

Bi-Weekly IOOS® Z-GRAM – 19 May 2012

www.IOOS.gov

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. To see previous Z-Grams go the IOOS website and view under [program updates](#).

IOOS® - A Partnership supporting Lives and Livelihoods

Highlight: Partners across NOAA and local community redeploy a wave buoy in Cook Inlet, Alaska: AOOS, NOAA's NCCOS Kasitsna Bay Laboratory and Kachemak Bay National Estuarine Research Reserve, took advantage of ship time during a joint oceanography survey project, part of a long-term monitoring program funded by the Exxon Valdez oil spill Trustee Council, to redeploy the wave buoy. Darcy Dugan of AOOS put together a short deployment video: <http://vimeo.com/42098267> which shows the importance of partnership in redeploying the buoy, which is also part of USACE CDIP program.

US IOOS Summit – PLEASE SUBMIT YOUR WHITE PAPERS by 30 June: Yes, we know you are busy but hopefully not too busy to provide us short (5 pages max) white papers that will help us define US IOOS for the next 10 years. We are looking for papers that address a particular element of the sustained observing system (not a process study) or stating the requirements for a user need component(s) for the U.S. IOOS Summit. The papers should include an introductory statement that clearly states the opportunity for a specific element of U.S. IOOS or the specific requirement(s) for a U.S. IOOS user need, description of any new technology and its potential contribution to U.S. IOOS, and must include a final section on recommendations moving forward. Recommendations should be concise and action oriented. These papers will be solicited as group or individual contributions with one identified corresponding author and a list of contributors. To be most helpful, the CWPs should include input on the vision for the next 10 years and should map broadly to one of the five chapters of the IOOS Summit Proceedings:

1. Highlighting the Past Decade
2. User Requirement: Revisiting/Updating
3. Observing System Capabilities: Gap Assessment
4. Integration Challenges and Opportunities
5. Vision for Next 10 Years

The chapters above are intended to be comprehensive so for example we would expect to see papers on a range of topics from new observing technologies e.g. gliders, autonomous vehicles;

new core variables we need to measure e.g ocean acidification, refinement of biological and ecological variables; to the need for comprehensive nested coastal modeling strategies that include both physical and ecological forecasting.

Links to the most recent Summit updates are as follows:

- For more information please visit: www.iooc.us/summit
- To submit an expression of interest: <http://www.iooc.us/summit/expression-of-interest-form/>
- IOOS Summit brochure and flyer are now available at: www.iooc.us/summit/ioos-summit/
- White paper guidelines are now available at: <http://www.iooc.us/summit/white-paper-guidelines/>

There is a new section at US IOOS website that also provides the details:

www.ioos.gov/about/governance/summit2012/welcome.html

Governance and Management Subsystem:

- **FY12 Awards:** Congrats to SECOORA who have received their award, completing the FY12 distribution of funds.
- **Signed MOUs:** MOUs between IOOS and the Naval Research Laboratory (NRL) (to support the GODAE server/ Argo GDAC and COAMPS model activities) and the Naval Postgraduate School (NPS) (surface current mapping network support) have been signed. An MOU between CaRA and the NWS was signed this week by NWS and sent to CaRA to be signed. This agreement supports collaboration between CaRA and NWS San Juan WFO, including provision of observational data from CariCOOS and partners to the NWS with specialized model output to assist with more effective forecasting of regional winds, waves, and currents and enhancing temporal and spatial resolution of forecast.

Observation Subsystem:

- **High Frequency Radar/Radio:** For more information contact the US IOOS HFR Project Manager, Jack Harlan, Jack.Harlan@noaa.gov.
- **The 1st Ocean Radar Conference for Asia:** Over 60 representatives from Australia, China, Japan, Korea, Indonesia, Russia, Taiwan, Thailand, Vietnam and the United States met in Seoul, Korea on 17-18 May. The purpose of the conference was to bring together the Asian HF radar communities to establish communication on specific topics e.g. data management, operation and maintenance, error estimation, data gap filling, and other results of research and application. The conference was kicked off by Mr. Joo Bin Im – Director General Korean Hydrographic and Oceanographic Administration who stressed the importance of international cooperation. Scott Glenn, MARACOOS/Rutgers, set the

