



Hilton Head Island's Water Sources: The Past and the Future

A Message from the Broad Creek Public Service District

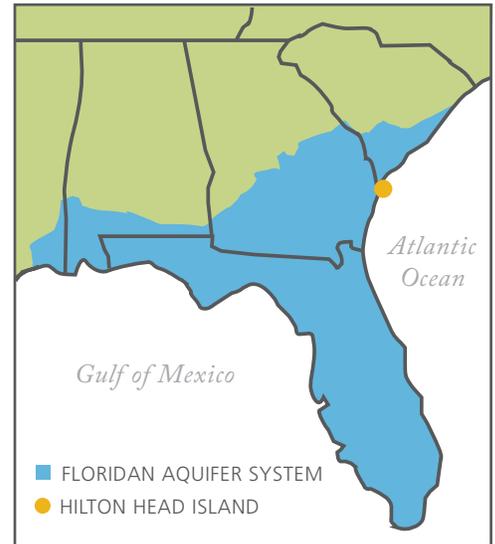
In 2007 a drought of significant magnitude culminated with major metropolitan areas in the southeastern US searching for new sources of water. The severity of the drought drove the state of Georgia to create a statewide plan involving the creation of numerous water planning districts. Each of these districts had their own unique issues, but the one that was most threatening to South Carolina was Atlanta's search for sufficient water to meet its burgeoning growth. One solution was to look to the Savannah River 100 miles to the northeast.

The idea of adding Atlanta's demand to withdrawal from the Savannah River was enough to stir both states into action. Governors Sanford and Perdue formed "Governor's Committees" to discuss three key areas in an attempt to avoid litigation. The topics were: withdrawal and treatment for potable use, discharges into the river, and finally the use of the Floridan aquifer, specifically in the Chatham and Beaufort County area. It is this final area that will be addressed in this special mailing. We are including a history of the aquifer's use and an indication of the work that is being done to better understand salt-water intrusion and its aftereffects.

Currently there is a limit of 10.5 million gallons of water per day (Mgal/d) that all users on Hilton Head Island may withdraw from the Floridan aquifer. That number pales in comparison to the 65-80 Mgal/d being pumped daily in the Savannah metro area. Due to current withdrawals, Hilton Head PSD has lost 6 of its potable production wells. Studies indicate that by 2020, Hilton Head PSD will have all but one of its current wells affected to the point that it must now find other sources to meet the demand. South Island PSD has lost a well in Long Cove Club and studies indicate that they will lose several more in the not-too-distant future. They are currently planning on supplemental water sources, all of which are more costly than aquifer water. Broad Creek PSD, perhaps simply due to the geology of our area, has had no significant degradation of our well water such that increasing chlorides could be identified and used to determine a time line for replacement.

The South Carolina Department of Health and Environmental Control (DHEC) has agreed to allow the Island to plan the best ways to use Floridan Aquifer water to meet the needs of the largest number of citizens. We are working jointly with other island PSDs to develop a plan, but we also need the community to do its part. Any and all steps taken to conserve water will keep the price of water at equitable levels for years to come. It is in our hands. Of this much we can be certain; we will get little help from Georgia. That issue, I fear, will be resolved in the courts.

*Russell Hildebrand, General Manager
Broad Creek Public Service District*



What can I do to help?

There are things that each homeowner and commercial entity can do to conserve water. One of the cheapest solutions is a rain sensor. This inexpensive device must be checked in a simple manner once or twice a year, but if properly installed and maintained, can save several million gallons of water.

Take control and be responsible for your time clock. Toro (Distributor: Smith Turf and Irrigation) has a satellite-fed controller available that monitors the weather and can automatically set your time clock to run based on weather data. These have been very successful on the west coast.

