

Photo Courtesy Bill Wabbersen



# September Meeting Highlights

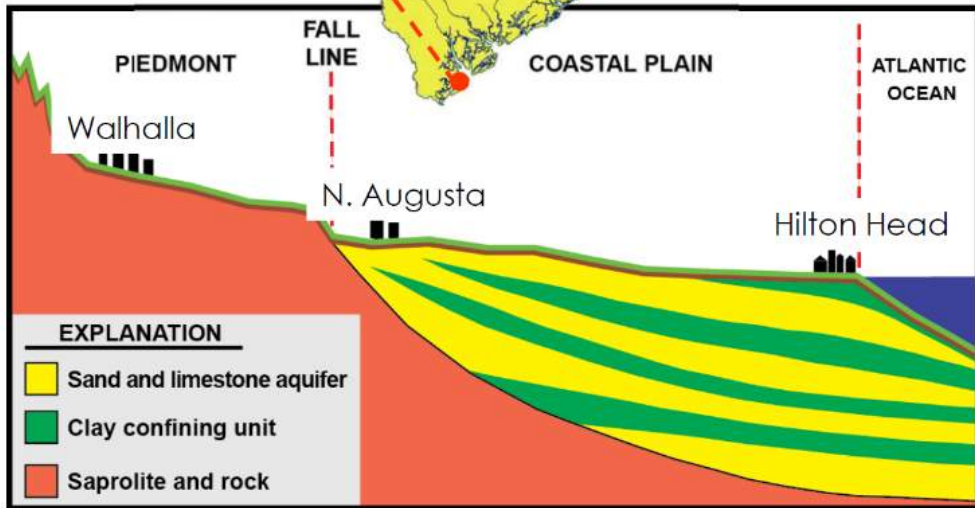
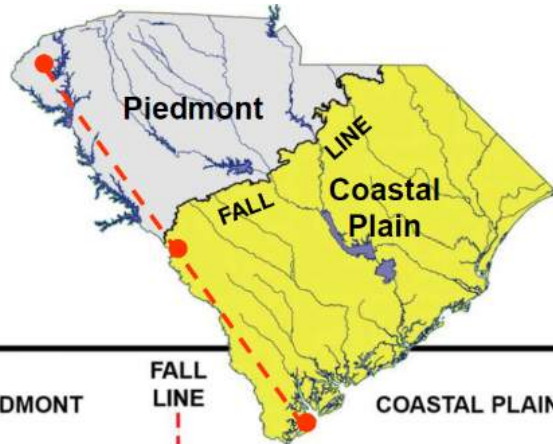
Agenda Item 4

