

Bi-Weekly Z-GRAM - 3 September 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

So I am not sure where summer has gone as I write this over Labor Day weekend. Time flies by as children head back to school, classes are back in session with our academic partners and my Gamecocks got their football season off to a winning start. The IOOS community remains busy supporting both Regional and National needs and my sincere appreciation for your efforts.

Programmatic:

- **Welcome Aboard:** Derrick Snowden successfully competed to fill the job vacated when Marcia Weaks retired. We welcomed him to the IOOS office on August 20, 2010. He did not have to go far, as he came to us from NOAA's Climate Program, Climate Observations Division, which is co-located with our office. As well, he will not require much spin-up as he has been working the Global component of U.S. IOOS for several years, and before that with NOAA's Atlantic Oceanographic and Meteorological Lab (AOML). We know that he will be a loss to NOAA's Climate Observation Division but some of his duties will include ensuring that we remain linked to the Global component of U.S. IOOS.
- **Want to get an idea of what each IOOS Regional and National Cross Cuts are doing?** Read the fact sheets: http://ioos.gov/library/regionalfactsheets_2010.pdf

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.
 - **IOOS Biological Data Project:** Monthly IOOS Biological Data Project Conference Call (09/02/10): Hassan Moustahfid led the final conference call prior to the Biological Data Project Workshop. There was a status update and review of the project requirements document and the design document, which will be the focal points of the workshop. Progress updates were provided on project activities. Some final workshop logistics were also covered.
 - **BEST Workshop Data Management:**
 - **BEST Workshop Data Management Conference Call (08/24/10):** Hassan Moustahfid and Rob Ragsdale discussed with CJ Pellerin (NOAA Chesapeake Bay Office [NCBO]) the data management of the observing data collected by several AUVs during the BEST workshop held in Oxford, MD, July 27 – 30, 2010. It was agreed that NCBO would host the data on their development server and that additional metadata and

consistent nomenclature are needed to make this available in IOOS DMAC standards. Rob is working to provide the additional metadata in the format needed by NCBO.

- **NDBC Glider Data and BEST Data Management Conference Call (08/26/10)**: Rob and Hassan (IOOS), CJ Pellerin (NCBO), and Darrell Duncan and Mike Garcia (NDBC) discussed the glider data now served using IOOS SOS Web services and asked for guidance for providing AUV data at NDBC. NDBC is making temperature and salinity data collected from gliders available. We discuss steps needed by NCBO to implement the NDBC IOOS software on the NCBO SOS server in order to provide the AUV data available in IOOS standard formats and Web services.
- **NOAA Hydro-Acoustic Survey Data Conference Call (8/27)**: Hassan organized this call for the purpose of initiating contact and to identify partners for the NOAA Hydroacoustic survey data project. This activity will also benefit the acoustic datasets collected during the 2010 BEST Workshop. Mike Jech (NOAA Fisheries – Woods Hole), an acoustics expert, Darrell Duncan and Mike Garcia (NDBC), Philip Goldstein (USGS/OBIS-USA), Ru Morrison (NERACOOS), and Rob Ragsdale (IOOS) attended the call. The call was focused on acoustic sampling methods and the importance of acoustic observing data for resource management and real-time management decisions and how IOOS could facilitate the accessibility of this data using IOOS DMAC standards. Discussion also focused on the technical aspect of this type of observing data. The group agreed that there is a need to include other key partners (e.g. NOAA offices, IOOS Regional Associations) and organize a large call with the objective to frame the project scope and develop an SOW for this. The IOOS office is interested in this type of observing data because of their wide use/application in observing systems. Acoustic technology is extensively used in Fisheries to assess fish stocks, marine mammals, and habitat mapping, and it was recently used to determine oil spill size and oil flow rate from the source and to understand the oil plumes in the Gulf of Mexico Deepwater Horizon oil spill accident.
- **Regional DMAC**: The Regional DMAC Team talked about the regional task list and priorities heading into FY11. In addition to improving on the interoperability of services, the members on the call agreed to establish a uniform visualization display for High Frequency Radar outputs, leveraging SCCOOS code across all of the regions. This was an activity discussed in the workshop and was also part of a discussion at the NFRA Products Development Workshop.

