

CHAPTER 5

Natural Resources

Calhoun County has a rural agricultural landscape that is remarkably intact despite its proximity to urban areas. Partly because of the boll weevil's decimation of the cotton economy in the 1920s, the landscape of Calhoun County and St. Matthews are relatively little changed in a century. Many former cotton fields now grow pine trees, and a few have sprouted small subdivisions and home sites. However, today's population is less than the 1920 census count for both the county and St. Matthews.

The relative absence of growth pressures on the county's natural resources for nearly 100 years has preserved the county in a relatively unspoiled natural state, and has preserved the feeling if not always the intact fabric of old rural settlements. The high bluffs along the Congaree River, the bottomland forests along the river and creeks, maturing longleaf and loblolly pines on sandy hilltops, and expansive fields of prime farmland define the rural landscape of Calhoun County.

Preservation of the county's rural landscape has been a priority of residents who have been engaged in public meetings during the course of the plan. However, responsible and reasonable development is generally seen as desirable and beneficial by most residents.

The key purpose of this chapter of the plan is to identify key natural resources and provide thoughtful guidance to other elements of the plan. This chapter will address the county's natural resources in logical groups as follows:

- Land
- Water
- Air
- Plant Life and Wildlife

This report does not attempt to provide a detailed and complete accounting of Calhoun County's natural resources. More complete plans by several state agencies provide greater detail of the important animal species, precise measurements of land cover, specific habitat development practices, and detailed recommendations than can be captured here. Two plans from South Carolina Department of Natural Resources (SCDNR), the State Wildlife Action Plan and the newly completed Edisto River Basin Plan, provide a rich level of detail of key environmental issues, and the future Santee River Basin Plan will complete the picture of Calhoun County. Instead, this chapter will attempt to identify threats to each group of resources, opportunities for responsible development consistent with the county's vision, and impacts of natural resources decisions on other plan elements

Land

The Land Use chapter of this plan provides a picture of how land currently is used in the county. This section looks specifically at land resources, development pressures on the land, and land conservation and stewardship initiatives.

Farmland and Farm Products

The county's most productive farmland is south of Beaverdam Creek. Relatively little prime farmland is found in the Sandy Run area and "the neck" of the county.

The U.S. Department of Agriculture 2017 Census of Agriculture (the 2022 data is not yet available) counted 480 farms in Calhoun County with over 148,000 acres, producing almost \$81 million in market value. The number of farms in the county increased by 17 percent between 2012 and 2017, and farm acreage grew by 26 percent.

Crops account for 73 percent of farm sales, with livestock and poultry accounting for 27 percent.

Seventy farms are 500 acres or larger, and these largest farms account for 15 percent of farmland in the county.



Not all farmland is cultivated; 54 percent of farm acres are cropland, 3 percent is pastureland, 39 percent is woodland and 4 percent is in other uses. Cotton accounts for 28,785 of all cropland acres (36%), peanuts are grown on 17,001 acres (21%), and corn on 12,092 acres (15%). Other top crops are forage (hay and haylage) and soybeans.

Calhoun county's \$81 million in annual farm product sales places the county 16th in the state in total farm production.

With \$59 million in crop sales, Calhoun ranks 5th among South Carolina counties in crop production. Cotton and cottonseed yield over \$18 million in sales, while plant nursery products yield \$11 million in sales. Grains, oilseeds, dry beans and dry peas yield \$9 million in sales.

Livestock, poultry and related products sales totaled \$22 million in 2017, with poultry and eggs accounting for 93 percent of these sales. Poultry production is skewed heavily toward broilers and meat chickens, which account for 925,000 birds, while just over 1,000 birds were egg producers (layers).

Cattle and calves yielded \$829,000 in sales from an inventory of 3,600 animals. Hogs and pigs accounted for \$549,000 in sales from an inventory of 4,700 .

The 2017 Census of Agriculture County Profile, the source of these statistics, is presented in Appendix 5A.

Minerals

Marketable mineral resources in Calhoun County are common clay and construction sand. Both are surfaced mined, and activity in the county is limited.

Forest Land

The South Carolina Forestry Commission's Forest Action Plan 2020 – 2030 is the authoritative source for forest data, issues, best practices and forest management initiatives in the state. This section will highlight some key facts, findings and initiatives from that plan, which can be found at

<https://www.scfc.gov/wp-content/uploads/2021/03/forest-action-plan-2020-30.pdf>

Forest covers 171,454 acres in Calhoun County, or 66 percent of the county's 257,954 acres of land.

