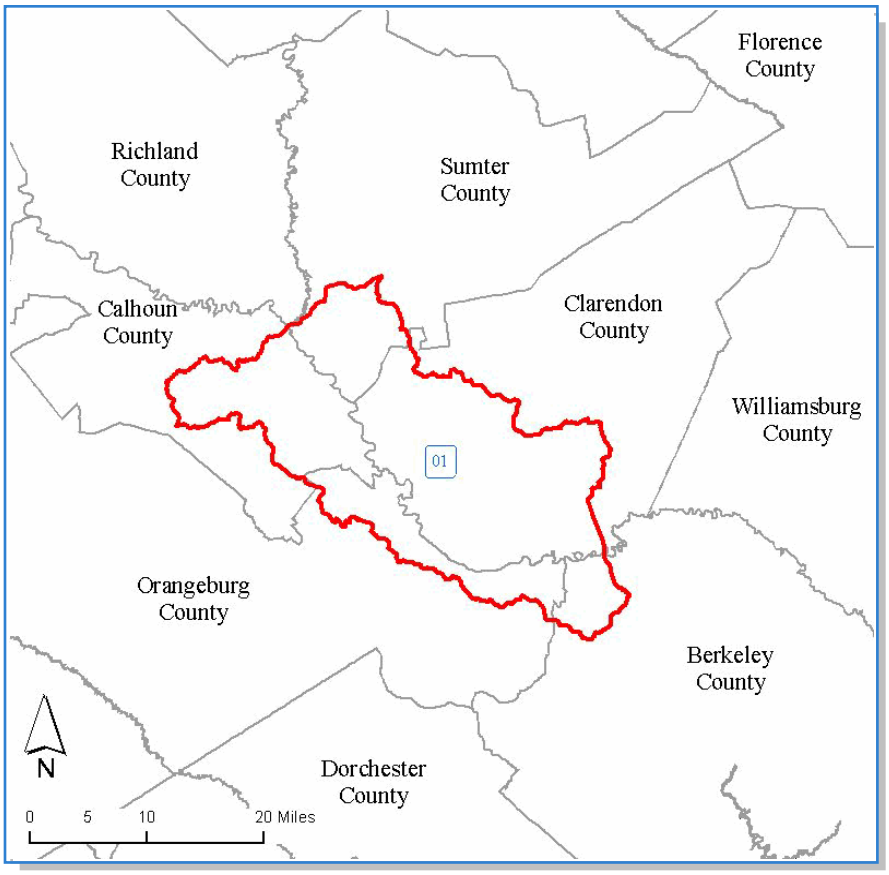
LAKE MARION Subbasin

August 31, 2007

An Assessment of the Lake Marion Subbasin

Hydrologic Unit Code (8 Digit): 03050111



WATERSHED (10-digit HUC)
(E.g., 01 = 0305011101)

01 Lake Marion-Santee River

NRCS
Natural Resources
Conservation Service

EXECUTIVE SUMMARY

Watershed Description

This subbasin forms at the confluence of the Wateree and Congaree rivers converge, forming the Santee River which runs into the head of Lake Marion (Figure 1). The subbasin is named for Lake Marion, the largest lake in South Carolina, covering 110,000 acres and operated by the South Carolina Public Service Authority (Santee Cooper); the lake is known for its big fish and abundant wildlife. The subbasin drains 548 square miles or 350,905 acres.

The subbasin lies in the Southeastern Plains (65) and Middle Atlantic Coastal Plain (63) ecoregions (Figure 1). A brief description of the Level III ecoregions in this watershed is available in this document's appendix. A more detailed description of the Level III and Level IV Common Resource Areas (Ecological Regions) is available online (See Griffith *et al.* 2002 in References section.).

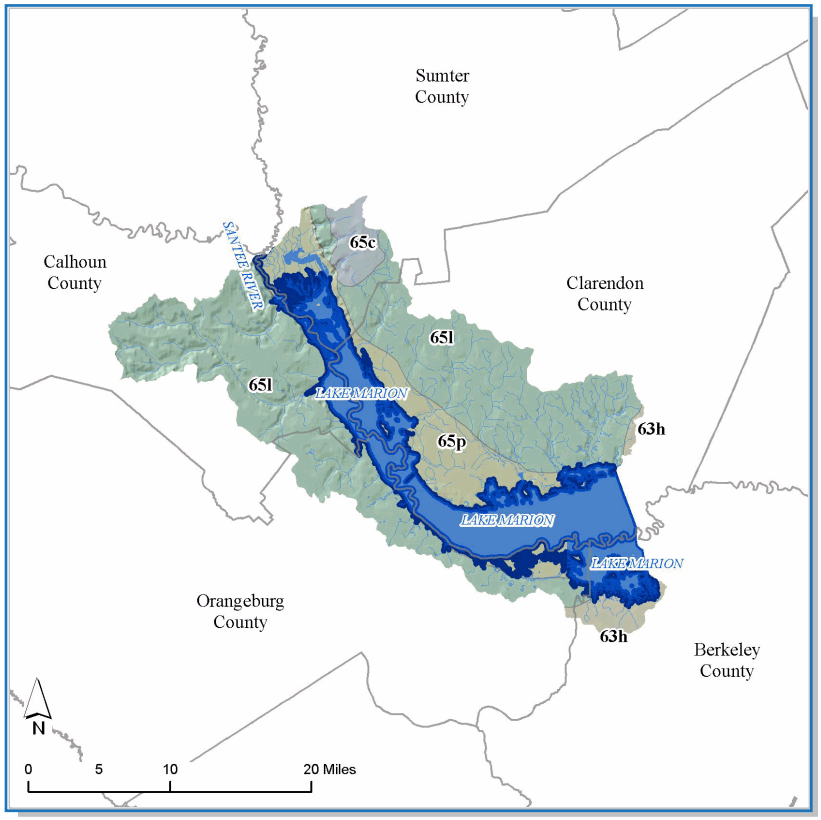


FIGURE 1:
LEVEL IV ECOLOGICAL REGIONS

	63h	Carolina Flatwoods
	65c	Sand Hills
	65l	Atlantic Southern Loam Plains
	65p	Southeastern Floodplains and Low Terraces

EXECUTIVE SUMMARY

Land Use/Land Cover

There is negligible urban area in the subbasin with land use largely following ecoregion boundaries. The USAF gunnery range in the northern corner of the watershed is primarily on the sand hills while the Santee State Park lies on Lake Marion and in the surrounding floodplains and low terraces. Note that much of the area under "Parks and Lands Under Easement" category is in fact the surface water of Lake Marion. Almost all agricultural land lies in the Atlantic Southern Loam Plains where soils are deep and well drained. Most of the land is dedicated to cropland. According to the NASS 2002 Agricultural Census, Clarendon county was the top producing county in the state for corn for grain.

