

U.S. Geological Survey Hydrologic Monitoring in Georgia

Brian E. McCallum

Affiliation: Associate Director for Data, U.S. Geological Survey South Atlantic Water Science Center, Norcross Georgia 30093

Reference: McDowell RJ, CA Pruitt, RA Bahn (eds.), *Proceedings of the 2015 Georgia Water Resources Conference*, April 28-29, 2015, University of Georgia, Athens.

Abstract. The hydrologic monitoring program of the United States Geological Survey (USGS) has been the foundation of water policy and decisions since the early 1890's. Water monitoring can vary from discrete measurements, or samples manually collected, to sophisticated instrumentation that continuously records and transmits data in real-time. The USGS hydrologic monitoring program is more than just a consistent practice in data collection, it includes intensive quality-assurance, real-time processing for viewing on the web, and eventual publication and archival of all collected data. The State of Georgia has USGS state-wide hydrologic networks that measure surface-water levels and flows, quality of the surface waters, and availability of groundwater resources. The first USGS streamgage to measure river levels and flows in Georgia was installed at the Etowah River near Canton in 1892. Since 2000, the streamgaging network has more than tripled in size to over 330 locations, all with real-time satellite telemetry and over eighty percent collecting precipitation data. Since the early 1970's, the USGS has collected discrete water-quality data at nearly 50 locations to monitor the long-term water-quality trends of Georgia's rivers. Recent development of water-quality monitors over the past several decades now allows for continuous monitoring at more than 120 locations of select water-quality constituents. Groundwater levels at 164 locations have been continuously monitored by the USGS for more than 70 years, with discrete measurement dating back to the 1890's. These hydrologic networks are operated in cooperation with other Federal, State, and local agencies, and the data collected are available to the public. While individual users may be interested in a single gage or well, the data from that location, aggregated to a regional or national level, can provide a broader evaluation of the water resource conditions. The USGS hydrologic monitoring program has an extremely diverse base of stakeholders, including water resources planners and managers, researchers, river forecasters, modelers, emergency managers, dam operators, and recreational

users. New tools, such as WaterAlert, WaterWatch, river webcams, storm-tide monitoring, and site-specific flood inundation libraries, continue to highlight the USGS hydrologic monitoring program as the foundation of water resources research and policy decisions in Georgia and beyond.