The state's forest industry is a \$21 billion industry. Growth in the state's forest products industry has been strongest in composite panels, bioenergy, and pulpwood. Detailed data on forest production and ownership is not available at the county level.

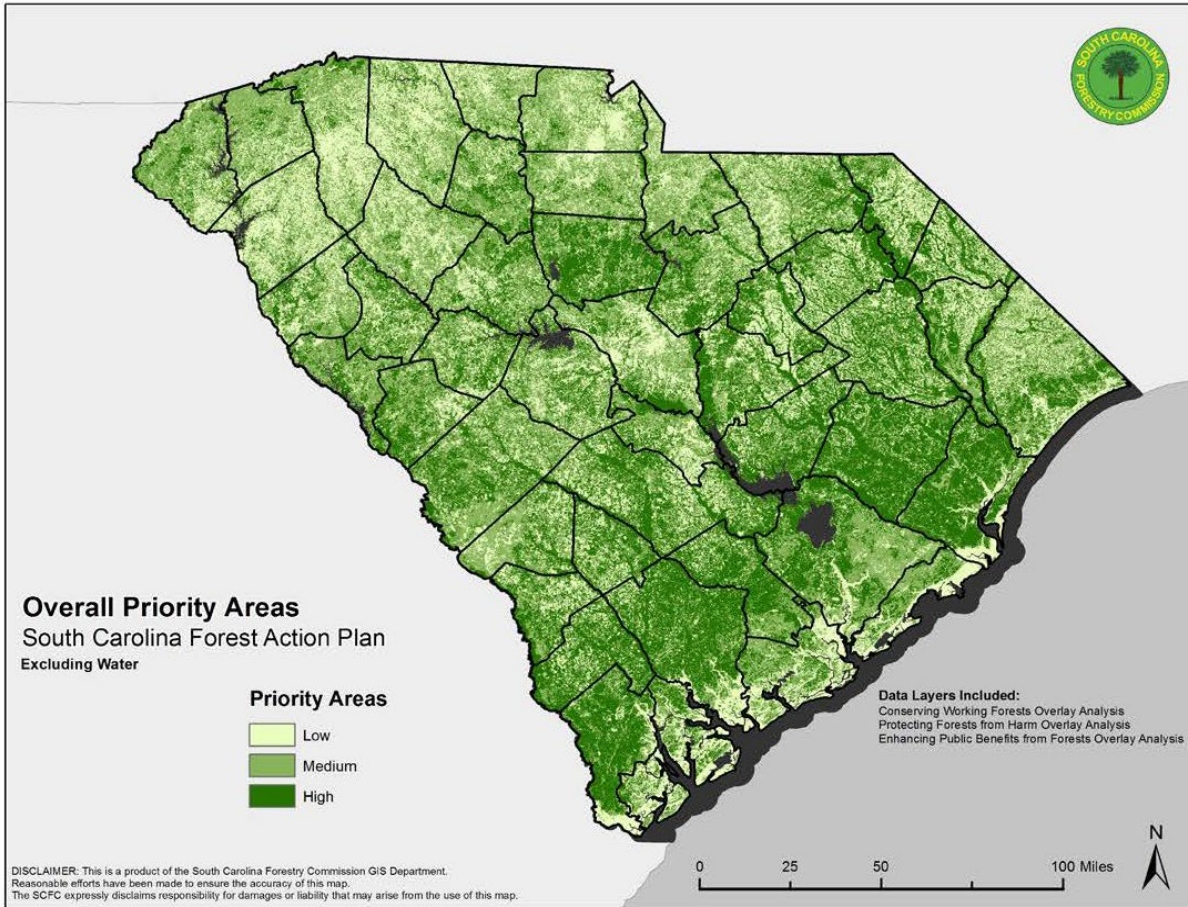
All of Calhoun County is included in the Southern Coastal Forest Legacy Area, which the SC Forestry Commission has designated as a priority area for forest preservation, and has adopted goals and objectives shown in the sidebar at right.

Significant threats to South Carolina's forests include the Southern pine beetle, Sirex wood wasp, and invasive cogon grass. The Forestry Commission also identifies climate change, fragmentation and parcelization (conversion of forest to other uses and subdivision of large forest tracts), and wildfire as threats to forest viability.