For more information on where you can purchase these products or for tips on how you can conserve water, please visit our website www.bcpsd.com

Understanding the Floridan Aquifer System and Saltwater Intrusion

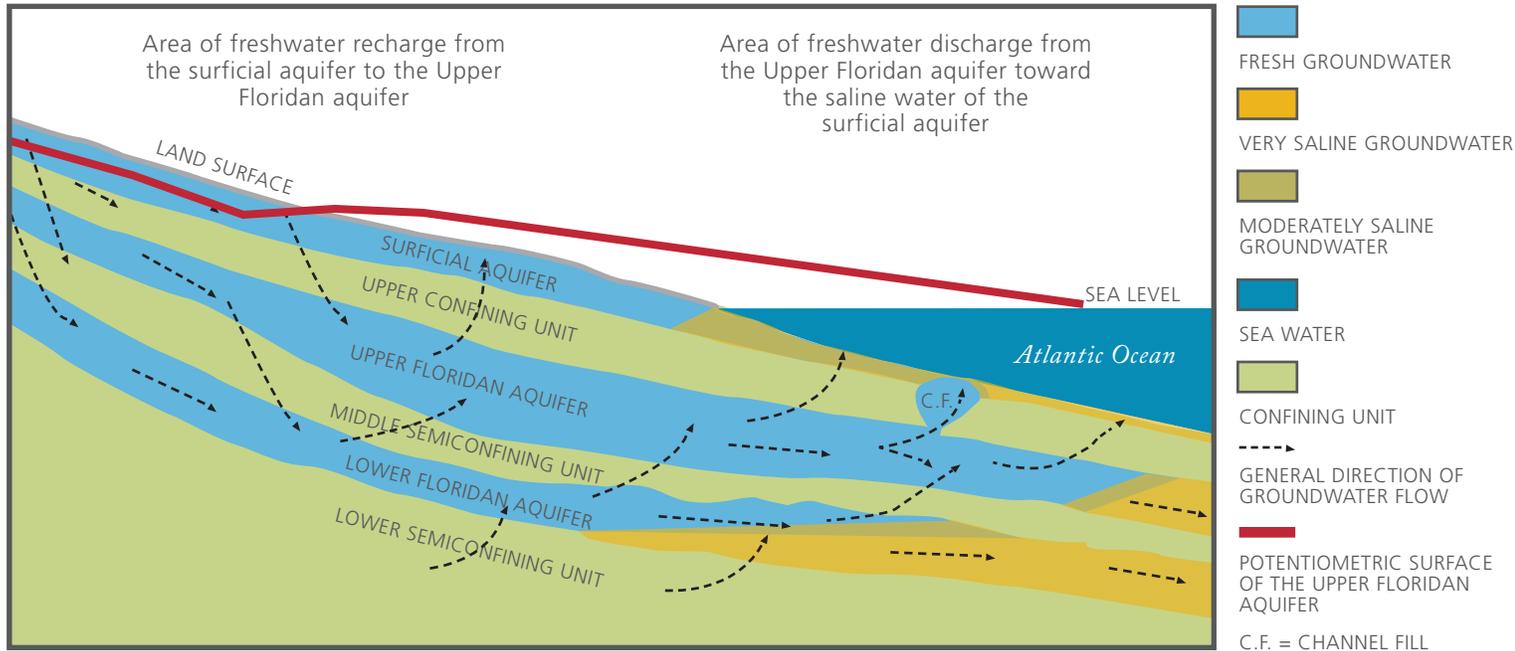


Fig. 1: Pre-development (before 1880's)

CHART COURTESY OF UNITED STATES GEOLOGICAL SURVEY (USGS)

How Does Saltwater Intrusion Affect Me?

Groundwater is a vital natural resource in the southeastern Atlantic Coastal Plain. The Floridan aquifer, one of the most productive aquifers in the world, is a regional-scale source of groundwater that has been used locally for more than 100 years. Recently, heavy use of this resource has caused some wells along the coast to experience saltwater intrusion, rendering them unsuitable for drinking water (fig. 2). As water use increases in response to growing municipal, industrial, and agricultural demand, state and local governments will face difficult decisions about future use of the Floridan aquifer. A primary goal of the United States Geo-

logical Survey (USGS) is to make information on the aquifer available to decision makers.

What Is the Purpose of a Test Well?

