

Bi-Weekly Z-GRAM - 28 May 2010

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The Z-Gram is an informal way of keeping you up-to-date on IOOS® activities. Please advise of additional addressees, or if you are receiving and no longer want to receive. If you think others could benefit from the Z-Gram please pass it on. To see previous Z-Grams go the IOOS website and view under 'program updates.

IOOS® - Our Eyes On Our Oceans, Coasts, and Great Lakes

Programmatics:

- FY10 RCOOS Awards: SECOORA, GLOS awards were processed by NOAA's Grants Management Division and have been accepted by the recipients. The remainder of the awards continue to go through the process at NOAA's GMD. Earmark for ACT has also been processed and accepted by ACT.

Initial Operating Capability - Data Management and Communications (DMAC) Subsystem of IOOS® http://ioos.gov/library/dmac_implementation_2010.pdf

- **Customer Projects:** **Contact Charly Alexander** at Charles.Alexander@noaa.gov if you want to be part of the action. **No update.**
- **Technical Updates: Data Providers - No update.**
- **IOOS Data Catalog and Viewer:** On schedule for a 30 June release of V1.
- **IOOS Regional DMAC Team Efforts:**
 - IOOS Regional Vocabulary List: Matt Howard (GCOOS) and Stephanie Watson (SECOORA) completed a vocabulary of observing terms. This is the first phase of what is intended be a multi-phase effort. The list contains similar terms for observing terms used through the eleven IOOS Regional Associations. Matt is next going to upload the terms to the Marine Metadata Initiative. The next phase may include work by Sarah Haines (SECOORA) to add terms, for example cf terms, to the list and to map against other vocabularies.
 - NetCheck: Kyle Wilcox (MACOORA) offered to host a program called NetCheck to test the IOOS RA THREDDSS Services. A draft Web interface is up, but is not live. The Website should be live for use by the RAs to keep a current list of THREDDSS services within the next couple of weeks.

Interagency Project Collaboration: The Z-Grams are certainly focused on providing information on IOOS® connections to these projects and it is not intended to provide programmatic updates of these specific projects because they all have project leads.

- **IWGOO 3rd Industry Day - 25 May 2010 - La Jolla, CA:** The Interagency Working Group on Ocean Observations (IWGOO) held the third in a series of stakeholder outreach workshops. Experts from a variety of backgrounds detailed the value of the ocean to California and the challenges of preserving its benefits. The event entitled, "Small Sea Changes: BIG California Impacts" was held on 25 May and it explored how monitoring and understanding the ocean delivers economic and environmental benefits to industries, government, and citizens of California, at Scripps Institution of Oceanography, UC San Diego. The event, sponsored by Fugro GEOS, the IWGOO, SAIC, and Teledyne Technologies Inc., took place at the Robert Paine Scripps Forum for Science, Society and the Environment (Scripps Seaside Forum). The event drew in around 100 decision-makers from a wide variety of sectors ranging from energy, water supply and treatment, aquaculture, commercial fishing, tourism and recreation, transportation, and environmental and urban planning. The event included 16 speakers across four panels, from research centers, agencies, and companies throughout California. The IWGOO program office is currently developing a workshop series report that will synthesize the outcomes of each workshop. I was the stand-in for David Kennedy, Acting Assistant Administrator for the National Ocean Service, to give the US IOOS presentations. David sent his regrets as he is NOAA's lead for the Deep Horizon response. All video footage and presentations will be made available online at: <http://www.oceanleadership.org/iwgoo>. Please check the website for updates and more information. Thank you very much to SCCOOS and CeNCOOS for their efforts as part of the steering team.
- **High Frequency Radar/Radio (HFR):** No update.
- **IOOS and Links to the National Water Quality Monitoring Network:** No update.
- **IOOS and National Science Foundation (NSF) - Ocean Observatories Initiative (OOI):** No update.
- **DMAC Steering Team:** No update.

