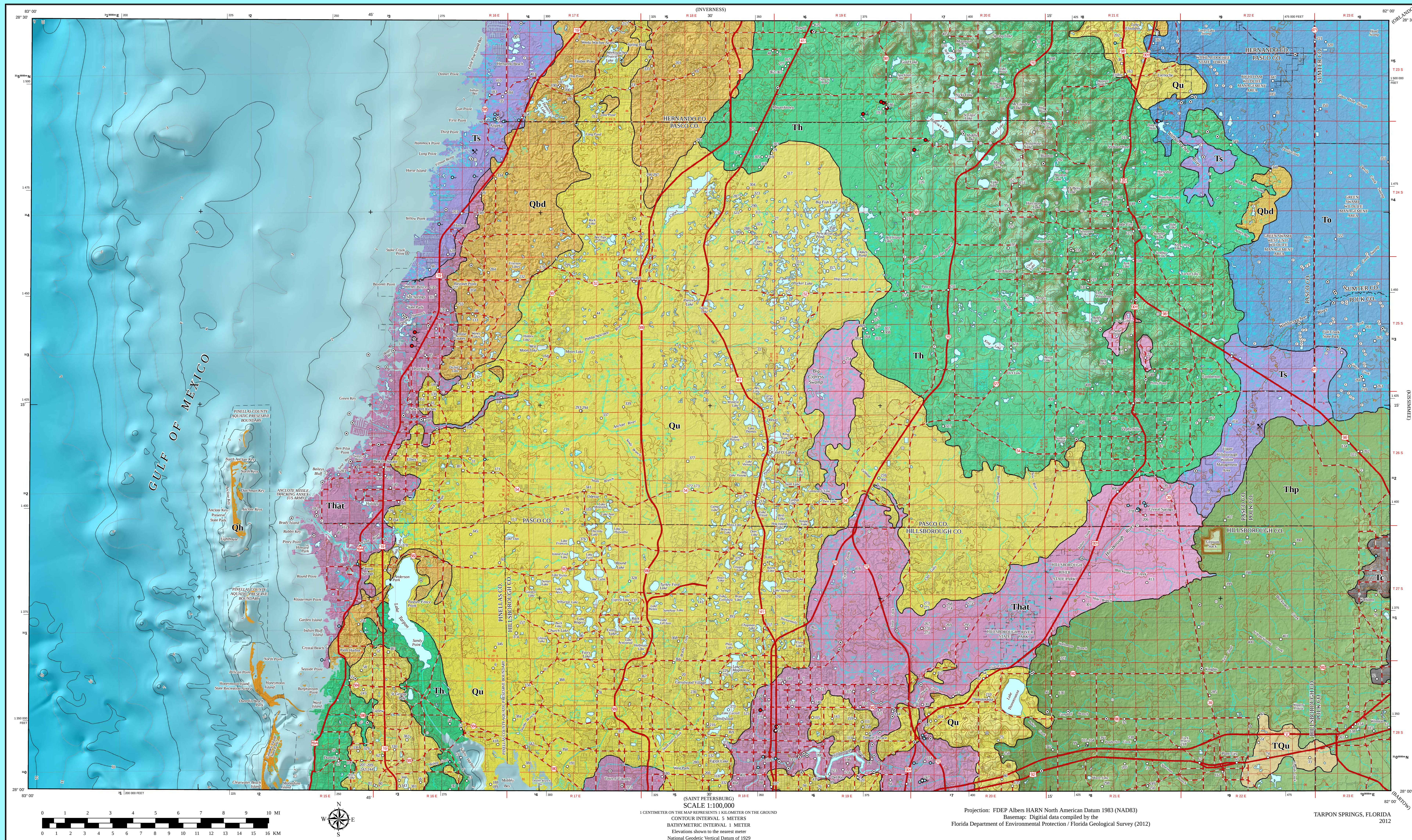


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SecretaryJonathan D. Arthur
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OPEN-FILE MAP SERIES 104, Plate 1 GEOLOGIC MAP OF THE USGS TARPON SPRINGS 30 X 60 MINUTE QUADRANGLE, CENTRAL FLORIDA

2012

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CLINTON KROMHOUT, P.G., SETH W. BASSETT, AND LEVI M. HANNON**Undifferentiated Holocene**

Qh Undifferentiated Holocene sediments may include quartz sands, marls, organics, and minor carbonate sands and mud. They may also include fresh-water gastropods.

Qbd Quaternary beach ridge and dune sediments are predominantly siliclastic sands and are unconsolidated to poorly consolidated. Organics typically occur as disseminated organic matrix, roots and plant debris, carbonized remains or charcoal.

Undifferentiated Quaternary Sediments

Qu Undifferentiated Quaternary sediments consist of white to gray to orange to blue-green, fine- to coarse-grained, clean to clayey unfossiliferous sands, sandy clays and clays with variable admixtures of organics, unconsolidated to poorly indurated. This unit may contain significant amounts of clay and organics.

