Upper Savannah River Basin Planning – Public Meeting #1

- 1. Welcome and Opening Remarks Dr. Jeff Allen, Clemson University
- 2. Why We Are Here Ken Rentiers, SCDNR, Deputy Director of the Land, Water & Conservation Division

Why is water planning important to all South Carolina citizens? Where are we in the planning process, how did we get here, and where are we going?

3. Upper Savannah River Basin Planning – Scott Harder, SCDNR, Hydrologist

What is a River Basin Plan and how will the Upper Savannah River Basin Plan be developed?

4. Next Steps for Upper Savannah River Basin Planning – Scott Harder, SCDNR

What is the schedule for planning activities in the Upper Savannah basin? How can stakeholders apply to be on the Upper Savannah River Basin Council? What are other ways stakeholders can be involved?

5. Comments from the Planning Process Advisory Committee and Q&A Session – moderated by Dr. Jeff Allen, Clemson University.

PPAC members will share their perspectives on water planning and along with SCDNR address any comments or questions about the Planning Framework and river basin planning activities.

Let us hear from you. We welcome your questions and feedback.

Upper Savannah River Basin Planning – Public Meeting #1

1. Welcome and Opening Remarks – Dr. Jeff Allen, Clemson University

2. Why We Are Here – Ken Rentiers, SCDNR, Deputy Director of the Land, Water & Conservation Division

Why is water planning important to all South Carolina citizens?

Where are we in the planning process, how did we get here, and where are we going?

3. Upper Savannah River Basin Planning – Scott Harder, SCDNR, Hydrologist

What is a River Basin Plan and how will the Upper Savannah River Basin Plan be developed?

4. Next Steps for Upper Savannah River Basin Planning – Scott Harder, SCDNR

What is the schedule for planning activities in the Upper Savannah basin? How can stakeholders apply to be on the Upper Savannah River Basin Council? What are other ways stakeholders can be involved?

5. Comments from the Planning Process Advisory Committee and Q&A Session – moderated by Dr. Jeff Allen, Clemson University.

PPAC members will share their perspectives on water planning and along with SCDNR address any comments or questions about the Planning Framework and river basin planning activities.

Let us hear from you. We welcome your questions and feedback.

SC State Water Planning

Upper Savannah River Basin Planning – Public Meeting #1

Tri-County Technical College – Anderson, SC

November 10th, 2023

Ken Rentiers, Deputy Director – Land, Water, and Conservation Division

SC Department of Natural Resources





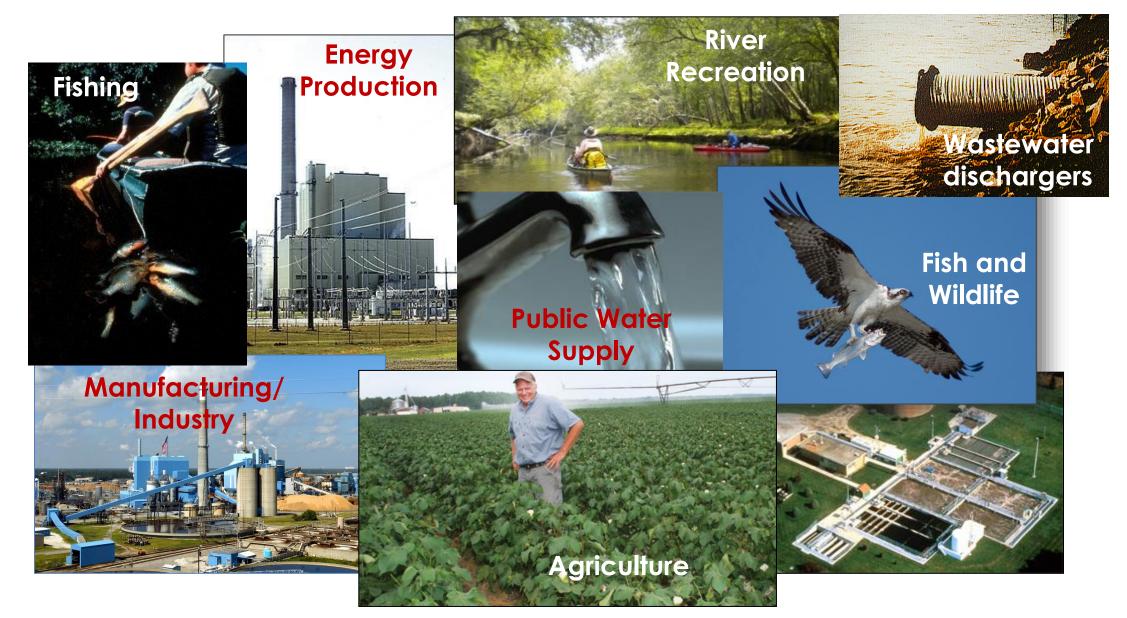
Why Are We Here?

"The effective management of South Carolina's water resources is beyond the scope of any one agency or organization and will require cooperation and shared responsibility among federal, state, and local agencies, as well as public and private parties." - South Carolina Water Plan (2004)



Water Use in South Carolina



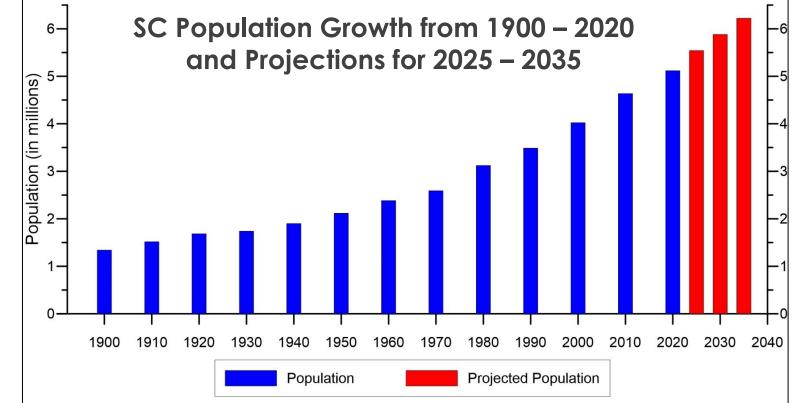


Why State Water Planning?



