

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

The 17,000-square-mile South Florida Water Management District encompasses all or portions of 16 counties. Forty percent of the population and 31 percent of the land area of the state are within its boundaries. The district contains two watersheds or drainage basins: the Big Cypress Basin (Collier County and part of Monroe County) and the larger Okeechobee Basin, which begins at the headwaters of the Kissimmee River and ends in Florida Bay.

In its natural state, South Florida can be described in one word—wet. Rainfall occurs at an annual average rate of about 54 inches; 67 percent of that amount, or about 36 inches, occurs between May and September. The combination of concentrated periods of rainfall and flat terrain produces a continually swampy, flooded condition throughout much of the region during the wet season, a subtropical characteristic which, for a long time, made South Florida a less-than-desirable spot for human settlement. Over the last 100 years or so the South Florida environment has been substantially modified to accommodate urban, residential, and agricultural development, often to the detriment of the remaining areas of subtropical wilderness.

The first large-scale regional drainage project in South Florida began in 1881, when Hamilton Disston bought 4 million acres of land from the state for twenty-five cents per acre. In 1882, a Lake Okeechobee outlet to the Gulf coast, via the Caloosahatchee River was completed. In the same year, Southport Canal was cut between Lake Tohopekaliga and Lake Cypress. The St. Cloud Canal, which connects Lake Tohopekaliga to East Lake Tohopekaliga, was completed next. By fall of 1883, Disston's company had drained land and opened navigation channels from the Kissimmee Lakes to the Gulf of Mexico.

Disston's land reclamation project revived the depressed railroad industry in Florida which, in turn, brought new settlement, new industry, and new growth. The region's development, however, proceeded in a very haphazard manner—a reflection of the variety of private interests trying to make a profit from South Florida. Funding to sustain large land reclamation projects became harder to acquire as the nineteenth century drew to a close, and drainage efforts by private business ended as well.

In 1907, the state legislature created the Everglades Drainage District. From 1913 to 1927, six major canals and several smaller waterways, 440 miles of levees, and 16 locks and dams were constructed. Hurricanes in 1926 and 1928 halted construction by the Everglades Drainage District, but gave rise to the Okeechobee Drainage District (1929). The Okeechobee district was created to prevent a recurrence of the flooding produced by wind tides on Lake Okeechobee and constructed floodway channels, control gates, and major levees along the lake's shores.

Droughts occurred between 1931 and 1945, bringing saltwater intrusion along the coasts and causing extensive fires in the muck soils of the Everglades. This period came to a dramatic end with the hurricane of 1947. In 1948, Congress authorized the Central and Southern Flood Control Project to provide flood

protection and adequate water supply, prevent saltwater intrusion, encourage agricultural and urban development, and preserve fish and wildlife. The Central and Southern Florida Flood Control District (CSFFCD) was established in 1949 by the Florida legislature to act as local sponsor for the federal project. The CSFFCD acquired lands for, and assumed operation and maintenance of, each section of the project as it was completed.

From 1949 through 1969, the U.S. Army Corps of Engineers and the CSFFCD built and operated the project works. At the same time, South Florida's population surged, and industrial and residential consumption became significant components, in addition to the existing agricultural demands, of water use within South Florida.

The National Environmental Protection Act, passed in 1969, requires the corps and the CSFFCD to consider damage to the environment when making management decisions. Growing concern for preservation of the environment prompted, in 1971, a Governor's conference on Florida's water management issues. The conference produced legislative action, the Water Resources Act of 1972, which broadens the authority and responsibility of the CSFFCD, and requires control and regulation of water supplies and their use. In 1976 the CSFFCD became the South Florida Water Management District (SFWMD), to reflect the changing scope of the district's responsibilities.

