

Bi-Weekly IOOS® Z-GRAM - 9 September 2011

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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.

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Governance and Management Subsystem:

- **FY11 Awards:** CONGRATS to ACT, MARACOOS, GCOOS , NERACOOS and SURA (US IOOS Modeling Testbed). PaCIOOS, SCCOOS, and UC Santa Cruz (animal tagging and telemetry data management work - co-funded by ONR) have been approved and are awaiting recipients to pick them up. The awards to NFRA and CIMEC - CORDC (HF Radar work) are still being cleared by finance.

Observation Subsystem:

- **High Frequency Radar/Radio (HFR):** For more information contact Jack Harlan, Jack.Harlan@noaa.gov - the US IOOS HFR Program Manager
 - Jack met with Korea Hydrographic and Oceanographic Administration (KHOA) HF radar partners in the San Francisco Bay area. Visits were made to Codar Ocean Sensors Ltd, San Francisco State University (SFSU) Romberg-Tiburon Center and UC-Davis Bodega Marine Laboratory partners to exchange information on data quality control and management. From there our SCCOOS colleagues at Scripps hosted the Korean delegation. This was funded by the NOS Joint Project Agreement with KHOA.
- **IOOS Non-Federal Observing Asset Inventory Status:** All are complete, thank you. The information will be used in the near-term to inform the Independent Cost Estimate as required by the ICOOS Act.

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).

- **IOOS Biological Data Project:** Discussion topics on the call covered many of the project team's activities. The team went through the data/metadata integration; reported on the move of the rapid ecological assessment data set to the PacIOOS server, which is now visible through the ERDDAP Webservice; and announced the development of a script to translate from FGDC to ncISO. The script is now being tested with data hosted by PacIOOS. Project Customers and data providers are in the process of testing and evaluating the deployed services. Finally, the National Parks Service Fish Transect data is now available on the Web: <http://pacioos-mapserver.acl.hawaii.edu:8081/erddap/index.html>

- **Regional Priority Activities:** There was discussion on the role of SOS in the enterprise and acknowledgement that it may not serve all roles. There are advantages to the ncSOS plug-in developed in the Modeling Testbed that could be utilized. A useful output from the group would be a document describing these roles and emphasizing the unique role of each technology. Deciding whether to move to SWE version 1.0 & 2.0 is still not clear because the differences (and similarities) between versions is not understood well enough. Luis Bermudez's recommendation is to work with version 1.0 and then transition to v2.0 when approved, which should be done relatively easily. The group discussed WaterML per Emilio Mayorga's (NANOOS) upcoming attendance at the OGC Technical Meeting (Boulder, CO; 9/19-23) and participation in the Hydrology Domain Working Group (HydroDWG) discussion. The HydroDWG is migrating the WaterML specification to an OGC compliant status. For the Reference Implementation Working Group, Emilio will help define the differences between WaterML versions 1.0 & 2.0 and determine use in IOOS.
- **CMSP Data Registry:** Rob Ragsdale reviewed the data links, content and metadata information provided on core IOOS data services in place at CO-OPS, NDBC and CoastWatch that have been integrated into a prototype web-based CMSP Registry developed by the CMSP Data and Tools Team. The registry, which will soon be moved to a production server, is part of efforts to improve access to core NOAA data sets and capabilities for an emerging National Information Management System or NIMS for CMSP.

Modeling and Analysis Subsystem: US IOOS Ecosystem Modeling Testbed Introductions: Becky met with many of the key testbed partners (Mary Erickson, Rick Luettich (lead PI), and Liz Smith (SURA Liaison)). She had initial discussion of desired outcomes from Phase 2 of the Testbed to achieve success; and status of milestone achievements for Phase 1 and plans for Phase 2.

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.

