

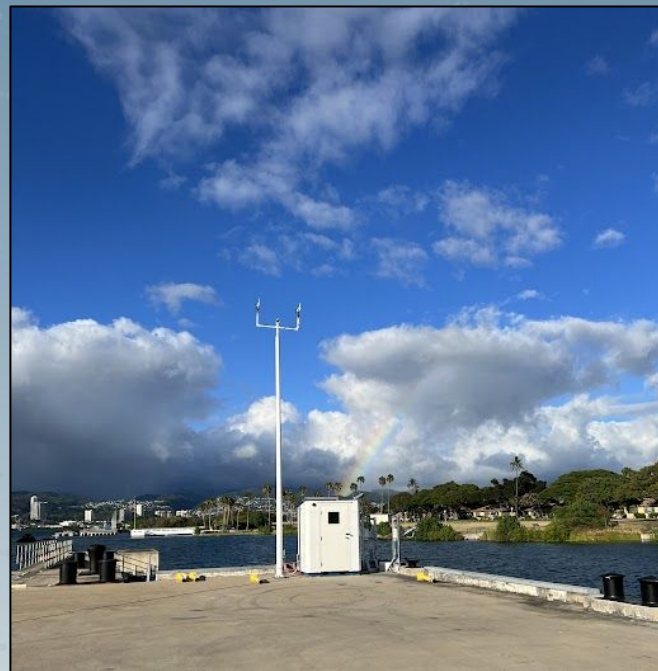
Center for Operational Oceanographic Products and Services (CO-OPS) Updates and Outlook

Derrick Snowden, Acting Director
September 29, 2023



Overview

- High Tide Flooding Product Enhancements
- Wave Measurement Development
- WebCOOS Cameras on NWLON Tide Stations
- PORTS® Program Updates
- PORTS® Assessment
- NCOP Tidal Current Surveys
- OceansMap

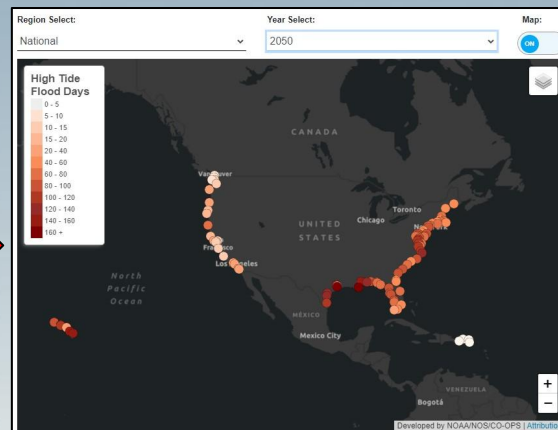
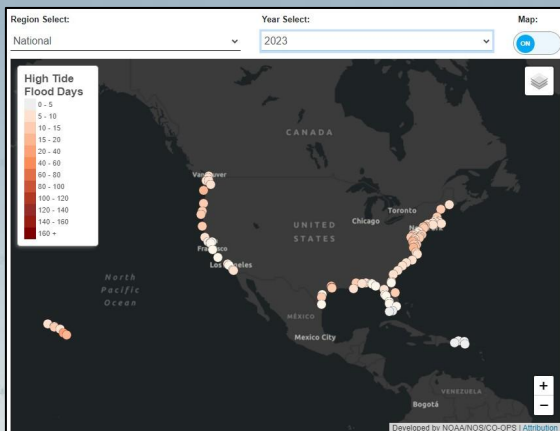


Newly Installed Pearl Harbor, HI PORTS Water Level Station (1612401), Ford Island, Pearl Harbor, O'ahu island, Hawai'i.

