

THE CURRENT

November 7, 2024

Quarterly news about ocean observing data and systems, coastal modeling and forecasting, navigational services, and coastal resilience / hazard mitigation

Good Afternoon,

Welcome to *The Current* — the official newsletter of [NOAA's Center for Operational Oceanographic Products and Services!](#)

As the provider of the Nation's tidal, current, and water level observations, we want to take this moment to thank you for being a user of our data, products, and services. Whether you access our resources to safely navigate waterways, promote long-term resilience in your community, or protect public health during extreme weather, we are proud to provide the information you need to make decisions at the coast and on the water!

To better serve and connect with users like you, we are working to strengthen our strategic communications, which includes launching this newsletter. By staying in regular contact, we hope to keep you informed about the work we are doing to support the Nation and share exciting updates about our coastal ocean observing network and related data products and services.

Our newsletter will be issued 4 times a year so we can keep you up-to-date without inundating your inbox. Via our product spotlights, you'll hear about the latest changes, new features, and upcoming enhancements. If you'd like to connect directly with and learn from us, we'll also share information about future training, webinars, feedback sessions, and public surveys.

We look forward to engaging with you and are excited to have you read this inaugural newsletter. Please feel welcome to share our content with any members of your network interested in NOAA Tides & Currents!

Dr. Marian Westley
Director

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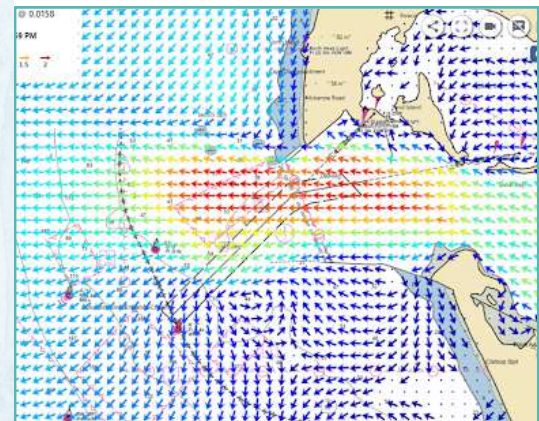
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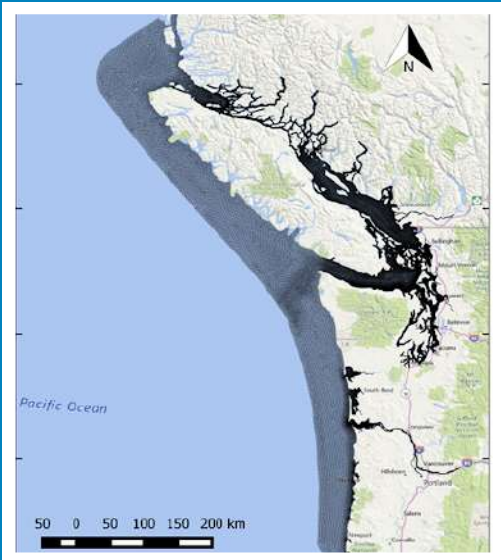
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NEW MODELING PRODUCT | Launching the Salish Sea and Columbia River Operational Forecast System



Images: ship transiting the Columbia River (top), model coverage map (bottom)



In September 2024 CO-OPS launched a new operational forecast system for the Salish Sea and Columbia River region. The [Salish Sea and Columbia River Operational Forecast System](#) provides nowcast and short-term (up to 3 days) forecast guidance for water levels, currents, salinity, and temperature to coastal and maritime communities in the Puget Sound, the San Juan Islands, the Strait of Georgia, and the Strait of Juan de Fuca, and the Columbia River up to Bonneville Dam.

The new system replaced the existing Columbia River and Estuary Operational Forecast System and expanded geographic coverage, offering comprehensive guidance to more users in the region. It was developed in collaboration with NOAA's [Office of Coast Survey](#) and [Integrated Ocean Observing System](#), both part of the National Ocean Service, as well as the National Weather Service, the [Pacific Northwest National Laboratory](#), the [Northwest Association of Networked Ocean](#), and others modeling community partners. It is the first Operational Forecast System initially developed by the coastal community and launched into operations by NOAA. The model's nowcast and forecast data supports marine navigation, resource management, search and rescue, and hazardous spill response.

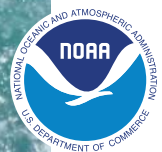
SURVEY OPPORTUNITY | Seeking Your Input on Tidal Datums!