stage with a presentation on US IOOS's use of HF Radar. Scott provided examples how HF Radar is being used to support Search and Rescue, Fisheries Management, Hurricane Forecasting and Oil Spill Response. Zdenka followed with a presentation on the Group on Earth Observations (GEO) efforts to create a Global High Frequency (HF Radar) network. In preparation for this talk, US IOOS partner MARACOOS compiled a list of some 258 radars worldwide. Zdenka invited all participants to join this exciting effort. Lucy Wyatt, Director of the Australia ACORN HF Radar Center of Excellence, a co-chair on the GEO HF Radar effort, followed with a presentation on Australia's HF Radar network and emerging scientific uses of their system. Other US IOOS partners providing presentations included – Hank Statsewich, AOOS/UAF who presented on the challenges of operating HF Radar in the Arctic with no land power sources. Sung Yong Kim, Scripps Institute of Oceanography, presented how the United States has handled the data management challenges. Jeff Paduan, CenCOOS/Naval Post Graduate School, Monterey, CA presented his and Sergey Frolov's work on improving the statistical prediction of surface based currents based on historical HF-radar observations. Don Barrick, CODAR Inc. discussed the use of SeaSonde HF Radar for tsunamis warnings. We heard presentations describing the HF Radar networks in Korea, Japan, Australia, Thailand, Taiwan, and China. There is a long history of HF Radar operations in Asia, and Zdenka was impressed by the extensive nature of the networks. We share the challenges of keeping hardware operating and ensuring we are providing good quality data. Japan and Taiwan are working to produce a joint current map, which not only combines data from different countries by different types of radars. This is a great start within the region, that it is hoped is expanded across the region. The challenges of data management and assimilation into models and end products will continue to require a coordinated effort. Zdenka's presentation has been posted on <http://www.ioos.gov/communications/welcome.html>; for more information on the meeting: <http://korf.kunsan.ac.kr/xs/index.php?mid=ORCA>

- **Liquid Robotics/Sondardyne Inc/NERACOOS/US IOOS and the University of Maine's School of Marine Sciences launch Wave Glider and deploy the Fetch node:** A Wave Glider has been launched near Monhegan Island in the Gulf of Maine. Over a period of 6 to 8 weeks it will collect information on water conditions in the Gulf of Maine, including temperature, salinity, and wave height. Two of Sonardyne's long-life subsea sensor logging nodes, called Fetch, have been deployed onto the seafloor, from where they will make regular subsea measurements using their on-board suite of environmental sensors. When requested to do so, the stored data will be transmitted wirelessly up to the Wave Glider for onward transmission via a satellite link to the shore for near real-time assessment. This project demonstrates how the combination of Fetch and Wave Glider technologies can expand the spatial and temporal resolution of the installed Ocean Observing System. After the initial deployment in the Gulf of Maine is completed, the Wave Glider will transit to waters off the mid-Atlantic for additional missions, including tsunami detection. (Taken from Liquid Robotics newsletter)

Data Management and Communications (DMAC) Subsystem: To get on the IOOS System Status list which announces service changes, please contact Derrick (Derrick.Snowden@noaa.gov) or Rob (Rob.Ragsdale@noaa.gov).