High Tide Flooding Product Enhancements

- Integrated High Tide Flooding Products
- Interactive dashboards & visualizations
- Links to additional internal & external resources
- Flooding predictions across timescales

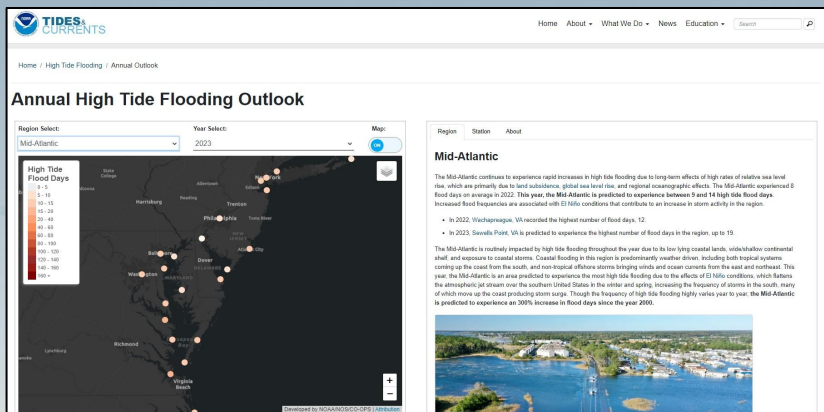
The screenshot shows the NOAA TIDES & CURRENTS website page for High Tide Flooding. The page includes a navigation menu with links for Home, About, What We Do, News, and Education. The main heading is "High Tide Flooding". Below the heading, there is a descriptive paragraph: "High tide flooding is the overflow or excess accumulation of water that covers typically dry coastal land and occurs during high tides. As relative sea levels rise, high tide flooding is occurring more frequently, even on sunny days. High tide flooding creates short-term impacts like road closures, overflowing storm drains, and temporary business closures. Over the long term, recurrent high tide flooding causes more severe impacts, like damage to below-ground infrastructure and degraded wetlands. NOAA's high tide flooding information can help users plan for and mitigate impacts." There are two interactive product sections: "Annual Outlook" and "Monthly Outlook". The "Annual Outlook" section states: "An interactive product illustrating the frequency of high tide flooding predicted for the next meteorological year, May to April accompanied by regional summaries, decadal projections and sea level rise scenarios through the year 2100." The "Monthly Outlook" section states: "An interactive product illustrating the likelihood of high tide flooding for each day in the calendar year, up to a year in advance, for specific locations." To the right of the text is a photograph of a flooded street with a house in the background. Below the photo is a caption: "The intersection of Kibbutz street and Kakiel street is flooded with water during high tide. Above normal water levels were due to a perigean spring tide and swell from Hurricane Eick." Below the caption is the photo credit: "Photo Credit: @ingrids@browli.edu, 8/7/2019." and the location: "Location: Hopsunquise, NJ".



High Tide Flooding Product Enhancements

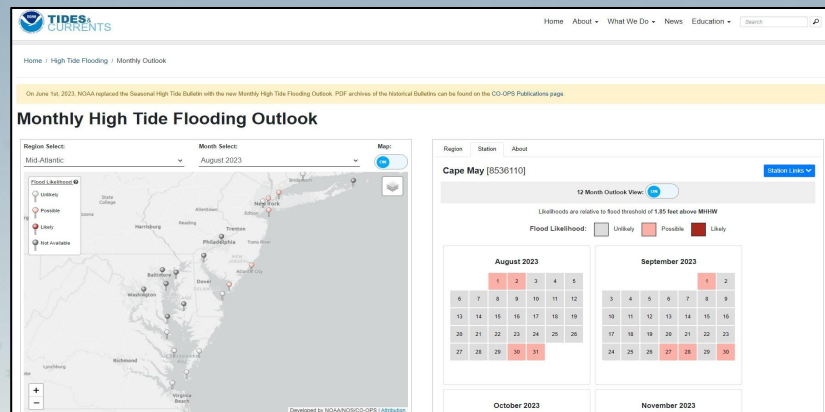
Annual High Tide Flooding Outlook

- Number of high tide flood days for the coming year at specific stations
- Projections out to 2050
- Regional impact summaries
- Supports long-term planning



