

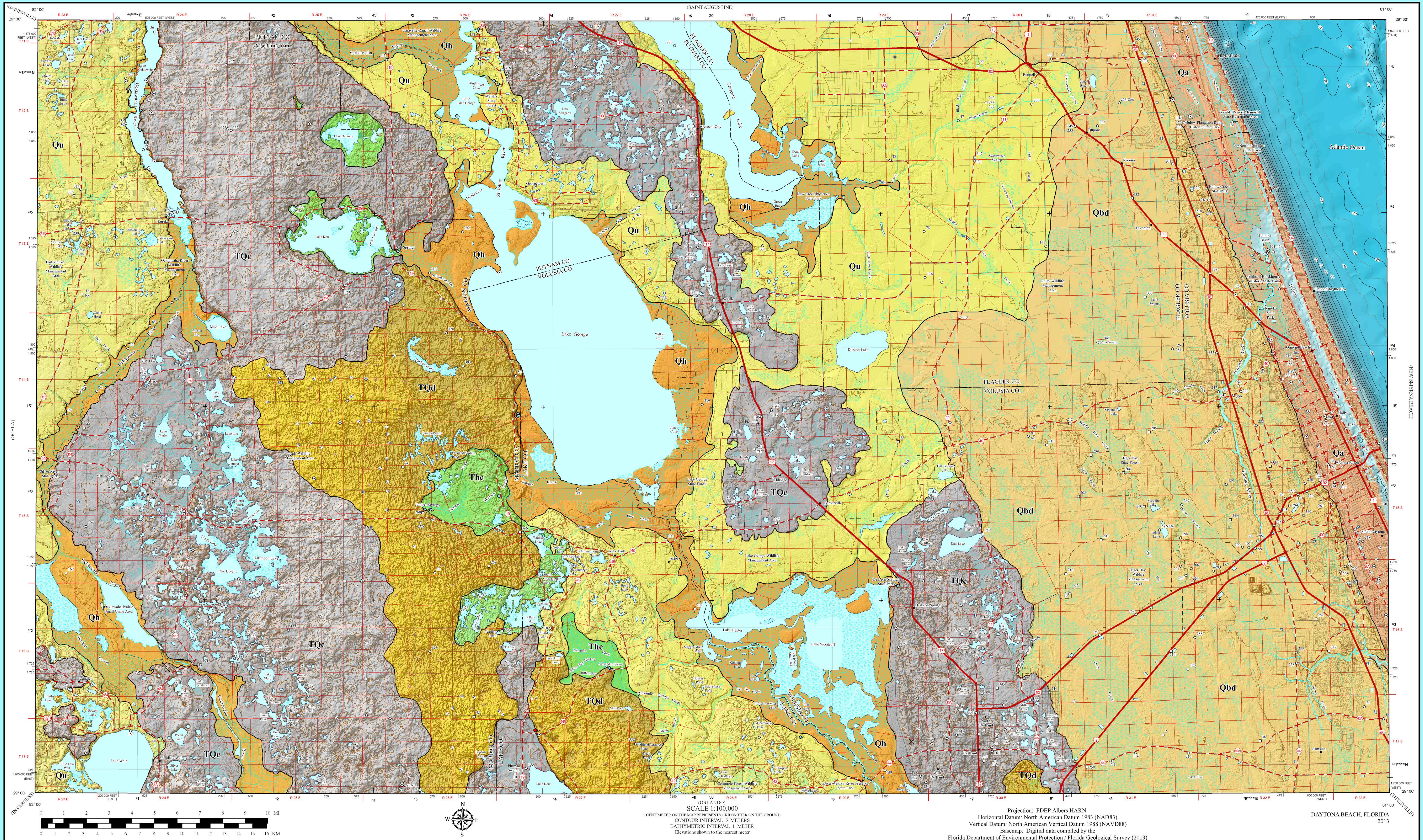
Herschel T. Vinyard Jr.
Secretary



OPEN-FILE MAP SERIES 105, Plate 1
GEOLOGIC MAP OF THE USGS DAYTONA BEACH
30 X 60 MINUTE QUADRANGLE, NORTHEAST FLORIDA
2013
BY
RICHARD C. GREEN (P.G. #1776), WILLIAM L. EVANS, III, P.G.,
SETH W. BASSETT, AND LEVIM HANNON



Jonathan D. Arthur
State Geologist and Director



Holocene Sediments

Sediments mapped as Holocene (Qh) may include quartz sand, marls, organics, and minor carbonate sands and mud. They may also include fresh-water marshes. Within the study area, they occur as floodplain deposits in the vicinity of Lake George, the St. Johns River and the Ocklawaha River.

Quaternary Beach Ridge and Dunes

Quaternary beach ridge and dune sediments (Qbd) are a subdivision of the undifferentiated Quaternary sediments that are noted on the basis of surficial expression of relief beach ridges and dunes. While not a formally recognized lithostratigraphic unit, it is mapped in order to facilitate a better understanding of Florida's geology. Beach ridge and dune sediments are dominantly siliclastic sands and are unconsolidated to poorly consolidated. Organics typically occur as disseminated organic matter, roots and plant debris, carbonized remains or charcoal.

Quaternary Sediments

Undifferentiated Quaternary sediments (Qu) consist of white to gray to orange to blue-green, fine- to coarse-grained, clean to clayey unfossiliferous sands, silty clays and clays. The unit may contain significant amounts of organics.