- **National DMAC:**
 - **SOS Web Services: refining existing web services for access/delivery of ocean observation data:** The IOOS Program Office is coordinating two SOS server development projects. Both development teams have met to scope out a plan for engagement with the RA DMAC developers in order plan for server installation at interested RAs. GCOOS and PaCLOOS have both shown interest in being early adopters and all regions will be contacted in the coming weeks. If you have interest please contact Derrick at derrick.snowden@noaa.gov.
 - **QARTOD – BOA Meeting 5/14:** The BOA discussed plans for analysis of existing procedures for the next set of core variables (temperature, salinity, conductivity, dissolved oxygen, turbidity). The process of identifying subject matter experts to evaluate existing procedures and/or recommend new procedures is underway and Dick Crout, QARTOD Project Manager, and Ray Toll expect to have SMEs selected by mid-June.
- **GLOS in Action: New Web-based Tool Unlocks Mysteries of Great Lakes Fish Behavior:** The Great Lakes Fishery Commission and the Great Lakes Observing System announce the launch of a web-based Great Lakes Acoustic Telemetry (GLATOS) tool - data.glos.us/glatos - that promotes collaboration among fisheries researchers and managers to better understand migration, ecology and spawning of Great Lakes Species. GLATOS currently includes five major projects with 337 receivers. The system will track more than 1700 fish of four species tagged between 2010 and 2013. “The GLATOS tool will be extremely valuable for researchers planning to use acoustic telemetry technology to answer fisheries management and ecology questions in the Great Lakes region,” said Chris Vandergoot, an Ohio Department of Natural Resources Fisheries Biologist. “The ability to see where current and prospective acoustic arrays exist will allow researchers to augment existing arrays and establish new arrays in areas where they don't exist. In addition to facilitating collaborative fishery research projects, the GLATOS tool allows the public to learn more about fish movement studies currently underway in the Great Lakes region.” The project team will be hosting a webinar to demonstrate the functionality of the tool and to provide information on how to contribute data. The webinar will be held on Thursday, May 24, 2012 at 11:00 a.m. To register, visit <https://www1.gotomeeting.com/register/143724808>.
- **Intelligent Automation, Inc briefs the IOOS Regional DMAC experts:** This call follows a meeting with the US IOOS Program office. Research Scientist, Dr. Jakob Henriksson, from Intelligent Automation, Inc. (IAI) presented their work. IAI is a technology research and development firm in Rockville, MD. Dr. Henriksson is currently working on a NASA SBIR grant and is building a general purpose SOS client and SOS based collaboration tool and has been testing his software on SOS services. He was invited to the call to share his work with the IOOS community and to be informed about the IOOS communities’ requirements and use of SOS software and SOS based tools.

Modeling and Analysis Subsystem: For information on the US IOOS Coastal Ocean Modeling Testbed, please contact the US IOOS Modeling Testbed Project Manager, Becky Baltes, Becky.Baltes@noaa.gov

- **MODELING TESTBED**

- **Cyberinfrastructure Team:** Addressing a mechanism to facilitate the Estuarine Hypoxia model comparisons.
- **Inundation Group:** The tropical component has begun to illustrate shortcomings in the operational storm surge model (SLOSH) used to predict hurricane storm surge within NOAA / NWS. In the present case this is a combination of basin size, resolution and model parameterization (specifically the surface and bottom stress). This identification of need is important to guide future improvements to SLOSH or to motivate the transition to new modeling technology. The version of SLOSH coupled to the SWAN wave model that was used in the testbed was provided to the storm surge group at the National Hurricane Center along with initial setup and training on computers available to the NHC surge group.
- **Estuarine Hypoxia Group:** Important progress has been made in transitioning its model formulations and scientific insights for use by Federal Agencies. Lyon Lanerolle, a modeler at NOAA-CSDL and a member of the Estuarine Hypoxia Team, has already incorporated model formulations within the research version of NOAA-CSDL's Chesapeake Bay Operational Forecast System (CBOFS).

Interagency Collaboration:

- **IOOS Summit 2012 - A new Decade of Integrated and Sustained Ocean Observing, 13-16 November, Herndon, VA:** See above
- **DMAC Steering Team: No Update**
- **USACE in Action:**
 - **USACE-IOOS Water-Level Pilot:** Through the ongoing USACE-IOOS Water-Level pilot project with the USACE Mobile District, the USACE has identified opportunities to utilize the IOOS Sensor Observation Service (SOS) to download CO-OPs water-level data through other Corps tools to benefit more projects.
 - **MARACOOS and NERACOOS collaboration with USACE North Atlantic Division (NAD):** Representatives from MARACOOS and NERACOOS have been invited to participate in a USACE NAD coastal meeting to be held in June. The goal is to learn more about each organization and explore opportunities for collaboration in the Maine to Virginia region.
 - **SECOORA Annual Meeting:** Jason Engle, USACE Jacksonville District, participated in the SECOORA annual meeting held 8 May in Miami, FL.
 - **USACE IOOS Participation:** USACE representatives continue to participate in activities regarding the Modeling Testbed, QARTOD Committee, Animal Telemetry Network, DMAC, Waves Plan Update, IOOC, IOOS Summit Planning,

USACE-IOOS Water-Level Pilot, and coordinating Districts with the Regional Associations.

