

# **South Carolina Forestry Commission**

## **Annual Report 2005 - 2006**

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# STATE COMMISSION OF FORESTRY

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Robert C. Schowalter, State Forester

William Boykin, Deputy State Forester

## **MISSION**

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

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

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

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



## FOREST PROTECTION

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

### **FIRE MANAGEMENT**

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

### **Wildfire Summary**

Agency firefighters recorded 3,017 fires that burned 16,300 acres of forestland and grassland during the fiscal year.

Wildfires destroyed 40 homes and damaged 17 others. In addition, 67 other buildings were destroyed and 72 vehicles were damaged.

### **Fire Protection Cooperatives**

The Forestry Commission has cooperative arrangements with 12 fire and emergency management entities. Activities for each cooperative during FY 2005-06 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 fiscal year 2005-2006 the Forestry Commission assisted the states of Mississippi, Louisiana, and Texas with firefighting resources under the compact agreement. These states had unusual fire activity due to damage from Hurricanes Rita and Katrina. The Forestry Commission also sent firefighting resources to Texas and Oklahoma to help with fires caused by the extreme drought. Over 60 SCFC personnel were sent to assist along with 13 pieces of equipment. The Forestry Commission also assisted with the deployment of non-SCFC personnel to assist with the post-hurricane efforts. These resources were mainly qualified Fire Department personnel.

**SC Emergency Management Division:** SC Forestry Commission personnel participated in several EMD emergency response training sessions involving hurricanes, earthquakes, and dam failures. Revisions of the Logistical Staging Area (LSA) SOP as a result of the training exercise held in June 2006 were made to improve the clarity and effectiveness of the LSA operational procedures.

**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. The Guard used the SCFC Bambi buckets on a structure fire in the town of Great Falls at the request of the Emergency Management Division.

**Volunteer Fire Assistance Program:** Pass through funds from the National Fire Plan were distributed as

follows:

Title II Grants for structural and wildland firefighting needs: 83 Fire Departments requested \$243,023 worth of firefighting equipment of which 69 fire departments were funded for \$93,266.

National Fire Plan Grants for wildland firefighting needs: 103 Fire Departments requested \$276,345 worth of firefighting equipment of which 99 fire departments were funded for \$113,267.

**Federal Excess Property Program:** Acquired 2,299 items with acquisition value of \$1.5 million. Seventy-eight (78) pieces of “inventoried” federal excess equipment with an acquisition value of \$1.2 million were loaned to fire departments during the year. At present, 1,892 pieces of equipment with acquisition value of \$35.3 million are assigned to 475 fire departments statewide. Additionally, since 1987, non-inventoried durable and consumable properties numbered at 17,479 have been issued to fire departments for use in support of firefighting and rescue operations.

**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.

**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.

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**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:** Agreement maintained; no reportable activity.

**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.

## **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 2006\***

Month	Precipitation
July 2005	6.17
August	5.35
September	.81
October	4.94
November	3.30
December	4.41
January 2006	3.39
February	3.0
March	1.36
April	2.51
May	2.78
June	7.03
<b>Total</b>	<b>45.05</b>

\*Source – National Climatic Data Center

**Precipitation Last 5 Years\***

Fiscal Year	Precipitation Inches	Departure from Normal**
2001-02	34.07	-14.20
2002-03	61.18	+12.91
2003-04	42.90	-5.99
2004-05	49.35	+3.33
2005-06	45.05	-3.36

\*Source – National Climatic Data Center

\*\*statewide normal, based on previous 30 years is 48.41 inches

**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 2006 are as follows:

Region	Coastal	Pee Dee	Piedmont
Readiness 1 (No wildfire danger)	6 days	6 days	0 days
Readiness 2 (Low wildfire danger)	268 days	264 days	156 days
Readiness 3 (Moderate wildfire danger)	71 days	76 days	180 days
Readiness 4 (High wildfire danger)	20 days	19 days	28 days
Readiness 5 (Extreme wildfire danger)	0 days	0 days	1 days

**Burning Ban and Red Flag Fire Alert:** There was one declared Burning Ban for Charleston County due to limited water supply because of a water main break. There were five Red Flag Fire Alerts during the year. These included:

March 3-6:	a statewide Red Flag due to low humidity and increased outdoor activity
March 8-10	a statewide Red Flag due to high wind and low humidity
March 13-15	a statewide Red Flag due to high wind and low humidity
April 4-8	a statewide Red Flag due to high wind and low humidity
April 14-19	a statewide Red Flag due to high wind and low humidity

## 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.

**Air Operations:** Forestry Commission pilots equipped with Federal Excess aircraft provide incident reconnaissance (suppression assistance) as well as wildfire detection service. The SCFC has 11 aircraft with 1 full time pilot and on average 10 temporary pilots which fly on as needed basis. Specially trained private aerial contractors provide basic wildfire detection services..

During the year, SCFC pilots flew a total of 2885.7 hours (Coastal—785.5 hours, Pee Dee-859 hours, Piedmont—1241.2 hours); contractors flew fire detection a total of 2060.22 hours.

## Prescribed Fire

**Certified Prescribed Fire Manager Program:** Three Certified Prescribed Fire Manager Programs were conducted during the year with 150 participants. Participation in this program strengthened over the past year due to increasing statewide interest in prescribed burning. This course focuses of planning prescribed burns to comply with mandated air quality standards.

### Prescribed Burning for Forestry, Wildlife, and Agriculture FY06 (Smoke Management Guidelines)

Region	Forest Understory		Forestry Site Prep.		Wildlife		Agriculture	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Coastal	1,952	171,051.1	2,273	6,398.2	988	96,260.5	2,948	46,561.7
Pee Dee	1,068	57,552.8	692	2,407.6	484	28,089.7	2,295	42,515.9
Piedmont	432	50,690.3	1,601	4,195.5	100	5,263.4	720	5,746.5
<b>Totals</b>	<b>3,452</b>	<b>279,294.2</b>	<b>4,566</b>	<b>13,001.3</b>	<b>1,572</b>	<b>129,613.6</b>	<b>5,963</b>	<b>94,824.1</b>

**Total Forestry, Wildlife & Agriculture Burns: 15,553 for 516,733.2 acres**

## Fire Prevention Information

**Wildland-Urban Interface (WUI):** Work continued on assessing wildland-urban interface communities and their risks to wildfire with Keowee Key (Pickens Co.) becoming the second Firewise Community USA in South Carolina. A ‘How to Have a Firewise Home’ workshop was conducted at Keowee Key as well as at Isaquena and Waterford communities in Pickens County. Another ‘How to Have a Firewise Home’ workshop was conducted at the Blue Heron Learning Center in Ridgeland (Jasper Co.) in cooperation with the Low Country WUI Council. The Prescribed Fire Council; of which the SCFC is a member and the SCFC WUI council manned an exhibit promoting Prescribed Fire as a Fuels Reduction practice in the WUI at the SC Firemen’s Convention at Myrtle Beach.

**Wildfire Prevention:** Wildfire Prevention Teams were implemented in historically high fire occurrence areas in each of the three regions. The teams had two objectives 1) to inform the public of safe debris burning practices to reduce the number of escaped debris fires and 2) to emphasize to property owners their responsibility in protecting their property to reduce the losses due to wildland fire. The teams accomplished these objectives by implementing strategies which involved coordinating with the local fire departments and providing assistance to local areas as requested and showing and promoting Firewise principles.

The Coastal Region’s team was located in Moncks Corner to address the fires around the Francis Marion NF and surrounding communities in Berkeley and Charleston Counties. The Pee Dee Region had their team in Kingstree to address those wildfires in the southern part of Williamsburg County and into Georgetown and

Horry Counties. Earlier the Piedmont Region located their team in the mountain corridor of Oconee, Pickens and Greenville Counties with a short team staged out of Columbia to readdress the lower Lexington County area.

The slogan “*Think Before You Burn*” continued to be utilized in order to maintain consistency and familiarity with the fire prevention message. The slogan and logo were used exclusively in advertisements and printed on brochures, posters, and table tents. These items were distributed to local businesses, schools and various community leaders throughout the targeted areas. The *Living with Fire* multi-page newspaper insert was distributed (43,000) along with another 30,000 of the one-page insert *Think Before You Strike*. Trap lines( routes in which prevention materials are distributed) were again used throughout the target areas. Over 110 businesses, 19 churches, 464 residences, a score of schools and media groups of all types (cable channels, newspapers, radio and TV stations) were contacted with messages and articles.

### Fires By Cause

Cause	Number	Acres Burned	Average Acres per Fire	Percent of Total Number FY 06
Lightning	68	876.2	12.9	2.25
Campfire	16	25.7	1.6	.52
Smoking	116	549.9	4.7	3.84
Debris Burning	1,400	7,604.3	5.4	46.37
Incendiary	685	5,073.0	7.4	22.69
Equipment	228	672.2	2.9	7.55
Railroad	29	83.8	2.9	.96
Children	185	391.5	2.1	6.12
Miscellaneous	293	1,020.6	3.5	9.70
<b>TOTALS</b>	<b>3,020</b>	<b>16,297.2</b>	<b>5.4</b>	<b>100</b>

### Five-Year Summary: All Fires

Fiscal Yr.	Acres Protected	# Fires	Acres Burned	Avg. Acres/Fire	% Area Burned
2001-02	12,807,924	6,378	49,371.8	7.7	0.39
2002-03	13,657,033	1,760	9,182.0	5.2	0.07
2003-04	13,657,033	3,409	21,394.3	6.3	0.16
2004-05	13,657,033	2,283	13,478.1	5.9	0.10
2005-06	13,657,033	3020	16,297.2	5.4	0.12
<b>Five Year Averages</b>		<b>3,370</b>	<b>21,944.7</b>	<b>6.1</b>	<b>0.17</b>

**Acres Protected and Total Burning Notifications by County,  
Fiscal Year 2006**

<b>County</b>	<b>Acres Protected</b>	<b>Smoke Mgt. Notifications</b>	<b>Other Notifications</b>
Abbeville	248,551	136	2,422
Aiken	524,743	846	13,535
Allendale	199,005	466	667
Anderson	216,023	216	13,676
Bamberg	202,862	490	1,624
Barnwell	266,959	496	3,023
Beaufort	130,448	337	8,584
Berkeley	595,291	790	15,371
Calhoun	151,294	268	2,698
Charleston	318,526	363	7,366
Cherokee	168,077	79	3,852
Chester	315,565	117	2,544
Chesterfield	416,239	349	6,341
Clarendon	238,952	403	4,592
Colleton	560,896	1,168	12,707
Darlington	176,333	221	6,551
Dillon	163,935	197	2,809
Dorchester	272,524	354	10,405
Edgefield	279,433	250	2,140
Fairfield	408,433	133	2,107
Florence	308,707	416	11,393
Georgetown	400,136	445	8,728
Greenville	296,082	110	16,604
Greenwood	205,593	96	3,012
Hampton	303,663	863	3,325
Horry	493,012	450	17,739
Jasper	341,036	677	3,439
Kershaw	376,376	240	14,515
Lancaster	291,845	74	4,605
Laurens	337,499	115	4,584
Lee	121,735	215	1,364
Lexington	256,939	292	34,887
Marion	226,896	187	6,664
Marlboro	226,676	142	4,355
McCormick	223,394	108	1,025
Newberry	334,566	129	2,949
Oconee	292,590	130	12,026
Orangeburg	446,887	1,043	10,383
Pickens	236,029	145	10,804
Richland	352,904	239	7,686
Saluda	196,376	168	1,582
Spartanburg	286,496	184	9,165
Sumter	268,338	324	11,519
Union	277,640	65	520
Williamsburg	407,761	877	5,866
York	293,768	140	10,563
<b>Total</b>	<b>13,657,033</b>	<b>15,553</b>	<b>342,316</b>

