

Bathymetric Data Collection

Bathymetric Data

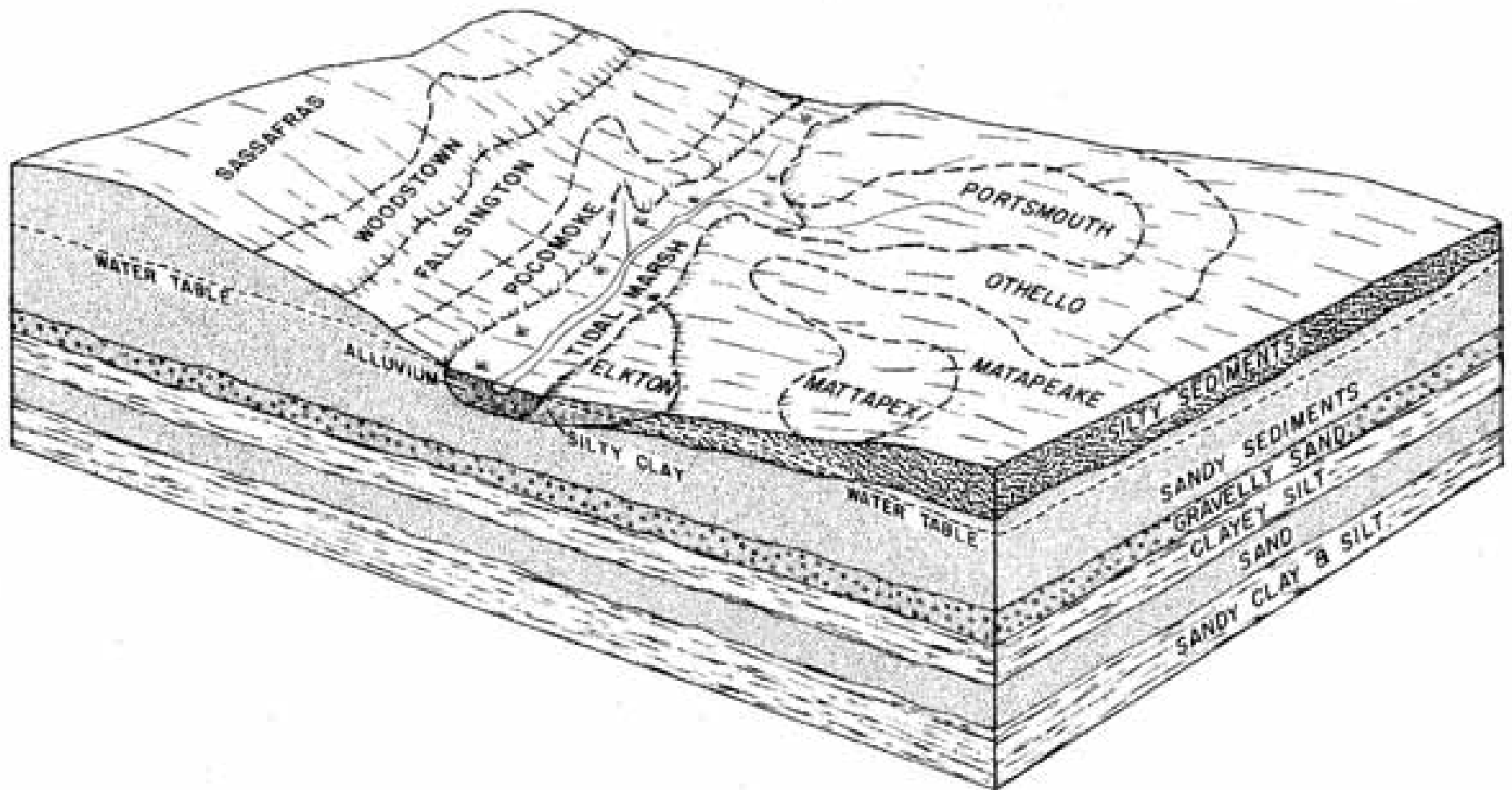
- What is bathymetric data?
- Why is this important?
- How can this be obtained?

What is Bathymetry?

- A representation of the 3-D nature of the subaqueous land surface
- A contour map
- A DEM

Why is Bathymetry Important?

