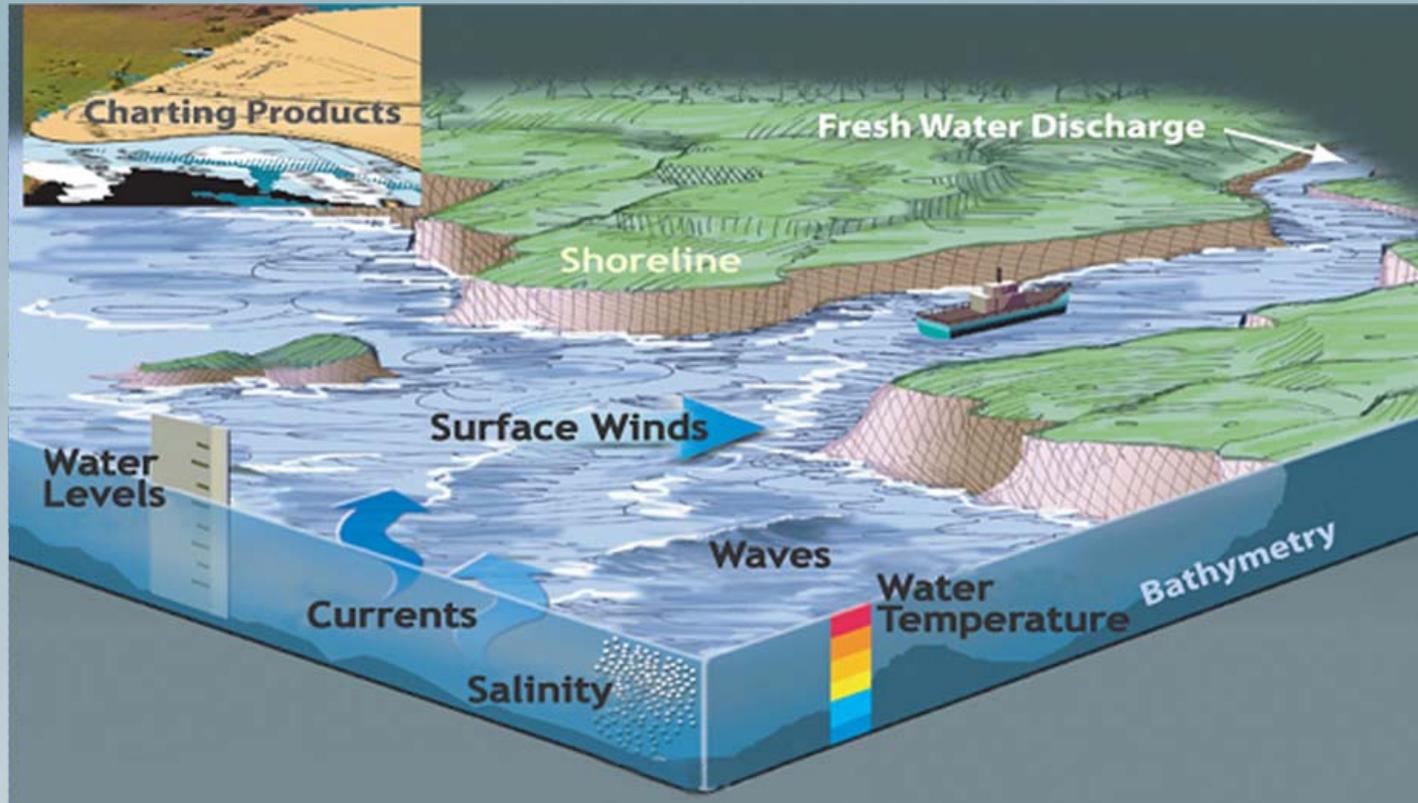


Northwest Association of Networked Ocean Observing Systems

The Integrated Ocean Observing System (IOOS) Regional Association
for the Pacific NW

www.nanoos.org

Fundamental Issue:



We are limited and poorly coordinated with respect to environmental data supporting fundamental societal needs

We need a system that can fill societal needs for ocean data

- Must be sustained
- Must be driven by users
- Must be responsive to regional needs
- Must fill needs from end to end

The Integrated Ocean Observing System is designed to fill this need

What will IOOS do?

The U.S. Integrated Ocean Observing System (IOOS) is developing as a user-driven, integrated system of observations and data telemetry, data management and communications, and data analysis and modeling that **routinely, reliably, and continuously provides data and information required to address seven societal goals.**

What will IOOS do?

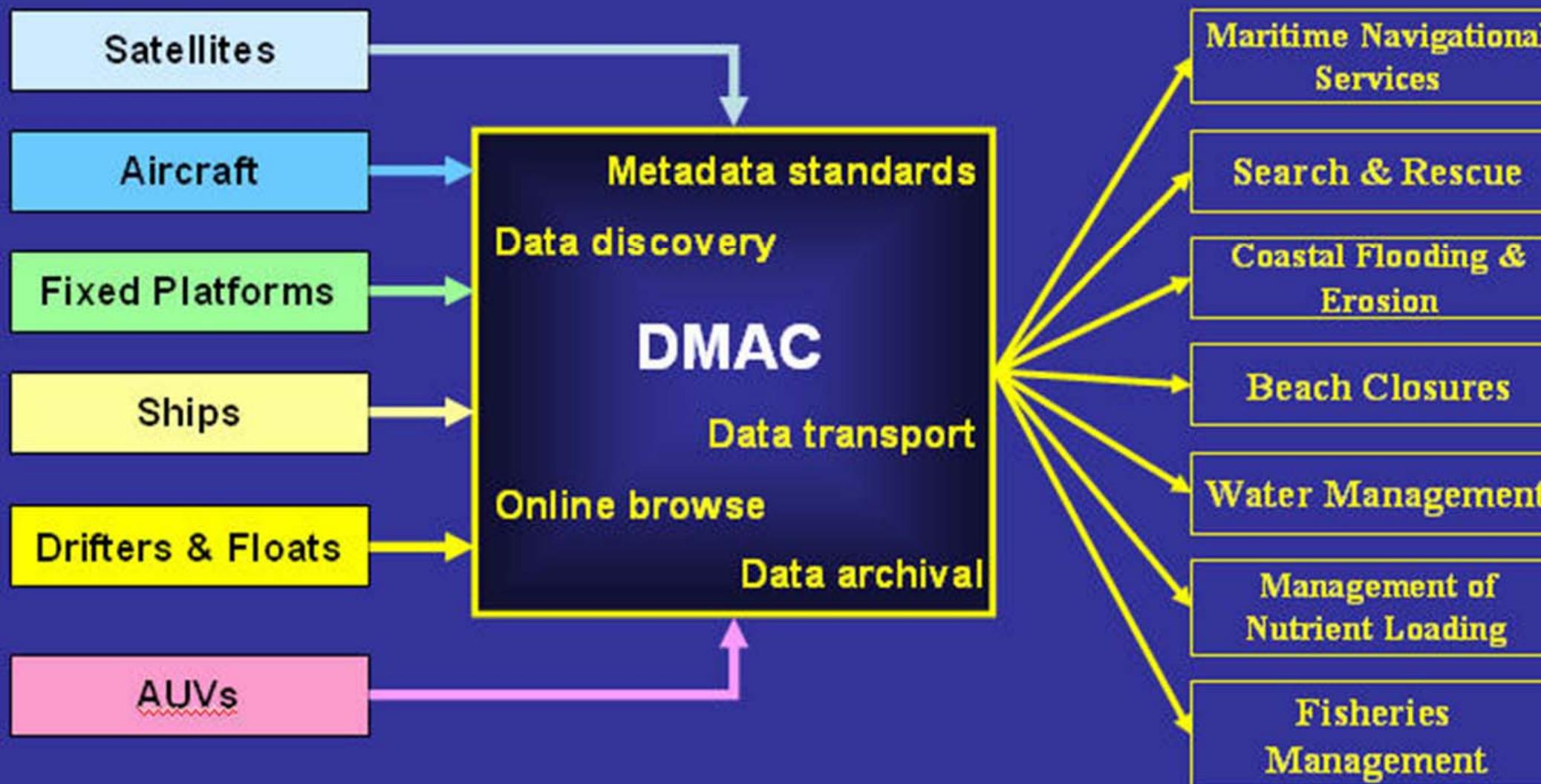
- Improve predictions of **climate change and weather** and their effects on coastal communities and nation
- Facilitate safe and efficient **marine operations**
- Improve forecasts of **natural hazards** and mitigate their effects more effectively
- Improve **homeland security**
- Protect and restore **healthy coastal ecosystems**
- Manage **living marine resources** for sustainable use
- Minimize **public health risks**

1 System, 7 Goals

Sustained, Integrated, End-to-End System

Rapid Access to Diverse Data from Many Sources

Observations → Data Telemetry → Data Management & Communications → Modeling & Analysis → Data & Information Products & Services



Coastal Component of IOOS

Alaska

PNW

Cen/No CA

Pac Isl

So CA

National Backbone

- Federal Agencies Responsible
- EEZ & Great Lakes
- Core variables required by RAs & Fed Agencies
- Network of sentinel & reference stations
- Data Standards/Exchange Protocols

NE Atl

G Lakes

Mid Atl

SE Atl

Gulf

Carrib

Regional Coastal Ocean Observing Systems

- Regional Associations Responsible
- Involve private & public sectors
- Inform Federal Agencies of user needs
- Enhance the backbone based on user needs
- Incorporate sub-regional systems

