Program Update
FY16 and FY17 Highlights

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Hydrographic Services Review Panel

Galveston, TX

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Coastal Intelligence: New PORTS®

FY16 and FY17:

Add three more Physical Oceanographic Real-Time System (PORTS®) to the network:

- Bridge air gap sensor on the Talmadge Bridge in Savannah, GA.
- Current meter on the Cuyahoga River in Ohio.
- Wave buoy in Cape Cod, MA. (Partners: USGS, IOOS)

Coastal Intelligence: Expanding and Enhancing PORTS®

FY16 and FY17:

Expand PORTS® sensors:

- Ben Franklin Bridge Air Gap – Delaware PORTS®
- Toga Terminal Water Level – Delaware PORTS® **(done)**
- Providence Visibility Station – Narragansett PORTS®
- Cox Creek Visibility Station – Chesapeake Bay North PORTS®

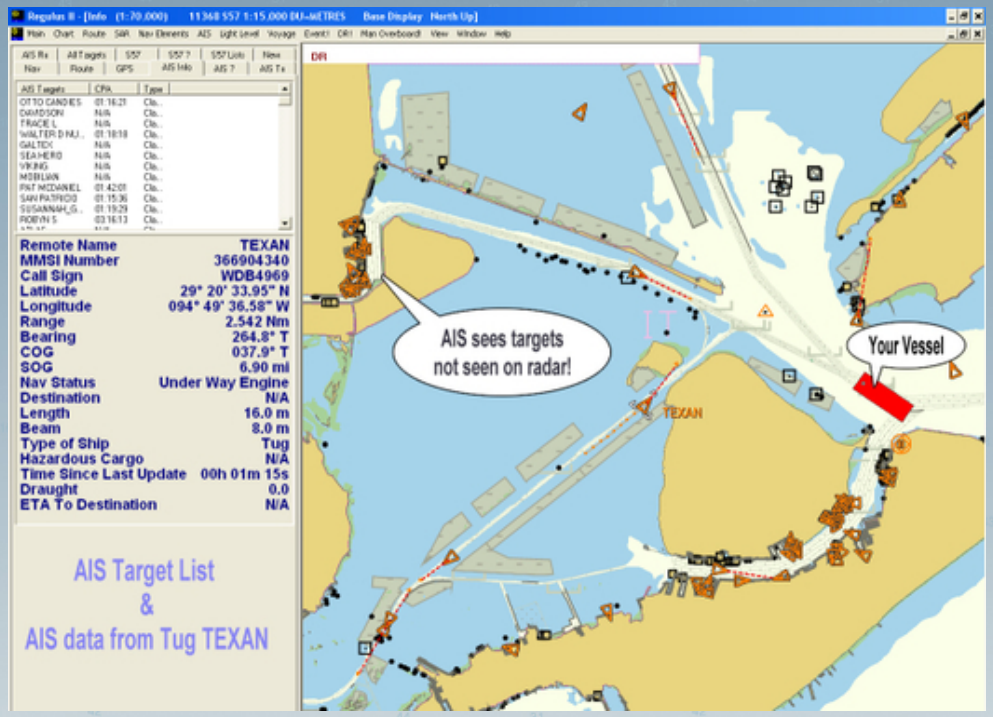
Enhance PORTS® sensors:

- Fred Hartman Bridge Current G&H Current Meter – Houston Galveston PORTS® **(done)**
- Cape Disappointment Water Level – relocation of Hammond Gauge – Columbia River PORTS® **(done)**
- CDOT Water Level Hardening – New London, New Haven PORTS®
- Tacoma MWWL Upgrade – Tacoma PORTS®

Coastal Intelligence: Broadcasting PORTS® to Mariners

FY16 and FY17:

Continue working with the U.S. Coast Guard to broadcast PORTS® data over its nationwide Automatic Identification System (AIS).



- Previously, CO-OPS successfully tested transmitting PORTS® data using AIS software for Tampa and the lower Chesapeake.