# SC Hydrogeologic Framework Along Dip



450 Feet, elevation  
Fall Line (Aiken County)

10 Feet, elevation  
Coastline (Beaufort County)



Limestone/Sand Aquifer  
Clay Confining unit

not drawn to scale

SOUTHEASTERN COASTAL PLAIN HYDROGEOLOGIC PROVINCE

Limestone

Limestone/Sand

Sand

Sand

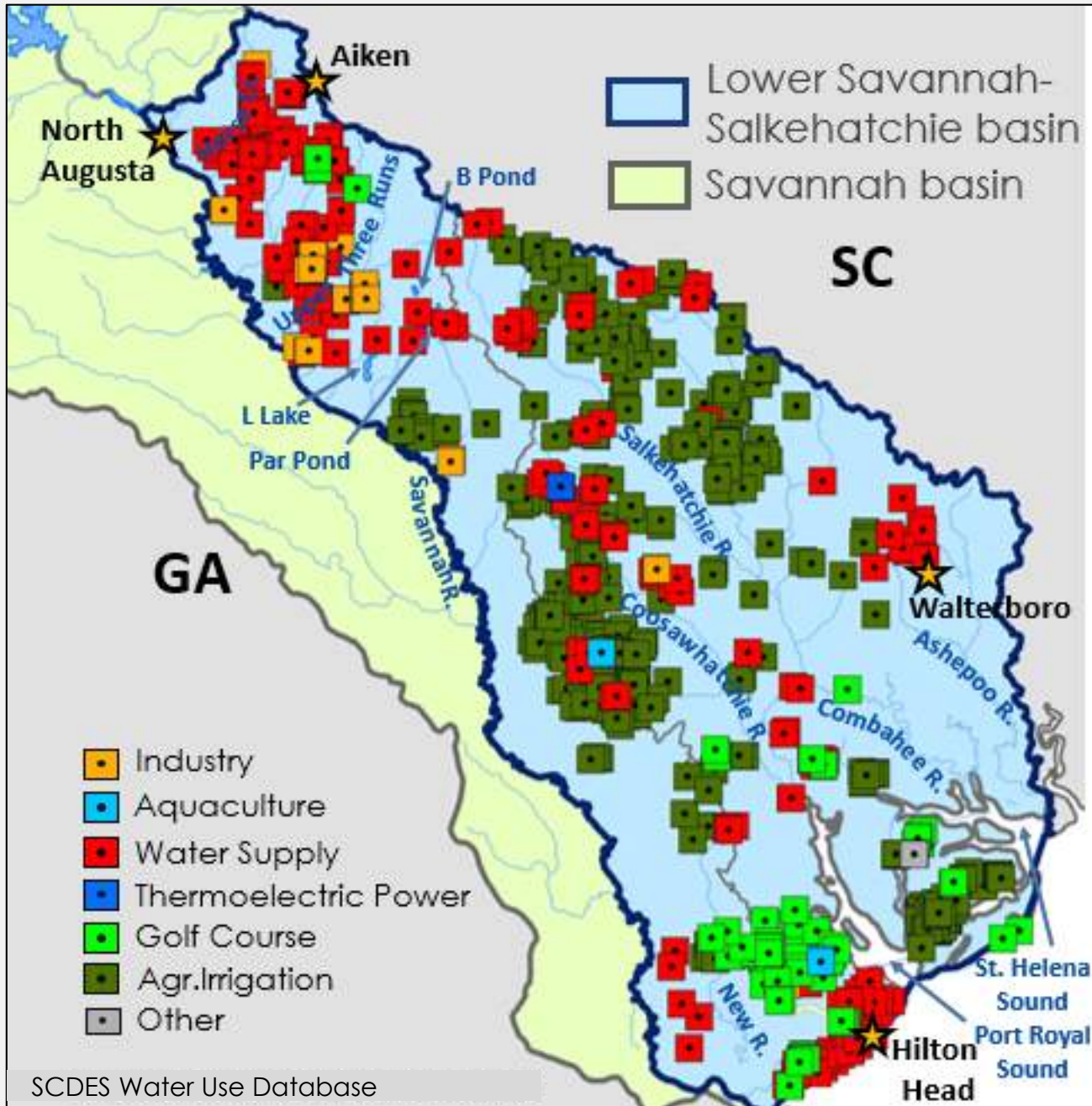
Sand

Sand

Sand/Clay

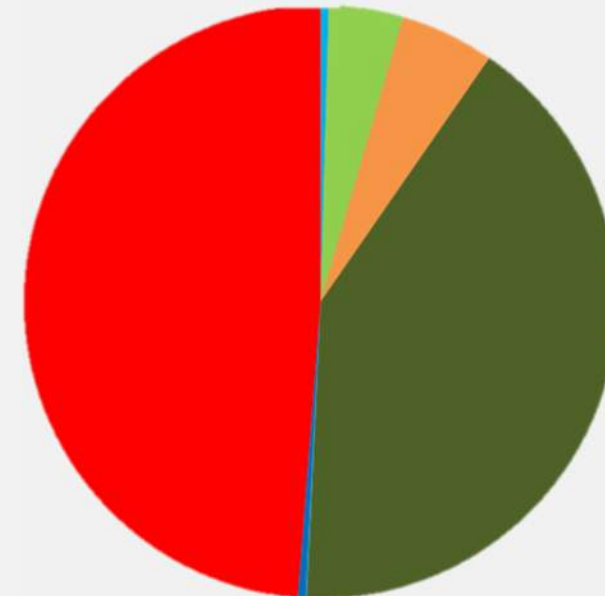
-4000 Feet

# Reported SC Groundwater Withdrawals in 2023

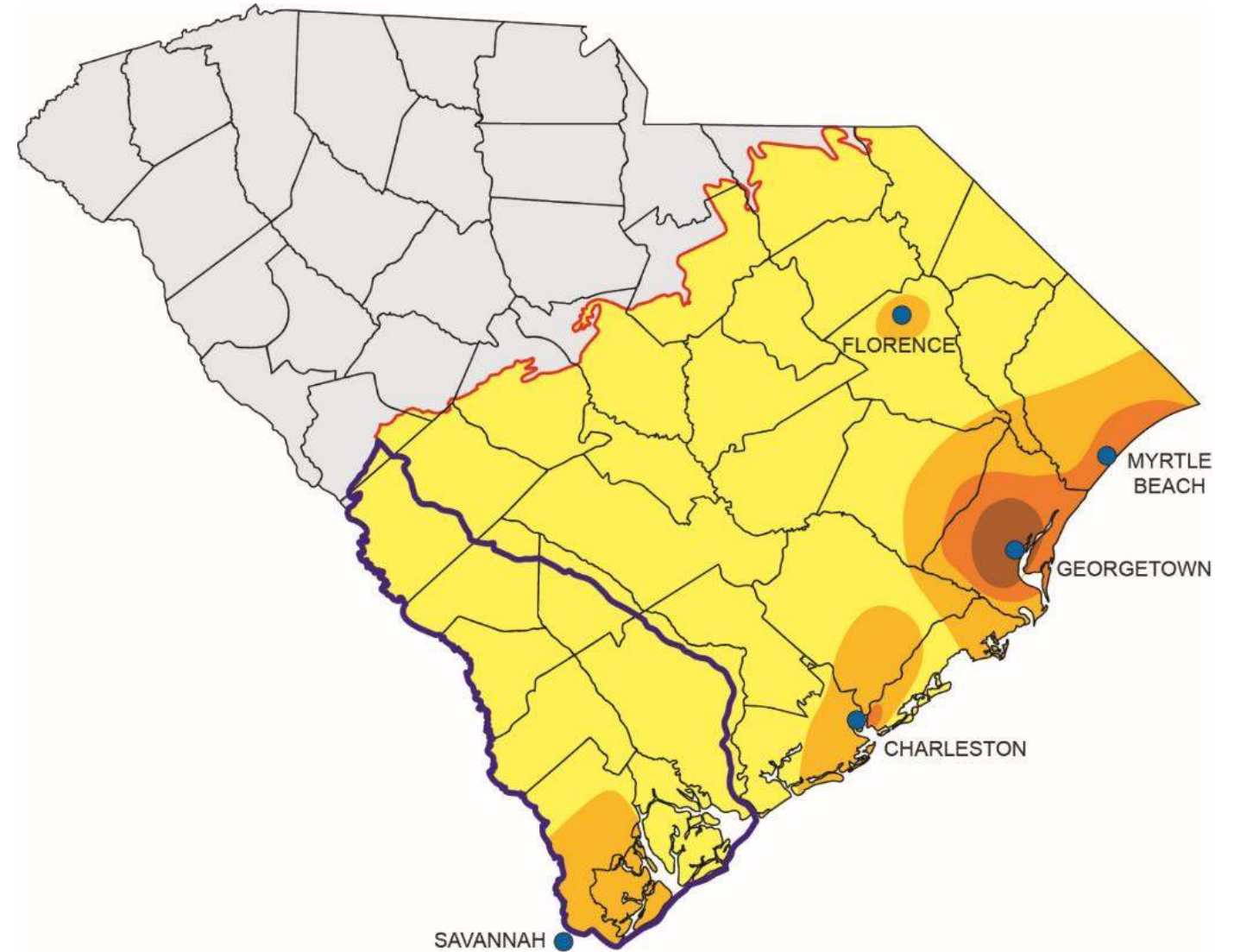
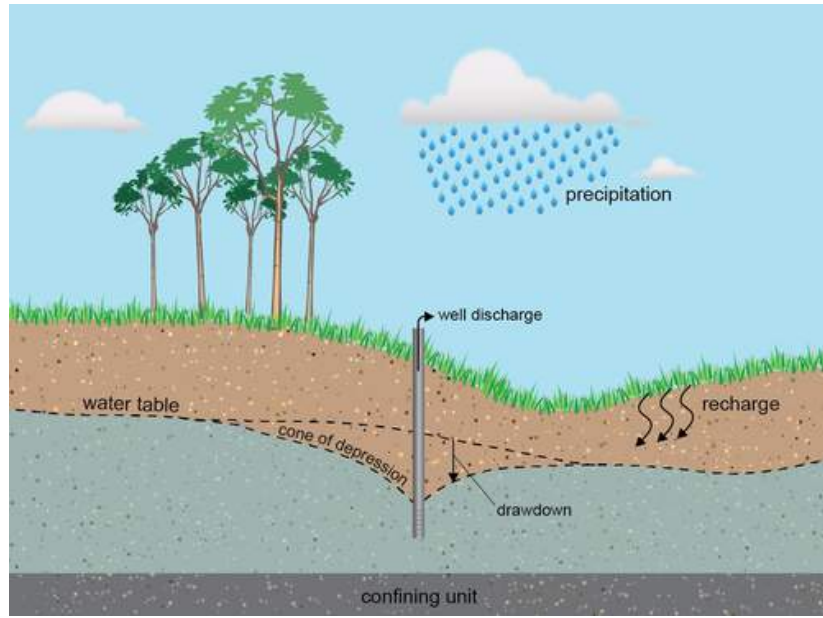


