

# HSRP HYDROGRAPHIC SERVICES IMPROVEMENTS

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# DISSEMINATION OF HYDROGRAPHIC DATA

## LIMITED SAND RESOURCES IN FLORIDA

- Goal to find the best and nearest sand resource and to protect sensitive marine habitats
- Critical to have most accurate and timely data
- Preliminary research involves locating past data sets
- Need to minimize duplication of effort

# DISSEMINATION OF HYDROGRAPHIC DATA



NOAA Satellite and Information Service  
National Environmental Satellite, Data, and Information Service (NESDIS)

NOS Hydrographic Survey Data

Office of Coast Survey & National Geophysical Data Center

NOAA > NESDIS > NGDC > Maps

[Comments?](#)

[privacy policy](#)



## LAYERS

- All Surveys
- Digital Sounding Data
- Multibeam EEZ Surveys
- Shallow Water Multibeam Surveys
- Sidescan Sonar Data
- Incomplete Surveys
- NOS Nautical Charts
- NOS Bottom Samples

Refresh Map

Auto Refresh

Show Legend

# ROSS ArcIMS



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## Reconnaissance Offshore Sand Search

[FAQs](#) | [Related Links](#) | [Contact Us](#) | [FTP](#)

### Reconnaissance Offshore Sand Search Home Page

Mapping

-ArcIMS

Database

-Query Builder

Downloads

-Shapefiles

Reports

Technical Advise

Bibliography

Project List

ROSS Terms

[Mapping](#)

[Database](#)

[Reports](#)



**Bureau of Beaches  
and Coastal Systems**

# ROSS ArcIMS



FDEP Reconnaissance Offshore Sand Search

[Home Page](#)

[User Manual](#)

Tool Mode: Zoom In



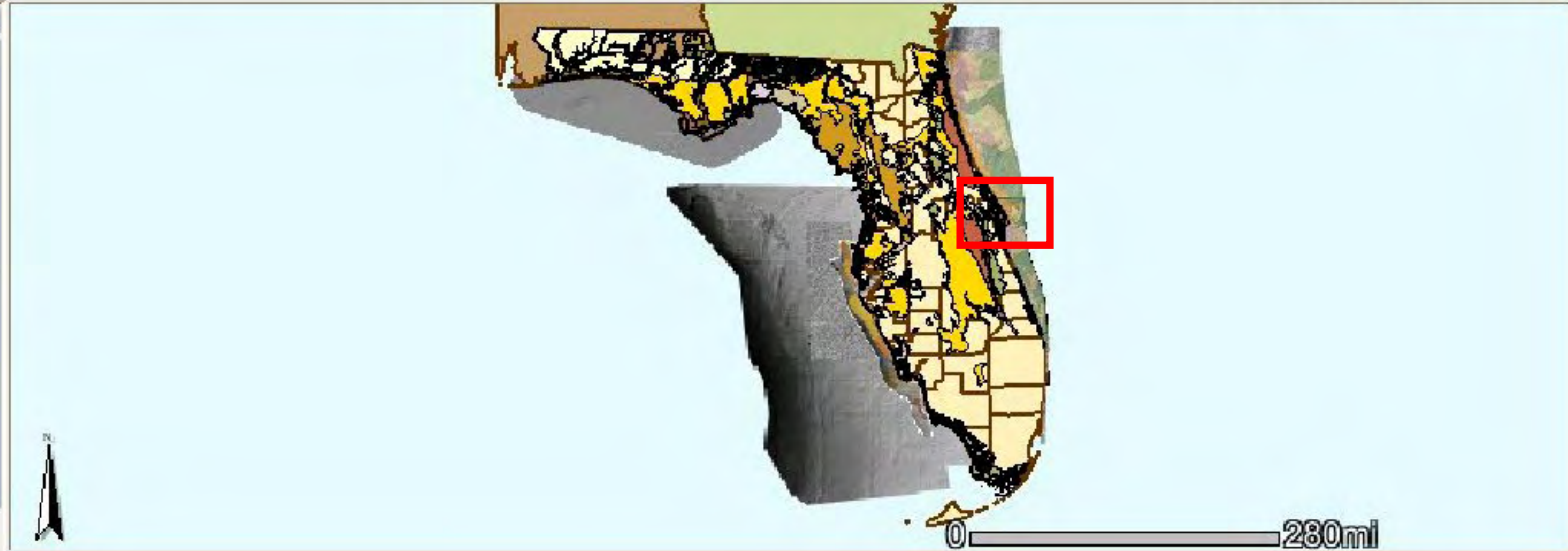
X, Y -642804.26, 434116.99

Scale 1:

## LAYERS

- Sediment Samples
- Other
- Reef/Hardbottom
- Geophysical
- Environmental
- Basemap
- Isopach Lines
- Bathymetry
- Borrow Sites
- Paleo Features
- Near Shore Features
- Geology/Gomorphology
- Interpreted Maps
- Queries

Auto Refresh



# ROSS ArcIMS

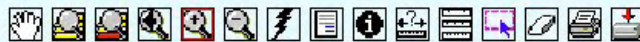


FDEP Reconnaissance Offshore Sand Search

[Home Page](#)

[User Manual](#)

