Groundwater Information and Project Support

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St. Johns River Water Management District, Florida

Year Started 1938

Problem

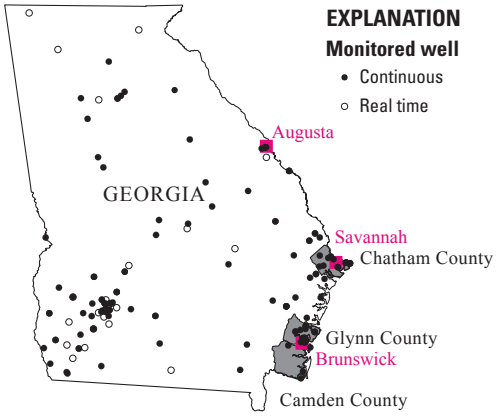
Groundwater supplies about 22 percent of freshwater withdrawals in Georgia—more than 1.2 billion gallons per day during 2005. More than 1.9 million people are served by groundwater supplies, and 752 million gallons per day are withdrawn for irrigation (Fanning and Trent, 2009). The distribution and quality of groundwater are highly variable and directly related to geology and natural and human stresses. Monitoring groundwater levels and groundwater quality is essential for the management and development of this resource.

Objectives

- Collect groundwater-level and groundwater-quality data to assess the quantity, quality, and distribution of groundwater.
- Provide data to address water-management needs and evaluate the effects of national and local management and conservation programs.
- Contribute data to national databases that will be used to advance the understanding of regional and temporal variations in hydrologic conditions..

Progress and Significant Results, 2008–2009

- Continuous water-level recorders were operated in 179 wells during 2008 and in 181 wells during 2009. Of the 181 wells, 30 are instrumented with real-time transmission (satellite relay) of continuous water-level records. During 2009 an additional well was instrumented with real-time equipment in the coastal area to monitor specific conductance, which brought the total to four wells being monitored for water quality. The data from these wells can be accessed through the National Water Information System (NWIS) database on the Web at *http://waterdata.usgs.gov/ga/nwis/current/?type=gw*.
- Periodic water-level measurements were made in more than 3,700 wells to define potentiometric surfaces and to assess long-term trends.



- Water samples for chloride analyses were collected from 66 wells during 2008 and 60 wells during 2009 in the Brunswick area, and from 4 wells in the Savannah area and 7 wells in Camden County during 2008–2009.
- During 2008–2009, borehole geophysical logs were collected in 11 wells in northern Georgia and in 22 wells in southern Georgia (map and table, facing page).
- Well-inventory, water-level, and geologic data were verified for entry into the NWIS database. Field inventories of well sites were conducted to assist projects, and 1,030 sites were added to the NWIS Groundwater Site Inventory to improve groundwater data coverage in the State. The NWIS database can be accessed on the Web at *http://waterdata.usgs.gov/ga/nwis/inventory/*.

References

Fanning, J.L., and Trent, V.P., 2009, Water Use in Georgia by county for 2005; and water-use trends, 1980–2005: U.S. Geological Survey Scientific Investigations Report 2009–5002, 186 p.; available online at *http://pubs.usgs.gov/sir/2009/5002/*.

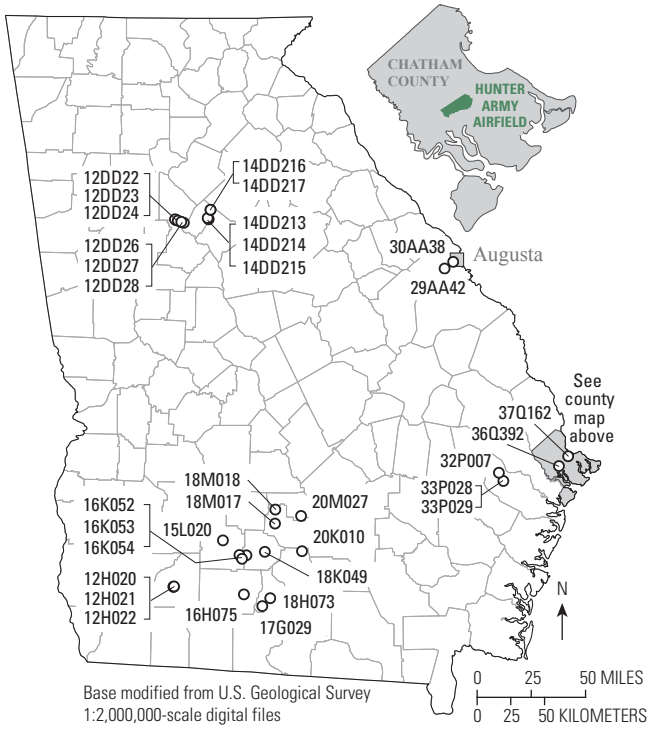
Peck, M.F., Painter, J.A., and Leeth, D.C., 2009, Ground-water conditions and studies in Georgia, 2006–2007: U.S. Geological Survey Scientific Investigations Report 2009–5070, 86 p.; available at *http://pubs.usgs.gov/sir/2009/5070/*.

Wells where geophysical logs were collected, 2008–2009

County name	Station name	Well depth, in feet, below land surface
Ben Hill	18M018	265.0
Ben Hill	20M027	304.0
Berrien	20K010	485.0
Chatham	36Q392	1,168.0
Chatham	37Q162	903.0
Colquitt	16H075	342.0
Cook	17G029	306.0
Cook	18H073	210.0
DeKalb	12DD22	228.0
DeKalb	12DD23	183.0
DeKalb	12DD24	165.0
DeKalb	12DD26	183.5
DeKalb	12DD27	206.6
DeKalb	12DD28	172.6
Liberty	32P007	505.0
Liberty	33P028	1,300.0
Liberty	33P029	560.0
Mitchell	12H020	133.0
Mitchell	12H021	76.0
Mitchell	12H022	200.0
Richmond	29AA42	509.0
Richmond	30AA38	122.0
Rockdale	14DD213	622.0
Rockdale	14DD214	622.0
Rockdale	14DD215	725.0
Rockdale	14DD216	305.0
Rockdale	14DD217	305.0
Tift	16K053	244.0
Tift	18K049	622.0
Tift	18M017	230.0
Worth	15L020	738.0
Worth	16K052	725.0
Worth	16K054	520.0

Hydrologic technicians set up a data logger and pressure transducer to monitor the stage at Hunter Army Airfield in Chatham County, Georgia. A tipping bucket rain gage has also been installed to record precipitation during the test period. Data were used to develop a hydrologic budget for the pond to help assess water-bearing potential as a source of irrigation supply. Photo by John S. Clarke, USGS.

A hydrologic technician from the Groundwater Information and Project Support unit is recording the discharge from a well at Augusta, Georgia, during a 24-hour aquifer test. The well is completed in the Dublin–Midville aquifer system. Photo by Michael D. Hamrick, USGS.



Well locations where geophysical logs were collected during 2008–2009.