

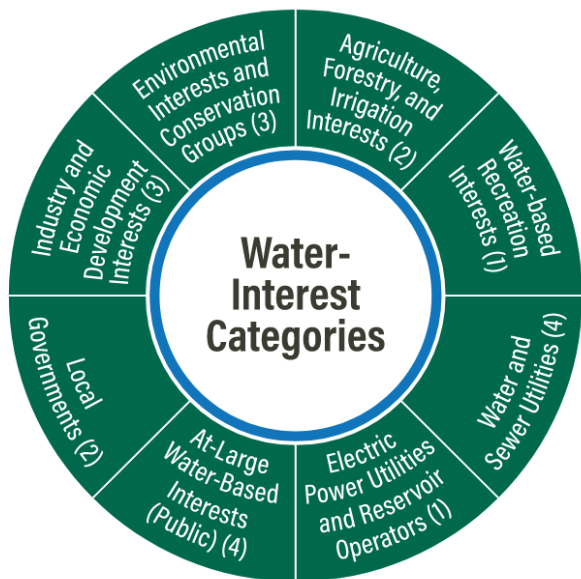


## UPPER SAVANNAH RIVER BASIN PLAN

# Upper Savannah River Basin Plan: SUMMARY SHEET

## River Basin Planning Process

The Upper Savannah 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 Upper Savannah 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 Upper Savannah River Basin Council (RBC), a group of volunteer stakeholders representing the eight water interest categories shown below. This group coordinated with the Lower Savannah-Salkehatchie River Basin Council to share results of technical analysis and align recommendations where possible.



## Composition of the Upper Savannah River Basin Council.

Numbers in parentheses indicate RBC member representation at the time the plan was developed.

## Current and Future Water Use

Current withdrawals from permitted and registered users in the South Carolina portion of the Upper Savannah River basin total approximately 2,917.4 million gallons per day (MGD) on average, with nearly all of that amount coming from surface water and only 0.4 MGD from groundwater. Of this total withdrawal, only an estimated 2 percent (62 MGD) of the water is consumptively used and 98 percent (2,855 MGD) is returned to streams, rivers and lakes after use

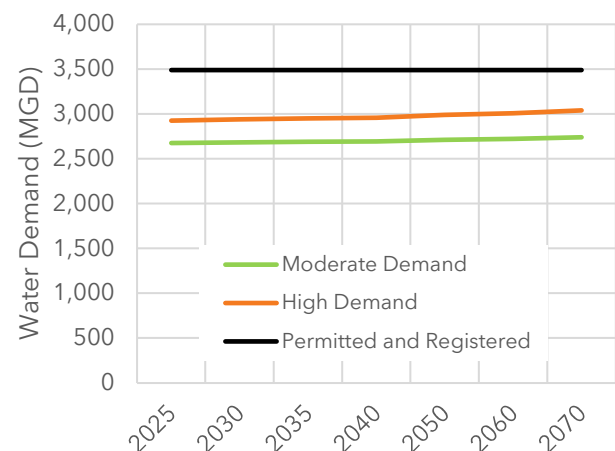
(principally from thermoelectric cooling). Current surface water withdrawals are approximately 84 percent of the 3,491.7 MGD that has been approved through permits and registrations in the South Carolina portion of the basin. Most of the surface water used in the basin is for thermoelectric energy and public water supply purposes, as shown below.

Current Water Uses (10-year Average)		
Water Use	Total Withdrawal (MGD)	Consumptive Use (MGD)
Thermoelectric	2,848.5	~28.5*
Public Supply	59.3	29.0
Manufacturing	8.0	1.7
Golf Courses	1.1	**
Agriculture	0.3	**
Mining	0.3	**

\* Approximately 99% of water used for thermoelectric power is returned

\*\* For planning, assumed to equal total withdrawal

To identify whether surface water supplies are likely to meet demands up to 50 years in the future, the Upper Savannah 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. It accounts for 87 percent of the currently permitted and registered amount of surface water in the basin. Both demand projections are shown below:



**Water Demand Projections: Upper Savannah River Basin.**



## Key Findings

The Upper Savannah 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 shortages under moderate or high economic growth assumptions through 2070. However, unexpected growth could introduce stressors.
- **Overall allocation:** 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.
- **Ecological Flow Metrics:** Analysis indicated low ecological risk for fish species based on flow. However, these findings do not rule out other ecological risks, and generally apply only to wadable streams.
- **If Future Droughts Worsen:** The RBC determined that hypothetical future droughts that are significantly more severe than historical droughts could result in shortages.

## Recommendations

The RBC developed a range of recommendations related to water management, planning, data collection, regulation, legislation, and policy. 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 in current and future scenarios.
- **Demand-side Strategies:** The RBC recommended a toolbox of municipal and agricultural demand management strategies such as education, conservation pricing, leak detection, and water loss control.
- **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. This helps avoid over-investment now and can ward off under-investment if risks are recognized in time.

### Technical Recommendations

The RBC recommended that future planning efforts should:

- Evaluate surface water quality (bacteria, nutrients, sediment, dissolved oxygen, etc.).
- Study the impacts of changing land use on streamflow.
- Identify and prioritize properties for conservation.
- Expand work on flow-ecology relationships.
- Seek to better understand the potential impacts and vulnerabilities of private and community/commercial wells.
- Share data through accessible platforms.

The RBC also recommended that the state should support the completion of the United States Army Corps of Engineer's Comprehensive Study and Drought Plan Update (Phase 2).

### 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 new 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 Legislature should approve and adopt the State Water Plan.
- Increased coordination and planning with the Georgia Regional Water Planning Councils on Savannah River water resources issues is needed.

### Planning Process Recommendations

- RBCs should develop and implement an engagement plan to improve awareness and build support.
- Elected officials should be invited to participate on RBCs.
- Future water planning efforts should consider increased collaboration between all South Carolina's RBCs.

### Call to Action

The Upper Savannah RBC developed an implementation plan that includes six objectives for the next 5 years: improve water use efficiency, promote Plan recommendations, improve technical understanding of issues, protect water resources, improve drought management, and promote engagement in water planning process. The following actions highlight two of the many ways to put the Plan to work:

- During 2025, the RBCs should initiate and coordinate discussions with the South Carolina Department of Environmental Services to begin the process of updating the State Water Plan.
- The South Carolina Legislature should authorize recurring funding for state water planning activities, including river basin planning.