Diverse Needs Require a Regional Approach



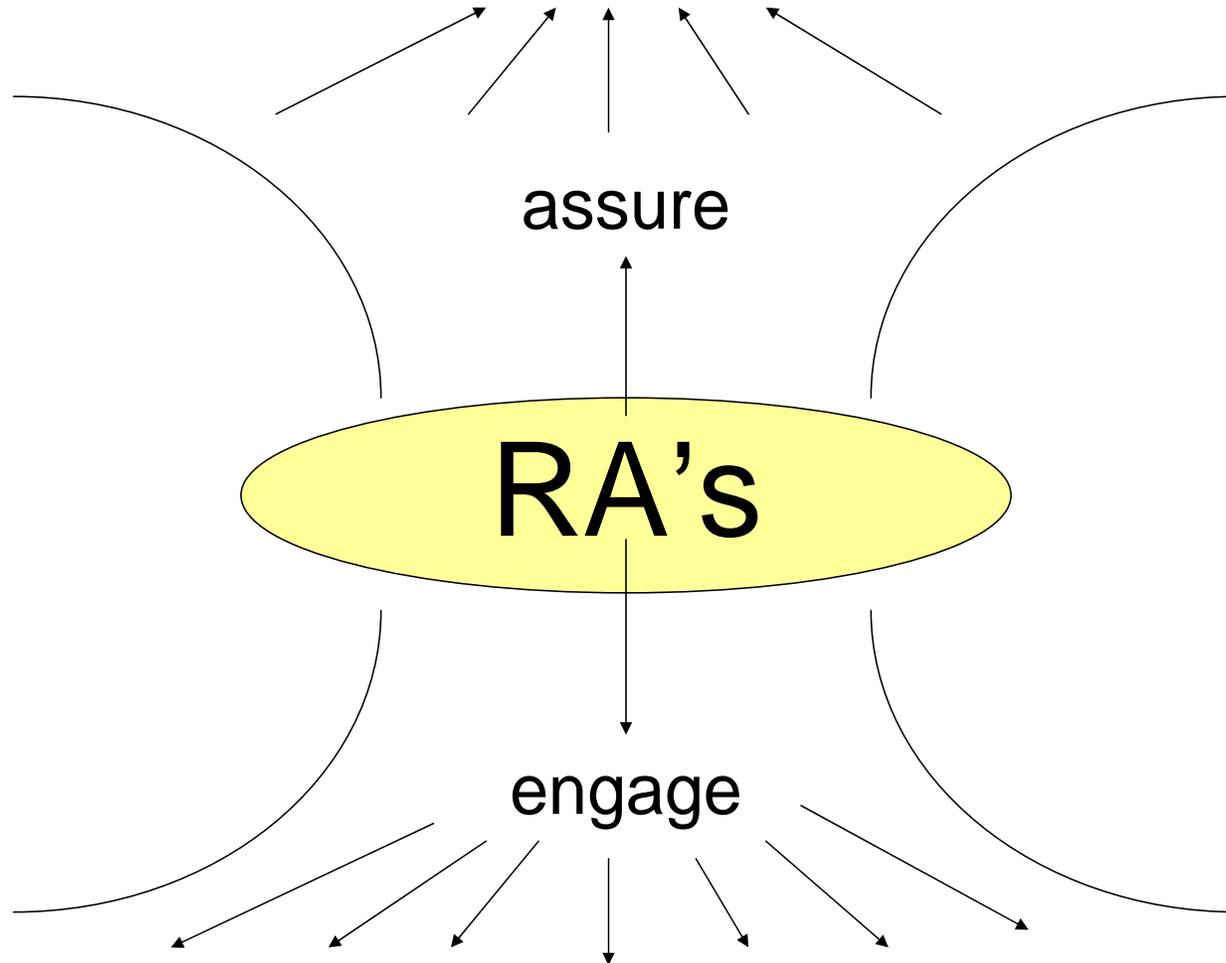
What are RAs ?

- Regional organizations through which to integrate and sustain existing coastal ocean observing capability, to prioritize for new operational systems, and to provide easy, user-driven access to data, data products, model forecasts about regional marine conditions to users
 - “coastal ocean” includes inland marine waters (*head of tide to EEZ*)
 - “user-driven” means users define priorities, delivery
- A regional system designed to produce and disseminate coastal ocean observations and products deemed necessary by the region’s users in a common manner and according to sound scientific practice

Why have RAs ?

- Regional differences
 - e.g. Fisheries concerns in Maine are not those of the Gulf nor those of Hawaii nor those of the Chesapeake nor those of the PNW nor those of
 - e.g. Data needs for HABs in Maine are not those of the Gulf nor those of Hawaii nor those of the Chesapeake nor those of the PNW nor those of
- Leverage
 - The federal govt alone cannot afford nor mobilize what it will take (\$ and FTEs) to make and operate Regional Coastal Ocean Observing Systems nationwide
 - The federal govt cannot engage with private and public sector services and assets with the same ease that a RA can
 - RAs can effectively build an educated and involved

**CONSISTENT NATIONAL
CABABILITY**



DIVERSE LOCAL STAKEHOLDERS

Will IOOS ever happen?

Re funding:

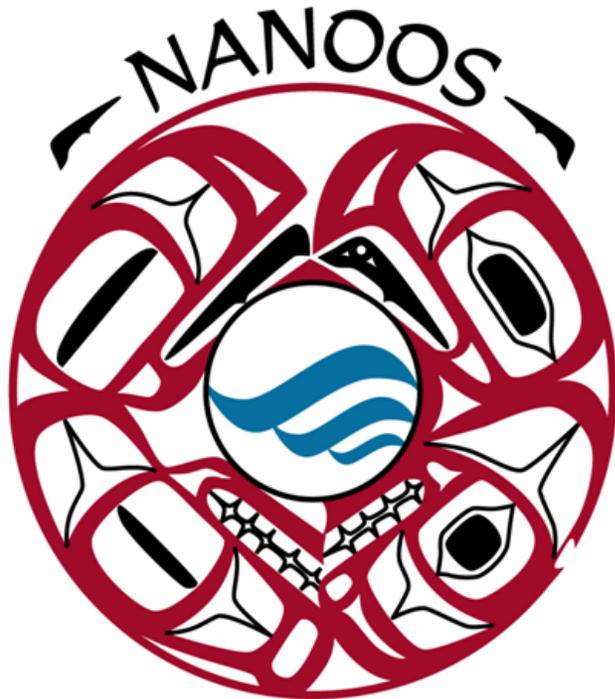
For the first time, the President's budget contained line items for IOOS in 2008. The budget contained \$16.3 million for IOOS which includes \$11.5 for Regional IOOS; \$2.5 for data management and \$2.3 for coastal enhancements (NWLON and sensors for NDBC buoys).

This is good news but falls far short of the needs \$138 million requested in the Ocean Commission Report.

Re authorizing legislation:

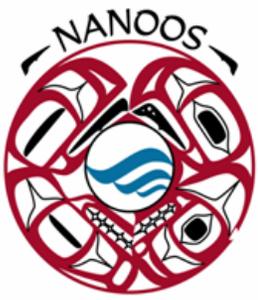
Senators Snowe (R-ME) and Cantwell (D-WA) introduced the bill to the Senate. Congressman Allen (D-ME) introduced the bill to House, as part of the Energy Bill. It passed both.

Northwest Association Of Networked Ocean Observing Systems (NANOOS)



<http://www.nanoos.org>





Regional Characteristics

- **Coastal ocean:**

- Northern extent of California Current
 - Winds, topography, freshwater input, ENSO & other climate cycles

- **Major inland basins:**

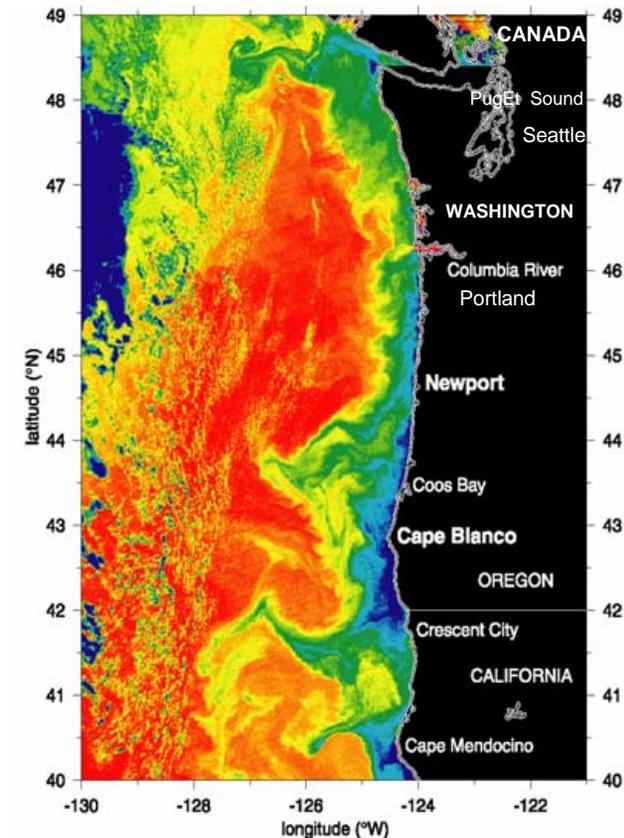
- Puget Sound-Georgia Basin, Columbia River
 - Urban centers, nearshore development, climate variation

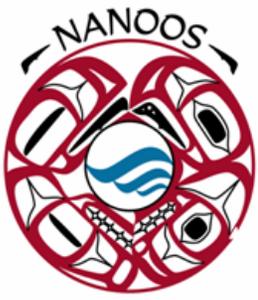
- **Coastal estuaries:**

- Willapa Bay, Grays Harbor, Yaquina Bay, Coos Bay, and 20 more
 - Resource extraction, development, climate variation

- **Major rivers:**

- Columbia River (~75% FW input to Pacific from US west coast)
- many rivers (e.g., Fraser, Skagit) via Strait of Juan de Fuca
 - Dredging, water regulation, climate change





ID of PNW User Groups

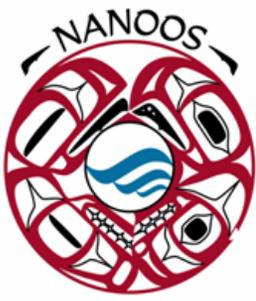
From NOAA/NANOOS analysis:

NEEDS



SYSTEM

- Marine shipping and oil transport/spill remediation
- Search and rescue
- Shellfish fishery and aquaculture
- Marine recreation
- Natural resource/environmental management
- National and homeland security
- Finfish aquaculture
- Research institutions
- Education
- Commercial groundfishing
- Crab fishery

