

# The South Carolina Forestry Commission Annual Report FY 2010-2011



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# STATE COMMISSION OF FORESTRY

## **Members of the Commission**

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Sam Coker, Gilbert

James B. Thompson, Greenwood

## **Administration**

Henry E. (Gene) Kodama, State Forester

Joel T. Felder, Deputy State Forester

Larry Moody, Director of Legislative and Administrative Services

## **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 3,100 wildfires that burned 22,770.6 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 2010-2011 wildfires destroyed 38 homes and damaged 82 others. In addition, 93 other buildings were destroyed, 71 buildings were damaged, and 97 vehicles were damaged. Agency firefighters saved an additional 553 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 2009 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 42 personnel and 22 pieces of equipment to provide wildfire suppression assistance in Georgia and North Carolina.

**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: 81 Fire Departments requested \$406,780 worth of firefighting equipment of which 79 fire departments were funded for \$92,646.
- National Fire Plan Title IV grant funds are for wildland firefighting needs: 96 Fire Departments requested \$637,231 worth of firefighting equipment of which 94 fire departments were funded for \$121,091.

**Federal Excess Personal Property program (FEPP):** Due to the minimal amount of equipment available for screening, only 9 items valued at \$204,000 were screened and delivered to rural fire departments under this program. Therefore, to help increase the rural fire department's growing interest for equipment and vehicles the SCFC is working on an agreement with DoD to enter into the Firefighter Property (FFP) program which will allow the SCFC to screen additional property for disbursement to rural fire departments.. The total value of inventoried FEPP property now stands at \$24.3 million for 1,189 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, 242 items (valued at \$5.1 million) were either transferred to other fire departments or were returned to the Columbia warehouse where most were sold on auction through GSA . These sales accounted for the disposal of 168 items valued at approximately \$1 million. 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 cooperative agreement between the Corps of Engineers and the SCFC was updated and extended for an additional five years.

**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 2009\*

Month	Precipitation
July, 2010	4.91
August	6.48
September	5.08
October	1.39
November	1.25
December	2.28
January, 2011	1.74
February	3.09
March	4.75
April	2.71
May	2.86
June	2.88
<b>Total</b>	<b>39.42</b>

\*Source – National Climatic Data Center

### Precipitation Last 5 Years\*

Fiscal Year	Precipitation (inches)	Departure from Normal**
2006-07	43.07	-5.13
2007-08	37.53	-10.67
2008-09	49.36	1.16
2009-10	48.82	0.91
2010-11	39.42	-8.41

\*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 2011 are as follows:

<b>Region</b>	<b>Coastal</b>	<b>Pee Dee</b>	<b>Piedmont</b>
Readiness 1 (No wildfire danger)	5 days	2 days	days
Readiness 2 (Low wildfire danger)	183 days	116 days	275 days
Readiness 3 (Moderate wildfire danger)	171 days	235 days	84 days
Readiness 4 (High wildfire danger)	0 days	12 days	6 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 18-22, 2011 due to high winds, low relative humidity, and high fire occurrence over the President’s Day weekend.

## **Dispatch and Air Operations**

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

**Aviation** – During the year, SCFC pilots flew 12 different Federal Excess Property aircraft for a total of 344 missions for 648 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 648 hours (Coastal- 247 hours, Pee Dee-319 hours, Piedmont-82 hours). No contract aircraft were utilized.

## Prescribed Fire

**Certified Prescribed Fire Manager Program:** Three Certified Prescribed Fire Manager Programs were conducted during the year with 138 participants. This course focuses on planning prescribed burns to comply with mandated air quality standards.

### Prescribed Burning for Forestry, Wildlife, and Agriculture FY11

REGION	Forest Understory		Forestry Site Prep		Wildlife		Agriculture	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Coastal	2,367	186,719.39	1,838	14,378.18	732	80,791.75	2,732	41,465.27
Pee Dee	1,056	51,285.70	871	3,550.10	607	39,138.00	2,591	47,164.45
Piedmont	562	57,094.95	1,278	4,053.58	128	4,140.60	525	5,166.80
<b>State Total</b>	<b>3,985</b>	<b>295,640.0</b>	<b>3,987</b>	<b>21,981.9</b>	<b>1,467</b>	<b>124,070.4</b>	<b>5,848</b>	<b>93,796.5</b>

**Total Forestry, Wildlife & Agriculture Burns: 15,287 for 535,488.8 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 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' (10-workshops for 302 people) and various Firewise-related presentations/meetings (24) to interested communities and community leaders. The Firewise mobile exhibit and the table top Firewise Home exhibit were used on 12 different occasions demonstrating how homeowners can mitigate those risks to wildfire. The exhibit was used in cooperation with the USFS, USF&WS, and NPS. Fuels mitigation plans, workdays and assessments were conducted throughout the state. The SCFC has conducted a total of 658 community assessments to date with 600 of those rating at moderate to extreme in regards to wildfire risk. Sixty (60) new community assessments were completed and eight (8) Community Wildfire Protection Plans written and delivered this year. Five communities received national recognition as Firewise Communities/USA: Waterford – Oconee County, Walkers Woods – Horry County, Pine Creek – Kershaw County, Hunters Pointe – Darlington County, and Briarcliffe Acres – Horry County.

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.

**Wildfire Prevention:** A statewide wildfire prevention awareness effort was made across the state prior to the spring 2011 wildfire season to promote safe debris burning; the number one cause of wildfires in the state. Field personnel utilized trap lines in every county to reach those communities situated in high-fire occurrence areas or those communities at risk situated in the 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 1,007 schools, businesses and public buildings. Almost 40,000 TBYB brochures were distributed including 1,250 Spanish versions (mainly in the Coastal region).

Interviews were conducted with local media, public service announcements were distributed and billboards placed in areas where debris burns occur to increase public awareness. Along with distributing

Think Before You Burn brochures, TBYB 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.

<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	98	1,385.4	14.1	3.16%
CAMPFIRE	32	230.8	7.2	1.03%
SMOKING	63	261.7	4.2	2.03%
DEBRIS BURNING	1540	9,525.0	6.2	49.68%
INCENDIARY	577	7,865.3	13.6	18.61%
EQUIPMENT USE	309	1,425.2	4.6	9.97%
RAILROAD	13	32.7	2.5	0.42%
CHILDREN	129	451.9	3.5	4.16%
MISCELLANEOUS	339	1,592.6	4.7	10.94%
<b>Totals</b>	<b>3,100</b>	<b>22,770.6</b>	<b>7.3</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>
2005-06	13,657,033	2,972	16,677.1	5.6	0.12%
2006-07	13,657,033	3,678	21,945.7	6.0	0.16%
2007-08	13,657,033	2,001	30,739.6	15.4	0.23%
2008-09	13,657,033	1,639	8,443.9	5.2	0.06%
2009-10	13,657,033	3,100	22,770.6	7.3	0.17%
<b>Five Year Averages</b>		<b>2,678</b>	<b>20,115.4</b>	<b>7.9</b>	<b>0.15%</b>

**Acres Protected and Total Burning Notifications by  
County, Fiscal Year 2010**

<b>County</b>	<b>Acres Protected</b>	<b>Smoke Mgt. Notifications</b>	<b>Other Notifications</b>
Abbeville	248,551	113	2,491
Aiken	524,743	622	15,361
Allendale	199,005	458	901
Anderson	216,023	206	14,377
Bamberg	202,862	470	2,077
Barnwell	266,959	485	3,775
Beaufort	130,448	283	8,765
Berkeley	595,291	695	19,585
Calhoun	151,294	256	3,004
Charleston	318,526	360	8,156
Cherokee	168,077	44	4,010
Chester	315,565	129	3,002
Chesterfield	416,239	349	7,858
Clarendon	238,952	536	5,843
Colleton	560,896	1200	15,553
Darlington	176,333	236	8,978
Dillon	163,935	200	3,296
Dorchester	272,524	301	10,438
Edgefield	279,433	213	2,435
Fairfield	408,433	132	2,620
Florence	308,707	498	13,174
Georgetown	400,136	580	9,800
Greenville	296,082	80	12,336
Greenwood	205,593	96	3,297
Hampton	303,663	877	3,628
Horry	493,012	563	21,578
Jasper	341,036	641	3,721
Kershaw	376,376	205	15,672
Lancaster	291,845	96	4,577
Laurens	337,499	99	5,166
Lee	121,735	260	1,696
Lexington	256,939	268	29,797
Marion	226,896	242	6,407
Marlboro	226,676	98	4,442
McCormick	223,394	70	1,191
Newberry	334,566	129	3,298
Oconee	292,590	82	10,874
Orangeburg	446,887	1021	14,659
Pickens	236,029	112	11,272
Richland	352,904	254	7,315
Saluda	196,376	156	1,663
Spartanburg	286,496	121	8,388
Sumter	268,338	350	13,396
Union	277,640	67	427
Williamsburg	407,761	912	8,119
York	293,768	122	12,155
<b>Total</b>	<b>13,657,033</b>	<b>15,287</b>	<b>370,573</b>
	<b>Total Smoke Mgt. &amp; Other Notifications</b>	<b>385,860</b>	

## **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**

The Southern Pine Beetle outbreak that began in York County in 1997 collapsed over most of the outbreak zone. As of June 30, 2010, 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 2010-2011, the losses were minimal. During that time, SCFC foresters and technicians plotted 156 active beetle spots containing 3,190 trees. These trees contained a volume 180 cords and 0.12 million board feet. This timber had a green stumpage value of \$40,939

During the spring of 2011, 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. We continued a sub-grant contract with Clemson University Department of Entomology, Soils, and Plant Sciences to rear and release HWA predatory beetles in South Carolina.