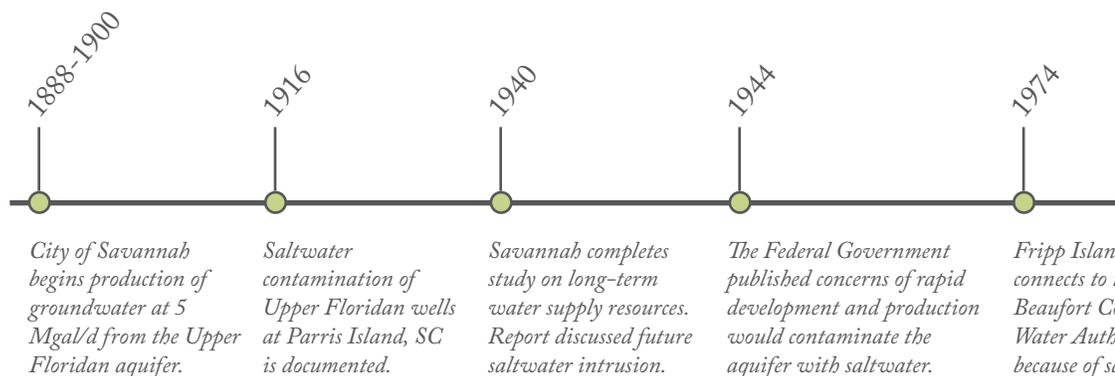
The USGS, in cooperation with the South Carolina Department of Health and Environmental Control (SCDHEC), is drilling a deep geologic test well at Hilton Head Island, S.C. At over 1000 feet deep, the purpose of this test well is to gain knowledge about the regional-scale Floridan aquifer, an important source of groundwater in the Hilton Head area.

How Does it Work?

A test well is obtained using a technology called wire line

History of Saltwater Intrusion in the Upper Floridan Aquifer

Savannah, GA and Hilton Head Island, SC area



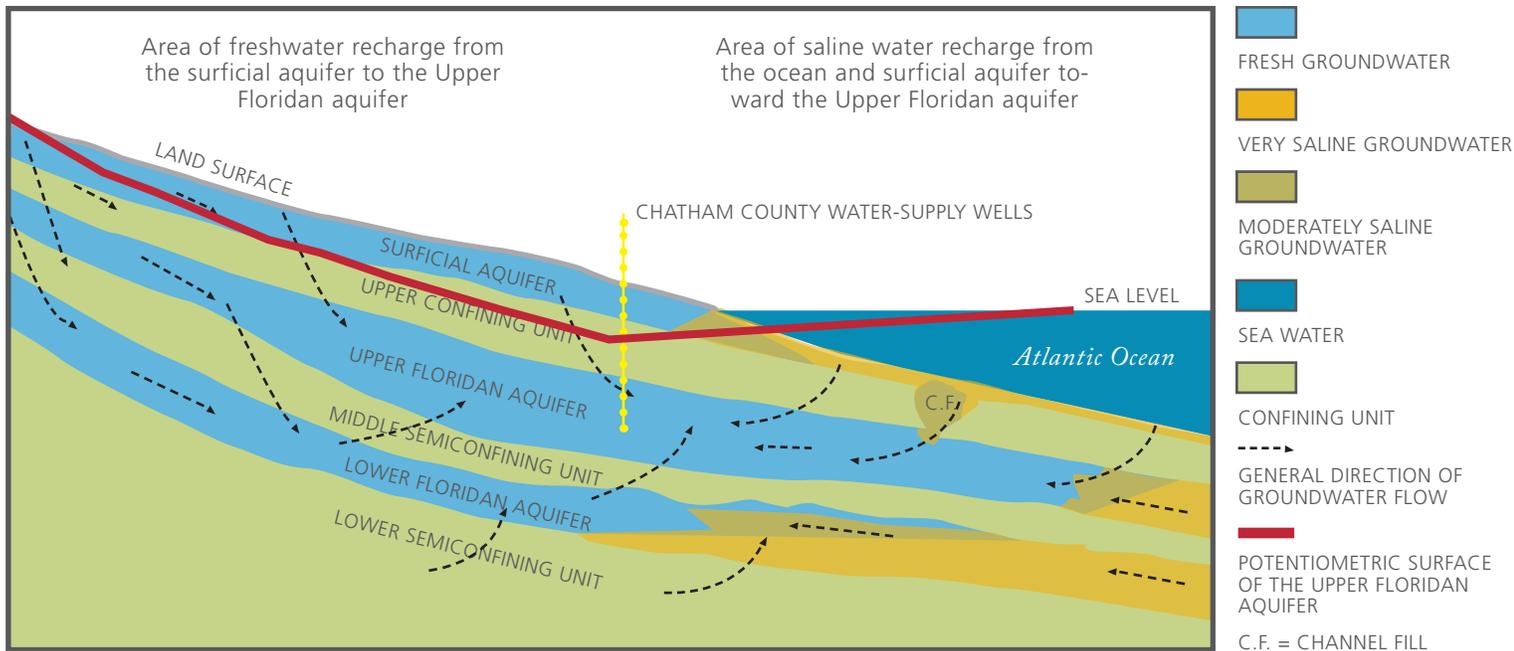


Fig. 2: Post-development (as of 2005)