- **IOOS and Links to the National Water Quality Monitoring Network:** An introductory discussion was held to initiate a project to incorporate US IOOS data into Eye on Earth. Eye on Earth is an European Environment Agency (EEA) led portal for organizations to make their data available and for consumers to overlay different data sets from different sources and create new knowledge and a better informed general public. EEA, SECOORA, NANOOS, IOOS, ESRI, Microsoft, and EPA are involved in the effort. The initial project tasks are to identify the variables that will be ingested first by Eye on Earth. Identifying the team members that will be executing on the technical work is occurring in parallel.
- **IOOS and The National Science Foundation (NSF) - Ocean Observatories Initiative (OOI):** No update

Other:

- **NASA/US IOOS: The Multi-sensor Improved Sea-Surface Temperature (MISST) Project:** Sea Surface Temperature (SST) is vital to coastal and marine planning, global weather prediction, climate change studies, search and rescue, and ecosystem based management. SST is derived from measurements taken by numerous satellites carrying infrared and microwave radiometers, and measured from moored buoys, drifting buoys, and ships. The MISST project for U.S. IOOS -- jointly funded by NASA and NOAA/IOOS -- focuses on completing research to improve the quality of the satellite SSTs from existing and new sensors, produce multi-sensor blended gap-free SSTs from US and international datasets, and successfully broaden the use of these products, specifically targeting coastal applications and regional IOOS. The IOOS Regional Executive Directors received a webinar on this effort during the last call. If you would like more information please contact: Chelle Gentemann, gentemann@remss.com, Dave Foley Dave.Foley@noaa.gov. The IOOS Program Office POC is Gabrielle Canonico, Gabrielle.Canonico@noaa.gov.
- **SECOORA Annual Meeting:** Dave Easter and I participated in the SECOORA meeting. Zdenka's presentation can be found at <http://www.ioos.gov/communications/welcome.html>. All presentations can be found at: <http://secoora.org/news/2012annualmeeting>. On May 8 and 9, the Southeast Coastal Ocean Observing Regional Association (SECOORA) held its annual meeting in Miami, Florida. With Nick Shay and the University of Miami Rosenstiel School of Marine & Atmospheric Sciences acting as host, SECOORA brought together PI's with stakeholders to exchange information on capabilities that SECOORA could provide and needs of stakeholders. With the continued emergence of the Regional Ocean Partnership the IOOS Regional Associations are working closely with these groups. SECOORA is a recognized member of the South Atlantic Alliance. Becky Prado, from the Florida Department of Environmental Protection, works with both the Gulf of Mexico Alliance and Governor's South Atlantic Alliance, and she spoke of the need for the Regional Associations (RA) to have a marketing plan that shows the benefits the RAs can

provide to groups like the regional ocean governance organizations. This can be achieved in part, by focusing on specific tasks and “cross-walking” between RA and alliance priorities. Sue Markely, Miami Metro Dade County, talked about SECOORA marketing its knowledge to real decision making issues. In her county, the threat of salt water intrusion to fresh water resources from sea level rise and expansion of port facilities are issues that will require contributions from science to find the best solutions. Touching on the challenge of communicating science to decision-makers, she mentioned how scientists need to be able to explain their work to decision-makers. As a user of SECOORA data, but also a contributor to observing assets in the region, the National Weather Service (NWS) was mentioned repeatedly as an organization that would be good target. Chip Kasper, from the WFO Key West, indicated that IOOS data is an indispensable part of forecasting routine operations and special events, such as tropical storms. He also mentioned that there are some data gaps that he’d like to see filled, in particular, there is no systematic wave height data between the Keys and Miami. Pablo Santos, from the WFO Miami, talked about running high resolution nearshore wave models, and needing the wave data to validate these. Santos stressed that for data to be useful, it needs to be in a format that the forecasters can use. In particular he would like to see High Frequency radar data be available to the WFOs in their system.

- **MARACOOS in Action:**
 - **Meeting with the NY/NJ Harbor Operations Full Committee:** MARACOOS presented on May 16 on Staten Island, NY to a group of about 75 maritime stakeholders on MARACOOS and the work they are doing on HF Radar with the Coast Guard, and how MARACOOS is working with NOAA CO-OPS to respond to the maritime communities needs in the area of the NOAA PORTS Program.
 - **Meeting with the Regional Response Team 3 (interagency/intergovernmental committee):** MARACOOS presented on May 17 in Ocean City, MD to a group of about 60-70 people on MARACOOS and the work being done in their region and elsewhere that could be applicable to their oil and chemical spill response activities in the mid-Atlantic region (from Pennsylvania to Virginia). There was interest in follow-up discussions from a number of quarters that will be pursued over the coming months.
- **Partners Explore New Opportunities for Collaboration with NOAA, EPA in the Northeast (IOOS):** The U.S. Integrated Ocean Observing System (IOOS®) system in New England is opening its doors to new opportunities for collaboration with NOAA and the Environmental Protection Agency (EPA). On May 9, the Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS), a regional member of IOOS, hosted the directors of all four northeast National Estuarine Research Reserve System (NERRS) and the EPA’s six regional National Estuary Programs (NEP) during a session within the annual NERACOOS Board of Directors Meeting in Rye, N.H. The session included overviews of regional NEP, NERRS, and NERACOOS activities and priorities, as well as a discussion of complementary activities and partnership ideas. For more information, contact Gabrielle Canonico.

