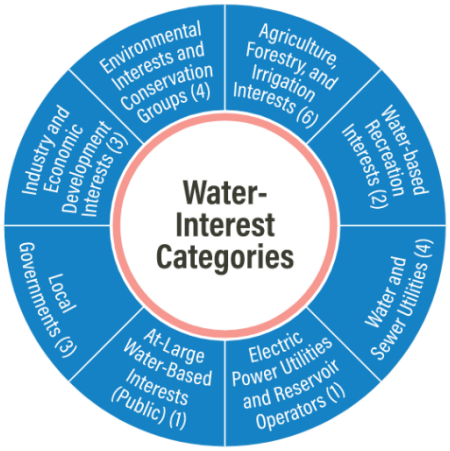
Lower Savannah-Salkehatchie River Basin Plan: SUMMARY SHEET

River Basin Planning Process

The Lower Savannah-Salkehatchie River Basin Plan is one of eight river basin plans under development for South Carolina. Once completed, the eight basin plans will converge into an updated South Carolina State Water Plan. The Lower Savannah-Salkehatchie River Basin Plan includes data, analysis, and water management strategies to guide water resource development in the basin for a planning horizon of 50 years. It was developed by the Lower Savannah-Salkehatchie Basin Council (RBC), a group of volunteer stakeholders representing the eight water interest categories shown below. This group coordinated with the Upper Savannah RBC to share results of technical analysis and align recommendations where possible.



Composition of the Lower Savannah-Salkehatchie RBC. *Numbers in parentheses indicate RBC member representation at the time the plan was developed.*

Current and Future Water Use

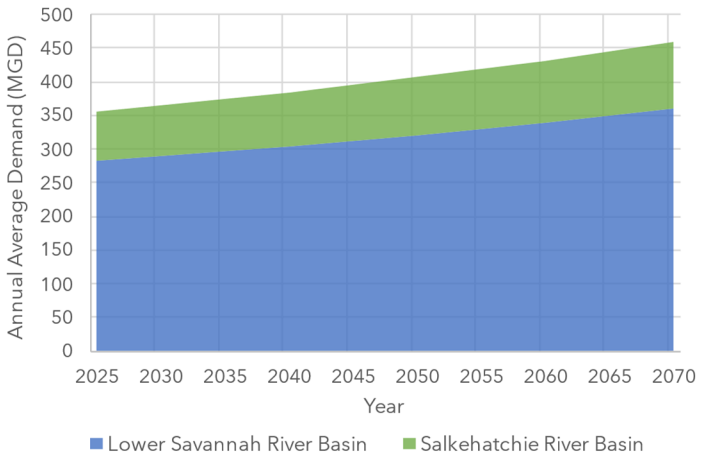
Current water withdrawal from permitted and registered users in the South Carolina portion of the Lower-Savannah Salkehatchie River basin is approximately 246.4 million gallons per day (MGD), 42.5 MGD of which is from the Salkehatchie basin and 203.9 MGD of which is from the Lower Savannah basin. Approximately 76 MGD of this total demand is withdrawn from groundwater, with the rest coming from surface water. Of the surface water withdrawals, approximately 22 percent (36.9 MGD) of the water is used consumptively and 78 percent is returned to streams and rivers downstream.

Current surface water and groundwater withdrawals are only 15 percent of the 1,625.4 MGD that has been approved through permits and registrations in the South Carolina portion of the basin. Most of the water used in the Lower Savannah basin comes from surface water sources and is used for thermoelectric energy and public water supply, as shown below. In the Salkehatchie basin, groundwater is the major source for all use types, and use is dominated by agriculture.

Current Water Withdrawals (10-year Average)

Water Use	Lower Savannah (MGD)	Salkehatchie (MGD)
Thermoelectric	103.1	0.4
Public Supply	71.9	7.8
Manufacturing	22.4	0.1
Golf Courses	1.3	2.3
Agriculture	5.3	31.5
Aquaculture	0.0	0.4

To identify whether surface water supplies are likely to meet demands up to 50 years in the future, the Lower Savannah-Salkehatchie RBC investigated two planning scenarios that covered a range of surface water demand projections: (1) a *Moderate Demand Scenario,* which assumed normal weather conditions (average irrigation) and moderate growth projections, and (2) a *High Demand Scenario* which assumed hot and dry conditions (high irrigation) and high population and economic growth. The *High Demand Scenario* is considered a conservative estimate of future demand and was used as the basis for selecting water management strategies. With a projected 2070 surface water and groundwater demand of 459 MGD, the *High Demand Scenario* withdrawals account for 28 percent of the currently permitted and registered amount of surface water and groundwater in the basin. The *High Demand Scenario* projections are shown below.



