



WESTERN TROPICAL ATLANTIC REGION
REGIÓN ATLÁNTICO TROPICAL OCCIDENTAL
RÉGION ATLANTIQUE TROPICALE
OCCIDENTALE

U.S. INTEGRATED OCEAN OBSERVING SYSTEM (IOOS)

CARL GOULDMAN | SEPTEMBER 2021



[HTTPS://IOOS.NOAA.GOV/](https://ioos.noaa.gov/)

One Planet, One Ocean / Un Planeta, Un Océano / Une planète, un océan

iocaribe.ioc-unesco.org

ioc.unesco.org - www.oceandecade.org



LEGISLATION

Authorizing legislation

Integrated Coastal Ocean Observing System (ICOOS) Act ([P.L. No 111-11](#), March 2009)

Coordinated Ocean Observations and Research Act ([P.L. No 116-271](#), December 2020)

Mission Areas

- Predicting Weather & Climate variability
- Safe and Efficient Transportation and Commerce
- Preparedness, Risk Reduction, and Resilience for Coastal Communities
- Healthy ecosystems and water quality



Supporting Decisions Every Day!

U.S. IOOS: PROGRAM OVERVIEW

Partnership effort that leverages dispersed national investments to deliver ocean, coastal and Great Lakes data relevant to decision-makers.

Global Component

- US contribution to Global Ocean Observing System (GOOS)
- 1 of 15 Regional Alliances of GOOS



National Component

- 17 Federal agencies
 - Coordinated by the Interagency Ocean Observation Committee (IOOC)
 - NOAA is the lead federal agency & houses the U.S. IOOS Office



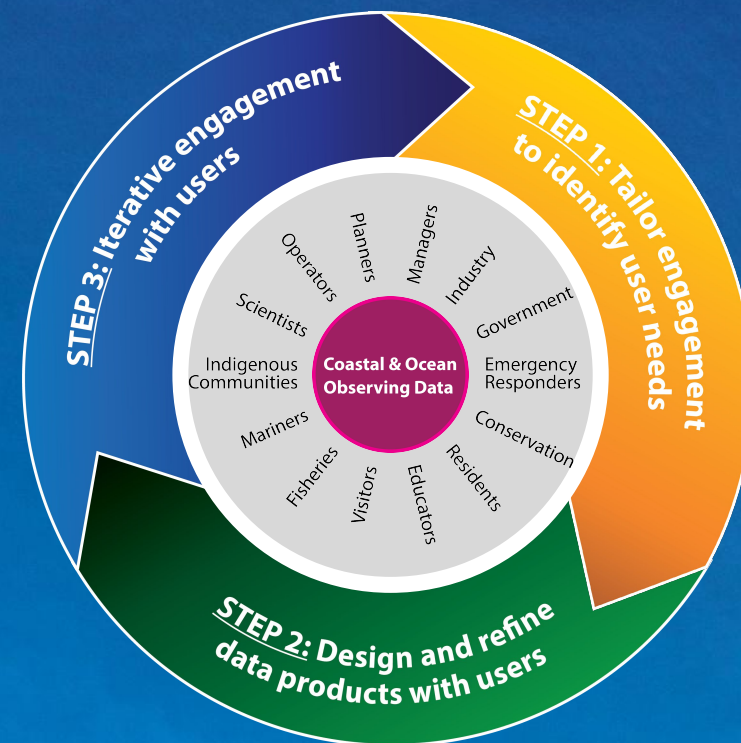
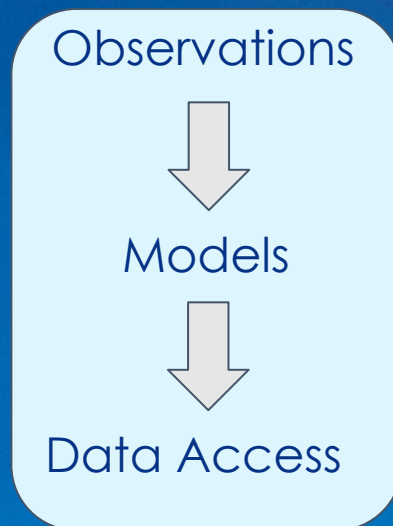
Regional Component