GOALS AND OBJECTIVES FOR THE SOUTHERN COASTAL FOREST LEGACY AREA

- Maintain and enhance the high quality of forest resources along with the associated plant, and animal communities.
- Maintain and enhance the bottomland hardwood areas located along major river systems.
- Protect historical and cultural resources.
- Protect areas inhabited by threatened and endangered species.
- Maintain contiguous forest land by connecting to managed public and private lands.
- Preserve the rural landscape and associated by-products that provide jobs.
- Provide opportunities for the public to have a place to enjoy various types of outdoor recreation.
- Provide opportunities for environmental education and research.
- Protect the scenic landscapes.
- Protect diminishing riparian corridors from further development; including the protection of river systems, wetlands, and their associated upland habitats.
- Protect areas designated as part of the Santee River, CAWS Basin, ACE Basin, South Lowcountry, and Santee Cooper Lakes Focus Area Initiatives.
- Provide a connective corridor between existing conservation projects.

Priorities for forest management include preservation of bottomland hardwood forests; restoration of longleaf pine forest ecosystems, including longleaf pine savannahs; and development and management of early successional habitat. All of these priorities promote diversity of plant and animal species by expanding critical habitats, and support the overall health of the forest ecosystem, and promote responsible and productive use and harvest of forest resources. Good forest management is critical for wildlife diversity, hunting, timber production, water quality, and outdoor recreation.

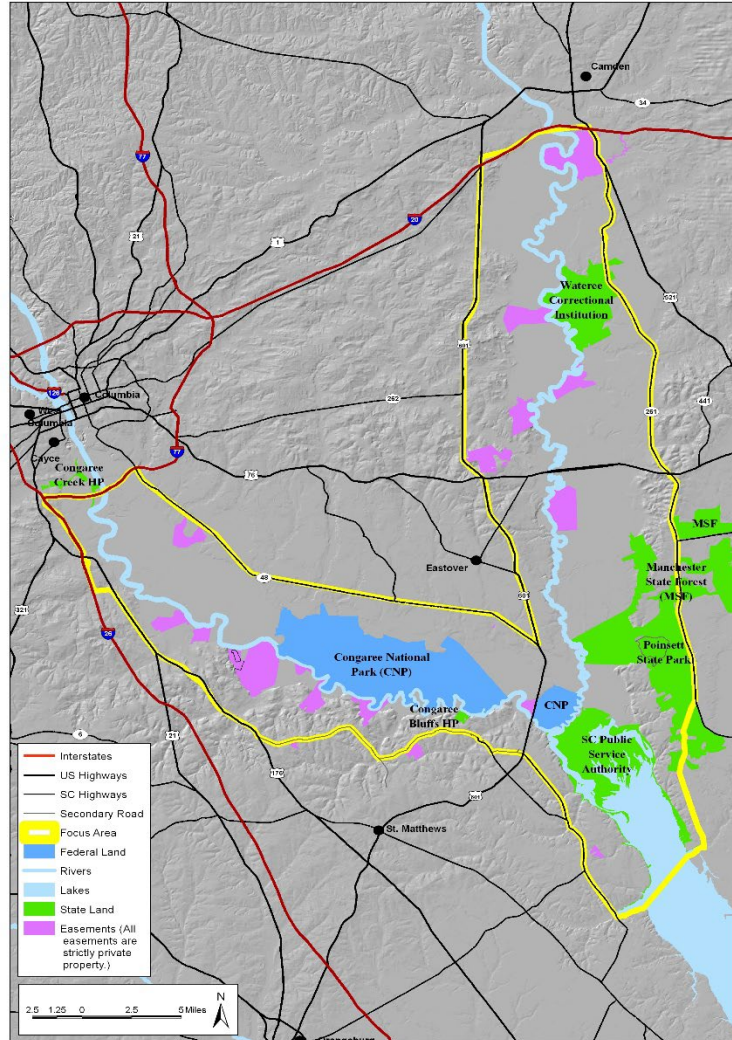


Map 5.1 South Carolina Forest Action Plan Priority Areas; Source: SC Forestry Commission, SC Forest Action Plan

Water

Calhoun County's geographic location provides a wealth of water resources, including Lake Marion, the Congaree River, extensive wetlands and swamps.

