

SUWANNEE RIVER WATER MANAGEMENT DISTRICT

The Suwannee River Water Management District (SRWMD) covers 7,640 square miles in north central Florida including all or part of 15 counties. The area is one of the least populated in the state, with a 1995 population of about 280,000. Florida's rapid population growth during the last several decades bypassed north central Florida, indirectly helping keep the region's natural resources healthy. The region's water-related problems are of a smaller scale and more localized than those in more urbanized and developed parts of the state and nation. The region has become increasingly attractive to retirees and second-home developers from other parts of the state and nation. This presents a challenge for the region: providing for continued growth and development while protecting water and related resources.

The defining natural feature of the region is the Suwannee River. From its source in the Okefenokee Swamp in southeastern Georgia, the Suwannee winds its way to the Gulf of Mexico 12 miles above Cedar Key. Two major tributaries also originate in Georgia. The Alapaha River joins the Suwannee southwest of Jasper, and the Withlacoochee flows into the Suwannee a few miles downstream at Ellaville. The Santa Fe River flows west from its headwaters in the Santa Fe Lakes area to join the Suwannee near Branford.

The Suwannee begins as a narrow stream and then broadens and flows through extensive swamps and marshes. The Suwannee River estuary is a complex of diverse natural communities and a major nursery for commercially important fish and invertebrates. Other major stream systems within the district include the Waccasassa, Steinhatchee, Fenholloway, Econfina, and Aucilla. The region's surface waters—lakes and springs as well as rivers—are a major recreational resource for residents and tourists. Groundwater is the major source of water for public supply, agriculture, industry, and domestic use.

Population distribution within the region is influenced by topography and patterns of land tenure. Most of the population is in the higher, drier counties east of the Suwannee River, concentrated around Lake City and Live Oak and along the northern and western edge of Gainesville. Other population centers are Starke, Alachua, and Chiefland east of the river, and Madison and Perry west of the river. Along the Suwannee River the largest incorporated towns are White Springs and Branford, each with a population of about 700. To the west of the Suwannee River are extensive low, wet areas and large tracts of land owned by timber companies. In portions of this western region, mile upon mile of back roads can be traveled without sign of permanent human habitation.

The district's rural character and low population density often lead to the conclusion that the economy of the region is based primarily on agriculture. In reality, agricultural wages and employment rank far behind those for other employment categories. Only about three percent of all employed persons in 1994 worked in farm-related jobs. The two largest industries that have long provided an important economic base for the region are forest products and phosphate mining. One of the larger employment sectors is government—about

52 percent of the 14-county workforce is employed by federal, state, regional, and local government agencies. Most of this employment is with local school boards, the University of Florida, and correctional facilities. The region's increasing number of retirees has given rise to a trend toward a service-oriented economy that is expected to continue.

The district's nine-member governing board, appointed by the governor and confirmed by the senate, has the authority to levy ad valorem taxes and to implement rules and regulations for the management of groundwater and surface water within the district. One board member must reside in the Aucilla River basin; the coastal area between the Suwannee and Aucilla rivers; the Withlacoochee (north) and Alapaha river basin and the Suwannee River basin north of the Withlacoochee River; the Suwannee River basin south of the Withlacoochee River (excluding the Santa Fe River basin); and the Santa Fe River basin, Waccasassa River basin, and coastal area between the Withlacoochee (south) and Suwannee rivers. The other four members are appointed at large.

Topography, Physiographic Features, and Climate

The topography in the region overall is subdued, although some dramatic effects have been produced by solution activity and ancient marine processes. Elevations range from at or near sea level in the coastal swamps, lowlands, and river valleys to over 200 feet above mean sea level (msl) in the Northern Highlands and Tallahassee Hills.

The Northern Highlands, considered to be the most distinct physiographic feature in north central Florida, include several subdivisions, one of which is the Tallahassee Hills. All the highlands appear to be disconnected remnants of a once-continuous residual highland (Yon 1966). The line of demarcation separating the Northern Highlands from the Gulf Coastal Lowlands is the Cody Scarp, termed the "most persistent topographic break in the state" by Puri and Vernon (1964). The Suwannee River is the only major stream that does not go underground crossing this transition zone. The Santa Fe and Alapaha re-emerge miles downstream, while smaller streams such as Rose Creek and Pareners Branch disappear into the Floridan aquifer system.

The Gulf Coastal Lowlands consist of a series of Pleistocene surfaces and shorelines with limestone at or near the land surface. Karstic topography produced by intense solution activity is prominent. Important remnant features in the Gulf Coastal Lowlands are the Bell and Brooksville ridges. Towards the east the Brooksville Ridge becomes a rolling plain with sinkholes. The western edge is probably bounded by a marine terrace scarp (White 1970). Bell Ridge, an outlier of the Brooksville Ridge, consists of two irregularly shaped ridges approximately 20 miles long with crests ranging from 80 to 100 feet above msl.

The Coastal Swamp consists of mud and silt over limestone and supports both freshwater swamp and salt marsh. The relative absence of sand barriers and beaches along the coastline is the result of a shallow, sloping sub-marine surface, lack of wave activity, and inadequate sand supply (Tanner 1960).

Remnant dunes, of either aeolian (wind-deposited) or marine origin, can be found inland from Cedar Key to Steinhatchee.

The climate of the region is humid subtropical. Average annual temperatures range from 68½F in Madison County to 72½F at Cedar Key in Levy County. During the winter, temperatures in the 40–50½F range are typical, although freezing temperatures associated with cold fronts are common. Precipitation throughout the district varies from 58 inches annually at Perry to 52 inches annually at Madison, with 50 percent of this amount falling during the summer months (June through September). Summer rainfall is associated with localized thunderstorm activity. In winter, fronts bring sweeping bands of rain and cooler temperatures. Frontal rains are usually more evenly distributed areally and are of longer duration than summer rainfall. Since evaporation and plant transpiration are significantly lower during the winter, these frontal rains are important for recharging groundwater.

Rainfall during spring and summer, although unevenly distributed, is normally sufficient for plant growth. However, spring and summer droughts of varying severity occur, but not in any predictable patterns. Dry conditions in the late 1970s and early 1980s, combined with improvements in irrigation technology, led to an increase in the use of center-pivot and other irrigation systems. Although demands on the Floridan aquifer system are greatest during drought, a period of record-low groundwater levels in 1990–1991 throughout most of the region did not cause any significant water shortages.

