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News from the U.S. Integrated Ocean Observing System (U.S. IOOS®) and Northwest Association of Networked Ocean Observing Systems (NANOOS)

As the Executive Director of NANOOS (the Northwest Association

What is the U.S. Integrated Ocean Observing System (U.S. IOOS®)?

of Net-worked Ocean Observing Systems), I was very pleased when Captain Tom Bradley invited me to share information about my organization with CAMM members around the country. We benefit greatly from Captain Bradley's active participation in NANOOS and have previously presented information about national and regional efforts to deliver timely ocean information to national meetings of CAMM leaders at his invitation. NANOOS is the Pacific Northwest Regional Association responsible for developing, deploying and maintaining a Regional Coastal Ocean Observing System (RCOOS) as part of the U.S. National effort to deploy a fully robust and comprehensive Integrated Ocean Observing System (IOOS). This national effort is led by the U.S. Integrated Ocean Observing System (U.S. IOOS®) office in NOAA that, in addition to serving as the coordination office for federal efforts, also oversees regional observing effort managed by eleven Regional Associations, including NANOOS, arrayed along the nation's ocean coasts and Great Lakes.

As with the international Global Ocean Observing System, the U.S. IOOS® consists of two components: a global, open-ocean component and a coastal component focused on observations, products, and services needed from within the estuaries (head of tide) to the edge of the nation's Exclusive Economic Zone (EEZ). In the U.S. coastal zone, the notion of a "national backbone" was articulated in the Ocean. U.S. reports in which federal agencies were to be responsible for the funding and provision of a set of core and ancillary measurements. These would be augmented by higher density measurements provided by regionally-focused consortia of organizations (including industry, tribal, state and local governments, academia, and NGO's) that would augment the backbone federal measurements to both benefit federal agencies in fulfilling their mission requirements as well as to better serve regional needs. This approach was adopted as it was the most efficient way to fully meet federal agency mission coastal ocean information mandates, adequately understand and address regional ocean information needs, and build an informed ocean constituency in the U.S. There are presently eleven IOOS® Regional Associations throughout the U.S., each of which is responsible

for maintaining, operating, and improving a regionally-focused RCOOS that meets regional federal agency and other regional stakeholder coastal and ocean information needs.

NANOOS (<http://www.nanoos.org>) is the regional association of the national IOOS® for the PNW states of Oregon and Washington. The spatial domain of NANOOS extends from the U.S./Canada border in the north to Cape Mendocino, California in the south. Despite these political boundaries NANOOS maintains strong cross-boundary ties with observing programs in Alaska, British Columbia, and in central and northern California through our common purpose and because of the overlap of data and products. Established by charter in 2003, NANOOS now comprises well over 40 entities, including tribal, state, and local governments, industries, non-governmental organizations and academic institutions; all have signed NANOOS's operational Memorandum of Agreement (MOA) and now form its Governing Council.

U.S. IOOS® and Maritime Operations and Safety

A major sector that the U.S. IOOS® is designed to benefit is maritime operations and safety. Data provided by the system is used to issue weather and marine forecasts, as well as enhance national defense, marine commerce, and



navigation safety. As one example, a particular IOOS® data collection tool that is critical to saving lives, improving time and fuel efficiency, and enhancing oil-spill response is high-frequency radars that monitor sea surface currents. Several Regions around the country are working with the maritime community and the U.S. Coast Guard to provide and improve tools for mariners that are critical to the safe passage of vessels, efficient harbor navigation, and search-and-rescue operations.

The Southern California Region, SCCOOS (Southern California Coastal Ocean Observing System), paired currents data from radar systems with existing wave data into a user-friendly website providing tankers with up-to-date sea conditions as they enter the Port of Long Beach, California, one of our nation's busiest ports.

The Mid-Atlantic Region, MARACOOS (Mid-Atlantic Regional Association Coastal Ocean Observing System), worked with the U.S. Coast Guard to integrate sea surface current data from 26 high-frequency radars between Massachusetts and North Carolina into the U.S.C.G.'s mid-Atlantic Search and Rescue system in 2009. Collaboration is on-going and nationwide expansion is expected in 2012.

News from NANOOS, the Pacific Northwest Regional Association

At NANOOS, we are constantly striving to improve data and forecast products that meet the needs of marine stakeholders in the Pacific Northwest. Our main data portal, the NANOOS Visualization System (NVS), provides data and forecasts from over 25 data providers, including NOAA buoys, CDIP wave buoys, and sea surface current data. In addition to hosting our data and products on NVS, we also work with groups to provide tailored webpages fea-

turing data and forecasts relevant to their specific interests in a fashion most useful to them.

To further promote our efforts of to better understand the priorities of access to marine data and forecast needs in our region, NANOOS in partnership with U.S. IOOS®, is hosting a workshop to bring together users and providers of marine information to explore how monitoring and forecasting the ocean, coast and estuaries can best deliver safety, economic and environmental benefits to industries, government and citizens

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Monitoring and forecasting the ocean, coast and estuaries delivers important safety, economic and environmental benefits to industries, government and citizens throughout the Pacific Northwest region.

Ensuring coastal safety requires an understanding of hazards such as tsunamis, flooding, erosion and harmful algal blooms. Understanding the coastal ocean and estuaries provides direct economic benefits to maritime operations, ports and harbors, fisheries, aquaculture and the recreation and tourism industries. Even far inland, the ocean drives weather and climate affecting all businesses and citizens.

By better understanding the connection between the ocean and weather we can improve predictions of when and where severe weather will strike. Reducing uncertainties in knowledge of future weather and climate significantly improves strategies for management of infrastructure and the reduction of business risks.

Managing the sustainable use of marine resources and the quality of the marine environment requires continuous monitoring of threats such as accidental

spills, low oxygen and ocean acidification.

A sustained Integrated Ocean Observing System (IOOS), which NANOOS represents in the Pacific Northwest, that connects information at a global, national, regional state and local scale is an essential means of delivering these benefits.

Bringing together beneficiaries and providers of marine information the workshop will explore existing and emerging user needs for data, information and forecasts; provide an opportunity to match user needs with observing system capability and will help to inform future plans for improved delivery of benefits.

Pacific Northwest Waters: GATEWAY TO OUR FUTURE

A workshop bringing together users and providers of marine information to explore how monitoring and forecasting the ocean, coast and estuaries can best deliver safety, economic and environmental benefits to industries, governments and citizens of the Pacific Northwest.

Thursday February 2, 2012
Microsoft Conference Center,
Redmond, Washington

Early registration for the free event is highly recommended.
For more information visit: WWW.IOOS.US/PNW

Northwest Association of National Ocean Observing Systems (NANOOS) with support from: **Microsoft Research**, **SonarDyne**, **Applied Environmental Group**

Who should participate?

- Industries, federal, tribal, state and local organizations that make use of marine information
- Educators and researchers
- Value-added consultancy and information providers
- Manufacturers of observing platforms and instrumentation

What will be covered?

- A view of the regional coastal environment, the linkage of oceans and weather/ climate, and coastal hazards
- A review of how observations benefit industries, governments, and citizens
- An understanding of how observations are used to deliver benefits to a variety of interests
- An opportunity to network across a range of users and providers of marine information