- 11 Regional Associations
 - Stakeholder driven
 - Academia, state/local/tribal government, private industry



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HOW DOES THIS SYSTEM WORK - U.S. IOOS REGIONAL TO GLOBAL



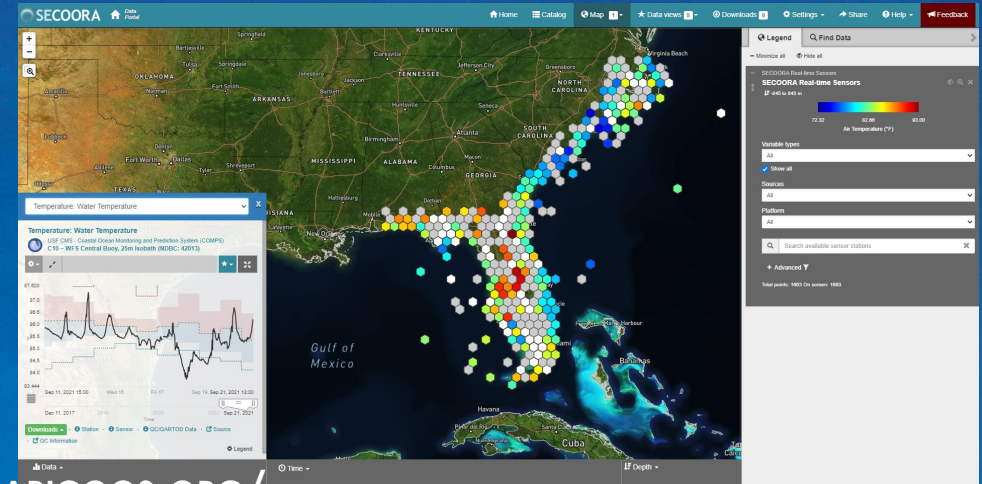
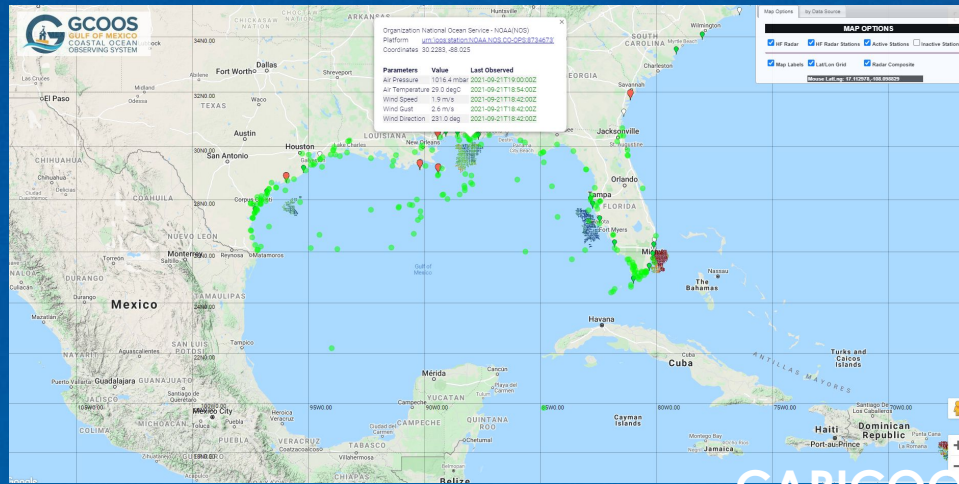
From Ocean Obs '19 White paper:
Melissa Iwamoto PacIOOS (et al.)