Anastasia Formation

The Anastasia Formation (Qa) is present within the Atlantic Coastal Complex in a narrow band along the eastern edge of the study area. The formation is composed of interbedded coquina limestone and quartz sands. It typically occurs as an orangish-brown, unindurated to moderately indurated coquina consisting of whole and broken mollusk shells in a quartz sand matrix. The coquina is commonly cemented by sparry calcite. The sands occur as light gray to tan and orangish-brown, unconsolidated to moderately indurated, unfossiliferous to very fossiliferous beds.

Tertiary/Quaternary Dunes

Tertiary/Quaternary dunes (TQd), while not formally a recognized lithostratigraphic unit, are mapped in order to facilitate a better understanding of Florida's geology. Where LiDAR is available these dunes are readily differentiated by their distinct topographic expression. These dune sediments are fine-to-medium quartz sand with varying amounts of disseminated organic matter. They are generally found at elevations above 100 feet (30 meters) MSL, although there are areas along the flanks of the Mt. Dora Ridge where elevations of these dune sands can be lower. Sands forming these dunes are thought to be derived from reworking of sediments from the Cypresshead Formation (TQc) and undifferentiated Quaternary sediments (Qu).

Cypresshead Formation

The Pliocene/Pleistocene Cypresshead Formation (TQc) is a mottled reddish-brown to reddish-orange to white, unconsolidated to poorly-consolidated, fine- to very coarse-grained, variably clayey to clean quartz sand. Cross-bedded sands are common within this formation. Discoid quartzite pebbles, mica, and ghosts of nearshore marine mollusks are often present. The Cypresshead Formation is present throughout much of the study area and forms the core of the various ridges present in the region (see geomorphology plate for more discussion). East of the St. Johns River, it typically becomes a more weathered, finer-grained, well-sorted sand and silt. In cores, the unit is often characterized by beds of fine-grained, well sorted sand with thin layers of clay dispersed through the sand.

Hawthorn Group, Coosawhatchee Formation

The Miocene Coosawhatchee Formation (The) consists of quartz sands, dolomites and clays. The unit ranges in color from greenish-gray and light gray to olive gray. The most common lithology in the upper section of the unit is characteristically a sandy to very sandy dolomite which may be interbedded with quartz sands and clays. Quartz sands and clays dominate and dolomites become subordinate in the lower portion of the section. The quartz sands are fine- to medium-grained, generally phosphatic, clayey and dolomitic. In many instances, the sands grade into dolomites and clays. Clay content is variable and may range from five to more than 20 percent. Phosphate content is highly variable, ranging from a trace to more than 20 percent. Coarse phosphate sands and pebbles are present but not common in the unit.

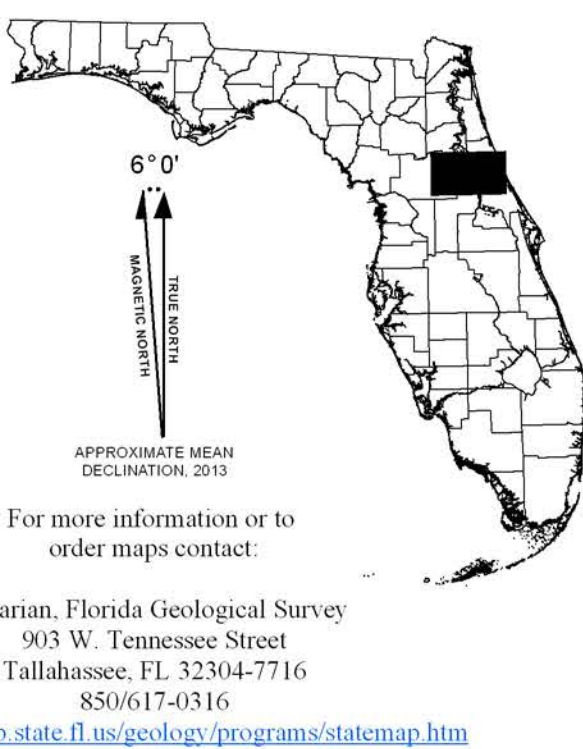
LEGEND

- Primary highway
- Secondary highway
- Light duty road, principal street
- Railroad
- County boundary
- National or State reservation boundary
- Contours
- Index
- Bathymetry
- Index
- River or stream
- Core
- Cuttings
- Archived M-Series sample
- Outcrop/exposure
- Quarry
- Borrow pit
- Swallet
- Spring
- City/town
- Basemap Coordinate Explanation
- 10,000-meter grid, zone 17 North Universal Transverse Mercator
- 25,000-foot grid ticks based on Florida coordinate system, west and north zones
- 40 = 40,000m
- 1725 = 1725,000 FEET (MEET)
- 1650 = 1650,000 FEET (MEET)

E24,000 QUADRANGLE GRID											
FLORIDA	LAKE	WELAKA	CHERRY	SUNNY	BONELL	FLORIDA	FLORIDA	FLORIDA	FLORIDA	FLORIDA	FLORIDA
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ADJOINING MAPS

- 1 Gainesville
- 2 Saint Augustine
- 3 Ocala
- 4 Daytona Beach
- 5 New Smyrna Beach
- 6 Titusville
- 7 Titusville
- 8 Titusville
- 9 Titusville



This map was created using Florida Department of Environmental Protection (FDEP) databases and data obtained by the Florida Geological Survey (FGS). It was completed August 31, 2013, by the FDEP/FGS, Geological Investigations Section. This document was prepared for the presentation of the geologic information shown and is not intended to replace site-specific or use-specific investigations. The FGS does not guarantee this document to be free from errors or inaccuracies and disclaims any responsibility or liability for inappropriate change of scale, interpretation, or decisions based thereon. Cooperatively funded by the FGS and the U.S. Geological Survey (USGS), National Cooperative Geologic Mapping Program, under USGS assistance award number G12AC20412. The views and conclusions in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.