As we prepare to update the National Tidal Datum Epoch, we're conducting a [brief survey](#) to gather feedback from stakeholders who use tidal datums or related coastal products (e.g., marine charts, sea level viewers).

The survey will take **only 3 minutes to complete** and helps us better understand the potential impacts of updated datums on your downstream /third-party products. Your input will help us help you prepare for changes.

Not sure if you use datums? Learn more about these references [here!](#)



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RECENT NEWS | Connecting with Our Navigation Partners in the Great Lakes

In late September, CO-OPS traveled to Detroit, Michigan for NOAA's [Hydrographic Services Review Panel](#) fall meeting. This federal advisory committee provides NOAA with independent advice on improving the quality, efficiency, and usefulness of NOAA's navigation-related products, data, and services.

In honor of the location, the fall meeting focused strongly on the Great Lakes, providing CO-OPS and other stakeholders a valuable opportunity to engage directly with regional attendees. CO-OPS Director, Dr. Marian Westley, was joined by office leadership from NOAA's National Ocean Service, and shared updates on recent CO-OPS work and projects completed over the past year. Leadership also provided a special presentation on the [National Ocean Service response](#) to the Francis Scott Key Bridge tragedy last spring, which was followed by a robust panel discussion.

The CO-OPS Datums Team provided an in-depth briefing about the [International Great Lakes Datum](#) in tandem with the [National Geodetic Survey's](#) Great Lakes Advisor, Dr. Jacob Heck.

Additional meeting sessions enabled CO-OPS to learn more about local perspectives on navigation in the Great Lakes as well as mapping and charting needs for underserved areas in the region.

The Hydrographic Service Review Panel meetings are a consistent way to connect with [members](#) from various backgrounds and specialties who provide great feedback to help CO-OPS, the National Ocean Service, and wider NOAA build and operate valuable oceanographic and meteorological products and services for the nation!



Image: Detroit, Michigan skyline at night.



Image: CO-OPS employees Adam Grodsky (on left), Dr. Marian Westley (middle), Sierra Davis (on right) on the Detroit River.



Image: Sierra Davis (CO-OPS) and Dr. Jacob Heck (National Geodetic Survey) present.

PRODUCT SPOTLIGHT | Keeping Up With Your Coastal Storm Data Needs

CO-OPS relies on a suite of web services and Application Programming Interfaces (APIs) to disseminate vital oceanographic data (water levels, currents) to users. These datasets drive a variety of CO-OPS, NOAA, and other applications and provide information critical for ensuring safe maritime navigation, emergency response, and recreation.

Over the years, CO-OPS has seen significant growth in demand for our data. On average, our [Data API](#) receives about 183 requests a second, which amounts to 11,000 requests a minute and 16,000,000 requests a day!

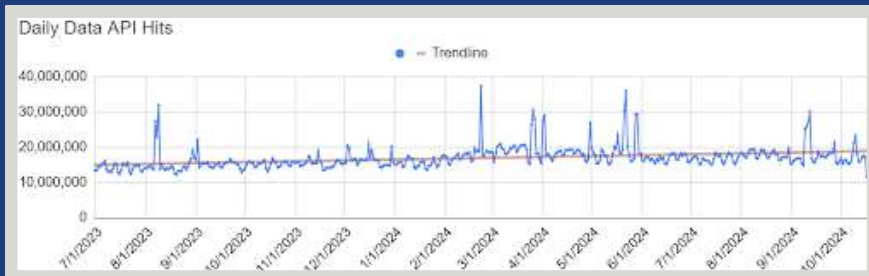


Image: Daily hits to the CO-OPS Data Application Program Interface

In just 2 years, this increase equals about 34%, with year-over-year increases amounting to 17% in 2022-2023 and 14% in 2023-2024 (September - September). CO-OPS is able to meet growing demand by enhancing core cloud infrastructure, including automatic scalability of instances, smart caching, and other systems changes.

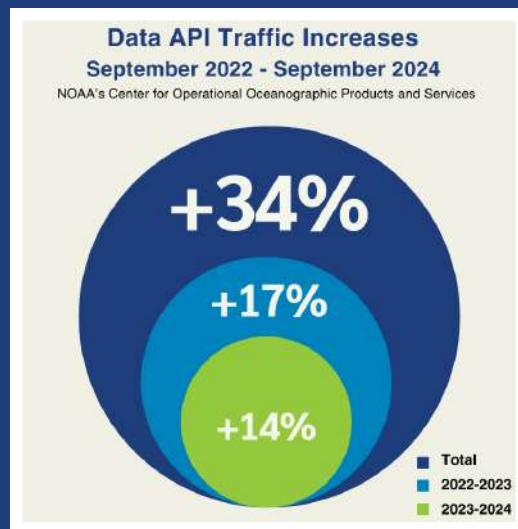


Image: 2-year increase in our API hits

Did You Know? CO-OPS data services are able to accommodate significant website surges during coastal storms. For example, during the recent Hurricane Milton (October 2024), our web traffic reached unprecedented levels, with daylight activity peaking at 49,000 requests a minute, or 800 requests a second.