Population Growth → **Increased Water Demand**

- From 1990 2020, SC population increased from 3.5 to 5.1 million and is forecasted to increase to 6.2 million by 2035.
- Our growing population may increase future water demands and may increase competition for our water supplies.

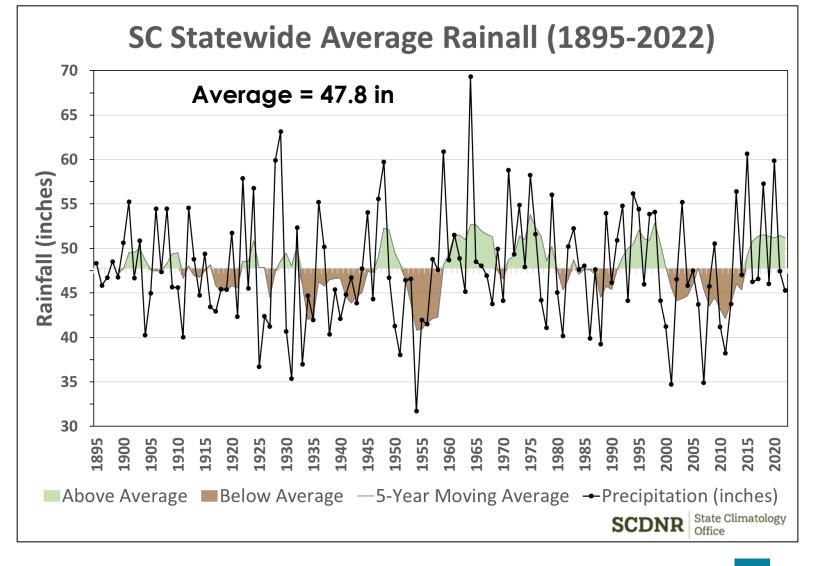


Data from the SC Office of Revenue and Fiscal Affairs, 2021, and U.S. Census Bureau, 2021.

Why State Water Planning?

Drought

SC generally has an abundance of water, but recent droughts (1998-2002, 2007-2008, 2011-2012, 2016, 2019, 2021) have stressed the State's water resources.



Why State Water Planning?



Tree-ring studies indicate the occurrence of more severe and longer-term droughts (Mega-droughts) over the past 400 years.

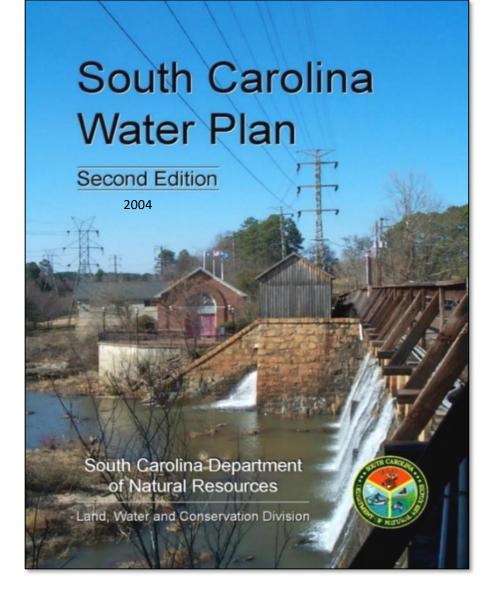
Uncertainty in future droughts + increased water demand = the need for comprehensive State and river basin planning.



Photos courtesy of National Drought Mitigation Center

History of State Water Planning

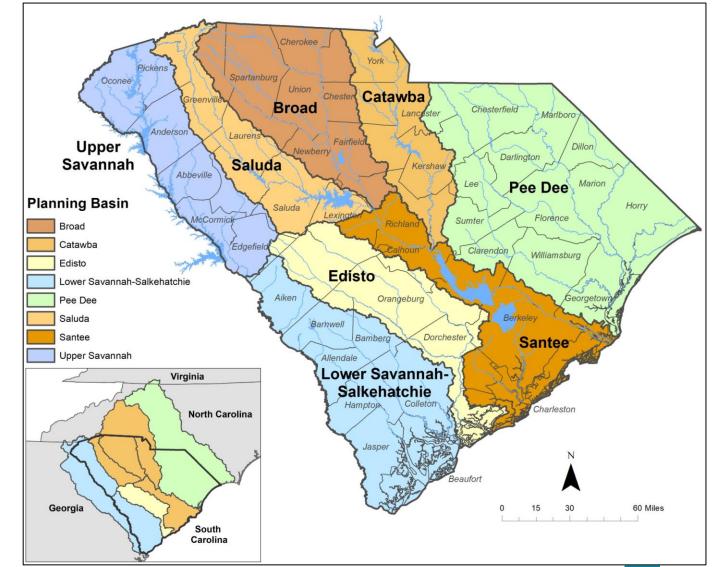




- SCDNR is legislatively mandated to develop a State Water Plan.
- SCDNR published the first edition of the State Water Plan in 1998.
- In 2004, SCDNR published the second edition of the South Carolina Water Plan incorporating lessons learned from the drought of 1998-2002.
- One recommendation was to develop a regional water plan for each major river basin in the State.

South Carolina's Eight Planning Basins

- River Basin Plans will be developed for the State's eight major river basins using a "bottom-up" approach where stakeholders in each basin lead the development of their basin plan.
- Collectively, the River Basin Plans will form the foundation of a new State Water Plan.