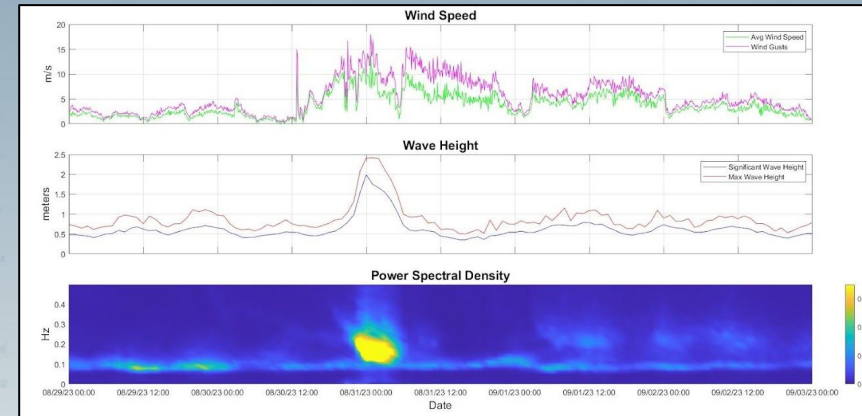
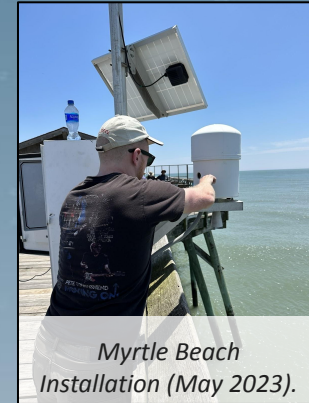
Monthly High Tide Flooding Outlook

- Daily flooding likelihoods for specific stations, up to a year in advance
- Regional impact summaries
- Supports near-term planning



Wave Measurement Development

- Advancing R2O Readiness of Wave Measurements from MWWL Sensors to Support Flood Monitoring and Prediction
- Nearshore Coastal Wave Observations is currently one of the biggest coastal ocean data gaps in our Nation.
- Expectations are growing for CO-OPS to adapt our foundational observing network toward capturing a “dynamic” still water (still water level + wave setup) observations.



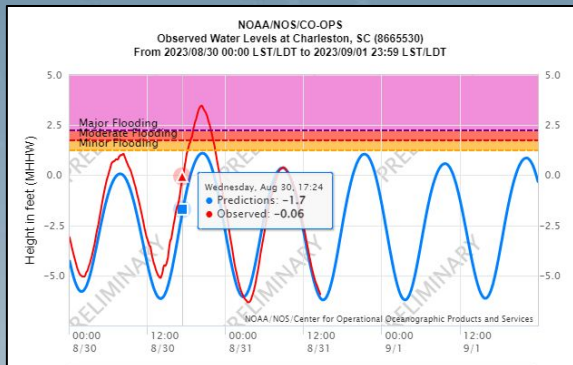
Real-time wind and waves measurements collected by OSTEP's Myrtle Beach test platform during the passage of tropical storm Idalia.

WebCOOS Cameras on NWLON Tide Stations

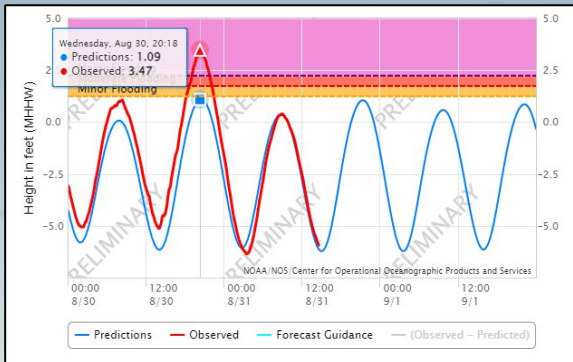
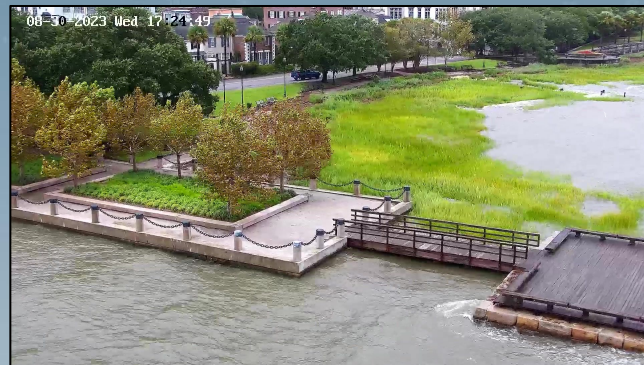
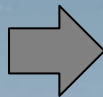
Monitors:

- Rip Currents
- Beach Erosion
- Beach Usage
- **Flood Monitoring**

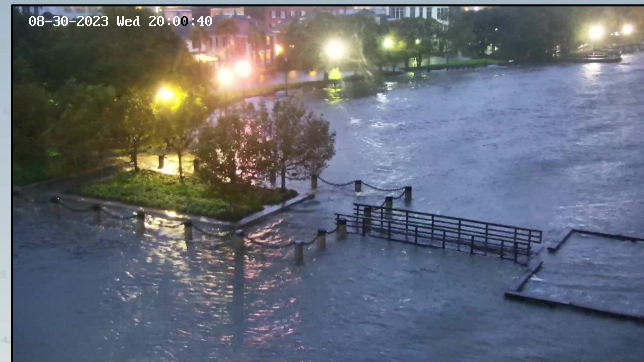
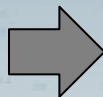
Hurricane Idalia - Charleston, SC NWLON and WebCOOS camera near MHHW and peak water level



MHHW



Peak WL



PORTS[®] Program Updates

FY23 Enhancements

- **Portsmouth, NH** - Current Meter
- **New Bedford, MA** - Water Level Station, →
Meteorological Station
- **Bethany Beach, DE** - CDIP Wave Buoy
- **Hollywood Beach, FL** - CDIP Wave Buoy
- **Fort Morgan, AL** - Visibility Station
- **Kalama, WA** - Water Level Station



New PORTS in the works

Pearl Harbor, HI (FY23-24)

- Partnership with the U.S. Navy
- Integrate 1 NWLON, install 1 water level with meteorological station, 2 current meters, integrated CDIP wave buoy

Upcoming new PORTS

Seattle, WA (FY24)

- Partnership with Port of Seattle
- Integrate 1 NWLON, add a current meter and stand alone meteorological station

PORTS[®] Assessment

Contracted Eastern Research Group (ERG) to Host 21 PORTS[®] Assessment Workshops

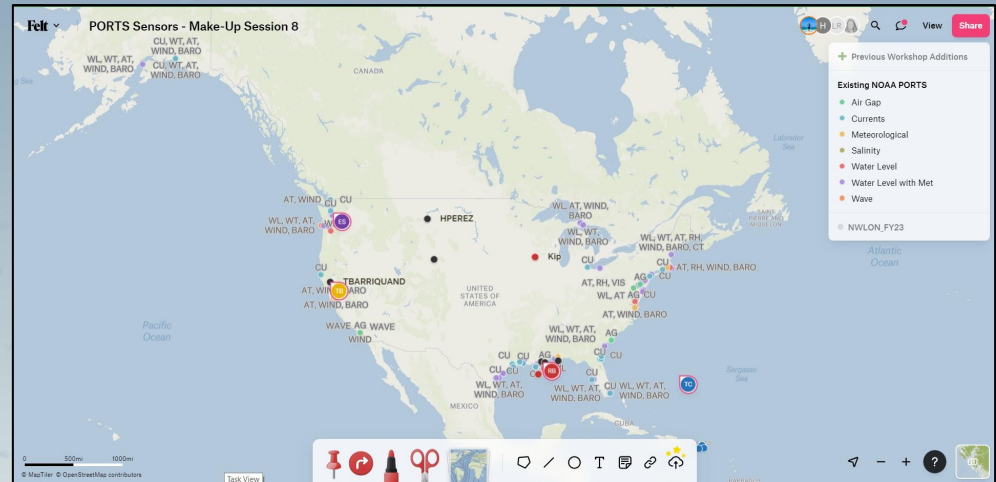
- 11 Regionally Targeted Sessions
- 10 Make-Up Sessions