Other:

- **Response to Deep Horizon:** IOOS continues to be involved in this effort. Many activities continue. Sam has been on-point putting together an 3D observing strategy. We saw the deployment of a number of IOOS partner gliders, and MBARI AUV off the NOAA Ship Gunter. Jack Harlan continues to work the bridge between the data coming in and ensuring OR&R can use this information. Check out <http://rucool.marine.rutgers.edu/deepwater> for IOOS support and participate in the planning process at the following wiki site: <https://www.st.nmfs.noaa.gov/confluence/display/OOP/Home>. If you are in NOAA, use your NOAA LDAP credentials to access the site. Partners please use: Username: oilspill.response; P-word: WikiWelcome!

- NANOOS in Action - iPhone Application was released on the Apple Store on 05/27/2010:** As a major NANOOS partner, Boeing lead the development of an iPhone application allowing mobile phone access to the NANOOS Visualization System (NVS). A simple service interface using a lightweight data interchange format was constructed to the NVS, developed by the University of Washington Applied Physics Laboratory and the NANOOS User Products Committee. The result is real-time mobile access to ocean observing assets, sensor data values, and graphs of weekly trends. This regional application will be released as an iPhone application on the Apple Store soon. The NVS iPhone application provides unprecedented convenience to a diverse set of users allowing instant access and viewing of regional ocean-observing information. For NANOOS, Boeing is talking with customers and stakeholders about expanded capabilities to provide asset viewing by geospatial location (GPS), and to allow users to identify alerts by area or individual asset. In addition a search mechanism is being considered to enable sensor asset & data discovery. Points of Contact: Steve Uczekaj (NANOOS DMAC Chair/Boeing Mgr); Rick Blair (NANOOS DMAC/Boeing PI); Jan Newton (NANOOS Exec. Dir.); and Troy Tanner (NVS Lead Engineer). See attached for screen captures.
- NFRA Regional Product Developers Workshop (May 17-19, Ann Arbor, Michigan):** This was a very successful conference that brought together all 11 Regions, along with representatives of USGS and Google. The goal of the meeting was to elevate the quality of IOOS products, avoid the duplication of efforts, and make the best products available to all the RAs. The products available range from larval transport to inundation, from water quality to beach safety, and from observation systems to data management to models. See a fact sheet on existing IOOS RA products at <http://www.usnfra.org/products.html>.
- The European Commission, the Spanish Presidency of the EU, and the Government of the Principality of Asturias hosted the third edition of the European Maritime Day Stakeholder Conference in Gijón, Spain:** At the sponsorship of the Spanish government, I was asked to speak on US IOOS at this prestigious conference. The main theme was "Innovation." The central question of the conference was fostering innovation in policymaking for competitiveness, environmental protection, employment, and scientific excellence. There were two sessions focused on ocean observing and I spoke at the first session: "Observation and forecasting in the ocean. Critical aspects. From observations to information," and "EUROGOOS: European Global Ocean Observing System." My message was about how U.S. IOOS was delivering benefits. I focused on the very positive response of the non-federal partners to support Deep Horizon. I highlighted HFR as a system that has grown out of U.S. IOOS and is now being replicated worldwide. I focused on the importance of data management as the underpinning of U.S. IOOS and, secondly, how partnerships are vital to the success of U.S. IOOS. The most interesting discussion of the morning centered around a question that Scott Glenn asked the panel: "What advice does the operational ocean observing

community have for the academic institutions on the types of studies/classes they should offer to prepare the students for employment in both national agencies and industry?" One discussion thread focused on whether a new type of degree needed to be offered that combines both science and technology/engineering into an interdisciplinary study. There was also a very good discussion about the need for exchange programs, both for undergraduate and graduate students. This concept of adding the cultural interchange into study programs so that collaboration globally is recognized as critical to success was echoed by all of the panel members. IOOS. The briefing was well received. I had a chance to catch up on what our European counterparts are doing. I had a chance to spend time with Scott Glenn (MACOORA), Laura Pederson (CODAR), and Andres Alonse (Spanish Rep for CODAR) to discuss the future where Spain is headed in terms of setting up a national HFR system and connections to our U.S. IOOS HFR network..