- **DMAC Steering Team:** No update
- **IOOS and Links to the National Water Quality Monitoring Network: Coordination with EPA:** No Update
- **IOOS and The National Science Foundation (NSF) - Ocean Observatories Initiative (OOI):** Charly attended the OOI-CI's Life Cycle Objective review meeting in San Diego (UC-SD). The purpose of the meeting was to review the team's readiness to begin their next phase of cyberinfrastructure development. Day two included a presentation and demonstration of the OOI-CI software tools developed for the US IOOS "use case" for coastal modelers. The meeting also provided an opportunity for Charly to talk with OOI-CI leadership about on-going US IOOS collaboration, connections between OOI-CI and the US IOOS Modeling Testbed (Rich Signell was in attendance), extension of the biological observations work currently wrapping up in Hawaii (NOAA Fisheries' Roy Mendlessohn was present) and a short visit with SCCOOS Executive Director Julie Thomas.

Other:

- **SCCOOS Site Visit:** Thank you very much for a wonderful visit and hospitality. I sincerely appreciated the open and frank discussions, hearing about the close working relationships, and seeing the outstanding support that SCCOOS is providing to vital stakeholders. I had the chance to visit Scripps Institute of Oceanography; Orange County Sanitation District, University of Southern California; University of California- Santa Barbara; and the Bureau of Sanitation/City of Los Angeles. Roger Pierce, the new Meteorologist in Charge of NOAA's National Weather Service - Weather Forecast Office - San Diego joined us for our day at Scripps and SCCOOS. Along the way, I had numerous opportunities to better understand efforts in a local context: We got to watch Melissa take a pier sample, a test SCCOOS does often as a vital partner of the CA state Harmful Algal Bloom forecast system. I recognized the capabilities of the Scripps Glider Fleet, now more than 40 strong, which gave me a great appreciation for their operations. We heard about valuable collaborations, such as the California Cooperative Oceanic Fisheries Investigations (<http://calcofi.org>) project between NOAA, Scripps and SCCOOS which keeps a time series alive that has been in existence since the 1940's, SCCOOS has the ability to not only contribute and enhance this project using both their nearshore and glider technology. The discussions that took place reinforced the fragile nature of many of our Ocean Observing programs that are dependent on Federal and State funding. The close working relationship between the academic partners of Scripps and the many hours of dedication by Julie, Amanda, Eric, Dan, Lisa, Burt and Libe to keep a highly dynamic partnership moving forward was a treat to see. We also have areas that we need to continue to work on such as the coastal hazards and inundation, Bob gave Roger and I a good understanding of the issues and challenges CA is facing in regards to inundation and where those responsibilities lie at the Federal and State level. The partnership with a vital stakeholder, the Orange County Sanitation District and the Bureau of Sanitation/City of Los Angeles, proved that the concept of US IOOS is the right one. Our visit with George Roberston, Orange County Sanitation District, who passionately talked about their monitoring program and the Sanitation District's goal to do their part in the community and his desire of marrying up OCSD monitoring with SCCOOS to truly have a region wide monitoring, and how the SCCOOS HF radar, gliders and modeling capabilities can help the County improve and make their operations more efficient. With equal passion was our discussions with Mas Dojiri, who put the Hyperion diversion operations, see <http://www.sccoos.org/projects/hyperion/>, in a whole new context. Mas, was the Leader in the front of the room, whose job was to convince over 80 folks representing the local community and press that this diversion of 759 Million gallons of sewage outflow 1 mile from shore would be a safe operation. Mas, stated having SCCOOS and all the best intellectual capacity for the UC-Santa Barabar, Scripps, USC, USCLA and NASA's Jet Propulsion Laboratory (JPL), made his talk compelling and convincing and Mas not only received buy in, but vocal support – something he stated was a first. Daily, SCCOOS provided all the oceanographic data on their website and provided go/no-go support for beach closure decisions. Amanda and I had the chance to lend a hand during a HF Radar maintenance trip to Santa Cruz Island. This entails another partnership with NOAA's Channel Island Marine Sanctuary, whose boat we used for the ride out to the Island. Many thanks to Charlie for the ride. To put it