The "Cowassee basin" -- a focus area designated by SCDNR -- is a 315,000 acre areas composed of the Congaree, Wateree, and upper Santee Rivers and surroundings. SCDNR developed a conservation plan for the Cowassee Basin in 2017 to work with private landowners, who hold 68 percent of the land in the designated basin area, to protect the diverse habitat for waterfowl, migratory songbirds, wading birds and numerous other species. Congaree National Park, Poinsett State Park, Manchester State Forest, Santee-Cooper property, Congaree Bluffs Heritage Preserve, and a number of private conservation easements provide protection for and provides a wealth of wildlife habitat, cultural resources, timber and agriculture. Economic benefits are derived from agricultural production, forestry, and outdoor recreation. The area attracts hunters, fishermen, hikers, birdwatchers and boaters, who in turn become important customers for local businesses.



Map 5.2 Cowassee Basin; Source: SC Dept of Natural Resources

The county currently relies on groundwater wells for public drinking water, so protection and management of groundwater and aquifers is of long-term importance.

Water quality can be protected through preservation of wetlands and floodplains, best management practices for timber harvesting, best management practices for livestock and agricultural operations, no-till farming methods, and riparian buffers to protect the areas immediately adjacent to streams and rivers.

The county is split between the Edisto River basin and the Santee River basin. South Carolina Department of Natural Resources has recently completed and adopted the Edisto River Basin Plan, which provides extensive analysis of water resources in the basin, recommendations for management,

and strategies for protection and preservation of water resources within that basin. SCDNR plans to complete plans for all 8 river basins in the state over the next few years. The full Edisto River Basin Plan can be found on line at

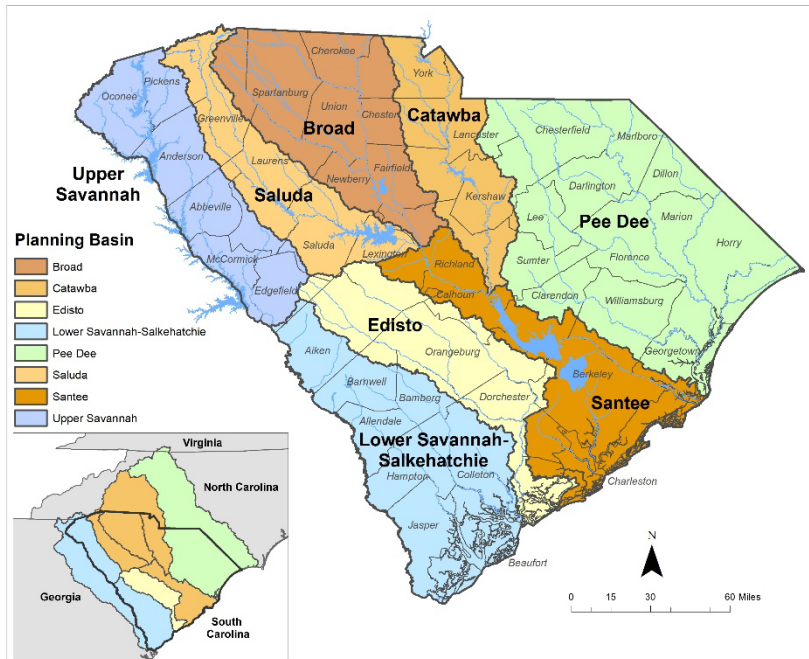
https://hydrology.dnr.sc.gov/pdfs/basin-planning/Edisto%20River%20Basin%20Plan_2023.pdf

Aquifers in the Edisto River basin are the surficial, Middle Floridan, Gordon, Crouch Branch, and McQueen Branch aquifers. A long-range groundwater model developed by SCDNR for the Edisto River Basin Plan identifies potential for groundwater levels dropping below the top of the Crouch Branch aquifer in central Calhoun County in the 30-to-40-year time horizon under some scenarios, dependent on drought conditions, land development in aquifer recharge zones, and intensity of future water demand. This is significant because of the county's reliance on the aquifer for drinking water and for agricultural irrigation. In some cases, aquifers may be permanently impaired by low water conditions, resulting in dry wells.

To protect long term groundwater access, it will be important for the county to work with SCDNR, SCDHEC, and major water users to develop water management and conservation strategies to protect the county's groundwater supplies.