**Total Smoke Mgt. & Other Notifications 357,869**



Total All Land Fires by County & Cause -- Fiscal Year 2006																				
COUNTY	LIGHTNING		CAMPFIRE		SMOKING		DEBRIS BURNING		INCENDIARY		EQUIPMENT USE		RAILROAD		CHILDREN		MISCELLANEOUS		Total Acres	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres		
ABBEVILLE	2	0.3	2	6.0	6	39.4	19	20.4	30	46.9	11	20.7			3	1.2	6	26.5	79	161.4
AIKEN	8	38.7			5	9.0	62	234.6	11	58.6	3	1.7			27	40.0	22	39.1	138	421.7
ALLENDALE	1	8.0			2	0.6	15	79.2	6	23.4	1	20.0							25	131.2
ANDERSON			1	0.2	6	70.5	18	37.9	8	25.6	1	0.2			5	6.1	3	4.5	42	145.0
BAMBERG					1	50.0	19	312.8	2	7.1	3	8.0			3		3	5.0	28	382.9
BARNWELL							11	49.2			1	1.0			3	3.9	3	71.5	18	125.6
BEAUFORT	1	0.1					21	41.9	17	121.8	1	1.0			4	13.0	1	2.0	45	179.8
BERKELEY			1	0.2			49	189.2	49	468.3	2	2.0	1	3.1	13	28.6	13	62.7	129	755.1
CALHOUN	1	25.0			1	0.3	18	80.6	3	6.3	7	34.9			1	2.5	2	2.1	33	151.7
CHARLESTON			1	0.1	1	34.9	14	34.9	10	37.5	1	1.0	1	5.0	1	5.0	3	9.1	31	92.6
CHEROKEE	1	15.0			7	19.2	9	28.2	2	11.1	6	28.0	5	15.0	6	6.9	3	4.6	39	128.0
CHESTER			4	1.2	4	1.2	8	7.6	3	9.5	4	5.6	2	28.8	3	13.0	5	13.0	29	78.7
CHESTERFIELD	5	108.1			2	7.0	59	299.7	9	51.1	13	35.5	1	2.0	9	12.7	9	12.7	98	516.1
CLARENDON	2	4.5					44	137.9	41	349.8	5	16.3			2	1.0	3	13.5	97	523.0
COLLETON					1	1.0	87	1,422.0	32	335.0	4	8.1			1	3.0	3	23.5	128	1,792.6
DARLINGTON	1	4.0			1	0.5	54	133.5	22	69.6	5	13.1	1	6.5	4	14.5	8	112.9	96	354.6
DILLON	1	0.5					26	290.8	15	373.0	5	18.1	1	1.0	4	3.7	5	7.6	57	687.1
DORCHESTER	1	1.0			2	0.9	17	71.3	10	89.7	2	0.6			2	1.1	2	2.1	36	166.7
EDGEFIELD							16	87.5	1	1.0	7	4.8			1	0.2	1	0.5	26	94.0
FAIRFIELD	3	36.3	2	4.5	6	5.1	27	41.3	12	40.9	7	7.8			6	2.9	11	7.2	74	146.0
FLORENCE	1	70.0					66	253.4	54	252.7	7	5.3	1	4.0	5	8.7	6	24.6	140	618.7
GEORGETOWN	1	1.0			1	0.1	26	118.7	11	20.1	6	47.0			2	3.1	2	6.0	49	196.0
GREENVILLE			2	1.5	2	5.0	30	187.9	11	62.3	10	56.5	1	0.5	5	6.8	13	25.3	74	345.8
GREENWOOD					1	0.1	7	36.3	5	12.8	5	18.1	1	0.5	2	3.5	4	13.6	25	84.9
HAMPTON							30	178.3	23	113.1	1	10.0			5	32.0	4	5.5	63	338.9
HORRY	4	39.2					35	127.1	22	112.3	2	3.0			1	1.0	9	39.1	73	321.7
JASPER	2	164.0					40	176.2	28	732.0	9	26.7	1	0.5	1		3	1.6	83	1,101.0
KERSHAW	6	54.0			7	28.5	42	523.5	12	20.4	10	43.9			5	34.6	14	36.7	96	741.6
LANCASTER	2	30.0			2	3.0	25	47.5	3	75.0	5	52.0			2	0.3	8	38.0	47	245.8
LAURENS	1	0.1			1	2.0	17	47.2	4	11.5	3	10.2	2	1.1	2	9.5	8	18.6	39	101.7
LEE					1	3.0	52	329.2	28	317.8	8	17.1			3	14.0	8	31.5	100	712.6
LEXINGTON	6	11.6	4	6.3	4	2.6	48	282.3	11	48.7	9	21.8	2	1.1	16	44.8	21	78.3	121	497.5
MARION	1	5.0			1	8.0	11	126.6	4	15.1					1	0.1	1	3.0	19	157.8
MARLBORO							28	341.3	12	65.3	6	8.4			1	1.0	6	18.1	53	434.1
MCCORMICK					1	2.0	5	1.3	3	120.0	5	10.2	4	2.2	1		1	1.0	19	136.7
NEWBERRY					1	0.5	8	7.3	1	1.0	3	12.1	3	1.3	1	0.3	3	1.9	20	24.4
OCONEE	4	8.7	1	0.5	6	35.0	23	38.0	2	2.4	3	0.6			2	3.0	13	28.1	54	116.3
ORANGEBURG	1	1.0			27	193.2	108	450.0	13	75.6	16	20.1			8	10.8	12	63.7	185	814.4
PICKENS	1	25.0			2	1.7	27	41.8	6	13.5	5	5.1			9	22.0	8	33.1	58	142.2
RICHLAND	4	200.5			4	5.0	25	92.4	13	88.1	2	3.0	1	0.2	6	16.5	8	44.0	63	449.9
SALUDA	1	0.1					9	42.6	7	0.7	4	0.5			1		1		21	43.7
SPARTANBURG					4	10.7	27	51.6	6	6.7	6	9.8			6	10.8	11	30.3	60	119.9
SUMTER	2	23.0			2	4.0	41	232.8	34	169.3	3	22.5			8		8	13.3	90	464.9
UNION	3	1.4	1	3.0	2	39.6	9	17.9	1	1.4	3	7.1			5	5.9	6	9.8	30	86.1
WILLIAMSBURG	1	0.1					54	235.7	86	606.7	8	40.4			4	5.2	4	21.1	157	909.2
YORK			1	2.0	1	0.1	14	16.9	2	2.3			1	11.0	8	11.0	6	14.3	33	57.6
Grand Total	68	876.2	16	25.7	116	549.9	1,400	7,604.3	685	5,073.0	228	672.2	29	83.8	185	381.5	293	1,020.6	3,020	16,287.2

## **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, 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, 2006, 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 2005-2006, the losses were minimal. During that time, SCFC foresters and technicians plotted 2,267 active beetle spots containing 41,245 trees. This timber had an estimated volume of 2,349 cords and 1.6 million board feet. The green value of this timber was \$529,541.

The SCFC continued in a SPB suppression program in cooperation with the USFS. This program included funding to operate cut and leave controls on isolated or non-merchantable SPB spots. We received no requests for cut and leave treatments this year.

The suppression program also funded six positions in the agency where existing employees were redirected to the SPB program from other areas such as forest management and fire control. Without the SPB program, these positions could have been lost to budget cuts.

During the spring of 2006, 31 counties were pheromone trapped for prediction of Southern Pine Beetle population trends. No counties trapped enough beetles to predict a severe outbreak. In Edgefield and McCormick counties, sufficient beetles were trapped to predict increasing-high pine beetle activity. Aerial surveys were in progress at the end of the fiscal year and very little beetle activity was seen outside of the Savannah River drainage. Surveys will continue as needed.

The U.S. Forest Service has funded a new initiative that is targeted at preventing or reducing Southern Pine Beetle damage. 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 will fund approximately nine existing 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 2002. It is a small insect that feeds by sucking plant juices from its host tree. Unfortunately, heavy infestations of this pest kill hemlocks and control is very difficult, especially in the general forest. Clemson University has established an insect rearing center to raise insect predators of the adelgid and is currently rearing two species of predatory beetles to relocate in infested stands. Unfortunately, we may face the loss of hemlock as an important forest species. We have contracted with Clemson to perform a survey of susceptible stands to delineate the infestation area.

#### **Emerald Ash Borer**

Currently, this exotic beetle is not yet a problem in South Carolina, but is established in some northern states. Last year's survey found no infestation by the EAB. We performed a third year of visual survey of Ash in S.C. this year to certify our lack of infestation.

#### **Red Bay Ambrosia Beetle**

In November 2004, an exotic ambrosia beetle, *Xyleborus glabratus* Eichhoff, was discovered in a dead red bay tree

on Hilton Head Island. The beetle attacks red bay trees and introduces a currently unnamed, and potentially exotic, fungus (*Ophiostoma* spp.) into the tree. Since the discovery of *X. glabratus* in 2004, the beetle and its associated fungus has been found in 4 South Carolina counties: Hampton, Jasper, Beaufort, and Colleton. The beetle and fungus has also been found in 11 Georgia counties and in 5 Florida counties. Unfortunately, in the areas where the beetle has been found, there is a large loss of red bay (up to 50% in some locations). Visual surveys of dead or dying red bay trees in infested, and adjacent, counties were conducted.

## **Major Disease Problems**

### **Oak Wilt**

Oak wilt disease has been identified in Aiken, Barnwell, Chesterfield, Kershaw, Lancaster, Lee, and Richland counties. Except for the recent discoveries in Aiken and Barnwell Counties the 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, periodic surveys 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. As part of a southwide effort, the Forestry Commission has established 19 permanent plots in the counties known to harbor infections of the fungus. The dogwoods in those plots will be monitored periodically to determine the rate of spread of this potentially devastating disease.

### **Sudden Oak Death**

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 USA. This disease kills oaks and causes leaf spots on many other species. Testing of eastern species of oaks in California has shown that they could be susceptible to this disease if it occurs here. Unfortunately, some infected plants were shipped to S.C, but no local spread was detected.

As part of a southeastern project, we are cooperating in a survey to be sure the disease does not occur here. Oaks, rhododendrons, and other susceptible species were sampled in the forest adjacent to commercial nurseries and in general forest areas in the high risk category for SOD. At this time all sample results from the lab at Clemson are negative.

## **Miscellaneous Insect And Disease Checks**

Commission foresters made approximately 396 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 2005-2006, the Insect and Disease Laboratory processed 53 samples. Commission employees

and private individuals submitted these for analysis. Recommendations for control of various pests identified were given where needed. In addition to these samples, 10,524 southern pine beetles and 21,221 clerids were counted in the lab.

### **Exotic Insect Trapping Project**

The I&D Unit is cooperating with the US Forest Service in a program to identify exotic insects which may have become established in the state. At nine locations we have placed three pheromone traps each with a different pheromone lure. These traps catch bark beetles and ambrosia beetles that are initially pre-screened for common species and unknown species are sent to a USFS entomologist for identification. The traps are checked every two weeks and were active for 20 weeks. The results of the survey will be published upon completion.

### **Forest Health**

The SCFC entered into agreement with the USFS to evaluate permanent Forest Health plots throughout South Carolina. This was done by the Management 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 annosus root rot damage.

Major defoliation continued this year due to an outbreak of Forest Tent Caterpillar. Larvae of this insect defoliated over 371,700 acres of gum and other bottomland hardwoods in 14 counties. Defoliation occurred until late May at which time the insects pupated to adults. The most impacted areas were along the Edisto, the Little Pee Dee, the Santee and the Savannah and in many low country swamps. Four-hole swamp in Orangeburg and Dorchester counties was heavily impacted again this year.

Timber losses due to beaver impoundment and feeding were seen on a total of 13,870 acres or 277,400 cords with a value of \$4,993,200. Fire mortality was detected on 20,360 acres. The estimated value of fire-killed timber was \$7,329,600. Annosus root rot was also identified on 50,980 acres. Value lost due to annosus was estimated to be \$ 1,832,040.

## **EQUIPMENT**

The Equipment Section is responsible for development and implementation of statewide programs concerning use, design and maintenance of specialized forest fire control equipment.

This section is responsible for providing technical assistance and advice to repair shops, developing specifications for fire suppression equipment and motor vehicle fleet, and arranging training for all field mechanics.

Maintenance facilities at the regions, state forests, Taylor Nursery, and Central Repair Shop were all certified by State Fleet Management. The Forestry Commission has nine maintenance facilities.

The Central Repair Shop was phased down as a maintenance shop. The shop will continue to be used on an infrequent basis to make repairs during inclement weather and emergency repairs for fire suppression equipment in Richland and Lexington Counties. The shop will also be used to receive new equipment before distributing to the field shops. The light vehicles (less than 10,000 GVWR) assigned to Columbia headquarters will be serviced by the Department of Corrections Shop on Broad River Road.

Three training sessions were offered to our mechanics during the fiscal year.

## **Equipment Purchased**

### **Coastal Region**

- One (1) Oliver Dahlman Maintenance Harrow
- Two (2) 2006 Chevrolet Transport Trucks
- One (1) 2006 3/4T Chevrolet Truck w/Extended Cab

### **Pee Dee Region**

- Two (2) 2006 Chevrolet Transport Trucks
- Four (4) 2006 JD550J Crawler Tractors

### **Piedmont Region**

- Five (5) 2006 3/4T Chevrolet Trucks w/Extended Cab
- One (1) 2006 1/2T Extended Cab Ford Truck
- One (1) 2006 JD550J Crawler Tractor

### **Sand Hills State Forest**

- Two (2) 2006 Chevrolet 4x4 Trucks w/Extended Cab

### **Manchester State Forest**

- Two (2) 2006 Ford Rangers w/Extended Cab

### **Piedmont Center**

- One (1) 2006 New Holland Farm Tractor

### **Taylor Nursery**

- One (1) 2006 3/4T Chevrolet 4x4 Truck w/Extended Cab
- One (1) 2006 3/4T Dodge Truck w/Crew Cab

### **Columbia Headquarters**

- One (1) 2006 Dodge Mini Passenger Van
- One (1) 2006 1/2T Chevrolet Truck w/Extended Cab
- One (1) 2006 Chevrolet Trailblazer
- One (1) 2006 Yamaha ATV (Law Enforcement)
- One (1) 2006 Polaris ATV

The Forestry Commission prepared and organized equipment for auction in November 2005. The auction netted the Forestry Commission \$111,340. This money was used to purchase equipment. Also, received \$1,663.44 from the sale of scrap metal.

## **LAW ENFORCEMENT**

During FY 06, the Forestry Commission had 34 sworn officers statewide. Of these, five were investigators focused primarily on complex timber theft, timber fraud, and woods arson cases.

Officers prosecuted 596 fire tickets, 92 litter and environmental cases, 76 violations of state forest regulations, and two miscellaneous cases. In addition, five adults and two juveniles were charged with a total of 24 counts of woods arson.

