

HYDROLOGIC CONDITIONS IN WEST-CENTRAL FLORIDA

The Floridan aquifer system consists of the Upper and Lower Floridan aquifers separated by the middle confining unit. The middle confining unit and the Lower Floridan aquifer in west-central Florida generally contain highly mineralized water. The water-bearing units containing fresh water are herein referred to as the Upper Floridan aquifer. The Upper Floridan aquifer is the principal source of water in the Southwest Florida Water Management District and is used for major public supply, domestic use, irrigation, and brackish water desalination in coastal communities (Southwest Florida Water Management District, 2000).

This map report shows the potentiometric surface of the Upper Floridan aquifer measured in September 2010. The potentiometric surface is an imaginary surface connecting points of equal altitude to which water will rise in tightly-cased wells that tap a confined aquifer system (Lohman, 1979). This map represents water-level conditions near the end of the wet season, when groundwater levels usually are at an annual high and withdrawals for agricultural use typically are low. The cumulative average rainfall of 53.17 inches for west-central Florida (from October 2009 through September 2010) was 0.41 inches above the historical cumulative average of 52.76 inches (Southwest Florida Water Management District, 2010). Historical cumulative averages are calculated from regional rainfall summary reports (1915 to most recent complete calendar year) and are updated monthly by the Southwest Florida Water Management District.

This report, prepared by the U.S. Geological Survey in cooperation with the Southwest Florida Water Management District, is part of a semi-annual series of Upper Floridan aquifer potentiometric-surface maps for west-central Florida. Potentiometric-surface maps have been prepared for January 1964, May 1969, May 1971, May 1973, May 1974, and for each May and September since 1975. Water-level data are collected in May and September each year to show the approximate annual low and high water-level conditions, respectively.

Most of the water-level data for this map were collected by the U.S. Geological Survey during the period September 13-17, 2010. Supplemental water-level data were collected by other agencies and companies. Most water-level measurements were made during a 5-day period; therefore, measurements do not represent a 'snapshot' of conditions at a specific time, nor do they necessarily coincide with the seasonal low water-level condition.

WATER-LEVEL CHANGES

Water levels in about 61 percent of the wells measured in September 2010 were higher than the September 2009 water levels (Ortiz, 2010a). Data from 402 wells indicate the September 2010 water levels ranged from about 5 feet below to about 6 feet above the September 2009 water levels (fig. 1). The largest water level increase occurred in north-central Pasco County. The largest water level declines occurred in south-central Pasco County and north-central Manatee County (fig. 1).

Water levels in about 83 percent of the wells measured in September 2010 were higher than the May 2010 water levels (Ortiz, 2010b). Data from 413 wells indicate the September 2010 water levels ranged from about 5 feet below to 23 feet above the May 2010 water levels. The largest water level decline was in northwest Pasco County and the largest rise in water levels was in east-central Manatee County.

ACKNOWLEDGMENTS

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SELECTED REFERENCES

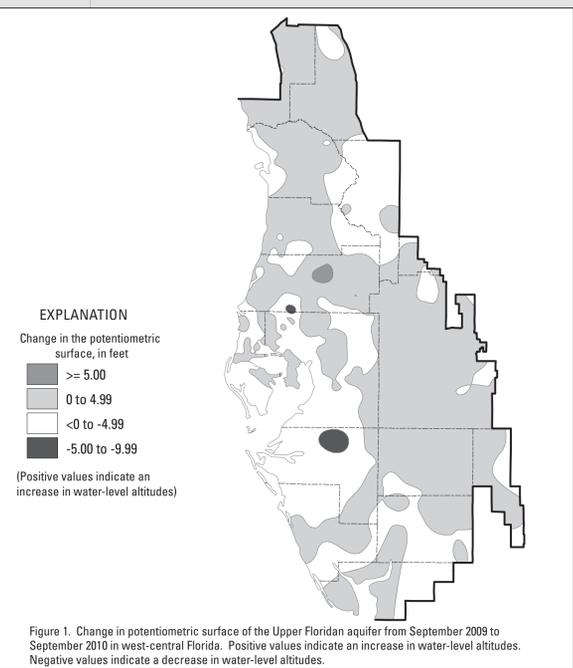
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EXPLANATION

- MUNICIPAL WELL FIELD
- POTENTIOMETRIC CONTOUR -- Shows altitude at which water would have stood in tightly cased wells. Contour interval is 10 feet. National Geodetic Vertical Datum (NGVD) of 1929. Hachures indicate depressions. Dashed where approximately located.
- BOUNDARY OF SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
- OBSERVATION WELL -- Number is altitude of water level in feet above or below NGVD of 1929.
- OBSERVATION WELL -- Number is altitude of water level in feet above or below NGVD of 1929. Bold number indicates water levels corrected for salinity.
- SPRING
- CITY OR TOWN