Three wastewater treatment plants have permits from SCDHEC to discharge treated wastewater into the Congaree River basin: Eastman Chemical, Devro, the St. Matthews municipal treatment plant, and an inactive Calhoun County treatment plant at the I-26 rest area. Residential wastewater is treated in on-site septic systems outside of the town of St.

Matthews, while industrial wastewater from industries in the I-26 corridor is collected and pumped to the City of Cayce wastewater treatment plant upstream on the Congaree River.



Map 5.3 South Carolina River Basins; Source: SC Dept of Natural Resources

Air

In the late 1990s through early 2010s, many counties in South Carolina, including Calhoun, were exceeding the National Ambient Air Quality Standards (NAAQS) for ground-level ozone and particulate matter (soot and dust). While a variety of sources contributed to air quality problems in the state, coal-fired power plants, diesel trucks and construction equipment, locomotives, and automobiles were the primary sources of pollution.

Through a combination of voluntary efforts, EPA mandated standards for low-sulphur gasoline and diesel fuel, improved emission technology for automobiles and heavy duty diesel engines, decommissioning of coal-fired power plants, and other technological improvements in small engines, In January 2016, all of South Carolina was designated by US EPA to be in attainment with the NAAQS. Remarkably, these dramatic improvements in air quality -- which are of particular benefit to youth, the elderly, and persons with respiratory conditions including asthma and bronchitis – have been achieved while population, economic activity, and highway travel have shown tremendous growth statewide.

Plant Life and Wildlife

Plant and animal species thrive in Calhoun County, which provides diverse habitats that are relatively undisturbed by human development. SCDNR's State Wildlife Action Plan (SWAP) is the best source for information, analysis and recommendations for protecting and enhancing plant and animal life in the county, and can be found at the link below. This section will summarize threatened and endangered species, important habitats, and other issues.

<https://www.dnr.sc.gov/swap/index.html>

Plant life

Calhoun County has a wide range of trees and plant life. SCDNR tracks 82 species of plants and animals in the county, and no endangered or threatened plants have been identified in the county

Some of the important canopy tree species in the county are Longleaf Pine, Loblolly Pine, Bald Cypress, Southern Red Oak, White Oak, Live Oak, Black Gum, Eastern Red Cedar, Sweetgum, Red Maple, American Beech, and Pignut Hickory. Understory trees and shrubs important for wildlife include Serviceberry, Sparkleberry, Wax Myrtle, Persimmon, and Dogwood.

Wildlife

Four endangered species are found in Calhoun County: Shortnose Sturgeon, Red Cockaded Woodpecker, Wood Stork (state endangered, federally threatened), and Tri-colored Bat (proposed federally endangered).

The Bald Eagle is a state threatened species, although the bird is no longer a federally listed species due to strong recovery of the population nationwide. Chamberlain's Dwarf Salamander, a tiny wetland amphibian, also is on the federal threatened species list.

Six birds found in Calhoun County are on the Migratory Bird Treaty Act. Passed in 1918, this Act is among the oldest wildlife protection laws and was designed to prevent extinction resulting from overharvesting for sport or for bird feathers, which were in high demand for women's hats at the time. Some small colorful birds such as Painted Buntings were stuffed and used whole for decoration. Great Egret, Anhinga, Great Blue Heron, Snowy Egret, Black and White Warbler, and Painted Bunting are all found in the county and protected by the Migratory Bird Treaty Act.

Key Issues, Initiatives, and Opportunities

Three important initiatives are ongoing in the region and are important to the county: the Congaree Biosphere Region; Cowasee Basin; and upcoming Santee River Basin Plan.

Congaree Biosphere Region

The Congaree Biosphere Region was designated by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1983, in recognition of the unique natural resources and cultural heritage of the region. A required 2016 Periodic Review process generated renewed interest in the initiative. The Central Midlands Council of Governments is leading a renewed CBR Advisory Council and encouraging participation by local governments and key stakeholders.