- State, Local, Tribal Governments; profit & non profit industries; and academia
- Connection from the national backbone to regional stakeholder needs
- Certified RAs expand available federal data resources for all users

IOOS REGIONAL OBSERVING, MODELING, TOOLS, SERVICES (CO-DESIGNED)

GCOOS - [HTTPS://DATA.GCOOS.ORG/](https://data.gcoos.org/)

SECOORA - [HTTPS://PORTAL.SECOORA.ORG/](https://portal.secoora.org/)



CARICOOS - [HTTPS://WWW.CARICOOS.ORG/](https://www.caricoos.org/)



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OUR PRIMARY (BUT NOT ONLY!) OBSERVING ASSETS...

IOOS supports a national high-frequency radar network and provides for operation and maintenance of observing assets in U.S. coastal & territorial waters.

Fixed Moorings & Buoys



HF Radar



Shore Stations



Sub-surface gliders



Ships

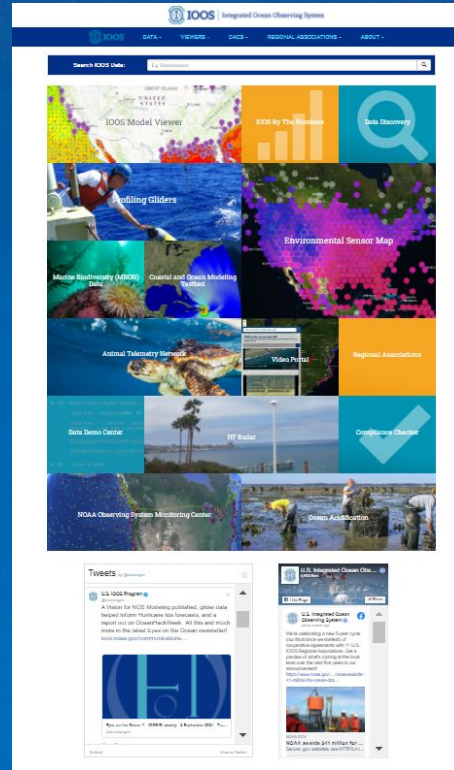


Water Levels

OPEN DATA AND HOW TO ACCESS

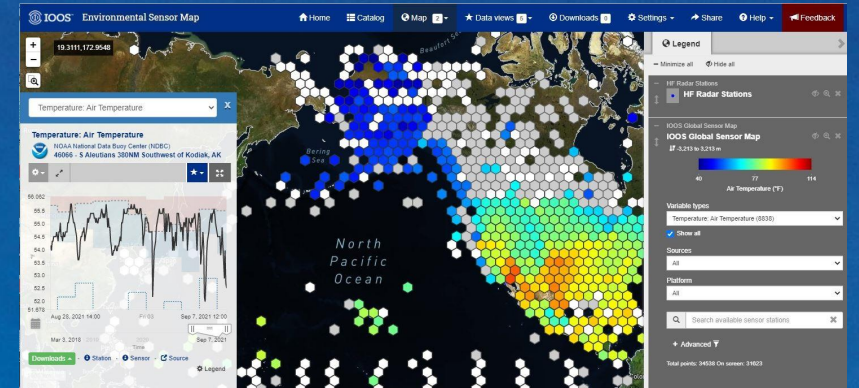


Regional Portals: 11 RA portals integrate data at a local level and provide tailored products for stakeholders



ioos.us

A central portal of portals



Sensor Map: a 2 week cache of real-time observations from 108 providers



Program portals & data assembly centers: gliders, animal telemetry, high-frequency radar, and more!



IOOS Model Viewer: Visualize and access model hindcast/forecast information and compare to observations

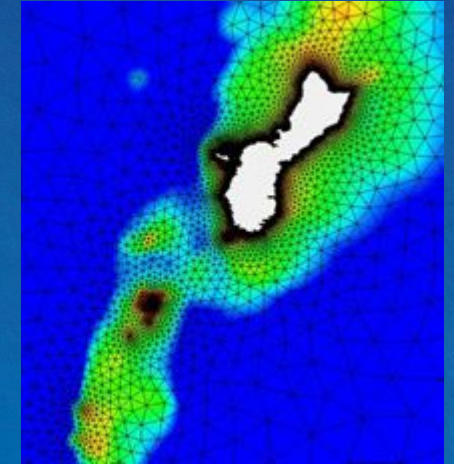
NOAA EXTRATROPICAL SURGE & TIDE - NOW AVAILABLE GLOBALLY

NOAA/NOS' model is, to our knowledge, the highest resolution operational global surge model available today. Coastline resolution is at least 1.5 km, up to 80 m globally.