Terrestrial Block Diagram Showing Soil-Landscape Relations



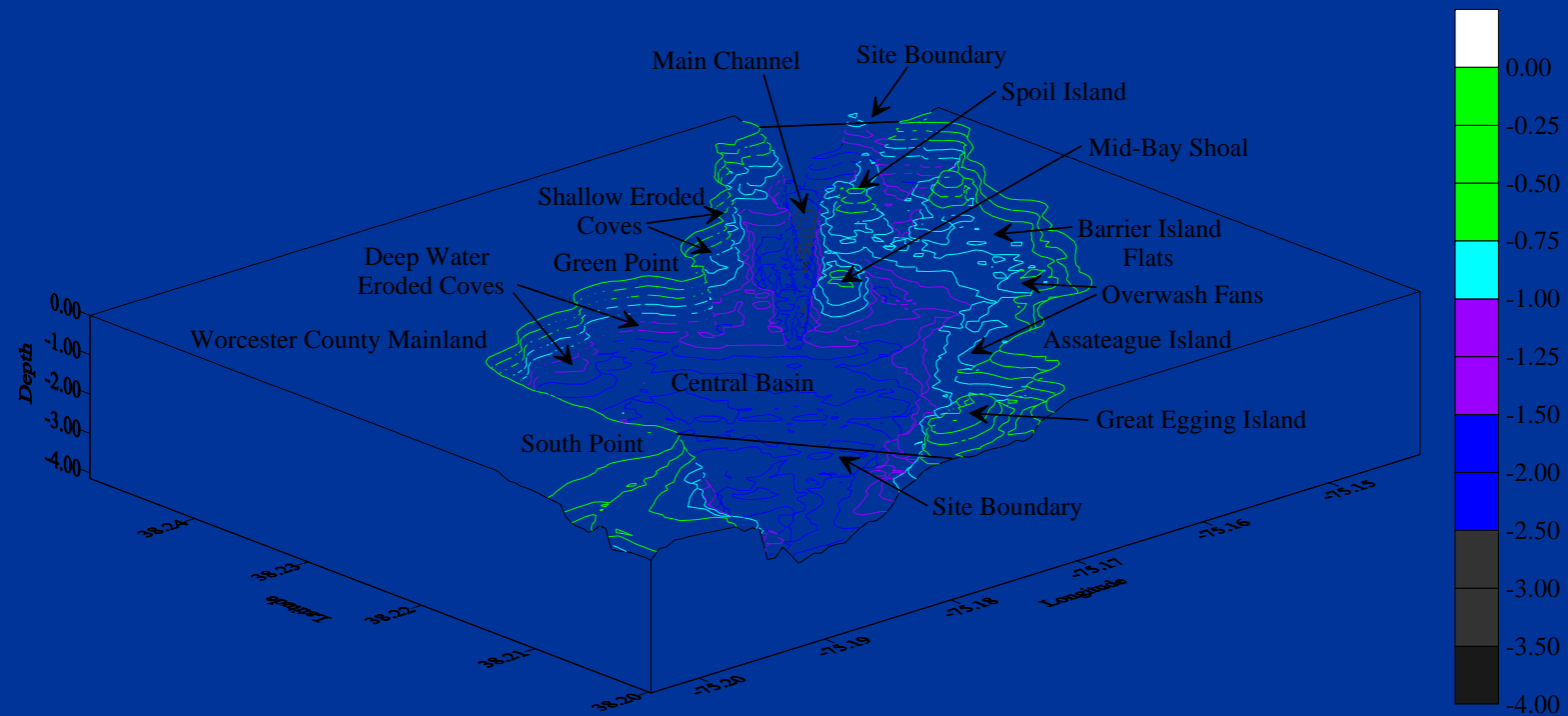
The Present Paradigm

The Soil - Landscape Model

- Within the soil-landscape unit, the five soil forming factors interact in a distinctive manner. As a result, all areas of the same soil-landscape unit develop the same kind of soil.
- Once the relationship among soils and landscape units have been determined for an area, the soil type can be inferred by identifying the soil-landscape unit.

From Hudson 1992 (SSSAJ 56:836-841)

Three-dimensional View of Sinepuxent Bay, MD



How can this be obtained?

- NOAA
- Other agencies
- Self generated

For Small Areas

- Rod and level
 - Bradley and Stolt modification
- GPR (on frozen water bodies)

