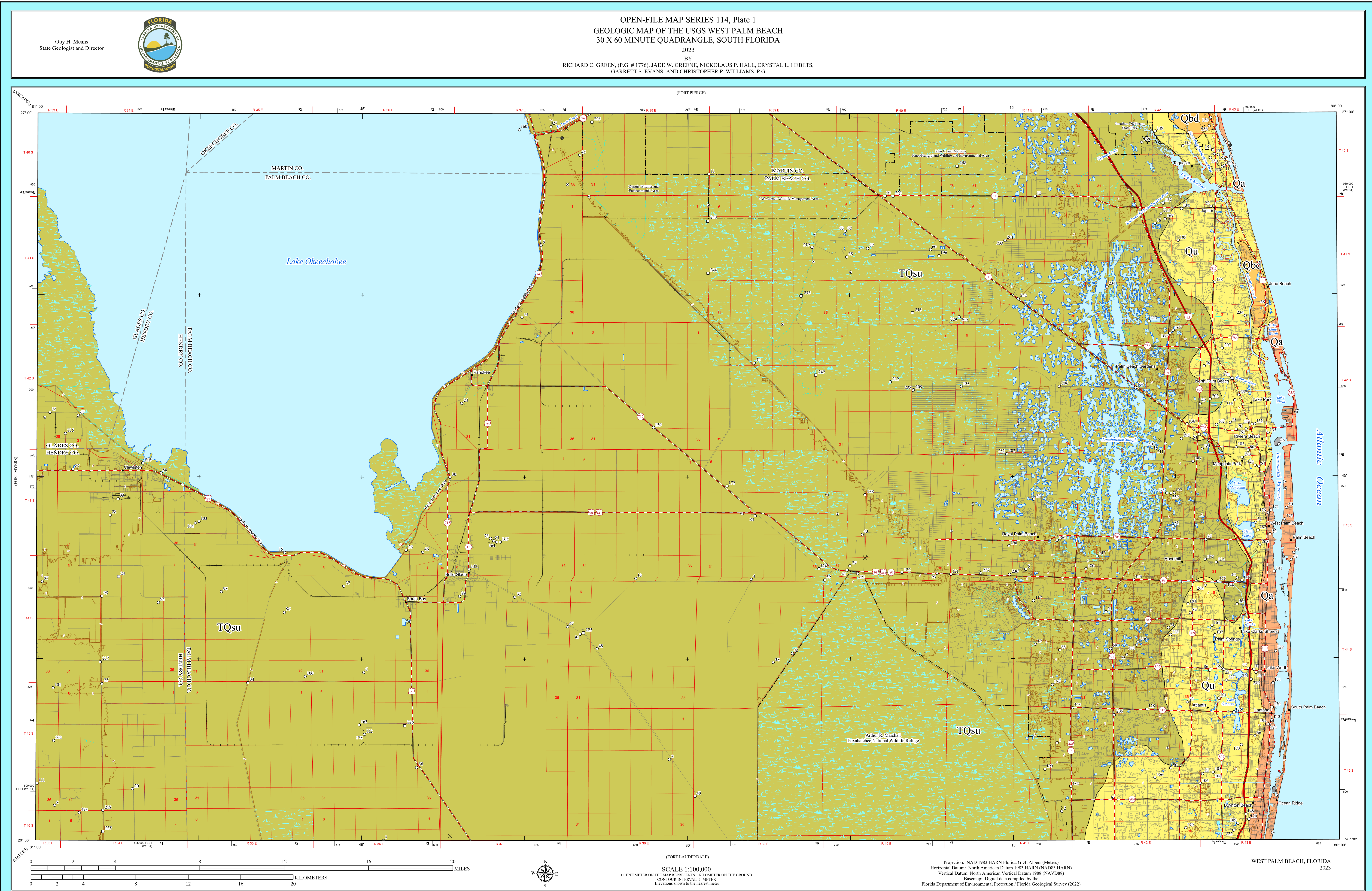




Quaternary beach ridge and dune

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

Quaternary undifferentiated sediments

While not a formally recognized lithostratigraphic unit, Quaternary undifferentiated sediments (Qu) are mapped in order to facilitate a better understanding of Florida's geology. Quaternary undifferentiated sediments consist of white to gray to orange, fine to coarse-grained, clean to clayey, unfossiliferous sands, sandy clays, and clays with variable admixtures 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, named by Sellards (1912), is composed of interbedded coquina limestone and quartz sands. It typically occurs as an orangish brown to very pale orange, unconsolidated 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. The unit sits unconformably on Pliocene/Pleistocene undifferentiated shelly sediments.

Tertiary/Quaternary undifferentiated shelly sediments