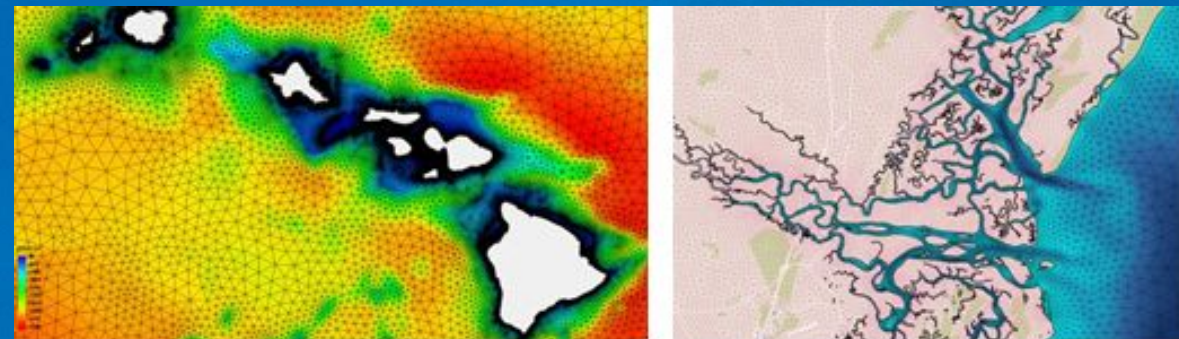
Now, focusing on 1) providing even higher resolution (25 m) in key U.S. ports; 2) improving model bathymetry & shoreline

Extratropical Storm Surge & Tide Operational Forecast System (ESTOFS)

- Advanced CIRCulation (ADCIRC) core hydrodynamic model
- Provides 7-day water level forecasts
- Driven by NOAA Global Forecast System (GFS) atmospheric model (10 m winds, mean SLP, sea ice)
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Guam