in perspective, it was a full day which included: a 1 hour boat ride, followed by a 20 minute rough truck ride just to get to the site. It gave me two perspectives: (1) necessary resiliency of HF Radar, remoteness means few visits and the site can get 70 mph (thank you CODAR), and (2) how the remote location contributes to the O&M costs for an operational station. Partnerships are the name of the game, with our HF Radar techs, also our glider techs; opportunities with Sea Grant - Phyllis - I look forward to you and Amanda making headway on the hallway conversation.... and with the arrival of Roberta who is the new Director of the Wrigley Center, USC and will be part of the SCCOOS board. My sincere thanks to Amanda and Julie for setting up this wonderful visit and to Amanda for a most enjoyable couple of days traveling together. Thank you to each of you who met with me and for taking time out of your busy schedules as I appreciate that these visits do take time to plan and execute.

- **Connecting ACT to NOAA Technical Expertise for upcoming pH evaluation:** Gabrielle, US IOOS Program Office, coordinated a meeting between the NOAA National Estuaries Reserve Research System (NERRS) (Marie Bundy), and the NOAA Ocean Acidification (OA) Program Office (Libby Jewett) to discuss possible NERRS and OA contributions to the upcoming ACT pH evaluation, and the possibility of using a NERRS site or other NERRS resources during the evaluation. Bundy and Jewett were added to the Technical Advisory Committee list serve and will coordinate input from their teams to the needs assessment and protocols for the evaluation.
- **Working to Connect Regional RCOOS to Coastal Manager.** NOAA's Office of Coastal Resources and Management held a Coastal Strategies workshop that brought state coastal managers together to hear from NOS offices. The US IOOS Program Office staff provided a brief intro on U.S. IOOS at the plenary and led three panel sessions, Implementation of Regional IOOS, the National HFR Surface current network, and Supporting Shellfish growers address Ocean Acidification. While attendance at the panel sessions was not what we hoped, this activity represents the effort that the National Office is taking to connect the US IOOS Regional Coastal Ocean Observing Systems with programs across NOAA.
- **GCOOS in Action: GCOOS-RA Receives EPA Gulf Guardian Award:** The Gulf of Mexico Coastal Ocean Observing System-Regional Association (GCOOS-RA) will receive a 2011 Gulf Guardian Award in the Partnership category from the Gulf of Mexico Program of the U.S. Environmental Protection Agency for their work on the integration of and regional enhancements to the GCOOS. A major achievement of the GCOOS-RA has been the development of the GCOOS Data Portal that integrates ocean and coastal data sets from many different data providers. Initially, twelve institutions were involved in the portal development, including researchers at Texas A&M University and the University of Miami who developed the portal architecture and researchers and information-technology staffs of ten non-federal data providers who provided their near real-time oceanographic data from around the Gulf of Mexico. The challenge for the portal development was to interface the diverse data and products via an automated system and through web-based interfaces for users. The ten initial data providers are the Central Gulf of Mexico Ocean Observing System (University of Southern Mississippi); Coastal Ocean Monitoring & Prediction System (University of South Florida); Dauphin Island Sea Lab - Mobile Bay Environmental Monitoring (Alabama); Earth Scan Laboratory (Louisiana State University); Louisiana Universities Marine Consortium

Environmental Monitoring; Mote Marine Laboratory; Texas Automated Buoy System (Texas General Land Office; operated by Texas A&M University); Texas Coastal Ocean Observation Network (Texas A&M University - Corpus Christi); Institute for Marine Remote Sensing (University of South Florida); and Wave-Current-Surge Information System for Coastal Louisiana (Louisiana State University).

