

Bi-Weekly IOOS® Z-GRAM – 16 May 2014

The Z-Gram is an informal way of keeping you up-to-date on US 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.

IOOS® - Enables Decision Making Every Day; Fosters Advances in Science and Technology

From the IOOS Program Office:

- **Facebook:** www.facebook.com/usioosgov **Twitter:** <https://twitter.com/usioosgov>
- **Biodiversity page launched this week on the IOOS website:** <http://www.ioos.noaa.gov/biodiversity/welcome.html> -- content goes beyond BON, but this is intended as the future home for info about Marine BON demo projects.
- **Tribute to Ann Jochens:** <http://gcoos.tamu.edu/?p=6350>

Observation Subsystem and Sensor Technologies:

- **High Frequency Radar/Radio** (Lead Jack Harlan, Jack.Harlan@noaa.gov):
 - **New HF Radar product for PORTS®:** Using data from the U.S. IOOS, CO-OPS recently released a new [High Frequency \(HF\) Radar web product](#) that provides near real-time surface current observations and tidal current predictions in estuarine and coastal locations. The product offers broad spatial coverage of surface currents in areas vital for marine navigation and is now available in the Chesapeake Bay and San Francisco Bay, with additional locations to follow. High Frequency Radar surface current data also benefits search and rescue, oil spill response, harmful algal bloom monitoring, water quality assessments, ecosystem assessments, and fisheries management. It provides additional information in areas covered by NOAA's Physical Oceanographic Real-Time System (PORTS®), a system that provides real-time water level, current and meteorological observations for safe navigation. The PORTS, Operational Forecast System (OFS) models and HF Radar web pages were enhanced with cross product linkages. Users will find it easier to navigate to the other related product pages using the navigation links located at the bottom of the left hand side menu. Users are able to start from a PORTS web page (i.e. Chesapeake Bay North) and click to its related OFS or HF Radar web page (Chesapeake Bay) or vice versa, just using these links. NOAA press release: http://www.noaanews.noaa.gov/stories2014/20140505_ioos_ports.html
 - **Webinar on technical design of new HFR diagnostics web page:** A webinar will be held Friday May 23 1000 PDT, 1200 CDT, 1300 EDT, to brainstorm about the technical design of a new national HFR diagnostics web page. One of the goals is to have a product that can provide a quick, accurate view of HFRNet health as well as detailed technical data about individual radars. Jack has already sent out information to the IOOS HFR community and a doodle poll. More information about the webinar will be sent out Monday May 19. Email jack.harlan@noaa.gov if you would like to be included in the email list.
- **Dissolved Oxygen Sensors – calling for participants – May 30:** U.S IOOS - Alliance for Coastal Technologies (ACT) is accepting preliminary applications from developers and manufacturers of commercially available in situ DO sensors interested in participating in independent performance testing. This evaluation follows the first ACT Technology Evaluation conducted on DO sensors in 2003/2004. Over the past 10 years, there have been significant advancements in this class of instrumentation, while

the need for accurate and reliable spatially and temporally intensive measurements of DO remains a high priority in fresh, coastal and ocean waters around the world. Like all ACT Technology Evaluations, participation in this effort will be free of charge for qualifying applicants, and results will be made available to the public in individual summary reports. Visit ACT's web site at www.act-us.info for more information on ACT, and www.act-us.info/rft.php for additional information on the ACT DO sensor II performance verification and to download application forms. Initial applications are due May 30, 2014, and questions can be directed to Dr. Tom Johengen (johengen@umich.edu) or Dr. Mario Tamburri (tamburri@umces.edu).

