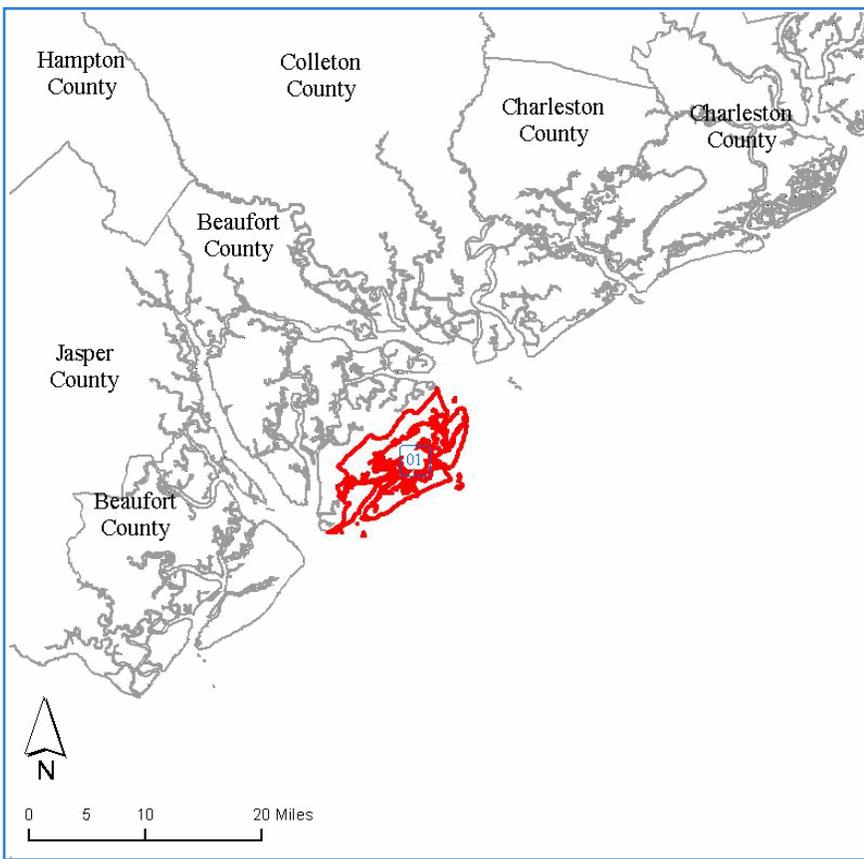


ST. HELENA ISLAND Subbasin

August 31, 2007

An Assessment of the St. Helena Island Subbasin

Hydrologic Unit Code (8 Digit): 03050210



WATERSHED (10-digit HUC)
(E.g., 01 = 0305021001)

01 Harbor River



EXECUTIVE SUMMARY

Watershed Description

St. Helena Island is one of the South Carolina Sea Islands in Beaufort County, South Carolina, that are historic sites of early European colonization of North America. St. Helena is also the center of African-American Gullah culture and language.

The subbasin covers Sea Island and Coastal Marsh, part of the Southern Coastal Plain (75) ecoregion (Figure 1). A brief description of the Southern Coastal Plain 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).