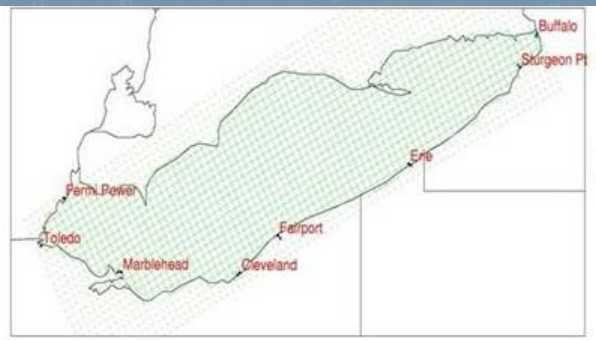
- Potential to transmit National Water Level Observation Network (NWLON) and model data as well.

Coastal Intelligence: Modeling

FY16 and FY17:

Enhance the Operational Forecast System (OFS), which provides local nowcasted and forecasted oceanographic and meteorological information to mariners.

- Tampa Bay Marine Channel Forecast: 13 locations along channel for wind, waves, visibility, etc.
- West Coast OFS will be pre-operational.
- Enhanced OFS in Lake Erie will have higher resolution and forecast out to longer time frames.



Existing POMGL Grid for Lake Erie (5km horz. resolution, 12 levels)

New Unstructured Grid for Lake Erie (100m – 2.5 km horz. resolution, 21 levels

Coastal Intelligence: Upcoming Current Surveys

FY16 and FY17:

Continue tidal current resurveys in:

•Puget Sound: Phase 2 in the central part of the sound through the Strait of Juan de Fuca. (Box on map)