SCDES Water Use Database

- Water Supply (49%, 35 MGD)
- Agr. Irrigation (41%, 30 MGD)
- Industry (5%, 4 MGD)
- Golf Course (4%, 3 MGD)
- Thermoelectric Power (<1%, 0.3 MGD)
- Aquaculture (<1%, 0.3 MGD)
- Other (<1%, 0.07 MGD)



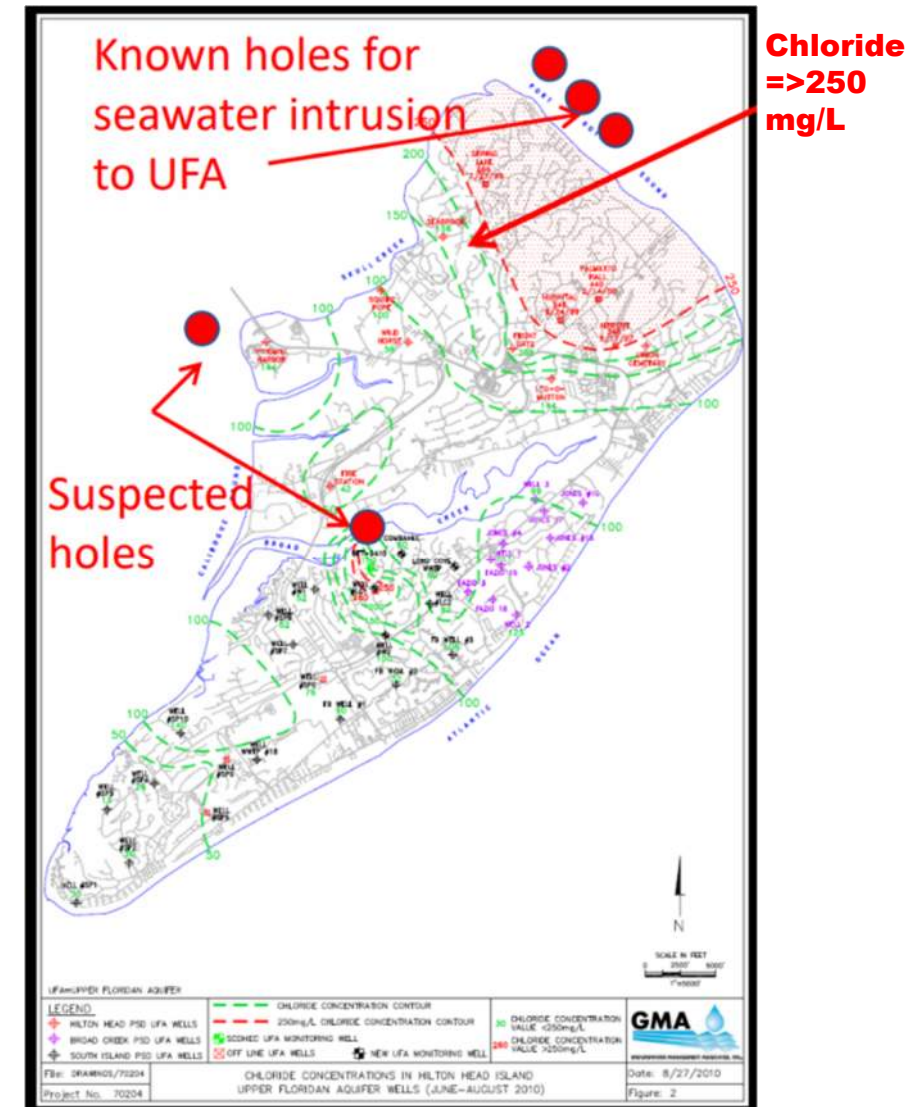
# Cones of Depression in South Carolina



Long-term pumping can result in “cones of depression”, which are areas where groundwater levels have declined. The greatest declines are centered at the pumping wells, but the zone of influence can spread out for tens of miles.

# Saltwater Intrusion at Hilton Head

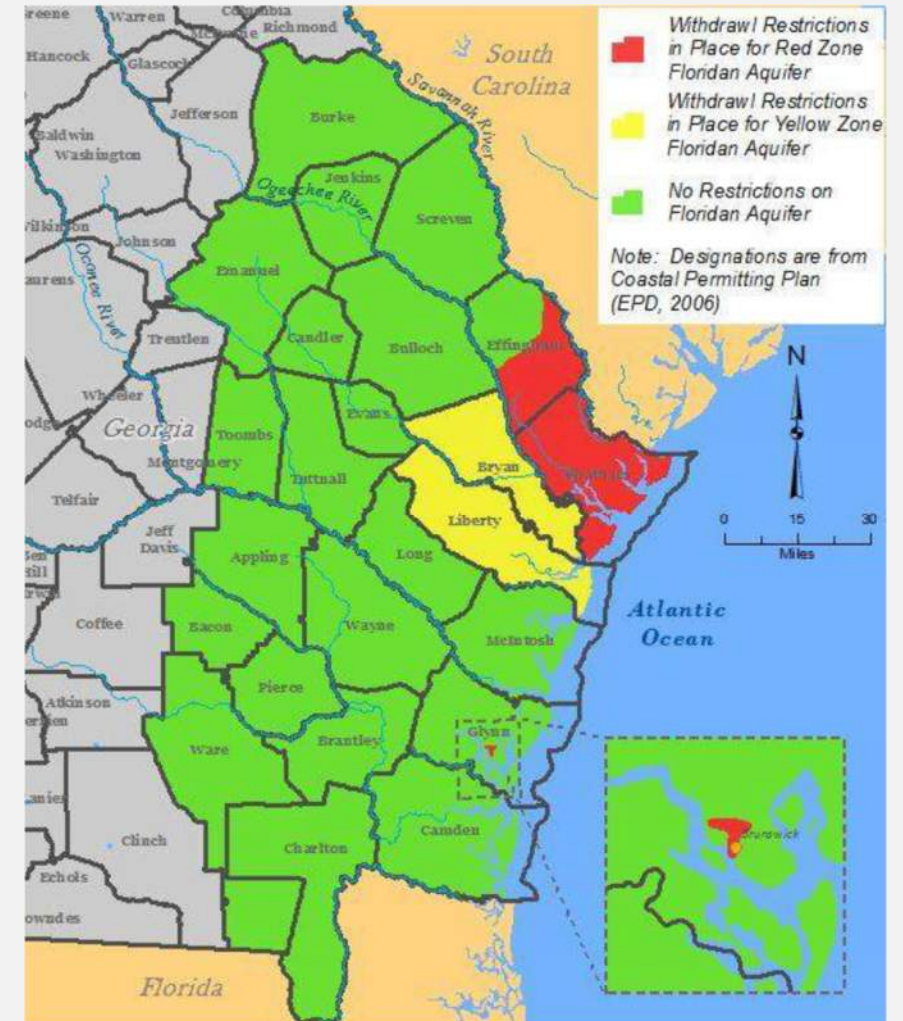
- Hilton Head Island is susceptible to saltwater intrusion due to surface and near surface geology. The thickness of the Upper Floridan confining unit is very thin or absent, leakage of saltwater has occurred in some parts of the island.
- Pumping in both Hilton Head Island and Savannah are factors involved in saltwater intrusion at HHI;
  - reduction in pumping in both pumping centers is required to stop the plume growth, however, plumes will continue to exist and move slowly with the groundwater gradient.
- Hilton Head Public Service District employs several water management strategies to support freshwater supply: these include conjunctive surface water use; aquifer storage and recovery (ASR) and reverse osmosis (RO) of the Middle Floridan Aquifer.