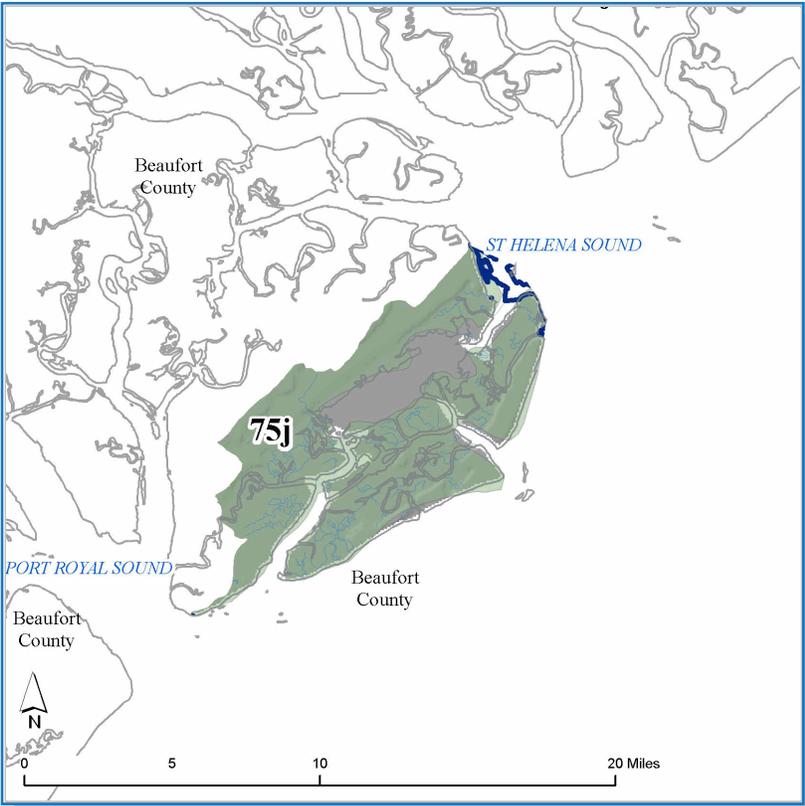


FIGURE 1:
LEVEL IV ECOLOGICAL REGIONS

75j Sea Islands/Coastal Marsh

EXECUTIVE SUMMARY

Land Use/Land Cover

The seaward side of the subbasin is covered by parks and preserves. There is some agricultural land on the landward side of the subbasin, most of it dedicated to vegetable crops.

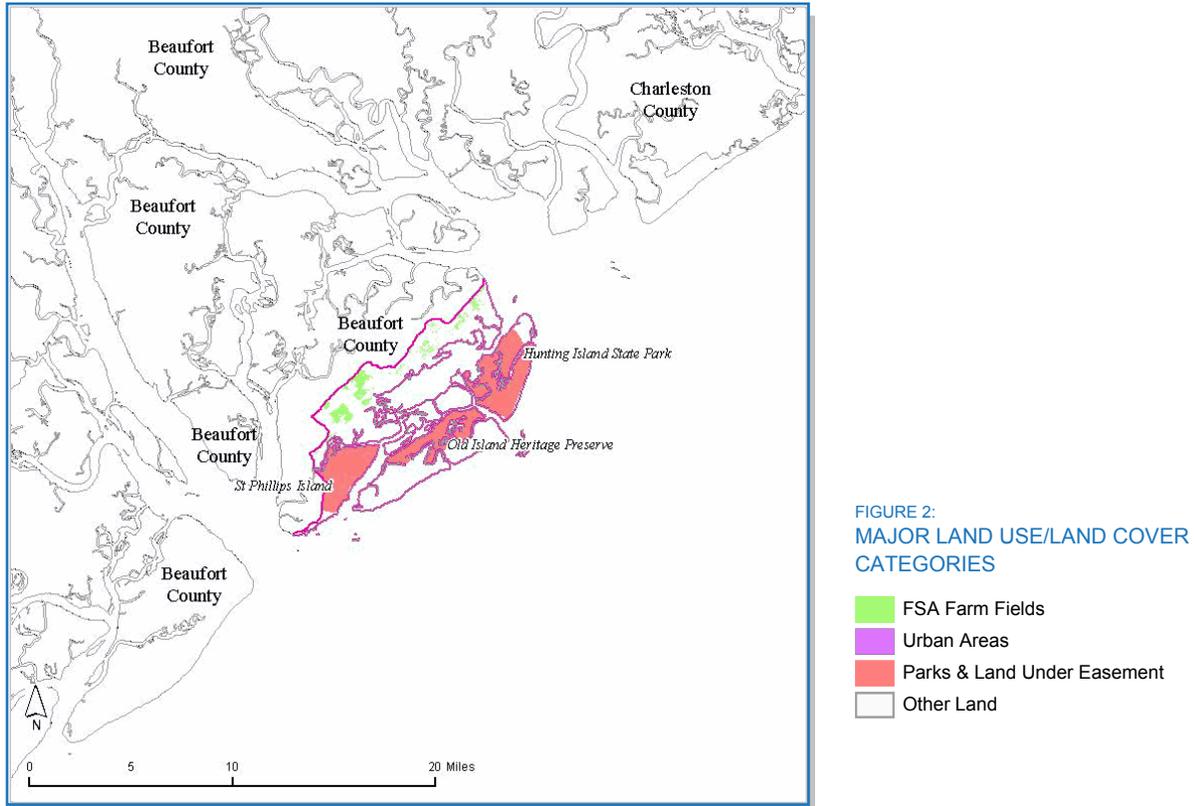


Table 1: MAJOR LAND USE/LAND COVER CATEGORIES

	Acres	% of Watershed
Watershed (Total)	33,659	-
Urban Area	-	-
Parks/Land Under Easement (not NRCS)	10,847	32%
Farm Service Agency Designated Farm Fields	1,661	5%