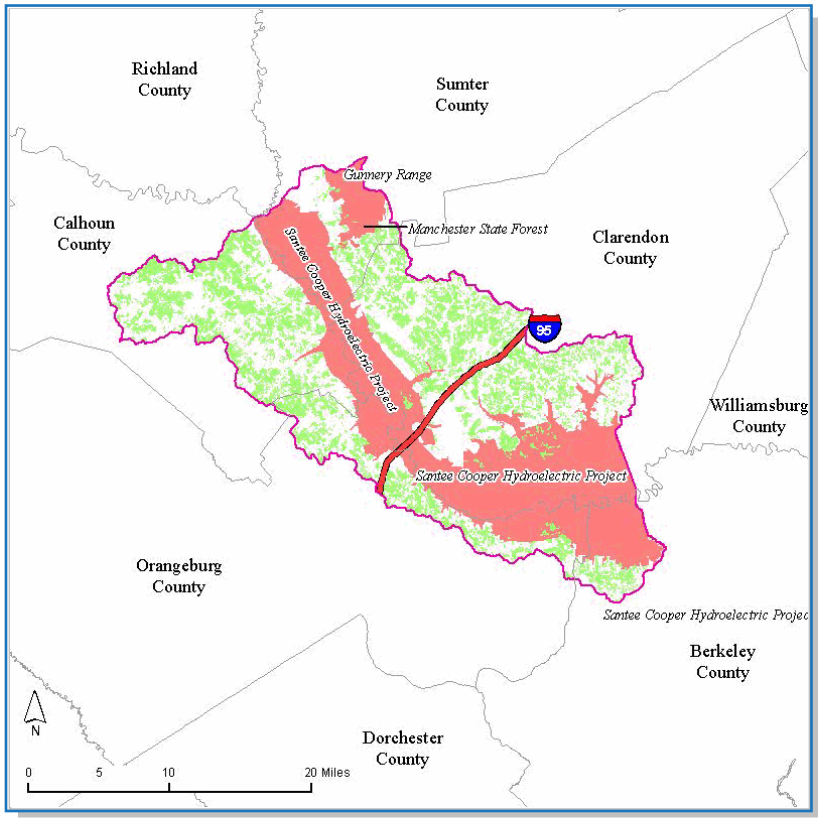


FIGURE 2:
MAJOR LAND USE/LAND COVER CATEGORIES

- FSA Farm Fields
- Urban Areas
- Parks & Land Under Easement
- Other Land

Table 1:
MAJOR LAND USE/LAND COVER CATEGORIES

	Acres	% of Watershed
Watershed (Total)	350,905	-
Urban Area	-	-
Parks/Land Under Easement (not NRCS)	130,576	37%
Farm Service Agency Designated Farm Fields	87,804	25%

EXECUTIVE SUMMARY

Table 2:
AGRICULTURAL LAND USE: FSA ACREAGE AND ESTIMATED FARM FIELD USE FROM THE 2002 AG CENSUS
(NASS Whole County Data Used. Cropland includes: Field Crops, Orchards, and Specialty Crops.)

County	FSA Fields (Acres)	% Pasture (Estimated)	% Cropland (Estimated)	% Hayland (Estimated)
Berkeley	2,987	16%	76%	9%
Calhoun	29,879	3%	92%	4%
Clarendon	37,020	3%	94%	3%
Orangeburg	14,098	7%	86%	7%
Sumter	3,819	7%	88%	5%

Summary of Resource Concerns

The following is a summary of resource concerns for the watershed. Each resource concern has a more detailed analysis provided in its corresponding section.

EXECUTIVE SUMMARY

Soils
Land capability limitations are dominated by droughtiness, wetness, and erosion in the Lake Marion subbasin and all are key resource concerns. Droughty, sandy soils in the Sand Hills occur in about 28% of the subbasin. Hydric soils, or partially hydric soils, comprise 26% of the subbasin. Highly erodible soils (5%) are confined to sloping soils west of Lake Marion while potentially highly erodible soils (15%) occur in soils on uplands north of Lake Marion.

Water Quantity
Awaiting SCDNR's 2007 state water assessment.

Water Quality
Total phosphorus and fecal coliform impairments.

Plant Condition
The subbasin is prominent for corn and wheat (grain), soybeans and vegetable crops.

Due to the shallow depth and high nutrient level of the lake, aquatic macrophytes have proliferated and public access has been restricted.

Fish, Wildlife and Native Plants
According to SC DNR's "Comprehensive Wildlife Conservation Strategy: 2005 - 2010" (see SCDNR 2005 in References section), the following applies to this subbasin: Biologists have identified habitat protection as one of the most important actions to ensure the protection of South Carolina priority species. Loss and fragmentation of habitat have been identified as a major threat to many of the species listed as threatened and endangered in South Carolina.

Domestic Animals
Grazing livestock and confined livestock (mainly poultry) populations are modest in comparison to other subbasins.

Economic and Social Factors
There are pockets of residential development along the lake in Orangeburg and Clarendon counties, used as both permanent and vacation homes. A large portion of the homes are using septic systems. Most of the development has occurred between the Towns of Santee and Eutawville. It is expected that trend will continue, as the area is marketing itself as a recreation destination.

EXECUTIVE SUMMARY

Progress on Conservation

Table 3:
A SUMMARY OF NRCS APPLIED CONSERVATION TREATMENTS (ACRES)
(See Appendix for NRCS Conservation Practices used for Conservation Treatment Categories.)
(Applied practice data is reported on a fiscal year basis commencing on October 1st)

Conservation Treatments	2004	2005	2006	Total
Buffers and Filter Strips	-	8	4	12
Conservation Tillage	2,548	-	1,194	3,742
Erosion Control	1,390	3,009	749	5,148
Irrigation Water Management	10	221	-	231
Nutrient Management	1,826	1,732	195	3,753
Pest Management	668	1,307	249	2,224
Prescribed Grazing	-	-	-	-
Trees and Shrubs	844	92	113	1,048
Wetlands	-	19	-	19
Wildlife Habitat	548	387	395	1,330

Table 4:
LANDS REMOVED FROM PRODUCTION BY FARM BILL PROGRAMS (WHOLE COUNTY DATA SHOWN)