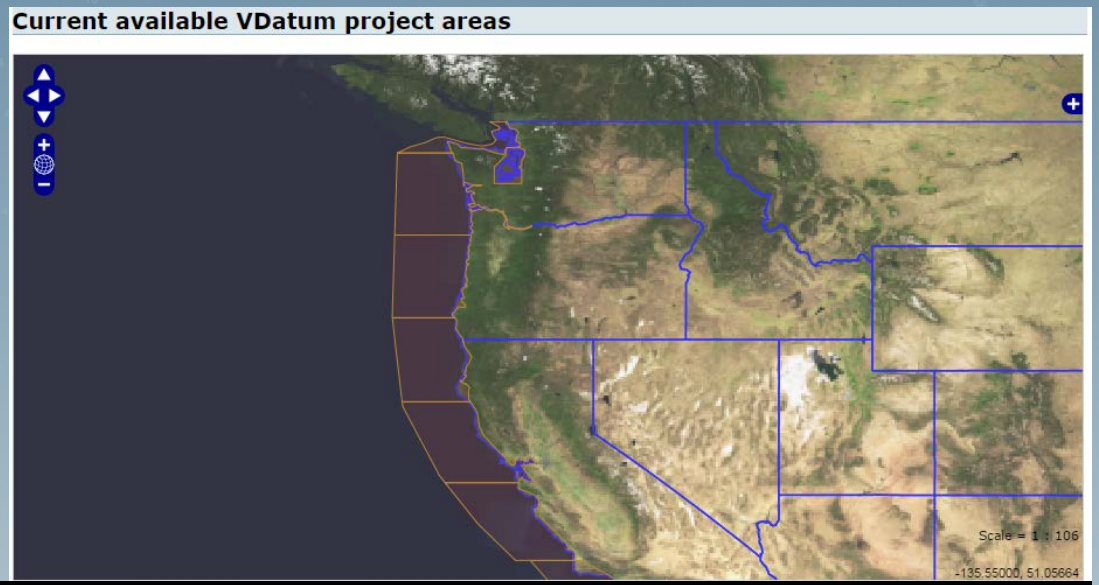
•Cape Fear, NC

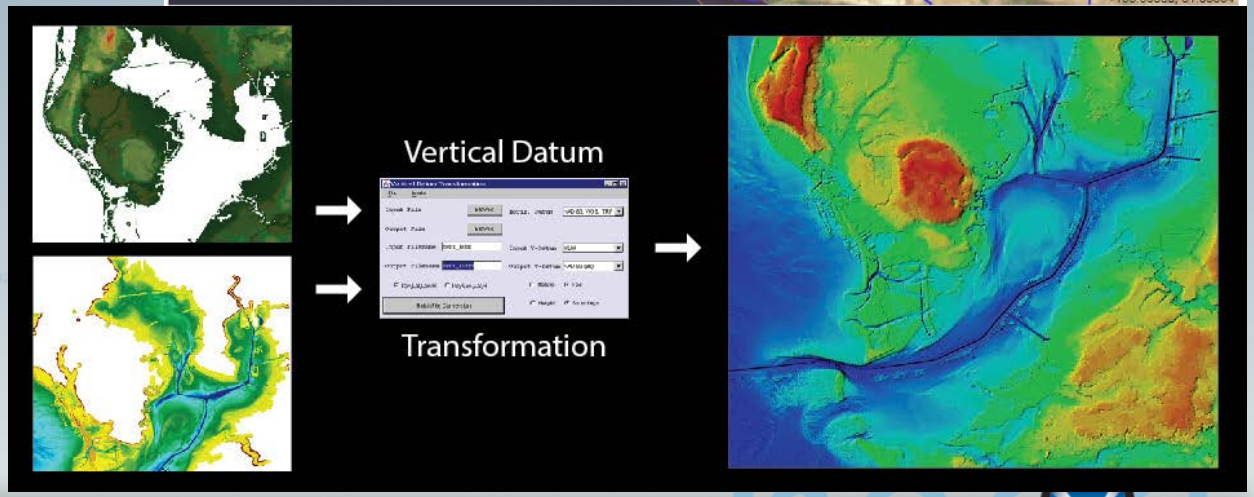
•South Texas

Coastal Intelligence: VDatum

FY16 and FY17:

Install water level gauges in California, Oregon, and Washington to collect data that supports VDatum model upgrades.





Coastal Intelligence: Microwave Water Level (MWWL) Transition

FY16 and FY17:

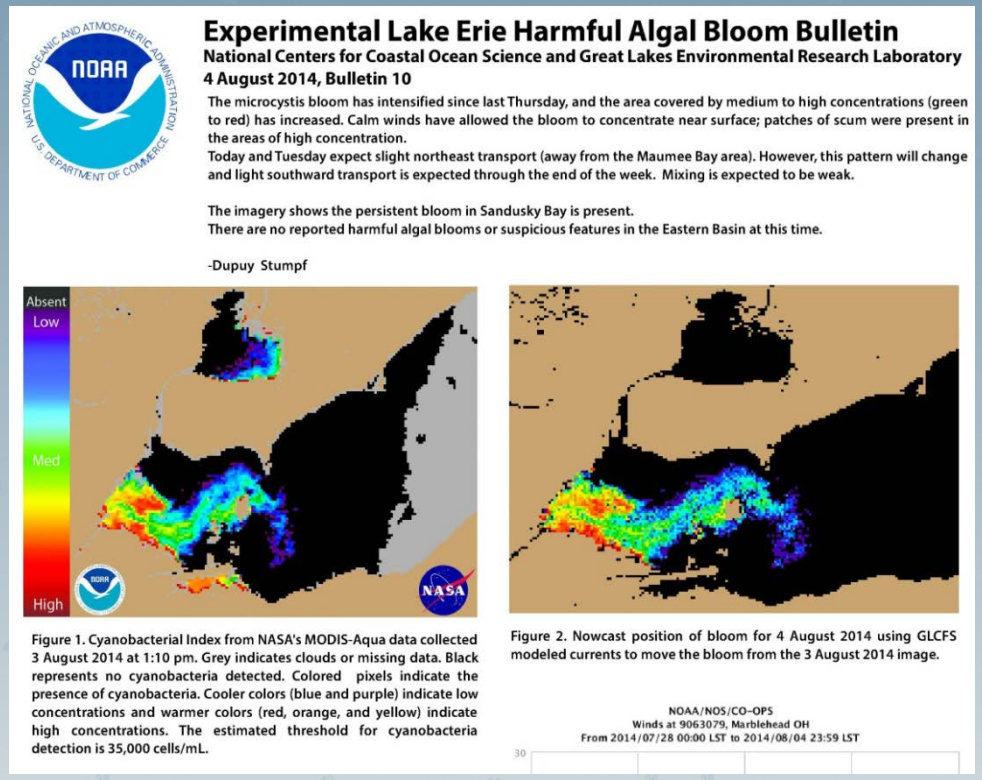
Transition at least 10 existing NWLON stations to Microwave Water Level sensor technology per year.

