

CONFIGURATION OF THE TOP OF THE FLORIDAN AQUIFER, SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT AND ADJACENT AREAS

By
Anthony Buono and A. T. Rutledge

This map depicts the approximate top of the rock that composes the Floridan aquifer. The contours represent the elevation of the top of the Floridan aquifer to mean sea level.

Rock units recognized to be part of the Floridan aquifer are limestone and dolomite ranging from middle Eocene to early Miocene. They are Lake City Limestone, Avon Park Limestone, Ocala Limestone, Suwannee Limestone, and Tampa Limestone.

In this report, the top of the Floridan aquifer is a limestone defined as the first consistent rock of early Miocene age, or older, below which occur no clay confining beds. Although the Hawthorn formation of Middle Miocene is considered part of the Floridan aquifer when it is in direct hydrologic contact with lower lying rock units, it is not considered here because of a lack of detailed delineation of areas where contact exists. In most areas, the aquifer surface represents the top of the Suwannee or Tampa Limestones.

Known elevation differences exist in the aquifer limestone surface and range as much as 50 feet in elevation for 300 feet of linear ground distance. Fifty-foot contour intervals indicate general configuration and regional trend of the aquifer limestone.

Part of the map was modified and expanded from one prepared during an earlier investigation of the hydrologic effects of proposed, large ground-water developments in west-central Florida. Lithologic logs and maps of the top of the Floridan aquifer were used from various reports. Geologists' logs of wells and quarries from the Florida Bureau of Geology, drillers' logs, and U.S. Geological Survey well schedules were used to define data points.

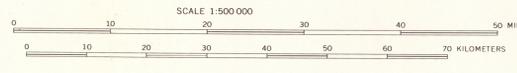
The map was prepared by the U.S. Geological Survey in cooperation with the Southwest Florida Water Management District.

Selected References

Carr, W. J., Alverson, D. C., 1959, Stratigraphy of Middle Tertiary rocks in part of west-central Florida: U.S. Geol. Survey Bull. 1092.
 Cathcart, J. B., 1962, Economic geology of the Keyville Quadrangle, Florida: U.S. Geol. Survey Bull. 1128.
 —, 1966, Economic geology of the Fort Mead Quadrangle, Polk and Hardee Counties, Florida: U.S. Geol. Survey Bull. 1207.
 Cathcart, J. B., McGreevy, L. J., 1959, Core drilling, 1953, land-pegble phosphate district, Florida: U.S. Geol. Survey Bull. 1046K.
 Faulkner, G. L., 1973, Geology of the Cross-Florida Barge Canal area, special reference to the Ocala vicinity: U.S. Geol. Survey Water-Resources Inv. 1-73.
 Heath, Ralph C., Smith, P. C., 1954, Ground-water resources of Pinellas County, Florida: Florida Geol. Survey Rept. of Inv. 12.
 Ketner, K. B., McGreevy, L. J., 1959, Stratigraphy between Hernando and Hardee Counties, Florida: U.S. Geol. Survey Bull. 1074-C.
 Knochenmus, D. D., 1971, Ground water in Lake County, Florida: Florida Bureau of Geol. Map Series 44.
 Litcher, W. F., Anderson, W., and Joyner, B. F., 1968, Water resources of Orange County, Florida: Florida Geol. Survey Rept. of Inv. 50.
 Pride, R. W., Meyer, F. W., Cherry, R. N., 1966, Hydrology of Green Swamp area in central Florida: Florida Geol. Survey Rept. of Inv. 42.
 Puri, H. S., Yon, J. W., Jr., Oglesby, W. R., 1967, Geology of Dixie and Gilchrist Counties, Florida: Florida Geol. Survey Bull. 49.
 Sinclair, W. C., 1974, Hydrogeologic characteristics of the surficial aquifer in northwest Hillsborough County, Florida: Florida Bureau of Geol. Information Circ. 86.
 Sutcliffe, Horace Jr., 1973, Appraisal of the water resources of Charlotte County, Florida: U.S. Geol. Survey Water-Resources Inv. Open-File Rept. 73010.
 Vernon, R. O., 1951, Geology of Citrus and Levy Counties, Florida: Florida Geol. Survey Bull. 33.
 —, 1973, Top of the Floridan artesian aquifer: Florida Bureau of Geol. Map Series 66.
 Wilson, W. E., 1975, Ground-water resources of DeSoto and Hardee Counties, Florida: U.S. Geol. Survey Open-File Rept. 75-428.
 Wright, A. P., 1973, Environmental geology and hydrology, Tampa area, Florida: Florida Bureau of Geol. Special Pub. 19.

EXPLANATION

- 400 STRUCTURE CONTOUR—Shows altitude of the top of rock of the Floridan aquifer. Dashed where approximately located. Contour interval 50 feet. Datum is mean sea level.
- WELL—Shows location of well data points.
- ✕ QUARRY—Shows location of quarry data points.
- BOUNDARY LINE—Indicates the boundaries of the Southwest Florida Water Management District.



CONFIGURATION OF THE TOP OF THE FLORIDAN AQUIFER, SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT AND ADJACENT AREAS

By
ANTHONY BUONO AND A. T. RUTLEDGE
1978