For Larger Areas

- Need more sophisticated means for data collection

Data Collection

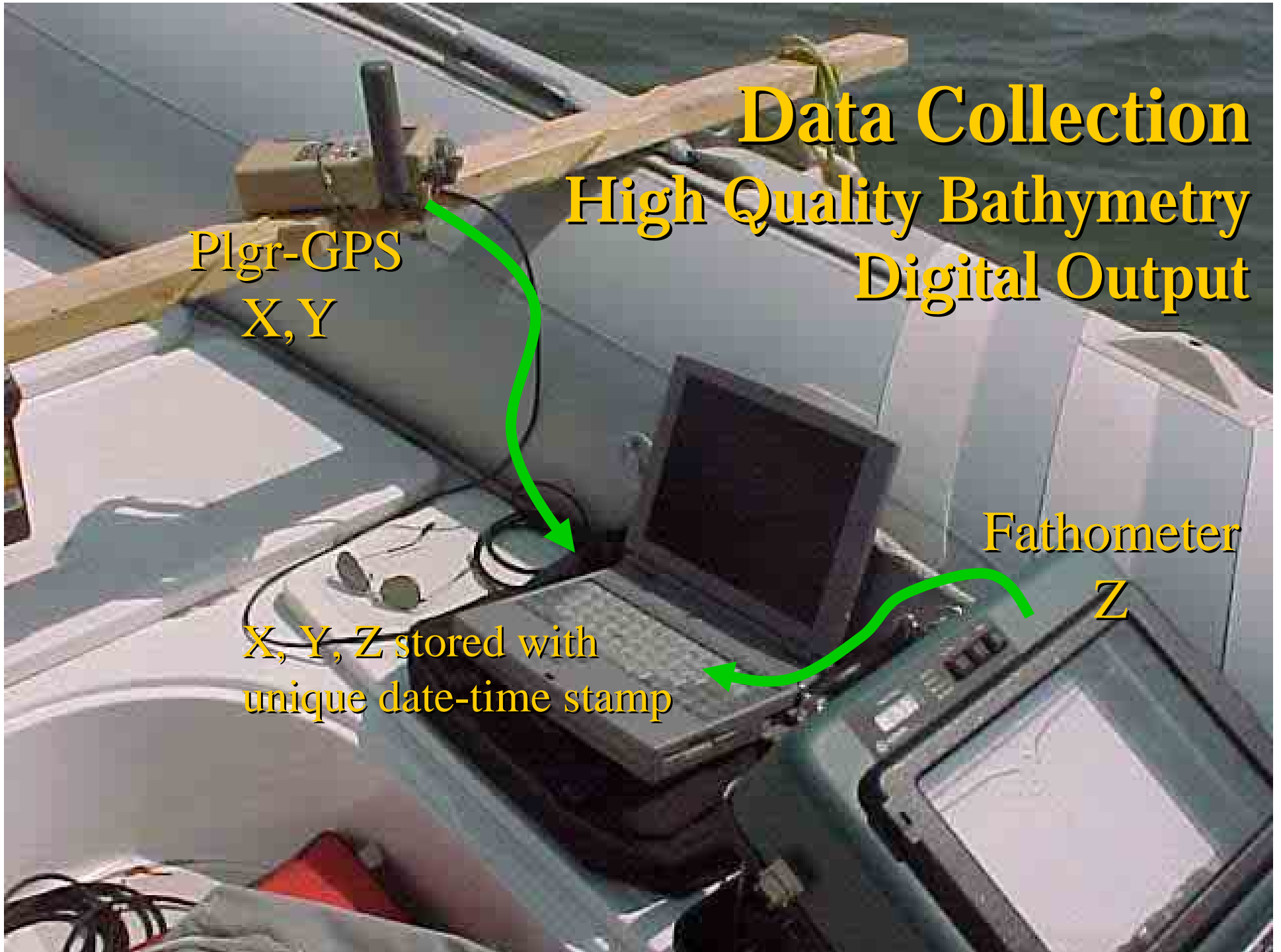
High Quality Bathymetry

Digital Output

Plgr-GPS
X, Y