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.

- **High Frequency Radar/Radio (HFR)**: No Update.
- **IOOS and Links to the National Water Quality Monitoring Network**: Regional and Interagency Water Quality Project Conference Call (August 12, 2010): The discussion of resource constraints in developing a project consumed a large part of this month's call. Identifying activities that are already being done that can contribute to this project and

taking the approach to focus on short-term projects was also discussed. Several projects currently underway within NERACOOS, MACOORA, and SECOORA were talked about as examples of activities that could be leveraged. The next group call will be in mid-September.

- **IOOS and National Science Foundation (NSF) - Ocean Observatories Initiative (OOI):** Charly Alexander and Jeff de La Beaujardière (IOOS) had a conference call with the OOI-CI collaboration project team to discuss the progress on the OOI/IOOS use case. Jeff will attend the upcoming OOI-CI planning meeting in San Diego (August 24-26, 2010).
- **DMAC Steering Team:** No Update.

Other:

- **Response to Deepwater Horizon:** Sam Walker arrived back from the Gulf on September 2, 2010. It was great to see Sam, as it was the first time we had a chance to see each other face-to-face since some time in late June. Sam and a WONDERFUL team has been working 20+ hours a day to put together the subsurface monitoring plan that has been vetted by all interagency partners, the White House, and our academic and non-Federal partners. The IOOS community has been extremely responsive and patient. Sam wanted me to be sure to publicly acknowledge NOAA and our interagency partners who immediately sent top-notch folks down to the Gulf to support this tasker from ADM (Ret.) Allen. Sam asked for Doug Levin (IOOS) for help and we sent him for twelve days to the Unified Area Command Center in New Orleans, LA. He worked closely with Sam and others on a subsurface monitoring plan. He developed a one-page proposal form, co-developed fifteen modules that included use of AUVs, Gliders, Sediment Profiling Cameras, US Army Corps of Engineers particle transport models, and other monitoring systems, and drafted a sediment sampling plan in partnership with BP. Doug introduced SURA and the Modeling Testbed Program as an academic partner that might assist with the work to determine the transport processes and fate of the oil. This effort is being discussed with the Deepwater Horizon on-site NSF representative. He also introduced an education component -- Doug engaged GCOOS in a proposal to develop educational modules to transfer educational aspects of the oil spill into the classroom. In addition to development of lesson plans, classes would be engaged in building Basic Observation Buoys (BOBs) fitted with passive membrane devices. These membranes were developed by Dr. Penny Vlahos of the University of Connecticut (UCONN). The membrane "armed" BOBs would be placed at sites along the Gulf Coast based on the US Army Corps of Engineers (USACE) particle transport model forecasts. Results would be used to hindcast and refine the USACE model. In short, this proposed program involves partnerships between the USACE, academics (UCONN), and GCOOS.
 - **Fun Fact: The IOOS gliders (not counting NAVO at this point) collected 41,670 casts since May 17, 2010.**
- **BP and Liquid Robotics team up and deploy Wave Gliders in the Gulf of Mexico in support of DWH:** Quoted from August 25, 2010 BP Press Release: "As part of its long term monitoring and research program in the Gulf of Mexico, BP is deploying a new technology that will enable nearly constant monitoring by two satellite-controlled,

unmanned vehicles. The vehicles, known as Wave Gliders and developed by Liquid Robotics in Silicon Valley, California, get their propulsion power from wave action and use solar power for their electronics. They will be deployed beginning today and begin a months-long, ongoing research program in the Gulf of Mexico. 'These vehicles will provide us a steady stream of data about water quality and should significantly increase the available data for ongoing research activity,' said Mike Utsler, chief operating officer of BP's Gulf Coast Restoration Organization. 'We will initially deploy the Wave Gliders between the Macondo well and the shoreline, and look to expand from there in the future.' You can read the full article here:

<http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7064711>. For more information on Wave Gliders, please contact Justin Manley at justin.manley@liquidr.com

- **Hurricane Earl:**

- CariCOOS data buoy B (aka Mooring PR 201) just withstood 8.5m max waves (5.5m SWH) from Hurricane Earl with 50+ knots winds gusts.
- NOAA introduces a new warning that includes flooding aboveground in an easier to understand fashion as part of the Storm Surge Road Map effort. IOOS data was used by the National Hurricane Center and WFO to access CO-OPS and NDBC data.
- USACE and Nortek let you watch real-time wave data as Earl passed by: As Hurricane Earl passes the Outer Banks, view real-time wave data courtesy of the US Army Corps of Engineers' array of six Nortek acoustic Doppler current profilers and wave gauges cabled to the Field Research Facility in Duck, NC. <http://www.nortekusa.com/usa/news/real-time-wave-data-from-hurricane-earl>. Sensors are cabled to the shore and hourly data is available on the Field Research Facility Website: <http://www.frf.usace.army.mil/frfzoom.shtml>. NortekUSA visited with engineers at the US Army Corps of Engineers Field Research Facility in Duck, NC late this past July, as engineers were busy preparing the Aquadopp Profilers shown here for nearshore deployment. These two instruments were to become the latest addition to the Duck cross-shore array, which already included four Nortek Acoustic Waves and Currents (AWAC) sensors and two Waverider buoys. The Aquadopps were deployed at depths of 2m and 3m.

- **AOOS announces the winner of the Data Management Request for Proposal:** AOOS has selected the Anchorage firm [Axiom Consulting and Design](#) to provide data services for AOOS for the next five years. AOOS is the Alaska regional component of the national Integrated Ocean Observing System (IOOS). The organization, a consortium of state and federal agencies and research institutions in Alaska, provides coastal and ocean data and informational products to meet the needs of Alaska's marine stakeholders. Axiom was selected following a competitive process conducted both in Alaska and nationwide. Eight separate teams submitted proposals that were reviewed by an independent panel of resource data and management experts. "This was a highly competitive process," said Molly McCammon, AOOS Executive Director. "We look forward to working with Axiom to develop new data products and visualizations."
- **NSF Ocean Observatories Initiative Cyberinfrastructure (OOI-CI) Architecture Review Meeting (San Diego, CA; August 24-25, 2010):** Jeff attended the NSF Ocean Observatories Initiative Cyberinfrastructure (OOI-CI) architecture review at UC San

Diego. Detailed presentations were given of the architecture, implementation technologies, and schedule for OOI-CI Release 1, known as the Data Distribution Network. The audience was primarily the OOI-CI Review Board. IOOS has a collaborative project with OOI-CI to provide access to near-real-time observations via IOOS services into the OOI-CI to (1) inject data into the CI prior to deployment of the OOI cabled observatories, and (2) develop and test functionality on behalf of the ROMS Espresso model at Rutgers University.