Tool Mode: Zoom In



X, Y 676509.4, 530022.81

Scale 1: 722711

- LAYERS**
- Sediment Samples
  - Other
  - Reef/Hardbottom
  - Geophysical
  - Environmental
  - Basemap
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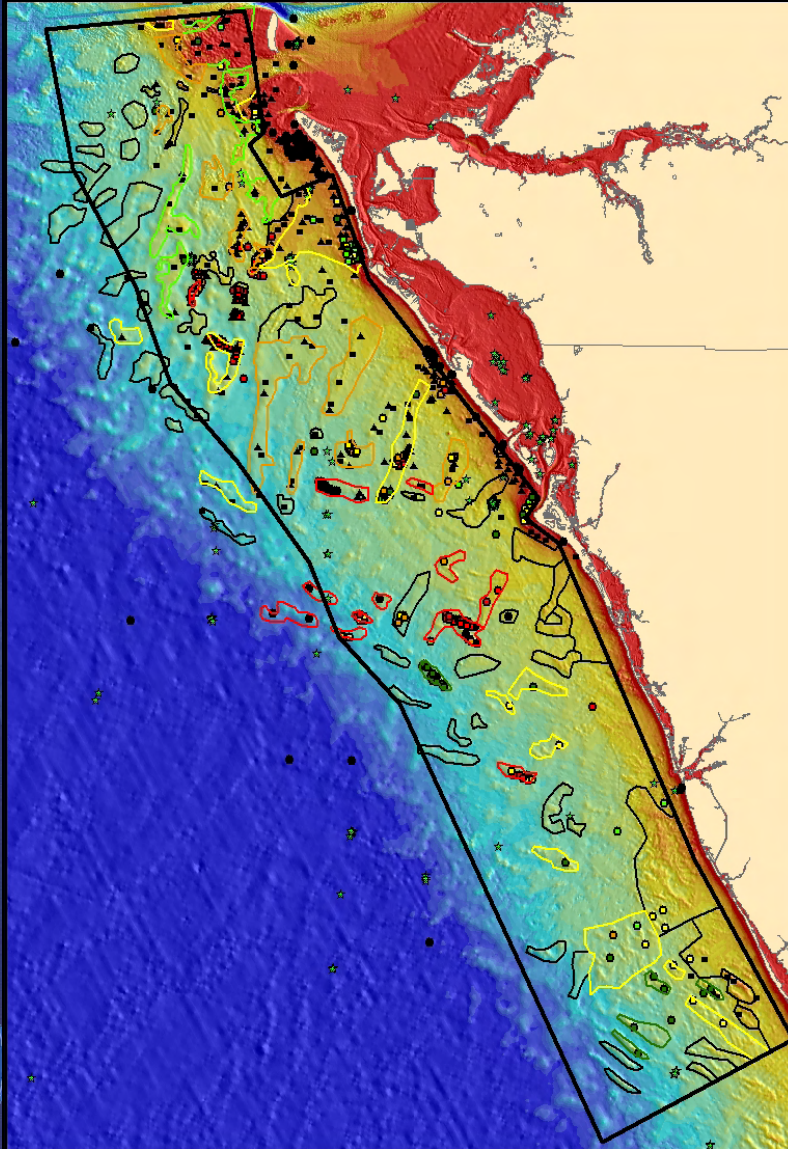
Auto Refresh