- **Glider Demonstration Project for Hypoxia Monitoring in the Gulf of Mexico:** A project demonstrating the use of gliders in monitoring hypoxia in the Northern Gulf of Mexico will be conducted during this year's hypoxia season. The gliders will be deployed in Summer 2014, in conjunction with shipboard hypoxia measurements from a cruise directed by Chief Scientist Dr. Steven DiMarco, Texas A&M University (TAMU) Geochemical and Environmental Research Group (GERG). The coordinated mission will allow for efficient and effective comparisons between the glider- and cruise-collected data in a highly vertically stratified, shallow, and heavily ship-trafficked region of the Gulf of Mexico. The glider-hypoxia demonstration is the result of the efforts of many organizations to cooperate and collaborate on a project that will achieve the objectives for showing the usefulness of gliders for the detection and assessment of hypoxia. The project is funded by NOAA's National Centers for Coastal Ocean Science (NCCOS) in conjunction with its NGOMEX Program and the U.S. Integrated Ocean Observing System (IOOS) Office through a \$35,000 award to the GCOOS-RA. Project development is a public-private cooperative effort of Dr. Stephan Howden of the University of Southern Mississippi, Dr. DiMarco, Teledyne Webb Research (TWR), Exocetus, NCCOS' Center for Sponsored Coastal Ocean Research (CSCOR) and IOOS. Gliders are being contributed by TWR, Exocetus, TAMU GERG, and TAMU-Galveston. The hypoxia cruise is funded by NCCOS as part of its [Gulf of Mexico Ecosystems & Hypoxia Assessment \(NGOMEX\) research program](#). Read the full story at <http://gcoos.tamu.edu/?p=6401>.
- **US IOOS Marine Sensor Innovation Project at Work:** New sensor array to monitor impacts of changing Gulf of Maine conditions on New England red tide. The U.S. IOOS effort provided funding to double the number of ESPs deployed in the Gulf of Maine: Cape Cod Today, <http://www.capecodtoday.com/article/2014/05/07/25293-new-sensor-array-monitor-impacts-changing-gulf-maine-conditions-new-england>. A team of NOAA and academic researchers led by the Woods Hole Oceanographic Institution (WHOI) has issued a seasonal red tide (*Alexandrium fundyense*) forecast for the Gulf of Maine as part of a pilot program that expands NOAA's harmful algal bloom (HAB) forecasting to this region. The forecast suggests a modest bloom for the upcoming 2014 season. This year the team will use a network of robotic HAB sensors called Environmental Sample Processors (ESPs) to help determine the oceanographic conditions that develop during the bloom season and to compare actual *A. fundyense* concentrations to those predicted by the forecast. ESPs also carry a sensor developed by NCCOS and WHOI that detects paralytic shellfish poisoning toxins. The seasonal forecast, weekly updates, and regular field measurements are distributed to more than 150 coastal resource and fisheries managers. This is a partnership effort through NOAA's NCCOS, US IOOS Program Office Office of Coast Survey, and Center for Operational Oceanographic Products and Services; North Carolina State University; the University of Maine; and the Monterey Bay Aquarium Research Institute. *Friday's update:* All 3 ESPs worked flawlessly this week for the HAB assay including today's run. Earlier this week, we had a solid hit for the NA1 *Alexandrium fundyense* probe on ESP-1 (don) near NERACOOS buoy B. That result was about 200 cells/L, but that signal went away the following day and has not returned today either. The latest results from ESP-3 (dennis) offshore of Pemiquid Point also returned a blank result. ESP-2 (jake) in Casco Bay returned a weak positive signal for the NA1 *A. fundyense* probe, but those spots were not quantifiable (below the <100 cells/Liter

detection limit). To make things even more interesting in Casco Bay, ESP-2 (jake) also returned a positive hit on the HAB array for the Psuedo-nitzschia MUD2 probe on both Wed and Friday this week. New bloom nowcast/forecast results (covering the period of Feb 1 - May 18, 2014) are available at:http://omgarch1.meas.ncsu.edu/GoMaine_Redtide/2014/weekly_nowcast_forecast/