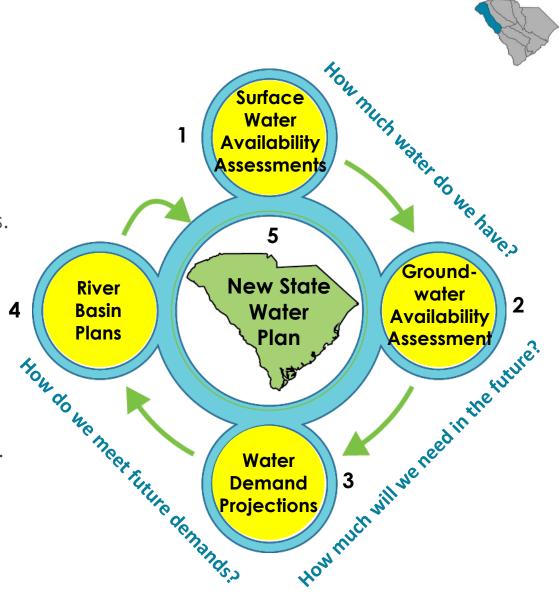
Five-step Process

- 1. Surface Water Assessments completed in 2017 for each basin (CDM Smith, Inc).
 - Several models recently updated.
- 2. Groundwater Assessment completed in 2021 (USGS).
 - 3 regional models to be developed over the next several years.
- **3. Water Demand Projections** methodology report completed in October 2019.
 - Projections completed for Edisto and Broad basins.
 - Projections for Pee Dee, Saluda, and Upper Savannah basins in progress.

4. River Basin Plans

Cooperators:

- Publication of South Carolina State Water Planning Framework.
- Edisto, Broad, Saluda, and Pee Dee basin planning in progress.
- Upper Savannah basin is the 5th basin to begin planning activities.
- 5. State Water Plan River Basin Plans will form the foundation of a new State Water Plan.





Stakeholder Participation

Edisto River Basin Council Field Trip



PPAC Meeting



Broad River Basin Council Meeting



SWAM Model Stakeholder Meeting



Pee Dee River Basin Council Meeting



Edisto Basin Water Demand Projection Stakeholder Meeting



Planning Process Advisory Committee

- Convened by SCDNR in March 2018.
- Purpose develop a guidance document (Planning Framework) for developing River Basin Plans and for updating the State Water Plan.
- South Carolina State Water Planning Framework (Planning Framework) was published in October 2019 after an 18-month process.



Planning Framework is available for review and download at: https://hydrology.dnr.sc.gov/water-planning-framework.html

PPAC Committee Members

Jeffery Allen David Baize David Bereskin Jesse Cannon Fred Castles, III

Clay Duffie Steve Hamilton Erika Hollis J.J. Jowers, Jr.

Eric Krueger Jeff Lineberger Jill Miller Dean Moss, Jr. Myra Reece

Ken Rentiers Bill Stangler Landrum Weathers Scott Willett Charles Wingard **Clemson University** SCAWWA/WEASC **Greenville Water** Santee Cooper Catawba-Wateree Water Management Group Mt. Pleasant Waterworks (retired) The Dunes Golf and Beach Club **Upstate Forever** Bamberg County citizen, Edisto Engineers and Surveyors, Inc. The Nature Conservancy **Duke Energy** South Carolina Rural Water Association Beaufort Jasper WSA (retired) South Carolina Department of Health and Environmental Control South Carolina Department of Natural Resources **Congaree Riverkeeper** Farmer Anderson Regional Joint Water System Walter P. Rawl and Sons, Inc.



For more information, visit: <u>https://www.clemson.edu/public/water-</u> <u>assessment/State_Water_Planning_Process_</u> <u>Advisory_Committee.html</u>



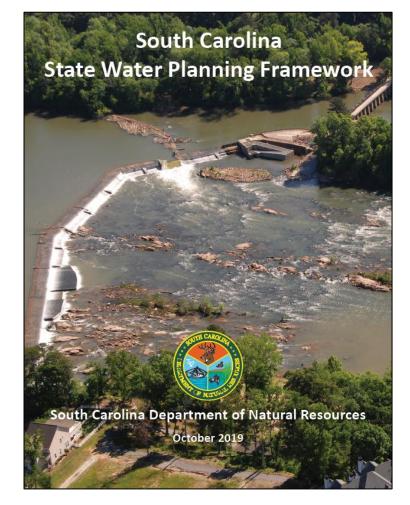


Contents of Planning Framework

Sections:

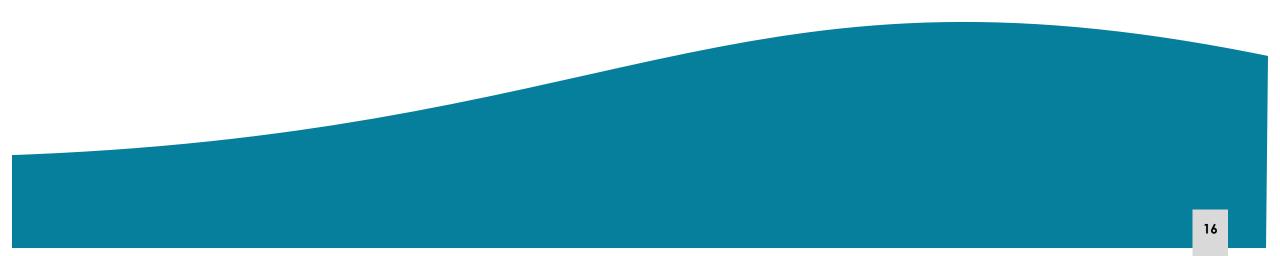
- 1. Executive Summary
- 2. Introduction
- 3. River Basin Planning Process
- 4. Methodologies for Evaluating Water Availability
- 5. River Basin Plan Table of Contents
- 6. River Basin Planning Process Implementation
- 7. River Basin Plan Implementation
- 8. State Water Plan