<http://gcoos.tamu.edu/documents/Newsletters/20110715.pdf>

- **AOOS coordination is key to successful AEA-NOS stakeholder meeting on tidal energy.** The Stakeholder meeting was hosted by the Alaska Energy Authority (AEA), the National Ocean Service (NOS) Center for Operational Oceanographic Products and Services (CO-OPS) and the NOS Office of Coast Survey (OCS)/Coast Survey Development Laboratory (CSDL) on August 24, 2011 in Anchorage, AK. This was the kick-off of a 2-year project to map the potential kinetic energy available in Cook Inlet combining historical and new current meter observations and to develop and validate a new hydrodynamic model for incorporation into a coastal Operational Forecast System. AOOS was instrumental in “getting the word out” to potential regional partners such as the Cook Inlet Model Working Group, connecting Federal and Regional researchers and ensuring that a diverse group of stakeholders were able to participate. AOOS gave opening remarks, provided logistical support and will be hosting the meeting presentations on the AOOS web site <http://www.aos.org/workshops-and-reports/>. AOOS looks forward to hosting data generated from the AEA-NOS project as it becomes available. For more information about the meeting and/or this NOS tidal energy project please contact Laura.Rear.McLaughlin@noaa.gov or Rich.Patchen@noaa.gov.
- **Members of MARACOOS work together to recover damaged Glider:** RU23 was on a combined an IOOS/Navy mission from Massachusetts to New Jersey to map the regional structure of the warm surface water and cold bottom water. It was damaged (lost a wing) and suffered a small leak during Hurricane Irene. As a precaution, Rutgers glider pilots kept it at the surface for the remainder of the hurricane. The glider was able to show the changing wind driven currents combined with the rotating inertial currents associated with the tail of the hurricane. Immediately after the hurricane Jeff Yapalater (aka Big Mahi), MARACOOS Board Member, and Long Island recreational fisherman, organized a fishing vessel rescue from Babylon, Long Island. Captain Todd Wolffert, along with his crew consisting of Bob Wanderer, Bob’s son Mark, and Kevin Winter, kindly volunteered their services and were able to recover RU23 from it’s perilous location near the NY harbor shipping lanes. Quoted from the MARACOOS website: "This great rescue story is just one example of the strong public-private partnerships that have evolved through the IOOS program!"
- **AOOS in Action: EARTH Workshop** – From July 29 – Aug 2, formal and informal educators from around the country (including 10 from Alaska) met in Anchorage and traveled to the remote Kasitsna Bay Lab to participate in Alaska’s first [EARTH Workshop](#). EARTH uses near-real-time data from ocean observatories to design and test outreach with the internet as an interface to scientists, teachers, students, and the public. The workshop was co-sponsored by the Monterey Bay Aquarium Research Institute (MBARI), the North Pacific Research Board (NPRB), COSEE Alaska, and AOOS. **McNeil Weather Station Coming Soon:** AOOS and the Cook Inlet Regional Citizens Advisory Council partnered to purchase and deploy a weather station at McNeil River on the western shore of Cook Inlet. This area receives high summertime visitor traffic due to

its internationally known bear viewing site. The weather station also fills a key gap for National Weather Service forecasters, who have little information from the western inlet to estimate winds. Data will be available through the AOOS and National Weather Service sites this fall.