Timber theft/timber fraud complaints continued to decline for the second straight year. Investigators worked 176 timber theft/timber fraud cases valued at over half a million dollars.

Officer Ron Holt was the top graduate in his class at the SC Criminal Justice Academy, winning the Academy's coveted J.P. Strom Award. Holt is one of only two Forestry Commission officers ever to win this award.

County	Prosecutions			Total	Investigations			Burn Site Inspection	State Forests	
	Outdoor Burning		Woods Arson		Fire	Timber Theft/Fraud			Prosecutions	Fines
	Prosecutions	Fines				Investigated	Settled			
Abbeville	4	\$504.50	0	4	4	2	2	0		
Aiken	27	\$2,700.53	0	21	90	12	9	0		
Allendale	3	\$225.00	0	3	11	2	2	0		
Anderson	4	\$127.00	0	2	9	3	1	0		
Bamberg	7	\$782.50	0	7	20	1	1	0		
Barnwell	2	\$255.00	0	2	16	5	3	1		
Beaufort	7	\$972.00	0	7	38	1	1	5		
Berkeley	41	\$7,572.00	0	29	110	2	2	20		
Calhoun	11	\$3,049.50	0	11	33	1	1	0		
Charleston	7	\$792.88	0	6	24	2	2	9		
Cherokee	0	\$0.00	0	0	25	2	1	0		
Chester	0	\$0.00	0	0	14	2	2	0		
Chesterfield	26	\$2,325.00	0	26	73	2	2	0		
Clarendon	6	\$600.00	0	6	52	3	1	0		
Colleton	17	\$2,214.50	0	16	55	8	7	0		
Darlington	21	\$2,230.00	0	21	57	5	4	0		
Dillion	2	\$0.00	0	2	8	3	2	0		
Dorchester	8	\$527.50	0	5	20	2	2	0		
Edgefield	6	\$257.50	0	2	1	2	2	0		
Fairfield	8	\$822.50	0	3	8	9	7	0		
Florence	16	\$1,443.00	0	9	30	5	3	0		
Georgetown	11	\$1,400.00	0	8	31	2	2	9		
Greenville	32	\$2,475.00	0	19	55	0	0	13		
Greenwood	1	\$232.50	0	1	1	0	0	0		
Hampton	6	\$1,342.50	0	6	47	2	2	0		
Horry	34	\$3,328.00	0	28	60	11	8	0		
Jasper	12	\$1,794.00	0	12	56	3	3	7		
Kershaw	32	\$4,200.00	16	24	46	10	7	0		
Lancaster	2	\$225.00	0	2	20	2	2	0		
Laurens	4	\$381.00	0	3	4	2	2	0		
Lee	12	\$1,290.00	0	6	55	3	2	0		
Lexington	17	\$3,347.76	0	17	17	9	6	0		
Marion	6	\$1,312.00	0	10	18	2	2	0		
Marlboro	8	\$379.00	0	11	30	0	0	0		
McCormick	0	\$0.00	0	0	0	1	0	0		
Newberry	2	\$307.50	0	2	2	2	2	0		
Oconee	25	\$3,771.00	0	25	39	7	4	0		
Orangeburg	65	\$11,688.00	0	66	170	6	5	0		
Pickens	28	\$2,875.75	0	28	63	8	6	16		
Richland	11	\$1,689.25	0	10	16	10	8	2		
Saluda	2	\$1,003.00	0	1	2	1	0	0		
Spartanburg	5	\$428.25	0	4	5	4	3	0		
Sumter	12	\$2,059.50	7	13	53	1	1	0		
Union	0	\$0.00	0	0	0	2	1	0		
Williamsburg	34	\$2,290.00	0	34	84	7	6	3		
York	12	\$400.00	1	9	26	7	6	0		
Manchester									29	\$5,500.00
Sandhills									38	\$5,272.00
Poe Creek									7	\$2,529.00
Harbison									2	\$1,052.50
Totals	589	\$78,127.16	24	521	1598	176	135	85	76	\$14,353.50

## **FOREST MANAGEMENT**

There are 12.2 million acres of commercial forestland in South Carolina. According to the 2001 U.S. Forest Service Survey, farmers and non-industrial private owners own 73% of this land. Forest industry owns approximately 16% with 11% in public ownership.

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 almost 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, 1417 management plans were prepared for 92,973 acres. Beginning in July of 1999, customer satisfaction surveys were sent to every landowner that received a forestry management plan. In FY 06, 96% of the landowners that responded to the survey indicated that they were satisfied with the management plan they received. Of these landowners, 93% 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 261 cases were referred to consulting foresters and 46 to industrial foresters.

### **COST SHARE PROGRAMS**

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

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

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

The Program began with crop year 1986 and was renewed with the passage of the 2002 Farm Bill.

## 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>Natural Regeneration</b>	<b>TSI Acres</b>	<b>Cost Share Payments</b>
FRP	301	8,097	0	1,500	\$707,211
CRP	150	3,843	0	0	\$172,935
<b>Totals</b>	<b>451</b>	<b>11,940</b>	<b>0</b>	<b>1,500</b>	<b>\$880,146</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 84% for loblolly pine plantings. Survival rates for longleaf pine plantings were tabulated separately. Plantings with longleaf seedlings had a survival rate of 64% when bare root seedlings were used and 80% when containerized stock was used.

## Forest Management Assistance 2005-2006

County	Non Cost-Share		Cost-Share		Forest Stewardship/FLEP	
	Exams	Acres	Exams	Acres	Exams	Acres
Abbeville	21	1,577	13	563	0	0
Aiken	16	825	26	1,423	2	237
Allendale	9	1,468	13	527	1	392
Anderson	108	4,037	21	132	1	46
Bamberg	11	1,268	6	519	1	86
Barnwell	23	2,217	9	335	1	289
Beaufort	7	783	0	0	2	225
Berkeley	19	994	8	307	2	365
Calhoun	7	1,264	16	804	2	396
Charleston	44	3,641	2	45	3	191
Cherokee	31	1,348	5	406	2	953
Chester	8	560	7	338	7	867
Chesterfield	7	687	10	443	2	303
Clarendon	4	139	7	232	0	0
Colleton	46	2,454	28	2,236	6	768
Darlington	5	277	10	377	0	0
Dillon	9	410	16	342	1	114
Dorchester	49	3,922	0	0	0	0
Edgefield	5	239	6	132	1	68
Fairfield	7	283	11	670	3	1492
Florence	20	1,695	16	660	3	394
Georgetown	2	76	9	482	0	0
Greenville	29	799	15	629	1	60
Greenwood	11	523	22	1,424	2	170
Hampton	24	2,234	16	481	7	922
Horry	19	746	13	525	0	0
Jasper	8	902	4	200	1	252
Kershaw	10	465	9	389	8	601
Lancaster	5	376	2	115	2	115
Laurens	25	3,363	9	477	7	730
Lee	1	33	6	501	1	63
Lexington	30	828	16	585	1	319
Marion	13	849	16	542	1	129
Marlboro	1	60	4	278	1	132
McCormick	9	770	14	775	1	142
Newberry	10	414	21	997	6	946
Oconee	19	726	2	48	1	254
Orangeburg	22	2,745	50	2,954	6	686
Pickens	30	1,286	2	710	1	33
Richland	10	306	10	407	0	0
Saluda	13	845	22	1,553	1	60
Spartanburg	6	270	5	192	3	1683
Sumter	5	260	4	251	1	141
Union	4	137	14	528	1	275
Williamsburg	11	337	29	1,568	1	38
York	10	441	13	528	2	1,169
<b>State Totals</b>	<b>783</b>	<b>49,878</b>	<b>538</b>	<b>26,989</b>	<b>96</b>	<b>16,106</b>

## **FOREST SERVICES**

Through this program the 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 \$80 for the 1st hour and \$55 for each additional hour. In FY 2006, a separate rate was established for firebreaks constructed with a heavy tractor. These rates were set at \$90 for the 1<sup>st</sup> hour and \$75 for each additional hour.

**Prescribed Burning** - performed by Forestry Commission employees using agency equipment for \$15 per acre. Firebreak plowing costs are not included. Minimum fee \$300.00.

**Prescribed Burning Standby** - an agency tractor and employee on standby at burning site for \$50 for the 1st hour and \$25 for each additional hour while landowner performs burning under an approved plan. Minimum fee \$100.00.

**Equipment Rental Program** - agency owned tree planters and drum choppers made available to private landowners at rates from \$5 to \$20 per acre.

**Timber Marking** - performed by Forestry Commission employees at the rate of \$8 per thousand board feet and \$3.00 per cord.

<b>Service</b>	<b>Number of Tracts</b>	<b>Units of Measure</b>	<b>Receipts FY 05-06</b>
Firebreak Plowing	505	1,260 miles	\$113,178
Prescribed Burning	99	9,497 acres	\$133,675
Prescribed Burning Standby	15	1,308 acres	\$2,906
Equipment Rental	29	337 acres	\$2,984
Water Bar Construction	7	282 bars	5,765
Timber Marking	6	2,214 cords 3,427,470 board feet.	\$34,384
<b>Totals</b>	<b>661</b>		<b>\$292,892</b>

Beginning in July of 1999, a customer satisfaction survey was sent to all landowners that received forestry services. In FY 06, 54% of the surveys were returned and 96% of these landowners indicated that they were satisfied with the services they had received.

## **COMMUNITY FORESTRY**

The Community Forestry program exists to provide technical assistance to municipal and county governments in 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; to provide financial assistance grants to local governments, non-profit organizations, and educational institutions of higher learning in order to create, enhance and support long-term local, regional and statewide 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 towards accomplishing a natural resource inventory and management plan, employ professional urban forest staffing, adopt and implement natural resource policy, and work in partnership with local advocacy organizations.

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

The Community Forestry Financial Assistance and Partnership Program is a state program funded on the federal level with monies appropriated by Congress. These funds are funneled through the U. S. Forest Service to the SC Forestry Commission to administer. Pass-through funds in the amount of \$143,000 were awarded to municipal and county governments, non-profit conservation organizations, and educational institutions to assist in the creation, enhancement and support of long-term local, regional and statewide community forestry programs. Specific project types include but are not limited to: public tree ordinance development, community forest management plans, community forestry staffing, educational tree planting, and training and continuing education.

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

Sponsored on the national level by the National 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 has recognized and awarded 37 municipalities, 1 county and 2 military bases under the Tree City USA program during 2006.

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 *seventh* 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 06*, 51 partnerships were developed and 64 different educational sessions were presented to approximately 1,108 South Carolinians, both youth and adults.

<i>Types of Technical Assistance</i>	<i>Program Accomplishments Community Forestry Staff</i>			<i>Program Accomplishments Financial Assist. Grants</i>		
<b>Program Development/Expansion</b>	# of Assists			# of grants awarded		
Municipal Government	<b>128</b>			<b>16</b>		
Non-profit organizations	<b>45</b>			<b>3</b>		
Educational Institutions	<b>15</b>			<b>1</b>		
State/County Governments	<b><u>28</u></b>			<b><u>2</u></b>		
<b>TOTAL</b>	<b>216</b>			<b>22</b>		
<b>Public Tree Ordinances Developed</b>	<b>2</b>			<b>0</b>		
<b>Urban Forestry Cultural Practices</b>						
Commercial/Business	<b>22</b>			NA		
Residential	<b>38</b>			NA		
Public Agency	<b><u>17</u></b>			NA		
Total # of Assists	<b>77</b>					
<b>Public Trees Inventoried</b>	NA			<b>5,949</b>		
<b>Public Tree Management Plans</b>	NA			<b>3</b>		
<b>Public Trees Planted</b>	NA			<b>305</b>		
<b>Tree City USA's</b>	<b>40</b>			NA		
<b>Demonstration Planting Projects</b>	<b>3</b>			<b>10</b>		
<b>Partnership Development</b>	NA			<b>51</b>		
<b>Volunteers</b>	<b>64</b>			<b>553</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	28	18	<b>46</b>	14	2	<b>16</b>
# People	437	671	<b>1,108</b>	871	3,772	<b>4,643</b>
# Seat hours	890	535	<b>1,425</b>	7,615	15,088	<b>22,703</b>

## **FOREST STEWARDSHIP**

The Forest Stewardship Program is a cooperative effort among the USDA Forest Service, Forestry Commission, other natural resource agencies and organizations, forest industry, and private 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 06, 152 Stewardship Plans were written in South Carolina on 35,072 acres. The plans were written by the following cooperators: S.C. Forestry Commission foresters, and Department of Natural Resources wildlife biologist - 96 plans, and Private Forestry Consultants- 56 plans.

Twenty landowners (comprising 10,261 acres) were certified for FY06.