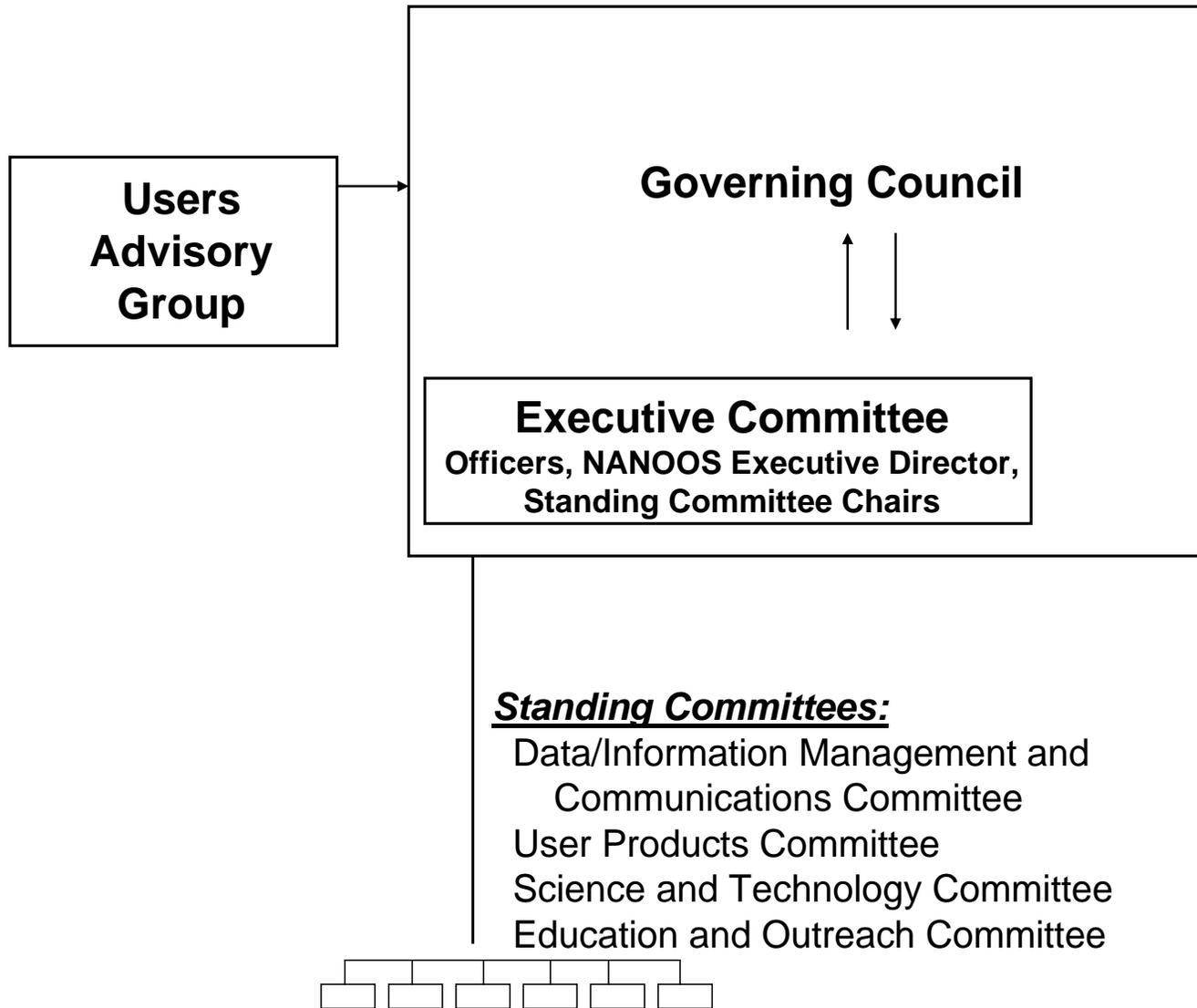


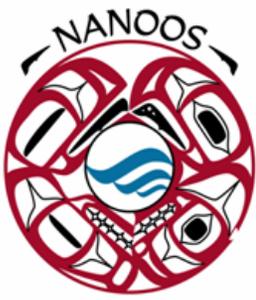
Building NANOOS: A brief history

- **Late 2003:** 1st year planning grant from NOAA Coastal Services Center
- **2003: Pacific Northwest Regional Ocean Observing System Workshop I**
 - Charter; Steering Committee
- **2004: IOOS Pilot proposal** regarding estuaries and shorelines funded by NOAA CSC
- **2004: NANOOS Governance Workshop II**
 - Governance Structure; User Needs Forum; Prioritization for Federal and Regional Activity
- **2005: NANOOS System Design Workshop III**
 - Priority User Needs and Responsive System Design
- **2005: NANOOS Industry Day**
 - Industry Needs, Opportunities, and Issues
- **2005: NANOOS MOA activated**
- **2006: NANOOS holds Election, Governing Council and Standing Committees**
- **2007: NANOOS wins 3-year award to build Regional Coastal Ocean Observing System**



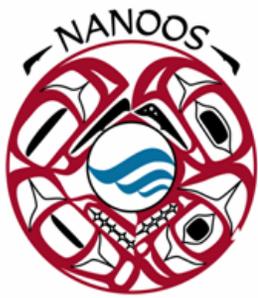
NANOOS: Governance structure





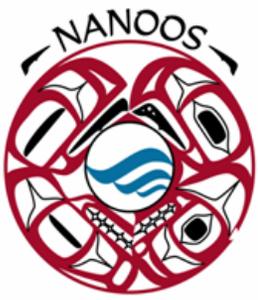
NANOOS Members *to date...*

1. Ocean Inquiry Project
2. Oregon Dept of Land Conservation & Development
3. Surfrider Foundation
4. The Boeing Company
5. Oregon State University
6. Puget Sound Action Team
7. University of Washington
8. WET Labs, Inc.
9. Oregon Health and Science University
10. Quileute Indian Tribe
11. Oregon Dept of Geology and Mineral Industries
12. Humboldt University
13. Marine Exchange of Puget Sound
14. Washington State Dept of Ecology
15. Pacific Northwest National Laboratory
16. Port of Newport
17. Puget Sound Harbor Safety Committee
18. Sound Ocean Systems, Inc.
19. Council of American Master Mariners
20. Hood Canal Salmon Enhancement Group
21. Pacific Salmon Center
22. Northwest Indian Fisheries Commission
23. Sea-Bird Electronics, Inc.
24. Western Association of Marine Laboratories
25. SAIC
26. OR Dept Fish and Wildlife
27. King County Dept Natural Resources & Parks
28. Western Resources and Applications
29. OR Dept State Lands



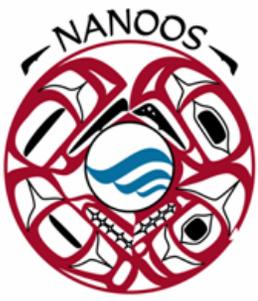
NANOOS Members *to date...*

-
1. Ocean Inquiry Project
 2. Oregon Dept of Land Conservation & Development
 3. Surfrider Foundation
 4. The Boeing Company
 5. Oregon State University, incl. OR Sea Grant
 6. Puget Sound Action Team
 7. University of Washington, incl. WA Sea Grant
 8. WET Labs, Inc.
 9. Oregon Health and Science University
 10. Quileute Indian Tribe
 11. Oregon Dept of Geology and Mineral Industries
 12. Humboldt University
 13. Marine Exchange of Puget Sound
 14. Washington State Dept of Ecology
 15. Pacific Northwest National Laboratory
 16. Port of Newport
 17. Puget Sound Harbor Safety Committee
 18. Sound Ocean Systems, Inc.
 19. Council of American Master Mariners
 20. Hood Canal Salmon Enhancement Group
 21. Pacific Northwest Salmon Center
 22. Northwest Indian Fisheries Commission
 23. Sea-Bird Electronics, Inc.
 24. Western Association of Marine Laboratories
 25. SAIC
 26. OR Dept Fish and Wildlife
 27. King County Dept Natural Resources & Parks
 28. Western Resources and Applications
 29. OR Dept State Lands
- | | |
|---|-------------------|
|  | Tribal Gov't |
|  | State/local Gov't |
|  | Industry |
|  | Academia/Research |
|  | NGO |



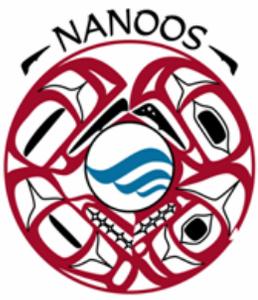
NANOOS Successes

- The numerous NANOOS GC members represent a broad spectrum of the marine community (27% local Gvmt incl tribes, 27% NGO/Education, 23% Industry, 23% Research); their involvement is strong and supportive.
- NANOOS has gained substantial stakeholder input on RCOOS, data products, and outreach priorities from broad workshops and focused meetings.
- NANOOS has an MOA and governance structure identified, vetted and proven successful.
- NANOOS has elected Officers and Standing Committees