Using funds from the Hemlock Woolly Adelgid Control ARRA grant, 6 temporary applicators treated via soil injection with imidacloprid to 20,356 individual hemlock trees (both Carolina and Eastern Hemlocks) for a total of 152,409 inches of diameter that were infested with Hemlock Woolly Adelgid. We will resume treating Hemlock Woolly Adelgid infested hemlocks this fall in Greenville, Pickens, and Oconee counties with temporary applicators

### **Emerald Ash Borer**

Currently, this exotic beetle is not yet a problem in South Carolina, but it is found in Illinois, Indiana, Iowa, Kentucky, Maryland, 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, and Vermont. None of this invasive species were 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 eleven (11) South Carolina counties: Jasper, Beaufort, Hampton, Colleton, Charleston, Bamberg, Barnwell, Allendale, Dorchester, Orangeburg, and Horry Berkeley. The beetle and fungus has also been found in 31 Georgia counties, in 28 Florida counties, in one county in Mississippi, and one county 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 2011. 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 2010-2011, the Insect and Disease Laboratory processed 11 samples submitted by SCFC employees and private individuals. Recommendations for control of various pests identified were given where needed. In addition to these samples, 526 southern pine beetles and 7,802 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 77,340.8 acres. Beaver damages were estimated at 74.75 acres (acreage is based on 20% survey); fire-caused mortality was observed on 443.25 acres of forestland (acreage is based on 20% survey); annosus root rot was identified on 450 acres with an estimated value lost of \$14,175.

## **EQUIPMENT**

### **Equipment Purchased**

- Two Chevrolet Silverado 1500 4x4 pickups for Law Enforcement Investigators. Funds Used: \$49,253.16 from Justice Assistance Grant (JAG) along with \$4,170.84 from Equipment Auction funds. These trucks were outfitted with blue lights, sirens, tonneau covers, and bed slides for an additional \$7,376.31
- One Polaris Ranger UTV for the Columbia shop to replace a stolen item. Funds Used: \$9,963.84 from Equipment Auction funds.
- One Polaris Sportsman 400 ATV for Law Enforcement to replace a stolen item. Funds used: \$6,075.44 from Equipment Auction Funds.
- One Chevrolet Silverado 1500 4x4 pickup for Manchester State Forest. Funds used: \$26,712 from Manchester State Forest
- One Ford F-150 4x4 pickup for Manchester State Forest. Funds used: \$23,653 from Manchester State Forest
- One Ford F-150 4x4 pickup for Sandhills State Forest Law Enforcement. Funds used: \$23,380 from Sandhills State Forest.
- One Ford F-250 4x4 pickup for Sandhills State Forest. Funds used: \$23,942 from Sandhills State Forest.
- One Chevrolet Silverado 1500 4x4 pickup for the Coastal Shop supervisor. Funds used: \$23,631 from Equipment Auction funds.

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 \$244,000. This money will be used to purchase equipment and supplies in FY '12.

## **LAW ENFORCEMENT**

During FY 2011 the Forestry Commission had 34 sworn officers statewide. Two of these were investigators that focused primarily on complex timber theft, timber fraud, and woods arson cases.

Officers prosecuted 624 fire tickets, 21 litter and environmental cases, 50 violations of state forest regulations, and 15 miscellaneous cases. Total fines collected were \$112,582.13. Fines collected from these cases are retained in the county where the offense occurred.

SCFC Law Enforcement Investigators investigated 102 timber theft / fraud cases which represented a loss of \$325,533.00 to the victims. SCFC collected and returned 67% or \$218,647.00 of that money to the affected landowners.

During the year, 18 arson fires were reported and investigated. Agents arrested 4 individuals for arson who were responsible for a total of 10 fires. One firefighter arsonist that was responsible for the majority of the fires was arrested. Arson is historically hard to prove, and these arrests represent an impressive 55% arrest rate. During the year, there were 1,460 fire investigations conducted.

## **FOREST MANAGEMENT**

There are 12.9 million acres of commercial forestland in South Carolina. According to 2007 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 39% 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 forests 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.

### **FOREST MANAGEMENT ASSISTANCE**

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

This year, 1,495 management plans were prepared for 82,487 acres. Beginning in July of 1999, customer satisfaction surveys were sent to every landowner that received a forestry management plan. In FY 10, 93% 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 to assist in carrying out management recommendations. This year 73 cases were referred to consulting foresters and 49 were referred to industrial foresters.

### **COST-SHARE PROGRAMS**

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

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

#### **Longleaf Restoration Program (LRP) – Federal - ARRA**

This landowner incentive program was part of the \$1,755,000 Longleaf Pine Restoration ARRA Grant that was awarded to the South Carolina Forestry Commission in August 2009. This grant was affiliated with an economic recovery (stimulus) package passed by Congress with the stated goal of creating and/or

retaining jobs. With this objective in mind, SCFC staff determined that the most expedient method of getting “boots on the ground” was to offer an upgrade to landowners who had applications for longleaf practices under the Forest Renewal Program that were already funded. These landowners were offered the opportunity to receive an incentive payment of approximately 75% through LRP versus the 40% payment that FRP provides. In addition to these higher cost-share rates for reforestation practices, the agency also provided incentives through LRP for prescribed burning and mid-story control treatments in longleaf pine stands.

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

The Conservation Reserve Program (CRP) began with crop year 1986 and was renewed with the passage of the 2002 Farm Bill. This program provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. CRP reduces soil erosion, protects the Nation’s ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. CRP is administered by the USDA Farm Service Agency, with the SC Forestry Commission providing technical assistance for forestry practices.

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

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

## **Wildlife Habitat Incentives Program (WHIP) - Federal**

The Wildlife Habitat Incentives Program provides financial incentives to develop habitat for fish and wildlife on private lands. The Natural Resources Conservation Service (NRCS) administers WHIP to provide both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. The SC Forestry Commission may work with NRCS to provide technical assistance for forestry practices. Participants agree to implement a wildlife habitat development plan and NRCS agrees to provide cost-share assistance for the initial implementation of wildlife habitat development practices. The cost-share agreement typically lasts a minimum of 5 years from the date that the contract is signed.

The 2011 WHIP includes a special initiative for nine states, including South Carolina; the Longleaf Pine Initiative. Approved participants will receive financial assistance for implementing conservation practices including planting longleaf pine, installing firebreaks, conducting prescribed burning and controlling invasive plants.

**Statewide Accomplishments For All Cost-Share Programs**  
Reforestation and Timber Stand Improvement

<b>Program</b>	<b>Number of Landowners</b>	<b>Acres Planted</b>	<b>Prescribed Burning</b>	<b>TSI Acres</b>	<b>Commercial Thinning</b>	<b>Precommercial Thinning</b>	<b>Cost Share Payments</b>
FRP	320	9,418	0	1,014	0	0	\$805,044
LRP	30	103	0	555	0	0	\$65,136
SPB	113	3,726	0	0	0	590	\$435,655
CRP	575	9,991	0	0	12,893	0	\$227,061
<b>Totals</b>	<b>1,038</b>	<b>23,238</b>	<b>0</b>	<b>1,569</b>	<b>12,893</b>	<b>590</b>	<b>\$1,532,896</b>

**SEEDLING SURVIVAL**

Survival checks were made on 10 percent of plantings using a row count or tenth acre plot method for determining survival. An average of all survival checks was used to determine the statewide survival of 81% for loblolly pine plantings. Survival rates for longleaf pine plantings were tabulated separately. Plantings with longleaf seedlings had a survival rate of 46% when bare root stock was used and 61% when containerized stock was used.