Appendix: River Basin Council Bylaws

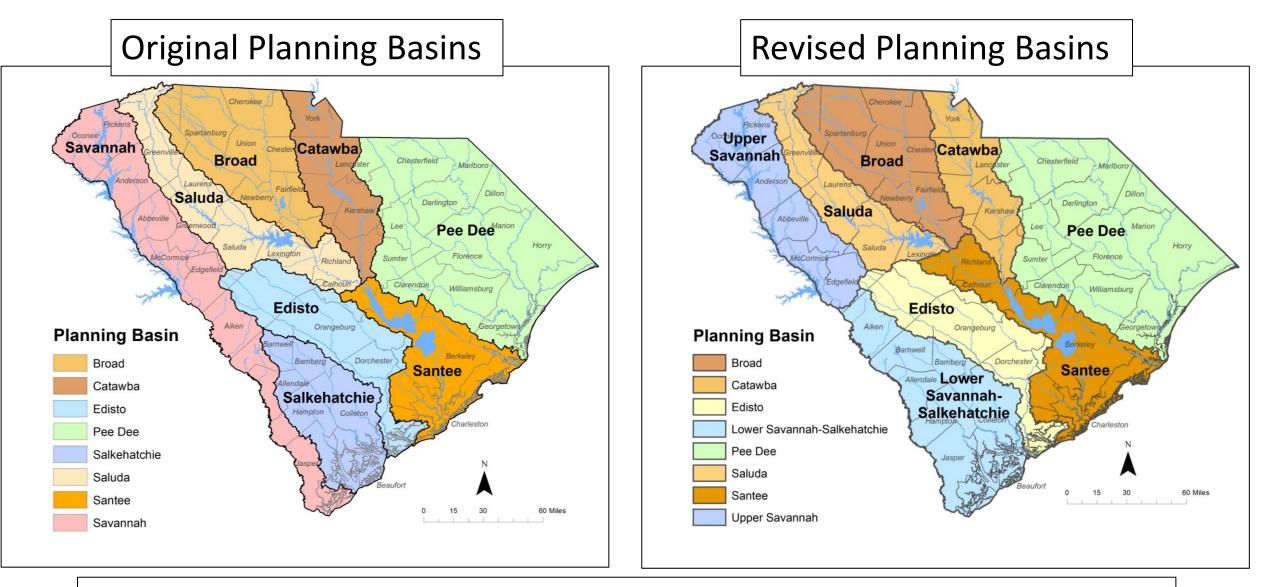


Planning Framework is available for review and download at: <u>https://hydrology.dnr.sc.gov/water-planning-framework.html</u>

SC River Basin Planning: Status and Long-term Schedule



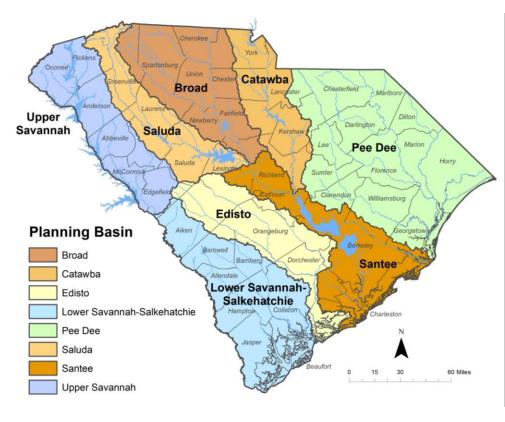
Recent Changes to Planning Basin Boundaries



Impacted basins include the Salkehatchie, Saluda, Santee, and Savannah basins

River Basin Planning Current Status

Basin	Status				
Edisto	June 2020 – present				
Broad	March 2022 – present				
Pee Dee	June 2022 – present				
Saluda	March 2023 – present				
Upper Savannah	Scheduled to begin Summer 2023				
Lower Savannah/ Salkehatchie	Scheduled to begin Fall 2023				
Santee	Scheduled to begin Spring 2024				
Catawba	CWWMG's Integrated Resource Plan in progress				



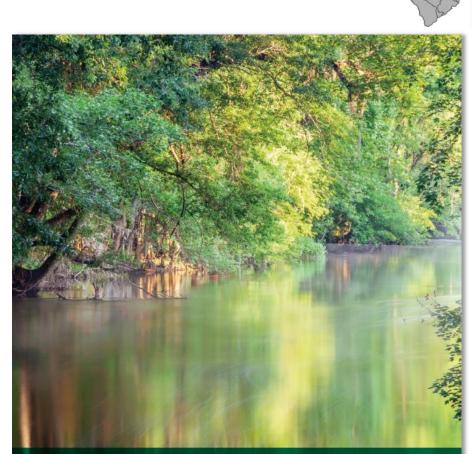
State Water Plan - Schedule

Basin	2021	2022	2023	2024	2025	2026
Edisto						
Broad						
Pee Dee						
Catawba						
Saluda						
Upper Savannah						
Lower Savannah/ Salkehatchie						
Santee						
State Water Plan						

Draft Edisto River Basin Plan

- Draft Plan and Executive Summary available at: <u>https://hydrology.dnr.sc.gov/edisto-river-</u> basin-plan.html
- Public comments are currently under review by the RBC.
- Final plan expected later this Spring.





EDISTO RIVER BASIN PLAN 2022

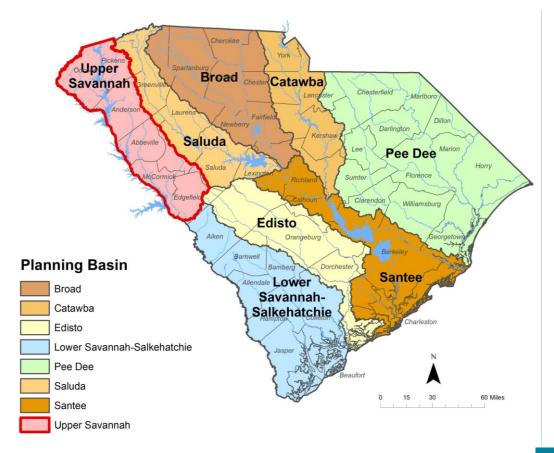


Where Are We Now?



Ready to start the Upper Savannah River basin planning process under the guidance of the Planning Framework





Upper Savannah River Basin Planning – Public Meeting #1



1. Welcome and Opening Remarks – Dr. Jeff Allen, Clemson University

2. Why We Are Here – Ken Rentiers, SCDNR, Deputy Director of the Land, Water & Conservation Division

Why is water planning important to all South Carolina citizens? Where are we in the planning process, how did we get here, and where are we going?

3. Upper Savannah River Basin Planning – Scott Harder, SCDNR, Hydrologist

What is a River Basin Plan and how will the Upper Savannah River Basin Plan be developed?

4. Next Steps for Upper Savannah River Basin Planning – Scott Harder, SCDNR

What is the schedule for planning activities in the Upper Savannah basin? How can stakeholders apply to be on the Upper Savannah River Basin Council? What are other ways stakeholders can be involved?