## **STATE FORESTS AND OTHER STATE LANDS**

### **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 2005-2006, the state lands coordinator provided assistance to six state agencies. The agencies and facilities were as follows:

#### **Department of Natural Resources**

Lewis Ocean Bay Heritage Trust Area  
Yawkey Wildlife Center  
Webb Wildlife Center  
Donnelley Wildlife Management Area  
Jocassee Gorges  
Bonneau Ferry Wildlife Management Area  
Great Pee Dee River Heritage Preserve  
Mason Wildlife Preserve

#### **SC ETV**

Florence ETV Tower Site

#### **SC State Parks Service**

Cheraw State Park

#### **SC Department of Commerce**

Lakeside at Russell

#### **SC Department of Transportation**

Big Pine Tree Creek Mitigation Bank

#### **SC Department of Mental Health**

Crafts-Farrow Mental Hospital

#### **Timber Revenue**

Seven state-owned tracts were marked or cruised for timber sales and produced an estimated volume of 2,814,430 board feet of pine sawtimber and 3,138 board feet of hardwood sawtimber. Also included in these sales were 2,833 cords of pine pulpwood and 58 cords of hardwood pulpwood.

Two timber sales were held on state-owned lands for which the SC Forestry Commission provided assistance. These sales generated a total of \$252,578 in revenue.

## SAND HILLS STATE FOREST

Sand Hills State Forest (SHSF) covers approximately 46,000 acres with 45,000 acres in Chesterfield County and 1,000 acres in Darlington County. The forest was operated under a use agreement with the federal government from 1939 until 1991. In July of 1991, title to Sand Hills State Forest was transferred to the South Carolina Forestry Commission. An additional 250 acre tract in Compartment 18 has been acquired and planted with longleaf pine.

### Receipts

Since 1967, Sand Hills has been totally self-supporting. No appropriations were received for H. Cooper Black Recreation Area in FY 2006.

### Receipts for Sand Hills Operating Budget

Activity	Receipts
Timber Sales	\$437,105.01
Pinestraw Sales	\$734,855.95
Stump Sales	\$5,200.92
Wildlife Management Area Payment	\$20,436.19
Rent State Owned Property	\$4,858.00
User Fees	\$17,954.31
Prior Yr Refund	\$2,773.59
Donation	\$5.00
<b>Total</b>	<b>\$1,223,188.97</b>

Note: 25% of \$1,215,552.38 was paid to Chesterfield and Darlington County School Systems. Sale of recyclables, donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems. An additional \$427.50 was generated from 25% of Cooper Black user fees.

Chesterfield County Schools	\$297,012.03
Darlington County Schools	<u>\$ 7,453.57</u>
Total	\$304,465.60

### Silvicultural Practices

The following species and number of seedlings were planted:

Containerized Longleaf Pine	65,000	80 acres
Bare root Longleaf Pine	65,000	80 acres
Bare root Loblolly Pine	140,000	175 acres

In 1999 Sand Hills started a pinestraw enhancement program. Under this program an individual from the general public can enter into a multi-year contract with the Forestry Commission to clear up land for pinestraw production. The individual agrees to eradicate 90% of all hardwoods on a tract of land using herbicides. In exchange, that person may harvest all the pinestraw that falls during the contract period. When the contract

expires, the acreage becomes part of SHSF's quality straw production program. The straw from these areas is offered for sale on a lump sum sealed bid basis. Currently there are 5 individuals working on approximately 10,767 acres of land. The enhancement contracts on 9,215 acres have expired.

### **Pinestraw Enhancement Program**

<b>Fiscal Year</b>	<b>Contracts</b>	<b>Acres</b>
2000	29	5,635
2001	25	6,922
2002	5	1,104
2003	3	467
2004	15	2,147
2005	2	421
2006	26	1,784
<b>Total</b>	<b>105</b>	<b>18,480</b>

As a result of increased pine straw activity at 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. The program started in FY 2003. This year shows a decrease in the number of stickers issued. Four hundred fifty six (456) were issued in 03. Two hundred thirty six (236) were issued in 04. One hundred seventy eight (178) were issued in FY 05. One hundred sixty one (161) were issued in 06.

A total of 1,608 acres were prescribed burned for wildlife habitat enhancement, hardwood control and fuel reduction. Smoke management limitations and weather limited the number of acres burned this year.

### **Forest Protection**

Sand Hills State Forest had six wildfires that burned 132 acres in FY 06. The fire was an incendiary fire.

### **Recreation/Education**

Recreational use of the Forest continues to increase. Hunting, fishing, horseback riding, riding, mountain biking, hiking, bird watching and camping continue to be favorite activities.

ATV use was discontinued July 1, 1999 based on an opinion from the attorney general's office. Environmental studies and mapping on a planned 5,000 acre off highway vehicle (OHV) trail continue. U.S. Fish and Wildlife Service must approve the OHV plan before it can be completed.

The Headquarters Mountain Bike Trail continues to attract riders from the surrounding areas. Thirty two permits were issued for bike riding. The trailhead was moved from Flory Pond Road to a more visible site on U.S. Highway # 1. Volunteers from the mountain bike user group do the majority of the maintenance work.

At Sugarloaf Mountain, there are 6 primitive camping sites for family camping and 8 primitive equestrian campsites. Sand Hills' personnel booked 167 reservations for these sites this year. An estimated 3,738 visitors with 551 horses used the campsites and trails. FY 04 was the first time ever that a fee was charged for use of facilities at Sugarloaf. FY 06 fees are from \$15 per site for sites with shelters and \$10 per site without shelters.

Cooper Black Recreation area continues to grow. There are now 52 campsites for RV campers. Twenty-seven have electricity and water hookups. The remaining sites are maintained as primitive sites. A clubhouse, kitchen, 24 stall horse barn, 63 pipe corrals, a full size arena with lights, two comfort stations, and a dump

station are available for use. Five hundred dogs can be housed in the dog pens just miles from the camp area.

Twenty-seven weekend events were scheduled at Cooper Black. Reservations for sites at Cooper Black showed a slight increase from the previous year. One thousand sixty three (1,063) reservations were booked. Reservations are required for campsites, stalls, corrals, training sites, arena, clubhouse, kitchen and grounds. Receipts from all reservations and other fees totaled \$56,720.00 (an increase of \$7,545.00).

### Summary of Sand Hills State Forest Recreation Areas

Year	Cooper Black Reservations	Sugarloaf Reservations	Total	Cooper Black Visitors/Horses		Sugarloaf Visitors/Horses		Total Visitors/Horses*	
FY 2000	504	316	820	3,790	1,662	3,674	1,025	7,464	2,687
FY 2001	711	307	1,018	4,024	1,304	3,456	932	7,480	2,236
FY 2002	874	283	1,157	5,000	1,580	4,200	866	9,200	2,446
FY 2003	1226	228	1,454	4,883	1,175	2,776	499	7,659	1,674
FY 2004	1,369	268	1,637	8,849	2,037	4,986	1,281	13,835	3,318
FY 2005	968	172	1,140	10,967	1,967	5,582	935	16,549	2,949
FY 2006	1063	167	1,230	10,482	1,898	3,738	551	14,220	2,449

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

Trail use permits decreased from 1,314 permits in FY 2005 to 1,147 in FY 2006. 513 annual permits and 634 daily permits were processed. Revenue from trail use permits totaled \$19,208.31. The majority of the annual permits are for horseback riders (502). Six hundred thirteen (613) of the daily permits were for horseback riders. Two hundred thirty seven of the annual permit holders are female.

The permit holders come from South Carolina, North Carolina, Virginia, Georgia, Tennessee, Florida, Pennsylvania, New York, New Jersey, Maryland, Nebraska and West Virginia.

Free-use permits are issued for any activity at Sand Hills State Forest that does not have a fee. Sand Hills' staff issued 43 this year. Twenty five (25) of the permits were for raking pinestraw for personal use, eighteen (18) for gathering firewood.

Year	Trail-Use Permits	Free-Use Permits	Total
FY 1999	505	329	834
FY 2000	573	412	985
FY 2001	839	299	1,138
FY 2002	932	335	1,267
FY 2003	1,240	255	1,495
FY 2004	1,246	192	1,438
FY 2005	1,314	78	1,392
FY 2006	1,147	43	1,190

As a result of community meetings, Sand Hills began a vehicle registration system for state forest users that wanted access to roads that had restricted use. The program began in December 2003. Two hundred twenty eight (228) vehicles were registered in FY 2006. Two hundred twenty three (223) vehicles were registered in FY 2005. In comparison, 170 were issued in FY 04. The majority of the users were hunters.

Fifteen scout groups used Sugarloaf Mountain for their weekend campouts. Numerous church groups used

Sugarloaf Mountain shelters for picnics and retreats. Sugarloaf Mountain continues to be a favorite place for many family reunions.

In April 2006 a couple got married at Sugarloaf Mountain.

Dr. Bill Alexander from the Governor's School of Science and Mathematics in Hartsville brought 2 classes to SHSF this year. In the fall he brought a vertebrate biology class of 10 to look at fish and other vertebrates. In the spring he brought an ornithology class of 12 students for bird identification.

Twenty Coker College evening students taking Biology 101 used Sand Hills State Forest for biology lab assignments in the fall and spring. Brian Davis gave them a tour of Sand Hills State Forest with emphasis on prescribe burn areas and red cockaded woodpecker clusters.

A forestry/wildlife presentation was done at Pate Elementary School in Darlington for 140 first grade students. Another presentation was made to 10 students at Chesterfield High School FFA meeting.

Forest Murphy and Brian Davis made a presentation on pine straw management to Lexington County Landowner's Association.

### **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 S.C. Forestry Commission. DNR personnel provide assistance with the game food plot establishment; monitoring deer herd dynamics, tracking various game and non-game species, and pond management. Law enforcement on the forest is provided through interagency cooperation. Sand Hills has a 57 acre public dove field. Thirty-five acres of the 57acre field were planted to annual crops with the remainder planted and maintained in bicolor lespedeza. A 30 acre farm field was made into a second public dove field this year. The field was planted in sunflowers and millet. It will open on September 2, 2006.

Darlington, Scott, Middendorf, Sexton and Campbell's Lake were reopened in September 2005 for fishing.

Eighty two acres (125 plots) were planted as wildlife food plots. These plots were planted in chufa, corn, sunflower, spring game mix, dove mix, dove proso, wild turkey mix, quail mix, sorghum, and bicolor. All plantings were fertilized and limed at the recommended rates. All manageable bicolor patches in compartments 14, 15, 16, 17 and the HCB area were bush hogged, fertilized, and limed. Two local volunteers worked approximately 400 man hours with the Sand Hills staff planting and maintaining wild life food plots.

Quail Unlimited supplied \$1,000 worth of seed and fertilizer that Sand Hills' staff used to establish and maintain 12 wild life openings for quail.

Sand Hills continues to conduct surveys for DNR. Furbearers, fox squirrel, turkey and quail were surveyed to track population trends.

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

#### **Population Trends**

The number of active clusters on SHSF was stable at 61 clusters and the number of potential breeding groups remained stable at 55. The number of solitary males was also the same at 4 individuals. There are currently 61 active clusters, and 9 inactive clusters, of which 1 can be considered recruitment clusters on SHSF. The other 8 would require habitat work in order to be considered a suitable recruitment clusters. One cluster is currently considered to be a relict cluster.

Fifty nesting attempts were made by 50 groups in 2006; 42 of these attempts produced viable offspring. One hundred chicks were produced on the forest this year from one hundred fifty eggs.

Management Implications: The 2006 breeding season on SHSF was slightly higher than last year. The initiation of a vigorous recruitment program will likely result in greater increases over the next few years. Recruitment clusters are to be provided at a rate of 10% of the active number of clusters. Therefore, we need to supply 6 recruitment clusters for FY2007. This can be done by using the one recruitment cluster currently available, improving existing inactive clusters making them suitable, and by the creation of up to five new recruitment clusters in previously unoccupied habitat. Placing new recruitment clusters in strategic locations based on the RCW management plan in concert with translocation of individuals to recruitment sites will likely result in the highest rate of population growth.

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.

A professor from Clemson University set up a turkey litter/water quality survey on the forest in 1999. The professor is now at the University of Georgia but continues the study at Sand Hills.

A sludge research project is on going. A four-year cycle that was started in 1999 continued this year. Turkey litter was added to the study site for comparison with sludge and commercial fertilizer applications and their effects on tree growth and soil chemistry.

**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	\$865,650.97
Pinestraw Sales	\$72,612.00
Land Lease Payments	\$58,714.26
Wildlife Management Area	\$29,914.75
Trail and Special Use Permits	\$40,164.00
<b>Total</b>	<b>\$1,098,192.34</b>

Note: 25% of all forest receipts are paid to Sumter and Clarendon Counties for a total of \$274,548.09.

Timber sales were concentrated on thinnings in overstocked stands and conversion of older slash pine stands to longleaf plantations. Also included in the timber sales was a harvest cut of hardwood in the Beidler Tract.

**Silvicultural Practices**

Approximately 265 acres of recently harvested areas were planted with longleaf and loblolly pine.

The following species, number of trees and acres were planted:

<u>Species</u>	<u>Trees</u>	<u>Acres</u>
Containerized Longleaf Pine	78,000	163
Bareroot Loblolly Pine	56,000	102

451 acres of longleaf pine stands were placed under a pine straw enhancement program utilizing one (1) vendor in fiscal year 2006. All of the acreage was enhanced by either mechanical or hand labor methods. Most of the acreage was raked and then treated with herbicides.

A total of 455 acres was prescribed burned for site prep, hardwood control, fuel reduction, and aesthetics.

Efforts began in 2004-05 and are ongoing to collect timber stand data for input into an internet based system that will allow designated personnel access to information for management decision making. The input data includes inventory, stand history, stocking, mapping, planting, cost data, etc. A forest technician was added to the Manchester State Forest staff with the primary responsibility of collecting data for entry into the system from all of the state forests. Training for those personnel authorized to use the system began in January, 2005 and continues.