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)
Beaufort	1,661	19%	71%	10%

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 wetness in this small subbasin and are typical of an area within the Coastal Plain. Hydric soils or partially hydric soils comprise 90% of the subbasin and are the key resource concerns. Erosion is not a major resource concern.

Water Quantity

Awaiting SCDNR's 2007 state water assessment.

Water Quality

-

Plant Condition

-

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

Domestic livestock populations in the subbasin are negligible.

Economic and Social Factors

The subbasin is too small to make any inferences from county-level agricultural census statistics.

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	-	-	-	-
Conservation Tillage	-	-	-	-
Erosion Control	-	-	-	-
Irrigation Water Management	-	-	-	-
Nutrient Management	-	-	1	1
Pest Management	-	-	-	-
Prescribed Grazing	-	-	-	-
Trees and Shrubs	-	-	-	-
Wetlands	-	-	-	-
Wildlife Habitat	-	-	-	-

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
Beaufort	163	6,928	-	355	413

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

TMDL Document	Number of Stations	Parameter of Concern	Status	WQMS ID Standard Attained
-	-	-	-	-

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

Organization	Description	Contact	Telephone
SCDHEC	Watershed Water Quality Assessment: Salkehatchie River Basin (2003)	Andy Miller	803-898-4031

EXECUTIVE SUMMARY

Other Watershed Considerations

RESOURCE CONCERNS

Soils

A majority (77%) of land in this Coastal Plain subbasin has limitations due to wetness (Table 7). Most of the wetness is associated with hydric soils in low-lying areas throughout the subbasin (Figure 5). Droughtiness is a concern in about 14% of the area (Table 7) and occurs in the sandy soils that form a narrow band along the upper edge of the subbasin. Erosion is not a resource concern as 95% of the land is classified as not highly erodible (Table 9). Only 33% of the land in the St. Helena Island subbasin is either prime farmland (irrigated or drained). There are no areas of statewide important farmland (Figure 3, Table 8).

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

Percentages are based on the whole watershed (33,659 ac).

Land Capability Class 1	Acres		Percent			
1 - Slight limitations	-	-	-	-		
% Land by Subclass Limitation						
Land Capability Classes 2-8	Erosion (e)		Wetness(w)		Droughtiness (s)	
	Acres	Percent	Acres	Percent	Acres	Percent
3 - Severe limitations	-	-	2,428	7%	1,056	3%
4 - Very severe limitations	-	-	2,641	8%	1,499	4%
5 - No erosion hazard, but other limitations	-	-	51	0%	-	-
6 - Severe limitations; unsuitable for cultivation; limited to pasture, range, forest	-	-	3	0%	62	0%
7 - Very severe limitations; unsuitable for cultivation; limited to grazing; forest, wildlife habitat	-	-	732	2%	2,466	7%
8 - Miscellaneous areas; limited to recreation, wildlife habitat, water supply	-	-	20,434	61%	-	-