- **NANOOS Board of Governor's Meeting:** As always, one of my favorite things about IOOS is getting out and meeting with each of the Regions. I continue to be impressed by the growth in each of the Regions. So to highlight - the NANOOS Visualization System (NVS) went from concept, to reality, to iPhone app this year. NANOOS is coordinating well with OOI and the Murdock Foundation for a comprehensive observing system within the regions. NANOOS will deploy an exciting new observing buoy and system (through a partnership with the Murdock Foundation), which will be deployed this July. This is exciting because the Murdock Foundation was excited to partner with NANOOS to take advantage of the data management and maintenance framework NANOOS could offer. As well, this is a partnership with NOAA's National Marine Sanctuaries Program. Engaging with the NSF Director of the Center for Coastal Margin Observation and Prediction (CCMOP) program takes this system from River to Ocean. New partnerships with Venus extend this across to Canada. New interactive education and interactive programs will be launched at the Port Townsend Marine Science Center and other kiosks around Puget Sound. It's great to see participation from across NOAA: John Stein – NMFS, Regional collaboration team; Patrick Ahearn and Ed Bowlby – National Ocean Service, National Marine Sanctuaries Program, and Steve Rumrill with National Ocean Service – National Estuarine Research Reserves System (NERRS).
- **Reminder AOOS releases Request for Proposals for data management services:** AOOS has issued a Request for Proposals (RFP) to provide data warehouse, access and discovery, transport and archive functions for the next five years. Proposals are due 25 June 2010 at 4:00 p.m.
- **CeNCOOS in Action:** New webpage: Real-time Ocean Glider Data - Data from a Spray glider traveling back and forth 500 km offshore from Moss Landing, CA. The webpage displays contour plots of water temperature, salinity and chlorophyll fluorescence to 500 meters as measured by the glider. San Francisco Estuary Partnership: Conference on Oil Spill Preparedness -Two CeNCOOS Council members attended the conference on 11 May. Toby Garfield of SFSU provided an explanation of the technology, High Frequency

Radar (HFR), and its value in tracking oil spills. Zeke Grader of PCFFA also provided comments. Partners monitoring Harmful Algal Blooms (HABs) in the Monterey Bay region have recently identified the first HAB of the spring. Bloom-level numbers of Pseudo-nitzschia at both the Monterey and Santa Cruz Wharf stations were detected. Satellite imagery from the CeNCOOS website also indicates the presence of a bloom.

- **SCCOOS in Action:** Red tide in San Diego County - Patches of discolored reddish-brown waters have been seen along San Diego County beaches from Oceanside to Imperial Beach over the past few weeks. Monitoring efforts show that these dense blooms are caused primarily by a type of phytoplankton, a dinoflagellate called Lingulodinium polyedrum. Cell counts show a population increase from an average of 7,000 cells/liter to 200,000 cells/liter in the patches, and a ten-fold increase in the chlorophyll content from the average value of 2 mg/m³. Areas where the red waters are observed during the day can have a drastically different look at night when these cells bioluminesce producing a striking blue color when agitated from breaking waves, swimming fish and even the movement of your hands and feet. The water is not harmful to swim in though we are currently testing for toxins that could accumulate in filter feeding organisms such as mussels and some fish. This species has been associated with previous red tides in southern California, and blooms of this current magnitude (chlorophyll greater than 20 mg/m³) have occurred in five years out of the last twenty five years. This story was recently featured on CBS News 8: <http://www.cbs8.com/Global/story.asp?S=12449316>. Spray Gliders reveal El Niño: Spray gliders are autonomous underwater vehicles, developed at Scripps Institution of Oceanography and used all around the world, and have been taking measurements of the upper ocean in Southern California continuously since the fall of 2006. The gliders have traveled more than 70,000 km (a distance equivalent to almost twice around the world) and have spent 3,400 days at sea, collecting nearly 33,000 profiles of the California coastal ocean. With their high spatial and temporal resolution, these observations show that the current El Niño has led to unusually warm temperatures in the upper ocean of Southern California (see figure below), which can affect biological production and fisheries. Anomalous temperatures at 50m depth and within 200 km of the coast are well correlated with the Oceanic Niño Index, an equatorial indicator of El Niño and La Niña events. El Niño conditions have been diminishing since the beginning of 2010.

Congressional:

- **Capitol Hill Oceans Week (CHOW)** - The First Trans-Atlantic Glider Flight: What it Means for Future Ocean Observing, breakfast reception set for 8 June in the U.S. Capitol Visitor Center Congressional Meeting Room South. 10:00-10:45 AM.