0 19mi

# Sand Search Methods

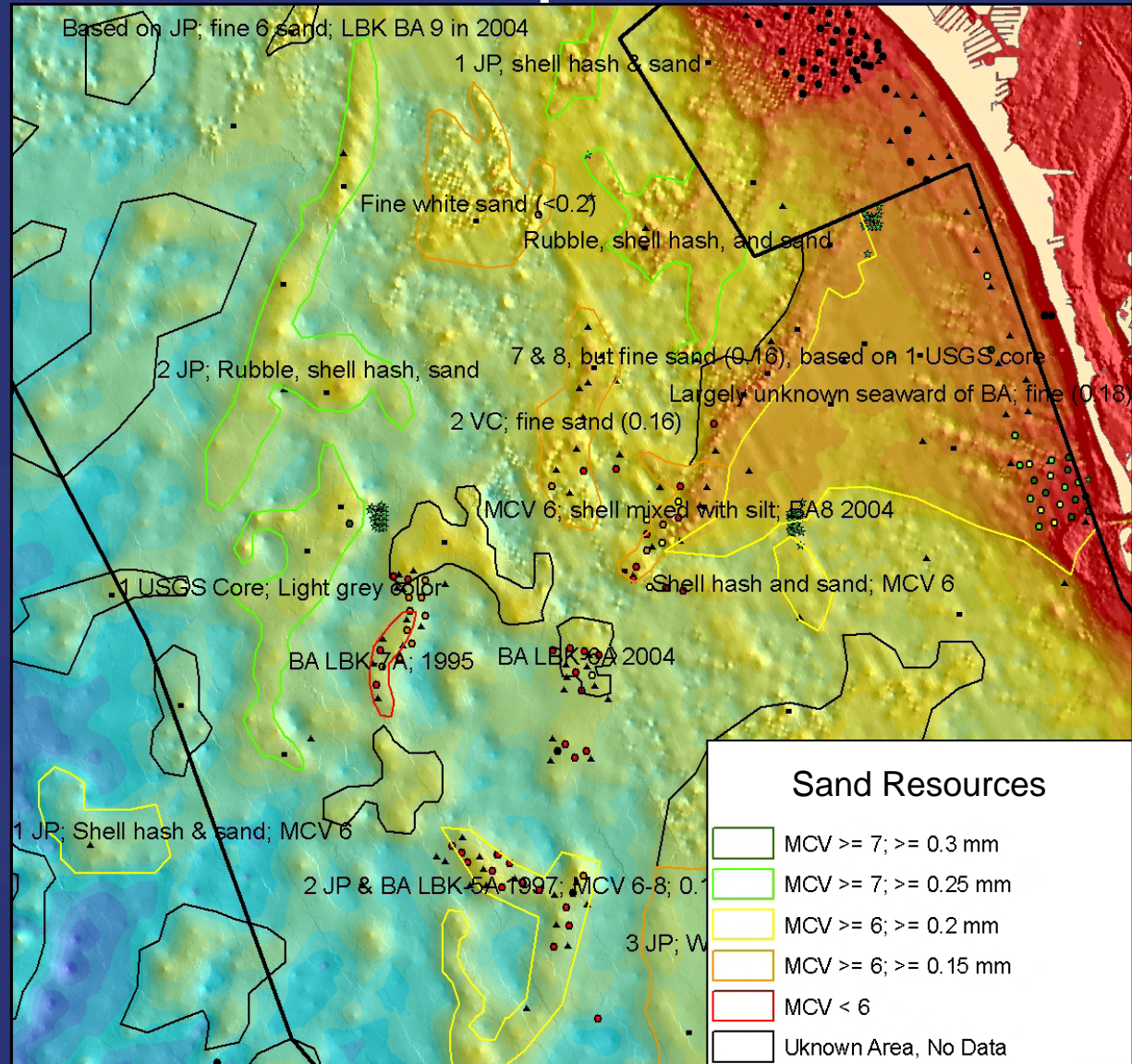
## Desktop Studies



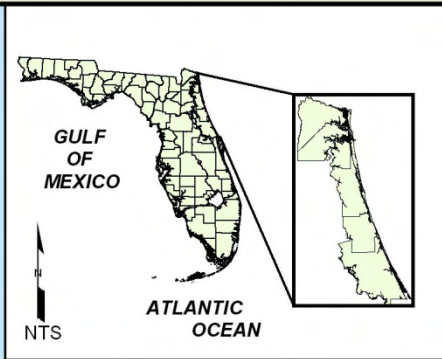
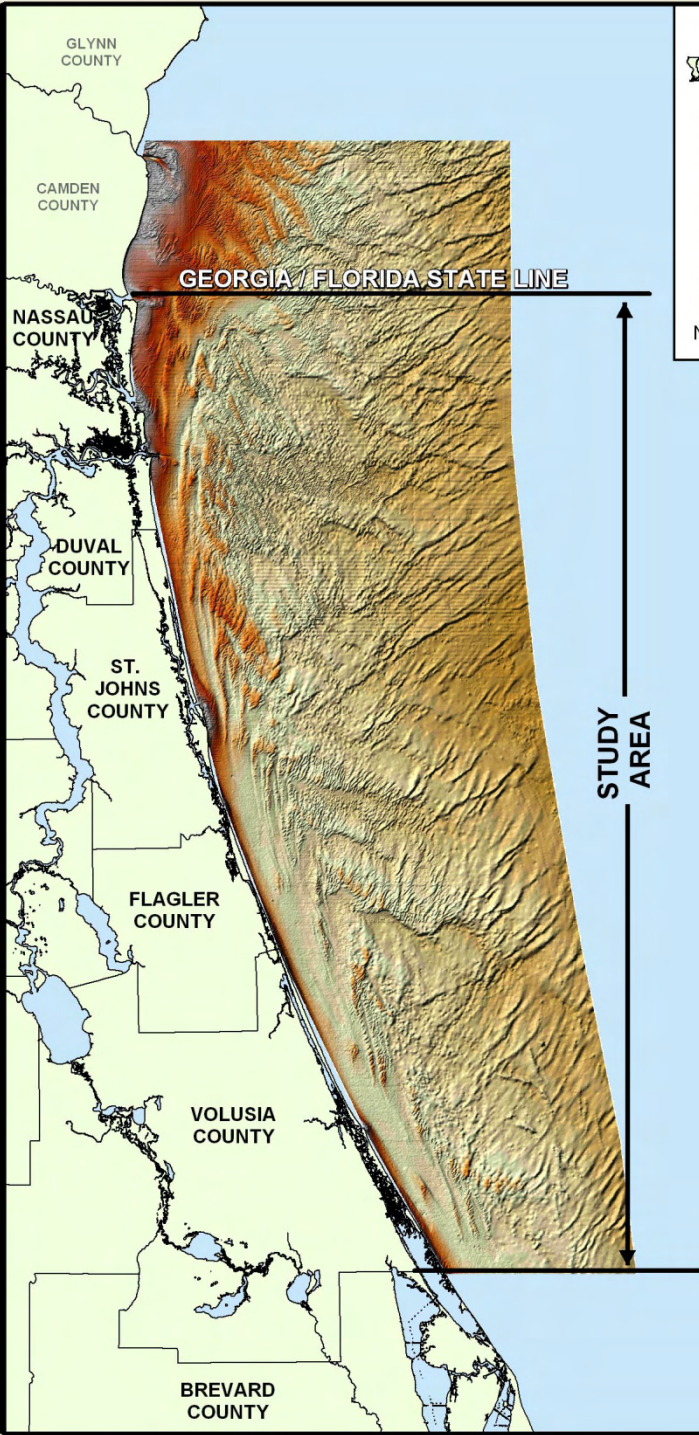
- Nautical charts
- Bathymetry contours
- Grid NOAA bathymetry
- Color-stretch bathymetry
- Color-shaded relief
- Overlay seatruthing
  - Cores
  - Jet probes
- Digitize areas

# Sand Search Methods

## Desktop Studies

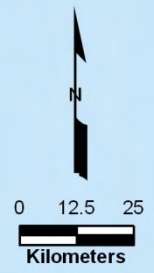






# STUDY AREA

119,250 ha State shelf area  
1,351,444 ha Federal shelf area



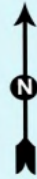
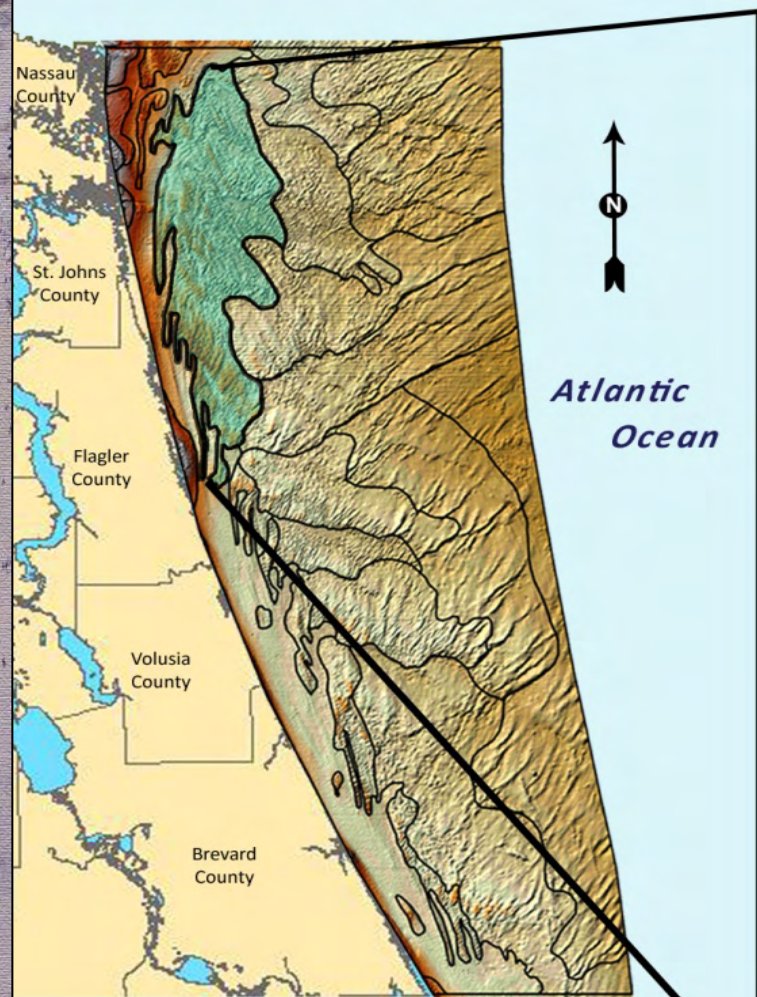
An aerial photograph of a sandy beach and ocean waves, showing the transition from the shore to the open sea. The beach is on the left, and the ocean is on the right. The waves are breaking near the shore, creating white foam. The sky is a clear, light blue.