### **Forest Protection**

Twenty (20) wildfires occurred burning approximately seven acres with minimal damage to the timber. However, a bathroom facility within the OHV recreation area was lost due to arson with an estimated replacement value of \$10,000. Firebreaks were maintained on those areas that were either high risk or of high value. Manchester personnel responded to several fires outside the forest boundaries in assistance to regional fire needs.

### **Recreation/Education**

Recreational use of the Forest continues to escalate over previous years. Hunting, fishing, horseback riding, motorcycle/ATV riding, mountain biking, and use of the rifle/pistol range continue to be favorite activities.

Six special-use permits were issued for organized events with approximately 1,531 paid participants.

Manchester staff participated in four educational programs including Wood Magic, school programs, and Palmetto Pride with approximately 300 attending. An organized clean-up comprised of 65 volunteers was held on Manchester which resulted in 12 tons of trash being picked up. Those participating included Palmetto Pride, Clemson Extension, Sumter County, Shaw Air Force Base, and numerous volunteers from the various recreational groups as well as Manchester State Forest personnel.

Work continued on the "High Hills" section of the Palmetto Trail concentrating on re-decking trestles and installing hand rails on the Norfolk-Southern Railroad bed, which crosses the Wateree Swamp. Several units of Americorps work groups were used as well as prisoners from the work release program at Wateree Correctional Institute.

Two meetings of the Manchester Recreational Advisory Council were held. Discussions included arrangements for alternate dates for special events due to inclement weather, applications for trails grants, new hours and permit sales at the rifle and pistol range, scheduling work days and cleanup after special events, spring litter cleanup, placement of direct 911 phones at key staging areas, temporary closures of trails during prescribed burns and an agreement with SCORE to maintain the OHV trail.

## **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 food plot and dove field establishment, monitoring, and maintenance. They also agreed to establish and plant a 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. Game harvests increased significantly from the previous year with 45 deer being harvested.

Manchester hosted its annual youth dove hunt on the Bland Tract, which was limited to 35 youths accompanied by adults who were required to register in advance. One hundred seventy (170) doves were harvested during this event with 2,080 shots being fired.

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

Planting and maintenance was conducted on 557 acres of wildlife areas. Corn, popcorn, sunflowers, sorghum-browntop-millet-benne mix, wheat, rye, clover, vetch and bicolor were utilized to diversify the food supply. Several of the plantings were donated by the Department of Natural Resources and planted by Manchester and DNR personnel.

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

Manchester currently maintains six (6) clusters of red-cockaded woodpeckers. 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 USF&W Service personnel resulted in the development of an emergency plan and possible enrollment into the Safe Harbor Program.

## **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 planted loblolly pine plantations and upland pine-hardwood types and the remaining 11,624 acres is comprised of bottomland hardwood types with the associated oxbow lakes and creeks. Being in the Santee River Focus Area of Ducks Unlimited's Lowcountry Initiative, it is a very significant, unfragmented bottomland hardwood forest. Its significance lies in its watershed and water supply protection, habitat for wildlife and a number

of threatened and endangered species and the opportunities it provides for recreation, forest practices and education.

### **Receipts**

During Fiscal Year 2005-06, \$31,136.36 was collected on Wee Tee State Forest as payment for SCDNR's WMA program from which \$7,784.09 was paid to Williamsburg and Georgetown Counties.

### **Silvicultural Practices**

None for Fiscal Year 2005-06.

### **Recreation/Education**

Fishing in the Wee Tee Lakes was opened in April, 2004 on Wednesdays and Saturdays from sunup to sundown. Manchester State Forest personnel opened and closed the gates to the three boat landings for this opportunity.

A hunting season was planned with SCDNR and was implemented starting in September 2004. Harvest data was collected for both the deer and turkey seasons indicated very minimal harvests due to continued high water levels in the Santee River Swamp.

Canoeing and kayaking will also be allowed at those times when the Wee Tee Lakes are open.

Funds have been secured, plans have been made, and permits have been obtained to construct a permanent boat landing and parking lot in cooperation with SCDNR. Road improvements to the landing have been completed and a two (2) acre parking lot has been cleared and nears completion. Bids and construction of the ramp is expected to start in the early fall of 2006.

### **Forest Protection**

Gates have been constructed and placed on all known entrances into Wee Tee.

Negotiations have been completed and settled concerning a boundary dispute with private landowners adjoining Wee Tee Lake.

### **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 road improvements to approximately 8 miles of roads on Wee Tee. Improvements included grading, mowing and drainage improvements due to existing beaver dams.

Renovations continued to the existing metal building which is being used as a work center at Wee Tee.

## **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. Fee boxes were installed at all trailheads in February 2004 to allow visitors to purchase parking permits without assistance.

## Receipts for Operating Budget

Activity	Receipts
<b>Timber Sales</b>	<b>\$0.00</b>
Shelter Rentals	\$2,305.00
Conference Room Rentals	\$10,175.00
Bike Permits	\$29,582.15
Parking Permits	\$13,067.99
Special Use Permits	\$1,115.00
Camping/Firewood Donations	\$118.00
Trail Donations	\$728.56
Total	\$57,091.70

Note: 25% of all receipts are paid to Richland and Lexington County School Systems. This amounted to \$11,517.54 for the 2005-2006 fiscal year.

## 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. Control of competing hardwoods and pines is being considered for the 4 areas that were planted during 2003 (2 areas of loblolly pine and 2 areas of longleaf pine) to demonstrate management options for private landowners. A timber harvest is being planned for next year.

Four prescribed burns were conducted in March 2006 for a total of 4 ½ acres. A 1-acre prescribed burn was conducted near the firetower to serve as a demonstration area. It is located near previous burns and an unburned area to provide a contrast of one, two, and three years following a prescribed fire as well as how the forest would look if fire was completely excluded. Two other demonstration burns were conducted, one adjacent to the Stewardship Trail and one adjacent to the Midlands Mountain Trail. The fourth prescribed burn was conducted in an area that had been planted in longleaf pine to control volunteer loblolly pines.

## Forest Protection

No forest fires 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 visitors and/or to buildings were felled as workload allowed. (Many of these trees were removed during chainsaw training conducted by the Forestry Commission's Training Section.)

## Recreation/Education

Several events were held on the trails at Harbison during the 2005-2006 fiscal year. One adventure race was held in February. This race was a three leg event, with biking, running and paddling. It was estimated that 25 people competed in this race. The largest event during this fiscal year was the Friends Weekend which included a bike race, a running race, a nature hike, and workshops on nature photography, nature art, and backyard wildlife habitats. It was estimated that over 200 visitors participated in this event that was sponsored by the Friends of Harbison State Forest. The Friends Weekend raised awareness among many area residents of opportunities available at the Forest. Publicity for the event included flyers at area businesses and articles in *The State* newspaper and *Living In South Carolina* magazine. Geocaching has come onto the scene now at Harbison State Forest and there are currently 19 known and approved caches.

In addition to these events, numerous trail work days were conducted during the 2005-2006 fiscal year. These events included the re-routing of approximately 1/4 mile of trail, rehabilitation of numerous wet areas on the trails, and pruning of overhanging branches and brush. 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 the Forest also began bike patrols throughout the Forest to aid users in their time of need while at Harbison. The bike patrol members were trained in First Aid and CPR by the American Red Cross. The Friends of the Forest also installed a bike wash station at the entrance of the forest adjacent to the front parking lot.

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 about 65 individuals.

Boy Scouts continue to provide assistance to Harbison through Eagle Scout projects and Cub Scout activities. Several Eagle projects were completed during 2005-2006 and several are currently in the planning stage. Eagle projects that were completed included “You Are Here” signs on Midlands Mountain Trail. Three bridges were also constructed and installed, one on the Learning Trail and two on the connector trail to the Eagle Trail. Cub Scouts and Boy Scouts conducted other trail work on various trails. Numerous educational programs were conducted for Scouts and others at Harbison State Forest. (See the Education and Information Technology section of this report for details.) Scouts and other organized groups continue to use the four primitive camping facilities at Harbison. Sixty-eight groups used the camping facilities for a total of 1,085 campers.

The canoe landing at Harbison State Forest provides access to the Broad River. During the 2005-2006 fiscal year, 99 groups used this facility for a total of 321 paddlers.

### **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. A wildlife view platform was constructed overlooking the Crooked Pine vernal pond to help facilitate users’ viewing of wildlife.

### **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**

None at this time.

## **POE CREEK STATE FOREST**

Poe Creek State Forest is located in Pickens County adjacent to SC Highway 11 and contains 1806 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 clear-cut and allowed to regenerate naturally to native hardwood species

The remaining 1006 acres are in natural upland hardwood type and a mixture of white pine and hardwood. The steep terrain in this area will limit the forest management activities that can be implemented.

## Receipts

### Receipts For Operating Budget:

Timber Sales	\$49,213
Wildlife Management Area	\$11,603

### Silvicultural Practices

Harvesting continues on a 172 acre timber sale area. Most of this sale is a buyer select, first thinning on loblolly pine plantations.

### Recreation/Education

Long Shoals Wayside Park, known locally as Sliding Rock, was dedicated on June 24, 2005. The two-year project, led by upstate conservationists Dennis Chastain and Dr. George Smith, has transformed a local party spot into a family recreation area. Improvements include grading and stabilizing parking areas, closing off vehicular access to erodable soils and slopes, and installing picnic tables, rest room and trash facilities. Project partners include the SC Forestry Commission; the SC Department of Transportation; the SC Dept. of Natural Resources; the USDA Natural Resources Conservation Service; the Town of Pickens; the Rural Water Company; Partners for Trout; the Carolina Association of Landscapers and Lawn Maintenance; Metromont Concrete Co.; the Boy Scouts of America; and numerous individual volunteers.

Trout fishing is available in Little Eastatoe Creek near Long shoals Wayside Park and in the Cheohee River near the Piedmont Forestry Center.

### Forest Protection

Harvesting currently in progress on Poe Creek and harvests for planned for FY 2005-2006 on Piedmont Forestry Center will reduce density in over stocked loblolly pine plantations. This harvesting will improve forest health and reduce 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. Poe Creek State Forest and Piedmont Forestry Center are also in DNR's Wildlife Management Area program and open to public hunting. During FY05, nine logging decks were graded and planted as wildlife food plots. Additional areas are slated for improvement in FY06.

### Rare, Threatened, and Endangered Species Management

In FY04, habitat improvements were made on Poe Creek State Forest to restore the health of some populations of federally endangered plants. This work involved removing overhead competition that was impacting the health of the population by blocking sunlight. In FY05, additional overstory removal was done to further improve habitat for this endangered plant.

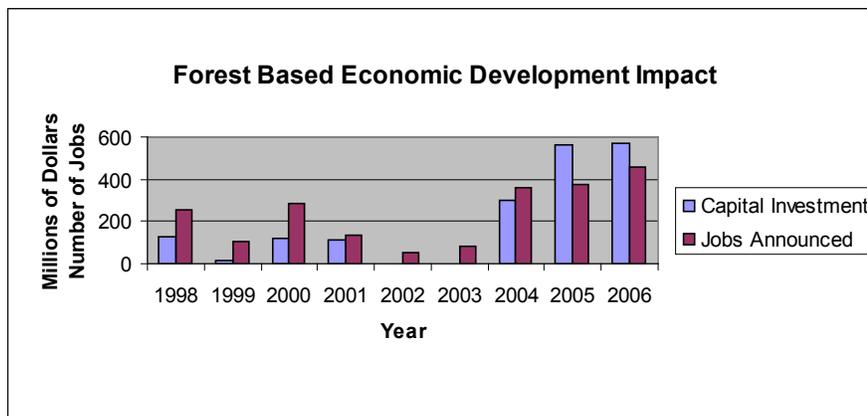
### Infrastructure

Receipts from timber sales during the fiscal year were used to improve access to the property by installing culverts and rock to several miles of roads. In addition, two easements across private lands were obtained to provide official access to areas of the property that were inaccessible. Road improvements were necessary at both locations to improve access.