5. Comments from the Planning Process Advisory Committee and Q&A Session – moderated by Dr. Jeff Allen, Clemson University.

PPAC members will share their perspectives on water planning and along with SCDNR address any comments or questions about the Planning Framework and river basin planning activities.

Let us hear from you. We welcome your questions and feedback.

What is a River Basin Plan?

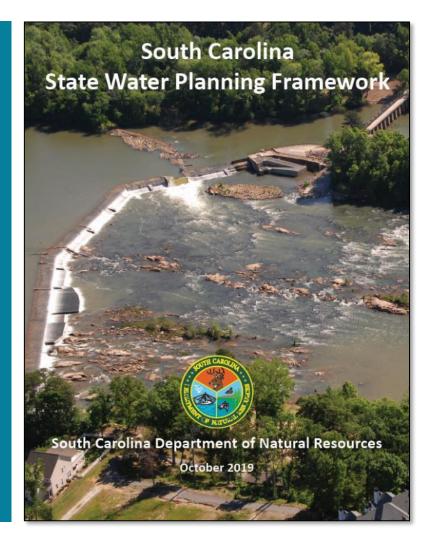


What is a River Basin Plan?



A River Basin Plan answers four questions:

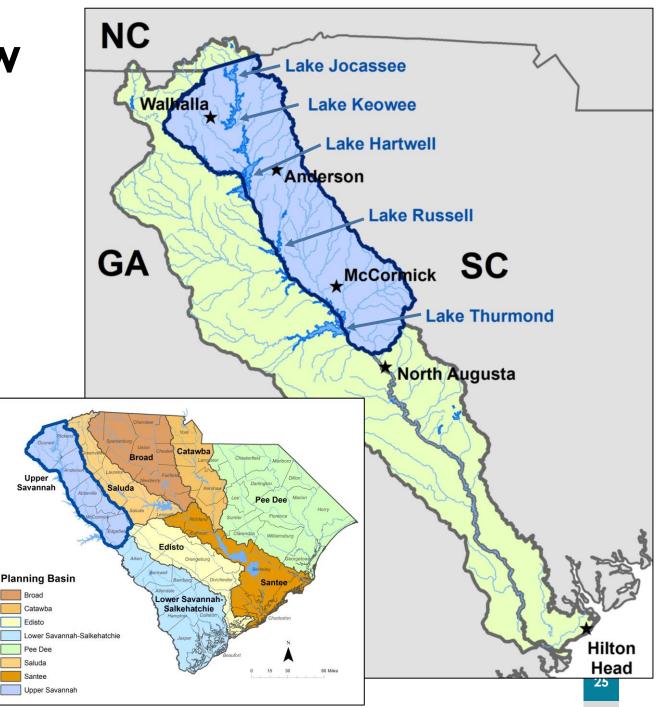
- 1. What is the basin's current available water supply and demand?
- 2. What are the current permitted and registered water uses?
- 3. What will be the basin's water demand over the Planning Horizon, and will the water supply meet the demand?
- 4. What water management strategies will be employed to ensure the supply meets or exceeds the projected demand over the Planning Horizon?



Proactive Water Management, not Reactive!

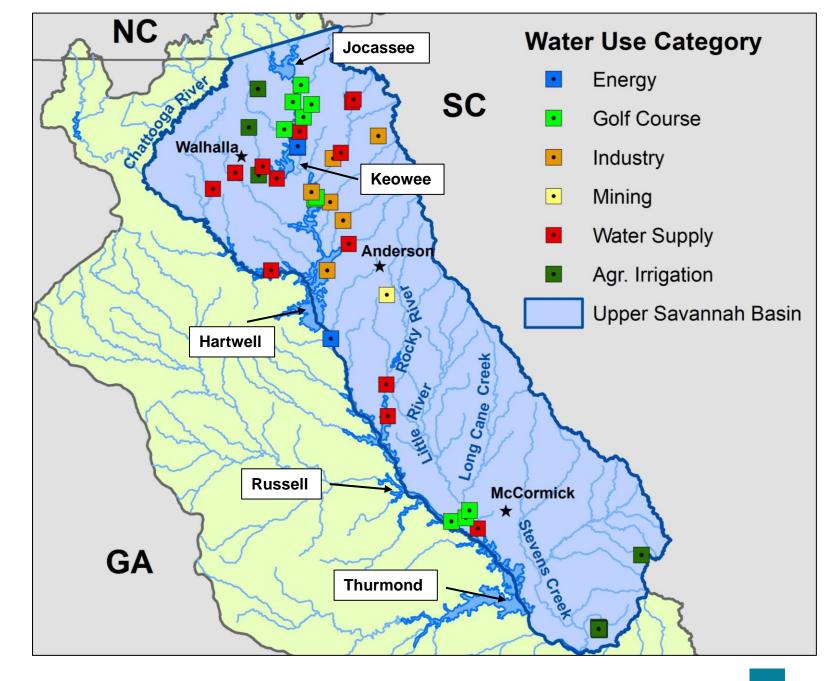
Savannah Basin Overview

- Length = 314 miles, with headwaters in the mountains of SC, GA, and NC.
- Spans 3 states NC, GA, SC
- Area = 10,971 sq. mi.
 - GA 5,821 sq. mi. (53.1%)
 - SC 4,979 sq. mi. (45.4%)
 - NC 171 sq. mi. (1.6%)
- Upper basin dominated by reservoirs operated by Duke Energy and the U.S. Army Corps of Engineers.



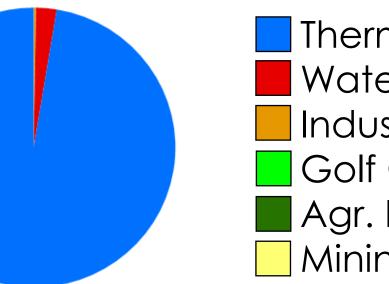
Upper Savannah Basin Water Use

- More than 99% of withdrawals are from surface water.
- Planning will focus primarily on the basin's surface water resources.