- **Underwater Robots Detect Toxic Algae off Southern California:** Two underwater robots deployed in San Pedro Bay off southern California detected what may signal the introduction of a harmful algal bloom along the coast. The robots are essentially underwater molecular biology laboratories enclosed in a can that sit at depths of 30 to 60 feet. They are networked to ocean observing sensors that measure and transmit information allowing researchers to study the complex environmental factors leading to the formation of harmful algal blooms. Project partners include IOOS, the Monterey Bay Aquarium Research Institute, the University of California Santa Cruz, and the University of Southern California.
- **Two Buoys Provide Valuable Data in the Great Lakes:** Boaters, scientists, and weather forecasters now have more Great Lakes coastal information at their fingertips. The Regional Science Consortium, a collaborative, non-profit organization that focuses on coordinated educational and research projects for Lake Erie and the upper Ohio River Basin, recently deployed a new buoy on Lake Erie. The buoy will provide information about the lake's wind and wave conditions, as well as water temperature. NOAA's Coastal Storms Program (CSP) funded the purchase of the buoy in partnership with the [Great Lakes Observing System](#), a region of the NOAA-led U.S. Integrated Ocean Observing System. A second buoy, purchased last year with CSP funds and providing similar data with webcam images, was recently re-deployed at Port Sheldon in Lake Michigan. This effort generated great buzz in the Region: This clip about the RSC-Tom Ridge Center buoy in Lake Erie popped up in my Google news alerts:http://www.yourerie.com/news/news-article/d/story/weather-buoy-deployed-today/26139/t6EA_c1N_0akUivmrxxx3w. And Ed Verhamme emailed this clip from LimnoTech's buoy in Lake Michigan: "A few hours after we deployed the buoy in Port Sheldon, a video clip from the webcam was on the evening news during the weather forecast. <https://www.youtube.com/watch?v=AeX1rAxji20&t=2m20s>"
- **Currents survey of Casco Bay, Maine:** NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) deployed twelve acoustic doppler current profiler (ADCP) stations in the Casco Bay region. The project team staged equipment at a U.S. Coast Guard facility in Portland and deployed the stations using a contract vessel, the R/V *Jamie Hanna*, ahead of schedule due to favorable weather and seas. The stations will stay in place until mid-June for at least 35 days to have sufficient data to resolve tidal constituents. Stations will be recovered, reprogrammed and redeployed in additional locations, with final recoveries scheduled for August. This project will measure currents in a total of twenty-five locations in Casco Bay, including the historical reference station at Portland Harbor Entrance, and used to update the Tidal Current Tables and the Currents on the Web interface. For more information, contact Carl.Kammerer@noaa.gov.

Data Management and Communications (DMAC) Subsystem and Tools Built on IOOS

data: (Contact Derrick or Rob to get on the list serve for changes, Derrick.Snowden@noaa.gov, Rob.Ragsdale@noaa.gov).

- **Past DMAC Webinar:** Rick Hooper, the Executive Director of the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) and Emilio Mayorga, the NANOOS Data Manager, demonstrated access to CUAHSI data services. Click to watch the Webinar: <https://mmancusa.webex.com/mmancusa/ldr.php?RCID=b6d3ebe281e386710b20412d0edb28f0>
- **Upcoming DMAC Webinars:**

- **May 21st at 3 PM EDT:** SECOORA's implementation of QARTOD recommended QC control tests for in situ current data.
 - *Presentation Abstract:* U.S. IOOS, in partnership with its regional associations, has been developing a series of Quality Assurance of Real Time Ocean Data (QARTOD) manuals for the U.S. IOOS core variables (<http://www.ioos.noaa.gov/qartod/>). The University of South Florida (USF), College of Marine Science (CMS), a sub-regional coastal ocean observing system in the Southeast Coastal Ocean Observing Regional Association (SECOORA) has developed and implemented procedures outlined in the [IOOS Manual for Real-Time Quality Control of In-Situ Current Measurements](#) for buoys on the West Florida Shelf. In this presentation, USF demonstrates and shares the workflow and implementation of these near real-time quality control tests recommended by QARTOD for current observations.
 - *To attend*
click: <https://mmancusa.webex.com/mmancusa/j.php?MTID=me5df85148d9967d9befe5373d73ddbe2>
 - Dial-in #: [1-866-759-4289](tel:1-866-759-4289)
 - Attendee Access Code: 143 876 9
 - Please contact Rob.Ragsdale@noaa.gov for dial-in information if you are from outside of the US.

- **June 11th at 3 PM EDT:** Demonstration of next generation HTML 5 data portals. Please contact Rob.Ragsdale@noaa.gov for webinar and dial-in information.