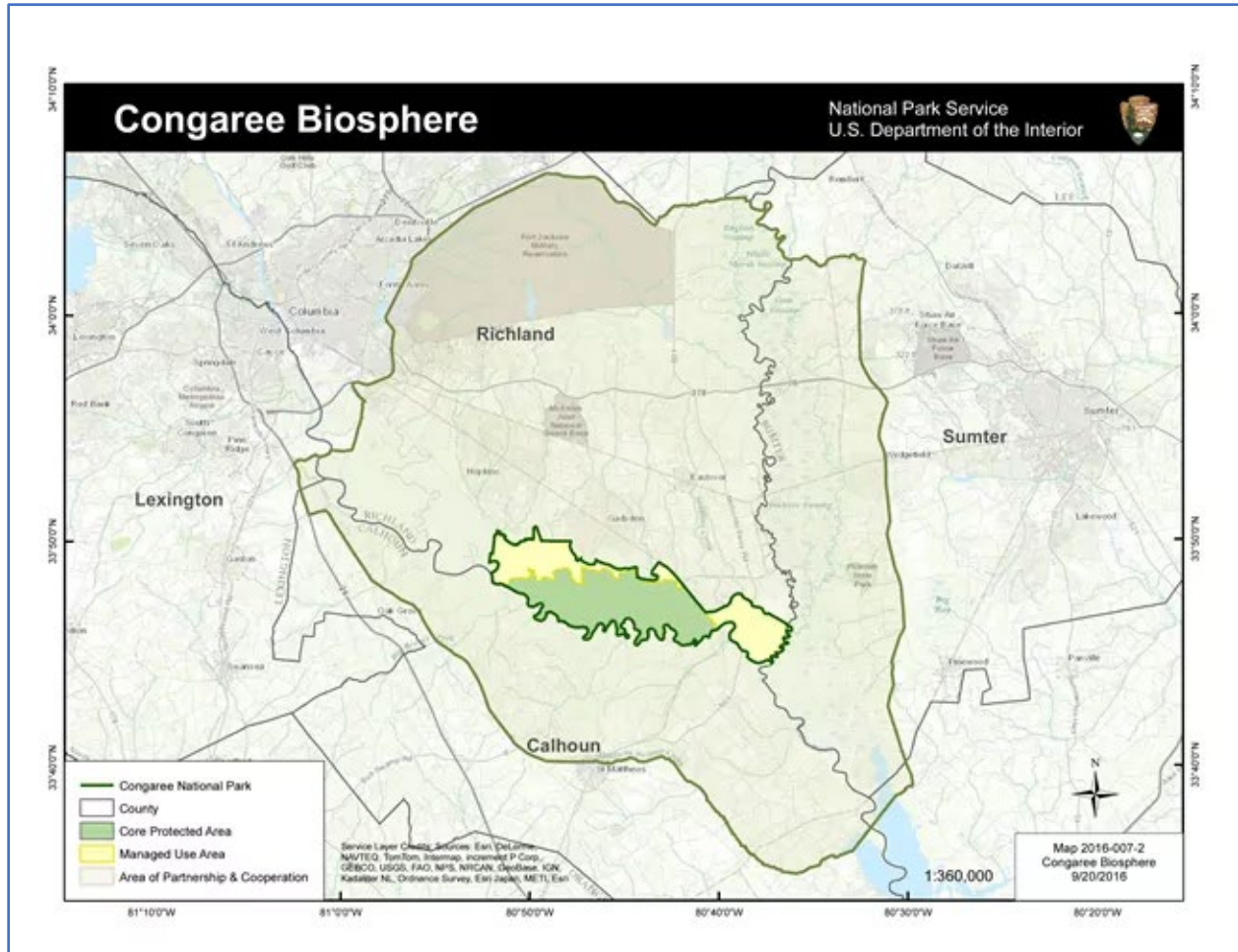
Key goals for the Advisory Council's work include the following:

- Conserve CBR cultural heritage, including community sites, stories, institutions, and traditions
- Conserve CBR natural resources, including environmental (e.g., water, air, and soil) quality, biodiversity, natural forest cover, and ecosystem services
- Promote scientific research, scholarship, monitoring, and education that can inform and inspire decisions regarding conservation and sustainability
- Remain accountable to local voices and stakeholders in guiding CBR initiatives and development
- Remain positive, proactive, and vigilant to forces and trends that challenge the long-term integrity of the CBR's natural resources and cultural heritage
- Support long-term, sustainable community planning, infrastructure engineering, collaboration, and economic development to simultaneously promote ecotourism, heritage tourism, small business, agriculture, silviculture, local industry, and commerce.

More information about the Congaree Biosphere Region is available at the links below.

