

# **Suwannee River Basin Pilot Study on Monitoring Water Quality**

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**USGS**

Fact Sheet 080-96

**Katz, B.G., and DeHan, R.S., 1996, The Suwannee River basin pilot study: Issues for watershed management in Florida: Fact Sheet FS-080-96, 4 p.**

## **ABSTRACT:**

In most watersheds (river basins) in Florida the interactions between ground water and surface water typically result in a single dynamic flow system. This direct hydraulic linkage results from numerous karst features (such as sinkholes, conduit systems in the underlying limestone, and springs) that facilitate the exchange of water between the surface and subsurface. Unique problems can arise in protecting water quality in karst areas because of the direct and rapid transport of recharge through conduits to the subsurface and through resurgence by springs. In some areas, recharge from unknown drainage pathways to areas of discharge may contribute to chemical and biological contamination of water supplies. Such contamination in karst areas has been documented by many studies.

Legislation enacted in 1993 mandated the Florida Department of Environmental Protection (FDEP) to develop and implement measures to protect the functions of the State's ecosystems.

Watershed management is one of the main components of a program designed to protect and manage Florida's ecosystems. The FDEP has identified several key objectives to effectively address watershed management issues: (1) more coordinated management of ground- and surface-water resources, (2) more effective partnerships with local, regional, State, and Federal government agencies, (3) coordination of ground- and surface-water monitoring efforts to assess the quality and quantity of the water resources and delineate the boundaries of three-dimensional watersheds, and (4) the development and maintenance of comprehensive statewide data bases for water resource information and monitoring networks oriented toward targeted watersheds.

The Suwannee River basin in Florida is one of several watersheds in the U.S. that was chosen for a pilot study by the Intergovernmental Task Force on Monitoring Water Quality (ITFM) to evaluate the effectiveness of current monitoring programs that are coordinated among Federal, State, and local agencies in addressing the key issues related to monitoring water resources. The ITFM previously found that information gaps existed in State and Federal monitoring programs and recommended that these gaps be addressed by developing an integrated, voluntary, nationwide strategy for water-quality monitoring. The ITFM recommended the watershed approach as a highly effective way to manage water resources because this approach integrates ground-water and surface-water systems.

The Suwannee River basin pilot study is attempting to provide answers to critical watershed-management questions such as: (1) Can boundaries be delineated for ground-water and surface-water basins and do these boundaries change depending upon hydrologic conditions? (2) What does existing information tell about the hydrochemical interaction between ground water and surface water in the basin? (3) Can natural processes provide a remediation of

elevated concentrations of nitrate in the Upper Floridan aquifer (UFA) during high or low flow conditions and or mixing of surface and ground water? and (4) Can a framework be developed in this study for evaluating the interactions between ground water and surface water and for delineating watershed boundaries that can be extrapolated to other watersheds within Florida and nationwide that have similar hydrogeologic conditions?

U.S. Department of the Interior, U.S. Geological Survey

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