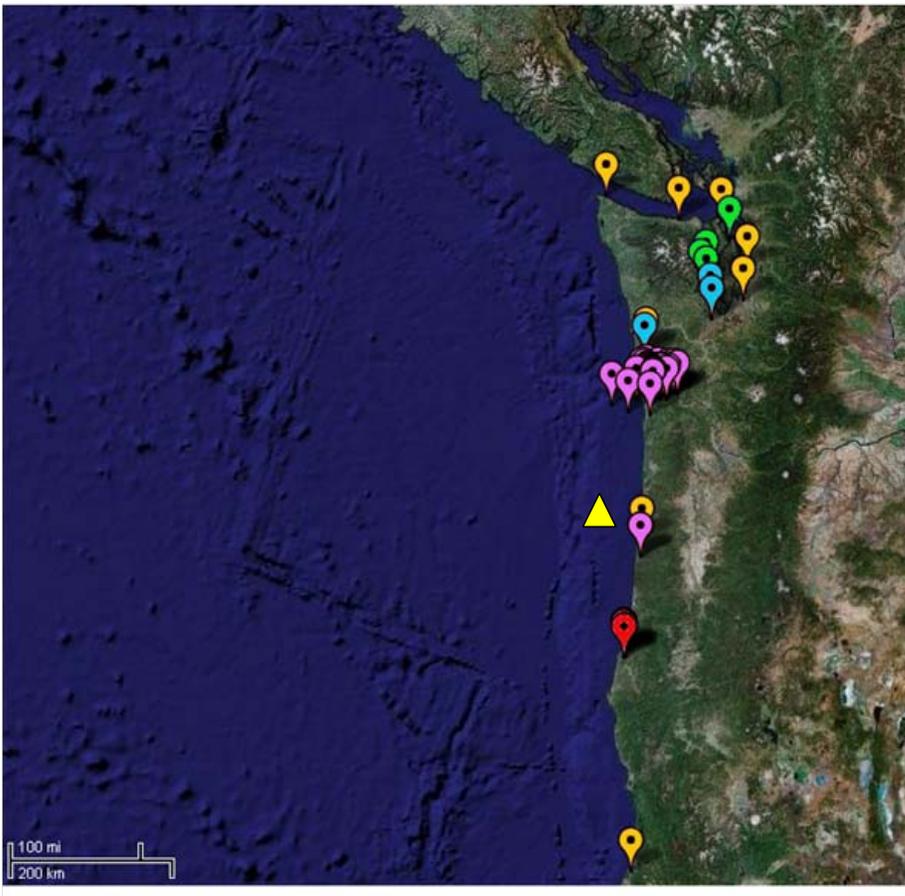


Building NANOOS: System design strategy

- **Integrate what we have:**
 - NANOOS Pilot project
 - Other assets
- **Strategize to build what we need:**
 - Prioritize NANOOS backbone with federal agencies and the needs for our Regional Coastal Ocean Observing System (RCOOS)



Pre-existing observing assets that NANOOS has integrated. Data from all pictured assets are available via link from NANOOS website



Locations of monitoring buoys in the PNW

Estuarine buoys operated by:

golden (NOAA) purple (OHSU)
green (UW) red (ODSL/NERRS)
blue (WDOE)

Coastal buoys operated by:

yellow (OSU/OrCOOS)

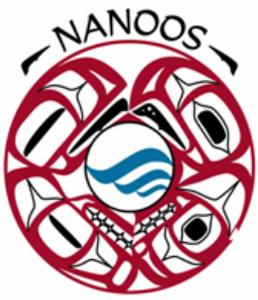
Olympic Coast National Marine Sanctuary Mooring Array



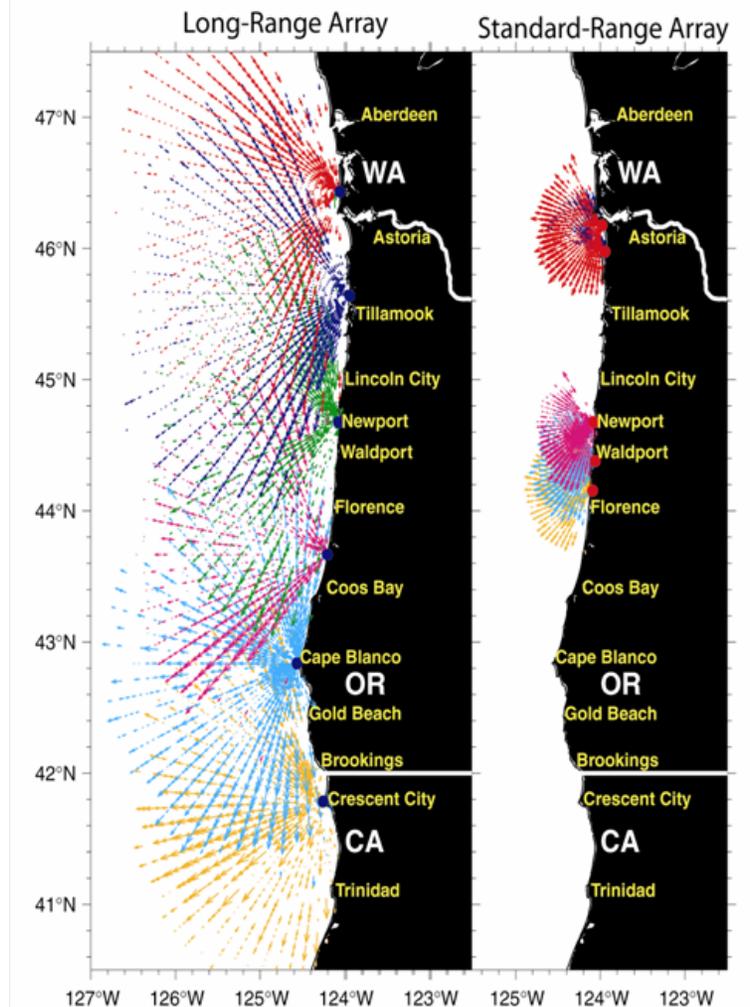
- Initiated in 2000
- Sites coordinated with ORHAB, PISCO and OCNMS needs
- Sites stable since 2002; addition of Cape Elizabeth in 2004
- Hypoxia monitoring initiated in 2004
- Seasonal array – late April to mid Oct, weather dependent

Olympic Coast National Marine Sanctuary Mooring Array

- Data available from OCNMS
 - Contact Ed.Bowlby@noaa.gov
- Data eventually available at:
 - <http://data.nodc.noaa.gov/nmsp/wcos>
 - Currently hosts unflagged thermistor data from west coast sanctuaries/PISCO including OCNMS



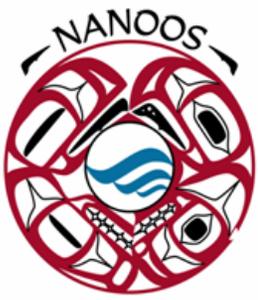
Pre-existing observing assets that NANOOS has integrated. Data from all pictured assets are available via link from NANOOS website



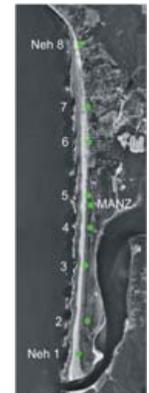
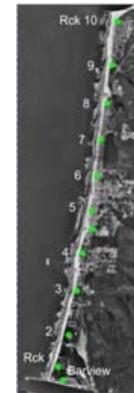
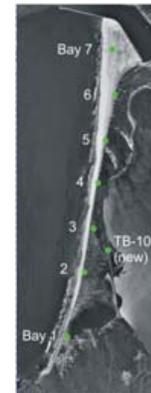
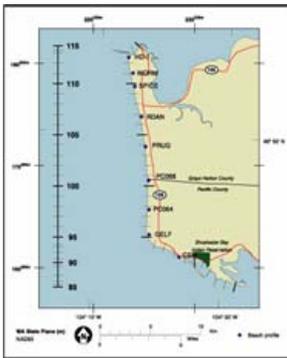
Locations of HF sites in the PNW

Six long-range systems (left panel) are operated near 5 MHz, with a range ~180km, range resolution ~6km, and angular resolution ~5 degrees.

Five standard-range systems (right panel) are operated near 12 MHz, with a range ~50km, range resolution of 2km, and angular resolution of 5 degrees.



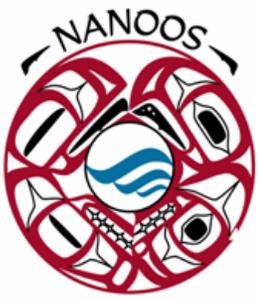
Pre-existing observing assets that NANOOS has integrated. Data from all pictured assets are available via link from NANOOS website



Locations of beach monitoring sites in PNW

Coastal beaches in Washington monitored by WDOE (left four panels): North Beach; Grayland Plains; Long Beach; Clatsop Plains.

Coastal beaches in Oregon monitored by DOGAMI (right three panels): BayOcean Spit; Rockaway; Nehalem Spit



Toward a system design...

NANOOS workshop 3

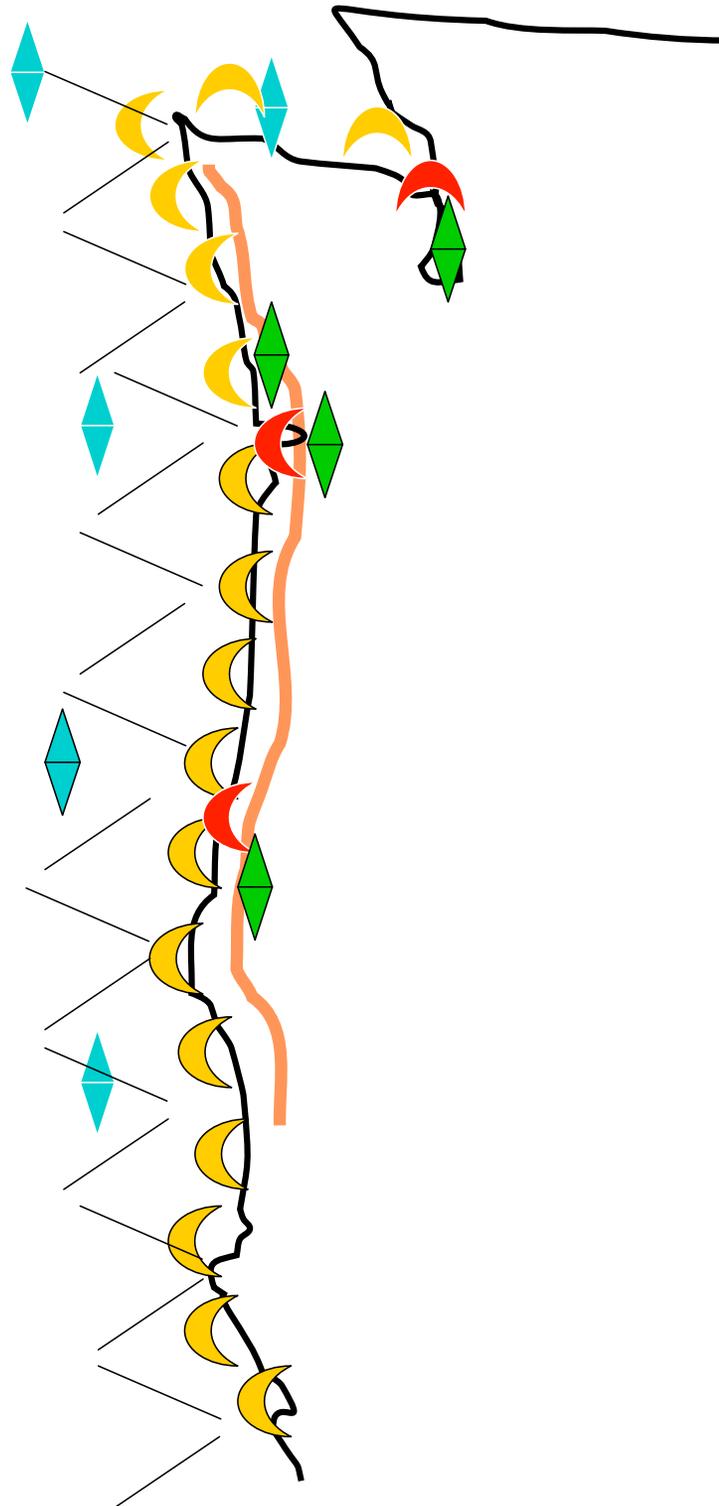
GOAL: To identify and prioritize user-driven data products and design the observational system that can be responsive to these needs.

