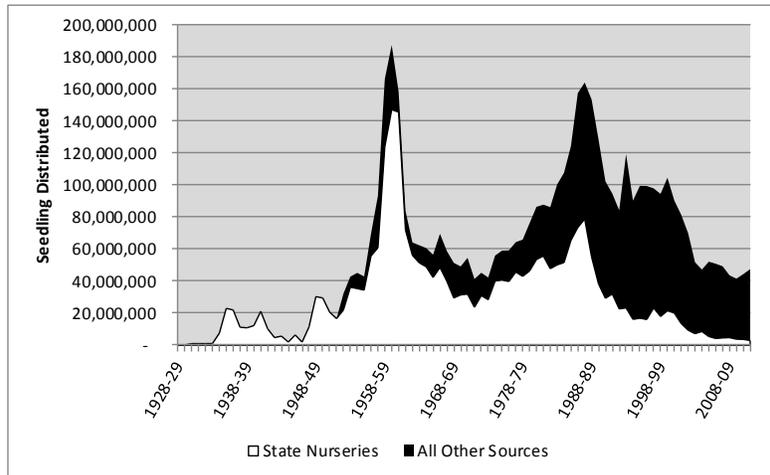
<b>Nurseries in South Carolina</b>	<b>Pines Distributed</b>	<b>Hardwoods &amp; Others Distributed</b>	<b>Total Number of Trees Distributed</b>	<b>Percent of Grand Total</b>
ArborGen (Bleinheim, SC)	19,025,075	575,150	19,600,225	41.3%
Weyerhaeuser	14,272,909	11,000	14,283,909	30.1%
South Carolina Forestry Commission	2,766,115	156,765	2,922,880	6.2%
<b>Total</b>	<b>36,064,099</b>	<b>742,915</b>	<b>36,807,014</b>	<b>77.5%</b>
<b>Nurseries Outside of South Carolina</b>				
ArborGen (Belleville, GA)	2,927,725	35,800	2,963,525	6.2%
Plum Creek	2,600,000	0	2,600,000	5.5%
Bodenhamer	2,500,000	0	2,500,000	5.3%
International Forest Company	1,542,650	239,500	1,782,150	3.8%
North Carolina Forest Service	653,000	18,800	671,800	1.4%
Bell Brothers	120,000	0	120,000	0.3%
Florida Division of Forestry	1,750	22,000	23,750	0.1%
<b>Total</b>	<b>10,345,125</b>	<b>316,100</b>	<b>10,661,225</b>	<b>22.5%</b>
<b>Grand Total</b>	<b>46,409,224</b>	<b>1,059,015</b>	<b>47,468,239</b>	<b>100%</b>

**State Nursery Seedling Production & Sales for FY 2011-20112**

<u>Species</u>	<u>Seedlings Produced</u>	<u>Seedlings Sold</u>	<u>% Sold</u>
Ash, Green	4,000	1,590	40%
Atlantic White Cedar CTR	900	900	100%
Baldcypress	15,000	14,080	94%
Carolina Sapphire CTR	1,080	1,080	100%
Cedar, Eastern Red	50,930	40,045	79%
Clemson Greenspire CTR	1,998	1,998	100%
Crabapple, Southern	3,980	3,970	100%
Dogwood	1,990	1,990	100%
Leyland Cypress CTR	14,946	10,944	73%
Loblolly Pine, Coastal 2nd gen.	88,130	88,130	100%
Loblolly Pine, Coastal 2nd gen. SRS	305,000	305,000	100%
Loblolly Pine, Coastal 3rd gen	2,000	2,000	100%
Loblolly Pine, Coastal Best Family	169,910	169,910	100%
Loblolly Pine, Piedmont 2nd gen.	298,270	298,270	100%
Loblolly Pine, Piedmont 3rd gen.	600	600	100%
Loblolly Pine, Piedmont Best Family	255,025	255,025	100%
Longleaf Pine	300,000	300,000	100%
Longleaf Pine, SRS	189,000	189,000	100%
Longleaf Pine Natural Stand CTR	1,040,000	876,300	84%
Longleaf Pine Improved CTR	600,000	600,000	100%
Oak, Cherrybark	2,000	1,990	100%
Oak, Gobbler	7,000	5,900	84%
Oak, Live	8,500	2,140	25%
Oak, Northern Red	7,000	2,640	38%
Oak, Sawtooth	20,500	12,340	60%
Oak, Swamp Chestnut	7,500	5,640	75%
Oak, White	7,090	7,090	100%
Oak, Willow	2,990	2,990	100%
Persimmon	8,000	6,940	87%
Plum, Chickasaw	2,000	2,000	100%
Redbud	6,000	2,040	34%
Shortleaf Pine	30,000	25,410	85%
Sycamore	6,000	510	9%
Virginia Pine	2,420	2,420	100%
Virginia Pine Christmas Tree Stock	17,050	16,950	99%
Walnut, Black	2,100	2,100	100%
White Pine	36,580	35,500	97%
Wire Grass CTR	17,000	17,000	100%
Yellow Poplar	2,000	2,000	100%
	<b>3,534,489</b>	<b>3,314,432</b>	<b>94%</b>