Hawaii

U.S. East Coast



NOAA/NOS' Office of Coast Survey

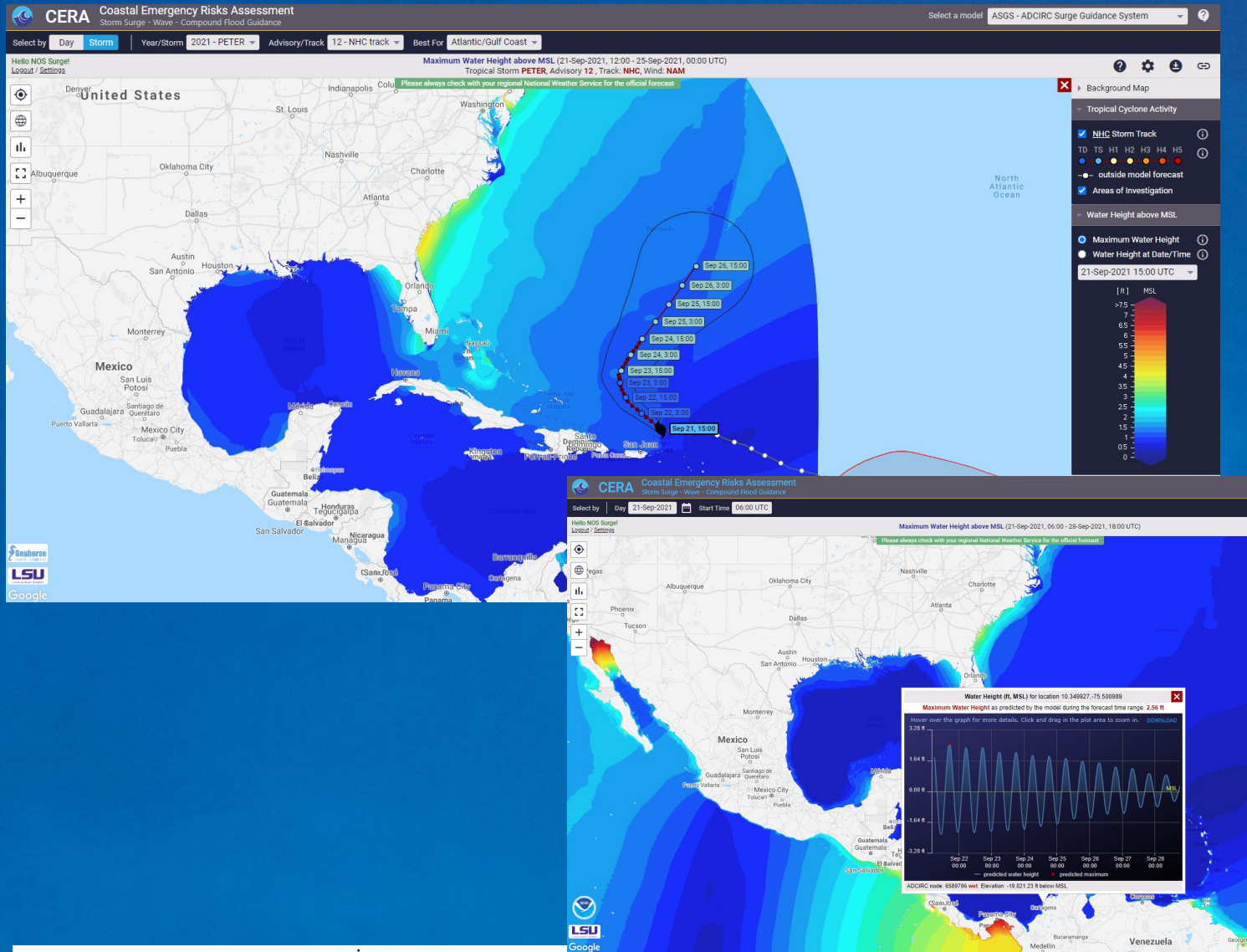


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HOW TO ACCESS GLOBAL ESTOFS RESULTS



1. Go to the CERA web portal at <https://cera.coastalrisk.live>
2. Click on the "Sign up" link next to the red "Login" button at the top left.
3. Register for a Login.
4. Once you receive your login credentials, click on the red "Login" button at the top left of <https://cera.coastalrisk.live> and log in using your registered username and password.
5. Once logged in, click on the "Select a model" dropdown menu at top right and click on "ESTOFS - NOAA Extratropical Surge & Tide"
5. Explore the zoomable web interface!

Contact: Greg Seroka NOAA Coast Survey Development Lab





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MUCHAS GRACIAS

.....
THANK YOU
.....

MERCI BEAUCOUP

One Planet, One Ocean / Un Planeta, Un Océano / Une planète, un océan

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Backup Slides/Originals

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The Global Ocean Observing System