County	Conservation Reserve Program (ac) 2005	Conservation Reserve Program (ac) 1986 - 2005	Grassland Reserve Program (ac) 2005	Farmland & Ranch Protection Program (ac) 2005	Wetland Reserve Program (ac) 2005
Berkeley	825	14,139	-	-	-
Calhoun	7,022	252,431	-	-	2,908
Clarendon	10,367	111,412	-	-	6,184
Orangeburg	21,142	488,064	-	-	3,819
Sumter	10,246	138,931	83	921	4,649

Table 5:
APPROVED TOTAL MAXIMUM DAILY LOAD (TMDL)
(See SCDHEC 2007 (a) in Reference Section.) - SCDHEC Contact: Matt Carswell - (803) 898-3609

TMDL Document	Numberof Stations	Parameter of Concern	Status	WQMS ID Standard Attained
Chapel Branch Creek	-	Fecal Coliform	Approved & Implementing	-
Halfway Swamp	5	Fecal Coliform	Completed & Approved	-

Table 6:
OTHER PLANS, ASSESSMENTS, AND PROJECTS IN THE WATERSHED

Organization	Description	Contact	Telephone
USGS	Santee National Water Quality Assessment (NAWQA) project	Celeste A. Journey	803-750-6141
SCDHEC	Watershed Water Quality Assessment: Santee River Basin (2005)	Andy Miller	803-898-4031

RESOURCE CONCERNS

Other Watershed Considerations

Santee Cooper FERC Relicensing

Hydroelectric projects require licenses issued by the Federal Energy Regulatory Commission in order to operate. These licenses require reevaluation periodically in order to incorporate new information for the protection of the common good and typically last from 30 to 50 years. In addition to economic factors, a wide variety of natural resource elements can be considered, including reservoir water quality, downstream water quality, fisheries issues, flow issues, and shoreline management issues. State and federal agencies as well as citizens and nonprofit groups have been meeting to discuss these issues in the Santee Cooper relicensing process. (Source SCDHEC watershed evaluation of Santee and Lake Marion)

RESOURCE CONCERNS

Soils

Droughtiness is one of the major concerns occurring in about 28% of the area (Table 7) and occurs mostly in the sandy soils of the Sand Hills in the upper part of the subbasin (Figure 1). Low soil organic matter in these sandy soils is a soil health concern. One-quarter of the land area in this Coastal Plain subbasin has limitations due to wetness (Table 7). Most of the wetness is associated with hydric and partially hydric soils along streams in riparian areas (Figure 5, Table 10). Erosion is a resource concern in Orangeburg County in the Atlantic Coastal Loam Plains area west of Lake Marion (Figure 4). Only 20% of the land is classified as highly erodible or potentially highly erodible (Table 9). Almost 55% of the land in the Lake Marion subbasin is either prime farmland (31%) or statewide important farmland (24%) and occurs on upland areas in the subbasin (Figure 3, Table 8). The largest area of land that is not prime farmland is in the Sumter County portion of the subbasin and small areas west of Lake Marion.

Table 7:
LAND CAPABILITY CLASSES (See NRCS 2007 [a] and [b] in References section.)

Percentages are based on the whole watershed (350,905 ac).

Land Capability Class 1	Acres	Percent
1 - Slight limitations	36,131	10%

	% Land by Subclass Limitation					
	Erosion (e)		Wetness(w)		Droughtiness (s)	
Land Capability Classes 2-8	**Acres**	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**
2 - Moderate limitations	36,019	10%	32,740	9%	33,532	10%
3 - Severe limitations	4,852	1%	41,029	12%	11,257	3%
4 - Very severe limitations	3,863	1%	2,173	1%	14,545	4%
5 - No erosion hazard, but other limitations	-	-	1,468	0%	-	-
6 - Severe limitations; unsuitable for cultivation; limited to pasture, range, forest	177	0%	9,175	3%	7,136	2%
7 - Very severe limitations; unsuitable for cultivation; limited to grazing; forest, wildlife habitat	-	-	4,085	1%	1,532	0%

RESOURCE CONCERNS

Prime Farmland

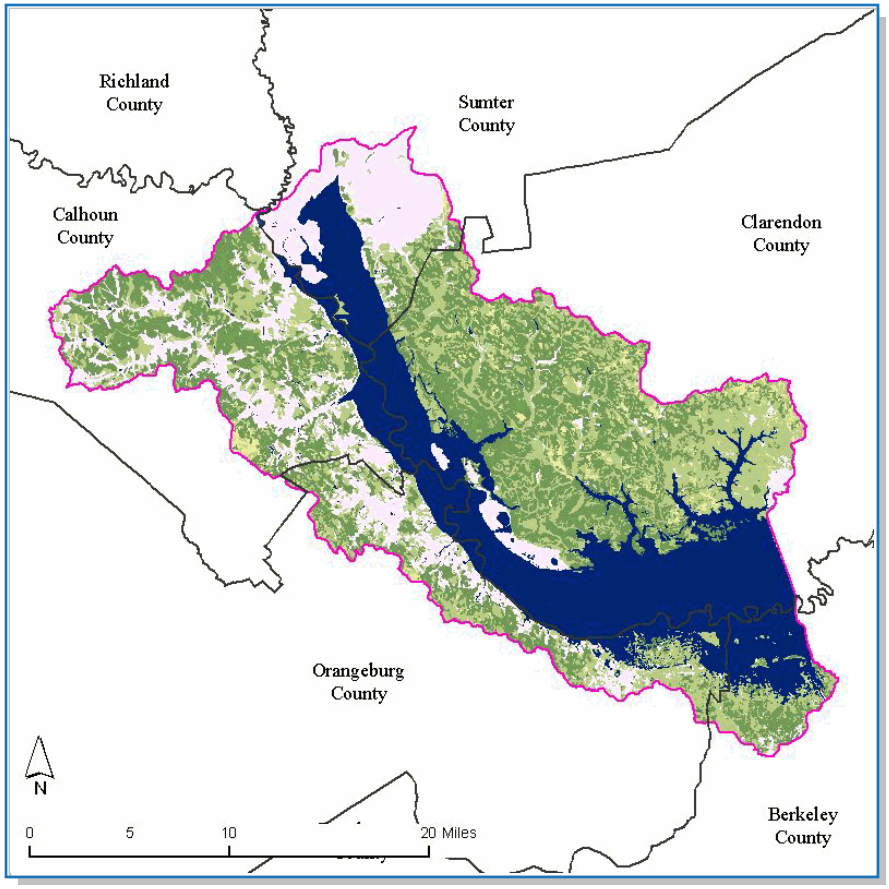


FIGURE 3:
PRIME FARMLAND
(See NRCS 2007 [a] and [b] in References section.)