Modeling and Analysis Subsystem

For information on the US IOOS Coastal and Ocean Modeling Testbed (COMT), contact our project manager, Becky Baltes, Becky.Baltes@noaa.gov

- **Updated Web Page:** Check it out on the IOOS website: <http://www.ioos.noaa.gov/modeling/welcome.html>

Interagency and International Collaboration/News

- **Monitoring the watershed:** Gabrielle, IOOS Program Office, will represent IOOS in an interagency activity led by EPA (ORD and Office of Water) and with participation from USGS and USDA to put in words a vision for watershed-wide, remote/continuous monitoring. An EPA contractor is leading the effort and will begin discussing/vetting initial products with the groups between now and mid-June. Anticipated outcome is a white paper that can be submitted as a publication (similar to one done previously on air monitoring).
- **Water Quality monitoring in the Choptank:** The IOOS Program Office is working with NOAA Chesapeake Bay Office, EPA, and IOOS' Alliance for Coastal Technologies (ACT) to develop a water column habitat (nutrient) monitoring pilot in the Choptank that will complement the Choptank Habitat Focus Area efforts and also meet EPA (and other agency) needs for advancement of nutrient monitoring technology in the Bay. MARACOOS is engaged and will help with Data QA/QC and standards discussions. ACT's involvement leverages their work with Dissolved Oxygen sensors and support to EPA on the interagency Partnership on Technology Innovation workshop.

- **GEO Appathon:** GEO has announced their first Appathon, a global applications development competition that aims to develop new Apps using Earth observation data from the data sets in the GEOSS Common Infrastructure. The Appathon runs from May 7 to August 31. More information can be found at www.geoappathon.org. And be sure to check out the short video produced by the U.S. Mission in Geneva at http://youtu.be/5sEH8go_DCI.
- **Belmont Forum Call for Arctic Observing and Research for Sustainability:** The Belmont Forum and the World Ocean Council held a webinar on May 16th calling for Arctic Observing and Research for Sustainability (<http://igfagcr.org/cra-2014-arctic-observing-and-research-sustainability>). The webinar will be recorded and made available on the ArcticHub (<http://www.arctichub.net>) after the event. Coming soon to the ArcticHub will be a “want ads” functionality, allowing interested proposers and collaborators to solicit partners. Additional researcher matching can be sought through the Belmont Forum website: <https://www.igfagcr.org/user/register>.

Delivering the Benefits:

- **SECOORA annual PI, Members & Stakeholders, and Board:** The meeting highlighted SECOORA’s contributions to regional stakeholders and to the national U.S. IOOS effort. The Members & Stakeholder meeting featured panels on fisheries, coastal hazards, and ecological forecasting, with each providing an example of SECOORA PI work, an overview of national efforts, and the perspective from a representative of the stakeholder community. To find out more, please visit the U.S. IOOS homepage at <http://www.ioos.noaa.gov>.
- **PacIOOS support to tsunamis:** *Real-time observations of the February 2010 Chile and March 2011 Japan tsunamis recorded in Honolulu by the Pacific Islands Ocean Observing System* (Fiedler et al., 2014) is now available as an early online release. This article shows the research value of “routine monitoring” and how various IOOS components can safely and relatively inexpensively collect valuable environmental data during extreme events when it is unsafe for vessels to operate. http://www.tos.org/oceanography/archive/27-2_fiedler.html

Congressional:

