

# SALINE AQUIFER MAPPING PROJECT IN THE SOUTHEASTERN UNITED STATES

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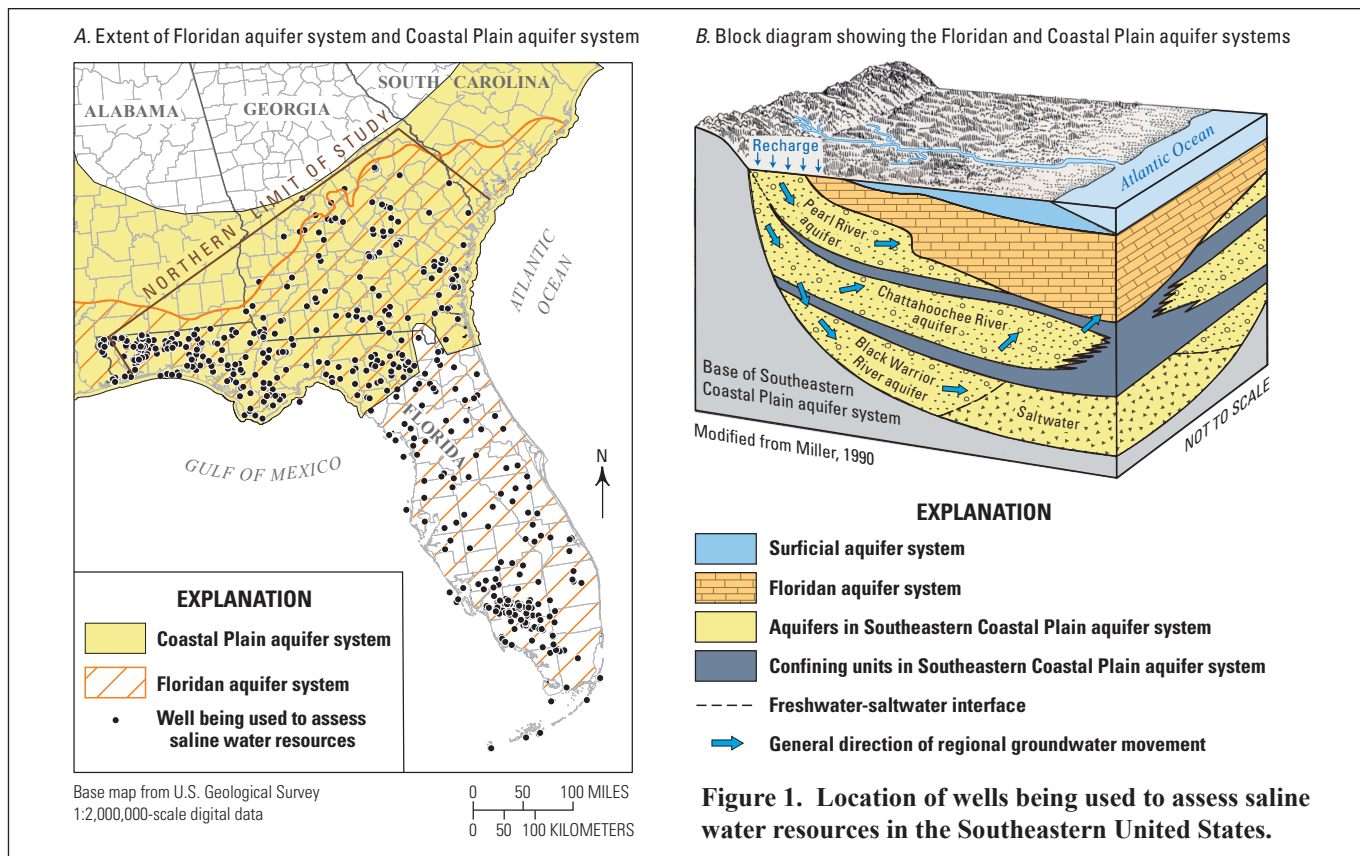
**Abstract.** In 2009, the U.S. Geological Survey initiated a study of saline aquifers in the southeastern United States to evaluate the potential use of brackish or saline water from the deeper portions of the Floridan aquifer system and the underlying Coastal Plain aquifer system (Fig. 1). The objective of this study is to improve the overall understanding of the available saline water resources for potential future development. Specific tasks are to (1) develop a digital georeferenced database of borehole geophysical data to enable analysis and characterization of saline aquifers (see locations in Fig. 1), (2) identify and map the regional extent of saline aquifer systems and describe the thickness and character of hydrologic units that compose these systems, and (3) delineate salinity variations at key well sites and along section lines to provide a regional depiction of the freshwater-saltwater interfaces.

Electrical resistivity and induction logs, coupled with a variety of different porosity logs (sonic, density, and neutron),

are the primary types of borehole geophysical logs being used to estimate the water quality in brackish and saline formations. The results from the geophysical log calculations are being compared to available water-quality data obtained from water wells and from drill-stem water samples collected in test wells. Overall, the saline aquifer mapping project is helping to improve the understanding of saline water resources in the area. These aquifers may be sources of large quantities of water that could be treated by using reverse osmosis or similar technologies, or they could be used for aquifer storage and recovery systems.

## REFERENCE

Miller, J.A., 1990, *Ground Water Atlas of the United States Alabama, Florida, Georgia, and South Carolina*: U.S. Geological Survey Hydrologic Atlas HA 730-G, 28 p.



**Figure 1. Location of wells being used to assess saline water resources in the Southeastern United States.**