Table 8:
PRIME FARMLAND

Prime Farmland Categories	Acres	Percent of Land
All areas are prime farmland	100,392	29%
Farmland of statewide importance	83,593	24%
Not prime farmland	159,101	45%
Prime farmland if drained	7,704	2%
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	24	0%
Prime farmland if irrigated	0	0%
Prime farmland if irrigated and drained	0	0%
Prime farmland if protected from flooding or not frequently flooded during the growing season	92	0%

RESOURCE CONCERNS

Highly Erodible Land

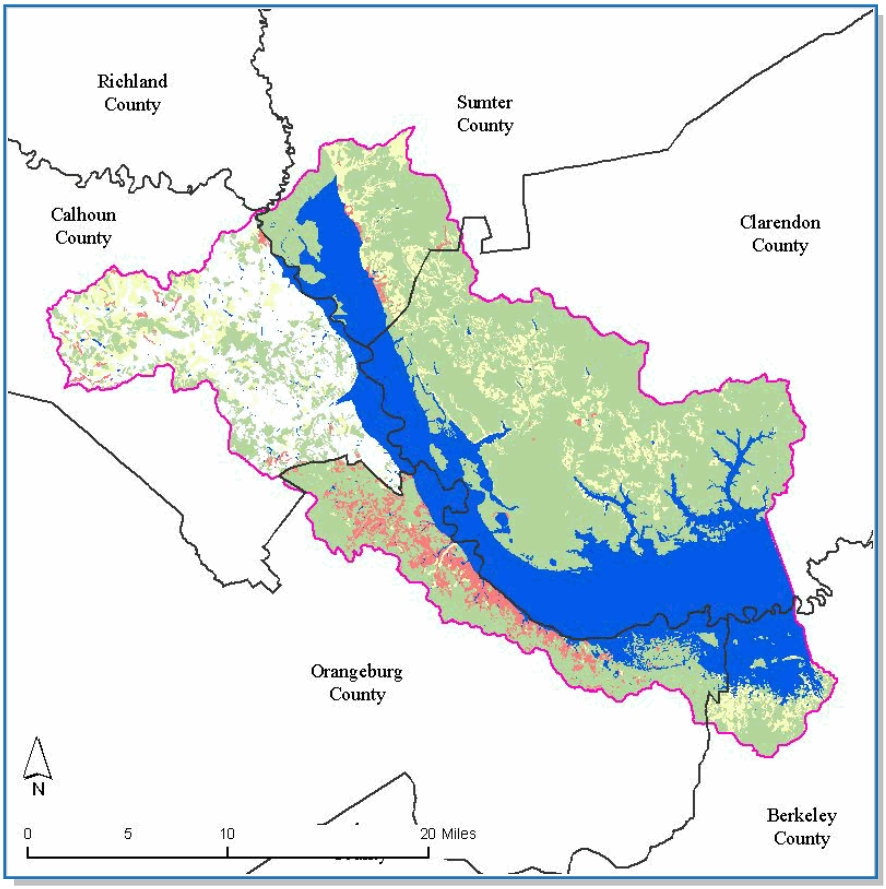


FIGURE 4:
HIGHLY ERODIBLE LAND
(See NRCS 2007 [a] and [b] in References section.)

Table 9:
HIGHLY ERODIBLE LAND

Highly Erodible Land Categories	Acres	Percent of Watershed
Highly erodible land	10,915	3%
Not highly erodible land	171,202	49%
Potentially highly erodible land	32,106	9%

RESOURCE CONCERNS

Hydric Soils

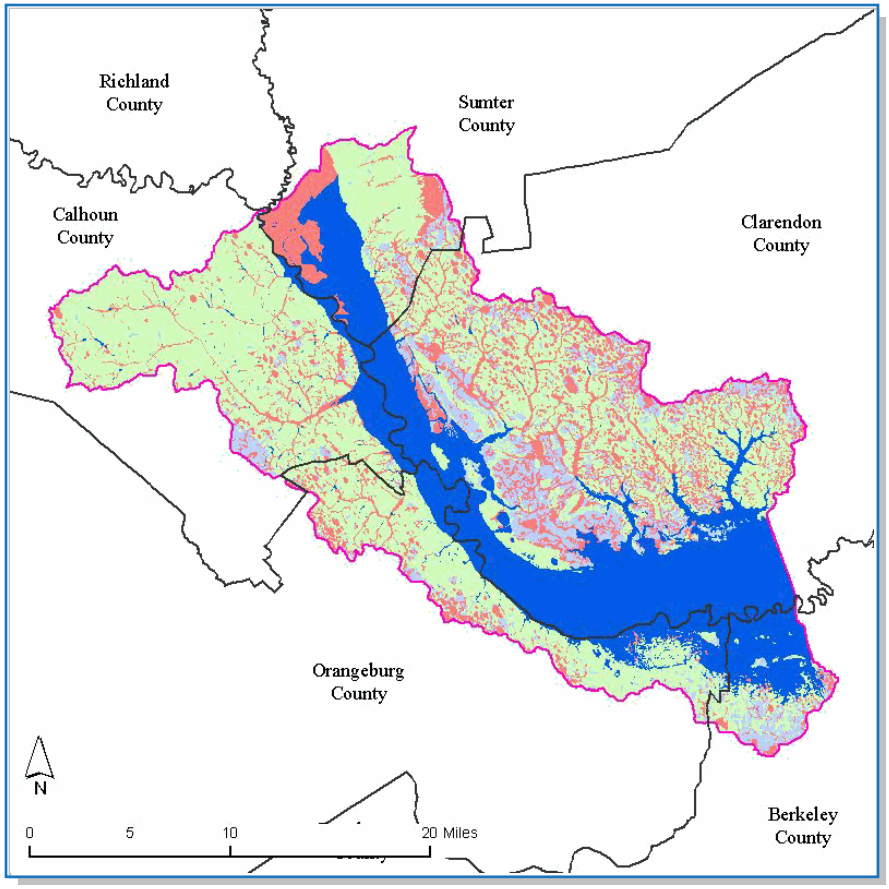


FIGURE 5:
HYDRIC SOILS
(See NRCS 2007 [a] and [b] in References section.)

Table 10:
HYDRIC SOILS

Hydric Soils Categories	Acres	Percent of Watershed
All Hydric	56,226	16%
Not Hydric	259,144	74%
Partially Hydric	35,535	10%

RESOURCE CONCERNS

Water Quantity

Narrative awaiting SCDNR's new state water assessment.