- To date, 27 NWLON stations have MWWL installed and 7 are fully transitioned
- 22 non-NWLON stations have MWWL installed and 16 are fully transitioned

Resilience: Harmful Algal Bloom (HAB) Forecasting

FY16 and FY17:

- Develop a Lake Erie HAB Forecast Initial Operating Capability
- Transition experimental forecast products to full operations for routine, reliable, and impactful HAB forecasts



Experimental Lake Erie Harmful Algal Bloom Bulletin

National Centers for Coastal Ocean Science and Great Lakes Environmental Research Laboratory

4 August 2014, Bulletin 10

The microcystis bloom has intensified since last Thursday, and the area covered by medium to high concentrations (green to red) has increased. Calm winds have allowed the bloom to concentrate near surface; patches of scum were present in the areas of high concentration.

Today and Tuesday expect slight northeast transport (away from the Maumee Bay area). However, this pattern will change and light southward transport is expected through the end of the week. Mixing is expected to be weak.

The imagery shows the persistent bloom in Sandusky Bay is present.

There are no reported harmful algal blooms or suspicious features in the Eastern Basin at this time.

-Dupuy Stumpf

Figure 1. Cyanobacterial Index from NASA's MODIS-Aqua data collected 3 August 2014 at 1:10 pm. Grey indicates clouds or missing data. Black represents no cyanobacteria detected. Colored pixels indicate the presence of cyanobacteria. Cooler colors (blue and purple) indicate low concentrations and warmer colors (red, orange, and yellow) indicate high concentrations. The estimated threshold for cyanobacteria detection is 35,000 cells/mL.

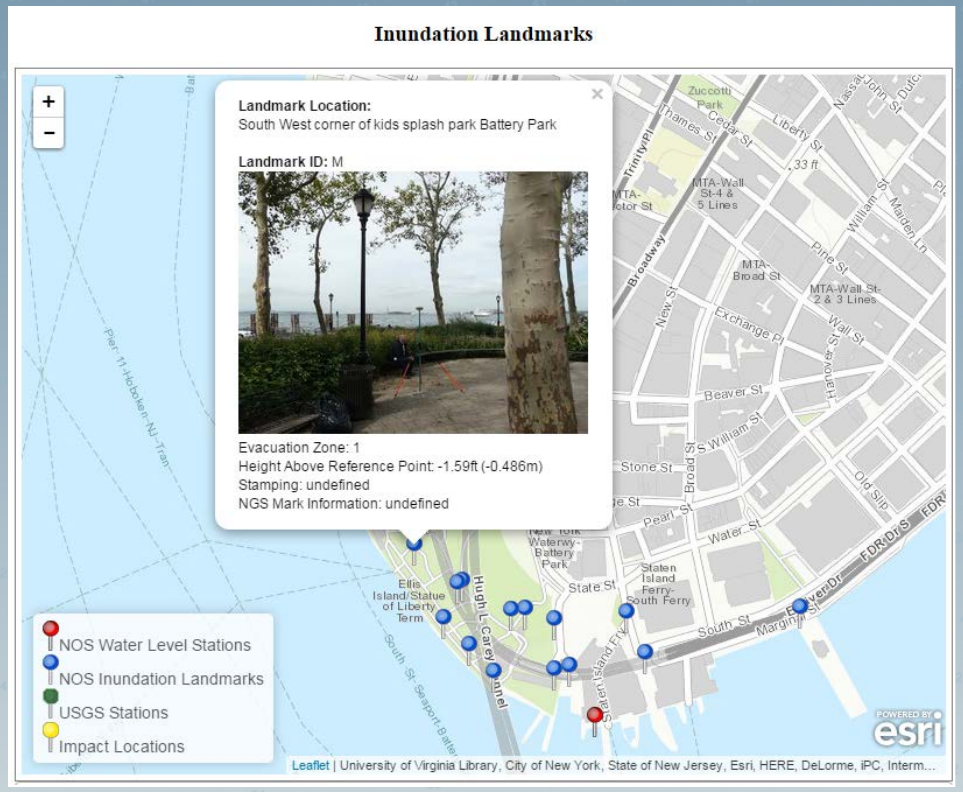
Figure 2. Nowcast position of bloom for 4 August 2014 using GLCFS modeled currents to move the bloom from the 3 August 2014 image.