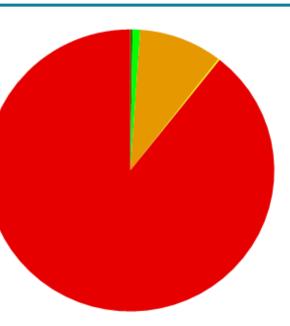
2021 SC Reported Water Withdrawals

Including Energy



Thermoelectric (97.4%)
Water Supply (2.3%)
Industry (< 1%)
Golf Course (< 1%)
Agr. Irrigation (< 1%)
Mining (< 1%)

Excluding Energy



Water Supply (89.3%)
Industry (9.4%)
Golf Course (1%)
Agr. Irrigation (< 1%)
Mining (< 1%)

Source: SCDHEC Water Use Database

Reported SC Surface Withdrawals (2011-2021)

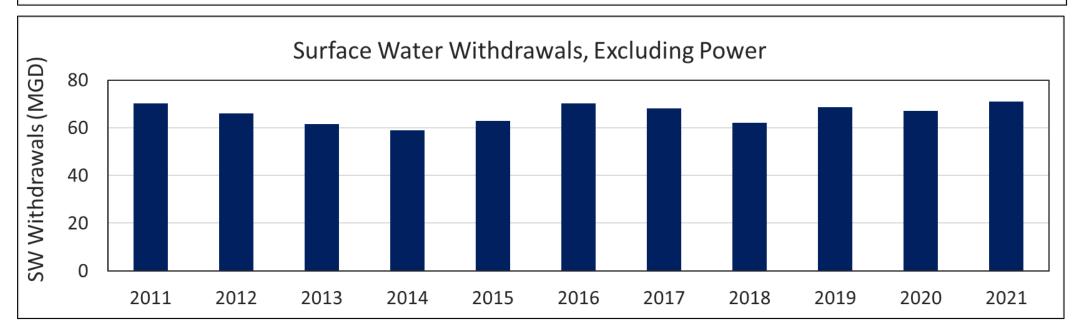


Surface Water Withdrawals, Including Power

2,900

- How will this demand change over the next 50-years?
- Will we have enough water to meet those demands?
- If not, how can we manage our water resources to meet future demand?

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	





Guiding Principles

- Water is a limited natural resource and is a major factor for economic development and environmental protection.
- River Basin Plans should strive for the equitable use of water resources with the goal of ensuring water is available for all uses, when and where needed, throughout the Planning Horizon and under drought conditions.
- River Basin Plans should protect the public's health and well-being and should balance social, economic, and environmental needs.

B

Features of a River Basin Plan

- Stakeholder-developed.
- Covers a **50-year** Planning Horizon.
- Considers both **surface water** and **groundwater** resources.
- Current focus is on water *quantity* not water *quality* with emphasis on drought conditions.
- Not a regulatory document but may include recommendations regarding State water policy, law, and regulations.
- Updated every 5-years water planning will be an ongoing process.
- Supported by hydrologic data, models, and water-demand projections.



EDISTO RIVER BASIN PLAN 2022



PS-

River Basin Plan Table of Contents

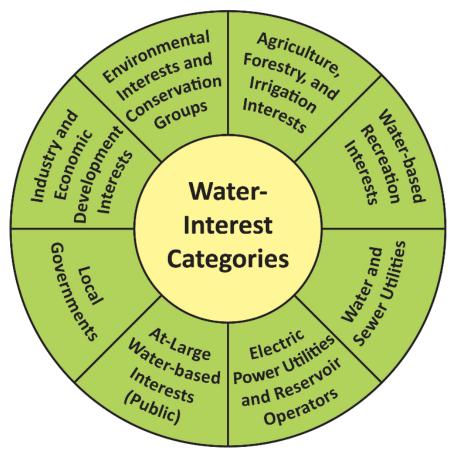
- 1. Introduction
- 2. Description of the Basin
- 3. Water Resources of the Basin
- 4. Current and Projected Water Demand
- 5. Comparison of Water Resource Availability and Water Demand
- 6. Water Management Strategies
- 7. Water Management Strategy Recommendations
- 8. Drought Response
- 9. Policy, Legislative, Regulatory, Technical, and Planning Process Recommendations
- 10. Implementation Plan

How will the River Basin Plan be Developed?



Planning Framework calls for the formation of a River Basin Council (RBC) in each planning basin

- **Stakeholder-led team** responsible for developing the River Basin Plan.
- 25-30 members representing 8 interest categories.
- Governed by a set of Bylaws.
- Consensus based decision-making process.
- Chair and Vice-Chair elected by RBC.



River Basin Plans will be developed over a 2-year period

RBC Roles and Responsibilities

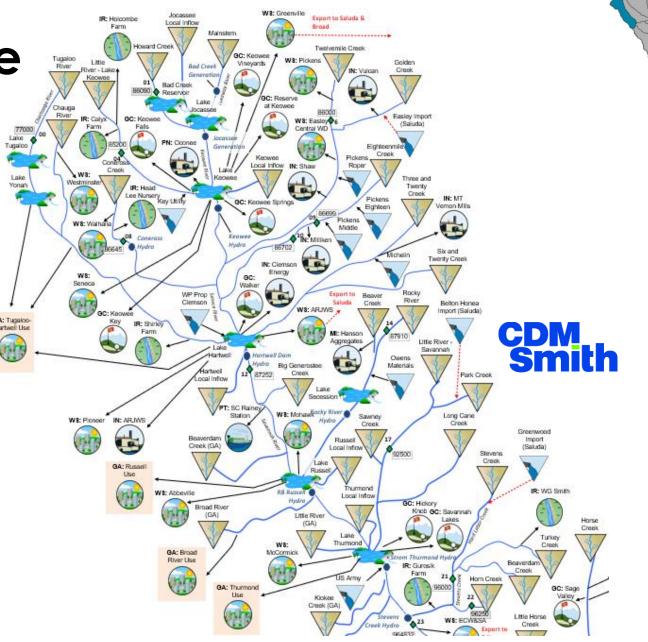
- Identify water shortages or conflicts using hydrologic models.
- Recommend strategies to mitigate or eliminate water use conflicts or water shortages.
- Communicate with stakeholders and the public on water planning activities.
- Coordinate with other formal water planning bodies.
- Recommend changes to water policy or legislation or to the water planning process.
- Help draft River Basin Plans.
- Update River Basin Plans every 5years and amend the plans as needed.