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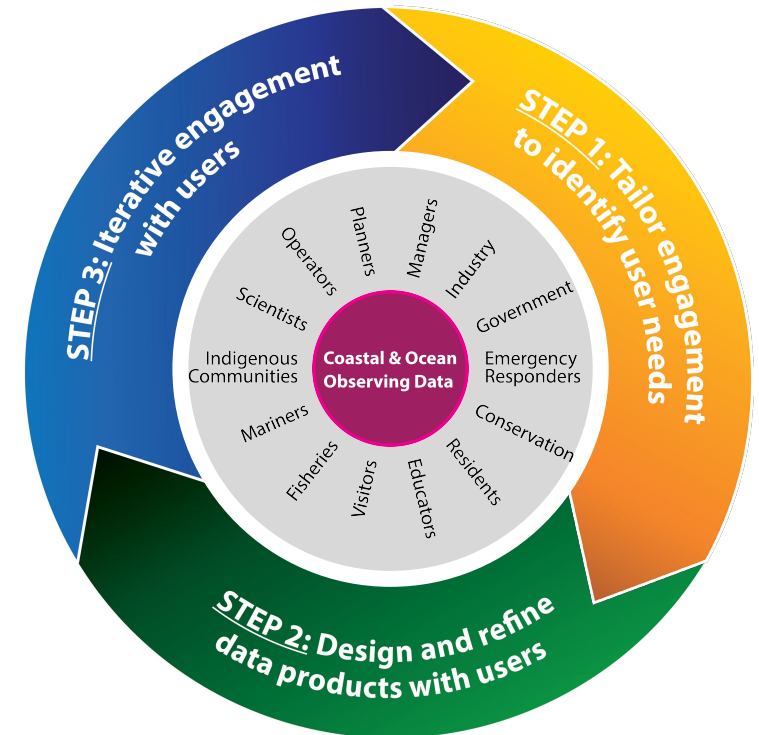
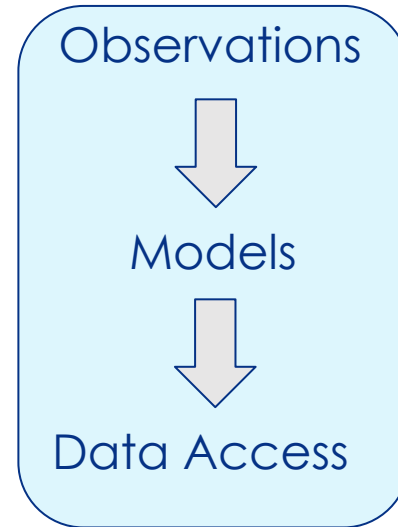


Regional Component

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How does this System work - U.S. IOOS Regional