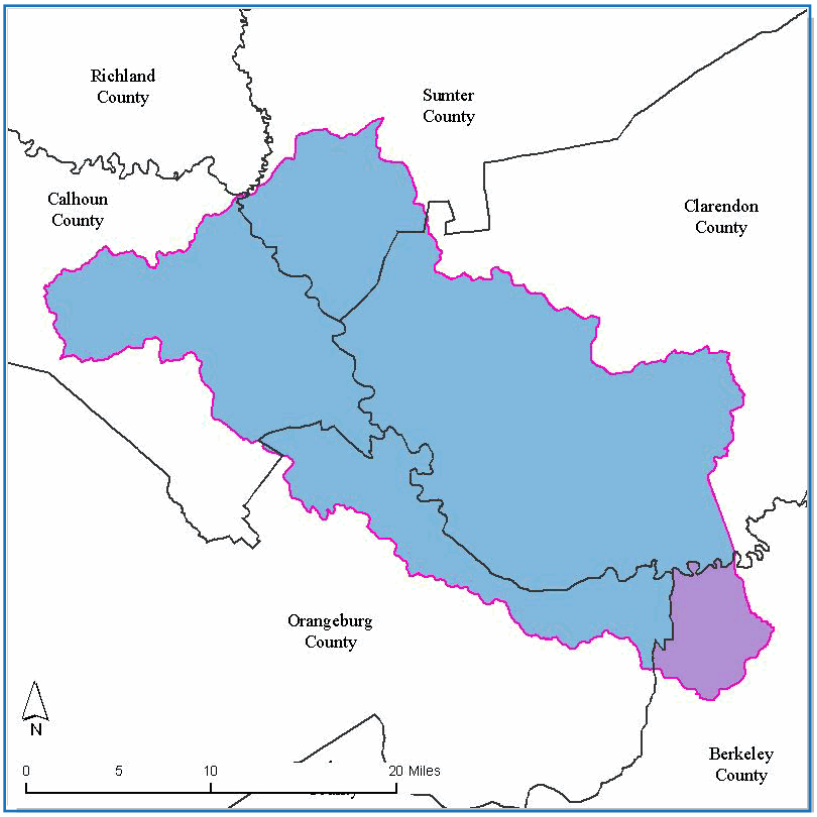


FIGURE 6:
WATERSHED RELATIVE TO CAPACITY USE AREAS, NOTICE OF INTENT AREAS, AND CONES OF DEPRESSION

Table 11:
CAPACITY USE, NOTICE OF INTENT, AND CONES OF DEPRESSION AREA IN WATERSHED
(See SCDHEC 2007 [c] and SCDNR 2004 in Refrerences Section.)

Area	Percent of Watershed
% Watershed in Cone of Depression and Capacity Use (CU) Area	0%
% Watershed in SCDHEC Capacity Use (CU) Area	6%
% Watershed in SCDHEC Notice of Intent (NOI) Area	94%

RESOURCE CONCERNS

Water Quantity Cont.

Table 12:
INDICATORS OF IRRIGATION WATER USAGE (WHOLE COUNTY DATA ARE USED)
(See NASS 2002 and SCDNR 2004 in References Section)

County	Total Irrigated Water Used MGD	Total NASS Cropland (ac)	Cropland Under Irrigation (ac)	Percent Cropland Under Irrigation	Water Use Gal/Ac/Day for Irrigated Land
Berkeley	1.83	17,389	602	3.5	3,040
Calhoun	21.20	56,296	4,617	8.2	4,592
Clarendon	5.72	91,881	1,704	1.9	3,357
Orangeburg	47.60	156,637	16,808	10.7	2,832
Sumter	13.18	85,223	5,537	6.5	2,380

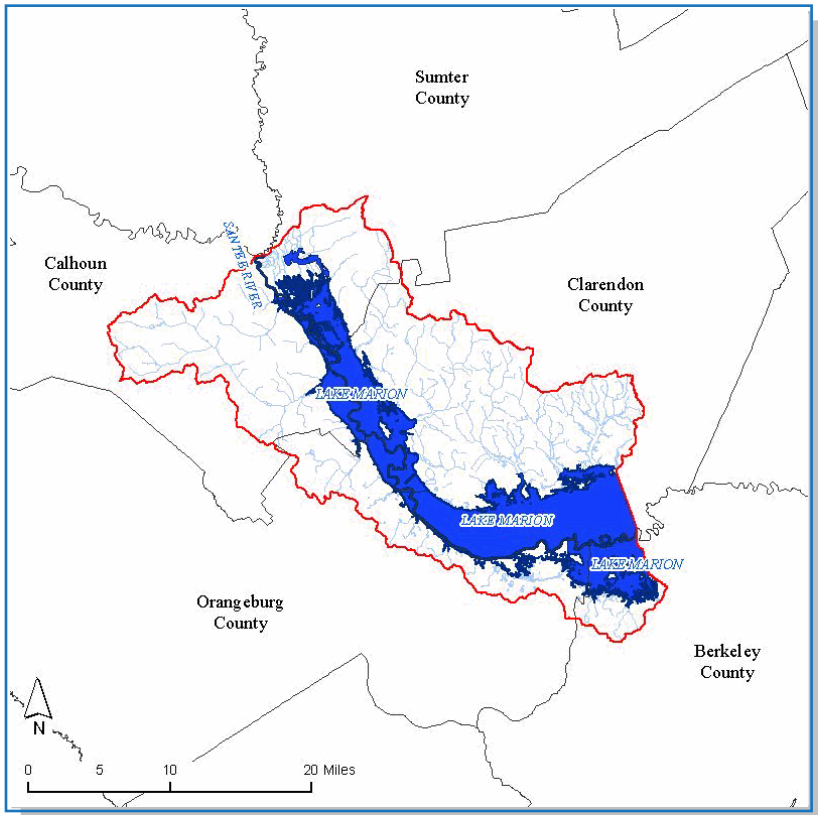


FIGURE 7:
NRCS ASSISTED FLOOD CONTROL STRUCTURES IN WATERSHED

- Flood Control Structure
- Main River
- Hydrography

Table 13:
NRCS IMPLEMENTED FLOOD CONTROL STRUCTURES

Number of Structures (in Watershed)	Maximum Storage (AcFt)	Number of Structures by Hazard Class			
		High	Low	Significant	Unclassified
0	-	0	0	0	0

RESOURCE CONCERNS

Water Quality

The number of surface water quality impairments is shown in Table 15 resulting in a "303(d)" listing of that Water Quality Monitoring Site (WQMS). Table 5 indicates what progress has been made to address surface water quality through the Total Maximum Daily Load (TMDL) process. Once a TMDL plan is approved, the WQMS is removed from the 303(d) list even though the standard may not have been attained. Note that standards for total nitrogen, total phosphorus, and chlorophyll-a only exist for lakes; therefore, no stream in the state can be listed for any of these three parameters.