# Coastal Georgia Regional Water Plan



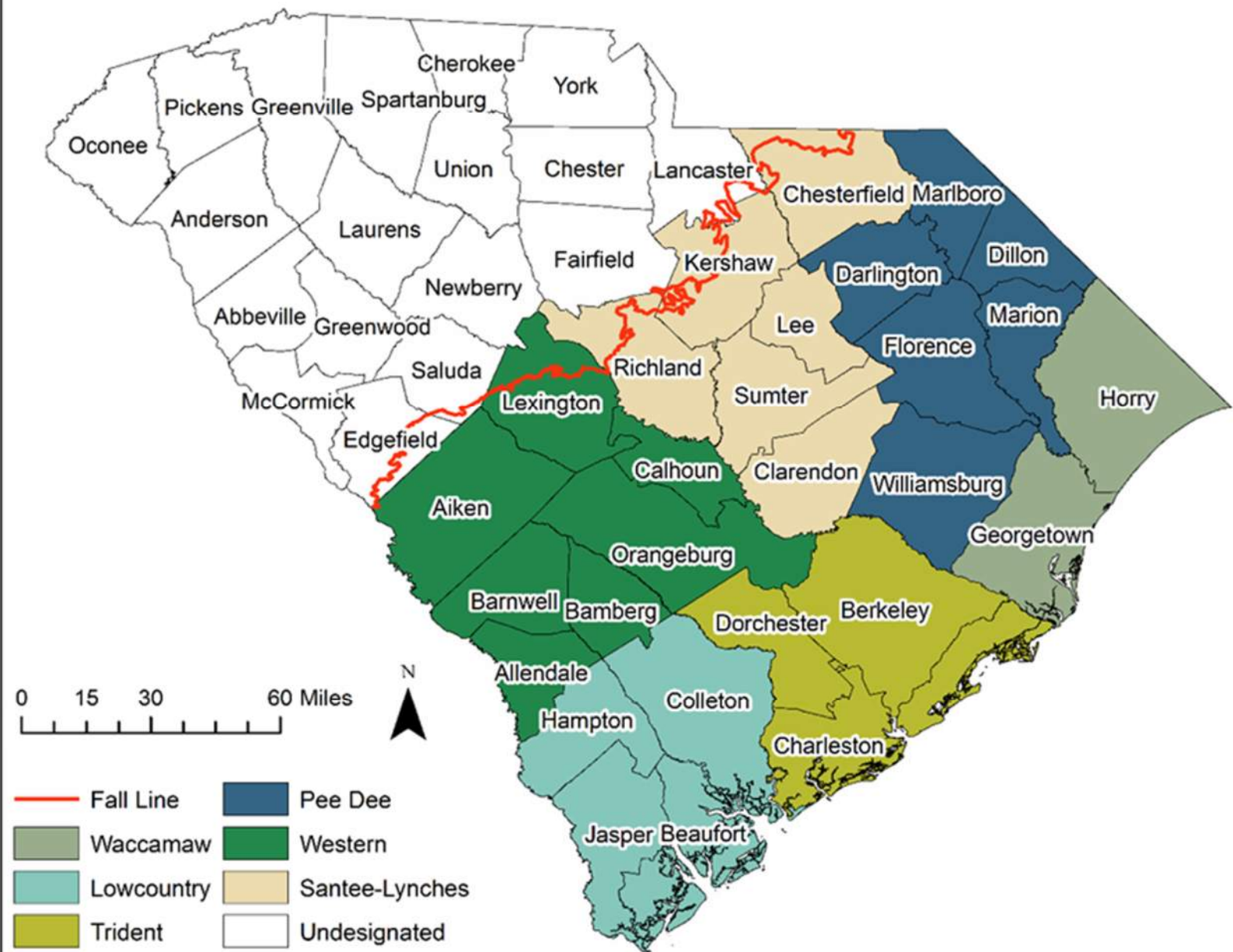
- Coastal Georgia Region includes nine counties, two of which border South Carolina (Effingham and Chatham County).
- Groundwater is mainly from the Floridan aquifer and supplies 65% of the Coastal Georgia Region
- Findings from the 2023 update determined that at a regional level, modeled aquifers have sufficient groundwater to meet forecasted needs over the planning horizon to 2060, but challenges will occur in areas where saltwater intrusion is an issue.
- Historic groundwater withdrawals in both Savannah and Hilton Head areas have contributed toward the inland movement of saltwater plumes in SC. These plumes would continue to exist well into the future even if all groundwater withdrawals were eliminated.