Evaluating governance options for:

- Existing cost share model
- A wholly owned federal program
- A hybrid model where certain PORTS aspects are wholly owned by the federal government.

Determine requirements for a fully built out system

- Number, type & locations of sensors needed to support safe and efficient marine navigation in each of the 175 top seaports



NCOP Tidal Current Survey Update

Columbia River

- Currents observations collected in 2022 and 2023
- Predictions will be updated at 32 locations in the Lower Columbia River and two long-term stations will collect data for the entire survey period

Delaware Bay

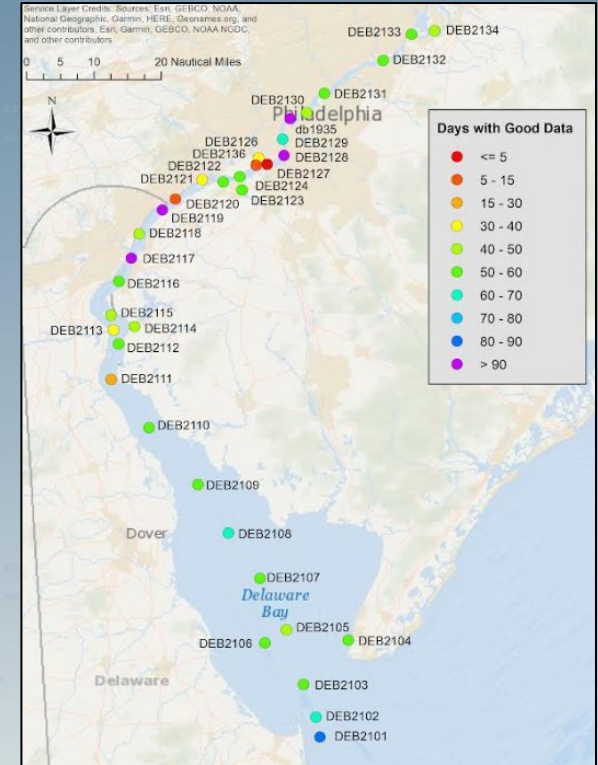
- Predictions updated at 32 locations
- Conductivity, temperature and density data collected and shared with USGS partners

Savannah River

- Pilots have been requesting updated currents information for over 10 years
- Following completion of harbor deepening project, observations were collected in 2023 at 25 locations

Charleston Harbor (planned for FY24)

- Field reconnaissance planned for October 2023 for ~40 locations in the Harbor and surrounding rivers.
- Requirements based primarily on navigation needs.
- Data will also support model validation and coastal circulation analyses.



OceansMap

OCEANSMAP

Nationwide Visualization of Water Levels on 7/7/2023 15:00

CO-OPS OceansMap Beta-launch Q1 FY24

OceansMap is a new tool that integrates real-time observations with OFS forecasts to provide up-to-date assessments of ocean conditions.

Cook Inlet OFS

NEW Salish Sea & Columbia River OFS
Available August 2024

San Francisco OFS

West Coast OFS

Lake Superior OFS

Lake Michigan & Huron OFS

Lake Erie OFS

Northern Gulf of Mexico OFS

Tampa Bay OFS

Lake Ontario OFS

Gulf of Maine OFS

New York OFS
Delaware Bay OFS & Chesapeake Bay OFS

In Development
East Coast OFS FY28
High resolution:
Northeast Coast OFS FY26
Southeast Coast OFS FY27

48.4432N, 50.5567W
500mi

mapbox

GEBCO

Questions?