Fathometer
Z

X, Y, Z stored with
unique date-time stamp



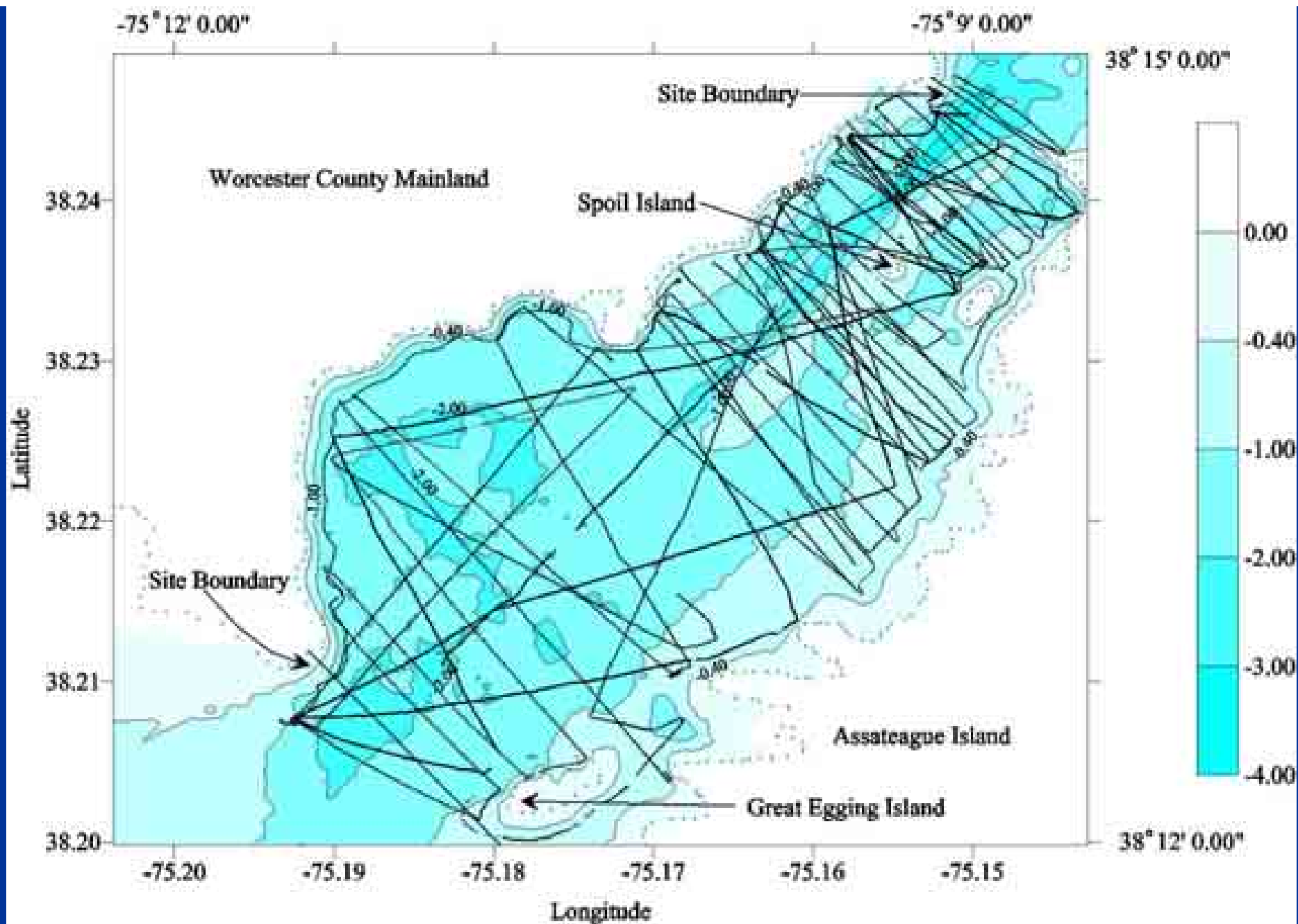
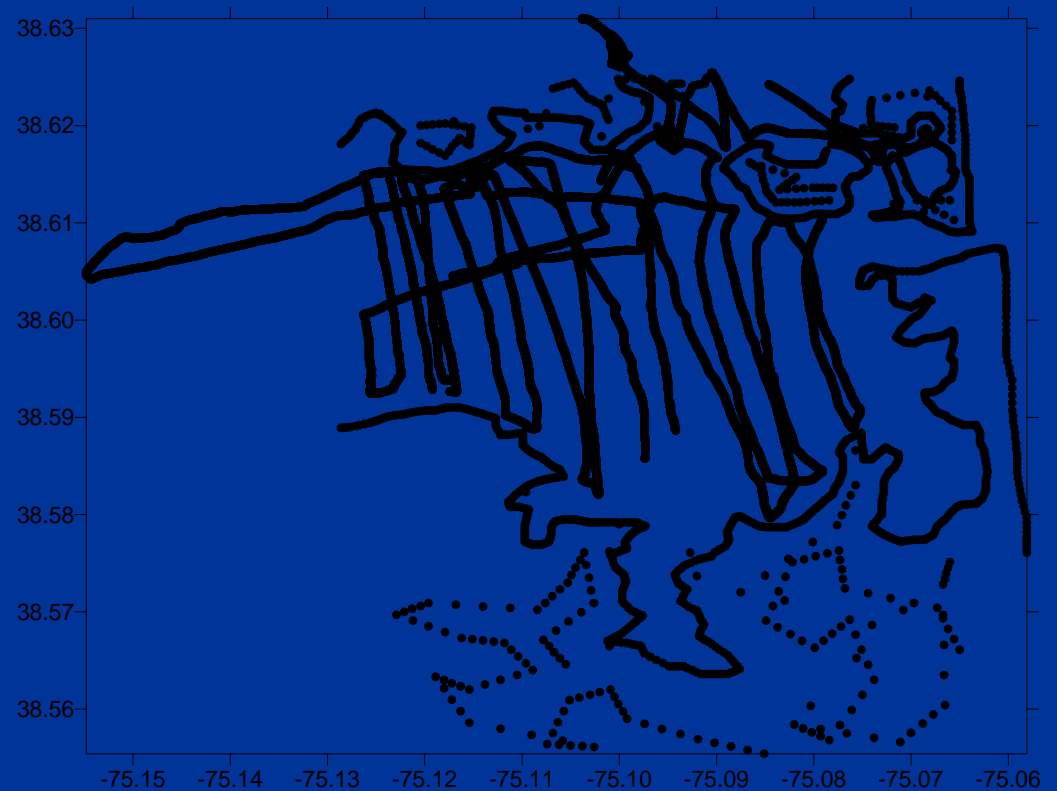
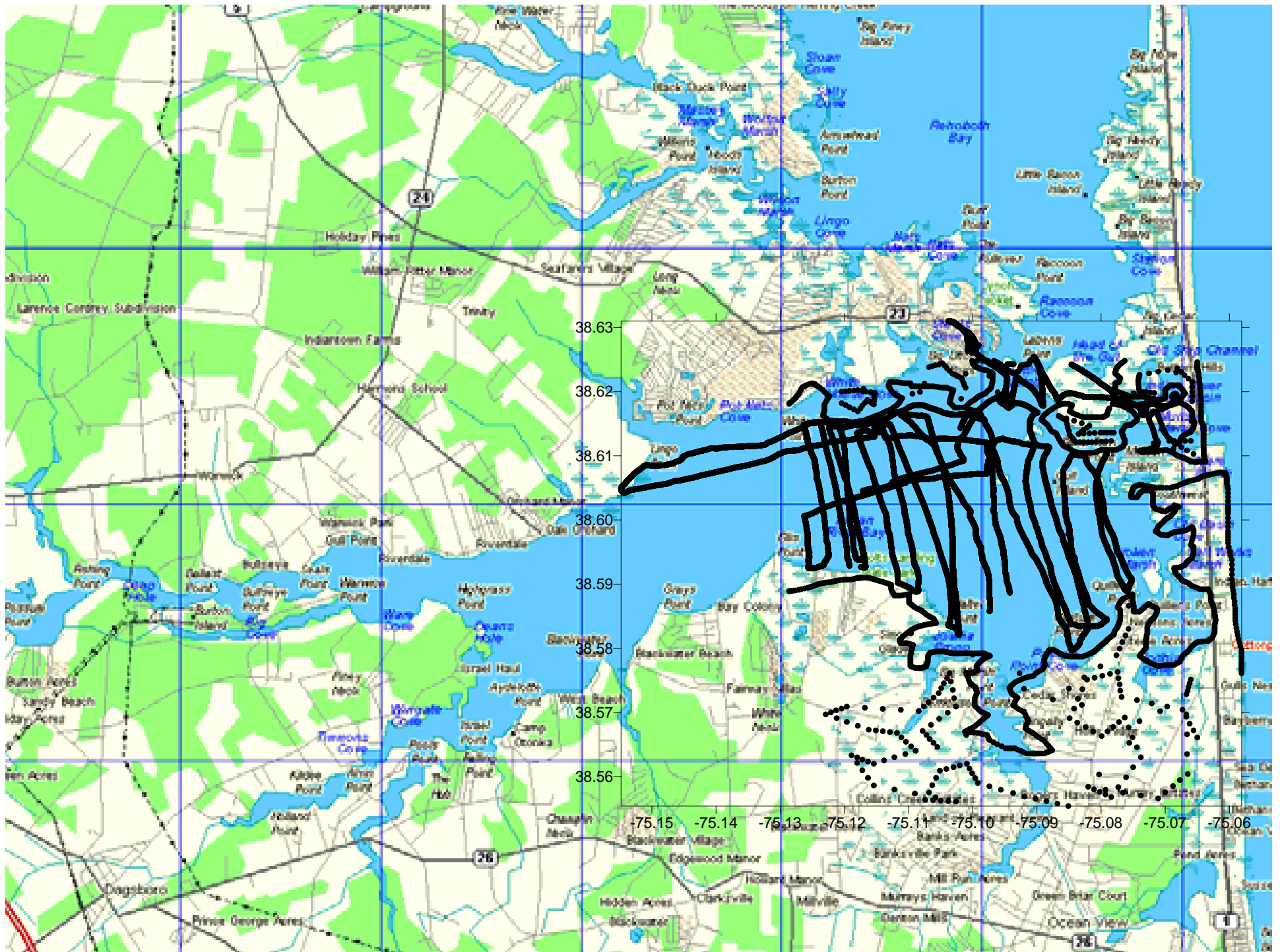