TIDES & CURRENTS CO-OPS API URL Builder

This application builds a URL based off of input parameters that links to our various APIs. It can be used to make a link that returns data. Select one of the following to begin.

- Data API**
The Data API can be used to retrieve observations and predictions originating from CO-OPS stations based on date and time.
[Documentation](#)
- MetaData API**
The MetaData API (MEDAR) can be used to retrieve information about CO-OPS' stations. It can return information for a specific station, or multiple stations.
[Documentation](#)
- Derived Product API**
The Derived Product API (DPAPI) contains data that is derived from historical data.
[Documentation](#)

Access the API Builder at: tidesandcurrents.noaa.gov/api-helper

New to APIs?

CO-OPS provides an interactive [API URL Builder tool](#), which allows users to construct API calls using a simple, intuitive form that offers a variety of selection features, such as product type, station, and other potential parameters of interest. CO-OPS data dissemination capabilities are made possible via a focused shift over the last several years to a service-oriented architecture, driven by cloud computing and the use of cloud services rooted in scalability and reliability.



PRODUCT ENHANCEMENT | Webcam Imagery Comes to Coastal Inundation Dashboard

CO-OPS recently integrated coastal webcam imagery into the Coastal Inundation Dashboard! This new feature is the result of a partnership with the [Southeast Coastal Ocean Observing Regional Association](#). The webcams are part of their [Webcam Coastal Observation System \(WebCOOS\)](#), a coastal webcam network that monitors real-time coastal environmental conditions.

CO-OPS integrated 17 of these webcams into its [Coastal Inundation Dashboard](#), a decision-support tool that allows users to monitor water levels at NOAA water level stations in real-time. The webcams are largely located in the Southeast U.S., but are also available at [Corpus Christi, TX](#), [Holland, MI](#), [Santa Cruz, CA](#), [Point Reyes, CA](#) and [Waikiki Beach, HI](#). The integration of webcams into the dashboard allows users to quickly visualize real-time flood impacts while monitoring water levels during flood events.

Over the coming years, the WebCOOS network will be expanded to more locations across the Nation, using funding provided by the [NOAA IOOS Ocean Technology Transition grant program](#) and the [Inflation Reduction Act](#). As the network expands, CO-OPS will look to integrate more webcams into digital products to help users better monitor and respond to coastal flooding impacts.



Images: webcam at Charleston Harbor, SC (top), [website of the WebCOOS network](#) where you can access this webcam (bottom).

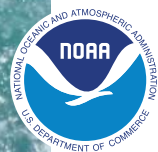


NEW TRAINING | 40-Minute Course on National Tidal Datum Epoch



For more information, please email tide.predictions@noaa.gov.

CO-OPS has released a new [training video](#) on the National Tidal Datum Epoch, the reference period for calculating U.S. tidal datums. This training provides an overview of how datums are calculated and updated, and why they are essential for activities like navigation, coastal engineering, and floodplain management. The current [National Tidal Datum Epoch](#) will soon be replaced by the 2002-2020 edition. The video explains how these updates will impact users and highlights the importance of using the most current data for accurate decision-making.



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RECENT PUBLICATION | CO-OPS Co-Authors Southeast Water Level Workshop Report

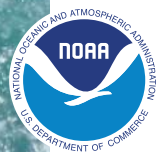
CO-OPS water level observing experts recently co-authored a new report led by the [Southeast Coastal Ocean Observing Regional Association \(SECOORA\)](#). The report presents a summary of the June 2023 Southeast Water Level Network Workshop, co-hosted by CO-OPS and SECOORA.

The workshop brought together water level practitioners from local, state, federal, academic, and private institutions to discuss water level needs in the southeast region which includes North Carolina, South Carolina, Georgia, and Florida. CO-OPS experts helped lead discussions on water level monitoring technologies, standard practices for operating and maintaining water level stations, and web-based applications to leverage water level data. Attendees also participated in breakout sessions to discuss gaps in monitoring and capacity requirements on a state-by-state basis. The workshop identified several areas for improvement in terms of both water level observation coverage and collaboration among states across the southeast.