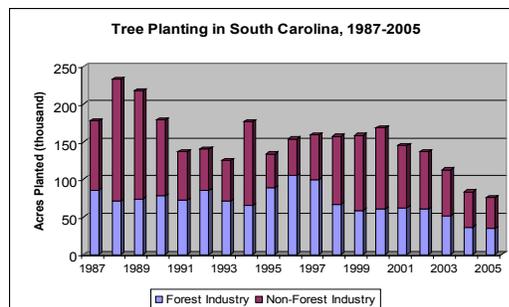
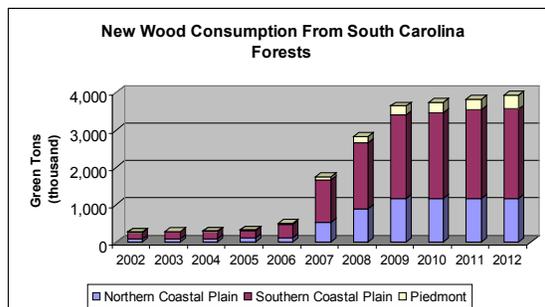
# RESOURCE DEVELOPMENT

## BUSINESS DEVELOPMENT

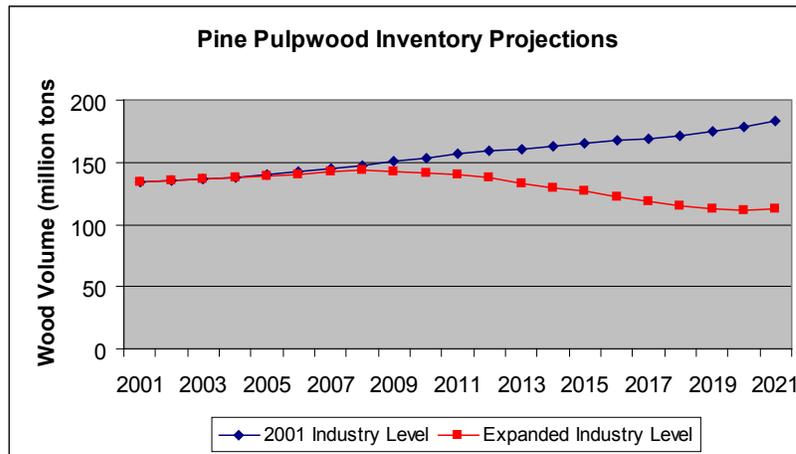
Forest industry development and investment reached a new high during FY 06 with 7 announcements totaling \$570 million of capital investment and 455 new jobs. International Paper Company announced a \$200 million modernization of its Georgetown paper mill. The upgrade is part of the company's plan to focus on manufacturing uncoated paper and packaging products. Kimberley-Clark announced the addition of a paper machine at its Beech Island plant near Aiken. The \$200 million capital investment will result in an additional 150 jobs. Tech-Wood, a Dutch manufacturer, announced plans to invest \$150 million in a new operation in Greenwood that will manufacture wood-plastic composite products. Its decking and siding products are 70% pine fiber and 30% polypropylene. Agency personnel worked on a total of 14 forest-product related economic development projects during the year.



In Spring 2006, a project was undertaken with North Carolina State University (NCSU) to project South Carolina's wood inventory through 2021. This project was necessitated by the anticipated rapid increase in softwood pulpwood demand over the next few years and a dramatic decline in tree planting since 2000. A survey of six newly-announced or expanded wood plants quantified a 4.6 million ton increase in softwood demand by 2012 with almost 4 million tons coming from South Carolina forests. While wood demand is increasing, tree planting is at a 30-year low. Tree planting rates have declined 55% since 2000.



The SERTS (Southeastern Regional Timber Supply) model, developed by Bob Abt at NCSU, projects South Carolina's softwood pulpwood supply to peak in 2008 and then decline 22% by 2020. Softwood sawtimber inventory was projected to increase through 2021. The increasing softwood sawtimber supply presents an opportunity for future industry expansion.



Based on the results of the SERTS model, a landowner outreach program, termed “Grow Some Green” was developed to inform forest landowners of the increasing wood demand and the need for increased tree planting. The program will involve billboard, radio and print media to broadcast a consistent statewide message. “Grow Some Green” programs have begun to be presented at county forestry landowner meetings.

During the 2006 fiscal year, the SCFC Resource Development Division represented the agency and forestry community through 10 statewide and regional economic development organizations. The SCFC is actively participating in the SC Competitiveness Initiative representing the forestry-related clusters. Finally, 184 individual business assists were made to address single-issue requests.

## FOREST INVENTORY & ANALYSIS

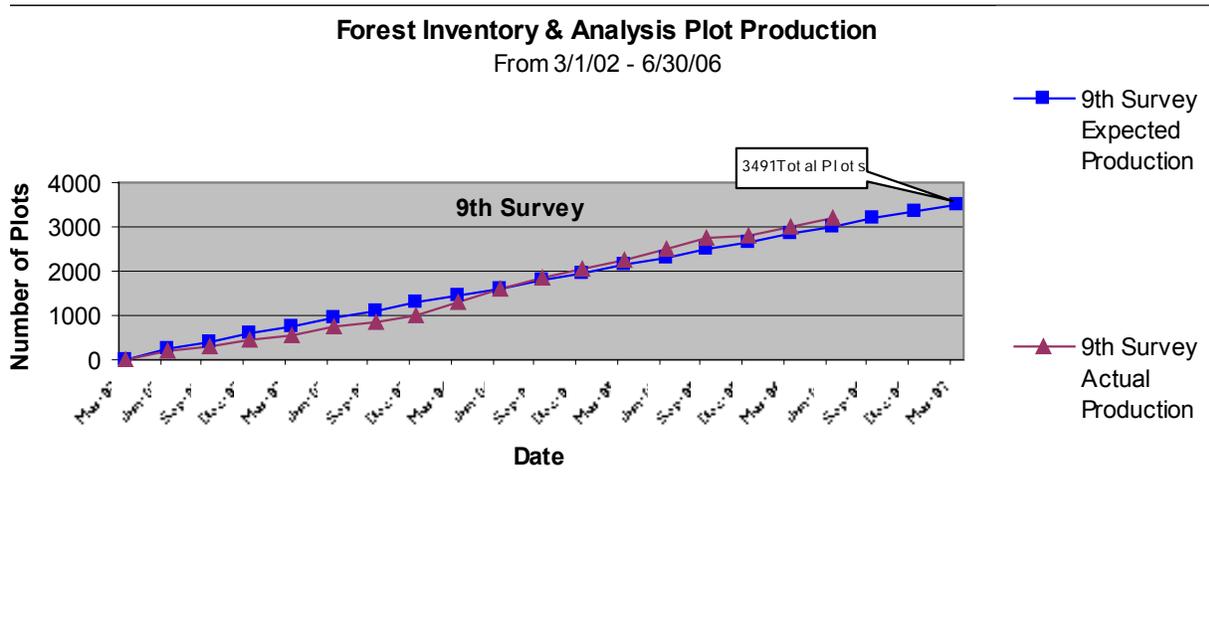
The Forest Inventory and Analysis (FIA) program is a cooperative program with the US Forest Service – Southern Research Station to collect forest inventory and forest health monitoring data from a network of permanent sample plots. Funding for the program is provided through a 75% Federal grant and a 25% state match of the program budget. There are 3,491 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. 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 is selected to provide data on forest health, referred to as the Phase 3 portion of FIA. A total of 190 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, separate bioindicator plots are taken to detect the presence of ozone pollution.

Currently, four full-time inventory crews are stationed throughout the state with field offices in Spartanburg, Newberry, Marion, 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 2005-2006, the average accuracy for all crews was 94.58%.

South Carolina is currently in the ninth remeasurement of the state. During FY 2005-2006, field crews completed one Panel of plots that began in FY 2004-2005, and began the next panel. For the year a total of 703 plots were completed. The Forestry Commission FIA program is currently 92% complete and on schedule to conclude the ninth survey measurements in five years, with December 2006 as a target date for completion.



## 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 Seed Orchard 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 2005-2006, 51,035,000 pine and 1,229,662 hardwood seedlings were planted in South Carolina for a total of 52,164,857 seedlings. This number is slightly higher than the 47,243,000 reported planted in FY 2004-2005. The number of seedlings planted in South Carolina has declined 55% since FY 1999-2000 due to fewer acres of final harvest, lower timber stumpage prices and a slowdown in government cost-share funding. Growth in forest industry and the SCFC's "Grow Some Green" campaign hope to increase

future tree planting.

Taylor Nursery distributed 4,690,900 pine and 746,487 hardwood seedlings in FY 2005-2006 for a total of 5,437,387 seedlings total. This amounts to distribution of 76% of the total number of bareroot and containerized seedlings grown at Taylor Nursery. The SCFC sold 10% of the seedlings distributed in South Carolina this year from all public and private sources. Taylor Nursery is the primary producer of hardwood and longleaf pine seedlings in the state.

Each year the SCFC surveys a 10% sample of seedling customers to determine general satisfaction with our seedlings and to target areas for improvement. The 2006 survey indicated that 89% of our customers were satisfied with our seedling quality and service. This is down from 96% satisfaction in FY 2004-2005 and the drop is likely due to poor seedling survival over much of the state caused by droughty conditions following planting season. Also, cutbacks in the N&TI program due to budget restraints resulted in an increase in the number of requests for improved seedling selection and distribution.

The SCFC entered into an agreement with Cellfor to jointly produce and market an elite variety of loblolly pine that is specifically suited to South Carolina. Cellfor uses vegetative propagation to produce identical copies of seedlings in mini-plugs that are transplanted into Taylor Nursery seedling beds. In May 2006, 110,000 Cellfor Q-3802 seedlings were transplanted for sale during the 2006-2007 planting season. Through this agreement, non-industrial private landowners will have access to these highly-valued seedlings through the SCFC's seedling catalog.

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: (1) a herbicide toleration study to improve chemical control of hard-to-control weeds such as spurge, nut sedge and Poor-Joe and (2) a study to find an alternative to methyl bromide for nematode control.

## **NIEDERHOF SEED ORCHARD**

Niederhof Seed Orchard (NSO) 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. NSO 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 1985-1988 and totaled 322 acres. NSO's orchards came into production in 1993 with some 4,542 bushels collected from both Coastal and Piedmont province orchards, and in the subsequent years, these orchards have produced in excess of 49,000 bushels.

Staffing of the facility reached its height during the early years of establishment, when NSO had six full-time employees. Economic factors were harsh to this program during the years from 2000-2004. Overall tree planting dropped markedly during this period, and as a result of this, in conjunction with severe state budget reductions, the SCFC ended its 41-year history with the North Carolina State University-Industry Tree Improvement Cooperative (NCSU-ITIC). Since June 1, 2004, the Seed Orchard Manager has remained as the only staff member on a full-time basis.

During FY 2005-2006, a total of 2,715 bushels were harvested from second-generation loblolly pine orchards. MeadWestvaco purchased 2,280 bushels of Coastal province cones and NSO retained 435 bushels of cones from select families within the Piedmont orchard. Improved Virginia pine cones from 5 progeny-tested families representing our Christmas tree mix were collected at the Piedmont Forestry Center, and approximately 25 bushels were processed for 5.80 pounds of seed.

Niederhof has enjoyed a unique situation whereby excess seed is produced and can be targeted for sale to forest industry to generate revenues. During FY 2005-2006, NSO generated \$131,750.05 in seed sales, and an additional \$67,560.00 in cone sales. To date, Niederhof has generated \$1,155,446.29 in revenue through the sale of second-generation cones and seed.

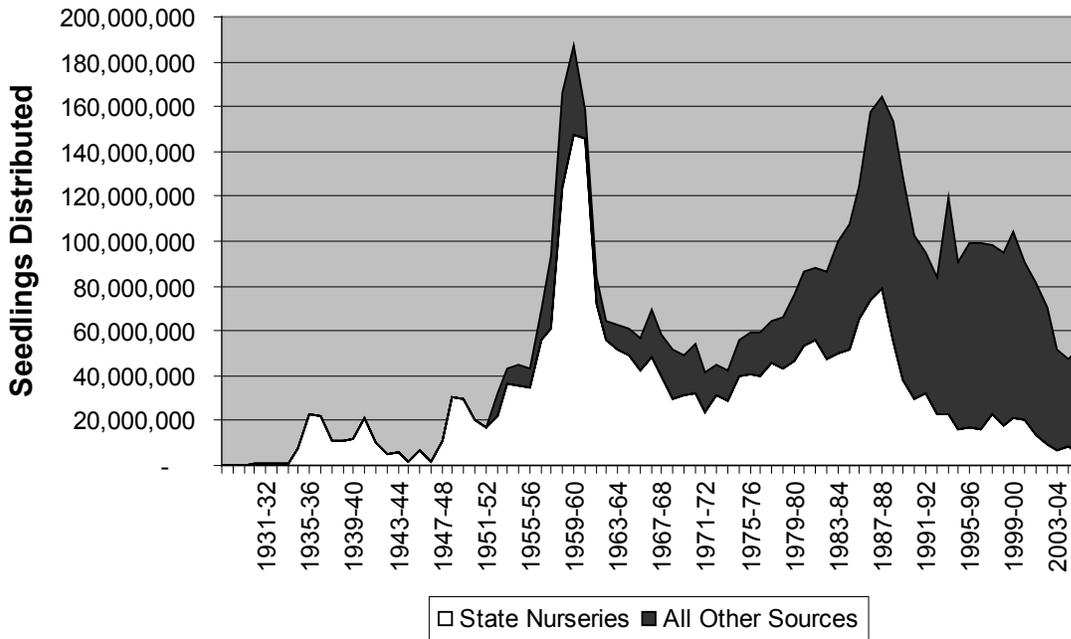
This past year, opportunities presented themselves whereby the Forestry Commission was able to successfully negotiate multiple research agreements with two forest industry companies: Cellfor and MeadWestvaco. Cellfor is a leading developer of Elite Varietal Seedlings produced by somatic embryogenesis for use by forest landowners on three continents. Our arrangement with Cellfor provides a fixed source of income for use of portions of the Niederhof Seed Orchard complex in order to conduct NCSU-ITIP breeding and testing. The research agreement with MeadWestvaco will permit us to increase productivity from our second-generation Coastal orchard and also open a new market for surplus Coastal loblolly pine cones. Due to recent changes within the Nursery and Tree Improvement Program, joint research agreements with private forest research organizations appears to be a cost-effective means to remain abreast of current and future advances within tree improvement.