Pliocene/Pleistocene undifferentiated shelly sediments (TQsu) typically consist of fine-to-medium quartz sand with variable amounts of calcillite, silt, marine mollusk shells, and clay. Shells, which may vary from whole to fragments, are normally highly weathered and abraded and may occasionally become the dominant lithology. Other accessory minerals may include calcite, argonite, mica, heavy minerals, and phosphate sand and gravel. A basal phosphate lag is often present. Colors range from light gray to light-olive gray. In the study area, TQsu is predominantly in the form of unconsolidated sands with varying percentages of shell fragments.

SPOIL

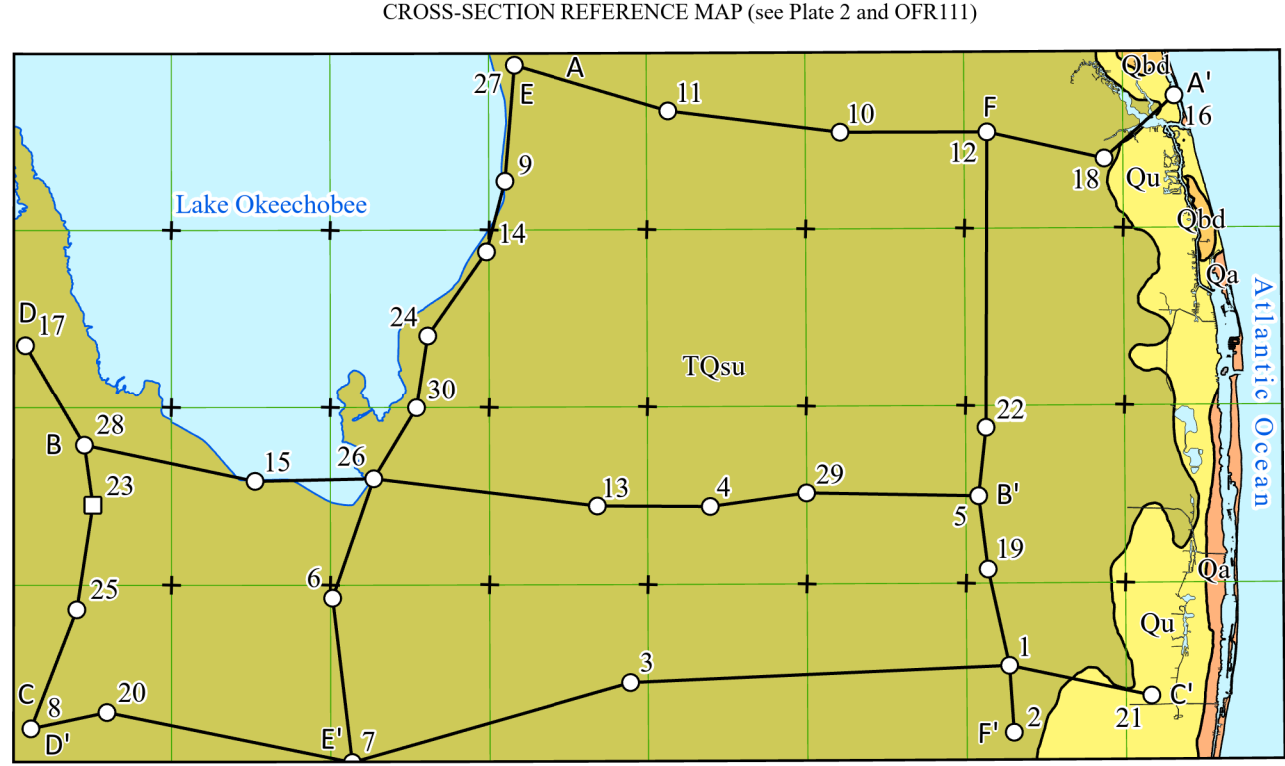
The areas marked as spoil on the map are disturbed islands created by dredging in the Indian River Lagoon and Lake Worth along navigation channels. These are typically a mixture of sand and shells from either the Tertiary/Quaternary undifferentiated shelly sediments, the Anastasia Formation, or Holocene sediments.