CHART COURTESY OF UNITED STATES GEOLOGICAL SURVEY (USGS)

core drilling. A hollow drill stem (pipe) is carefully drilled through the soil into the underlying variably indurated sands, silts, clays, and limy sediments, which are collected in an inner core barrel in 10-foot sections. These sections are pulled back to the surface and the collected core is boxed for study. The collected core and samples are transported back to USGS laboratories for completion of testing and descriptions.

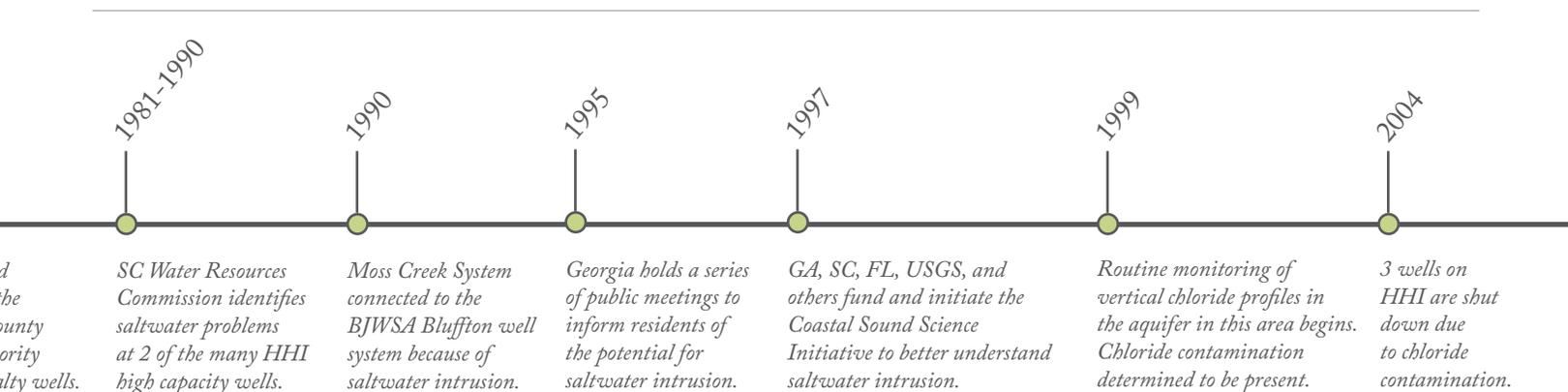
What Is the Final Product of This Study?

Following analysis of all the information gathered from the Hilton Head test well, the USGS will publish a set of reports and make them available to the public. These reports will include technical descriptions of the entire 1,000-foot core hole as well

as assessments of fossil content, chemical characteristics, and ages of the sediments. This information will be correlated with data from other test wells in the Floridan aquifer.

Why Hilton Head Island?

The Hilton Head drilling site was chosen to complete a series of test wells in Georgia and South Carolina that parallel the Savannah River from the Savannah River Nuclear Site to the Atlantic Coast. The data gathered from these test wells will be combined with published information from other wells in the area to enable USGS to model the subsurface geology in this area. The results from the test well at Hilton Head will be added to the larger database that describes the Floridan aquifer.





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2006

GA releases the “Coastal Georgia Water and Waste-water Permitting Plan for Managing Saltwater Intrusion.”

2007

Chloride map is generated by SC. Another well on HHI is shut down due to chloride contamination. An MOA is signed by GA and SC; states agree to undertake mutual steps to manage saltwater intrusion.

2009

HHPSD loses Leg-o-Mutton well to saltwater intrusion, but completes Jenkins Island reverse Osmosis Water Treatment Plant to replace Upper Floridan wells lost to saltwater intrusion.

2010

HHPSD begins construction of an Aquifer Storage and Recovery well to replace 3 wells anticipated to be lost to saltwater intrusion within one year; HHPSD loses the Front Gate well to saltwater intrusion.