

Measuring the Quantity and Quality of Surface-Water Resources in West-Central Florida: the Minimum Flows Network

Paul F. Boetcher¹ and John T. Trommer¹

¹U.S. Geological Survey, Florida Integrated Science Center

Florida statutes require that the Southwest Florida Water Management District (SWFWMD) adopt minimum levels for those water resources that are experiencing or will likely experience adverse impacts because of surface- and ground-water withdrawals. In response to this legislative mandate, SWFWMD has established a Minimum Flows and Levels (MFL) Rule (40D-8), which specifies minimum levels for cypress wetlands, lakes, and aquifers, and minimum flows in rivers and streams.

In keeping with the U.S. Geological Survey (USGS) mission of providing high quality long-term data for the management of water resources, the Florida Integrated Science Center for Coastal and Watershed Studies (CCWS), Tampa office in cooperation with the SWFWMD, maintains a network of minimum flow stations that monitor the quantity and quality of surface-water flows within selected river basins located within the SWFWMD area. In addition to providing the data, the USGS also provides information on the technological methods used to collect the data.

The primary purpose for establishing the MFL network was to provide long-term, high-quality data for use in setting minimum flows and levels for surface waters. However, there are many additional benefits of having long-term MFL data available. Long-term data can contribute to our understanding of saltwater/freshwater interactions, the extent of tidal effects on river systems, the effects of rainfall-runoff associated with hurricanes and storms on tidal estuaries, storm surge effects, constituent loads associated with stream discharge, flood inundation, and biological zonation related to salinity. The MFL data also may contribute to an improved understanding of how Florida streams respond to larger scale climatic signals such as global oscillations and climatic trends including the El Nino effect.