<https://www.nps.gov/cong/learn/cbr.htm>

<https://en.unesco.org/biosphere/eu-na/congaree>



Map 5.4 Congaree Biosphere Region; source: National Park Service

Cowasee Basin

SCDNR's Cowasee Basin initiative covers a focus area within the Congaree Biosphere Region. The species diversity and habitat in the basin is unique and important, and provides important water quality benefits and economic benefits. The initiative is focused on education and collaboration with private property owners to promote, enhance and continue wise use and stewardship of the basin.

Santee River Basin Plan

SCDNR is developing River Basin Plans with a 50-year planning horizon for the eight planning basins in the State – Broad, Catawba, Edisto, Lower Savannah-Salkehatchie, Pee Dee, Saluda, Santee, and Upper Savannah. Each plan will assess current and future surface and groundwater availability, and identify strategies to manage water shortages or issues, and recommend actions to manage water resources.

Advisory councils are a component of the planning process. The River Basin Council (RBC) for each of the plan will include up to 25 members and will represent a diverse range of water interests. The Edisto River Basin plan discussed above covers part of Calhoun County, and in the next few years work will commence on the Santee River Basin Plan. Because of potential future groundwater constraints in the county, the Santee River Basin Plan is strategically important for Calhoun.

Goals, Objectives and Strategies

Final goals, objectives and strategies related to Natural Resources will be developed based on input from the County Planning Commission and from comments received in public meetings that will be held during the development of the comprehensive plan. Below are draft Goals and Objectives based on analysis of the data in this chapter and the input received to date. In an upcoming session, the county staff and consultant will work with county leaders to fully develop goals and objectives for all elements of this comprehensive plan.

Goal HC1. Develop Natural Resources related recreational tourism opportunities in the county.

Objective HC1.1 **Work with appropriate state and local agencies to develop and promote agritourism and ecotourism in the county.**

Strategy: work with the Town of St. Matthews to develop a monthly downtown event with music, food trucks, and farmers market booths

Objective HC1.2 **Improve Congaree River access to support the Congaree River Blueway Trail from Columbia to the US 601 Bridge.**

Strategy: improve facilities and security at the existing US 601 landing and seek opportunities to develop a secure, dawn to dusk landing at a midway point between Columbia and US 601.

Goal HC2. Preserve and protect prime farmlands.

Objective HC2.1 **Develop zoning ordinance revisions to protect prime farmland areas in a manner consistent with private property rights.**

Strategy: develop effective regulation of large-scale solar farms in the county and limit land disturbing activities so these sites can return to agricultural use in the future.

Strategy: enact zoning controls in agricultural areas to limit uses that are incompatible with existing agricultural operations.

Goal HC3. Protect and enhance wildlife habitat and special natural areas.

Objective HC3.1 **Work with private property owners, state agencies, and land trusts to identify and protect the most important natural areas in the county.**

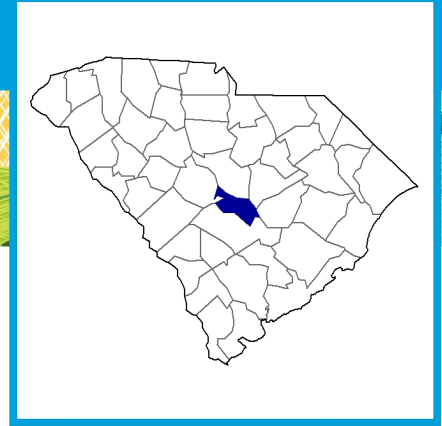
Strategy: meet with owners of key properties to identify opportunities consistent with the owner's long-term intentions for their property.

Goal HC3. Protect and conserve groundwater resources in the county.

Objective HC3.1 **Work to ensure future groundwater supplies are adequate to support public and private water needs.**

Strategy: Work with appropriate state agencies and local water users to develop strategies to conserve water in drought conditions.

Strategy: Actively participate in the SCDNR Santee River Basin plan.



