

# **SALTWATER INTRUSION IN THE FLORIDAN AQUIFER SYSTEM NEAR DOWNTOWN BRUNSWICK, GEORGIA, 2016**

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Since 1959, the USGS (USGS) has led a cooperative water program (CWP) with Brunswick, Georgia, to assess the effect of groundwater development on saltwater intrusion within the Floridan aquifer system (FAS). Saltwater was first detected in wells completed in the Upper Floridan aquifer (UFA) near the southern part of the city in late 1957. By the 1960s, a plume of saltwater had migrated northward toward two major industrial pumping centers, and since 1965, chloride concentrations have steadily increased in the northern part of the city. In 1978, data obtained from a 2,720-foot-deep test well drilled south of Brunswick indicate the source of saltwater was located below the UFA in the Fernandina permeable zone of the Lower Floridan aquifer. During calendar year 2016, the CWP data collection included continuous water-level recording at 10 wells completed in either the Floridan or Brunswick aquifer systems, or surficial aquifer; synoptic water-level measurements in 56 wells to map the potentiometric surface of the UFA in the Brunswick/Glynn County area during October 2016; and sampling 59 wells completed in the FAS for chloride concentrations. Results from thirty-one of the wells sampled indicate the shape of the chloride plume in the UFA near downtown Brunswick has remained relatively unchanged over the past several years. Results from eight of the wells collected at industrial sites near the northern part of the chloride plume indicate upward migration of chlorides between the upper and lower water-bearing zones of the UFA.

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