To do this, and using the initial priorities for the NANOOS observing systems developed at the second NANOOS Workshop, we will explore the following three related questions:

- * What are the specific, prioritized data products and who are the users who need these? ([Breakout #1, Mon afternoon](#))
- * Based on these prioritized products, what variables are needed? ([Breakout #2, Tues morning](#))
- * Given the priority variables identified, what are the system design priorities (location, measurement capabilities, phasing, etc.) for various technologies? ([Breakout #3-4, Tues afternoon-Wed morning](#))

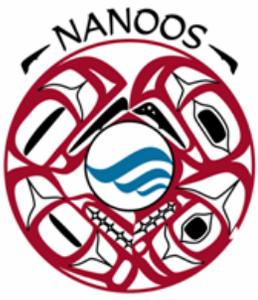
NANOOS
RCOOS

Conceptual
Design



-  Coastal buoy
-  Existing coastal buoy
-  Existing estuarine buoys
-  Glider track
-  HF network
-  Existing HF
-  Hi resolution HF
-  Shoreline assessment



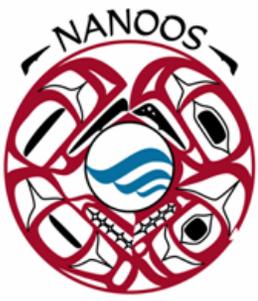


NANOOS response to NOAA IOOS BAA

“The Governing Council of the Northwest Association of Networked Ocean Observing Systems (NANOOS), on behalf of its members, proposes to enhance its Regional Coastal Ocean Observing System (RCOOS). Established in 2003, NANOOS used results of nearly three year’s NOAA-funded efforts and other regional contributions to build regional association partnerships in the Pacific Northwest (PNW) and to identify high priority user needs and requirements. We propose enhancements to develop a robust RCOOS for NANOOS that addresses these needs.

”

...



NANOOS RCOOS Y1-3 priorities & approach

We will specifically focus on high-priority PNW applications of:

- a) maritime operations;
- b) ecosystem impacts including hypoxia and HABs;
- c) fisheries; and,
- d) mitigation of coastal hazards

*to guide our efforts as these issues represent those having the **greatest impact on PNW citizenry and ecosystems** and, we believe, are **amenable to being substantively improved** with the development of a PNW RCOOS.*

Ocean observing systems



Subsystems:

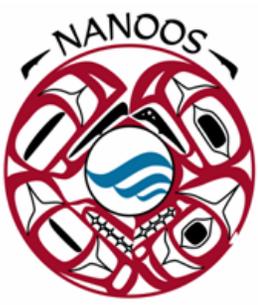
Observing

Analysis and modeling

**Data management and
communication**

Education and outreach

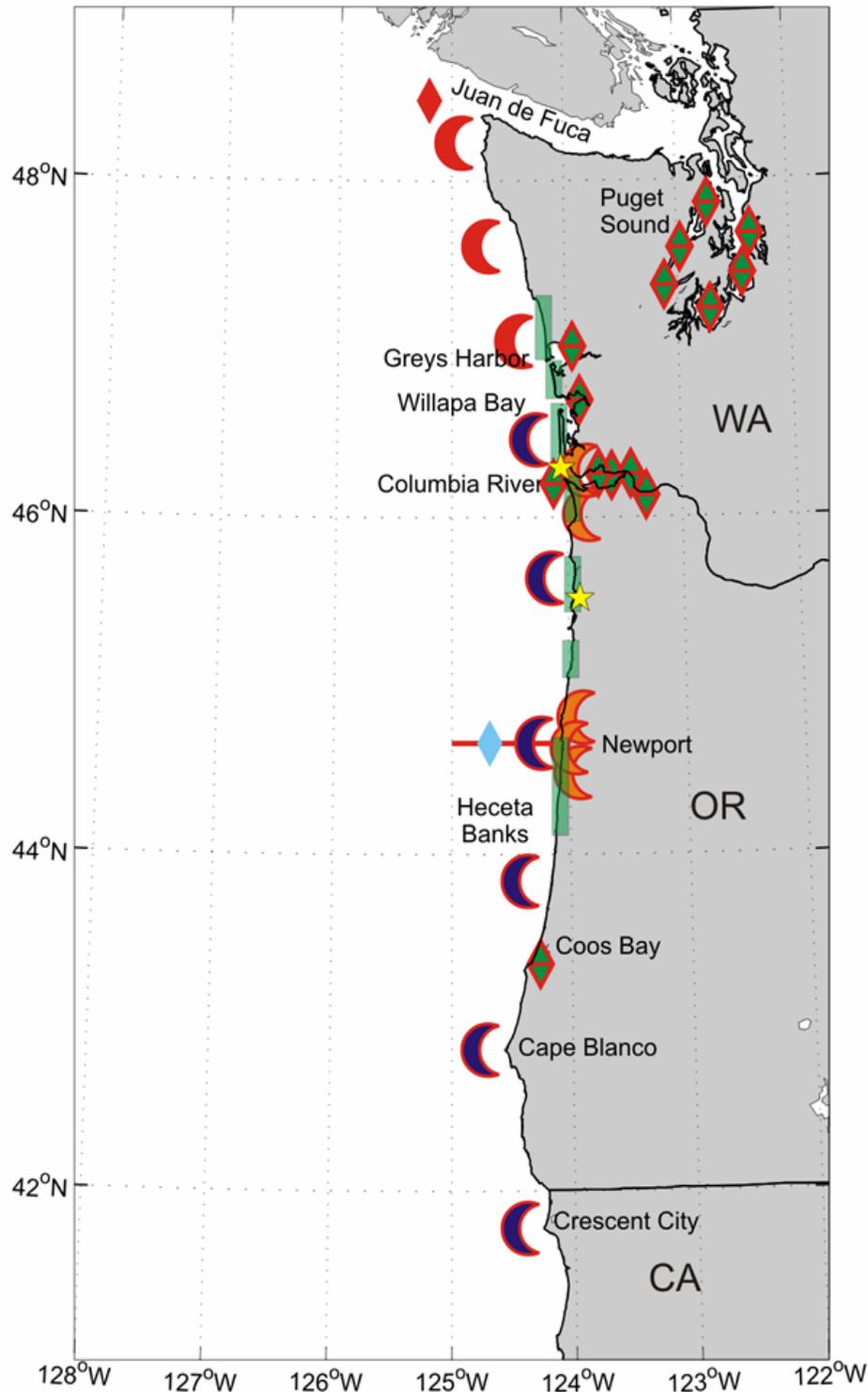




NANOOS RCOOS Objectives

- Maintain existing surface **current mapping** capability and expand with new prioritized HF radar sites in the PNW.
- Maintain and expand **observation capabilities in PNW estuaries**.
- Strategically expand coverage and range of **observations in the PNW shelf**, in coordination with emerging national programs.
- Maintain and expand core elements of existing **beach and shoreline observing programs** in Oregon and Washington.
- Create a federated system of **numerical daily forecasts of PNW circulation**.
- Commence development of state of the art cross-shore profile change models and probabilistic **shoreline change models**.
- Bolster ongoing **Data Management and Communications (DMAC)** activities to support routine operational distribution of data and information.
- Build from and strengthen ongoing NANOOS **education and outreach** efforts.