The report provides a summary of the workshop's presentations and discussions and is available for [download on SECOORA's website](#). Other report co-authors include experts from NOAA's [Office for Coastal Management](#) and the [U.S. Geological Survey](#).



Image: cover page of the jointly authored Southeast Water Levels Network Workshop Report. Workshop held in June 2023.



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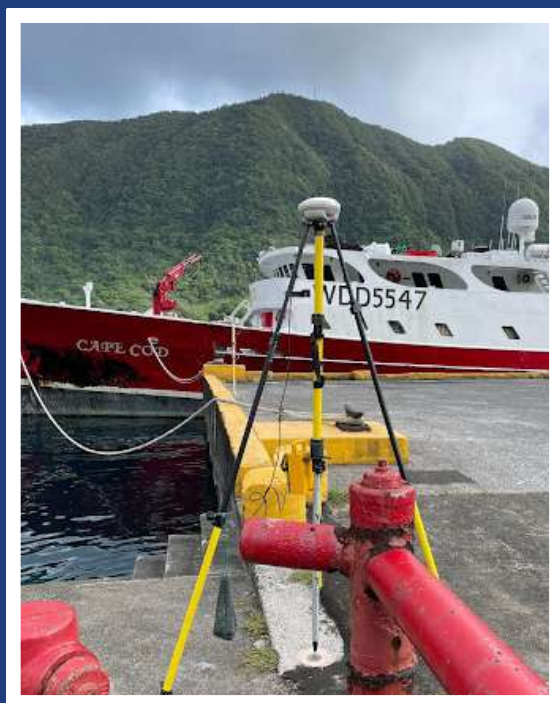
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NEWS FROM THE FIELD | Delivering Critical Weather Data to Communities in American Samoa

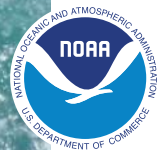


CO-OPS' Pacific Operations field team recently traveled to American Samoa to conduct scheduled maintenance on our [water level station at Pago Pago Harbor](#). The work included addressing a pump issue, replacing the water temperature sensor, installing a new data communications device, and collecting multiple GPS observations to assess subsidence on the island. After consultation with multiple territory agencies and partners, our team also outfitted the station with a new meteorological station!

This is the first weather station on Pago Pago Harbor, which is located in an old volcanic caldera and often experiences a variety of terrain driven winds. The station delivers real-time measurements of wind speed and direction, providing valuable information to ship pilots, captains, the local National Weather Service forecast office, and over seven villages in the area. Transporting the 25 foot meteorological mast for the station was a challenge. First the mast was transported via cargo ship from CO-OPS field office in Seattle, Washington to Honolulu, Hawaii. CO-OPS then worked with the [U.S. Coast Guard](#) who delivered the mast from Barbers Point O'ahu Air Station in Honolulu to Pago Pago. Installation of the station was well received by local agencies, businesses, and villages and our team is proud to provide critical information to this underserved community!



Images: surveying at Pago Pago Harbor (top and bottom left), newly installed weather station (bottom right).



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NEWS FROM THE FIELD | Deploying Our First Offshore Currents Real-Time Buoy in the Atlantic Ocean

CO-OPS' Ocean System Test and Evaluation Program, part of our Engineering Division, recently teamed up with the [Eastern Carolina University Coastal Studies Institute \(ECU\CSI\)](#) to deploy a new real-time currents buoy (CURBY) in the Atlantic Ocean. Using a CSI vessel, the team deployed the buoy near Jennettes Pier in Nags Head, North Carolina, approximately 800 meters (½ mile) from the coast in 11 meter water depth.



Images: CO-OPS' Currents Real-Time Buoy deployed near Jennettes Pier in Nags Head, North Carolina (left), CO-OPS field teams maneuver the buoy into the water (right).

This new CURBY system features a [National Weather Service](#) approved meteorological station, more robust cable/connector design, real-time water conductivity and temperature measurements, and mooring design modifications for the high wave environment.

This deployment marks the first time CO-OPS has placed a CURBY in an offshore, high wave energy environment. Data collected during the deployment will provide our engineering team with valuable insight on system performance capabilities and limitations in one of the highest wave energy environments on the U.S. East Coast. The ECU/CSI team will also use real-time data from the buoy to support marine renewable energy development and testing efforts in the Jennettes Pier region.

Subscription Preferences?

If you would like to be added to or removed from our newsletter listserv, please email the CO-OPS Communications Team at nos.co-ops.commsteam@noaa.gov.