## Forest Management Assistance 2010-2011

County	Non Cost-Share		Cost-Share		Forest Stewardship	
	Exams	Acres	Exams	Acres	Plans	Acres
Abbeville	8	402	10	602	2	142
Aiken	9	322	18	823	0	0
Allendale	0	0	29	2251	1	15
Anderson	13	408	17	486	4	119
Bamberg	11	504	52	3064	0	0
Barnwell	13	696	21	1096	2	1020
Beaufort	4	462	2	180	1	190
Berkeley	10	500	0	0	0	0
Calhoun	1	38	32	933	0	0
Charleston	7	170	4	105	0	0
Cherokee	11	705	8	504	1	53
Chester	19	1427	9	456	4	838
Chesterfield	1	135	111	4839	5	1193
Clarendon	1	22	31	914	1	1490
Colleton	19	1540	26	957	6	486
Darlington	3	145	28	855	6	1864
Dillon	0	0	15	422	5	839
Dorchester	5	130	2	55	0	0
Edgefield	3	96	18	759	3	464
Fairfield	12	881	18	1008	1	364
Florence	10	311	32	965	8	1446
Georgetown	0	0	10	428	1	41
Greenville	11	392	6	162	1	39
Greenwood	4	189	1	6	4	183
Hampton	8	383	54	2103	1	26
Horry	4	78	26	455	3	391
Jasper	2	20	8	410	0	0
Kershaw	7	163	23	799	6	2921
Lancaster	8	293	13	313	1	74
Laurens	9	764	4	80	3	409
Lee	1	39	44	2157	2	208
Lexington	16	766	35	1300	7	838
Marion	0	0	12	318	2	93
Marlboro	1	71	17	706	0	0
McCormick	0	0	6	346	0	0
Newberry	9	930	36	1444	2	811
Oconee	3	156	3	211	0	0
Orangeburg	6	4122	93	4364	2	196
Pickens	9	270	3	39	2	126
Richland	22	766	7	246	3	213
Saluda	1	30	41	2063	1	202
Spartanburg	6	245	15	416	3	157
Sumter	2	125	25	1009	7	361
Union	1	139	5	167	3	505
Williamsburg	5	155	81	3977	4	503
York	15	996	14	413	0	0
<b>State Totals:</b>	<b>310</b>	<b>19,986</b>	<b>1,065</b>	<b>45,204</b>	<b>108</b>	<b>18,820</b>

## FOREST SERVICES

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

These services were available to landowners during the year:

**Firebreak Plowing** - performed by Forestry Commission employees using agency equipment for \$140 for the 1st hour and \$85 for each additional hour. In FY 2006, a separate rate was established for firebreaks constructed with a heavy tractor. For FY 2008-09, these rates were set at \$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 \$19 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 \$400.00.

**Prescribed Burning Standby** - an agency tractor and employee on standby at burning site for \$80 for the 1st hour and 305 for each additional hour while landowner performs burning under an approved plan. The minimum charge for this service was \$110.00.

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

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

Service	Number of Tracts	Units of Measure	Receipts FY 11
Firebreak Plowing	465	1,239 miles	\$184,765.02
Prescribed Burning	169	19,814 acres	\$366,676.00
Prescribed Burning Standby	22	1,375 acres	\$6,760.00
Equipment Rental	13	1,137 acres	\$3,681.50
Water Bar Construction	4	164 bars	\$7,442.50
Timber Marking	1	236 acres	\$4,351.38
<b>Totals</b>	<b>674</b>	<b>-</b>	<b>\$573,676.40</b>

Beginning in July of 1999, a customer satisfaction survey was sent to all landowners that received forestry services. In FY 11, 96% of these landowners who responded indicated that they were satisfied with the services they had received.

## **FOREST STEWARDSHIP**

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

During FY 11, 145 Stewardship Plans were written in South Carolina on 48,183 acres. South Carolina Forestry Commission foresters authored 108 plans covering 18,820 acres. Private Forestry Consultants authored 37 plans covering 29,363 acres.

Nineteen landowners (comprising 5,653 acres) were recognized as Forest Stewards during FY 11.

Of the landowners who returned customer surveys during FY 11, 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 educational institutions of higher learning to create, enhance and support long-term local and regional community forestry programs. This assistance is accomplished through a variety of ways: direct contact, diverse and cooperative partnerships, and the financial assistance grant program.

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

### **Community Forestry Financial Assistance Program**

The Community Forestry Financial Assistance and Partnership Program is a state program funded with federal-level monies appropriated each year by Congress. These funds are funneled through the US Forest Service to the SC Forestry Commission to administer. Due to a reduction in federal funding in FY10, the Commission was only able to provide \$40,000 in pass-through funds to two different non-profit conservation organizations to assist with urban forestry and arboricultural training and continuing education for public tree managers and other professionals. The accomplishments reported on the following page are a result of previously-funded grant projects for which work was recently completed.

### **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 fiscal year 2011.

The Tree Line USA program, also sponsored by the National Arbor Day Foundation, seeks to stimulate and promote proper utility line clearing and safety techniques of private and public utility companies. In order to qualify as a Tree Line USA, a utility must meet three criteria: (1) perform quality tree care regarding pruning, trenching and tunneling methods; (2) provide opportunities for annual utility line worker training; and (3) sponsor an ongoing community tree planting program to include an Arbor Day celebration and at least one educational mailing to customers. The Forestry Commission recognized the Gaffney Board of Public Works as South Carolina's only Tree Line USA utility for the eleventh 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 11, nine (9) partnerships were developed and 58 different educational sessions were presented to approximately 1,343 South Carolinians.

Types of Technical Assistance	Program Accomplishments Community Forestry Staff		Program Accomplishments Financial Assist. Grants
	# of Entities	# of Assists	# of grants awarded
<b>Program Development/Expansion</b>			
Municipal Government			
Non-profit / trade organizations	101	166	88
Educational Institutions	17	28	1
County Government	12	14	0
State Government	15	22	7
Others	3	7	<u>N/A</u>
<b>TOTAL</b>	<u>30</u>	<u>38</u>	<u>N/A</u>
	<b>178</b>	<b>274</b>	96
<b>Tree City USA's</b>		<b>41</b>	<b>N/A</b>
<b>Public Tree Ordinances Developed</b>		<b>N/A</b>	<b>0 public tree ordinances written under grant projects</b>

<b>Public Trees Inventoried</b>	<b>N/A</b>			<b>0 trees inventoried under grant projects</b>		
<b>Public Tree Management Plans</b>	<b>N/A</b>			<b>0 grantees</b>		
<b>Public Trees Planted</b>	<b>N/A</b>			<b>1,354 trees planted under 46 grant projects</b>		
<b>Professional Certification</b>	<b>N/A</b>			<b>0 people certified as ISA Arborists under grant projects</b>		
<b>Partnership Development</b>	<b>N/A</b>			<b>9 partnerships developed under 3 grantees</b>		
<b>Volunteers</b>	<b>N/A</b>			<b>48 people volunteered a total of 408 hours under 3 grant projects and one non-grant project</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						
# People	53	5	<b>58</b>	7	0	<b>7</b>
# Seat hours	1,137	193	<b>1,343</b>	378	0	<b>378</b>
	1,152	377	<b>1,527</b>	3,210	0	<b>3,210</b>

## **STATE LANDS**

### **HARBISON STATE FOREST**

Harbison State Forest, located approximately 9 miles from downtown Columbia, encompasses 2,176 acres. The Forest was purchased in 1945 and became the site of the agency headquarters in 1963. Following the adoption of a Master Plan in 1981, the Forest began to be developed as an Educational State Forest. Recreational use grew dramatically in the early 90's with Harbison soon gaining the reputation as a mountain biking Mecca for the area.

#### **Receipts**

Parking fees were initiated in March 2004 to provide more equity with regard to user fees. Since 1997, bicyclists have been required to purchase daily or annual permits while hikers, runners, picnickers, and other forest users were not required to pay fees. Starting in the fiscal year 2009-2010 users were required to purchase a parking permit only. Note: 25% of all receipts are paid to the Richland County school system. This amounted to \$14,345.76 for the 2010-2011 fiscal year. (Donations and rental income are not included when calculating the total to be dispersed to the county.)

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

<b><u>Activity</u></b>	<b><u>Receipts</u></b>
Timber Sales	\$0
Shelter Rentals	\$1,340.00
Conference Room Rentals	\$5,786.25
Annual Permits	\$40,913.75
Daily Permits	\$13,899.27
Special Use Permits	\$1,700.00
Campsite Rental	\$870.00
Trail Donations	\$439.19
<b>Total</b>	<b>\$64,948.46</b>

#### **Silvicultural Practices**

Recovery of the Forest following the 2002 southern pine beetle outbreak continues to take place at a satisfactory rate. Most of the areas that were understocked followed salvage operations now contain an adequate number of natural seedlings, most of which are loblolly pine. Three prescribed burns were conducted in this year for an approximate total of 24 acres. Two of these prescribed burns, totaling 14.36 acres, were in the proximity of the Education Center. These burns will serve as demonstration areas.