# MORPHOSEDIMENTARY UNITS

- Transverse (nearshore) bars
- Ridge fields (sand ridges)
- Sand flats (shoreface-attached sand sheets)
- Sand waves (offshore transverse deposits)
  
- Banks (offshore deposits)
- Shoals (nearshore ridge-associated deposits)
- Ebb-tidal deltas (nearshore wave-dominated)

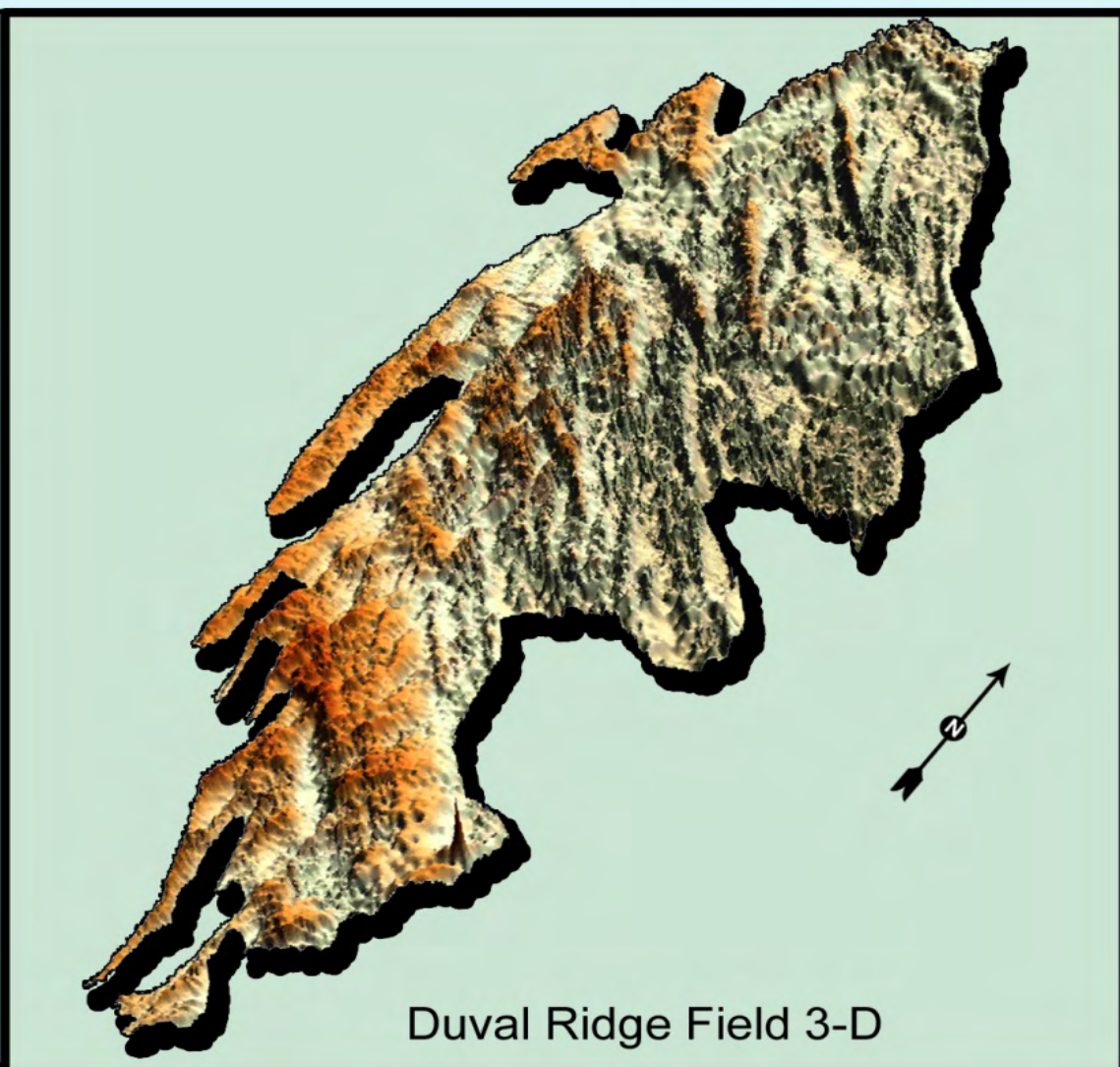
# DUVAL RIDGE FIELD

131,000 ha,  $12 \times 10^9 \text{ m}^3$  potential sand source



*Atlantic  
Ocean*

Study Limits



Duval Ridge Field 3-D

# DISSEMINATION OF HYDROGRAPHIC DATA



USGS Home  
Contact USGS  
Search USGS

## Center for Coastal and Watershed Studies

[Center for Coastal & Watershed Studies](#) > FLaSH Habitat Map Project

## Florida Shelf Habitat (FLaSH) Map Project

FLaSH Home

Florida Shelf  
Summary

Browse the Data:

by Location

by Type of Data

by Collection  
Platform

by Presentation  
Format

Resources

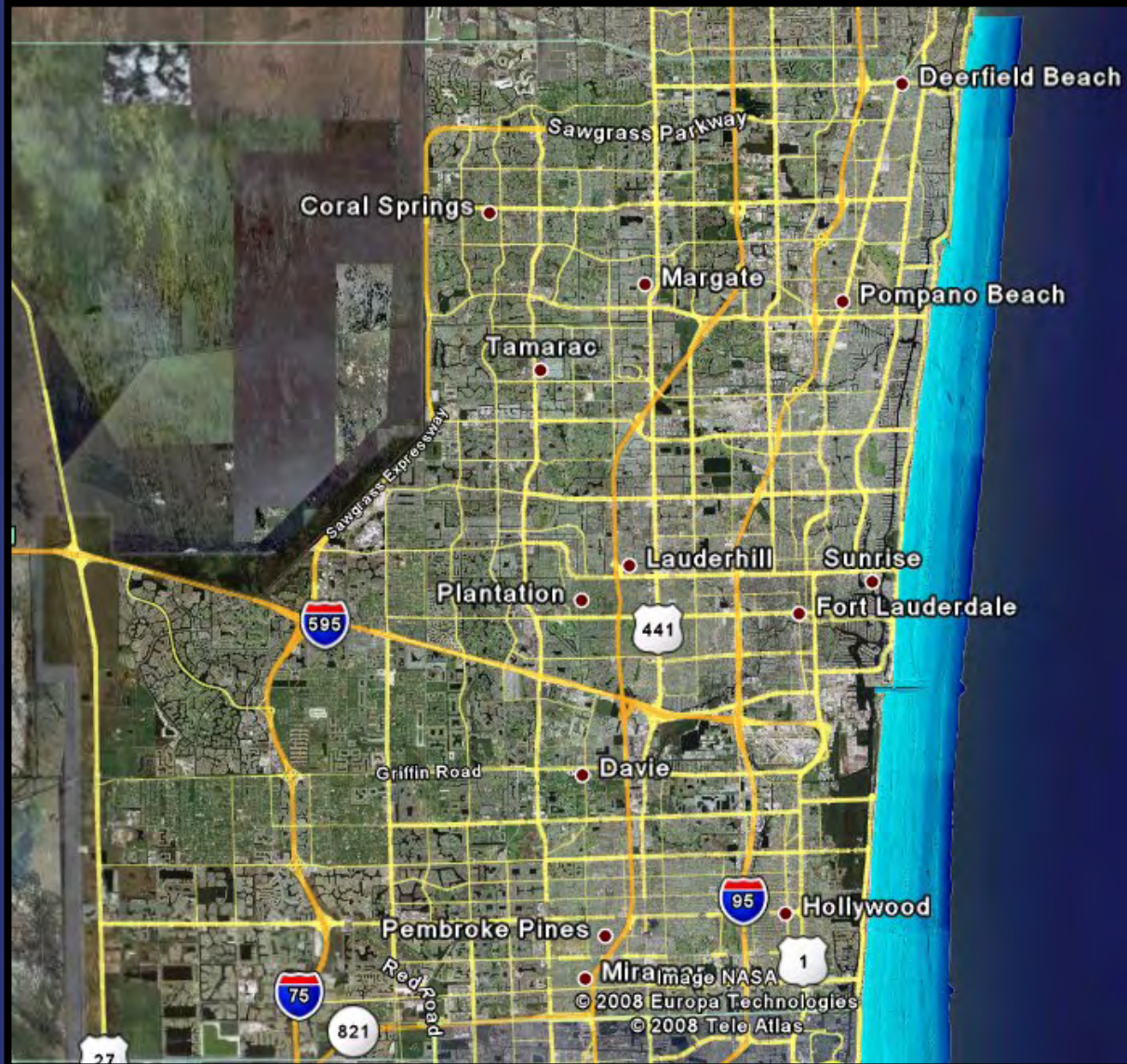
### Example Overlay of Multiple Datasets - Broward County