<b>Tree Seedling Distribution by Landowner Classification</b>				
<b>Land Ownership</b>	<b>Softwoods Planted</b>	<b>Hardwoods Planted</b>	<b>Total Number of Trees Planted</b>	<b>Percent of Total</b>
Non-Industrial Private Landowners	25,408,295	990,262	26,398,557	50.6%
Forest Industry	23,538,100	60,525	23,598,625	45.2%
Government	1,565,800	19,175	1,584,975	3.0%
Corporate	523,000	59,700	582,700	1.1%
<b>Total</b>	<b>51,035,195</b>	<b>1,129,662</b>	<b>52,164,857</b>	
<b>Source of Seedlings Planted in South Carolina</b>				
<b>Nurseries in South Carolina</b>	<b>Softwoods Distributed</b>	<b>Hardwoods Distributed</b>	<b>Total Number of Trees Distributed</b>	<b>Percent of Grand Total</b>
International Paper	19,557,375	323,725	19,881,100	38.1%
Weyerhaeuser	12,311,750	43,500	12,355,250	23.7%
MeadWestvaco	6,827,000	15,000	6,842,000	13.1%
South Carolina Forestry Commission	4,690,900	746,487	5,437,387	10.4%
<b>Total</b>	<b>43,387,025</b>	<b>1,128,712</b>	<b>44,515,737</b>	
<b>Nurseries Outside of South Carolina</b>				
Plum Creek	5,176,000	0	5,176,000	9.9%
International Forest Company	1,522,170	950	1,523,120	2.9%
Georgia Forestry Commission	950,000	0	950,000	1.8%
<b>Total</b>	<b>7,648,170</b>	<b>950</b>	<b>7,649,120</b>	
<b>Grand Total</b>	<b>51,035,195</b>	<b>1,129,662</b>	<b>52,164,857</b>	

## State Nursery Seedling Production & Sales for FY 2005-2006

<u>Species</u>	<u>Seedlings Produced</u>	<u>Seedlings Sold</u>	<u>% Sold</u>
Ash, Green	11,510	7,750	67%
Atlantic White Cedar CTR	7,000	7,000	100%
Baldcypress	13,100	13,100	100%
Carolina Sapphire CTR	360	360	100%
Cedar, Eastern Red	70,680	70,680	100%
Clemson Greenspire CTR	990	990	100%
Crabapple	7,730	7,730	100%
Dogwood	35,700	8,860	25%
Hazel, American	1,000	630	63%
Hickory, Mockernut	22,000	18,420	84%
Hickory, Pignut	500	80	16%
Lespedeza, Attaway	500,000	385,840	77%
Leyland Cypress CTR	13,000	12,542	96%
Loblolly Pine, Coastal 2nd gen.	1,000,000	207,650	21%
Loblolly Pine, Coastal Fast Growth	101,160	101,160	100%
Loblolly Pine, Coastal Rust Resistant	517,410	382,560	74%
Loblolly Pine, Coastal Best Family	50,000	50,000	100%
Loblolly Pine, Piedmont 2nd gen.	1,194,660	1,194,660	100%
Loblolly Pine, Piedmont Fast Growth	810,300	810,300	100%
Loblolly Pine, Piedmont Rust Resistant	248,510	207,500	83%
Loblolly Pine, Piedmont Best Family	36,810	36,810	100%
Loblolly Pine, Texas	30,000	23,000	77%
Longleaf Pine	1,350,000	1,067,570	79%
Longleaf Pine CTR	390,100	370,100	95%
Maple, Red	3,440	3,440	100%
Misc. Minor Species	44,160	28,350	64%
Mulberry, Red	20,000	590	3%
Oak, Burr	7,500	5,200	69%
Oak, Cherrybark	50,000	4,240	8%
Oak, Gobbler	9,390	9,390	100%
Oak, Laurel	15,000	1,430	10%
Oak, Live	10,000	5,310	53%
Oak, Northern Red	26,220	26,220	100%
Oak, Pin	15,000	15,000	100%
Oak, Post	3,000	2,170	72%
Oak, Sawtooth	100,000	30,095	30%
Oak, Scarlet	370	370	100%
Oak, Shumard	12,000	410	3%
Oak, Swamp Chestnut	5,000	1,820	36%
Oak, White	15,000	8,680	58%

Oak, Willow	10,500	10,400	99%
Pear	3,000	2,780	93%
Pecan	19,000	2,120	11%
Persimmon	7,700	7,600	99%
Plum, American & Chickasaw	7,630	6,800	89%
Redbud	2,620	2,620	100%
Shortleaf Pine	15,000	12,500	83%
Slash Pine, Rust Resistant	35,000	14,760	42%
Sweetgum	30,000	9,150	31%
Sycamore	9,320	9,320	100%
Tupelo, Blackgum	7,000	1,410	20%
Virginia Pine	89,200	85,670	96%
Walnut, Black	2,160	2,160	100%
Waxmyrtle	5,150	5,150	100%
White Pine	152,500	126,660	83%
Witch Hazel	1,000	1,000	100%
Yellow Poplar	<u>12,120</u>	<u>9,280</u>	<u>77%</u>
<b>Totals</b>	<b>7,157,500</b>	<b>5,437,387</b>	<b>76%</b>





<b>SCFC Active Seed Orchards</b>		
<b>Orchard Type</b>	<b>Years Established</b>	<b>Acres</b>
<b>Creech Seed Orchard/Manchester State Forest</b>		
Genetic Diversity Archives (Clone Banks)	1977-1983	25
Coastal Loblolly Pine 1.0 Rust Resistant	1971	5
Longleaf Pine 1.0	1971	12
Virginia Pine 1.0 (Creech)	1980	1
Virginia Pine 1.0 (Manchester)	1986	2
Sawtooth Oak 1.0 Seedling	1990	2
<b>Total</b>		<b>47</b>
<b>Niederhof Seed Orchard</b>		
Coastal Loblolly Pine 2.0	1985-1988	68.3
Piedmont Loblolly Pine 2.0	1985-1988	63.1
Longleaf Pine 1.0	1988-1990	30
Loblolly Pine Breeding Orchard 3.0	1997-2003	10
Longleaf Pine Seedling Seed Orchard	1998	8
Coastal Loblolly Pine 3.0	2005-2006	2
Piedmont Loblolly Pine 3.0	2005-2006	2
<b>Total</b>		<b>183.4</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>267.4</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 harvesting BMPs has been documented in three previous surveys. Compliance for harvesting BMPs was 84.5% in 1990, 84.7% in 1991, and 89.5% in 1994, 91.5% in 1999, and 94% in 2001. A new survey was initiated in the fall of 2004 to update BMP compliance. Two hundred sites were located and inspected for compliance with BMPs relating to timber harvesting throughout the state. Compliance with BMPs rose to 98%, demonstrating continual improvement since monitoring began.

### **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, 2,654 contact hours of training were held across the state for forest landowner groups, government agencies, and professional organizations. Included in these meetings were four Timber Operations Professional (TOP) workshops, five TOP Refresher workshops, five TOP SMZ workshops, and four TOP Harvest Preparation workshops, which reached 520 loggers, landowners, foresters, and road construction contractors.

### **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 2005-2006 fiscal year, the BMP Foresters provided assistance on 822 sites and completed 388 courtesy exams. The overall BMP compliance rate on sites which had a courtesy exam was 99.4%, compared to 98% overall statewide compliance.

### **Endangered Species**

This year, the Environmental Management Section continued training on endangered species biology and management, with an emphasis on those species that may impact forestry operations. The BMP Foresters are available to provide information and assistance to SCFC personnel, foresters, and private landowners. This assistance may include site visits, cooperating on the Safe Harbor program administered by the S.C. Department of Natural Resources, and assisting State Forests and other state-owned properties upon request.

# **EDUCATION AND INFORMATION TECHNOLOGY**

## **INFORMATION TECHNOLOGY/COMMUNICATIONS/AND DISPATCH**

### **INFORMATION TECHNOLOGY**

The Information Technology group is responsible directly and indirectly for the maintenance and support of the agency's wide area network, 10 Windows NT Servers, 7 Windows Server 2003 Servers, over 150 computer users, software applications and implementation of various initiatives to support agency operations and programs. In accordance with standards established by the State Architecture Oversight Committee, the IT staff completed a migration of desktop computers running Windows NT 4.0 operating system to Windows XP and upgrading users to Microsoft Office 2003. Administrative application and file servers running Windows NT 4.0 will be targeted in FY07.

The State's data network backbone is being upgraded from frame relay and ATM circuits to Multiprotocol Level Switching (MPLS). The IT staff has been review options and cost/benefits to upgrading the agency's ATM circuits to MPLS. MPLS offers a higher level of reliability and ability to prioritize various types of network traffic. Upgrading to MPLS will better align the agency with current and future technology needs. State agencies have until May, 2007 to migrate to MPLS and avoid substantial increases in network costs.

### **GIS**

A GIS analyst was hired to implement projects to support National Fire Plan grant activities related to wildfire risk assessment, planning, response, and hazard fuels treatment. The analyst also served as a liaison with the Southern High-Resolution Modeling Consortium to validate a smoke model developed by Dr. Gary Achtemeier of the University of Georgia for residual smoke impact on wildland-urban interface areas in South Carolina. An ArcGIS module was developed in-house that automated the steps involved to generate smoke predictions.

The Southern Group of State Foresters has been working on developing and implementing a model that would analyze the risk of wildfires in the southern region of the US. The Southern Fire Risk Assessment System will identify the potential for serious fires and prioritize areas where mitigation options may be desirable. The GIS analyst participated in a Beta test of this system, provided demonstrations, and assisted in training local staff on its use. This model will be updated and configured to better represent local South Carolina conditions for use by SCFC Fire Managers.

Various GPS/GIS mobile data recorders were procured for use on state forests and fire management activities. The GIS analyst assisted in configuring this equipment and conducting training to end users. SCFC continued its migration of GIS users to ESRI's ArcGIS software in accordance with the standards established by the State Architecture Oversight Committee. The GIS analyst coordinated the procurement of additional licenses, software installation, configuration and end user support.

SCFC interaction, collaboration and networking with other federal, state and local agencies in the area of geographic information systems and data sharing continued in FY06. The GIS analyst served as the Communications Liaison for the Southern Group of State Foresters GIS Task Force, working on developing a graduate level GIS internship program with the University of South Carolina, and exploring the sharing of weather data with the State Climatology Office.

## **COMMUNICATION TECHNOLOGY**

Using a National Fire Plan grant, the Forestry Commission began updating its two-way radio system to narrowband technology as mandated by Federal Communications Commission regulations. Firefighters that interoperate with the US Forest Service, US Fish & Wildlife Service and other federal land management agencies were targeted with the initial purchase of mobile radios. By the end of FY06, additional National Fire Plan funding was received to purchase replacements for all of the agency's mobile radios, base stations and repeaters. These radios will be installed during the first half of FY07.

With the assistance of the State Law Enforcement Division (SLED), the Forestry Commission received a Homeland Security Grant to purchase 800MHz radios for better interoperability with other Federal, State, and local law enforcement agencies. Thirty-five (35) portable 800MHz radios and a year's worth of access time to the Palmetto 800 system have been purchased with this grant.

The Forestry Commission began deployment of these new radios to its law enforcement officers after a training session in the spring of 2006. In addition to covering radio features, operations and programming setups, the training session also covers information on the Palmetto 800 System, interagency interoperability, and airtime costs.

## **DISPATCH**

The Forestry Commission operates three (3) dispatch centers for taking burn notifications for the purpose of forestry, wildlife or agricultural and reporting of wildfires. On July 1, 2005, the agency went "live" with a new computer aided dispatch and records management systems. These systems replaced a custom developed application written 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. The new system determines the closest available unit 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 automate vehicle location (AVL) technology; and automates the compliance issues with smoke management regulations on forestry, wildlife and agricultural burn notifications.

South Carolina is the only state with a statewide forest fire dispatching system. Commercial, "off-the-shelf" dispatching software makes it more cost-effective for other federal and state forest firefighting agencies to deploy a similar system. Built around a "standard product line", updates, enhancements, maintenance and support costs are shared with a larger customer base than a custom built application.

As a performance measure in the Forestry Commission's Accountability Report, average response time to wildfires decreased by 2.75 minutes in FY 2006 when compared to FY 2005. Further analysis of this data shows the average time from receiving the wildfire call and assigning a firefighter to it has reduced by 2.15 minutes and the average travel time to the wildfire decreased by 2 minutes (see table below). These time savings can be attributed to the new dispatch software's automation of alerting fire personnel and determining the closest available unit based on road mileage and travel speeds.

**SUMMARY AND COMPARISON OF DISPATCH TIMES  
FOR FISCAL YEAR 1999 through 2006**

TIMES	FY 1999 Average (Minutes)	FY 2000 Average (Minutes)	FY 2001 Average (Minutes)	FY 2002 Average (Minutes)	FY 2003 Average (Minutes)	FY 2004 Average (Minutes)	FY 2005 Average (Minutes)	FY 2006 Average (Minutes)
Dispatching <sup>1</sup>	6.11	5.68	5.42	6.27	5.12	5.10	6.33	4.18
Contact Establish <sup>2</sup>	4.39	4.14	4.00	3.09	4.15	4.18	3.83	4.47
Rolling <sup>3</sup>	4.38	4.37	3.97	3.69	4.13	3.83	4.22	4.11
Enroute <sup>4</sup>	8.32	8.40	7.72	6.06	7.92	7.95	7.10	8.44
Travel <sup>5</sup>	24.48	23.60	23.03	22.60	22.49	22.39	22.11	20.09
Response <sup>6</sup>	36.92	35.05	34.40	34.80	35.70	33.57	35.19	32.45

<sup>1</sup> Time between initial report of wildfire and first attempt to contact initial attack warden.