### Seedling Distribution 1928-2012

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
1030-31	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
1060-61	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
<b>Total State Nurseries</b>		<b>2,581,193,104</b>			
<b>Total All Sources</b>		<b>5,065,082,330</b>			



## SCFC Active Seed Orchards

Orchard Type	Years Established	Acres
<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>		
Cellfor 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 Implementation Monitoring**

Compliance with Best Management Practices (BMPs) related to timber harvesting was 98.6% for 2007-2008, demonstrating continual improvement since monitoring began in 1990. Compliance for harvesting BMPs was 84.5% in 1990, 84.7% in 1991, 89.5% in 1994, 91.5% in 1999, 94% in 2001, and 98% in 2005. Evaluation of difficult and borderline sites by a review team of outside experts resulted in 91.3% agreement, showing strong consensus on BMP implementation and identification of potential water quality impacts. The next round of compliance monitoring data for 150 sites has been collected and analysis is underway.

### **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, 1,868 contact hours of training were held across the state for loggers, landowners, contractors, and forest resource professionals. Included in these meetings were six workshops for the Timber Operations Professional (TOP) logger training and education program. BMP Foresters participated in 29 programs reaching 628 individuals.

### **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 the 2011-2012 fiscal year, the BMP Foresters provided assistance on 412 sites and completed 212 courtesy exams. BMP Foresters also conducted 63 hours of aerial observation for active forestry operations and responded to 31 complaints.

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

The Environmental Management Section monitored issues related to endangered species, wetlands, carbon sequestration, and biomass harvesting. 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; nine (9) Windows Server 2003 Servers; one (1) Windows NT Server; 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.

Due to severe budget cuts the agency purchased only 17 desktops and 8 laptops in FY 2012. These were associated with new grant funded positions; to 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; or to upgrade mission critical workstations to Windows 7 OS. Six (6) new Windows Server 2008 R2 servers were purchased to begin replacing 8 and 9 year old Windows Server 2003 servers running the agency's computer aided dispatch, records management, and other mission critical applications.

Three separate fiber connections between the Columbia Headquarters building and the Division of State Information Technology (DSIT) were combined over one fiber circuit in July, 2011. This eliminated the need for electrical equipment between these two locations. This circuit should be more reliable during commercial power failures as both ends have battery and generator backup power sources to keep it operational. The agency also saw a \$200-300 per month savings in combining these circuits.

The wide area network connection between Columbia and Newberry was upgraded from an MPLS Layer 2 to a Layer 3 connection in June, 2012. This will allow data traffic from Newberry to the other regions and dispatch centers to bypass Columbia and provide additional redundancy to the Newberry connection. The State's MPLS network can bypass bottlenecks or sections experiencing an outage. The real benefits of a Layer 3 connection will be seen when the agency implements a new radio communications system later this year that will be based on Internet protocols (IP). An IP-based radio system offers more flexibility and redundancy so there isn't such a critical single point of failure. All network connections between the three (3) dispatch centers and Columbia Headquarters will now be a Layer 3 connection to take full advantage of the redundancy, features and functionality an IP based radio system will have to offer.