Upper Savannah Surface Water Model (SWAM)

Model is a decisionmaking tool used to assess water availability and management strategies, and will support the development of River Basin Plans



https://hydrology.dnr.sc.gov/surface-water-models.html



Water Demand Projections

- Water-demand methodology report released in October 2019 and available at:
 - <u>https://hydrology.dnr.sc.gov/water-demand.html</u>.
- Projections will be used in surface water model to assess future water availability and will support the development of River Basin Plans.
- Water-demand projections for the Upper Savannah basin will be developed by Clemson University and SCDNR.
- RBC will have opportunity to review and provide feedback on the basin's water-demand projections.



US Army Corps of Engineers





RBC Support

- **Contractors** (solicited and hired by SCDNR):
 - Meeting Facilitation (TBD)
 - Meeting Coordination (Clemson University) administrative and logistical support
 - Surface Water Modeling Technical support (TBD)
 - Public Outreach (Clemson University)
 - River Basin Plan report writing (TBD)
- Other State and Federal Agencies:
 - RBCs can request agencies to serve as Advisors.
 - Participate in RBC meetings and subcommittee meetings as requested.
- RBCs can request input from other outside Advisors.

PPAC and SCDNR will continue to provide oversight of the river basin planning process.

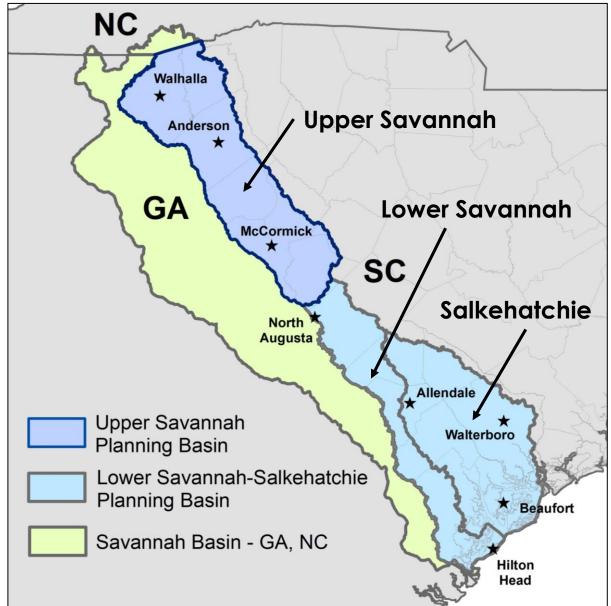
Coordination with other Planning Bodies

- Planning Framework recognizes the existence of other formal water planning groups and drought management groups.
- Planning Framework emphasizes coordination with such groups and provides general guidelines.
- Inter-basin River Councils (IRCs):
 - Made up of RBC members from two or more basins.
 - A forum for adjoining basins to communicate and coordinate on mutual interests and to resolve conflicts.



Coordination with Lower Savannah-Salkehatchie RBC

- Lower Savannah and Salkehatchie basins are defined as one planning basin.
- Lower Savannah-Salkehatchie planning activities will begin approximately 3 months after the Upper Savannah (Fall 2023).
- An IRC will be formed between the Upper Savannah planning basin and the Lower Savannah-Salkehatchie planning basin.



Limitations of the Upper Savannah River Basin Planning Process



- Process is **not** intended as a forum to evaluate and provide alternatives to:
 - the USACE's Drought Management Plan any future studies regarding the Drought Management Plan will be led by the USACE in a separate process.
 - Duke Energy Reservoir Operations already evaluated and stipulated through the Federal Energy Regulatory Commission (FERC) licensing process.
- Planning will focus on demand-side water management strategies and supply-side strategies on tributaries.

Upper Savannah River Basin Planning – Public Meeting #1



1. Welcome and Opening Remarks – Dr. Jeff Allen, Clemson University

2. Why We Are Here – Ken Rentiers, SCDNR, Deputy Director of the Land, Water & Conservation Division

Why is water planning important to all South Carolina citizens? Where are we in the planning process, how did we get here, and where are we going?

3. Upper Savannah River Basin Planning – Scott Harder, SCDNR, Hydrologist

What is a River Basin Plan and how will the Upper Savannah River Basin Plan be developed?

4. Next Steps for Upper Savannah River Basin Planning – Scott Harder, SCDNR

What is the schedule for planning activities in the Upper Savannah basin? How can stakeholders apply to be on the Upper Savannah River Basin Council? What are other ways stakeholders can be involved?

5. Comments from the Planning Process Advisory Committee and Q&A Session – moderated by Dr. Jeff Allen, Clemson University.

PPAC members will share their perspectives on water planning and along with SCDNR address any comments or questions about the Planning Framework and river basin planning activities.

Let us hear from you. We welcome your questions and feedback.

Upper Savannah River Basin Planning Schedule

Mar - Apr 2023

- Public kick-off meetings
- Solicit RBC applications
- Solicit Contractors (in progress)

May - Jun 2023

- Appoint RBC members
- Finalize contractors
- Planning Team (SCDNR, SCDHEC,
- Clemson, contractors)
- begins to meet

July 2023

• First RBC meeting

Aug 2023 – Jun 2025

• Monthly RBC meetings

June – July 2025

• Completed River Basin Plan

RBC Membership Qualifications and Considerations

- SCDNR appointments based on the following criteria:
 - Applicant's credentials
 - Knowledgeable and experienced in their interest category.
 - Must either reside, work or officially represent an entity having a significant water resource interest in the basin.
 - Additional qualifiers membership on the State Drought Response Committee, for example.
 - Recommendations and endorsements submitted by various interest groups or organizations.
 - Geographic diversity.
 - PPAC recommendations.

SCDNR will strive for a balanced RBC representation!