- **NANOOS represents US IOOS at the National Monitoring Conference: Jan Newton represented US IOOS at the 8th National Monitoring Conference – Water: One Resource – Shared Effort – Common Future** on April 30 – May 4, 2012 in Portland, Oregon. Jan presented on the panel led by Dr. Bernice Smith, Chief Coastal Management Branch, Oceans and Coastal Protection Division, Office of Wetlands, Oceans and Watersheds – EPA. Bernice was complementary of Jan’s efforts and Tony Olson’s, EPA, commented that the IOOS regional associations have taken a significant step forward. Still more attention is required to enable users to access all coastal data. Thank you Jan. We have posted Jan’s presentation on www.ioos.gov
- **NOAA Environmental Data Management Committee Meeting (May 15 – 17):** Derrick, Becky, Hassan, Carmel and Charly all participated in NOAA’s annual Environmental Data Management Committee meeting held in Hyattsville, MD at the Marriott Inn and Conference Center of University of Maryland University College campus. The 2.5 day meeting was broadly attended by IT and data management leadership from NOAA and its many partners including ASA’s Eoin Howlett, OOI’s Karen Stocks, NOS/ORR/ERMA’s Michele Jacobi, OAR/NGDC’s Ted Haberman and many others. As such it was an important opportunity for broad discussions with many IOOS DMAC partners. OpsDiv gave four presentations and chaired two sessions. A key observation from the team is that many teams are facing the same types of challenges we are at US IOOS. The OpsDiv presentations will be posted on the US IOOS web site. For more information about the EDMC meeting, go to: <https://www.nosc.noaa.gov/edmcon> Becky gave an ignite-style talk, "Establishing a Standards-based Approach to Glider Data"; Hassan presented a talk titled “U.S. Integrated Ocean Observing: Improving Biological Data Integration and Dissemination,” Derrick gave presentations on the IOOS DMAC Architecture and on progress with SOS services, he also chaired part 2 of the Data Access and Discovery Session and Carmel chaired the Data Integration Projects Session.

Congressional: No update

Communications/Outreach:

- The article written by Emilio about NANOOS' NVS for the CUAHSI (the Consortium of Universities for the Advancement of Hydrologic Science) newsletter has been posted: <http://his.cuahsi.org/documents/Mayorgahisinaction.pdf>.

IOOS Conference Involvement: This section will highlight those conferences where US IOOS is a sponsor/or has a major footprint.

- **Encouraging talks at AMS 2013:** Dr. Louis Uccellini, NOAA National Center for Environmental Prediction, asked me to be on his steering team for the upcoming AMS meeting to attract a more interdisciplinary theme. He very much understands the importance of the oceans, coasts, Great Lakes and their impact on our Earth’s resources. Quoted from Louis “The theme this year is “Taking Predictions to the Next Level: Expanding Beyond Today's Weather, Water and Climate Forecasts and Projections”, is

one that is very relevant, given the opportunities we have as a weather, water and climate enterprise, to impact decision makers and our varied and important stakeholders who increasingly require more accurate, relevant, and value-added data, products, applications and services. They look to the academic, public, and private sector members of the AMS as leaders in this area. To increase our relevance and connectedness, I also want to attract professionals of other fields (e.g., social scientists, geographers, health professionals) who don't normally attend the AMS annual meeting to join us in this worthwhile endeavor." Please consider submitting an abstract by August 1: <http://ams.confex.com/ams/>

Upcoming Meetings : To see the IOOS calendar, visit: <http://www.usnfra.org/calendar.html> or <http://www.ioos.gov/about/calendar.html>

Cheers,

Zdenka

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Zdenka Willis

Director, US IOOS Program Office

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