NANOOS RCOOS Enhancement Conceptual Design



- ◆ Proposed new coastal buoy
- ◆ Existing coastal buoy to be sustained
- ◆ Existing estuarine buoys* to be sustained in partnership
- Existing glider track to be sustained
- ☾ Proposed new long-range HF site
- ☾ Existing long-range (180 km range) HF site to be sustained in partnership
- ☾ Existing standard-range (50 km range) HF site to be sustained in partnership
- ★ Proposed new port wave radars
- ▬ Shoreline assessment to be sustained in partnership

*estuarine buoys are more numerous than symbols



NANOOS DMAC

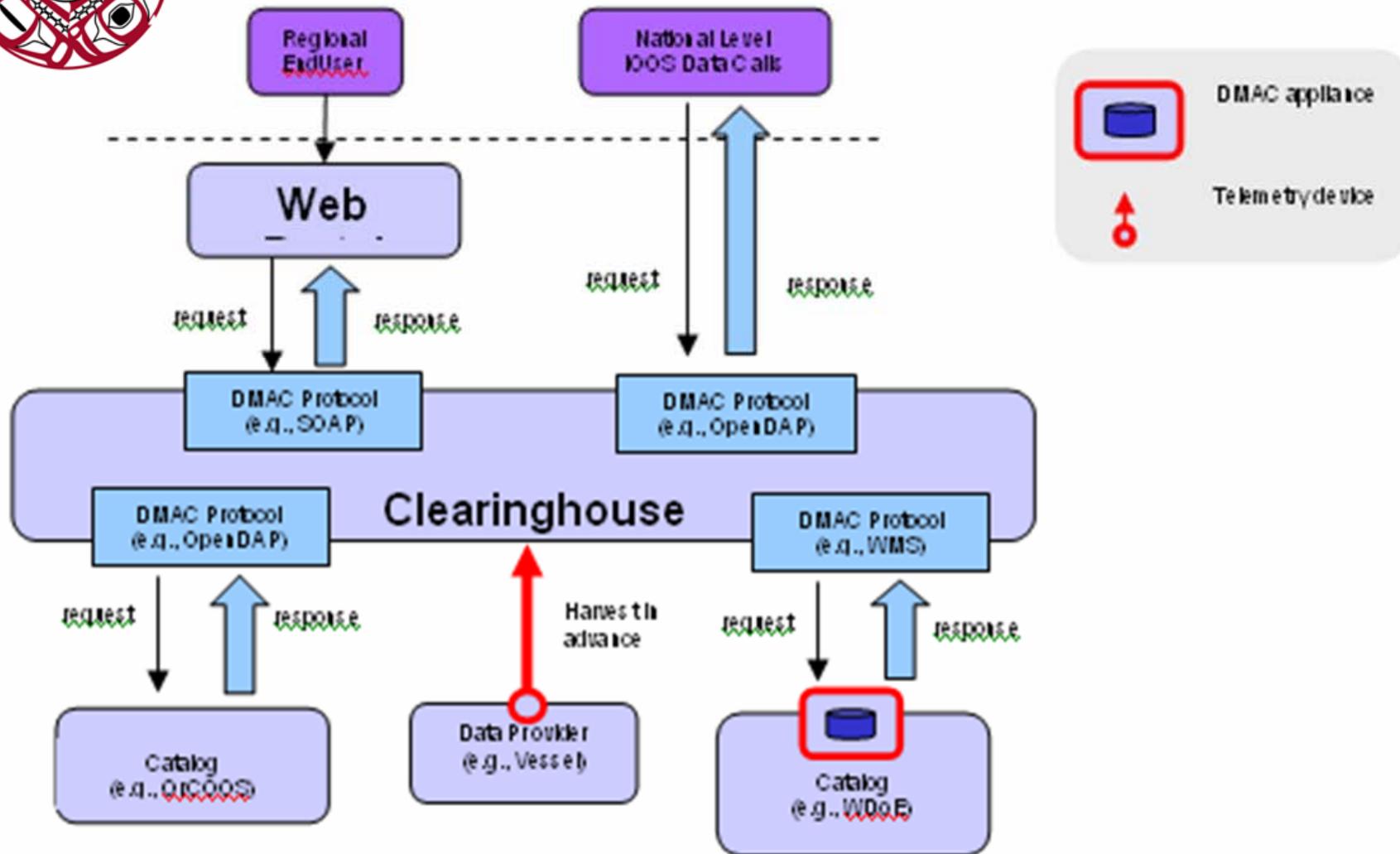
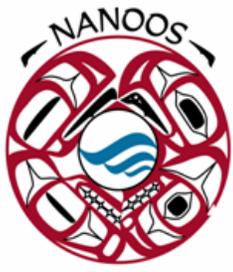


Chart showing NANOOS DMAC system of systems centered around a Clearinghouse and Web Portal. Requests may be served directly by the Clearinghouse or forwarded to remote catalogs.



NANOOS home page

Welcome to NANOOS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.nanoos.org/

Google Search Check AutoLink AutoFill Subscribe Options

Northwest Association of Networked Ocean Observing Systems

Oregon, Washington, Northern California, British Columbia

NANOOS PILOT PROJECT

A NANOOS prototyping project.

NANOOS Planning and Implementation: Workshops, Reports, Presentations, Documents, and the MOA: [This Link!](#)

A project to develop strategies and build assets for the integrated observation of the estuaries and shorelines of the Northwest. The project is developing nowcast and predictive capabilities for this environment, as well as interactive access to archival data, real-time data, and selected forecasts.

Hourly Buoy Data

Buoys and Stations
Collecting Weather and Ocean Data

Hourly information developed for marine operations includes wind, wave, visibility, air temperature, water temperatures at various depths, salinity and more. Real-time and historical data from NOAA.

Weather forecasts

Regional forecasts

Weather Services:

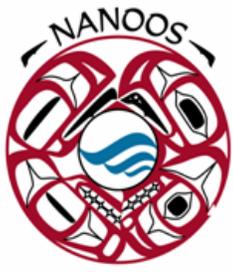
- NWS, Seattle
- NWS, Portland
- NWS, Northwest - Experimental
- British Columbia

Coastal Marine Forecasts

National Data Buoy Center
Pacific Offshore
Ocean Prediction Center - Wind/Waves/
Sea State Forecasts
National and Canadian forecasts

- [Weather Channel.com](#)
- [WeatherUnderground.com](#)
- [Canadian weather](#)

- [NANOOS Home](#)
- [About the logo](#)
- [About NANOOS](#)
- [In the News](#)
- [Dial-A-Buoy](#)
- [OpenDAP data access](#)
- [Ocean Conditions](#)
- [Atmospheric](#)



NANOOS home page

Welcome to NANOOS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.nanoos.org/

Google Search Check AutoLink AutoFill Subscribe Options

- Ocean Conditions
- Atmospheric Conditions
- For PDAs
- Education
- Surface currents
- NANOOS Contacts
- Join email list

Projects

Ongoing or planned projects with direct relevance to the Ocean Observing System. These projects presently have an educational or research approach, but they are likely to be key contributions to the Northwest observing system.

Satellite Imagery

Sea Surface Temperature

Pacific Satellite Imagery GOES 8 East Images (Visible, infrared, water vapour, etc) (Every Hour)

Quikscat Winds Coastwatch/NOAA

Marine Biotoxin Bulletin

Maps of beaches in the Puget Sound Region that are closed to harvesting of shellfish because of biotoxin levels. The Washington State Biotoxin Program monitors biotoxins in molluscan shellfish, closing harvest areas when high levels pose a threat to public health.

Wave Forecasts

Current wave height analysis for the U.S. West Coast.

Puget Sound Tides

Predictions for tidal elevation and current for many location in Puget Sound.

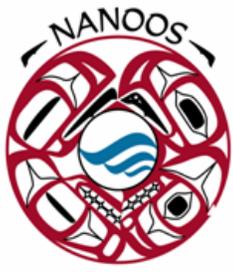
More Information on Puget Sound Tides

British Columbia Tides/Currents

Oregon Tides

Climate Pacific Decadal Oscillation (PDO/ENSO)

Climate variations in the northwest over timescales from years to decades are dominated by the Pacific Decadal Oscillation, an ENSO related phenomena. Here is the latest outlook on the evolution of the PDO state.



NANOOS data access

NANOOS Pilot Project - Mozilla Firefox

File Edit View History Bookmarks Tools Help

NANOOS Pilot Project

Pacific Northwest estuaries and shores

[About](#)
[Contact us](#)
[FAQ](#)

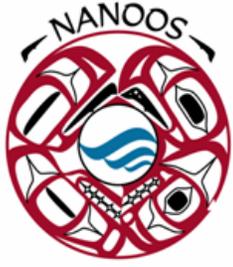
[Estuaries](#)

[Shores](#)
[North Beach](#)
[Grayland Plains](#)
[Long Beach](#)
[Clatsop Plains](#)
[Rockaway](#)

[Observatories](#)
 [CORIE](#)
 [NOAA](#)
 [ORCA](#)
 [PRISM](#)
 [SSNERR](#)
[WDoE](#)

[Help](#)

[Display](#)



NANOOS Real-time estuarine data

NANOOS - ORCA, Puget Sound, ORCA, Puget Sound, Twanoh - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.ccalmr.org.edu/nanoos/orca/?platform=Twanoh

Getting Started Latest Headlines Welcome to the Hood...

NANOOS Pilot Project NANOOS - ORCA, Puget Sound, OR...

Puget Sound, Twanoh, WA Observatory: ORCA

[2 day profile](#)

[7 day profile](#)

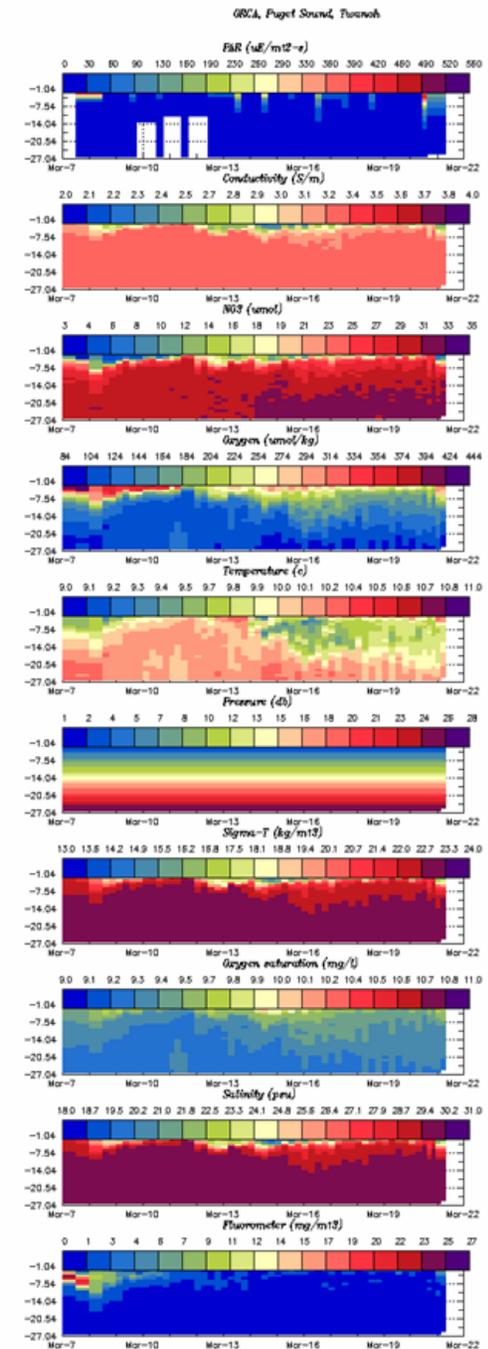
[15 day profile](#)