Undifferentiated Tertiary-Quaternary Sediments

Tq Undifferentiated Tertiary-Quaternary sediments are siliclastic that are separated from the Undifferentiated Quaternary Sediments primarily on the basis of elevation. Pleistocene sea levels reached a maximum of approximately 100 feet (30.5 meters) above MSL. These sediments are predominantly older than Pleistocene but include sediments reworked during the Pleistocene. They may contain sediments reworked from the Hawthorn Group and Cypresshead Formation during Pleistocene and late Pliocene fluctuations in sea level. These poorly consolidated to unconsolidated siliclastics are white to gray to orange to blue-green, fine- to coarse-grained, clean to clayey unfossiliferous sands, sandy clays and clays with variable admixtures of clay and organics. This unit may include fluvial and aeolian deposits.

Cypresshead Formation

Ts The Pliocene to Pleistocene Cypresshead Formation 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 mollusks are often present.

Hawthorn Group, Peace River Formation

Thp The Middle Miocene to Lower Pliocene Peace River Formation of the Hawthorn Group is comprised of yellowish gray to olive gray, interbedded sands, clays and carbonates with the siliclastic component being dominant. Phosphate sand and gravel are most common in the uppermost beds, although they are generally interspersed throughout the unit. The Peace River Formation contains a diverse fossil assemblage of marine and terrestrial fauna (e.g., shark teeth, ray spines, horse teeth, vertebrae, dugong and whale ribs), particularly within the Bone Valley Member. Porosity types in the formation are generally intergranular, except in the carbonate-rich zones, where moldic porosity is also present.

Hawthorn Group, Undifferentiated

Th The Upper Oligocene to Pliocene undifferentiated Hawthorn Group sediments are typically light olive gray and blue gray in unweathered sections and reddish brown in weathered sections. They consist of poorly- to moderately-consolidated, clayey sands to silty clays and relatively pure clays with little to no phosphate.

Hawthorn Group, Arcadia Formation, Tampa Member

That The Upper Oligocene to Lower Miocene Tampa Member of the Arcadia Formation (Hawthorn Group) varies from white to yellowish gray in color and ranges from a wackestone to packstone with varying amounts of quartz sand and clay. Phosphate (typically less than 3 to 5 percent), dolomite, chert, siliceous limestone and silicified corals are also present. Fossil molds of foraminifera, mollusks, gastropods and algae are all common within the Tampa Member. Pinkish gray to light olive gray dolostones also occur with a similar fossil assemblage and accessory mineral assemblage as the limestone. This sand and clay beds can be found intermittently within the unit. Porosity of the unit is generally intergranular and moldic.

Suwannee Limestone

Ts The Lower Oligocene Suwannee Limestone consists of limestone (grainstone and packstone) in the study area. The unit is typically gray, tan, light brown to moderate brown, moderately to very well-indurated, finely to coarsely crystalline, with limited occurrences of fossiliferous beds. Chert is present in the unit, particularly in the northwestern portion of the study area. Porosity types include intergranular and moldic. Sedimentary structures include bioturbation and cross bedding. Fossils present in the unit include mollusks, corals, echinoids (including the index fossil *Rhynchotrema gouldii*), as well as abundant microfossils, and other benthic foraminifera such as *Dicorinopsis gunter*, *Falloella* (*Dicogonius*) *cookei* and *Falloella* (*Coskinoella*) *floridana*.

Ocala Limestone

To The Upper Eocene Ocala Limestone can be subdivided into an upper and lower unit. The upper unit is a white to cream, fine- to coarse grained, poorly- to well indurated, poorly sorted, fossiliferous limestone (wackestone, packstone, and grainstone). Fossils commonly include foraminifera, bryozoans, mollusks, and a rich diversity of echinoids. The lower unit is characteristically a white to cream, fine to medium grained, poorly to moderately indurated limestone (grainstone to packstone). Fossils include foraminifera (*Lepidocyclina ocala*, *Nummulites* (*Camerina*) *vanderzaki*, *Amphistegina phoeniceis*, *Nummulites* (*Operculinella*) *ocalana*), bryozoans, algae, mollusks, echinoids, and crustaceans.

LEGEND

- Primary highway
- Secondary highway
- Light duty road, principal street
- Railroad
- County Boundary
- National or State reservation boundary
- Contours
- Bathymetry
- Index
- Intermediate
- River or Stream
- Core
- Cuttings
- Archived M-Series Sample
- Float
- Outcrop / Exposure
- Quarry or Borrow Pit
- Swallet
- Spring
- Lake or Pond
- Wetland
- U.S. Public Lands Survey
- Township/Range
- U.S. Public Lands Survey
- Section

- * Wells numbered 1 - 45 are used in cross-sections on OFMS 104, Plate 2
- * Refer to Open-File Report 98, Appendix A for well information

Basemap Coordinate Explanation

1983 North American Datum HARN
10,000-meter grid, zone 17 North Universal Transverse Mercator
25,000-foot grid ticks based on Florida coordinate system, west and north zones

1" = 2,500 = 2,500,000 FEET (NORTH)
1" = 300,000 FEET (WEST)

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, 2012, 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 G11AC20418. 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.

1:24,000 QUADRANGLE GRID

QUADRANGLE	1	2	3
TARPON SPRINGS	1	2	3
INVERNESS	4	5	6
ORLANDO	7	8	9
KISSIMEE	10	11	12
ST. PETERSBURG	13	14	15
BARTON	16	17	18

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