RESOURCE CONCERNS

Prime Farmland

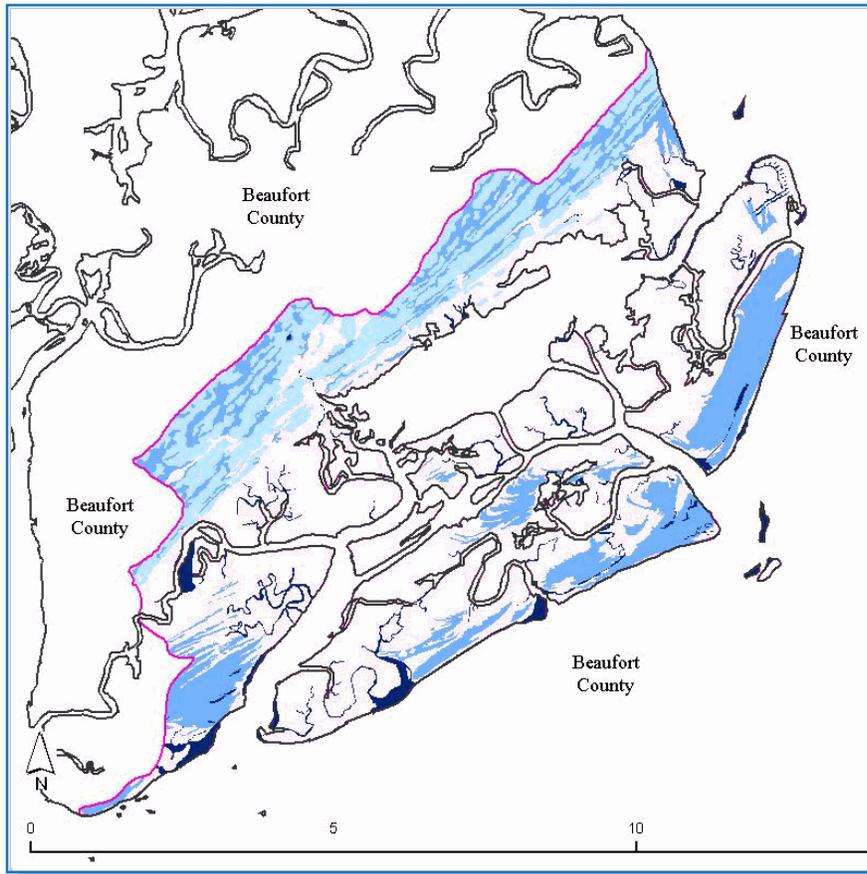


FIGURE 3:
PRIME FARMLAND
(See NRCS 2007 [a] and [b] in
References section.)

Table 8:
PRIME FARMLAND

Prime Farmland Categories	Acres	Percent of Land
All areas are prime farmland	0	0%
Farmland of statewide importance	0	0%
Not prime farmland	22,569	67%
Prime farmland if drained	0	0%
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	0	0%
Prime farmland if irrigated	4,817	14%
Prime farmland if irrigated and drained	6,230	19%
Prime farmland if protected from flooding or not frequently flooded during the growing season	0	0%

RESOURCE CONCERNS

Highly Erodible Land

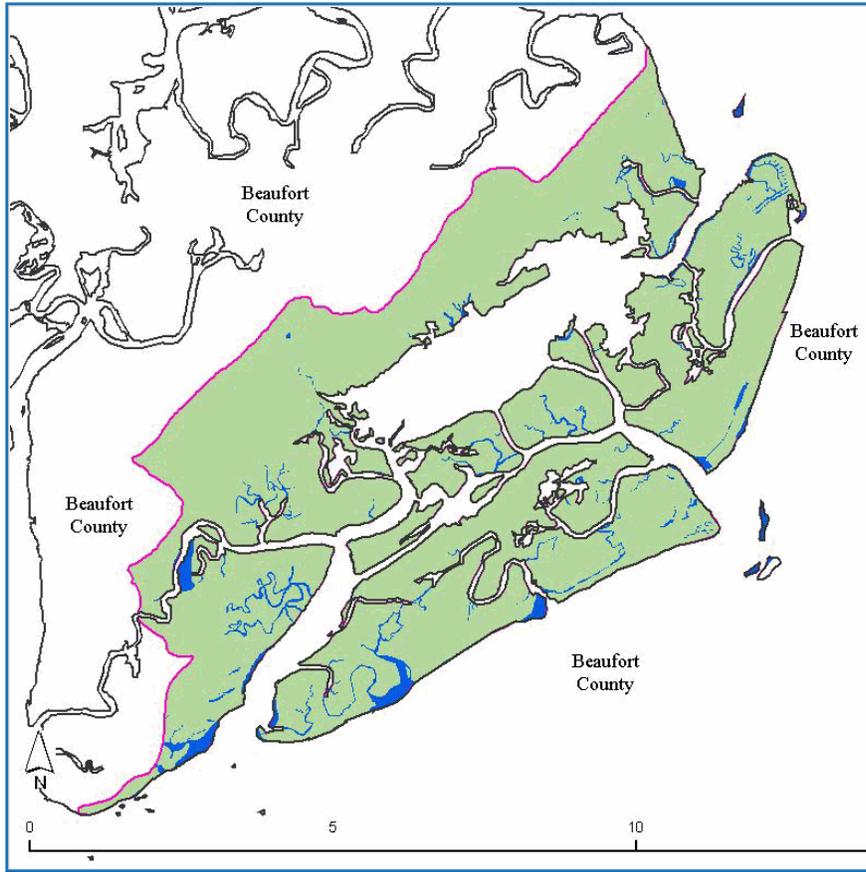


FIGURE 4:
HIGHLY ERODIBLE LAND
(See NRCS 2007 [a] and [b] in
References section.)