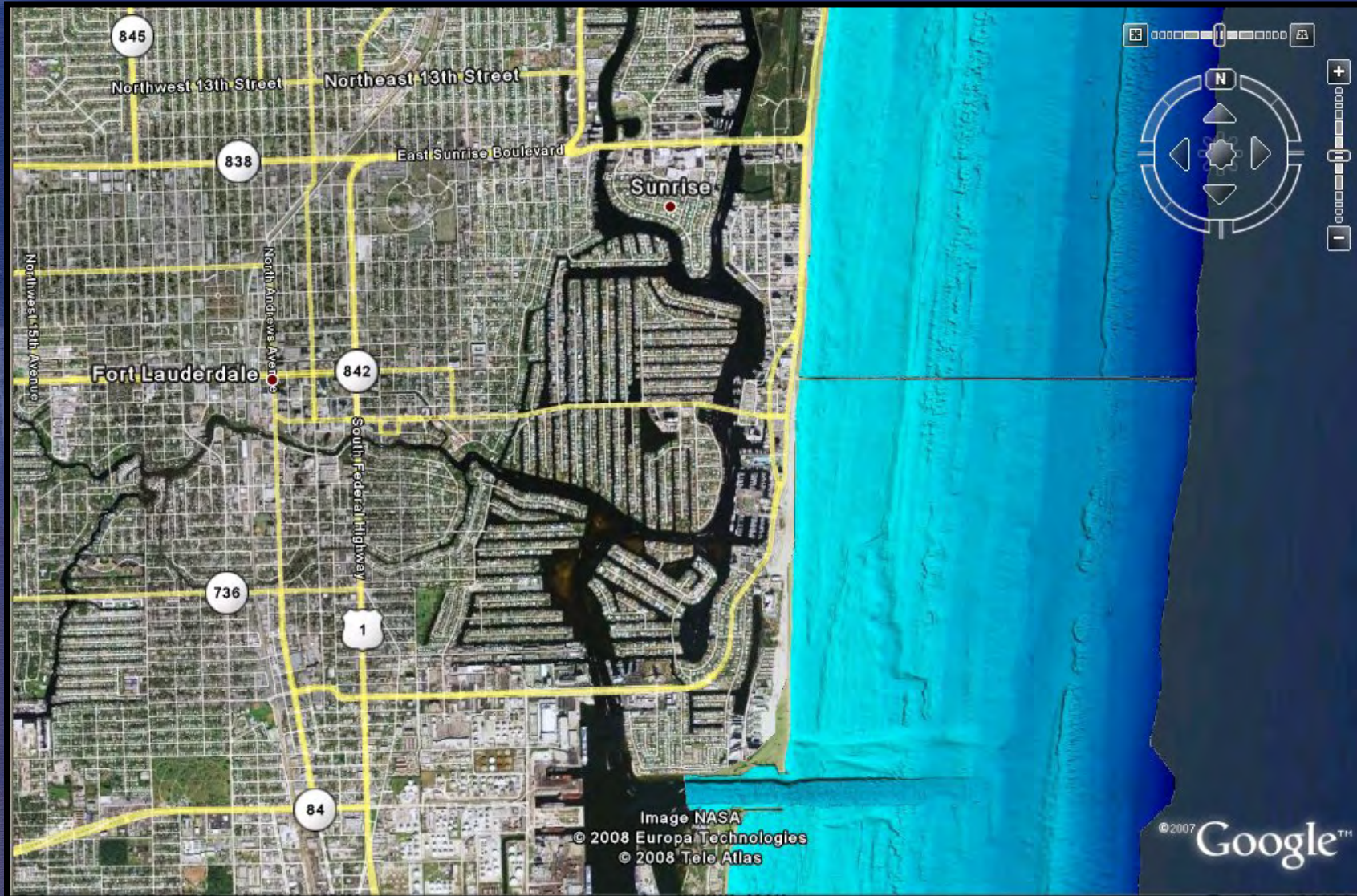
[Coastal Planning and Engineering](#) (CPE), working in conjunction with several universities, collected and prepared a variety of nearshore data for Broward County in preparation for beach renourishment projects in 2001 and 2006. Broward County has placed a strong emphasis on the collection, distribution, and use of GIS products. Some CPE datasets can be downloaded from Broward county's [GIS website](#). The U.S. Geological Survey has partnered with CPE in order to make the data more accessible to the larger scientific community as well as the general public. The Google Earth KMZs presented here are intended for use by the general public.

The large volume of quality data collected by CPE affords an opportunity to display and interpret these datasets. For ease of use, the data has been organized into four major themes: [biological constituents](#), [laser bathymetry \(LADS\)](#), [man-made structures and zones](#) and [bathymetry contours](#). The first two themes presented here have a large number of associated image and video files.