#### **Forest Protection**

No wildfires occurred on Harbison State Forest during this fiscal year. Individual tree mortality returned to a normal level following the 2002 southern pine beetle outbreak. Trees that were considered hazardous to forest visitors and/or to buildings were felled as workload allowed.

#### **Recreation/Education**

It was an active year for competitive events on Harbison. Eight events were held on the trails at Harbison during the 2010-2011 fiscal year. The Friends of Harbison State Forest hosted a foot and bike race with an estimated 150 participants. The Friends of Harbison State Forest also held their fifth 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. In addition to these events, numerous trail work days were conducted during the 2010-2011 fiscal year. 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 continue to provide leadership for these work days, enabling Harbison staff to perform other functions during these weekend events.

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. No Eagle Scout projects were completed this fiscal year. 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 39 groups this fiscal year for a total of 767 users.

The canoe landing at Harbison State Forest provides access to the Broad River. During the 2010-2011 fiscal year, 70 groups used this facility for a total of 222 paddlers. Usage of the Canoe Landing appears to be recovering from the diminished use due to the closing of the down river take out at the Riverside Golf Center.

### **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**

Researchers from Auburn University have located four research plots on Harbison State Forest as part of an ongoing study of Piedmont Longleaf Pine.

## **MANCHESTER STATE FOREST**

Manchester State Forest, located in Sumter County and Clarendon County, is currently comprised of approximately 29,070 acres. From 1939 to 1955, Manchester was leased by the State of South Carolina from the federal government and managed by the South Carolina Forestry Commission. The State received title to the property on June 28, 1955.

**Receipts**  
**Receipts For Operating Budget:**

<b>Activity</b>	<b>Receipts</b>
Timber Sales	488,613.48
Pine Straw Sales	118,584.20
Land Lease Payments	27,192.80
Wildlife Management Area	82,708.94
Trail and Special Use Permits	38,295.00
<b>Total</b>	<b>\$ 755,394.42</b>

Note: 25% of all forest receipts are paid to Sumter and Clarendon Counties for a total of \$188,848.60.

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**

Nine hundred eighty-five and six tenths (985.6) acres were prescribed burned during the fiscal year for wildlife habitat improvement, hazard reduction, hardwood control, aesthetics, and site preparation purposes.

Two hundred forty-three and five tenths (243.5) acres were sold for final harvest cuts and four hundred fifty-one and five tenths (451.5) acres were sold for improvement cuts (thinnings).

One thousand one hundred one and five tenths (1,101.5) acres were sold for pine straw raking.

The following species and number of seedlings were planted during FY11:

	Acres	Seedlings
Containerized longleaf pine	983.8	606,400
Bare root loblolly pine	<u>64.1</u>	<u>40,000</u>
	1,047.9	646,400

**Forest Protection**

Four (4) wildfires occurred during FY11 which burned approximately 25 acres. Damage was light to moderate. Manchester personnel also assisted regional personnel as well as the local fire departments with twenty-four (24) additional fires which were adjacent to the Forest. These fires burned approximately 138.1 acres.

**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 all three sessions of the Wood Magic Forest Fair.

Five (5) special-use permits were issued for organized events with approximately 1,157 paid participants.

An organized clean-up comprised of 40 volunteers was held on Manchester which resulted in 10 tons of

trash being picked up. Those participating included personnel from the City of Hartsville, Sumter County Public Works, Manchester State Forest, Shaw Air Force Base as well as hunters from various parts of the state and volunteers from the local region.

### **Wildlife Management**

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

Five (5) public dove fields were opened on Manchester and Oak Lea with an overall participation during the three seasons of seven hundred fifty-eight (758) hunters. Two thousand two hundred eighty-four (2,284) doves were harvested on opening day with a total of 10,396 shots being fired.

Manchester also hosted its annual youth dove hunt on the Bland Tract, which was limited to 35 youths who were required to register in advance. One hundred thirty-two (132) doves were harvested during this event with 1,514 shots being fired.

Quail and turkey data were carefully tracked on the Bland, Tuomey, and Oak Lea tracts with a total of 53 quail harvested from 48 covey flushes and 8 gobblers killed.

During the year DNR also provided technical assistance with deer herd dynamics, tracking various game and non-game species including quail, turkey, and fox squirrels and pond management. DNR also assisted in law enforcement on the Forest through interagency cooperation.

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

### **Research**

Manchester continues to cooperate with the SCFC Nursery Section by providing 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 of 2003 through the partnership of eight participants. These partners included the South Carolina Forestry Commission, South Carolina Department of Natural Resources, The Conservation Fund, U. S. Forest Service, Forest Legacy Program, U. S. Fish and Wildlife Service, North American Wetlands Conservation Act Grant, Ducks Unlimited, National Wild Turkey Federation, and Anheuser-Bush. Wee Tee contains 12,394 acres of which 770 acres is comprised of loblolly pine plantations and upland pine-hardwood types and the remaining 11,624 acres consists of bottomland hardwood types with the associated oxbow lakes and creeks. Being in the Santee River Focus Area of Ducks Unlimited's Lowcountry Initiative, it is a very significant, unfragmented bottomland hardwood forest. Its significance lies in its watershed and water supply protection; habitat for wildlife and a number of threatened and endangered species; and the opportunities it provides for recreation, forest practices demonstration, and education.

### **Receipts**

For FY11, \$52,977.56 was collected on Wee Tee State Forest as payment for SCDNR's WMA program and one timber sale was conducted for \$184,460.00 from which \$59,359.40 was paid to Williamsburg and Georgetown Counties.

### **Silvicultural Practices**

Two hundred ninety-five (295) acres of bottomland hardwood 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 to place Wee Tee under the WMA program according to a pre-closing cooperative arrangement. Hunting and fishing schedules were agreed upon and implemented.

### **Infrastructure**

Manchester State Forest personnel made improvements to approximately 45 miles of roads on Wee Tee during FY11. Improvements included grading, mowing and drainage improvements due to existing beaver dams, culvert replacements, and bridge replacements.

Wee Tee State Forest has one permanent employee with primary responsibilities for wildfire response mainly in Williamsburg and Georgetown Counties, and secondary responsibilities for maintenance of roads, buildings, and other infrastructure at Wee Tee.



Sand Hills State Forest had 4 wildfires in FY 11 totaling 75 acres.

## **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 pine straw production. The individual agrees to eradicate 90% of all hardwoods on a tract of land using herbicides. In exchange, that person may harvest all the pinestraw that falls during the contract period. When the contract expires, the acreage becomes part of SHSF's quality straw production program. The straw from these areas is offered for sale on a lump sum, sealed bid basis.

In FY 11 Sand Hills issued 15 enhancement contracts for a total of 971 acres. There were a total of 6,297 active enhancement acres at the end of FY 11.

Sand Hills State Forest sells pinestraw through bid sales and negotiated sales. In FY 11 there were 3,955.7 acres sold on bid sales for \$456,621.60 and 2,479.9 acres sold on negotiated sales for \$237,542.42.

FY 2011 saw an increase in timber sales over previous years with 3,266.2 acres of sales for a total of \$1,156,489.21. Product volumes and dollar amount by product are:

<b>Product</b>	<b>Volume</b>	<b>Dollar Amount</b>
Pine Pulpwood	5,836.50	\$ 52,438.25
Pine CNS	7,836.40	\$ 135,462.17
Pine Sawlogs	34,605.20	\$ 936,912.15
Hardwood Pulpwood	1,968.80	\$ 13,374.87
Hardwood Sawlogs	1,262.40	\$ 18,301.77

As a result of increased pine straw activity on Sand Hills State Forest, a vehicle registration system was implemented to ensure that 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 a 2 weeks or 60 day pinestraw sales, yellow registration stickers are used for the pine straw enhancement program, and green registration stickers are used for state forest users that want to access the "authorized vehicles only" truck trails. The majority of the green registration stickers are issued to hunters.

In FY 11 Sand Hills State Forest issued 241 green stickers, 186 red stickers, and 137 yellow stickers.

## **Recreation**

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

Geo-caching is a new activity that is becoming popular at Sand Hills. Geo-caching is a game of hiding and seeking treasures by entering the location using a GPS system and then putting the location online for individuals to find the geo-cache. There are 15 geo-caches on Sand Hills, 170 within 25 miles of Sand Hills and over 1,449,346 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 nine (139) reservations for these sites this year. An estimated 2,950 visitors used the campsites and trails. Number of visitors does not include day users nor does it include any visitors from any other user group (i.e. hunters, fishermen, birdwatchers, pinestraw workers, etc.). FY 11 fees were \$15 per site for sites with shelters and \$10 per

site without shelters. Sand Hills received \$3,705.43 in revenue from camping.