Resilience: Inundation Dashboard

FY16 and FY17:

Develop an Inundation Dashboard framework and implement an experimental web product in: Hampton Roads, VA; New York City; Coastal North Carolina

- Framework will integrate landmarks, coastal flood thresholds, water level data, etc.
- Prototype will transition into national product that supports coastal inundation decision making.

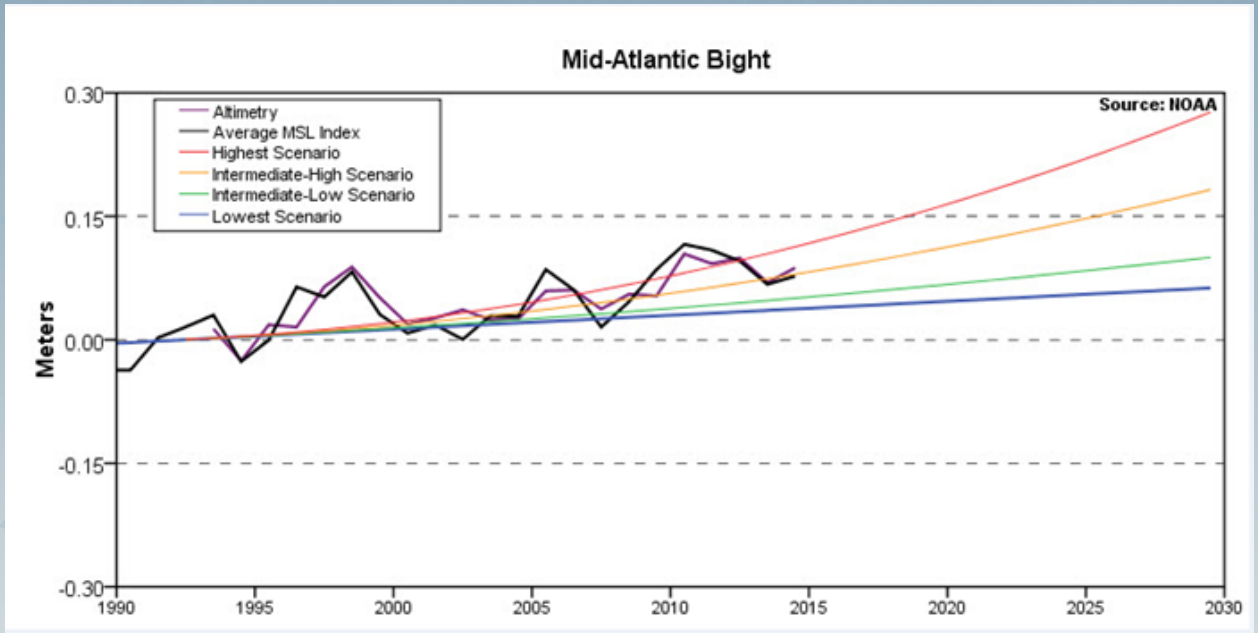


Resilience: Sea Level Rise Indices

FY16 and FY17:

Release sea level indicator that makes regional comparison of tide gauge and altimeter sea level measurements.

- Assesses the trajectory of regional sea level "indices" relative to the global sea level rise scenarios of the 2013 National Climate Assessment for planning guidance



Observation Network Partnerships

FY16 and FY17:

- Partner with USGS on gauging and technical training that will fill gaps in the NWLON
- Establish a new Arctic water level station in Unalakleet, AK in collaboration with NWS
- Partner with National Park Service (NPS) on long-term sea level monitoring networks
- Operate and maintain Texas Coastal Ocean Observation Network (TCOON)

Questions