



Northwest Association of Networked Ocean Observing Systems (NANOOS)

The eye on the Pacific Northwest's ocean and coast

Ocean Data Types:

- Real-time & near real-time data including:
 - Biological- chlorophyll, phytoplankton species
 - Chemical- pH, CO₂, dissolved oxygen, aragonite saturation
 - Physical- wind speed & direction, wave height & period, air & water temperature, salinity, water level, surface current speed & direction
- Climatologies:
 - Long-term average conditions (climatology) and present-day departures from average (anomaly) data visualizations from buoys, satellites, and weather stations
- Forecasts:
 - Forecasts for ocean conditions including tides, surface currents, water temperature, waves and salinities; and weather forecasts

Relevant Tools:

- Data Portal: NANOOS Visualization System (NVS)
<http://nvs.nanoos.org>
Description: Our NVS data portal provides a wide-range of ocean and coastal data including real-time observations from buoys, ships, and shore stations; ocean and weather forecasts; satellite data; and climatologies. We also provide tsunami evacuation zone maps for the OR and WA coastal communities and beach and shoreline profiles. Educators can use NVS to link their curricula and lesson plans to events in the news.
- Educational Resources:
<http://www.nanoos.org/education/introduction.php>
Description: Page includes downloadable lesson plans and other resources, teacher workshops, animations and videos.



The NANOOS region spans the coastal ocean, shorelines and estuaries of the Pacific Northwest, including Puget Sound, the Columbia River and the outer coast. Screenshot of NVS, NANOOS' data portal



Students at NOAA Science Camp, Seattle WA, deploy their first ocean observing buoy

Regional Example:

NANOOS works with educators and scientists to make real world connections between the ocean and the classroom, in formal and informal settings. Specific activities include teacher professional development, classroom presentations, curriculum development and tutorials.

Contact Information:

Name: Amy Sprenger
Email: asprengr@uw.edu
Phone: 206 543 0061



Waves



Temperature



Wind



Currents



Water Level



U.S. Integrated Ocean Observing System (IOOS®)

Our Eyes on the Ocean, Coasts, and Great Lakes

Ocean Data Types:

- Biological- chlorophyll
- Chemical- pH, CO₂, dissolved oxygen
- Physical- wind speed and direction, ocean currents, wave height and period, air temperature, water temperature, salinity, air pressure, and water level.
- Biodiversity – Species presence/absence/abundance: phytoplankton, zooplankton, fish, coral, marine mammal, sea turtles, and more.

Relevant Tools:

- Data Catalog: <http://data.ioos.us/>

Data portals integrate real-time observations with historical records, revealing climate variability and long-term trends. Ocean temperatures, sea level, and the saturation state (ocean acidification) are among the many climate variables that can be accessed through coastal ocean data portals. Using real-time observations, teachers can link their curricula and lesson plans to events in the news.

- Data Tools: <http://www.ioos.us/>

Access the IOOS Data Catalog and data tools, such as the Data Assemble Centers (DACs), the Environmental Sensor Map, the Coastal and Ocean Modeling Testbed, and much more.

- Educational Resources:

<https://ioos.noaa.gov/community/education/>

Description: Access to ways to use real data in the classroom, lesson plans, and links to regional resources.

Description:

IOOS is our eyes on the ocean, coasts, and Great Lakes. We are an integrated network of people and technology gathering observing data and developing tracking and predictive tools to benefit the economy, the environment, and public safety at home, across the nation, and around the globe.



U.S. IOOS is the national integrated ocean observing system, working with Regional Associations across the U.S., Caribbean, and Pacific.



U.S. IOOS Director Zdenka Willis talks to ocean observing students about their presentations while visiting Rutgers University.

Contact Information:

First Name: Kate Culpepper

Email: kate.culpepper@noaa.gov

Phone: 240-533-9457