Communications and Outreach:

- The Smithsonian "Scientist Is In" exhibit is an all-day event set for Saturday, 5 June 2010 from 11:00 AM - 4:00 PM. Scott Glenn and students from Rutgers University will be available to talk about the Scarlet Knight Trans- Atlantic Mission. Scarlet Knight will be on display, and it will then be on display in the main entrance lobby of the Department of Commerce Building downtown from 5-7 June 2010.
- Florida Sun Sentinel Article Highlights IOOS support to Deep Horizon:
http://articles.sun-sentinel.com/2010-05-26/news/fl-oil-spill-research-20100526_1_oil-spills-coastal-south-florida
- EOS, Vol. 91, No. 20, 18 May 2010; Ocean Observing System -Demonstrated in Alaska - Dr. Chris Schorch and Dr. Chao.
- GLOS Press Release: Great Lakes Observing System awarded \$1 million grant - See http://glos.us/pdf/GLOS_GLRI_NOAA_pr52410.pdf

IOOS Conference Involvement: This section will highlight those conferences where IOOS is a sponsor or has a session.

- **Marine Technology Society (MTS), NOAA Research, and IOOS - TechSurge Workshop, 8-9 June, 2010: Ocean Observing: Thinking Outside the Basin:** The TechSurge Workshop will provide innovative knowledge and an interdisciplinary perspective to enhance our ability to collect, deliver, and use ocean information. This is the can't-miss event for all marine communities — the U.S. Navy, U.S. Coast Guard, NOAA, and all federal and regional partners involved with marine spatial planning and ecosystem-based management. For more information, please visit <https://www.mtsociety.org/conferences/OceanObserving2010.aspx> and register at www.regonline.com/mtsoos
- **Bay and Estuaries Sensor Technology (BEST) Workshop:** IOOS will provide partial sponsorship to the NOAA Chesapeake Bay Office (NCBO) BEST Workshop scheduled for 27-30 July 2010 at NOAA's Cooperative Oxford (MD) Laboratory. This workshop will convene professionals, educators, and users of sensors in order to evaluate how data from multiple sensors can be integrated into a unified observation system (buoys/moorings, AUVs, gliders). Regional and federal partners (including Rutgers, University of Delaware, NCBO, University of Maryland, industry [Teledyne, Gavia, Remus, YSI], NASA, NESDIS) will work together to implement DMAC standards and protocols. Environmental parameters will include, but not limited to, dissolved oxygen, chlorophyll a and turbidity measurements. IOOS will benefit through assisting NCBO with the application of DMAC protocols to the development of a final data package. It will also support the modeling test-bed by providing an opportunity for creating a catalog of standardized data formats that can be applied to a variety of tools for oceanographic observation systems. Rob Ragsdale will be the lead on ensuring data interoperability. Doug Levin is the lead on the workshop based largely on his previous position at NCBO.

Upcoming Meetings: We have merged our calendars and now there is single calendar that allows you to view the IOOS-related meetings. To see this calendar, please visit <http://www.usnfra.org/calendar.html> or <http://ioos.gov/calendar/>

- 9 June; CeNCOOS and SCCOOS Joint Strategic Advisory Committee Meeting - Zdenka attending.
- 14-18 June: Sliver Spring, MD; Open Geospatial Consortium and Ocean Interoperability Day.

Cheers,
Zdenka

iPhone Application for the Northwest Association of Networked Ocean Observing Systems (NANOOS) Visualization System - NVS



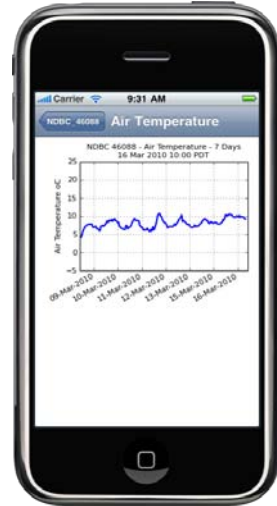
NVS iPhone App



Assets on Google Map



Sensor Data Values



Weekly Trends