Figure 3-2. Location map of bathymetric runs in Sinepuxent Bay (depth in meters below MSL). Distance between successive readings was approximately 10 m.

Collection of bathymetric data without
having real-time plot on a map or photo



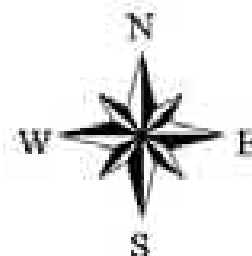


Indian River Bay, Delaware

Bathymetric Runs, Summer 1999

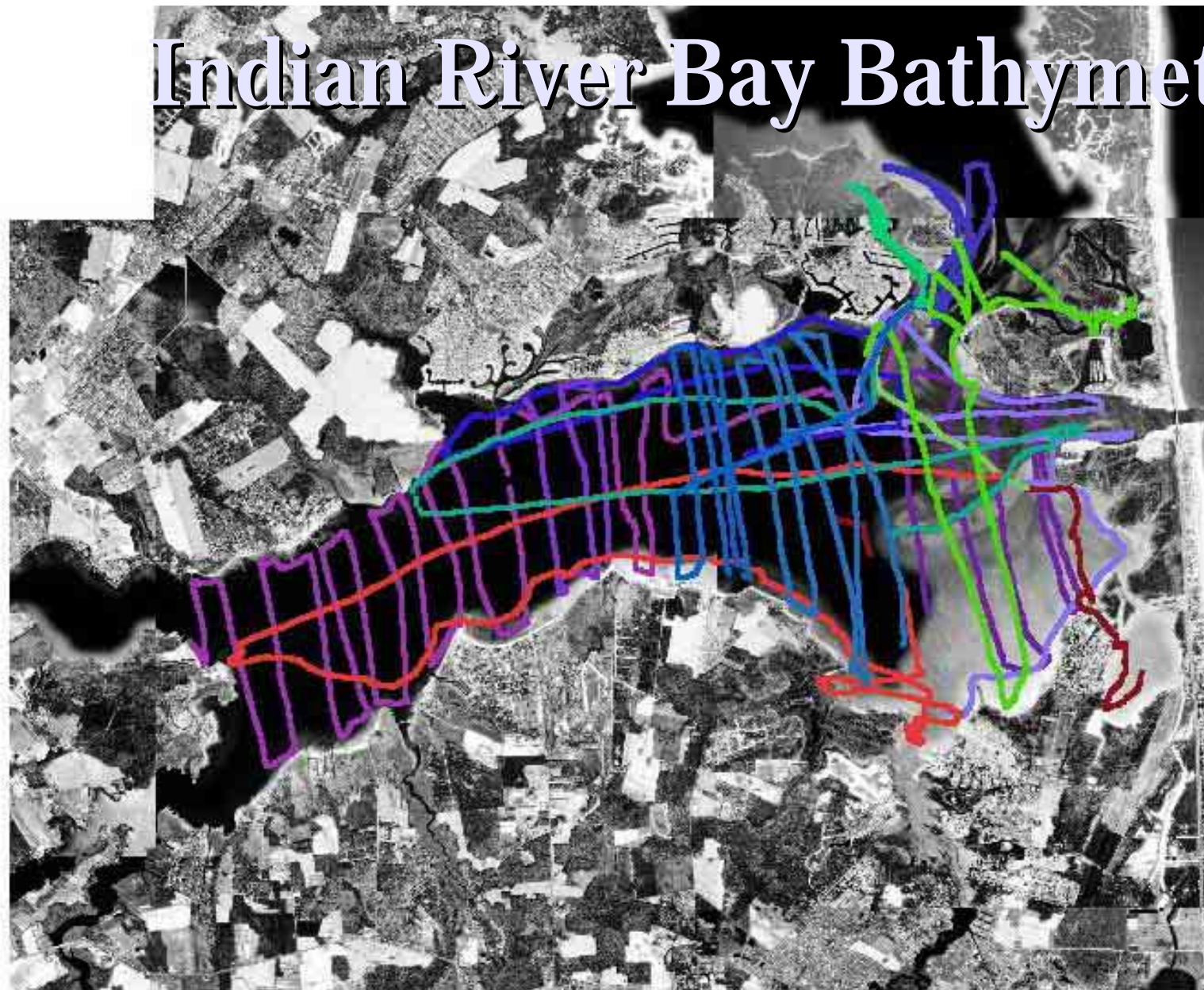


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- June07-99SP.shp
- June08-99SP.shp
- June14-99SP.shp
- July01-99SP.shp
- Jul26-99SP.shp
- July30-99SP.shp
- Aug12-99SP.shp