Table 9:
HIGHLY ERODIBLE LAND

Highly Erodible Land Categories	Acres	Percent of Watershed
■ Highly erodible land	0	0%
■ Not highly erodible land	31,882	95%
■ Potentially highly erodible land	0	0%

RESOURCE CONCERNS

Hydric Soils

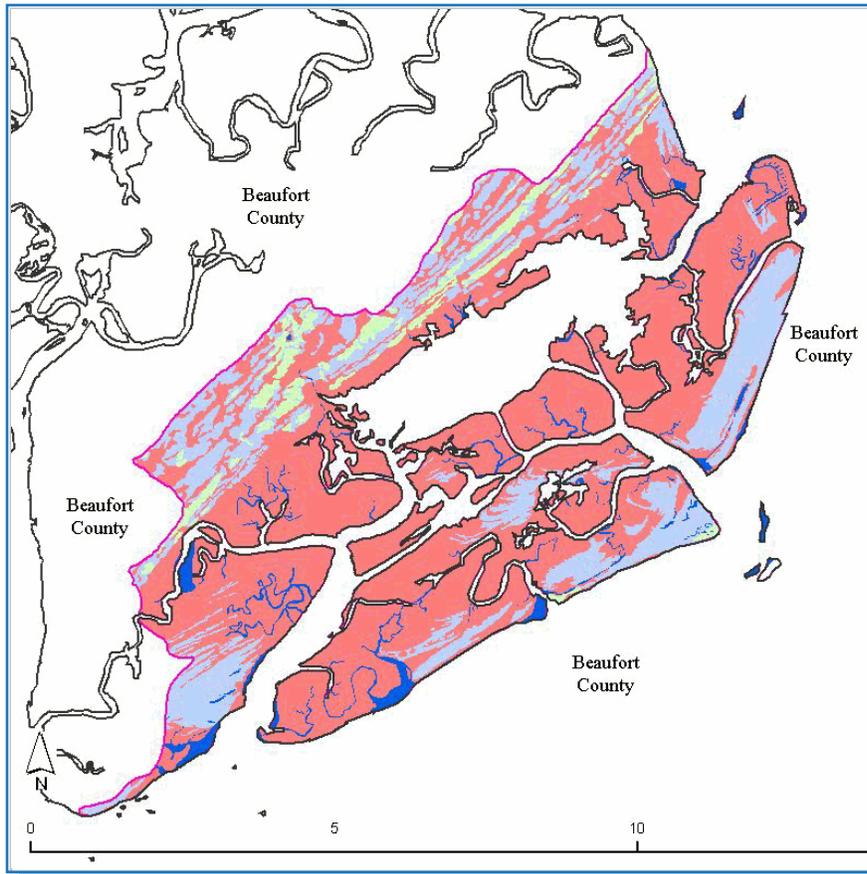


FIGURE 5:
HYDRIC SOILS
(See NRCS 2007 [a] and [b] in
References section.)

Table 10:
HYDRIC SOILS

Hydric Soils Categories	Acres	Percent of Watershed
All Hydric	22,752	68%
Not Hydric	3,294	10%
Partially Hydric	7,569	22%

RESOURCE CONCERNS

Water Quantity

Narrative awaiting SCDNR's new state water assessment.