The most frequent impairments in are for total phosphorus and fecal coliform. (Table 15).

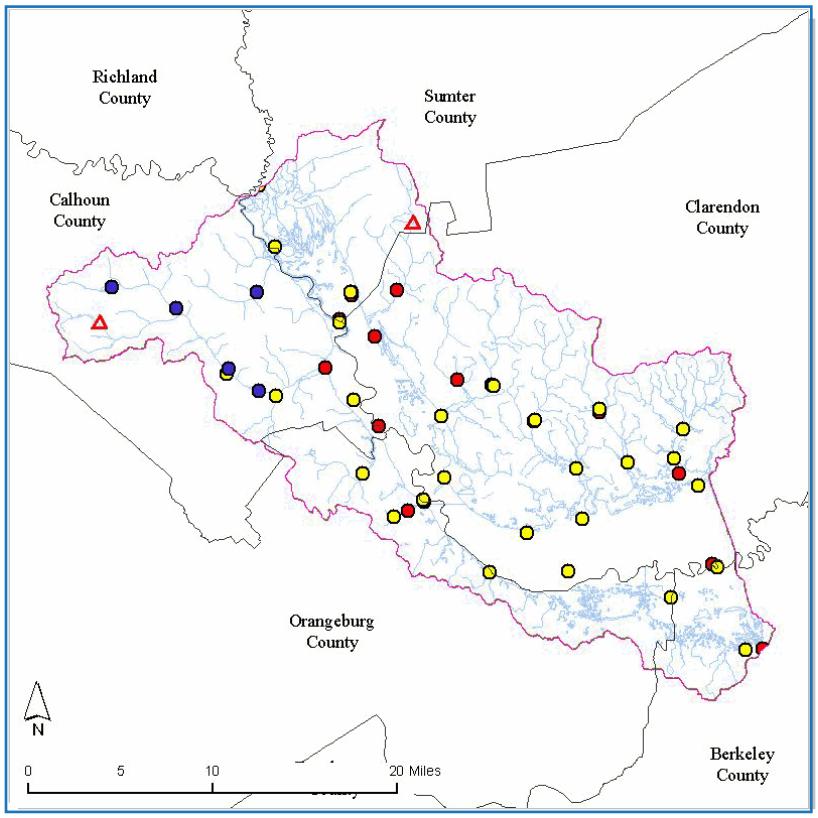


Table 14:
WATER QUALITY MONITORING SITES

Permanent Water Quality Monitoring Sites (WQMS)	47
Random Water Quality Monitoring Sites (WQMS)	27

FIGURE 8:
PERMANENT WATER QUALITY MONITORING SITES

- WQMS (No Impairment)
- WQMS (303d Listed)
- WQMS (Approved TMDL)
- Waste Water Treatment Plant
- Hydrography
- Hydrologic Unit Code 10 Boundary

Table 15:
NUMBER OF MONITORING SITES SHOWING SURFACE WATER QUALITY IMPAIRMENTS
(See SCDHEC 2006 in References for the state 303(d) list.)

Recreational Use Standard

Parameter	Impairments
Fecal Coliform	7

Fish Tissue Standard

Parameter	Impairments
Mercury	6
PCB's	0

Shellfish Harvest Standard

Parameter	Impairments
Fecal Coliform	NA

Aquatic Life Use Standard

Parameter	Impairments	Parameter	Impairments	Parameter	Impairments
Biological	3	Dissolved Oxygen	4	Total Phosphorus	8
Chlorophyll A	1	Ammonia Nitrogen	0	pH	3
Chromium	0	Nickel	0	Turbidity	1
Copper	1	Total Nitrogen	1	Zinc	0

RESOURCE CONCERNS

Plant Condition

Plants of Economic Importance

Plants of economic importance are shown in Table 16. The crops shown in this table are from NASS data where the top five crops, by acres, in each county are displayed. The timber statistics (see Clemson Extension Forest Services 2003 in References) indicate the relative importance of the timber industry within the state and the importance of the timber industry compared to agriculture within the county.

The most prominent crops in the subbasin include corn and wheat for grain, soybeans and vegetables.

Native Plant Species

According to SC DNR's "Comprehensive Wildlife Conservation Strategy: 2005 - 2010" (see SCDNR 2005 in References section), the following applies to this subbasin: upland areas consist of forests dominated by hardwoods, primarily with oaks and hickories, and typically on fire suppressed upland slopes near river floodplains or between rivers and tributaries. Vegetation composition is similar to oak-hickory forest in the Piedmont, where it is a major vegetation type. Representative canopy trees are: white oak (*Quercus alba*), black oak (*Quercus velutina*), post oak (*Quercus stellata*), mockernut hickory (*Carya tomentosa*), pignut hickory (*Carya glabra*), loblolly pine (*Pinustaeda*), flowering dogwood (*Cornus florida*) and black gum (*Nyssa sylvatica*).

In the river bottoms on the coastal plains, one frequently finds hardwood-dominated woodlands with moist soils that are usually associated with major river floodplains and creeks. Characteristic trees include: sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), water oak (*Quercus nigra*), willow oak (*Quercus phellos*), laurel oak (*Quercus laurifolia*), cherrybark oak (*Quercus pagoda*) and American holly (*Ilex opaca*).

Aquatic Species

Due to the shallow depth and high nutrient level of the lake, aquatic macrophytes have proliferated and public access has been restricted. Hydropower generation and recreation have been impaired by the plants. Treatment measures have included aquatic herbicides and/or grass carp stocking since 1989 to the present. Aquatic herbicide continues to be applied to upper, mid, and lower lake regions to reduce problem plant populations and to reduce impacts to public accesses, recreational uses, irrigation withdrawals, navigation, and water quality. Some of the areas recently treated include the Santee State Park Swimming Lake (2001, 2004, 2005), Church Branch Impoundment (2001-2004), Fountain Lake (2001-2004), and Dean Swamp Impoundment (2001-2004).