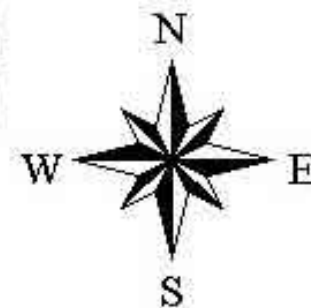


5 0 5 Kilometers

Indian River Bay Bathymetry

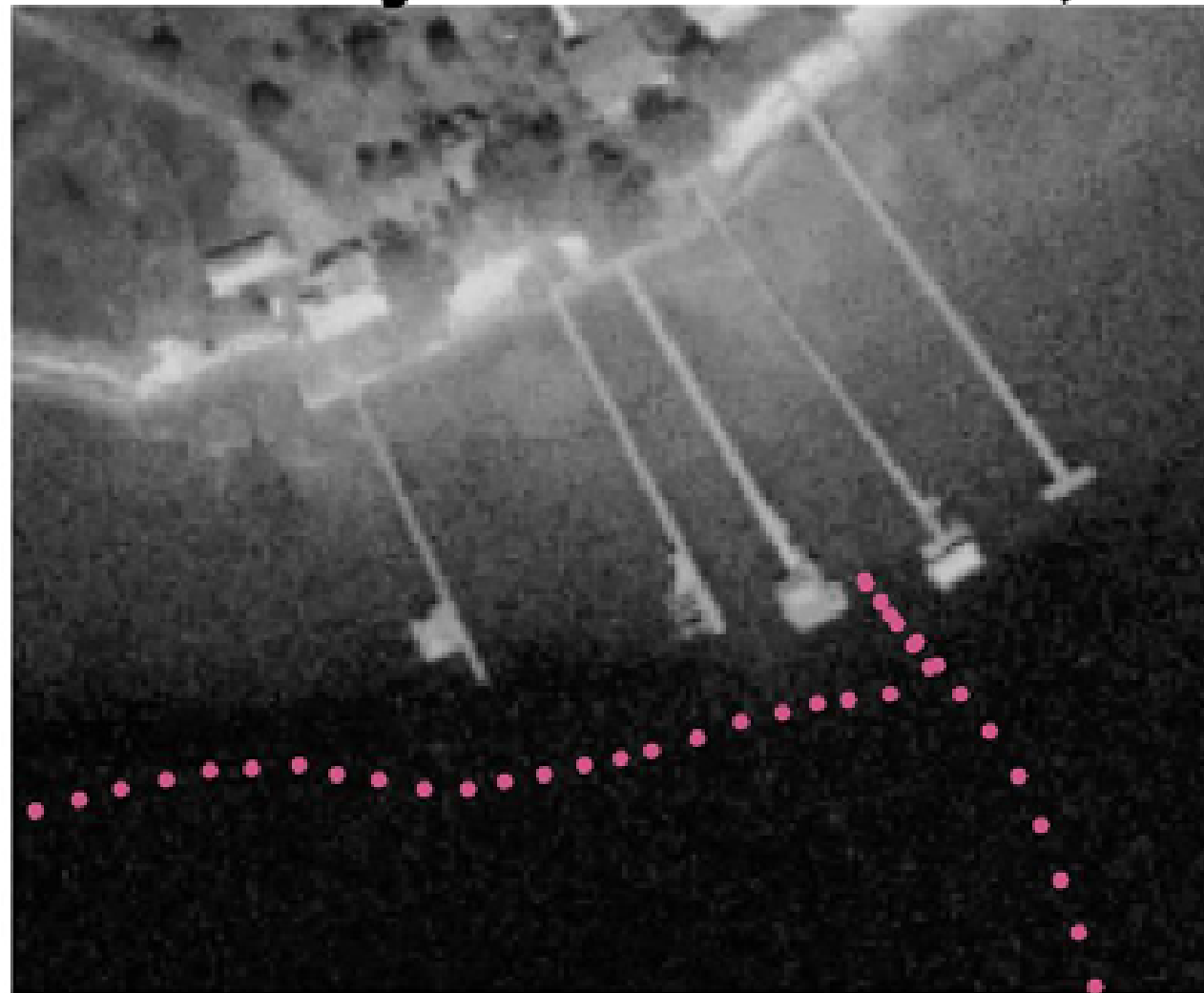


5 0 5 Kilometers

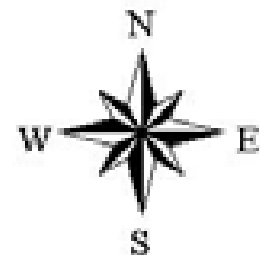


Indian River Bay, Delaware

Bathymetric Runs, Fall 2000



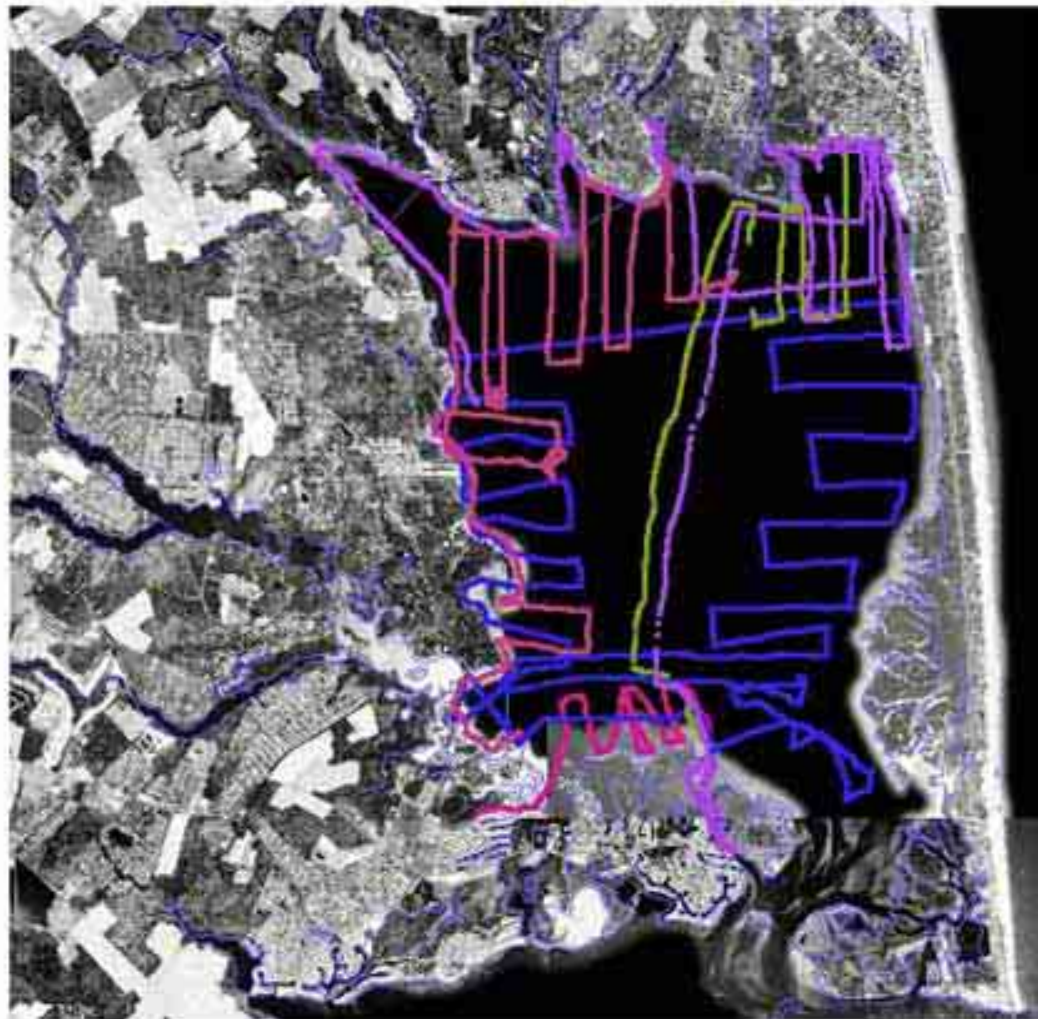
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- Aug12-99SP.shp
- July13-00-1SP.shp
- July13-00-2SP.shp
- July14-00-1SP.shp
- July14-00-2SP.shp
- July14-00-3SP.shp