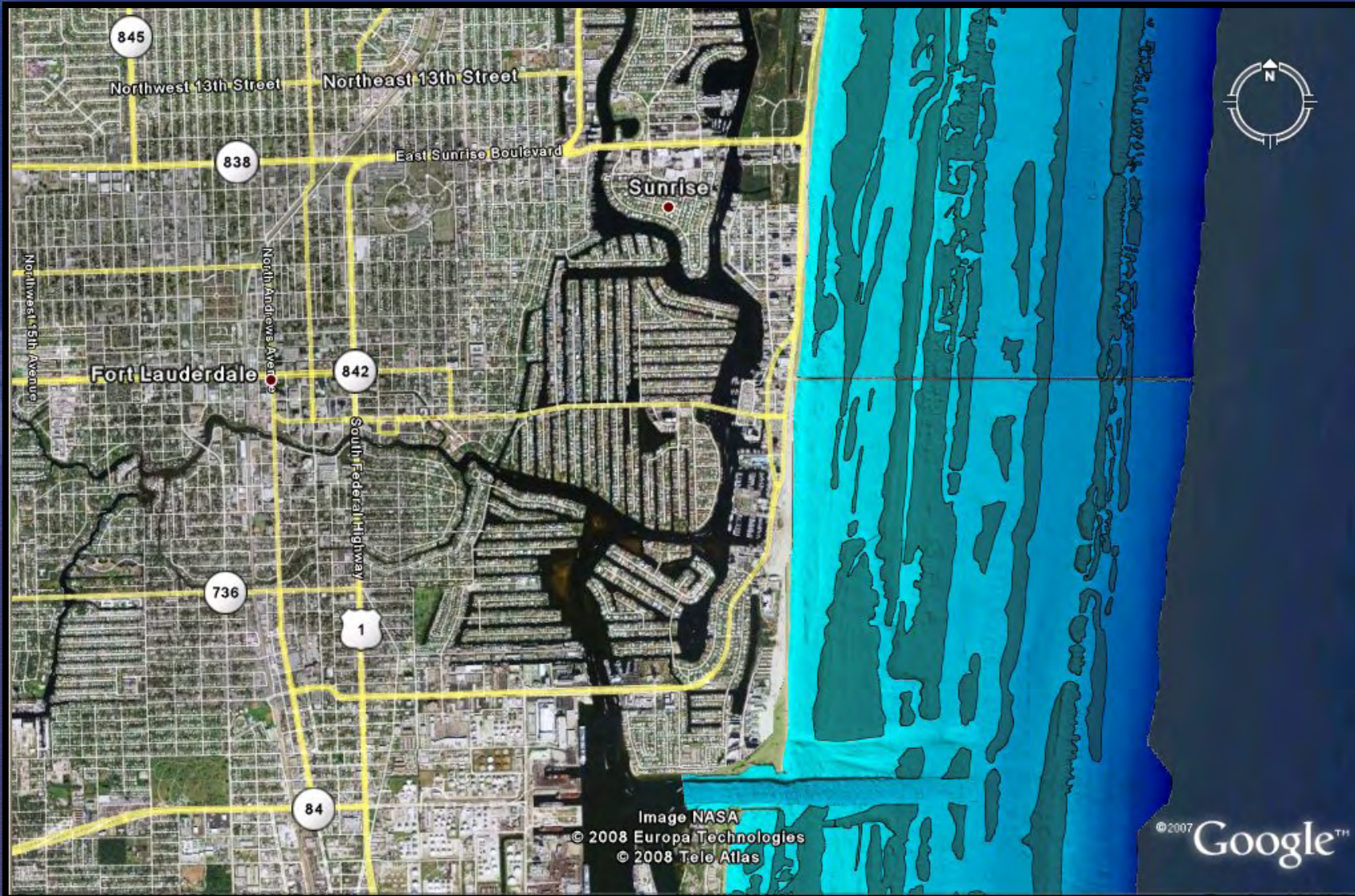
# DISSEMINATION OF HYDROGRAPHIC DATA



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# DISSEMINATION OF HYDROGRAPHIC DATA

**Search and Navigation:**  
Fly To: Find Businesses Directions  
e.g., 37 25.818' N, 122 05.36' W

**Places:**

- Biological Constituents Source Information
- Sea Turtles
- 2001 Reef Edges
- 2001 NSU Reef Transec
- 2001 Fish Count Transe
- 2001 Algae Transects
- 9, 12, 14 mo. Point Cou
- 2001 Benthic Assembla

**Layers:**  
View: Core

- Primary Database
- Terrain
- Geographic Web
- roads
- Traffic
- 3D Buildings

**Map Labels and Data Layers:**

- Download Full Extent of Man-Made Structures and Zones
- Download Full Extent of Laser Bathymetry (LADS)
- Download Full Extent of Biological Constituents
- LADS Source Information
- BA5 Offshore
- BA5 Inshore
- Borrow Area
- BA6 Inshore
- BA6 Offshore
- BA7 Inshore
- BA7 Offshore
- Lauderdale-by-the-Sea
- Lauderdale-by-the-Sea Pier
- Download Full Extent of Man-Made Structures and Zones
- Download Full Extent of Laser Bathymetry (LADS)

**Map Features:**

- South Federal Highway
- North Federal Highway
- Bay Club Drive
- Pine Avenue
- Benbow Drive
- Northeast 26th Avenue
- Terra Mar
- Sea Ranch Lakes
- Lauderdale-by-the-Sea
- Lauderdale-by-the-Sea Pier

**Map Metadata:**

- Image NASA
- © 2008 Europa Technologies
- © 2008 Tele Atlas
- © 2007 Google™



# Sand Search Methods

## Reconnaissance Level Investigations



# ONE CENTIMETER FLORIDA GEOID

## Airborne Gravity Measurement

Dr Ramesh Shrestha,  
University of Florida

National Center for Airborne Laser Mapping

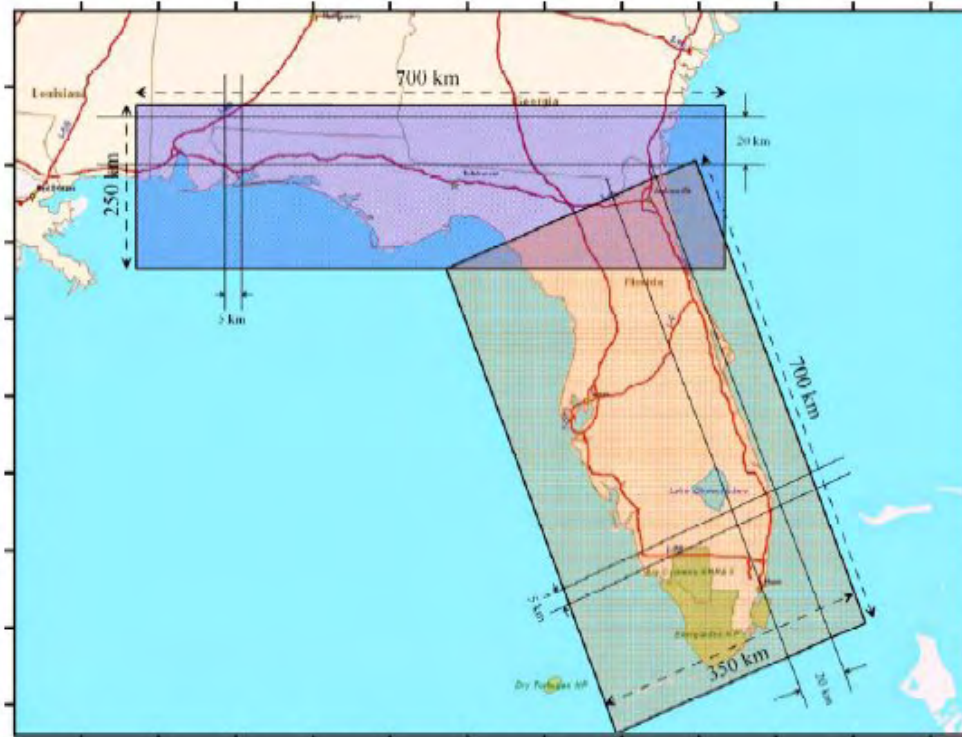


Figure 1. Proposed Airborne Gravity Campaign

As shown in Figure 1, airborne gravity will be collected every 5 km across and every 20 km along each sector from a flying height of about 4,500 m (15,000 ft.) to provide a high resolution and accurate gravity for the entire state. NGS, in collaboration with UF researchers, will compute geoid which will enable any user in Florida to compute the orthometric height accurate to to 1 cm.

Conversion of ellipsoid heights to orthometric heights require a Geoid.  
The better the Geoid the better the orthometric heights

Survey Vessel

Magnetometer

# Sand Search Technologies

## Magnetometer Surveys

- Cesium vapor magnetometer detects differences in the natural magnetic field of an area;
- Sensitive (0.2 gammas) to submerged metallic objects;
- Used to look for cultural resources and submerged hazards.