Trail use permits for horseback riding decreased to two hundred twenty-two (222) permits in FY 2011. Ninety-nine (99) annual/daily permits were sold online. One hundred twenty-three permits (123) were purchased through the drop box outside the SHSF office. Revenue from trail use permits totaled \$5,824.00. The permit holders came from South Carolina, North Carolina, Georgia, Tennessee, 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 Forty-Four (44) free-use permits this year. Fifteen (15) of the permits were for raking pinestraw for personal use and twenty-six (26) for gathering firewood.

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 Carolina Sandhills National Wildlife Refuge.

Three special- use permits were issued for organized events:

1. AERC National Championship Endurance Ride on October 14 -16, 2011: 145 riders, volunteers and received \$725 in fees.
2. Sand Blast Rally on February 5, 2011: 44 competitive entries with 58 people racing, 21 cars, 23 motorcycles, 126 volunteers and received \$625 in fees.
3. Spring Fling Endurance Ride on March 18 -19, 2011: 106 riders, volunteers and received \$510 in fees.
4. USA Southeast Fundraiser Endurance Ride on May 28, 2011: 57 riders, volunteers and received \$285 in fees.

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

Sand Hills State Forest hosted the first annual Youth Fishing Day on August 14, 2010. We had 129 kids and their parents attend the event. Each child received a free t-shirt and everyone enjoyed a hot dog lunch.

## **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)-75 students, Petersburg Elementary School (kindergarten)-30 students, Darlington County Institute for Technology (9<sup>th</sup>-12<sup>th</sup> Grade)-40 students, and Long Middle School (8th grade)-150 students. In addition to visiting classrooms, SHSF personnel also spoke to several civic clubs as well as participated in the Wood Magic Forest Fair.

## **Wildlife Management**

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

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 13, 14, 15 and 16 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 11, 72 clusters were active with one new cluster being found in an area being marked for harvest. Of those 72 active groups, 71 can be considered potential breeding groups. Seventy-five nesting attempts were made by 64 groups in 2011; 57 of those attempts fledged offspring.

Management Implications: In FY 11, no 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 12 it is hoped that 20 inserts will be installed to improve some existing clusters as well as providing 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 13 this year and found to have hatched and fledged young.

### **Law Enforcement**

In FY 11 law enforcement personnel at Sand Hills opened 29 cases with an average of \$408.63 per case and a total of 58 separate charges with a average of \$211.61 per charge. Of these charges, 75% were rules and regulations of the Forestry Commission or Wildlife Management Area Abuse. FY 11 also saw little to no pine straw theft on Sand Hills. This accomplishment is due in part to greater officer presence and increased resource awareness.

#### 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.**

## **POE CREEK STATE FOREST**

Poe Creek State Forest 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 (PFC), 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>Activity</b>	<b>Receipts</b>
Timber Sales	\$11,535.00
Wildlife Management Area	\$17,680.00
Rental state property	\$ .00
Cabin / conference center rentals	\$4,955.00
<b>Total</b>	<b>\$22,389.00</b>

Note: 25% of all forest receipts were paid to the school systems of Pickens and Oconee Counties for a total of \$7,304.00

**Silvicultural Practices**

One timber sale occurred on Poe Creek State Forest during FY11. This was a first thinning of loblolly pine that was planted in 1976. Practical road access was not possible until this year. No prescribed burns were conducted during the past year on the Piedmont Forestry Center property or on Poe Creek.

**Recreation/Education**

Use during FY11 was heavy, with numerous individuals and groups taking advantage of this beautiful facility. Over 300 scouts and 360 high school and middle school students utilized the facilities in differing capacities. The Future Farmers of America (FFA) held a forest practices event at PFC this year. The grounds were also made available for the Salem Fire and Rescue Annual Picnic.

**Forest Protection**

Harvesting on Poe Creek and on the Piedmont Forestry Center have reduced density in overstocked loblolly pine plantations. This harvesting has improved forest health and 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 FY11, 14 food plots were maintained to improve the wildlife habitat on Poe Creek. Poe Creek State Forest and the Piedmont Forestry Center are both in DNR's Wildlife Management Area program and open to public hunting.

**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.

**Infrastructure**

Road access at both the Piedmont Forestry Center and at Poe Creek State Forest was maintained during FY11 through mowing of road shoulders and grading where needed. The south end of the pole barn was renovated and is now housing a new Type 6 Pumper.

## **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.

### **Silvicultural Practices**

No timber sales were conducted at Neiderhof during FY11. A total of 308 acres were prescribed burned – 194 acres in young longleaf pine stands and 114 acres for site preparation and in old fields and other areas. Approximately 59 acres were chemically site prepared and planted in loblolly pine. In addition, 47 acres of midstory control was accomplished in longleaf stands through the use of a Bobcat machine equipped with a forestry cutting head.

### **Recreation/Education**

One workshop/tour was held for private landowners in conjunction with Clemson Extension Service. The topic was “Growing and Managing Longleaf Pine.” There were 21 landowners in attendance.

### **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 wildlife food plots were maintained on Neiderhof during FY11.

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

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

### **Infrastructure**

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

## Outreach Hunts

During FY11, 7 deer hunts and 3 turkey hunts were conducted. The Forestry Commission partnered with the Quality Deer Management Association (QDMA), National Wild Turkey Federation (NWTF), and Hunting with a Hero (HWAH). See below for number of hunters/participants etc. Approximately 100 individuals participated in these hunts.

<b>Niederhof Hunts</b>		<b>FY 2010-2011</b>			
	<b><u>Number of Hunt Participants</u></b>	<b><u>Other Attending</u></b>	<b><u>SCFC</u></b>	<b><u>Totals</u></b>	
<b><u>Deer Hunts</u></b>					
7 Hunts					
<b>December WIO</b>	6	4	6		
<b>December QDMA</b>	11	3	7		
<b>November HWAH</b>	10	6	9		
<b>October QDMA</b>	8	3	8		
<b>September QDMA</b>	11		7		
<b>August</b>	3	5	5		
<b>January Youth</b>	6	1	7		
	<b>55</b>	<b>22</b>	<b>49</b>	<b>126</b>	
<b><u>Turkey Hunts</u></b>					
3 Hunts					
<b>March HWAH</b>	4	3	6		
<b>March Military</b>	4	2	6		
<b>April WIO</b>	5	5	6		
	<b>13</b>	<b>10</b>	<b>18</b>	<b>41</b>	
		<b>Totals</b>	<b>10 hunts</b>	<b>167</b>	<b>people</b>

## **STATE LANDS MANAGEMENT PROGRAM**

The State Lands Forest Management Program was created to provide professional forest management assistance to South Carolina state agencies that own timberlands. During fiscal year 2010-11, the State Lands Coordinator provided timber sale assistance to 5 agencies on 13 different tracts. The agencies and facilities were as follows:

<b>AGENCY / TRACT</b>	<b>Acres</b>
<b>DNR</b>	
Waccamaw	32
South Heritage	378
Jocassee	352
Peach tree rock salvage	25
Long Branch Bay	25
A.G.T.	20
Palachucola	450
<b>PRT</b>	
Cheraw SP	231
<b>DOC</b>	
Wateree Bottom HW	140
Wateree SYP salvage	41
Kershaw SYP	90
<b>USC</b>	
Wedge	116
<b>DOT</b>	
I-95	35

**Table 1. Estimated Value of Timber Sale Based on Known Pricing**

<b>Product</b>	<b>Total Volume*</b>	<b>Tons</b>	<b>Sale Value</b>
Pine Pulp	cruised units	23,520.0	\$221,323.20
Pine CNS		5,297.0	\$101,808.34
Pine Saw		19,277.0	\$574,840.14
Hwd. Pulp		6,348.0	\$66,654.00
Misc. Hwd. Saw		2,196.0	\$48,751.20
Oak Saw			\$0.00
<b>Total:</b>		<b>56638.0</b>	<b>\$1,013,376.88</b>

## **Timber Revenue**

There was direct involvement consisting of; cruising, marking, and administering timber of sales on nine state owned tracts consisting of approximately 1900 acres. These sales generated approximately \$1,100,000.<sup>00</sup> for their respective agencies.