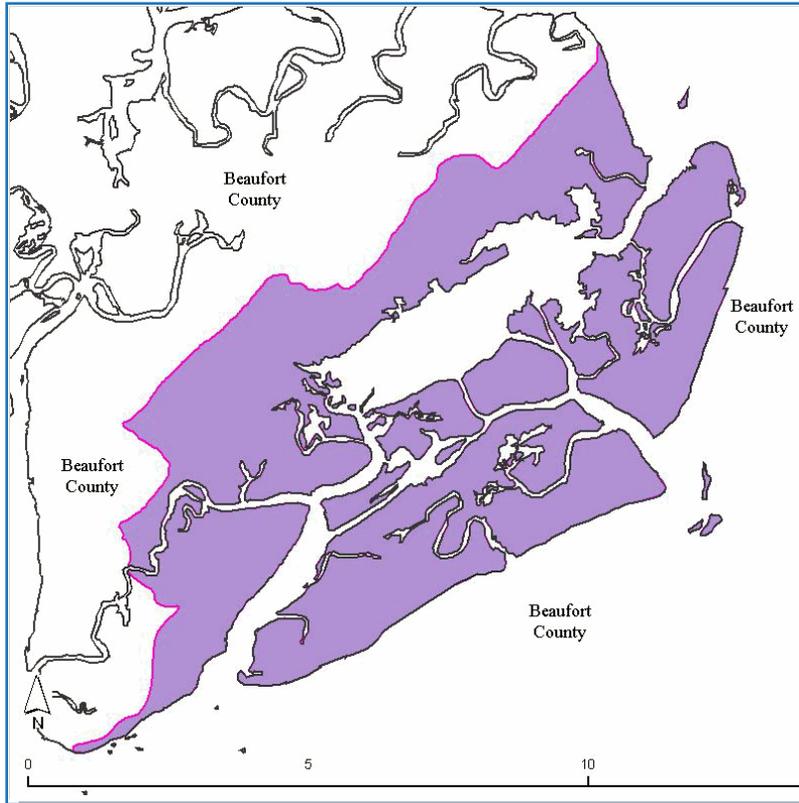


FIGURE 6:
WATERSHED RELATIVE TO CAPACITY
USE AREAS, NOTICE OF INTENT
AREAS, AND CONES OF DEPRESSION

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

Area	Percent of Watershed
 % Watershed in Cone of Depression and Capacity Use (CU) Area	0%
 % Watershed in SCDHEC Capacity Use (CU) Area	99%
 % Watershed in SCDHEC Notice of Intent (NOI) Area	0%

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
Beaufort	5.06	6,740	587	8.7	8,620

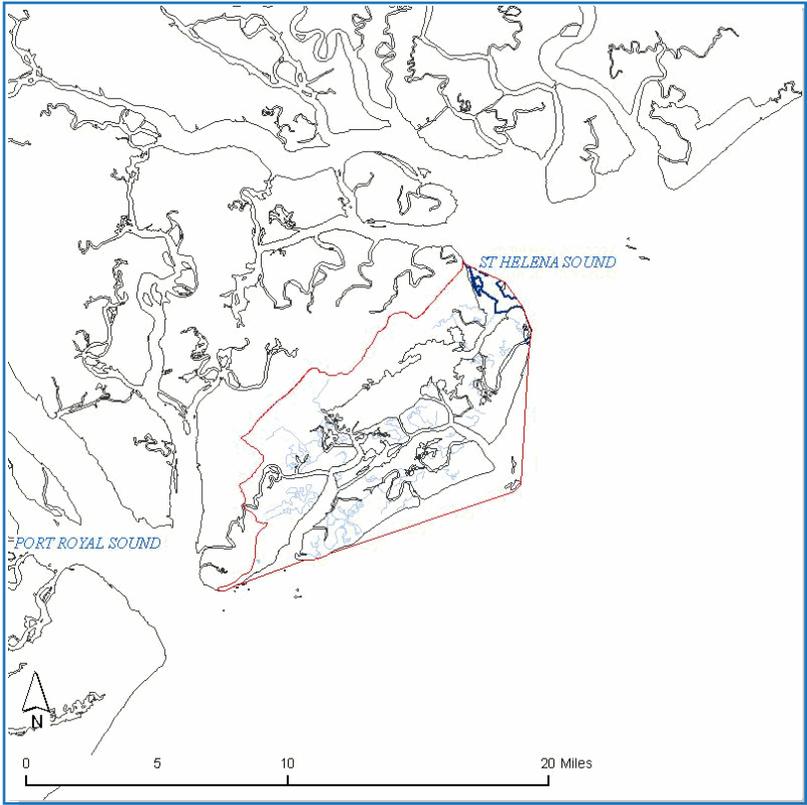


FIGURE 7:
NRCS ASSISTED FLOOD CONTROL STRUCTURES IN WATERSHED

-  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.