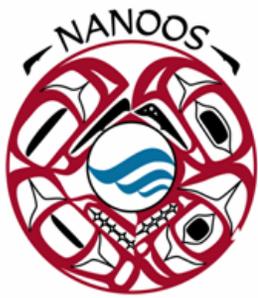
Recent Data for Twanoh

time	depth	measurements
03/21/2007 12:06:41 pm	1.178 m	Fluorometer 1.68 mg/m ³ PAR 14.14 uE/m ² -s Salinity 18.76 psu Pressure 1.18 db Oxygen saturation 10 mg/l Conductivity 2.16 S/m Oxygen 325.24 umol/kg NO3 6.05 umol Sigma-T 14.3 kg/m ³ Temperature 10.02 c
03/21/2007 12:07:36 pm	14.217 m	Temperature 9.92 c NO3 30.77 umol Fluorometer 0.28 mg/m ³ Sigma-T 22.87 kg/m ³ Oxygen saturation 9.34 mg/l Conductivity 3.28 S/m Oxygen 133.39 umol/kg PAR 16.3 uE/m ² -s Pressure 14.33 db Salinity 29.75 psu
03/21/2007 12:08:22 pm	26.588 m	Oxygen 84.79 umol/kg Oxygen saturation 9.28 mg/l PAR 0.83 uE/m ² -s Conductivity 3.33 S/m Pressure 26.81 db Fluorometer 0.12 mg/m ³ NO3 32.95 umol Salinity 30.04 psu Sigma-T 23.05 kg/m ³ Temperature 10.16 c

[NANOOS Station Map](#) [Data Access via SOS](#)

Done





NANOOS Real-time coastal shelf data

NANOOS Pilot Project CORIE - Network CCALMR Off-sho...

CORIE

CCALMR EBS OGI OHSU

CORIE Observations: ogi01 - CCALMR Off-shore Buoy #01



Position:

Last report Date: Tue, 19 Dec 2006 13:02:49 -0500 (GMT)
POSITION ALERT: 0.0017 minute, 46 11.283 N, 123 44.762 W
 Reference position: 46 02.957 N, 124 15.091 W (reference position)

ogi01 does not have real time data. See [Public Data Access](#) for archival data

[About](#) [CORIE Map](#) [Public Data Access](#) [Stations Index](#)



OGI assumes no legal responsibility for the accuracy, completeness, or usefulness of this information. See [DISCLAIMER](#)

NANOOS Pilot Project Data Archive ogi01

CTD at an estimated depth of 0.0 m below free surface ([current page](#))
[CTD](#) at an estimated depth of 5 m below free surface
[CTD](#) at an estimated depth of 11 m below free surface
[CTD](#) at an estimated depth of 25 m below free surface
[CTD](#) at an estimated depth of 50 m below free surface

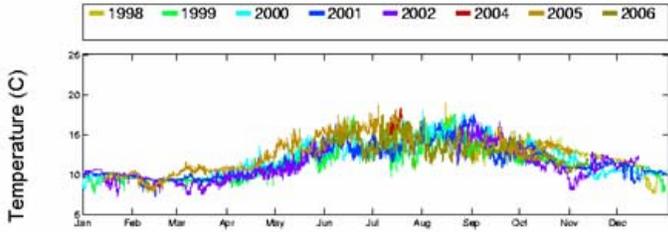
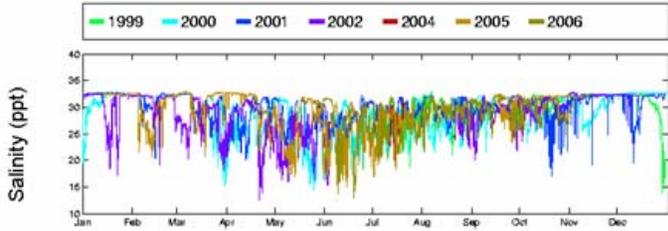
Time series shown in this page include only data that passed [CORIE quality control procedures](#) to quality level 2. These data can be [downloaded](#), but there is no expressed or implied warranty that the data are suitable for your intended use. The CORIE archives may contain more data, including unchecked data and data that do not meet the CORIE standards. Access to offline data may be requested by email (webmaster@ccalmr.ogi.edu)

- [Salinity](#)
- [Temperature](#)

To see data for all variables, for a single year or as an aggregate over all years of record, select the desired period:

- [All Years](#)
- 2006
- 2005
- 2004
- 2002
- 2001
- 2000
- 1999
- 1998

You can also see [statistics](#) or [real-time data](#) for this station or look at other [CORIE stations](#).

[Main](#) [Observations](#) [Modeling](#) [Applications](#) [R&D](#) [Education](#) [Contact Us](#)

[an error occurred while processing this directive]

Done



NANOOS surface currents

Mapping Coastal Ocean Currents - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://bragg.oce.orst.edu/

Getting Started Latest Headlines Welcome to the Hood...

Mapping Coastal Ocean Currents Oregon Coastal Ocean Observing Sys...

MAPPING OREGON COASTAL OCEAN CURRENTS

Home

Ocean Current Maps Available:

- Entire Oregon Coast *
- Near Newport Oregon **
- Near Columbia River mouth **

About Ocean Currents
Mapping Lab

* medium resolution
** high resolution

SURFACE CURRENTS

- New Recent currents along entire Oregon Coast
- New Currents at Columbia River mouth
- Maps of Recent surface currents off Newport, Oregon
- An animation of last 5 days currents from standard-range array

Experimental:

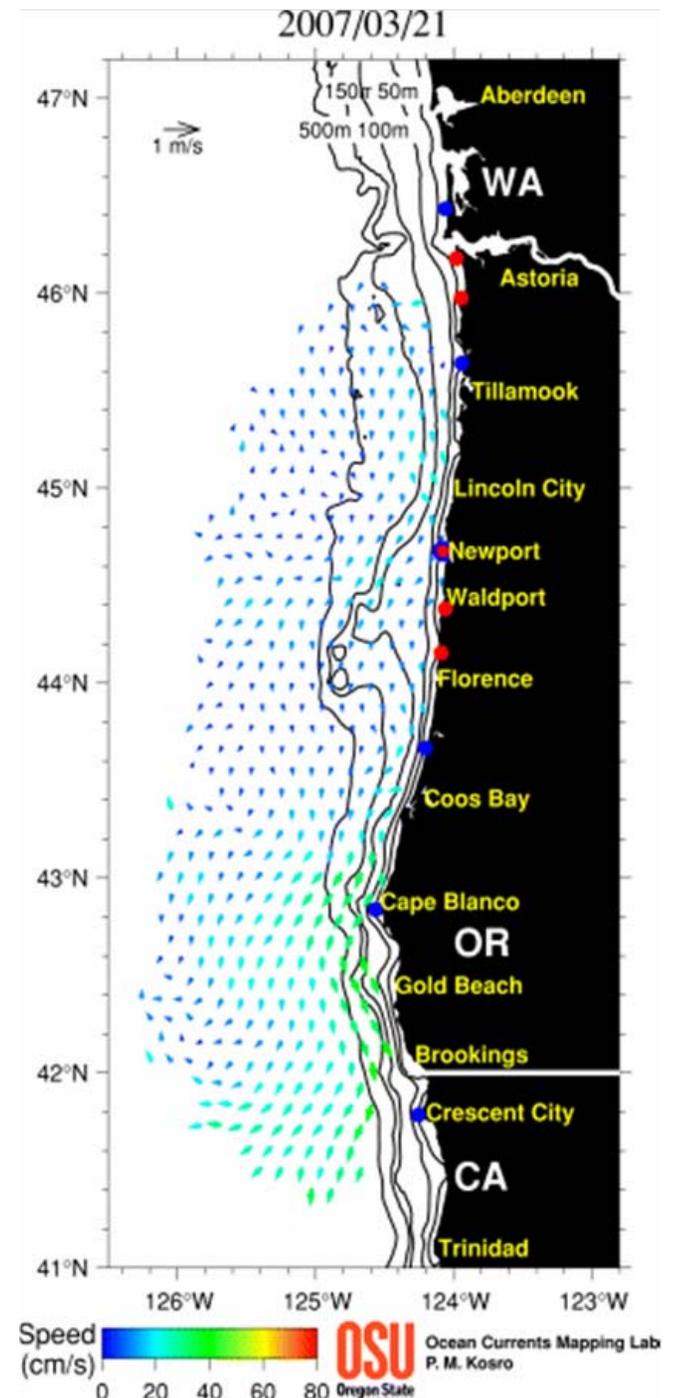
- apparent gaps in coverage often do not reflect real data losses
- frames are running 24-hr averages

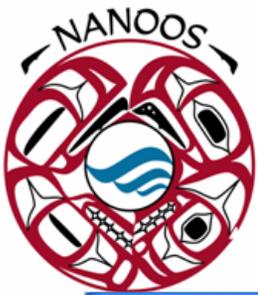
- HF maps from the COAST experiment, spring/summer 2001



Related Sites

- [CODAR Ocean Sensors](#)
- [COAST](#)
- [RISE](#)
- [Other SeaSonde Users](#)





NANOOS Shoreline data

beach profiles - north beach sub-cell - Mozilla Firefox

http://www.ecy.wa.gov/programs/sea/swces/research/change/monitoring/maps/profile_nb.htm

Getting Started Latest Headlines Welcome to the Hood...

NANOOS Pilot Project beach profiles - north beach sub-...