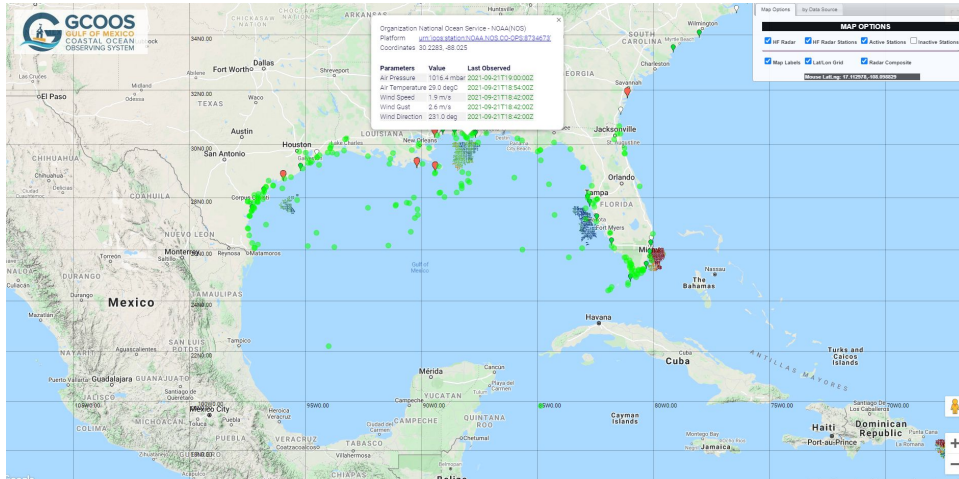


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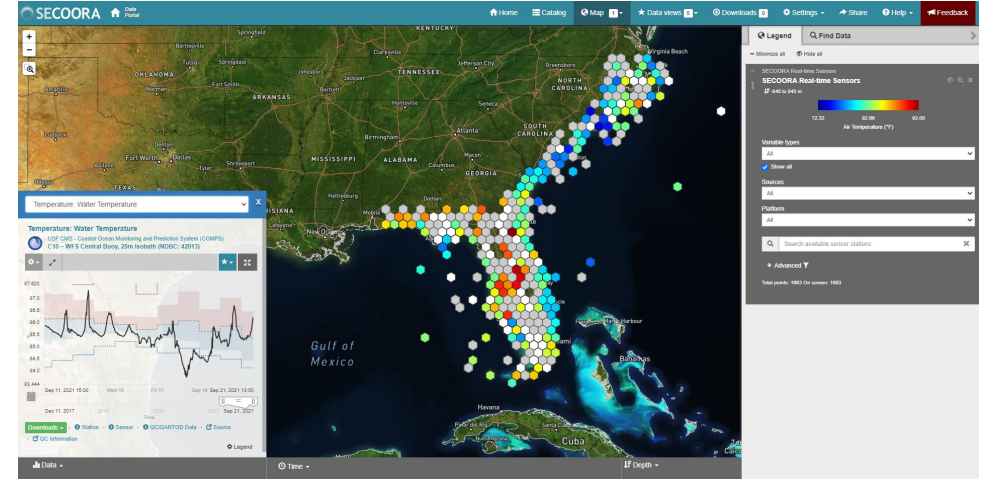
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IOOS Regional observing, modeling, tools, services (co-designed)

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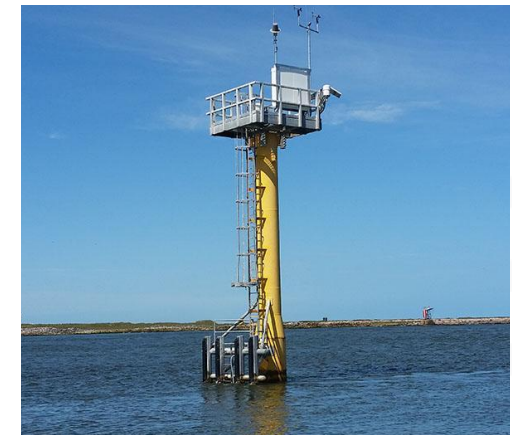
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Ships

Water Levels

...what we do with that data (and how to access it!)



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for WTA ? Global ESTOFS - NOAA Extratropical Surge & Tide

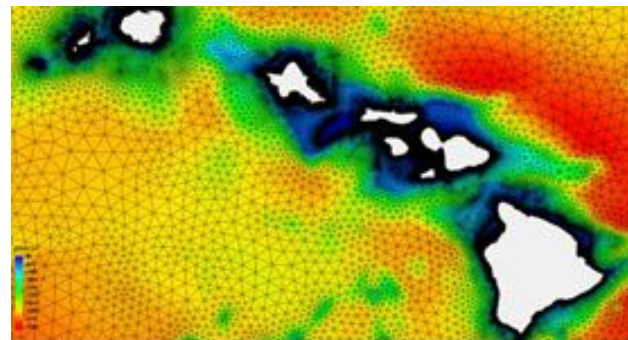
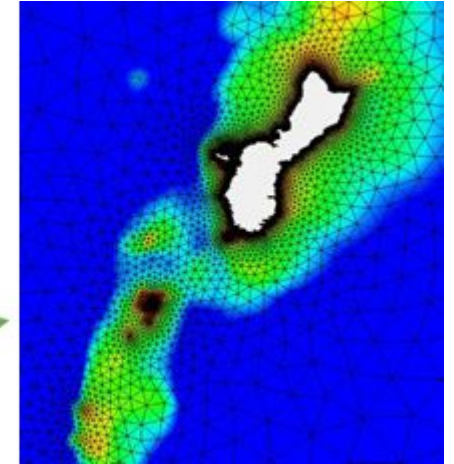
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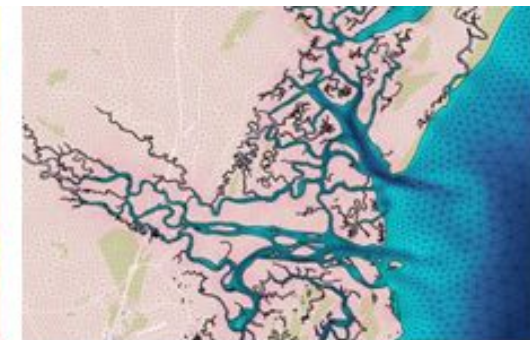
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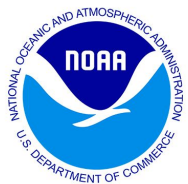
Guam →