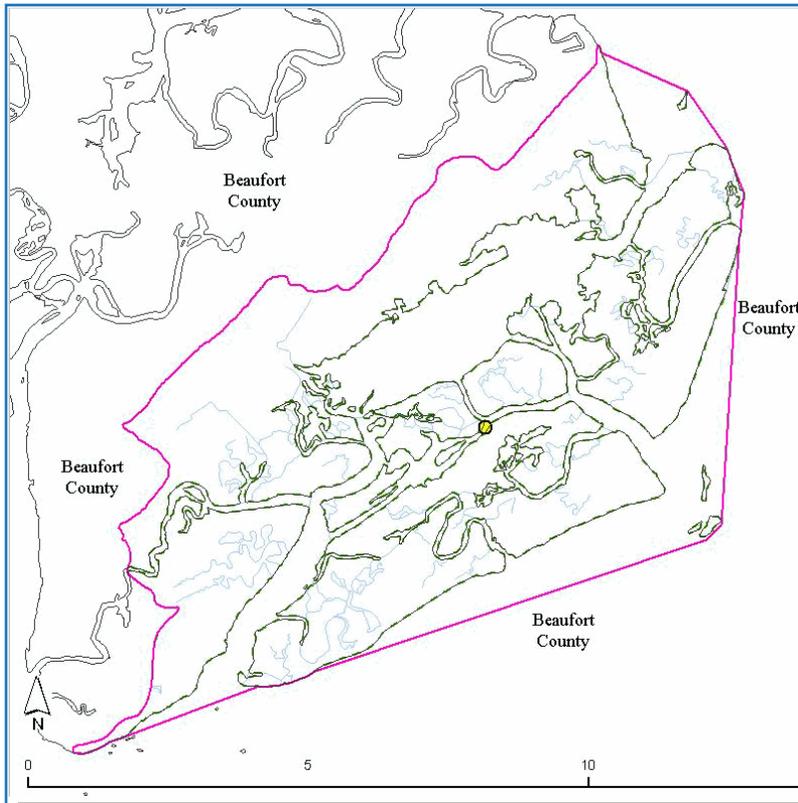


Table 14:
WATER QUALITY MONITORING SITES

Permanent Water Quality Monitoring Sites (WQMS)	1
Random Water Quality Monitoring Sites (WQMS)	28

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	

Fish Tissue Standard

Parameter	Impairments
Mercury	
PCB's	

Shellfish Harvest Standard

Parameter	Impairments
Fecal Coliform	NA

Aquatic Life Use Standard

Parameter	Impairments
Biological	
Chlorophyll A	
Chromium	
Copper	

Parameter	Impairments
Dissolved Oxygen	
Ammonia Nitrogen	
Nickel	
Total Nitrogen	

Parameter	Impairments
Total Phosphorus	
pH	
Turbidity	
Zinc	

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.

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: in the forests of the immediate Coastal Zone, barrier islands and inland dune systems, characteristic trees include live oak, laurel oak, cabbage palmetto, southern magnolia and southern red cedar. These evergreen-dominated forests are salt-tolerant and often support shrub thickets with yaupon holly, red bay and wax myrtle.

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 Vegetables harvested	Beaufort
Corn for grain	Beaufort
Forage - land used for all hay and haylage, grass silage, and greenchop	Beaufort
Tomatoes	Beaufort
Watermelons	Beaufort

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

Common Name	Latin Name	Status
Canby's dropwort	<i>Oxypolis canbyi</i>	Endangered
Chaff-seed	<i>Schwalbea americana</i>	Endangered
Pondberry	<i>Lindera melissifolia</i>	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	<i>Picoides borealis</i>	Endangered
West Indian manatee	<i>Trichechus manatus</i>	Endangered
Piping plover	<i>Charadrius melodus</i>	Threatened, Critical Habitat
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened
Leatherback sea turtle	<i>Dermodochelys coriacea*</i>	Endangered
Kemp's ridley sea turtle	<i>Lepidochelys kempii*</i>	Endangered
Green sea turtle	<i>Chelonia mydas*</i>	Threatened
Flatwoods salamander	<i>Ambystoma cingulatum</i>	Threatened
Kirtland's Warbler	<i>Dendroica kirtlandii</i>	Endangered
Wood stork	<i>Mycteria americana</i>	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	<i>Acipenser brevirostrum</i>	Endangered

RESOURCE CONCERNS

Domestic Animals

Domestic livestock populations in the subbasin are negligible.