- **Hearing to Focus on New Ocean Technologies at 9:30 a.m. on Wednesday, May 21, 2014 in 2253 Rayburn House Office Building:** The Subcommittee on Coast Guard and Maritime Transportation, chaired by Rep. Duncan Hunter (R-CA), will hold a hearing this week to examine the proliferation of new ocean technologies, how such technologies could improve government performance, and any impediments that exist in the use of such technologies. The federal government is responsible for recording, understanding, monitoring and protecting the oceans in the Exclusive Economic Zones which surround United States and territories out to 200 miles, and even in areas of the ocean beyond those littoral zones. Understanding and monitoring both the physical characteristics of these areas and how these areas are being used is vital to our national defense, the safety of maritime transportation, and to the protection and use of the natural resources contained in these areas. In order to reduce costs and improve mission effectiveness, the Coast Guard and other federal agencies will need to rely on ocean observation and maritime domain awareness (MDA) technologies to make the most efficient use of valuable vessel, aircraft, and crew time. Private companies and academic institutions are developing better ways to understand and monitor the oceans and human activity on the oceans by inventing new, or making advances in existing, ocean observation and MDA technologies. Next week’s hearing will examine some of these developments, as well as potential impacts of federal regulatory regimes on the use of such technologies. The Subcommittee hearing, entitled, “Using New Ocean Technologies: Promoting Efficient Maritime Transportation and Improving

Maritime Domain Awareness and Response Capability,” is scheduled to begin at 9:30 a.m. on Wednesday, May 21, 2014 in 2253 Rayburn House Office Building.

Witness List:

- Thomas W. Altshuler, Ph.D., Vice President & Group General Manager, Teledyne Marine Systems
- Chuck Benton, CEO, Technology Systems, Inc.
- Casey Moore, President, Sea-Bird Scientific
- Dean Rosenberg, CEO, PortVision
- Commander David M. Slayton, Research Fellow, Hoover Institution - Stanford University
- Eric J. Terrill, Ph.D., Director, Coastal Observing Research and Development Center, Marine Physical Laboratory - Scripps Institution of Oceanography

More information about the hearing, including testimony, additional background information, and link to live webcast, will be posted here as it becomes available.

- **IOOS Program Office Hill visits:** The IOOS Program Office met with staff from Senate Commerce Committee (Majority, Minority), House Resources Committee (Majority, Minority), Sen. Begich, Rep. Farr, and Rep. Capps’ offices as part of routine Hill visits. Updates were provided on certification, the IOOS Advisory Committee, IOOS funding and its excellent alignment to NOAA’s Environmental Intelligence and National Ocean Services Coastal Intelligence priorities, and the opportunities of working with the other offices under the Navigation, Position and Observation budget line, the efforts under the Marine Sensor Innovation project, and ICOOS Act re-authorization.

Communications / Outreach / Education:

- Department of Commerce Blog talks about the IOOS/CO-OPS HF Radar product. <http://www.commerce.gov/blog/2014/05/14/noaa-provides-environmental-intelligence-keep-goods-moving-along-our-marine-highways>
- NOS Weekly and News Splash on the GLOS buoys: <http://oceanservice.noaa.gov/aaweekly/archive/051514.html>
- Feds award \$50,000 grant for South Haven buoy (GLOS): THE ESCANABA DAILY PRESS/ ASSOCIATED PRESS, <http://www.dailypress.net/page/content.detail/id/504821/Feds-award--50-000-grant-for-South-Haven-buoy.html?isap=1&nav=5046>

Upcoming Meetings with IOOS participation:

- **Marine Technology Society Tech Surge 3-4 June, Old Dominion University, Norfolk VA: Technical Support for Coastal Resiliency:** The conference will investigate the technical capabilities required to increase coastal resiliency •Announcement of a sea level rise pilot project for Hampton Roads. A combined government-industry approach for mitigating and adapting to sea level rise.
 - **Who Should Attend:**
 - Technical experts in observation techniques for measuring coastal flooding and coastal resiliency
 - Decision-makers and engineers dependent on those observations to help formulate a strategy for addressing the impacts of sea level rise.

- Dr. Russell Callender - Deputy Director, National Oceanic and Atmospheric Administration (NOAA)/ National Ocean Service (NOS) will give a Keynote Address. Eric Letvin, White House National Security Staff and CDR John Marburger, Navy Task Force Climate Change, will announce the Hampton Roads Whole of Government Plus Industry Sea Level Rise Pilot Project.
- To find out more and register: <http://www.mtshamptonroads.org/>

View the IOOS

calendar: <http://www.ioosassociation.org/calendar> or <http://www.ioos.noaa.gov/about/calendar.htm>
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Cheers,
Zdenka

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Zdenka Willis
Director, US IOOS Program Office
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