- **SECOORA in Action: New Color Index (CI) Product for SECOORA Region:** Chuanmin Hu and his staff from USF have implemented real-time production of the new MODIS color index (CI) product for SECOORA region. This work was funded by a SECOORA mini-grant focused on product development. Check out the products http://optics.marine.usf.edu/cgi-bin/optics_data?roi=SECOORA¤t=1.
- **PacIOOS and NOAA's Atlantic Ocean Meteorology Laboratory (AOML) in Action: New CREWS station operational in Saipan:** Reports from the field indicated a very challenging weather conditions but the team from Miami (Derek Manzello, Rachel Kotkowski and yr humble scribe) joined Ross Timmerman from Honolulu and locals David Benavente (Coastal Resources Mgmt) and Steven Johnson (Dept of Environmental Quality), and we were all ably supported by Mark Blackburn and Kraig Church of Seafix, Inc. A larger cast of CRM, DEQ and Seafix people provided professional support for every aspect of the operation. This is the first CREWS station outside of the Caribbean, and the first station whose main mode of communications is a cellular modem. This means that, rather than the usual 20-second window of satellite communications once per hour, AOML can connect to this station at will and download as much data as we wish. For those instruments that are sampled every 5 seconds (anemometer, barometer, air temperature), AOML can and do have every individual 5-second measurement recorded and downloaded. The reports for the hourly and hourly reports and six-minute data can be found at: http://www.coral.noaa.gov/static/data_llbp7_Web_12_06min.html (6min) http://www.coral.noaa.gov/static/data_llbp7_Web_12.html (hourly) http://www.coral.noaa.gov/static/data_llbp7_Web_72.html (daily) These pages only provide the most recent 12 hours (6min and hourly) or 3 days (daily) of data. The full collection of Saipan and other CREWS data will go online later this year when the database project is completed. This station is also part of a collaboration with PacIOOS (as represented by Ross Timmerman) and their sensor reports chlorophyll and turbidity data. A feed of those data back to PacIOOS will be completed in the coming weeks, and another feed will provide data to NOAA's National Data Buoy Center, where they will make it into the National Weather Service's operational stream, for use in global models and by researchers around the world.

Congressional: No update

Communications/Outreach and Website Updates: No update

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

- **Oceanology International - Global Ocean Forum - Abstracts due 30 September. I am chairing the steering team for the Ocean Observation and forecasting session, along with Rich Burt, Sales and Marketing Director, Chelsea Technologies Group Ltd; Gwyn Griffiths, Chief Technologist and Head, Ocean Technology and Engineering Group Directorate of Science and Technology National Oceanography Centre University of Southampton Waterfront Campus European Way, Eric Lindstrom, NASA - Physical**

Oceanography Program Scientist - Science Mission Directorate, Bev MacKenzie, Senior Technology Manager, IMarEST, Justin Manley, Senior Director of Business Development Teledyne Benthos and Ralph Rayner, Professorial Research Fellow at the London School of Economics; Sector Director, Energy and Environment for the BMT Group and Industry outreach liaison for US IOOS.

- **Why consider speaking:** In 2010, there were 6,938 unique attendance with 550 world-leading suppliers - so a great venue to get our message out on the of the importance of ocean observing and forecasting. Oceanology International is the global forum where industry, academia and government share knowledge and connect with the marine technology and ocean science community, improving their strategies for measuring, exploiting, protecting and operating in the world's oceans.
- The dates of the meeting: 13-15 March 2012 - <http://www.oceanologyinternational.com/>
- Session Objectives:
 - This conference theme covers all aspects of ocean observation and monitoring using remote sensing and in-situ technologies as well as tools and techniques for ocean forecasting. Abstracts are invited for papers covering any of the following broad areas:
 - Descriptions of existing, emerging and proposed observing systems and their use to deliver socioeconomic benefits.
 - New scientific and technological developments in sensors for improved observation of physical, chemical and biological parameters.
 - Case studies of novel application of existing technologies.
 - Developments in analysis and interpretation of ocean observations and measurements.
 - New approaches to the forecasting of the ocean's physical, chemical and biological characteristics
- **MTS/IEEE Oceans 2011- Kona, Hawaii September 19-22, 2011:** So, I can not list the wonderful talks that will feature US IOOS during these three days, because I am sure I will miss some, I will only feature our townhall and forum:
 - Tuesday 1:30-2:50: Partnerships to Integrate Ocean Observing to Address Customer Needs: This will feature speakers from US, Canada and Australia as we talk about an integrated observing partnership across the Pacific
 - Wednesday 0820-0940: Emerging Ocean Observing Technology Forum: This will be an interactive question/dialog with a panel from industry and US IOOS on the emerging/existing observing needs for the emerging technologies could meet. It will be open to **ALL** registrant and the goal is to foster closer relationships with the Industry sector of the US IOOS.

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

Cheers,

Zdenka