50 0 50 Meters

- Data from Aug-16-01 to Aug-17-01
- Data from Aug-27-01 to Aug-28-01
- Data from Aug-29-01 to Aug-30-01
- Data from Aug-31-01 to Aug-31-01
- Data from Aug-31-01 to Aug-31-01
- Data from Aug-31-01 to Aug-31-01

Rehoboth Bay

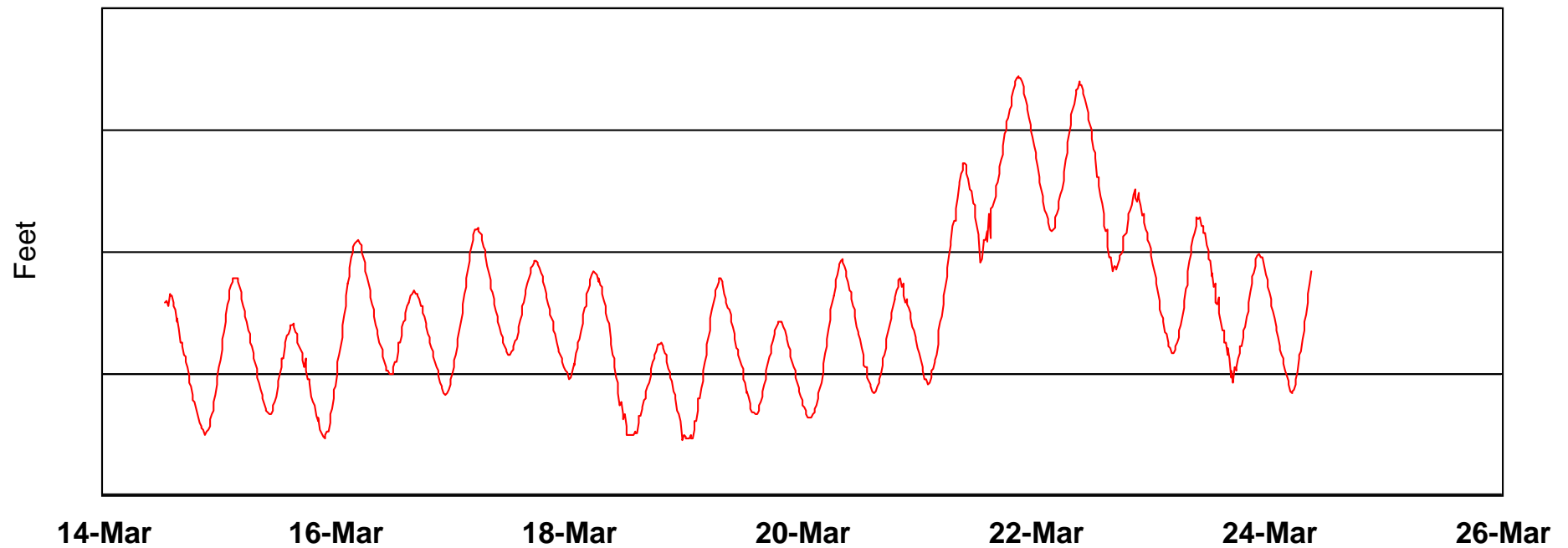


3 0 3 6 Kilometers

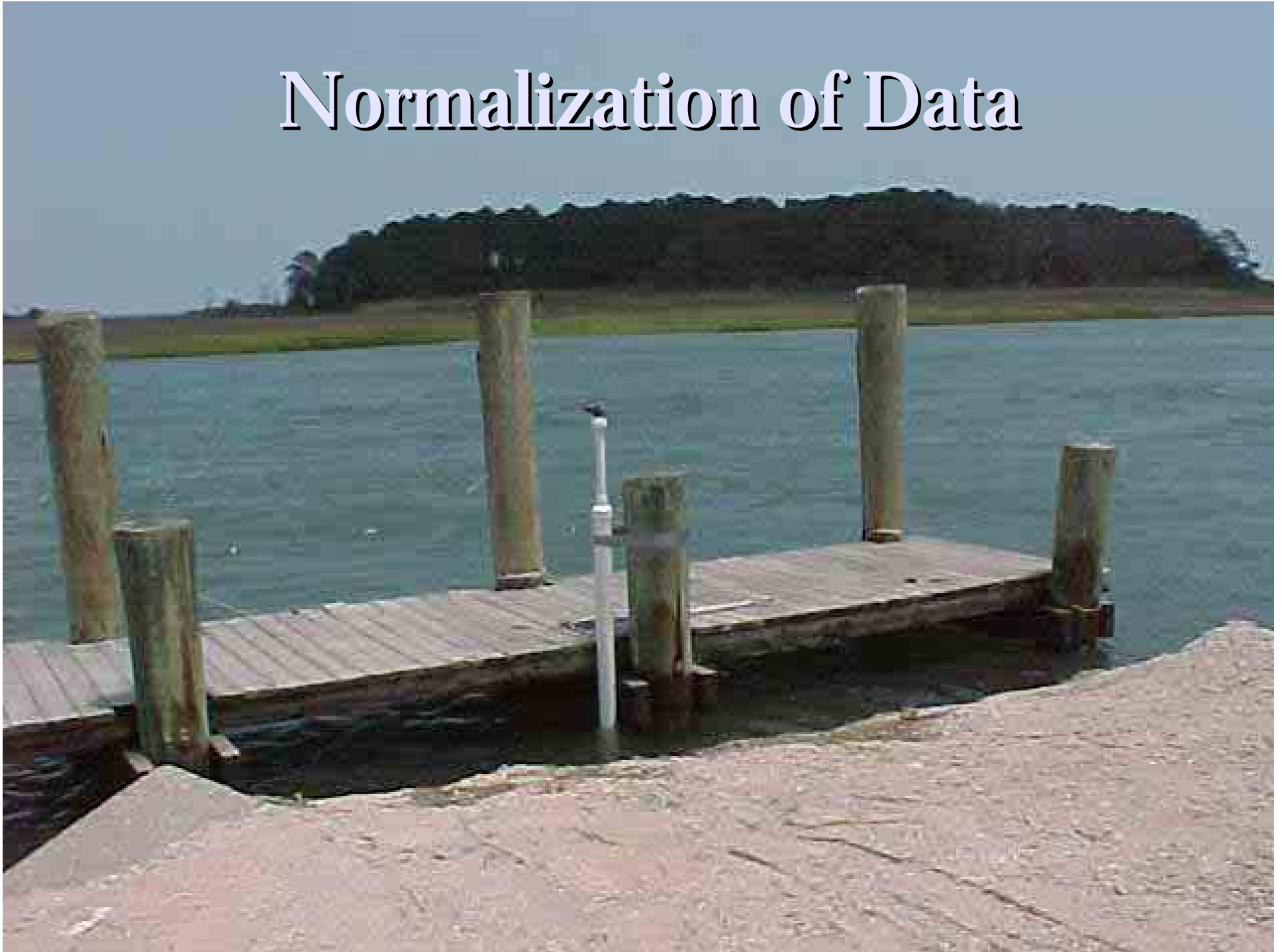


Data collected on different days

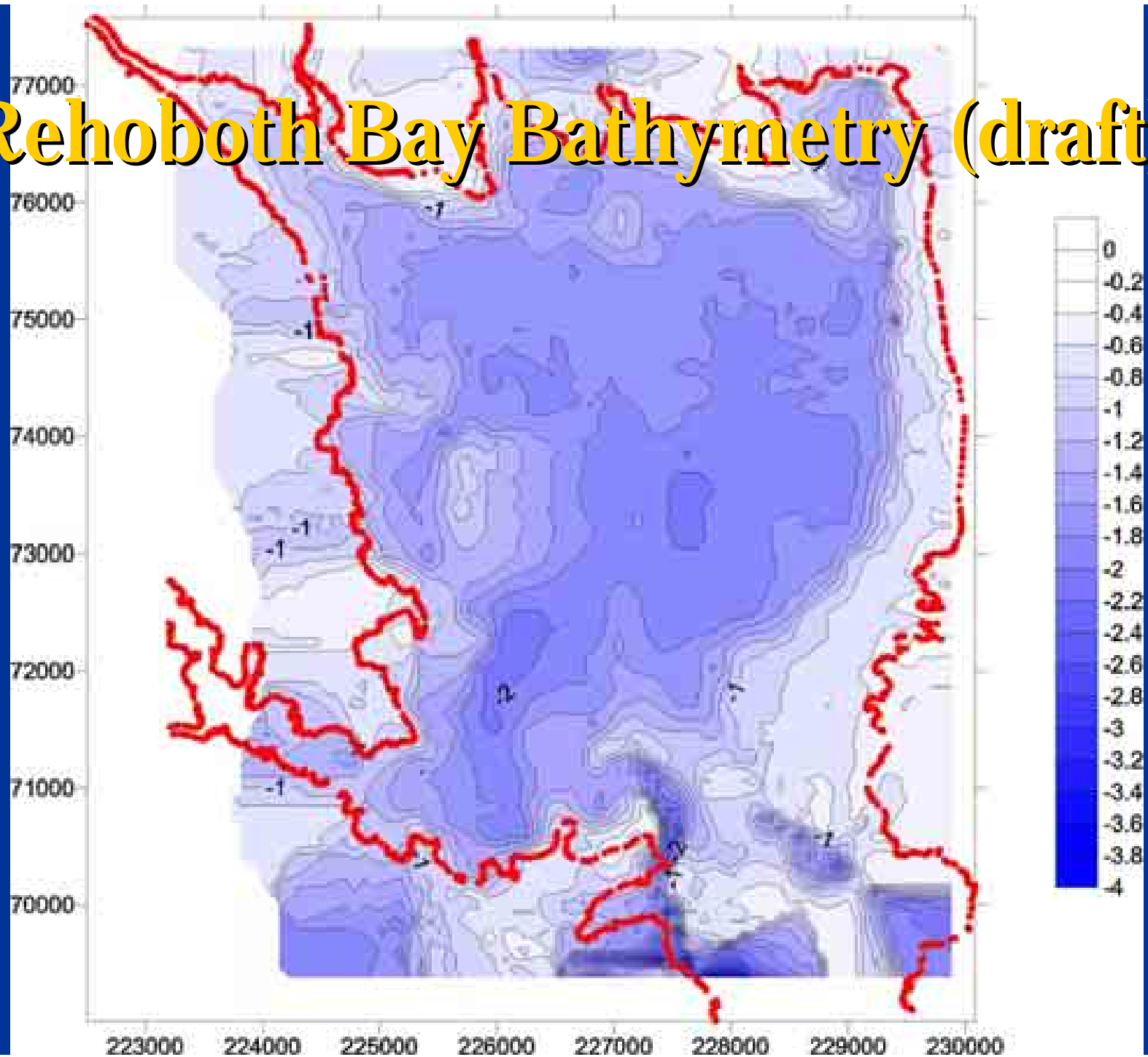
Rehoboth Bay - Dewey Beach Tidal Variations



Normalization of Data



Rehoboth Bay Bathymetry (draft)