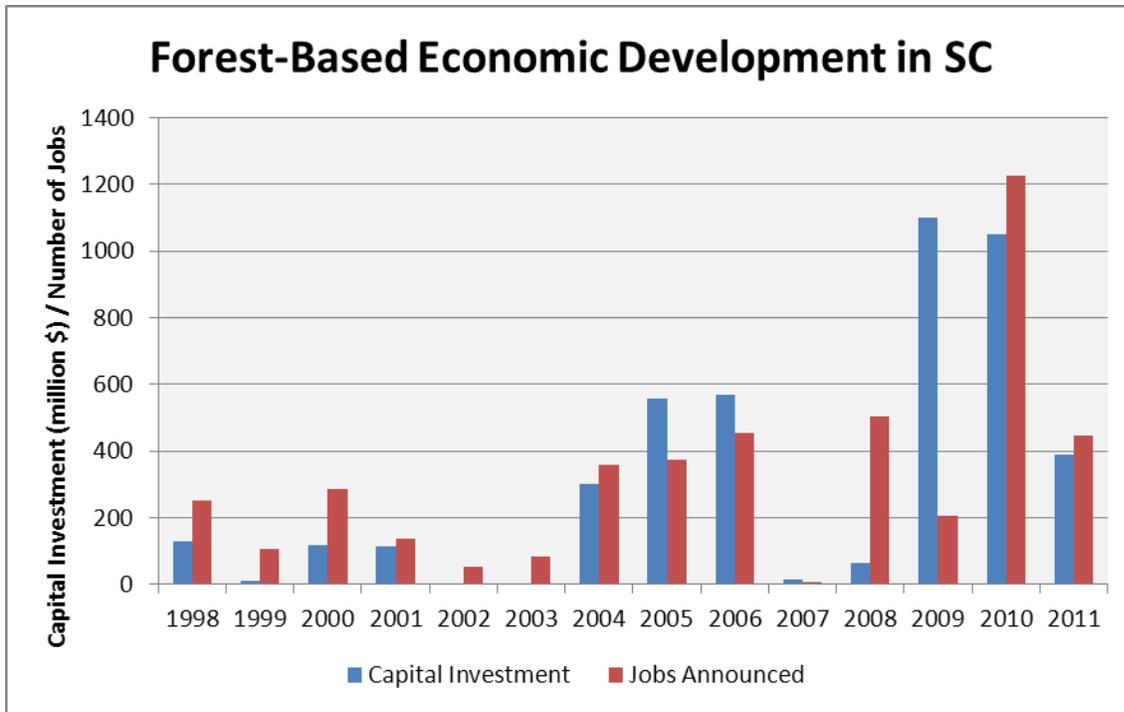
FY 11

- State Lands Coordinator utilized Longleaf Restoration ARRA Grant funds to contract with consulting foresters to provide inventory data on two DNR Tracts or a total of 9,950 acres. This work was completed in 06-06-11.
- State Lands Coordinator utilized Longleaf Restoration ARRA Grant funds to assist DNR with understory control on 209 acres
- State Lands Coordinator provided management assistance to State Dept of Mental Health
- State Lands Coordinator attended state trails committee meetings
- State Lands Coordinator facilitated timber marking with regions on ~400 acres

## RESOURCE DEVELOPMENT DIVISION

### BUSINESS DEVELOPMENT

Economic development activity in the forest products industry was strong during FY 2011. Ten individual projects were announced this year totaling \$391.4 million in new capital investment and 445 new jobs created. Industry announcements were split evenly between primary (\$193.4 million, 145 jobs) and secondary (\$198 million, 300 jobs) mills. The single largest project was the announcement by SC Tissue of a \$140 million sanitary paper plant in Barnwell County. Four separate biomass plants were announced for Allendale, Dorchester, Kershaw, and Marlboro Counties. These four plants total \$192 million in capital investment and, when in operation, they will generate 95 MW of green power. Other announcements included expansions of Kronotex’s flooring plant in Barnwell County (\$45 million), Interstate Container’s packaging plant in Lexington County (\$13 million), and mill expansions at Elliott Sawmill, Oldcastle Lawn & Garden, and Canfor Southern Pines.



During FY 2011, the SCFC Resource Development Division actively participated in 20 economic development projects. The majority of the projects involved utilization of biomass feedstock for the production of pellets, electrical power generation, or transportation fuels. Division staff represented the agency and the forestry community through 23 statewide and regional economic development organizations. Finally, 190 individual business assists were made to address single-issue requests.

Forestry’s 20/15 Initiative continued through FY 2011 although committee progress on action items was limited due to funding issues. Two grants were applied for and received to fund elements of the 20/15 Initiative. A USDA Rural Business Enterprise Grant (RBEG) was utilized to update research and publication of SC forestry exports. Research results were presented in an export conference for the forest industry. A USDA Forest Service Redesign Grant was awarded to the SCFC to fund the 20/15 Initiative, but funding was not received by the end of FY 2011.

## **FOREST INVENTORY & ANALYSIS**

The Forest Inventory and Analysis (FIA) program is a cooperative program with the US Forest Service – Southern Research Station 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. Additional funding is supplied by state 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 2010-2011, the average accuracy for all crewmembers was 93.77% with each crewmember exceeding the 87% yearly average required by the US Forest Service – Southern Research Station.

During fiscal 2010-2011, field crews completed one panel of plots that began in fiscal year 2009-2010 and began the next panel. For the fiscal year a total of 628 Phase 2 sample plots were completed. The US Forest Service – Southern Research Station completed 91 plots, consisting of 54 nonforest plots identified in the office and not sent to the SCFC field crews, and 37 plots that were classified as census water (bodies of water 4.5 acres in size or linear water features  $\geq 200$  feet in width). The FIA program completed data collection on one Panel and has completed 61% of the fifth Panel of data collection. The FIA program completed 2 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. These were the remaining product utilization studies to be collected for the Cycle 10 inventory. In addition, to the standard FIA plot grid, 50 FIA plots were installed on the John C. Calhoun Experimental Forest and 50 FIA plots were installed on the Santee Experimental Forest. The Phase 3 portion of FIA data collection was not performed this fiscal year due to the Federal budget not being finalized in time to prepare for the Phase 3 data collection season.

The Forestry Commission FIA program is currently 92% complete with the 10<sup>th</sup> inventory of the state through fiscal year 2011 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) and the 9<sup>th</sup> inventory (2006). Subsequently, South Carolina is the first state in the Southern Region to initiate the 10<sup>th</sup> inventory. The SCFC FIA program is on schedule to complete the 10<sup>th</sup> inventory measurements in five years, with December 2011 as a target date for completion. Data for the 9<sup>th</sup> inventory are available online and the published report, by the US Forest Service – Southern Research Station, was released in July 2009. Data with annual updates from Cycle 10 data collection are available online.

## **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 2010-2011, 43,535,765 pines and 839,150 hardwood and other seedlings were planted in South Carolina for a total of 44,374,915 seedlings from all nursery sources. This number is 7% higher than the 41.5 million seedlings reported planted in FY 2009-2010. 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 3,842,250 pines and 253,711 hardwood and other seedlings in FY 2010-2011 for a total of 4,095,961 seedlings total. Of this total, 466,086 seedlings were sold out of state. The total amount distributed represents 99% of the total number of bareroot and containerized seedlings grown at Taylor Nursery. The SCFC sold 8.2% 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 216 surveys e-mailed out, 116 (52%) customers responded. The 2011 survey indicated that 88% of our customers were satisfied with our seedling quality and service. Of the customers who had a problem with their seedling order, 91% of the customers were satisfied with our response. Of the customer comments on returned survey forms, 73% 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.

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 56,800+ bushels have been collected.

The recent addition of a Forestry Technician I position in March 2008 continued to serve the Commission well over the past fiscal year. However, due to personnel reductions through retirement incentives and the loss of TERI employees, this position was transferred to the supervision of the Edisto Unit; the technician now works a rotating schedule comparable to other agency fire suppression personnel. The technician does report to Niederhof on his assigned work days when occurring Monday-Friday, and he contributes greatly to facility and equipment maintenance, orchard management practices, and seed processing.

Third-cycle orchard establishment is now complete with the outplanting of 75 Coastal 3<sup>rd</sup>-Cycle grafts and 25 Piedmont 3<sup>rd</sup>-Cycle grafts. The completed acreage is as follows: Coastal 3<sup>rd</sup>-Cycle loblolly pine orchard, 17.6 acres; Piedmont 3<sup>rd</sup>-Cycle loblolly pine orchard, 12.4 acres. Additionally, due to analysis of the NCSUCTIP database, additional top-grafting was conducted utilizing scion from good selections made by the SCFC which were not represented in these orchards and were grafted onto selections with lower genetic potential than the scion selected for inclusion.

Utilizing NCSUCTIP data, pollen was collected and processed this year from the top three selections from both Coastal and Piedmont province 3<sup>rd</sup>-Cycle orchards, as well as from the top Coastal 2<sup>nd</sup>-Generation selection. The rationale for this is to permit the specific crossing of the top selections within provinces as well as the utilization of Coastal pollen to breed top-rated Piedmont selections for the optimization of the genetic potential that may be derived from these populations within our unique orchard composition. Seed from these crosses will then be sown at Taylor Nursery to provide access of superior genetic planting stock to the landowners of South Carolina. Furthermore, it is possible to build up a reserve of this superior seed which may also be targeted for seed sale revenues in the future.