Filter

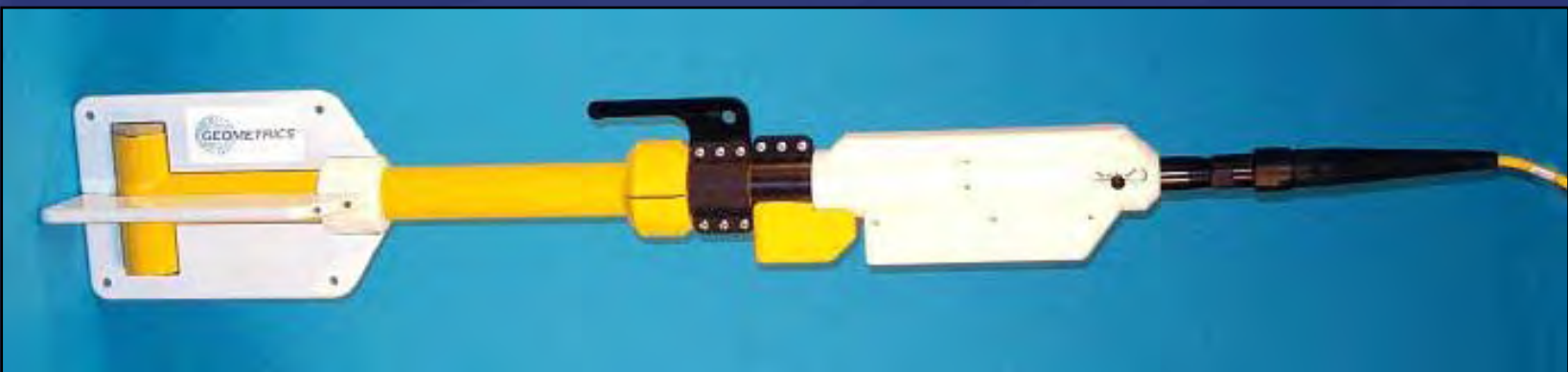
CHIRP Seismic

Sidescan Sonar

Fish

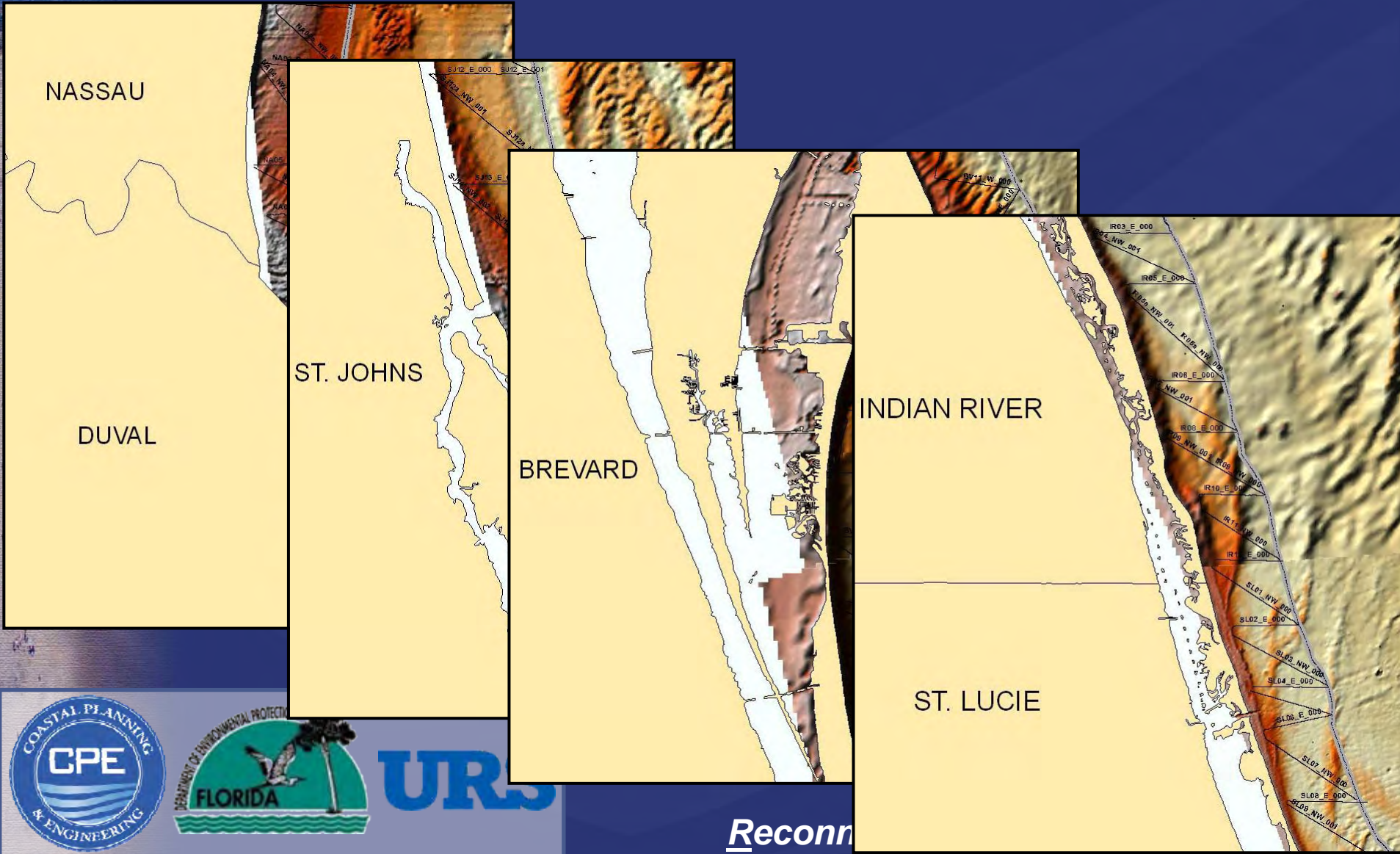
CHIRP Sub-Bottom  
Sub-Surface Coverage

Sidescan Sonar  
Swath Coverage



# Sand Search Methods

## Reconnaissance Level Investigations



# Sand Search Methods

## Detailed Level Investigations