<sup>2</sup> Time between first attempt to contact warden and when contact was established.

<sup>3</sup> Time between contact established with warden and his enroute time.

<sup>4</sup> Time between first attempt to contact warden and his enroute time.

<sup>5</sup> Time between going enroute and arriving at wildfire.

<sup>6</sup> Time between initial report of wildfire and arrival of initial attack warden.

**CREATIVE SERVICES**

The Creative Services Department provides audio-visual and print material for use by schools, Forestry Commission personnel and the public for both educational and training purposes. The department oversees compliance with Title VI and is the agency's contact for forestry outreach. Creative Services is responsible for keeping lines of communications open with Forestry Commission external and internal audiences. Currently the department accomplishes this using a weekly electronic news bulletin and a frequently updated website.

**Economic Analyst**

A forester with a Masters degree in forest economics was hired in April 2005. His first project was to oversee data collection for the Timber Products Output Survey and work closely with the USDA Forest Service in data analysis. The Forestry Commission plans to expand its capability to interpret the tremendous amount of data the agency collects each year, from FIA to CADS reports. The analyst will work closely with all program managers, GIS specialists, and the SCFC graphic designer.

**Southern Wildfire Risk Assessment**

The Director of the E&IT Division was Chair of the Southern Group of State Foresters (SGSF) Communications Committee during FY 04-05 and FY 05-06. Southern states worked cooperatively on several projects, including a tabloid-sized booklet, Living with Fire, that explains fire behavior in the South and examines, in some detail, ways to protect Southern homes and communities from wildfire.

The SGSF commissioned a Southern Wildfire Risk Assessment to be delivered in FY06. The Communications Committee began planning a campaign to publicize results of the Risk Assessment.

**Prevention Team Support**

Creative Services designed and produced additional material for distribution by S.C. prevention teams.

**Web**

An Accessibility Plan for SCFC's website was submitted to the state's oversight committee. Most required improvements had already been made. Those remaining were completed.

## **Publications**

The Forestry Commission completed a third revision of its Strategic Plan.

## **Outreach**

The USDA Forest Service schedules a program review in South Carolina every five years. This year the Coordinator highlighted the SCFC's law enforcement program's outreach efforts, especially in the areas of timber theft and fraud.

## **Environmental Education**

It is the responsibility of the Environmental Education Coordinator's position to plan, develop, support, and coordinate the Forestry Commission's environmental education effort. The Coordinator oversees the development of Harbison State Forest's Environmental Education Center and serves as State Coordinator of Project Learning Tree (PLT), which is an international environmental education program designed for students in pre-kindergarten through high school. The S.C. PLT Coordinator is also a trained mentor to other state PLT programs throughout the nation and serves as a team leader in conducting Best Management Practices Self Assessment techniques for other state PLT programs. The Coordinator also represents the Commission on the Coalition for Natural Resource Education and various other committees involved with environmental education throughout the state.

Last fiscal year (July '05 to June '06) SC PLT conducted 19 professional development workshops throughout the state to train 325 teachers. In addition, PLT participated in 4 exhibits and/or presentations at various functions across the state to reach approximately 1600 participants. SC PLT received two grants with the national PLT office to conduct workshops in "Energy & Society", a new PLT curriculum that teaches the basics of energy, energy conservation, and renewable vs. non-renewable energy alternatives (including biomass) and the "Burning Issues" interactive CD curriculum. This program was sponsored by BLM and uses technology for students to learn ecological principals related to fire ecology, the importance of prescribed fire, and how to maintain a fire safe home in the wildland/urban interface. The coordinator also obtained EETAP grants to correlate Project Learning Tree curriculum materials to the new State Department of Education curriculum standards in science and social studies. Since PLT was brought to South Carolina, over 16,000 educators throughout the state have been trained in the use of PLT materials for their classrooms. The state PLT program continues to gain national prominence. In the last 7 years, six state PLT Educators have been selected as National PLT Outstanding Educators of the Year.

The Forestry Commission was instrumental in assisting the training and conducting of this year's Envirothon competition. The Envirothon is a program for high school students to learn more about our natural environment. The Envirothon tests the student's knowledge on topics such as soils, water resources, forestry, wildlife, and current environmental issues. James Miller, Forest Director for Harbison State Forest served on the steering committee, establishing contacts and training throughout the state, teaming our Commission employees and high school teams in their areas, along with conducting a training session for the teachers and coordinating the forestry part of the competition and test.

The Wood Magic Forest Fair was again successful this year. This event was held at Harbison State Forest in Columbia, the Piedmont Forestry Center in Oconee County, and Sewee Visitor's Center in Charleston County. The program involved approximately 1937 students and 575 teachers and adult chaperones. One hundred one school applications were received to attend the Wood Magic Forest Fair program this year. Demand continues to exceed the capacity of this popular education program. The South Carolina Forestry Commission, S. C. Forestry Association and the USDA Forest Service jointly sponsor SC's Wood Magic Forest Fair program, with the Forestry Commission serving as the key partner for logistics and recruitment. Over 43 other organizations, forest industry, and state agencies also contributed to the success of this award-winning program. Since the Wood Magic Forest Fair program first began in 1999, approximately 15,978 children and adults have participated in this forestry event.

The Forestry Commission was also a key partner in the SC Teachers' Tour Coalition, an association of forest

industry representatives, state and federal agencies. This coalition conducted the SC Teachers' Tour in the Low Country area in June of this year. This successful tour provided 25 teachers with a first-hand experience of the forest industry and forest management. These educators received training, resources and information to conduct lessons in sustainable forestry for their students. Many participants received 3-hours of non-degree graduate credit for their efforts. The Environmental Education Coordinator serves as an adjunct professor for the University of Charleston in order to obtain this credit for the educators. Since the Teachers' Tour first began in 1998, approximately 268 educators have participated in this forestry education program.

Using the Title III Proposal under the Rural Schools and Community Self-Determination Act of 2000, a partnership has been developed between the Education & Information Technology Division of the Commission and the Clemson Cooperative Extension Service to use the Piedmont Forestry Center in Oconee County to conduct natural resource based environmental education classes for schools in the Oconee County area. Last year 11 programs were conducted for 601 students and 59 teachers and adults from Oconee County schools at the Piedmont Forestry Center. This was the third year for this program. The Forestry Commission continues to be a strong supporter of the Coalition for Natural Resources' environmental education efforts throughout the state. Foresters are trained to help conduct Teaching KATE (Kids About The Environment) environmental education lessons in forestry at Camp Cooper in Clarendon County.

### **Environmental Education at Harbison State Forest**

Harbison Environmental Forest, located within the city limits of Columbia, contains 2,176 acres. This tract is being managed as a public greenspace to emphasize environmental and forestry education, demonstrate forest management practices, and serve as a forest recreational area. The forest is open seven days a week, with estimated annual attendance of 75,000 – 80,000.

Harbison's staff and other SCFC employees associated with Harbison conducted 19 programs this past year, serving approximately 2086 participants. Fourteen programs were conducted at Harbison, with 1178 participants and 5 programs were conducted outside of Harbison by the staff, serving approximately 2064 participants. This figure does not include the Wood Magic Forest Fair held at Harbison in October, where 627 children and 153 adults participated.

Harbison continues to offer support to the Scouting community. Seven Cub Scout programs were held where approximately 75 young scouts earned their Forestry pins, accompanied by 30 adult leaders. The Boy Scout Forestry Merit Badge Program offered by Harbison staff in the fall had 60 scouts and 10 adult leaders participate to earn this scouting badge.

The Harbison Environmental Education Center is a 5,000 square foot log building containing three offices, a small conference room, a screened porch, a large deck and a 100-seat conference room. The conference rooms at the Center are offered free to groups or agencies conducting environmental education workshops or classes. The Center was used 26 days in the last fiscal year to conduct environmental education events, with approximately 2339 people attending these events. These include programs directly or jointly sponsored by the SCFC such as Project Learning Tree educator and facilitator workshops, the Wood Magic Forest Fair, the S.C. Teacher's Tour, the State Department of Education's SEER EIC program for teachers, the Coalition for Natural Resource Education meetings, Environmental Education Association of South Carolina annual cooperators meeting, and the Soil and Water Conservation Districts training. Twenty-three other events and meetings related to forestry were also held at no charge at the Harbison Environmental Education Center and were attended by approximately 1017 participants. The Harbison Environmental Education Center remains an important hub for the Forestry Commission's education mission as well as other cooperative environmental educational entities.

# ADMINISTRATION

## South Carolina Forestry Commission Financial Statement Fiscal Year 2005 - 2006

### REVENUES

<b>State Appropriations</b>	14,577,410
<b>Federal Grants</b>	5,591,851
<b>Earmarked Funds</b>	
Hunting & Fishing License	98,073
Refund of Prior Year Expenditure	29,176
Burning Assistance Fee	131,050
Fire Lane Fee	112,526
Timber Marking Fee	37,363
Training Conf - Registr Fee	18,396
User Fee - State Park & Forest	105,284
Miscellaneous Fee - Field Trial	1,710
Forest Product Assessment	860,783
Construction of Water Bar	5,765
Stand By for Prescribed Burning	2,413
Sale of Seedlings	673,825
Sale of Timber	2,166,867
Conviction Surcharge	19,767
Rent - Residence	37,922
Rent - Farm Land	75,229
Rent - State Owned Property	107,937
Rent - Equipment	2,785
Contributions & Donations	898
Insurance Claims	16,023
Sale of Services	113,977
Sale of Publications	15
Sale of Materials & Supplies	1,663
Sale of Recycling Material	96
Surety Bond Deposit	4,440
Capital Projects	200,000
Sale of Assets	366,332
<b>Total Earmarked</b>	\$5,190,315
<b>Total Revenue</b>	\$25,359,576

### EXPENDITURES

State	14,393,147
Federal	5,559,963
Earmarked	4,839,967
Permanent Improvements	46,708
<b>Total Expenditures</b>	\$24,839,785
<b><u>EXCESS OF REVENUE O/(U) EXPENDITURES</u></b>	\$519,791

\*State Appropriations Includes \$269,353 Carryforward Funds

## **OFFICE OF THE STATE FORESTER**

### **INFORMATION OFFICER**

The Information Officer is charged with generating news media coverage of SCFC activities and responding to reporters' inquiries.

During the year, the Information Officer wrote and distributed 80 press releases. Some releases were for statewide distribution; others covered specific local events and were released only to the appropriate local media. In addition, two op-ed pieces were distributed to newspapers and four articles were released to special interest publications.

As the agency's unofficial archivist, the Information Officer continued to compile historical information significant to the agency.

Throughout FY 06, the Information Officer also served as adjutant to the Chief Law Enforcement Officer. A significant accomplishment was publication of the agency's first Law Enforcement Manual.

### **INTERNAL AUDIT**

The Internal Audit Department is an independent appraisal function that examines and evaluates the adequacy and effectiveness of Commission activities as a service to all levels of Management and the Commissioners. Emphasis is on auditing the agency's activities, processes, systems, and operations to ascertain efficiency in quality services.

During this fiscal year an audit was performed of Security. A follow-up audit of Workers' Compensation was also performed. Equipment custodians were responsible for verifying their own fixed assets this fiscal year with the knowledge that spot checks would be performed by Internal Audit. Internal Audit verified 10% of the agency' custodians' inventories. Other activities include: periodic inventories of shop supplies at regional shop locations and fiscal year-end inventories of shop supplies in select locations.

The Internal Audit Department was also aware and involved where applicable in reviews performed by external sources including the State Auditor's Office and State Fleet Management. Memorandums are prepared and submitted to Management noting various issues that warrant attention.

The Internal Auditor has obtained adequate training to maintain compliance with the continuing education requirements of the Government Auditing Standards.

During Fiscal Year 2005-2006, the Internal Auditor has served on the Peer Review Committee for the South Carolina State Internal Auditors Association. She has also served as team leader in the performance of a peer review for the Internal Audit Department of the Department of Health and Environmental Control.

### **RECORDS MANAGEMENT**

The Internal Audit Department oversees the Records Management System for the Commission. The Internal Auditor serves as Records Officer. We have Record Liaison Officers selected based on the organizational structure of the Commission. The Records Officer is responsible for training the Record Liaison Officers. Such training is performed periodically to ensure consistency and continuity. In addition, the Record Liaison Officers are kept abreast of other training opportunities available.

During Fiscal Year 2005-2006, a total of 66 cubic feet of official records were destroyed in accordance with the retention schedules approved by the South Carolina Department of Archives and History. This total does not include the destruction of copies.

During Fiscal Year 2005-2006, the Records Officer served on the Awards Committee for the South Carolina Public Records Association. She also served as the Recorder for the Midstate Region and was awarded the Midstate Region Service Award by the members of the Midstate Region.

# South Carolina Forestry Commission Organizational Chart