<https://waterplanning.georgia.gov/coastal-georgia-regional-water-plan>



# South Carolina Capacity Use Areas



# Aspects of Water Use Addressed in Groundwater Management Plan:

- Current groundwater sources used
- Current water demand by type and amount
- Current aquifer storage and recovery (ASR) and water reuse
- Projected population and growth
- Projected water demand
- Projected opportunities for ASR, and water reuse
- Projected groundwater and surface water options
- Water conservation measures

<https://des.sc.gov/programs/bureau-water/groundwater-management-planning>

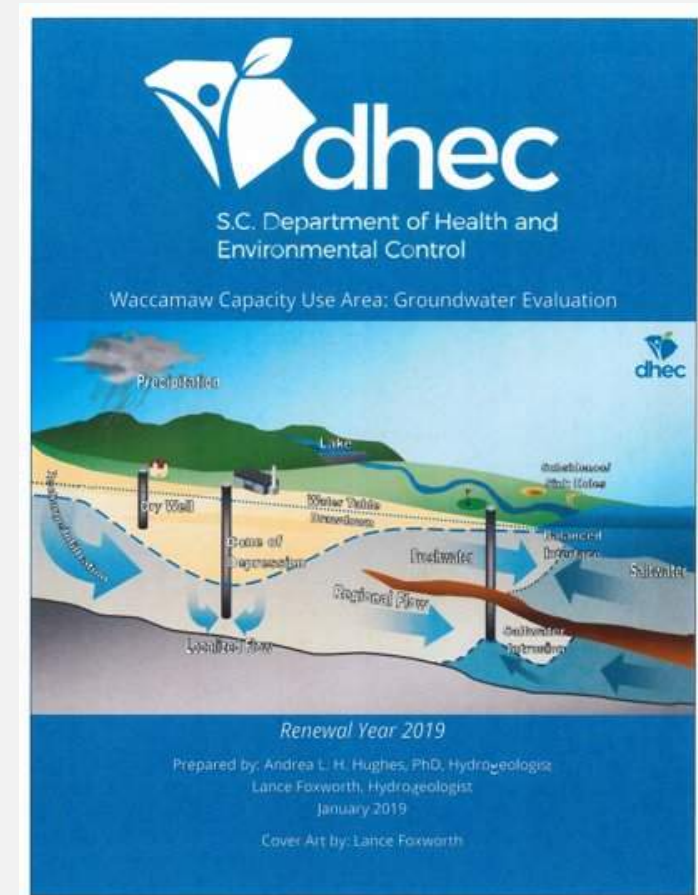


# Groundwater Management Strategies

- Strategy #1: Identify areas where a leveling and/or reduction in pumping is appropriate.
- Strategy #2: Review of permit applications based on demonstrated reasonable use.
- Strategy #3: Establish a comprehensive groundwater monitoring program.
- Strategy #4: Establish a conservation educational plan for the public and existing groundwater withdrawers.
- Strategy #5: Regulation and Planning.
- Strategy #6: Establish a plan for continual stakeholder engagement and awareness of groundwater development (only in Western and Santee-Lynches CUA)

# Assessment and Evaluation Reports

- Every 5 years total annual groundwater withdrawals are compiled and compared to hydrographs and aquifer potentiometric maps.
- All permitted withdrawers, permitted limits, and average groundwater withdrawals are listed.
- Withdrawals are evaluated by category and aquifer
- Areas of aquifer stress are identified.
- Recommendations and renewal restrictions are listed as appropriate.



# Capacity Use Area Assessments, Evaluations, and Renewals

## Lowcountry

- 2021 Assessment and Evaluation Report
- 2022 Permit Renewal
- 2026 Assessment and Evaluation Report
- 2027 Permit Renewal

## Western

- 2023 Assessment and Evaluation Report
- 2024 Permit Renewal
- 2028 Assessment and Evaluation Report
- 2029 Permit Renewal