RESOURCE CONCERNS

Table 16:
WHOLE COUNTY DATA OF PLANTS OF ECONOMIC IMPORTANCE IN SUBBASIN
(See: USDA NASS 2002 & Clemson University Forest Extension Services 2003 in References section)

Plant	Counties
All Cotton	Clarendon, Calhoun, Orangeburg, Sumter
All Vegetables harvested	Clarendon
All Wheat for grain	Calhoun, Orangeburg, Clarendon, Sumter
Corn for grain	Calhoun, Berkeley, Clarendon, Sumter, Orangeburg
Forage - land used for all hay and haylage, grass silage, and greenchop	Orangeburg, Calhoun, Berkeley, Sumter
Soybeans	Clarendon, Sumter, Orangeburg, Calhoun, Berkeley
Timber Revenues Exceed Ag. Revenues	Berkeley

Table 17:
FEDERALLY LISTED THREATENED AND ENDANGERED PLANT SPECIES IN WATERSHED
(See USFW 2006 in References section.)

Common Name	Latin Name	Status
Pondberry	*Lindera melissifolia*	Endangered
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	Endangered
Georgia aster	*Aster georgianus*	Supported Proposals to List
Chaff-seed	*Schwalbea americana*	Endangered
Canby's dropwort	*Oxypolis canbyi*	Endangered
Smooth coneflower	*Echinacea laevigata*	Endangered

RESOURCE CONCERNS

Fish and Wildlife

For additional information, the SC Department of Natural Resources has completed a "Comprehensive Wildlife Conservation Strategy: 2005 - 2010" (see SCDNR 2005 in References section).

In 2005, mercury advisories were issued for 57 water bodies in South Carolina. Higher concentrations of mercury in fish tissue tend to occur in the Coastal Plain of South Carolina with relatively lower concentrations (and therefore fewer advisories) in the Piedmont. For more details on fish advisories, please refer to the SCDHEC fish advisory website at: **http://www.scdhec.gov/environment/water/fish/**

Table 18:
FEDERALLY LISTED THREATENED AND ENDANGERED WILDLIFE SPECIES IN WATERSHED
(See USFW 2006 in References section.)

Common Name	Latin Name	Status
Red-cockaded woodpecker	*Picoides borealis*	Endangered
Flatwoods salamander	*Ambystoma cingulatum*	Threatened
Wood stork	*Mycteria americana*	Endangered

Table 19:
FEDERALLY LISTED THREATENED AND ENDANGERED AQUATIC SPECIES IN WATERSHED
(See USFW 2006 in References section.)

Common Name	Latin Name	Status
Shortnose sturgeon	*Acipenser brevirostrum*	Endangered
Carolina heelsplitter	*Lasmigona decorata*	Endangered

ECONOMIC & SOCIAL FACTORS

Domestic Animals

Grazing livestock populations are modest, but tend to be higher in Orangeburg County than other counties in the subbasin (Table 20). Confined operations populations are modest compared with other subbasins, and they consist mostly of poultry and some hogs and pigs (Figure 9, Table 21).

Table 20:
WHOLE COUNTY GRAZING ANIMAL POPULATION DATA FROM 2002 AG. CENSUS
(See NASS 2002 in References section. "D" in table = "Cannot be disclosed".)

County	Cows/Calves	Grazing/Forage (ac)	County Rank in State
Berkeley	2,137	2,754	42
Calhoun	2,546	1,955	39
Clarendon	4,833	3,038	27
Orangeburg	16,735	11,360	10
Sumter	5,680	6,023	32

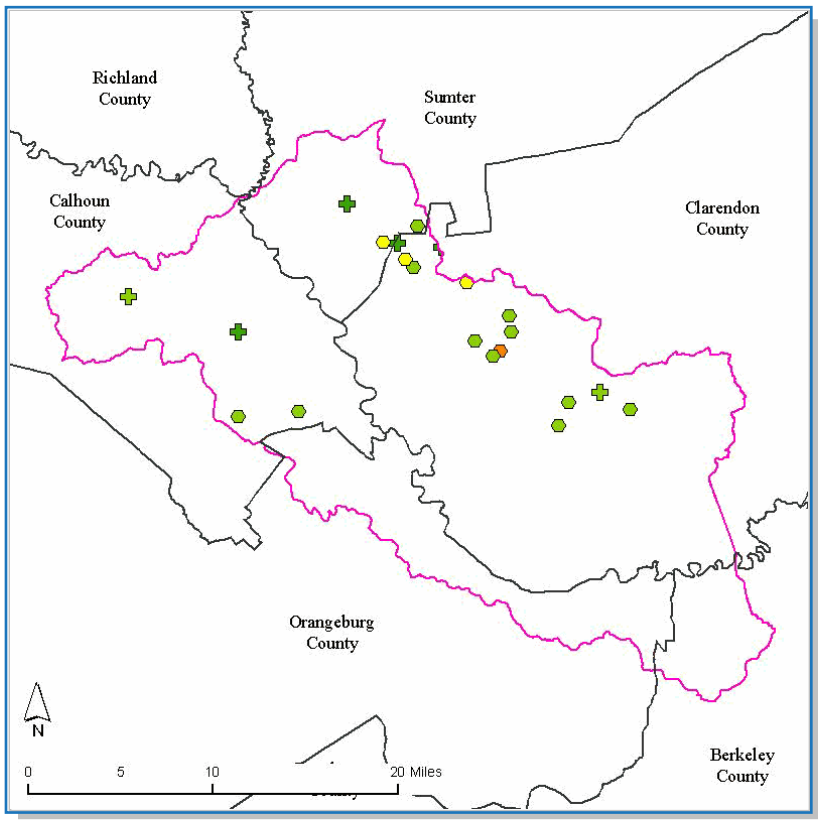


Table 21:
CONFINED ANIMAL POPULATION [As given by SCDHEC] (Au = Animal Unit = 1,000 lbs)

Beef Live Weight (Au)	-
Dariy Live Weight (Au)	-
Horse Live Weight (Au)	-
Poultry Live Weight (Au)	4,860
Swine Live Weight (Au)	521
Turkey Live Weight (Au)	-

FIGURE 9:
TYPE AND SIZE OF CONFINED ANIMAL OPERATION

Permit Design Count (Live Weight AU)
- 0 - 163
- 164-372
- 373 - 680
- 681 - 1360
- 1361 - 7076

- Beef
- Dairy
- Other
- Poultry
- Swine
- Turkey

* Weighted averages are estimated based on agricultural land use area.

ECONOMIC & SOCIAL FACTORS

The number of full-time farmers is *higher* than the state average of 47% and farm sizes are *larger* than the state average of 197 ac (Table 22); both parameters suggest above average levels of participation in conservation programs. Farm sizes have however, *decreased* by an estimated 14% between 1997 and 2002, whereas on average, farm sizes decreased by 13% across the state for the same period. Loss of cropland between 1997 and 2002 is estimated at 12%, significantly *higher* than the SC average cropland loss that is estimated at 8%.