Over the past two years, in conjunction with federal grants associated with the establishment and enhancement of longleaf pine stands in the South, an additional 1.6 acres of 1.5 Generation longleaf orchard has been established utilizing the top five selections from the SCFC orchard and the top five selections within the NCFS orchards. Additional grafting will be performed in 2012.

Cone collection for 2010 yielded 1,696 bushels 2<sup>nd</sup>-Generation loblolly pine, 2.5 bushels 3<sup>rd</sup>-Cycle loblolly pine (the first cone collection), and 820 bushels 1.5 Generation longleaf pine. Seed processing generated 1,395.15 pounds 2<sup>nd</sup>-Generation loblolly seed, 2.0 pounds of 3<sup>rd</sup>-Cycle loblolly seed, and 290.90 pounds of longleaf seed, gravity table run. Utilizing new data from the NCSUCTIP, selected family lots collected are being grown at Taylor Nursery to enhance the potential revenue a landowner may expect from reforestation with these seedlings. NFC's annual sale of seed and pine cones generated \$125,685.06 in revenue: to date, Niederhof's 2<sup>nd</sup>-generation orchards have created additional revenue in the amount of \$1,587,616.50 from cone and seed sales.

Our relationship with Cellfor continues to provide the Forestry Commission with additional revenue opportunities while promoting valuable research through tree breeding activities. Cellfor is a full member of the NCSUCTIP and continues Cooperative breeding and testing at NFC, and has renewed their research agreement with the Forestry Commission through 2015. The Forestry Commission continues its participation as a Contributing Member of the NCSUCTIP, which has its benefits in receiving ongoing data analysis and tree improvement expertise, but unless we can find a way to fund the cost and resources of full membership, we will be very limited in the future as to accessing material with increased genetic gain from continuing breeding and testing endeavors derived from full membership within the Coop. As funding for the Commission's Tree Improvement facility remains tenuous, our research agreement with Cellfor is a vital component of funding operations.

### Tree Seedlings Planted by Landowner Classification 2010-2011

Land Ownership	Pines Planted	Hardwoods & Others Planted	Total Number of Trees Planted	Percent of Total
Non-Industrial Private Landowners	28,619,638	496,503	29,116,141	65.6%
Forest Industry	8,808,042	12,007	8,820,049	19.9%
Corporate	4,750,185	296,990	5,047,175	11.4%
Government	1,357,900	33,650	1,391,550	3.1%
<b>Total</b>	<b>43,535,765</b>	<b>839,150</b>	<b>44,374,915</b>	

### Source of Seedlings Distributed in South Carolina

Nurseries in South Carolina	Pines Distributed	Hardwoods & Others Distributed	Total Number of Trees Distributed	Percent of Grand Total
ArborGen (Bleinheim, SC)	20,332,985	378,750	20,711,735	46.7%
Weyerhaeuser	11,120,400	11,600	11,132,000	25.1%
South Carolina Forestry Commission	3,390,900	238,975	3,629,875	8.2%
<b>Total</b>	<b>34,844,285</b>	<b>629,325</b>	<b>35,473,610</b>	79.9%

#### Nurseries Outside of South Carolina

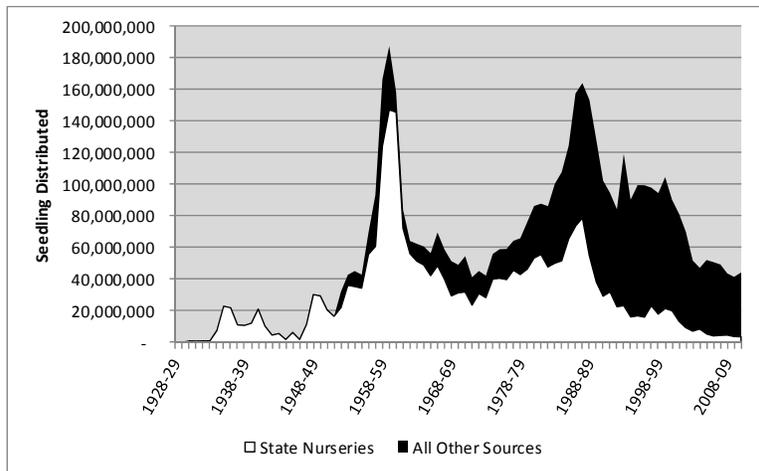
ArborGen (Belleville, GA)	3,014,280	88,825	3,103,105	7.0%
Plum Creek	2,870,000	0	2,870,000	6.5%
Bodenhamer	1,500,000	0	1,500,000	3.1%
North Carolina Forest Service	650,000	15,000	665,000	1.5%
International Forest Company	364,200	0	364,200	0.8%
Georgia Forestry Commission	220,000	106,000	326,000	0.7%
Florida Division of Forestry	48,000	0	48,000	0.1%
Blanton's	25,000	0	25,000	0.1%
<b>Total</b>	<b>8,691,480</b>	<b>209,825</b>	<b>8,901,305</b>	20.1%
<b>Grand Total</b>	<b>43,535,765</b>	<b>839,150</b>	<b>44,374,915</b>	100%

## State Nursery Seedling Production & Sales for FY 2010-2011

<u>Species</u>	<u>Seedlings Produced</u>	<u>Seedlings Sold</u>	<u>% Sold</u>
Ash, Green	4,990	4,990	100%
Atlantic White Cedar CTR	2,000	2,000	100%
Baldcypress	7,040	7,040	100%
Carolina Sapphire	1,080	1,080	100%
Cedar, Eastern Red	46,150	37,550	81%
Clemson Greenspire	540	540	100%
Crabapple	6,720	6,720	100%
CTR Shortleaf Pine	10,000	10,000	100%
Dogwood	950	950	100%
Lespedeza, Attaway	91,120	91,120	100%
Leyland Cypress CTR	25,000	14,004	56%
Loblolly Pine, Coastal 2nd gen.	146,050	146,050	100%
Loblolly Pine, Coastal 2nd gen. SRS	210,000	210,000	100%
Loblolly Pine, Coastal Best Family	476,310	476,310	100%
Loblolly Pine, Piedmont 2nd gen.	269,860	269,860	100%
Loblolly Pine, Piedmont Best Family	504,010	504,010	100%
Longleaf Pine	344,650	344,650	100%
Longleaf Pine, SRS	203,000	203,000	100%
Longleaf Pine CTR	1,616,000	1,616,000	100%
Oak, Cherrybark	10,000	5,870	59%
Oak, Gobbler	10,000	5,780	58%
Oak, Live	4,700	2,030	43%
Oak, Northern Red	5,000	5,000	100%
Oak, Sawtooth	10,080	10,080	100%
Oak, Swamp Chestnut	5,000	4,990	100%
Oak, White	4,107	4,107	100%
Oak, Willow	5,000	5,000	100%
Persimmon	10,000	7,910	79%
Plum	8,330	8,330	100%
Redbud	5,000	4,330	87%
Sweetgum	5,000	1,330	27%
Sycamore	2,010	1,010	50%
Virginia Pine	10,000	10,000	100%
Virginia Pine, Christmas Tree Stock	30,330	30,330	100%
Walnut, Black	4,240	4,240	100%
White Pine	35,310	20,240	57%
Wiregrass, CTR	18,000	18,000	100%
Yellow Poplar	1,510	1,510	100%
<b>Totals</b>	<b>4,149,087</b>	<b>4,095,961</b>	<b>99%</b>