LEGEND

- Core
- Cuttings
- M-Series sample
- ⊗ Outcrop/exposure
- × Borrow pit
- × Quarry / sand mine
- City/town
- + USGS 1:24,000 Quadrangle tick mark
- ** Boreholes numbered 1 - 30 are used in cross-sections on OFMS 114, Plate 2

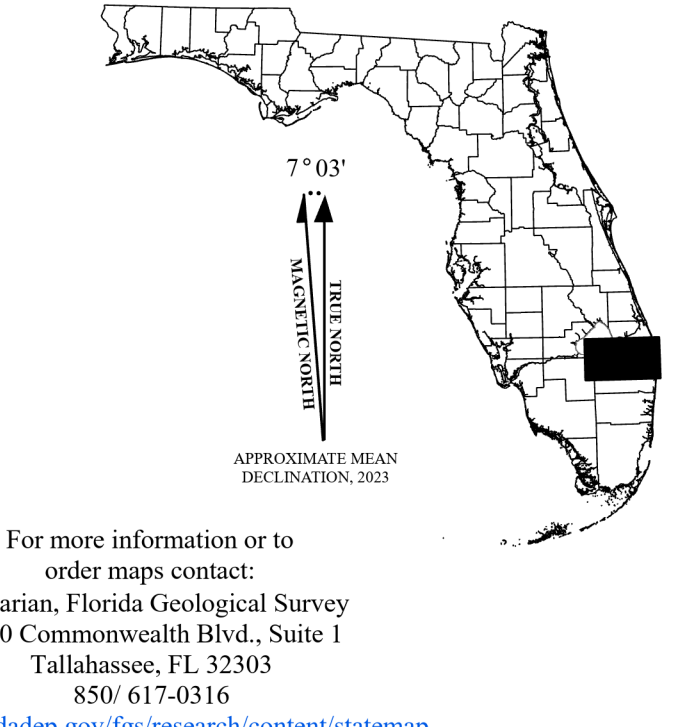
- Waterbody
- Wetland
- River or stream
- Cross section line
- U.S. Public Lands Survey Township/Range
- U.S. Public Lands Survey Section

Base map: Coordinate Explanation
10,000-meter grid, zone 17: Universal Transverse Mercator
25,000-foot grid ticks based on Florida coordinate system, east and west zones
250 - 718 000000
900 - 900 000 000 (FEET)



ADJOINING MAPS

- | | |
|---|---|
| 1 | 2 |
| 3 | 5 |
- 1 Arcadia (OFMS 87/88)
 - 2 Fort Pierce (OFMS 113)
 - 3 Fort Myers (to be mapped in 2024)
 - 4 Naples (to be mapped in 2025)
 - 5 Fort Lauderdale



This map was created using Florida Department of Environmental Protection (DEP) databases and data obtained by the Florida Geological Survey (FGS). It was completed March 31, 2023, by the DEP/FGS, Geological Investigations Section. This document is 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, interpretations, or decisions based thereon. Cooperatively funded by the DEP/FGS and the U.S. Geological Survey (USGS) National Cooperative Geologic Mapping Program under USGS assistance award number G21AC10817-00. 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.