

EXPLANATION

- WATER-TABLE CONTOUR --- Shows altitude of water table. Hachures indicate depressions. Contour intervals 2 and 4 feet. Dashed where approximately located. Datum is sea level.
- GROUND-WATER LEVEL MEASUREMENT SITE SHALLOW ZONE (0-40 FEET BELOW LAND SURFACE).
- GROUND-WATER LEVEL MEASUREMENT SITE DEEP ZONE (40-200 FEET BELOW LAND SURFACE).
- ▲ SURFACE-WATER LEVEL MEASUREMENT SITE
- CANAL AND WATER CONTROL STRUCTURE
- MUNICIPAL WELL FIELD

This map report shows the altitude of the water table in the surficial aquifer system in St. Lucie and Martin Counties for May 1989. The report, prepared by the U.S. Geological Survey in cooperation with the South Florida Water Management District, is one of a planned series of surficial aquifer system water-table map reports made for the study area. Water-level data for this series of reports are collected twice annually, in May and October, to show the normally expected annual low and high water-level conditions, respectively.

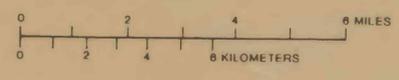
The surficial aquifer system in St. Lucie and Martin Counties is the major source of potable water for the area. It consists primarily of sand, marl, silt, shell, and limestone deposited during the Pleistocene Epoch (Miller, 1980). Ground water in this part of the surficial aquifer system generally is under water-table conditions, except in local areas where low-permeability units could cause partial confinement.

Water levels in 117 wells (94 wells having depths less than 40 feet and 23 wells having depths of 40-200 feet) in the two-county area were measured by the U.S. Geological Survey during May 1-5, 1989. The water-level data from these wells, supplemented with data from other agencies, were used to construct contours depicting the water-table altitude. This map shows the altitude of the water table in the surficial aquifer system in St. Lucie and Martin Counties at the end of the dry season (November-April). The combined effects of low rainfall and increased urban and agricultural withdrawals typically cause the water table to be at its lowest level during May.

The water-table contours, as drawn, indicate that they are in hydraulic connection with the canals, streams, and lakes in the area. The contours, based on hydrologic judgment and experience with the system, are generalized to show regional ground-water flow direction in this dynamic system. The water table conforms to the topography of the area in a subdued manner. Variations in hydrologic conditions such as varying well depths, nonsimultaneous measurements of water levels in wells and canals, variable effects of pumping and hydraulic structures, and changing climatic influence were considered in constructing the contours. Thus, the water-table contours may not conform exactly with individual measurements of the water levels.

In this map report, "sea level" refers to the National Geodetic Vertical Datum of 1929—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

Miller, W.L., 1980. Geologic aspects of the surficial aquifer in the Upper East Coast Planning Area, southeast Florida. U.S. Geological Survey Water-Resources Investigations Open-File Report 80-586, 2 sheets.



ALTITUDE OF THE WATER TABLE IN THE SURFICIAL AQUIFER SYSTEM
IN ST. LUCIE AND MARTIN COUNTIES, FLORIDA, MAY 1-5, 1989

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