The relative importance of crop and livestock commodity groups in the watershed is shown in Tables 24 and 25; a *qualitative* indication of the relative importance of timber is provided on Table 16.

For more economic and farm information from the 2002 Agricultural Census, more detailed reports for all South Carolina counties can be found at:
http://www.nass.usda.gov/census/census02/profiles/sc/index.htm

Table 22:
2002 FARM CENSUS DATA (WHOLE COUNTY DATA SHOWN) (SC average farm size = 197 ac)

County	Total Number of Farms	% Full Time Farmers	% Farms > 180 (ac)	Average Farm Size (ac)
Berkeley	398	47%	18%	143
Calhoun	281	49%	44%	337
Clarendon	390	47%	35%	379
Orangeburg	968	45%	32%	283
Sumter	537	46%	28%	253
Weighted Avg*	**448**	**47%**	**37%**	**333**

Table 23:
2002 FARM CENSUS ECONOMIC DATA (WHOLE COUNTY DATA SHOWN) (Results in $1,000)

County	Market Value of Ag Products Sold	Market Value of Crops Sold	Market Value of Livestock, Poultry, and Their Products	Farms with sales < $10,000
Berkeley	25,966	24,886	1,080	339
Calhoun	11,581	7,963	3,618	206
Clarendon	61,620	28,121	33,499	266
Orangeburg	69,128	32,355	36,773	727
Sumter	55,146	15,274	39,872	402
Weighted Avg*	**43,863**	**21,053**	**22,811**	**324**

Table 24:
VALUE OF CROP COMMODITY GROUPS - COUNTY RANK IN STATE
(See NASS 2002 in References section. "D" in table = "Cannot be disclosed".)

County	Value of All Crops	Grains & Oilseeds	Tobacco	All Cotton	Vegetables & Melons	Fruits, Nuts, & Berries	Nursery, Etc.	Christmas Trees & Woody Crops	Hay & other Crops
Berkeley	8	(D)	(D)	(D)	37	29	(D)	-	41
Calhoun	26	15	(D)	8	(D)	28	11	(D)	38
Clarendon	7	2	7	16	2	(D)	12	(D)	(D)
Orangeburg	5	1	-	7	9	10	5	1	1
Sumter	16	4	8	11	(D)	(D)	15	(D)	2

REFERENCES

Table 25:
VALUE OF LIVESTOCK AND POULTRY COMMODITY GROUPS - RANK IN STATE
(See NASS 2002 in References section. "D" in table = "Cannot be disclosed".)

County	Value of Livestock, poultry	Poultry, Eggs	Cattle & Calves	Milk & Dairy	Hogs & Pigs	Sheep & Goats	Horses, etc.
Berkeley	43	(D)	42	23	(D)	36	23
Calhoun	32	30	39	-	11	(D)	38
Clarendon	13	11	27	-	5	(D)	12
Orangeburg	12	14	10	2	4	(D)	4
Sumter	11	8	32	(D)	16	19	(D)

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APPENDIX

Level III Common Resource Area (Ecological Region) Descriptions

Middle Atlantic Coastal Plain (63)

The Middle Atlantic Coastal consists of low elevation, flat plains, with many swamps, marshes, and estuaries. Forest cover in the region, once dominated by longleaf pine in the Carolinas, is now mostly loblolly and some shortleaf pine, with patches of oak, gum, and cypress near major streams. Pine plantations for pulpwood and lumber are typical, with some areas of cropland. In South Carolina, the Middle Atlantic Coastal Plain is divided into three level IV ecoregions Carolinian Barrier Islands and Coastal Marshes (63g), Carolina Flatwoods (63h), Mid-Atlantic Floodplains and Low Terraces (63n).

Southeastern Plains (65)

The Southeastern Plains are irregular with broad interstream areas have a mosaic of cropland, pasture, woodland, and forest. In the past centuries, human activities (logging, agriculture and fire suppression) removed almost all of the longleaf pine forests. Elevations and relief are greater than in the Southern Coastal Plain (75), but generally less than in much of the Piedmont (45). The ecoregion has been divided into three level IV ecoregions within South Carolina: Sand Hills (65c), Atlantic Southern Loam Plains (65l), and Southeastern Floodplains and Low Terraces (65p). Note: The Atlantic Southern Loam Plains (65l) is a major agricultural zone, with deep, well-drained soils, and is characterized by high percentages of cropland.

NRCS Conservation Practices used for Conservation Treatment Categories in Table 3

Report Category	Practice Codes
Buffer and Filter Strips	332, 391, 393, 412
Conservation Tillage	324, 329, 329A, 329B, 344, 484
Erosion Control	327, 328, 330, 340, 342, 561, 585, 586
Irrigation Water Management	441, 449
Nutrient Management	590
Pest Management	595
Prescribed Grazing	528, 528A
Trees and Shrubs	490, 612, 655, 656, 66
Wetlands	657, 658, 659
Wildlife Habitat	644, 645

APPENDIX

Hydrologic Unit Numbering System

In 2005, the NRCS in cooperation with the U.S. Geological Survey, the South Carolina Department of Health and Environmental Control, and the U.S. Forest Service updated the South Carolina part of the USGS standard hydrologic unit map series. The report, "Development of a 10- and 12- Digit Hydrologic Unit Code Numbering System for South Carolina, 2005", describes and defines those efforts. The following is from the Abstract contained in that report: "A hydrologic unit map showing the subbasins, watersheds, and subwatersheds of South Carolina was developed to represent 8-, 10-, and 12-digit hydrologic unit codes, respectively. The 10- and 12-digit hydrologic unit codes replace the 11- and 14-digit hydrologic unit codes developed in a previous investigation. Additionally, substantial changes were made to the 8-digit subbasins in the South Carolina Coastal Plain. These modifications include the creation of four new subbasins and the renumbering of existing subbasins." The report may be obtained at **http://www.sc.nrcs.usda.gov/technical/HUC_report.pdf**. See Table 2 in the report for a cross-reference of old to new 8-digit HUC.

This subbasin profile uses the new HUC 8 numbering system with its modified and newly created subbasins. The NRCS reports implemented practices by 8-digit Hydrologic Unit Code. All NRCS reported Conservation Practices were reported using the older numbering system. 2005 and 2006 data were converted to the new HUC 8 numbering system through the Latitude and Longitude data reported with the applied practice. The use of these differing numbering systems has resulted in some NRCS implemented practices being credited in this report to an 8-digit HUC as reported by the NRCS but not correctly credited in the new numbering system. Likewise, the newly created 8-digit HUC will not be credited with the 2004 applied practices.