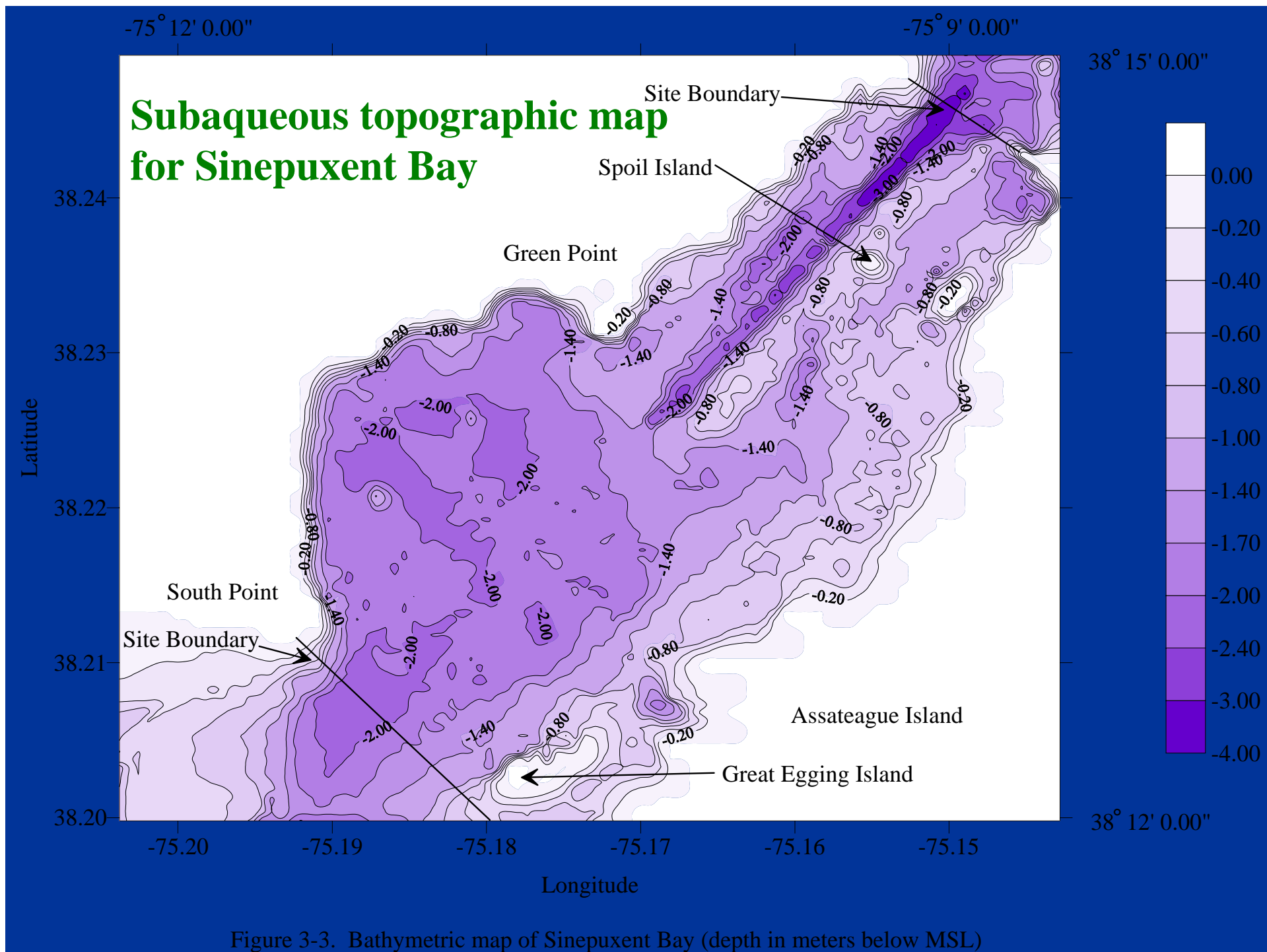


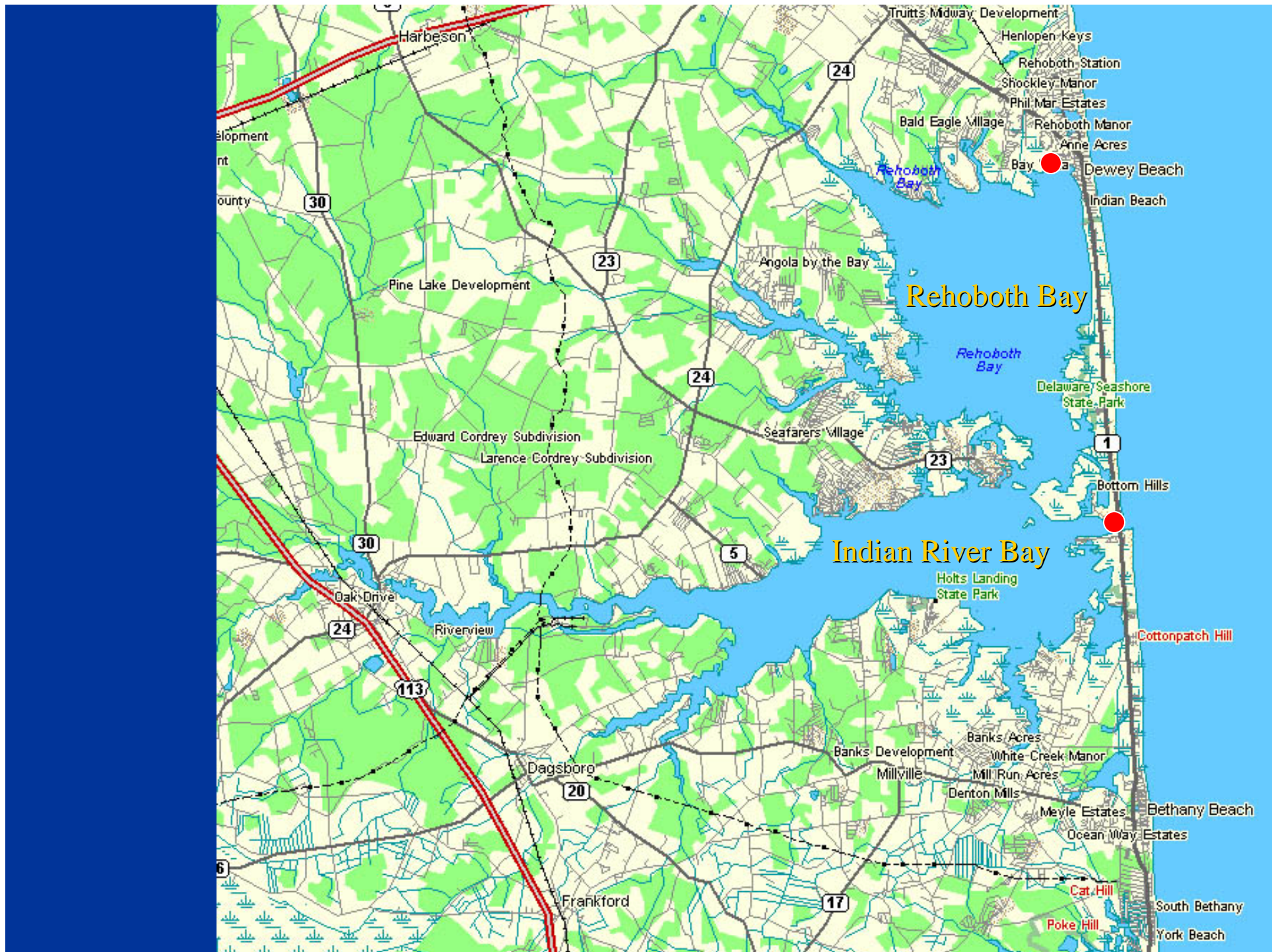


Sinepuxent Bay, MD



Assateague Island
National Seashore





New Technologies

- Lidar
- ??