Membership Terms and Commitment Considerations

- Initial terms are 2, 3 or 4 years.
- Subsequent terms of 3 years (each additional term subject to SCDNR approval).
- RBC members can serve up to 3 consecutive terms.
- Considerations for RBC applicants:
 - Multi-year commitment.
 - Monthly in-person meetings (held during normal business hours).
 - Subcommittee meetings.
 - Review of various technical reports and other documents.
 - Help write and review the River Basin Plan.
 - Annual meetings between iterations of the River Basin Plan (possibly higher frequency).

Upper Savannah River Basin Council Application Process

Applicants should carefully consider the time commitment and workload required to an RBC member.

MEMBERSHIP APPLICATION FORM		
Last Name:	First Nar	ne:
Address:		
		Phone 2:
		ZIP:
Organization/Company: _		
Position:	E-mail:	
Indicate which one Interest	Category you are requesting	ng to represent (required):
Agriculture, ForestrLocal Governments	y, and Irrigation Interests	 Industry and Economic Developmen Interests
 Water and Sewer Ut 	ilities	 Water-based Recreation Interests
Electric-Power Utili		 Environmental Interests
Reservoir Opera 1. How are you affiliated wi		 At-Large Water-based Interests
2. Explain what makes you	an appropriate representati	ve of your selected Interest Category:
		ve of your selected Interest Category: nd or experience with water resources:
3. Describe your relevant q	ualifications and backgroun	

https://hydrology.dnr.sc.gov/uppsav-basin-planning.html

RBC Application Process

- Application period: Apr 10th May 8th, 2023.
- Application forms available on SCDNR website:

https://hydrology.dnr.sc.gov/uppsav-basin-planning.html

- Application forms and recommendations should be sent to Ken Rentiers (see application for contact information).
- Application review period: May 8th, 2023 May 31st, 2023.
 - PPAC will review applications and make recommendations to SCDNR.
- Final selection and notification by **June 15th, 2023**.
- Applicants not appointed for membership may be placed on a waiting list.



Stakeholder/Public Participation Guidelines

- Guidelines for stakeholder and public participation described in Section 3.7 of Planning Framework.
- Public meetings (3 to 4 per basin):
 - Prior to first RBC meeting "kickoff" meeting(s).
 - After draft River Basin Plan is released.
 - After *final* River Basin Plan is released.
- Draft River Basin Plan public review period (30 days).
- RBC meetings:
 - Open to the public.
 - Each meeting will include public comment period.

SCDNR Hydrology Website



The SCDNR Hydrology Section is responsible for formulating and establishing a comprehensive water resources policy for the State of South Carolina.

Public Notice: SCDNR will host two public meetings in Anderson, SC on April 10th and in McCormick, SC on April 11thto kick-off river basin planning activities in the Upper Savannah basin. Meeting dates, locations, and agendas can be found on the Upper Savannah Basin Planning website.

Public Notice: SCDNR is accepting public comments on the draft Edisto River Basin Plan Public comments on the draft plan will be accepted through March 17th, 2023. The draft plan, along with comment submission instructions, can be found on the Edisto River Basin Plan website



https://hydrology.dnr.sc.gov/water-planning.html

Site will host:

- Announcements/Calendar of Events
- Access to water planning documents Planning Framework, technical reports •
- RBC meeting materials agendas, presentations, recordings •

Upper Savannah Basin Planning

Activities and reports on water planning in the Upper Savannah River basin.

Overview

Draft Agenda

avannah River Basin Planning Activitie

River basin planning activites in the Upper Savannah river basin have been initiated under the guidance of the South Carolina State Water Planning Framework. Two public meetings will be hosted by the SCDNR on April 10th at Tri-County Technical College in Anderson, SC and on April 11th at Hickory Knob State Park and Resort near McCormick, SC to kick-off planning activities. Additional meeting information, including agendas, can be found below. An overview of the South Carolina State Water Planning Framework will be provided, and applications to serve on the Upper Savannah River Basin Council will be solicited. Please visit this website for periodic updates and new information regarding Upper Savannah river basin planning activities.

Public Notice: SCDNR will host two pubic meetings on April 10th and 11th in the Upper Savannah basin to kickoff river basin planning activities. Meeting dates, locations, and agendas can be found below. Please contact Scott Harder (harders@dnr.sc.gov) for more information

Public Meetings Meeting #1 - Anderson, SC Meeting #2 - McCormick, SC April 10th, 2023; 6:00 pm - 8:00 pm April 11th, 2022; 6:00 pm - 8:00 pm Location: Tri-County Technical College Location: Hickory Knob State Park and Resort Anderson Campus Convention Center 511 Michelin Blvd, Rm 123 1591 Resort Dr Anderson, SC 29625 McCormick, SC 29835 Draft Agenda Directions via Google Directions via Google, Park Map Upper Savannah Planning News Hydrology Calendar • Public Meetings Scheduled for April 10th and 11th to Kick-off Upper Upcoming events

https://hydrology.dnr.sc.gov/UppSav-basinplanning.html

Contact Information







Upper Savannah River Basin Planning – Public Meeting #1



1. Welcome and Opening Remarks – Dr. Jeff Allen, Clemson University

2. Why We Are Here – Ken Rentiers, SCDNR, Deputy Director of the Land, Water & Conservation Division

Why is water planning important to all South Carolina citizens? Where are we in the planning process, how did we get here, and where are we going?

3. Upper Savannah River Basin Planning – Scott Harder, SCDNR, Hydrologist

What is a River Basin Plan and how will the Upper Savannah River Basin Plan be developed?

4. Next Steps for Upper Savannah River Basin Planning – Scott Harder, SCDNR

What is the schedule for planning activities in the Upper Savannah basin? How can stakeholders apply to be on the Upper Savannah River Basin Council? What are other ways stakeholders can be involved?

5. Comments from the Planning Process Advisory Committee and Q&A Session – moderated by Dr. Jeff Allen, Clemson University.

PPAC members will share their perspectives on water planning and along with SCDNR address any comments or questions about the Planning Framework and river basin planning activities. Let us hear from you. We welcome your questions and feedback.