Southwest Washington Coastal Erosion Study **Overview** Research Products Outreach

Coastal Change | Sediment Budget | Coastal Processes | Predictive Modeling | Management Support

research > coastal_change > monitoring > beach_profiles > data > north beach [site map](#)

Beach Morphology Monitoring Program

Beach Profile Locations:

North Beach sub-cell

Select a beach profile on the map below to view data. Please be patient, the beach profile pages include several graphics and may take a while to load.

WA State Plane (m) NAD83

Coastal conditions [Top](#) | [Home](#) | [Search](#) | [Feedback](#)

Done

Beach Profiles - GP14109 - Mozilla Firefox

http://www.ecy.wa.gov/programs/sea/swces/research/change/monitoring/prof_pages/gp14109

Getting Started Latest Headlines Welcome to the Hood...

NANOOS Pilot Project Beach Profiles - GP14109

Southwest Washington Coastal Erosion Study **Overview** Research Products Outreach

Coastal Change | Sediment Budget | Coastal Processes | Predictive Modeling | Management Support

research > coastal_change > monitoring > beach_profiles > index > north_beach > GP14109 [site map](#)

Beach Morphology Monitoring Program

Beach Profile - GP14109

Beach state parameters - [Click to view Excel worksheet](#)

Done

Boater access to predictions

BIS BOATER INFORMATION SYSTEM
A Mariner's Navigational Resource

Sea Grant
Washington

Menu Topics

- BIS Portal Properties
- Chart Features
- Winds
- Tides
- Currents
 - Currents Graphics
 - Currents Numbers (knots)
- Temperature
- Precipitation
- Wave Height
- Cloud Cover
- Links
- Help
- About Sea Grant

Visualization

48°05.1' N 121°34.6' W 2pm Thu 22 Mar 2007

Information

BIS IS AN EXPERIMENTAL PROJECT ONLY:
NOT FOR NAVIGATIONAL OR OPERATIONAL PURPOSES
DISCLAIMER

Routes

New Delete Save

Thu 3-22-2007 Fri 3-23-2007 Sat 3-24-2007 Sun 3-25-2007

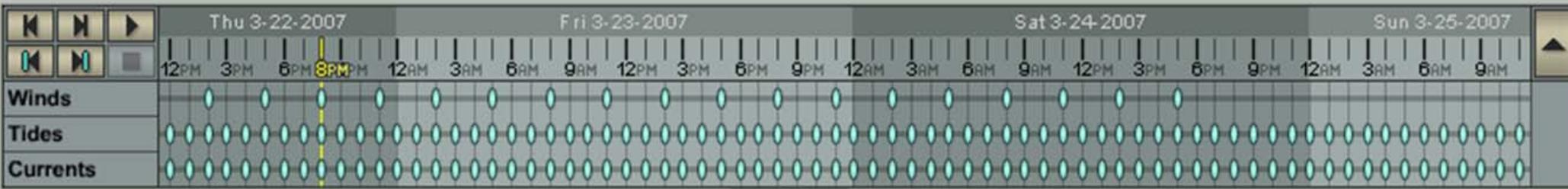
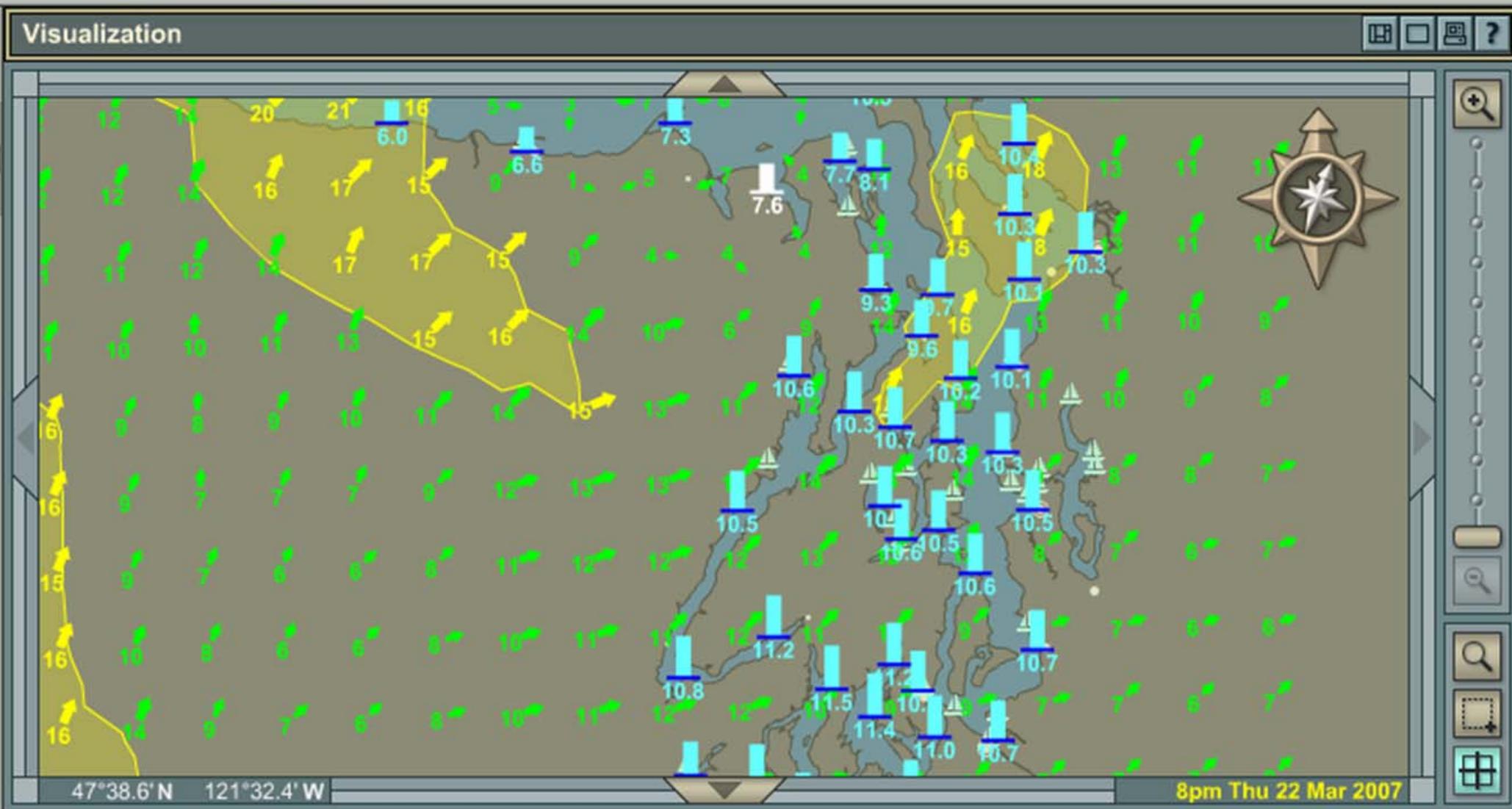
Winds
Tides
Currents

Tides - Gardiner, Discovery Bay

Time	Height (ft)
1:00 p	-0.98 ft
1:08 a	5.25 ft
1:52 p	-1.12 ft
2:07 a	6.1 ft
2:49 p	-0.89 ft
3:29 a	6.63 ft

8:10 p 7:52 a 6:26 a 9:13 a 9:34 p 7:55 a 7:01 a 7:07 a 11:08 p 7:64 a 7:42 a 7:48 a

Wind and tide predictions



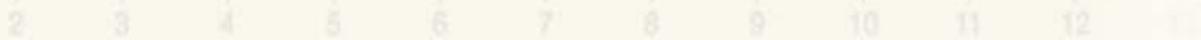
Shellfish Growing -



Real-time Water Quality Data for Shellfish Growers in the Pacific NW



A pilot project between NANOOS and the National Estuarine Research Reserve System



- home
- about
- reference
- e-mail alerts
- contacts
- links

Make Informed Decisions Based on Real-Time Data! This pilot project represents an effort to bring real-time water quality data to shellfish growers in the Pacific Northwest. The project has started with nine monitoring sites in Alaska, Washington, and Oregon. Expansion to other sites is anticipated.

Alaska

Are you at risk for a *Vibrio* bacterium outbreak in Kachemak Bay? Check temperature and other readings here.

Washington

Do your oysters have enough oxygen to thrive in the Hood Canal? Get the latest information now.

Oregon

What impact did the last rainfall have on salinity? See what's happening near Charleston and Valino Island.



email address:

password:

remember me

login

forgot? | join



2 3 4 5 6 7 8 9 10 11 12 13

Current Data : Charleston Bridge

[home](#)

[about](#)

[reference](#)

[e-mail alerts](#)

[contacts](#)

[links](#)

email address:

password:

remember me

[forgot? | join](#)



Temperature Salinity Dissolved O2 Turbidity PH

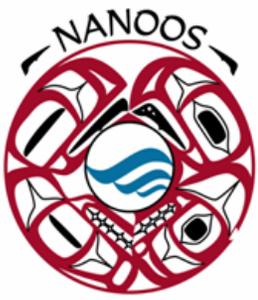
Current Data

Last 72 Hours



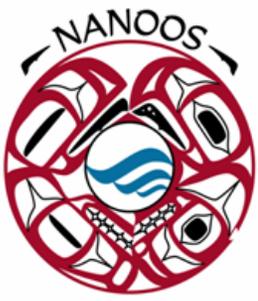
Fahrenheit Celsius

Time Period (click to change) 12 hrs 24 hrs 48 hrs 72 hrs



NANOOS Successes

- NANOOS Pilot project has allowed for multi-estuary information system connected and available through NANOOS portal.
- NANOOS Pilot has spearheaded technology transfer between Washington and Oregon shoreline management state agencies
- Information on high priority matters of regional marine concern (e.g., hypoxia in Hood Canal and outer coast) available through NANOOS portal
- Recent NERRS/NANOOS Joint Project to provide marine conditions in various instrumented locations to shellfish grower user community.
- NANOOS is out of the gate towards building a user-driven Regional Coastal Ocean Observing System.



How can you join in ?

- Become a NANOOS member
- Contact Jan Newton:
newton@apl.washington.edu
206 543 9152

NANOOS



“Every drop in the ocean counts.”

Yoko Ono