Excavation, construction of barriers, and other mechanical means to channel and retain water have been supplemented by the use of improved planning, operational, and regulatory processes to control human use of water. Recent efforts have focused on developing water management plans for four planning districts within the SFWMD and for Lake Okeechobee to address water supply, water quality, flood control, and enviTopography, Physiographic Features, and

Climate

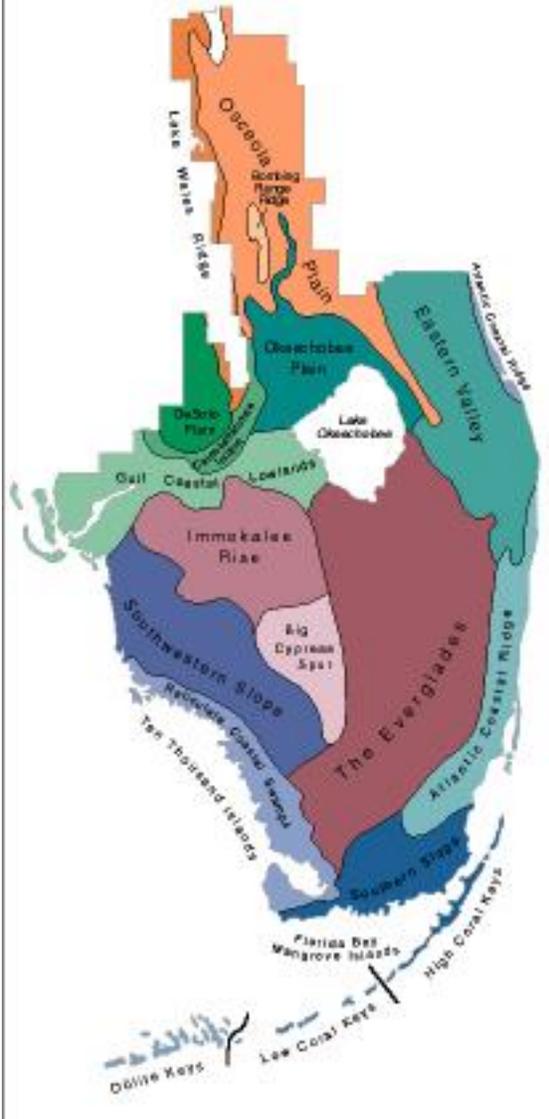
Nearly all the land in South Florida is less than 100 feet above mean sea level (msl). Land surface generally slopes from north to south. The coastal regions and most of the peninsula south of Lake Okeechobee are very flat and lie below 25 feet msl, except near Immokalee and parts of the Atlantic Coastal Ridge. North of Lake Okeechobee, the Lake Wales Ridge juts down the center of the peninsula and is mostly above the 100-foot contour. East of this ridge, the Okeechobee Plain rises from approximately 20 feet at the lake to 30 to 40 feet at the edge of the Osceola Plain, which rises in elevation from 60 feet to 90 feet.

Two major physiographic features, Lake Okeechobee and the Everglades, are discussed separately in this chapter. The Kissimmee River valley (also discussed separately) crosses the Osceola and Okeechobee plains and is a major source of surface water to Lake Okeechobee and the Everglades. Rainfall in the northern portion of the Osceola Plain recharges the Floridan aquifer. The Immokalee Rise provides recharge to the water table and sandstone aquifers in Lee and Collier counties. Water from the Atlantic Coastal Ridge and Everglades recharges the Biscayne aquifer in Dade and Broward counties and provides surface water flows to Florida Bay. The Big Cypress Swamp in eastern Collier and southern Hendry counties contributes primarily to surface-water flow to

coastal estuaries along the southwest coast of Collier County and Everglades National Park. The Florida Keys have no major source of freshwater except for rainfall and limited storage in the shallow aquifer of the larger islands. Coastal marshes and mangrove swamps, which are subject to tidal influx of saltwater, border the southern end of the peninsula.

South Florida, with its distinct wet and dry seasons, is the only savanna climate in the continental United States. Within this region, rainfall varies considerably. Average wet season (May 1–October 31) rainfall ranges from 46 inches near the southeast coast to 36 inches in the Kissimmee valley. Average dry season rainfall varies from 17 inches along the southeast coast to 10 inches on the southwest coast. The driest month is December, when average monthly rainfall ranges from less than 1.25 inches near Everglades City to 2.50 inches near West Palm Beach. The wettest month is September, when average rainfall ranges from 9.5 inches at West Palm Beach and Homestead to 6 inches near Okeechobee. The area occasionally experiences extended periods of below average rainfall, such as occurred during the drought of 1988–91. South Florida is also subject to tropical storms and hurricanes, which can produce significant amounts of rain. During such years, rainfall for the year can total over 80 inches.

Physiographic Regions



Population
1990



One dot represents 1,000 persons.