Calhoun County South Carolina

Total and Per Farm Overview, 2017 and change since 2012

	2017	% change since 2012
Number of farms	480	+17
Land in farms (acres)	148,718	+26
Average size of farm (acres)	310	+8
Total	(\$)	
Market value of products sold	80,798,000	+1
Government payments	3,859,000	+136
Farm-related income	2,941,000	-4
Total farm production expenses	62,512,000	-2
Net cash farm income	25,086,000	+22
Per farm average	(\$)	
Market value of products sold	168,330	-13
Government payments (average per farm receiving)	19,792	+129
Farm-related income	15,083	-12
Total farm production expenses	130,234	-16
Net cash farm income	52,263	+5

3 Percent of state agriculture sales

Share of Sales by Type (%)

Crops	73
Livestock, poultry, and products	27

Land in Farms by Use (%) ^a

Cropland	54
Pastureland	3
Woodland	39
Other	4

Acres irrigated: 24,509

16% of land in farms

Land Use Practices (% of farms)

No till	11
Reduced till	15
Intensive till	11
Cover crop	5

Farms by Value of Sales

	Number	Percent of Total ^a
Less than \$2,500	248	52
\$2,500 to \$4,999	26	5
\$5,000 to \$9,999	22	5
\$10,000 to \$24,999	61	13
\$25,000 to \$49,999	38	8
\$50,000 to \$99,999	10	2
\$100,000 or more	75	16

Farms by Size

	Number	Percent of Total ^a
1 to 9 acres	67	14
10 to 49 acres	110	23
50 to 179 acres	128	27
180 to 499 acres	105	22
500 to 999 acres	24	5
1,000 + acres	46	10

Market Value of Agricultural Products Sold

	Sales (\$1,000)	Rank in State ^b	Counties Producing Item	Rank in U.S. ^b	Counties Producing Item
Total	80,798	16	46	1,351	3,077
Crops	59,013	5	46	983	3,073
Grains, oilseeds, dry beans, dry peas	9,112	12	46	1,426	2,916
Tobacco	-	-	13	-	323
Cotton and cottonseed	18,736	2	31	102	647
Vegetables, melons, potatoes, sweet potatoes	(D)	11	46	(D)	2,821
Fruits, tree nuts, berries	(D)	25	45	(D)	2,748
Nursery, greenhouse, floriculture, sod	11,061	6	41	228	2,601
Cultivated Christmas trees, short rotation woody crops	(D)	27	31	635	1,384
Other crops and hay	16,224	2	46	154	3,040
Livestock, poultry, and products	21,785	22	46	1,579	3,073
Poultry and eggs	20,229	21	45	427	3,007
Cattle and calves	829	30	46	2,433	3,055
Milk from cows	-	-	26	-	1,892
Hogs and pigs	549	9	44	639	2,856
Sheep, goats, wool, mohair, milk	(D)	28	46	(D)	2,984
Horses, ponies, mules, burros, donkeys	(D)	20	46	(D)	2,970
Aquaculture	-	-	22	-	1,251
Other animals and animal products	(D)	(D)	45	(D)	2,878

Total Producers ^c	726	Percent of farms that:	Top Crops in Acres ^d
Sex		Have internet access	
Male	516	80	Cotton, all 28,785
Female	210		Peanuts for nuts 17,001
Age		Farm organically	Corn for grain 12,092
<35	21	(Z)	Forage (hay/haylage), all 4,655
35 – 64	421		Soybeans for beans 3,443
65 and older	284		
Race		Sell directly to consumers	Livestock Inventory (Dec 31, 2017)
American Indian/Alaska Native	9	4	Broilers and other meat-type chickens 925,000
Asian	6		Cattle and calves 3,552
Black or African American	14	Hire farm labor	Goats 451
Native Hawaiian/Pacific Islander	-	25	Hogs and pigs 4,642
White	696		Horses and ponies 612
More than one race	1	Are family farms	Layers 1,072
Other characteristics		98	Pullets (D)
Hispanic, Latino, Spanish origin	10		Sheep and lambs (D)
With military service	71		Turkeys (D)
New and beginning farmers	233		

See 2017 Census of Agriculture, U.S. Summary and State Data, for complete footnotes, explanations, definitions, commodity descriptions, and methodology.

^a May not add to 100% due to rounding. ^b Among counties whose rank can be displayed. ^c Data collected for a maximum of four producers per farm.

^d Crop commodity names may be shortened; see full names at www.nass.usda.gov/go/cropnames.pdf. ^e Position below the line does not indicate rank.

(D) Withheld to avoid disclosing data for individual operations. (NA) Not available. (Z) Less than half of the unit shown. (-) Represents zero.