This section is also responsible for following the South Carolina Information Security Policy which contains a set of guidelines to ensure the State's assets are maintained in a secure, reliable, and sustainable environment. In cooperation with the South Carolina Information Sharing Analysis Center (SC ISAC) and through a grant from the Department of Homeland Security, a network packet sniffer is installed on the agency's network. This device helps in identifying when agency computers and servers may be infected with viruses, Trojans, and other malware.

### **GIS**

Major projects for the GIS Section this year was the conversion, distribution, and creation of a statewide mosaic of the 2011 National Agriculture Imagery Program (NAIP) aerial photography; addition of statewide, high resolution pipeline data, updating 9-1-1 roads, fire stations and NWS weather zone layers for the agency's computer aided dispatch system (CADS); and updating a statewide parcel layer.

NAIP is a federal program that provides true color, leaf-on aerial photography of the state. County mosaics of the spring, 2011 aerial photography were converted to JPEG 2000 file format and State Plane coordinate system. DVDs of the 2011 NAIP county mosaics were created and distributed to field personnel. To provide a more seamless operation in CADS mapping applications, the county mosaics were merged into a single image of statewide coverage.

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 assistance 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 a statewide layer in the agency's GIS Server. 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.

The Forestry Commission was provided "confidential" pipeline data from the US Department of Transportation Pipeline & Hazardous Materials Safety Administration for use in its computer aided dispatch system. This statewide, high resolution data of major underground pipelines and operator contact information is being used to warn dispatchers when an incident is within ½ of a pipeline. Dispatchers can then notify the first responders of this potential hazard and contact the pipeline operator if necessary.

The 2011 NAIP aerial photography, Internet searches, county parcel data, and Google's Street View were used to verify existing and identify new fire stations in the state. Fifty-nine (59) new fire stations were found since the last statewide survey was conducted in 2009. This data included several future sites for fire stations found in the county parcel data and a few that may have been closed due to budget cuts.

The National Weather Service (NWS) added a Berkeley County Tidal Fire Weather Forecast Zone on March 19, 2012. This required updating the associated map layer in the computer aided dispatch system. This layer is used to populate burn notification weather fields and calculate smoke management guidelines compliance. Other NWS Forecast Zones that split counties were also cleaned up to better match NWS GIS boundaries.

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 possibly an agency GIS presence on the Internet.

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. At the end of FY12, the intern position was refilled with the responsible for entering stewardship plan data for the agency's geodatabase; updating layers for the agency's computer aided dispatch system; and GIS support of various fire management programs. The intern also assisted 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 new repeaters were added to the agency's VHF two-way radio system in FY 2012. Okeetee Repeater in Jasper County came on line in September, 2011. This repeater is located on a new Jasper County radio tower using part of the Okeetee Fire Tower site. Okeetee will fill in coverage holes in lower Jasper County and serve as a backup to the Beaufort and Hampton repeaters. New Zion Repeater in Clarendon County came on line in June, 2012. This repeater is located on a commercial radio tower along the Clarendon and Williamsburg county line near Workman. New Zion will improve communications in an area between five (5) existing repeaters (Florence, Brittons Neck, Andrews, Vance and Catchall). This should greatly improve radio communications for Clarendon, Lower Sumter, Western Williamsburg and Upper Berkeley counties.

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. In January, 2012 these radios were reprogrammed as part of a statewide rebanding of the Palmetto 800Mhz service. This frequency shuffle is designed to cut down on interference between Public Safety and Private Carrier operators using the 800Mhz frequency spectrum. The cost of this work was paid for through a settlement reached between the FCC and SPRINT/Nextel Wireless.

The agency ended a 20 year relationship with alphanumeric pagers by replacing them with Verizon pager/phones in October, 2011. As an emergency response/public safety agency, Verizon offered the agency a \$3.00/month/device wireless plan that provides unlimited text messaging, unlimited mobile-to-mobile calling to agency Verizon phones, and unlimited access to Verizon's Enterprise Messaging Access Gateway (EMAG). In addition to a potential \$35,000 annual savings, statewide coverage is provided by a single vendor. Access to EMAG also allows pages sent from other applications (i.e. computer aided dispatch and third-party software) to bypass various filters and gateways on the Verizon's system assuring the text message will not be blocked as spam.