Lower Savannah-Salkehatchie River Basin Council Vision:

Shared water resources are managed to sustainably meet the needs of all stakeholders in the Lower Savannah and Salkehatchie basins now and into the future.

Key Findings

The Lower-Savannah Salkehatchie RBC used a surface water quantity model to evaluate whether existing surface water supplies were sufficient to meet projected water demands through 2070, assuming historical hydrologic conditions. Some of the most significant findings include:

- **Current Water Use:** Surface water availability modeling suggests a low risk of water supply shortages based on current water demands.
- **Growth Projection Impacts:** Results suggest very low probability of surface water shortages under moderate or high economic growth assumptions through 2070. However, unexpected growth could introduce stressors.
- **Overallocation**: There may not always be enough water in every stream reach to satisfy all demands if all users withdrew their full permitted or registered amount 100 percent of the time. While this is unlikely, it is allowed by existing regulation.

Although a groundwater model was not available for this phase of planning, groundwater conditions were evaluated based on available groundwater monitoring data, potentiometric aquifer surface contours, current groundwater demand, and considering estimates of future water demand. For a majority of the basin, there have been no significant long-term declines in aquifer levels. The greatest concern in the basin exists in the Upper Floridan aquifer where pumping has created a cone of depression at Savannah, GA and where Hilton Head Island has been impacted by saltwater intrusion.

Recommendations

The RBC developed a range of recommendations related to water management, planning, data collection, regulation, legislation, and policy. Inherent to the recommendations was the desire to maintain a balance of water uses between societal and environmental needs. Some of the key recommendations are summarized below.

Water Management Strategy Recommendations

- **Supply-side Strategies:** The RBC did not recommend any new supply management strategies due to low risk of unmanageable water shortages but recommended the continued use of existing supply-side strategies such as recycling water for irrigation, conjunctive use of surface and groundwater, onsite retention of stormwater for irrigation, and aquifer storage and recovery.
- **Demand-side Strategies:** The RBC recommended a toolbox of municipal and agricultural demand management strategies such as education, conservation pricing, smart irrigation systems, soil management, cover cropping, and leak detection/water loss control programs.
- **Adaptive Management:** The RBC emphasized that future uncertainties should not be ignored (climate, population, industrial growth, emerging contaminants, etc.). In keeping with a predominant trend throughout the United States, an adaptive approach to water resources management is recommended.

Technical Recommendations

- The SC Department of Environmental Services should continue to work with the United States Geological Survey to develop a groundwater model covering the basin and use the model to better understand the capacity of each aquifer and its ability to sustain future demands.
- The RBC noted the need to coordinate with Georgia on the use and impacts to the shared groundwater resource.
- The state should request for and cost-share in the completion of Phase 2 of the US Army Corps of Engineers Comprehensive Study and Drought Plan Update.

Regulatory, Legislative, and Policy Recommendations

- The South Carolina Surface Water Withdrawal, Permitting, Use, and Reporting Act should allow for reasonable use criteria to be applied to all surface water withdrawals, like those that already exist for groundwater withdrawals.
- Current laws that allow for regulation of water use should be improved so that they are enforceable and effective. The current water law grandfathers most water users, limiting the ability for effective water management.
- The Governors of South Carolina and Georgia should establish a coordinated, state-level planning and water management process for the Savannah River Basin and their shared groundwater aquifers.

Planning Process Recommendations

- The South Carolina Legislature should continue to fund state water planning activities, including river basin planning.
- The RBC will support and promote outreach and education to increase awareness with the general public around watershed-based planning.

Call to Action

The Lower Savannah-Salkehatchie RBC developed an implementation plan that includes seven objectives for the next 5 years. Each objective is linked to actions and strategies that rely on support from state, local, and federal agencies, water users, conservation groups, and other stakeholders. Future funding is critical to implementation.