Hawaii

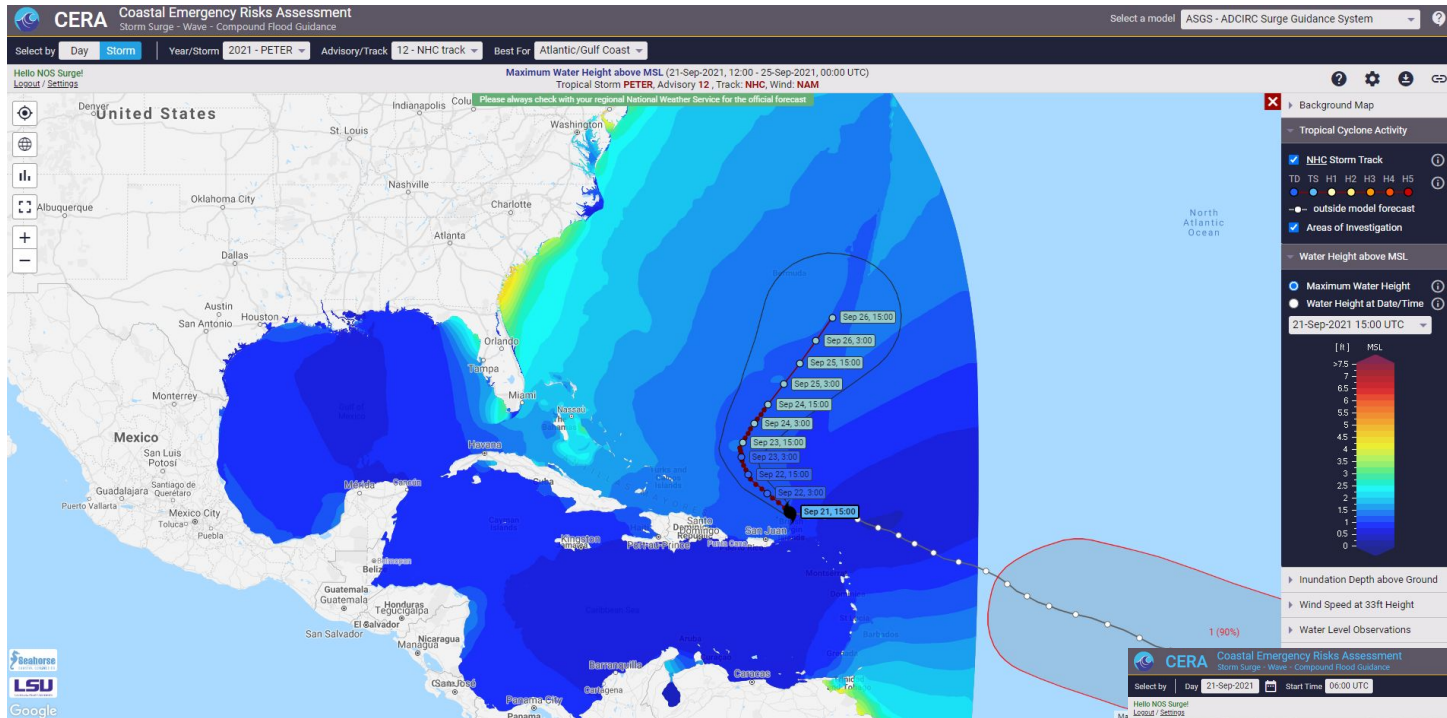


U.S. East Coast



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