The Communications and Dispatch Section is in the process of replacing the agency's "end-of-life" analog radio dispatch consoles and phone systems with Radio over IP and Voice over IP dispatch consoles. Products in this area have matured over the past few years and become less proprietary – important features for reliability and interoperability for mission critical communications. With the assistance of federal grants, it is anticipated that a contract will be awarded in August, 2012 and equipment installed by the end of 2012.

## **DISPATCH OPERATIONS**

The Forestry Commission operates three (3) dispatch centers that handle about 50,000 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.

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.

**SUMMARY AND COMPARISON OF DISPATCH TIMES  
FOR FISCAL YEAR 2004 through 2012**

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

\*New software implemented in FY 2006

**SUMMARY AND COMPARISON OF SMOKE MANAGEMENT NOTIFICATIONS  
PROCESSING TIMES  
FOR FISCAL YEAR 2004 through 2012**

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

\*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.

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 serve as backup to the main wired phone lines in the case of cables being cut or other local phone company equipment failures.

On November 15, 2011, the Piedmont Dispatch Center had an electrical fire in its 16 year old battery backup system (i.e. Uninterruptible Power Supply – UPS). The building suffered smoke damage, loss of power for several hours but fortunately no injuries or major structure damage. After power was restored to the building, damaged equipment was replaced or repaired to get the center's communication links functional. Dispatching functions for the region were transferred to the Pee Dee Dispatch Center.

Cleaning crews were able to clean the dispatchers' work area and seal off the rest of the building by the next morning. Cleanup work continued in the sealed off section during business hours and work on the rest of the building after hours over the next few day. A firm specializing in cleaning smoke exposed or damage electrical equipment arrived the following week. All electrical equipment was individually taken out of service, dismantled and cleaned to prevent future corrosion of all metal parts and connections due to their exposure to smoke.

A new UPS unit for the Piedmont Dispatch Center was procured and installed the first week of January, 2012. This UPS unit served as a prototype for replacing the 16 year old UPS units at the other dispatch centers and Columbia Headquarters. All those units were replaced in May, 2012. These new units provide remote monitoring and management capabilities that will simplify support and maintenance in the future.

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 FY12

<b>Carry Forward - July, 1 2011</b>	\$	4,600,211
 <b><u>REVENUES</u></b>		
<b>State Appropriations</b>	\$	10,013,965
 <b>Federal Grants</b>	 \$	 4,499,506
 <b>Earmarked Funds</b>		
Hunting & Fishing License	\$	193,722
Refund of Prior Year Expenditure		59,016
Burning Assistance Fee		344,101
Fire Lane Fee		166,699
Timber Marking Fee		6,087
Training Conference - Registration Fee		5,100
User Fee - State Park & Forest		117,084
Forest Product Assessment		513,595
Construction of Water Bar		5,640
Stand By for Prescribed Burning		5,415
Sale of Seedlings		616,219
Sale of Timber		2,608,157
Conviction Surcharge		17,862
Miscellaneous Revenue		13,500
Rent – Residence		12,100
Rent - Farm Land		128,738
Rent - State Owned Property		50,191
Rent – Equipment		950
Contributions & Donations		14,698
Insurance Claims		81,846
Sale of Services		46,391
Sale of Nursery and Farm Products		1,090
Sale of Recycling Material		1,939
Sale of Vehicles (Capitalized)		
Sale of Machinery and Equipment (Capitalized)		3,070
Sale of Buildings (Non-Capitalized)		-
Sale of Land (Capitalized)		30,000
Capital Reserve Fund		3,000,000
 <b>Total Earmarked</b>	 \$	 8,043,211
<b>Total Revenue</b>	<b>\$</b>	<b>22,556,682</b>
 <b><u>EXPENDITURES</u></b>		
State	\$	9,959,278
Federal	\$	4,530,082
Other	\$	9,298,736
<b>Total Expenditures</b>	<b>\$</b>	<b>23,788,096</b>
 <b>Balance as of June 30, 2012</b>	 \$	 3,368,797

# South Carolina Forestry Commission