### Seedling Distribution 1928-2011

Year	Total State		Year	Total State	
	Nurseries	Total All Sources		Nurseries	Total All Sources
1928-29	142,000	142,000	1970-71	31,940,000	54,541,000
1929-30	148,000	148,000	1971-72	23,678,000	41,357,000
1930-31	986,000	986,000	1972-73	30,978,000	45,239,000
1931-32	976,000	976,000	1973-74	28,443,000	42,306,000
1932-33	996,000	996,000	1974-75	40,082,000	55,997,000
1933-34	1,031,000	1,031,000	1975-76	40,664,000	59,063,000
1934-35	7,529,000	7,529,000	1976-77	39,795,000	59,238,000
1935-36	23,000,000	23,000,000	1977-78	45,735,000	64,380,000
1936-37	22,000,000	22,000,000	1978-79	43,010,000	65,937,000
1937-38	11,192,000	11,192,000	1979-80	46,375,000	76,207,000
1938-39	10,854,000	10,854,000	1980-81	53,513,000	86,420,000
1939-40	12,244,000	12,244,000	1981-82	55,728,000	87,793,000
1940-41	21,165,000	21,165,000	1982-83	47,799,000	86,265,000
1941-42	10,275,000	10,275,000	1983-84	50,170,000	100,394,000
1942-43	4,742,000	4,742,000	1984-85	51,636,000	107,718,000
1943-44	5,663,000	5,663,000	1985-86	65,465,000	124,381,000
1944-45	1,963,000	1,963,000	1986-87	73,555,000	157,523,000
1945-46	6,402,000	6,402,000	1987-88	78,788,000	164,095,000
1946-47	1,963,000	1,963,000	1988-89	55,052,000	153,450,000
1947-48	11,357,000	11,357,000	1989-90	38,356,000	128,475,000
1948-49	30,389,000	30,339,000	1990-91	29,297,000	102,384,000
1949-50	29,502,000	29,502,000	1991-92	31,984,000	94,710,000
1950-51	20,615,000	20,615,000	1992-93	22,665,000	84,287,000
1951-52	16,619,000	16,619,000	1993-94	23,286,000	119,311,000
1952-53	22,036,000	32,246,000	1994-95	16,154,000	90,336,000
1953-54	36,210,000	42,852,000	1995-96	16,841,000	99,549,000
1954-55	35,373,000	45,182,000	1996-97	16,058,000	99,439,000
1955-56	34,414,000	42,932,000	1997-98	23,278,000	97,963,000
1956-57	55,754,000	69,659,000	1998-99	17,955,000	94,539,000
1957-58	60,846,000	93,369,000	1999-00	21,524,000	104,594,000
1958-59	123,985,000	166,351,000	2000-01	20,095,000	90,346,000
1959-60	147,146,000	187,516,000	2001-02	13,500,000	81,431,000
1960-61	145,609,000	158,331,000	2002-03	9,376,000	69,989,000
1961-62	71,892,000	83,844,000	2003-04	7,202,000	51,823,000
1962-63	56,191,000	64,202,000	2004-05	8,563,000	47,243,000
1963-64	51,446,000	62,424,000	2005-06	5,437,000	52,165,000
1964-65	49,010,000	60,683,000	2006-07	4,206,000	50,900,000
1965-66	42,311,000	56,529,000	2007-08	4,539,842	49,320,517
1966-67	48,575,000	69,598,000	2008-09	4,739,783	43,692,314
1967-68	39,970,000	58,812,000	2009-10	3,762,989	41,549,345
1968-69	29,529,000	51,453,000	2010-11	3,629,610	44,374,915
1969-70	31,415,000	49,203,000			
<b>Total State Nurseries</b>		<b>2,578,270,224</b>			
<b>Total All Sources</b>		<b>5,017,614,091</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 three-year monitoring survey is currently underway, with 102 monitoring exams completed during this fiscal year.

### **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, 4,662 contact hours of training were held across the state for loggers, landowners, contractors, and forest resource professionals. Included in these meetings were nine workshops for the Timber Operations Professional (TOP) logger training and education program. BMP Foresters participated in 25 programs reaching 713 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 2010-2011 fiscal year, the BMP Foresters provided assistance on 553 sites and completed 283 courtesy exams. BMP Foresters also conducted 94 hours of aerial observation for active forestry operations and responded to 38 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 and support of the agency's local and wide area network, nine (9) Windows Server 2003 Servers, one (1) Windows NT Server, network storage devices, over 150 computer users, software applications and implementation of various initiatives to support agency operations and programs.

Due to severe budget cuts the agency only purchased 6 desktops and 20 laptops in FY 2011 to replace laptops that were over 6 years old, desktop models experiencing a high failure rate due to a defective component on their motherboard, or severely damaged by lightning. Also included in these numbers were 8 replacement laptops assigned to the Incident Management Team that were stolen. The deployment of Microsoft's Windows 7 operating system within the agency also began with the majority of these computers and laptop.

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. The agency's 6 year old, near end-of-life Internet and e-mail security appliance was upgraded this year. 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 was also installed on the agency's network. These devices help to protect and identify when agency computers and servers may be infected with viruses, Trojans, and other malware.

### **GIS**

Major projects for the GIS Section this year was updating road layers for the agency's computer aided dispatch system (CADS) and the creation of a statewide parcel layer. CADS utilize commercial and county 911 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 data and making the various modifications to incorporate 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 county tax offices.

The Forestry Commission continued the development of an Enterprise GIS System to support USDA Forest Service Spatial Accomplishment Reporting requirements and BMP program. 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.

## **COMMUNICATIONS**

The agency maintains approximately 555 mobile radios, 7 base stations, 26 repeaters, and 300 portable radios. With all equipment in the field narrowband capable, the agency's VHF radio frequencies will be re-license and move to narrowband spacing in FY 2012 to meet a Federal Communications Commission January 1, 2013 narrowbanding deadline.

The Beaufort repeater was moved to a new tower site in the Shell Point area. The county owned tower it was on was condemned and taken down. Links between Long Mountain, Glassy Mountain and Russell repeaters to the Dispatch Centers were converted from dedicated phone lines to less expensive DSL lines. In the process, a repeater was added at the Silverstreet site. This change will save the agency about \$400/month in reoccurring phone charges and improve the audio quality between Dispatch and field personnel.

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.

Due to the merger of Alltel with Verizon, all agency Alltel phones were replaced by Verizon phones this year. Verizon was using a hybrid system with these Alltel phones that was causing delays from a few minutes to hours in the delivery of voice mail messages. Unfortunately, some personnel saw coverage holes in areas that had access to Alltel cell sites that were no longer part the merged company in various rural areas of the state.

The Communications 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 could be awarded in 2011 and equipment installed by the end of FY 2012.

## **DISPATCH OPERATIONS**

The Forestry Commission operates three (3) dispatch centers that handles over 50,000 phone calls for burn notifications for the purpose of forestry, wildlife or agricultural 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 911 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 35% 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 2011**

TIMES	FY 2004 Average (Minutes)	FY 2005 Average (Minutes)	FY 2006 Average (Minutes)	FY 2007 Average (Minutes)	FY 2008 Average (Minutes)	FY 2009 Average (Minutes)	FY 2010 Average (Minutes)	FY 2011 Average (Minutes)
Dispatching	5.10	6.33	4.18	3.56	3.53	3.22	3.13	3.39

**SUMMARY AND COMPARISON OF SMOKE MANAGEMENT NOTIFICATIONS  
PROCESSING TIMES  
FOR FISCAL YEAR 2004 through 2011**

TIMES	FY 2004 Average (Minutes)	FY 2005 Average (Minutes)	FY 2006 Average (Minutes)	FY 2007 Average (Minutes)	FY 2008 Average (Minutes)	FY 2009 Average (Minutes)	FY 2010 Average (Minutes)	FY 2011 Average (Minutes)
Processing Time	4.16	4.61	3.49	2.81	3.00	3.13	3.21	2.97

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 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 911 Centers. Other key improvement is the ability to quickly add or modify messages used in the system and system management through a secure web portal. This system handles over 400,000 calls each year.

Equipment was added to the Dispatch Center phone systems to play messages to callers while on hold. Messages will include public service announcements, timely forestry facts and seasonal information. During peak periods, callers may be placed on hold until a dispatcher is available to take their non-emergency related call

**FINANCIAL STATEMENT FISCAL YEAR 2010 - 2011**

**REVENUES**

<b>State Appropriations</b>		\$ 9,878,203
<b>Federal Grants</b>	*	\$ 6,331,153

**Earmarked Funds**

Hunting & Fishing License		\$ 192,073
Refund of Prior Year Expenditure		514,231
Burning Assistance Fee		440,052
Fire Lane Fee		169,269
Timber Marking Fee		5,270
Training Conference - Registration Fee		5,890
User Fee - State Park & Forest		101,502
Forest Product Assessment		859,038
Construction of Water Bar		15,170
Stand By for Prescribed Burning		7,000
Sale of Seedlings		644,670
Sale of Timber		2,694,883
Conviction Surcharge		19,286
Miscellaneous Revenue		55
Rent - Residence		9,367
Rent - Farm Land		43,531
Rent - State Owned Property		32,096
Rent - Equipment		4,480
Contributions & Donations		23,740
Insurance Claims		60,226
Sale of Services		57,160
Sale of Nursery and Farm Products		1,226
Sale of Recycling Material		164
Sale of Vehicles (Capitalized)		92,419
Sale of Machinery and Equipment (Capitalized)		179,769
Sale of Buildings (Non-Capitalized)		-
Sale of Land (Capitalized)		322,698
Increased Enforcement Revenue (Dept. Of Revenue)		1,000,000

<b>Total Earmarked</b>		\$ 7,495,265
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<b>Total Revenue</b>		<u>\$ 23,704,621</u>
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**EXPENDITURES**

State		\$ 9,878,203
Federal		\$ 6,137,274
Other		\$ 6,314,129
<b>Total Expenditures</b>		<u>\$ 22,329,606</u>

<b>EXCESS OF REVENUES O/(U) EXPENDITURES</b>		<u>\$ 1,375,015</u>
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\* Federal Grants include \$1.85 million of ARRA (stimulus) funds.

# South Carolina Forestry Commission

