FY2010: Regional Integrated Ocean Observing System Development

NOAA continued a merit-based funding process in 2010 to enhance regional coastal ocean observing systems (RCOOS) and achieve three long-term outcomes: establishing coordinated regional observing and data management infrastructures, developing applications and products for regional stakeholders, and crafting regional and national data management and communications protocols. In addition, regional associations received planning grant awards designed to assist them in stakeholder engagement, education and outreach, and long-range planning activities.

PACIFIC NORTHWEST REGION

The Northwest Association of Networked Ocean Observing Systems (NANOOS) is the Integrated Ocean Observing System (IOOS®) Regional Association (RA) in the Pacific Northwest, primarily Washington and Oregon. NANOOS has strong ties with other west coast observing systems, particularly the Alaska Ocean Observing System (AOOS), the Central and Northern California Ocean Observing System (CeNCOOS) and observing programs in British Columbia (e.g., the Victoria Experimental Network Under the Sea, or VENUS) through common purpose and the occasional overlap of data and products.

Funding:

The 2010 RCOOS award to this region is $1,700,000. The 2010 RA Planning Grant award to this region is $400,000.
FY 2009 - $1,500,000 RCOOS, $400,000 RA
FY 2008 - $1,500,000 RCOOS, $400,000 RA
FY 2007 - $1,500,000 RCOOS, $400,000 RA

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Regional Priorities and Objectives:

NANOOS is a partnership of over 40 entities, including industry, state agencies, local governments, tribes, non-government organizations, and educational institutions. Established in 2003, NANOOS has used results of nearly three years of NOAA-funded planning efforts and ongoing regional contributions to build regional association partnerships in the Pacific Northwest (PNW) and to identify high priority user needs and requirements.

To progress on the NANOOS regional priorities of maritime operations, fisheries, ecosystem impacts, climate, and coastal hazards, this project will continue to develop the essential subcomponents of the Pacific Northwest RCOOS: observing systems, modeling and products, data management and communications (DMAC), and education and outreach. The work will be applied in four observational domains: coastal ocean shelf, coastal ocean surface currents, estuaries, and shorelines.

NANOOS identified eight initial objectives for the RCOOS. While budgetary levels were reduced, seven of those objectives were retained and have been met to date. In 2010, NANOOS will continue progress on those and add two new objectives to guide future build-out and focus:

- **Maintain surface current mapping capability** – A fundamental foundation block for the coastal ocean observing system serving diverse users spanning maritime operations to ecosystems and fisheries.
- **Sustain buoys and gliders in the PNW coastal ocean, in coordination with national programs** – These assets give advance information on hypoxia/anoxia, ocean acidification, and HABs.

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- **Maintain observation capabilities in PNW estuaries** – These address sustainable use and management.
- **Maintain core elements of beach and shoreline observing programs** – This helps hazard mitigation by providing better decision support tools for coastal managers, planners, and engineers.
- **Sustain a system of numerical models of PNW circulation** – This covers from the head of tide of estuaries to the outer edges of the EEZ. Modeling tools support users, e.g., marine operators, first responders, and environmental managers.
- **Maintain NANOOS' DMAC system for routine operational distribution of data and information** – This dynamic distributed system of systems supports users' needs and allows free access to the IOOS backbone and national information infrastructure.
- **Sustain and strengthen NANOOS education and outreach efforts** – This work fosters ocean literacy and use of NANOOS products.
- *(new for 2010)* **Make selected improvements to RCOOS** – NANOOS identified priority areas of improvement in all of the sub-systems of the RCOOS and a modular plan.
- *(new for 2010)* **Quantitatively evaluate assets, products and efforts of the RCOOS, in light of stakeholder input and evaluations, to assess payoffs and see where improvements and/or re-direction are needed** – This will allow NANOOS to plan for the future.

NANOOS places a priority on sustaining the leveraged coastal observations that its RCOOS has integrated and on developing the most informative and useful products for regional users, as advised by our Governing Council and our active Standing Committees (DMAC, User Products, Education & Outreach) that prioritize work efforts.

In late 2009, NANOOS launched its online system-wide data viewing and access tool, known as the NANOOS Visualization System (NVS). NVS, available at http://www.nanoos.org/nvs, allows easy access to ocean observing data in the Pacific Northwest. NVS gathers data across a wide range of sources (federal and non-federal) including buoys, shore and land-based stations throughout the NANOOS region (Canada to California). NVS is continually being improved and refined as new data streams are brought in and as the NVS development team receives feedback from users. Released in 2010, NVS 1.6 adds access to surface currents from high frequency radars, temperature and ocean color from satellites, and improved filters, legends, and data plots. Users can also find data from research cruises and forecast information on water levels and waves for many locations.

NANOOS developed a wide variety of user products and educational materials centered on our five regional priorities. Examples include on-line tsunami evacuation/inundation maps, forecast information products developed for commercial and recreational albacore tuna fishers, real-time water quality information optimized for shellfish growers, blended tide, current, weather conditions forecasts for mariners, and on-line "theme pages" for issues of regional interest, such as ocean acidification and hypoxia, with direct links to data, educational content, and regional activities. A variety of lesson plans, some using real-time data, and learning resources are available and being used and evaluated by teachers at various levels.

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