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
Beaufort	926	1,250	46

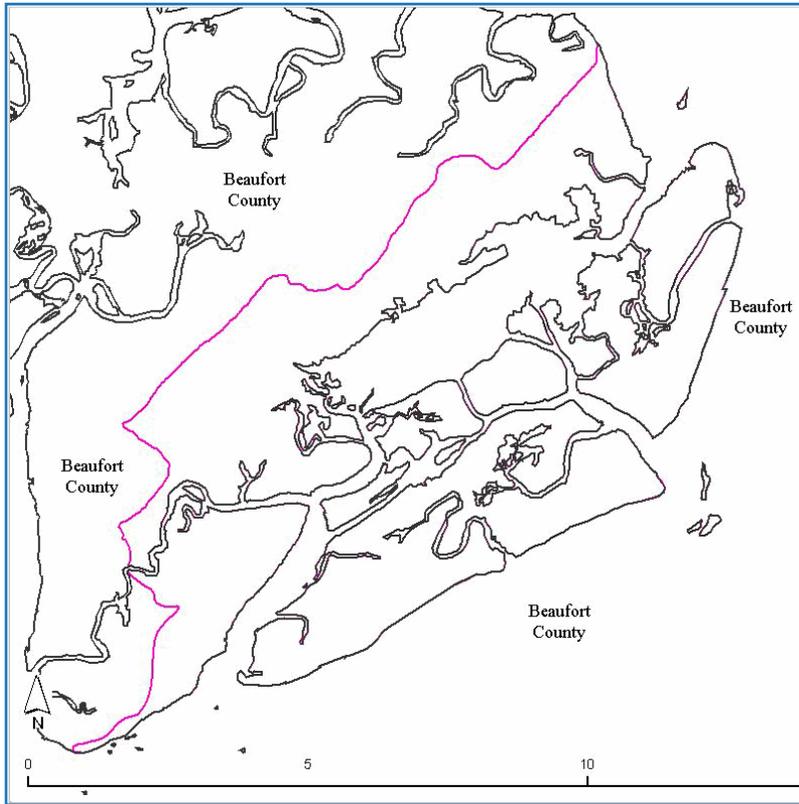


Table 21:
CONFINED ANIMAL POPULATION [As given by SCDHEC] (Au = Animal Unit = 1,000 lbs)

Beef Live Weight (Au)	-
Dairy Live Weight (Au)	-
Horse Live Weight (Au)	-
Poultry Live Weight (Au)	-
Swine Live Weight (Au)	-
Turkey Live Weight (Au)	-

FIGURE 9:
TYPE AND SIZE OF CONFINED ANIMAL OPERATION

Permit Design Count (Live Weight AU)	Symbol	Animal Type
0 - 163	■	Beef
164-372	■	Dairy
373 - 680	▲	Other
681 - 1360	●	Poultry
1361 - 7076	+	Swine
	★	Turkey

ECONOMIC & SOCIAL FACTORS

The subbasin is too small to make any inferences from county-level agricultural census statistics.

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)
Beaufort	116	44%	19%	383
Weighted Avg*	116	44%	19%	383

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
Beaufort	9,881	9,487	394	85
Weighted Avg*	9,881	9,487	394	85



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
Beaufort	23	39	-	-	3	31	41	19	32

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.
Beaufort	45	(D)	46	-	(D)	3	27

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

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APPENDIX

Level III Common Resource Area (Ecological Region) Descriptions

Southern Coastal Plain (75)

The Southern Coastal Plain extends from South Carolina and Georgia through much of central Florida, and further along the Gulf coast. It is a heterogeneous region also containing barrier islands, coastal lagoons, marshes, and swampy lowlands along the Gulf and Atlantic coasts. The South Carolina portion of the Southern Coastal Plain contains two level IV ecoregions: Floodplains and Terraces (75i), and Sea Islands/Coastal Marsh (75j).

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

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.