- **IOOS-SCCOOS Meeting:** Jeff visited SCCOOS while at UC San Diego for OOI-CI. This was an informal meeting to discuss the IOOS Data Catalog, wave data, and HFR data.
- **MPA/IOOS Task Team Workshop (Monterey, CA; August 31 – September 2, 2010):** If you recall, the formation of this interagency task team was a result of a request of the MPA Federal Advisory Committee (FACA). IOOS representatives include Charly Alexander (IOOS); Ru Morrison (NERACOOS), Heather Kerkering (CeNCOOS) and Dwayne Porter (SECOORA). On day one, Charly presented two IOOS briefs, first an introductory "What is IOOS?" brief and a second, more detailed overview of the IOOS infrastructure (observations/DMAC/modeling; observation networks [HFR] and products and services). Day two discussions focused on refining suggested ideas and options for demonstrations. The final day was a meeting just of the task team members to review the workshop outcomes and to discuss possible next steps. **In addition to attending the MPA/IOOS Workshop**, Charly took the opportunity to meet with partners at NOAA Fisheries, Frank Schwing, Roy Mendelsohn, Bob Simons, Lynn Dewitt (SWFSC/ERD), and Steve Brown (S&T) to discuss data access tools and technologies; Santa Cruz Fisheries Laboratory Director Churchill Grimes to discuss biological tracking networks (e.g. POST, OTN, TOPP); and Barbara Block at the Stanford/Hopkins Laboratory to discuss TOPP and biological observing connections. Charly also met with CeNCOOS RA Executive Director Steve Ramp and Marine Sanctuaries about the concept of "sentinel" sites and how IOOS can provide observations connecting MPAs.
- **Blue Ocean Film Festival, Meetings with MBARI, CenCOOS, and NOAA's SWFSC/ERD:** On August 27, 2010, NOAA's Integrated Ocean Observing System (IOOS) program and partners discussed the science behind a documentary of the first unmanned underwater robot (or "glider") to cross the ocean. Rutgers University completed the mission last year under the IOOS banner. The film, *Atlantic Crossing: A Robot's Daring Mission*, will premiere as a finalist in the category of 'Ocean Adventure and Exploration.' This was a wonderful opportunity and we were thrilled when Dr. Sylvia Earle graciously filmed an introduction to this documentary. We followed this up with a science panel on Saturday. Again, my congrats to Rutgers University for this honor. I also had the chance to meet with Chris Scholin, President and CEO of MBARI, and we chatted on efforts they have going with NDBC, continued work on HAB forecasting, and a new initiative -- [CANON](#) (Controlled, Agile, and Novel Observing Network). A key initial premise of CANON is to provide a new class of observation systems that will be able to follow and facilitate the study of organism assemblages and the transitions they undergo in the ocean environment. I was also able to see MBARI's efforts on a long-range AUV: Long-range autonomous underwater vehicles -- [Tethys](#). Frank Schwing and his team graciously hosted me on Friday afternoon, where I continue to be very impressed with their efforts in data management - a GREAT IOOS partner! Finally, last

but not least, I had a chance to catch up with Steve Ramp and Heather Kerkering of CeNCOOS. We never seem to have enough time to chat but see further below in the Z-Gram for some exciting activity with which CeNCOOS is involved.

- **Near-Term Design of the Great Lakes Coastal Observing System:** The request for quotes for a Near-Term Design of the Great Lakes Coastal Observing System closed on August 4, 2010. A total of three proposals were received. Contract award(s) are expected by September 20, 2010. The design work will be conducted in collaboration with the Great Lakes Observing System (GLOS), NOAA's Great Lakes Environmental Research Laboratory, and the Integrated Ocean Observing System (IOOS) program. The outcome of this projected nine-month effort will be an observation system design, a concept of operations, a risk assessment, and an implementation plan. When implemented, the system will provide data on the physical, chemical, and biological parameters necessary for the effective management of near-shore aquatic resources to support remediation, restoration, and conservation actions through the Great Lakes Restoration Initiative. For more information, please contact Steve Ruberg at steve.ruberg@noaa.gov, or Jen Read at jread@glos.us
- **SECOORA seeking feedback on their DMAC interactive map:** SECOORA's DMAC members have been working on an updated interactive map. They are seeking your feedback, specifically:
 - Are there critical datasets that are missing?
 - Are the datasets binned in a user-friendly way? Would it be helpful to have them by provider (or by some other parameter?)
 - What should we use as the inland extent of the "Land Stations" - Coastal Counties, Watersheds?
 - Is the help intuitive?
 - Please note any technical errors or changes.

The draft interactive map is available here:

http://rcoos.org/carolinasrcoosrev2/secoora_interactive.html. Please send any comments to Megan Treml at megan.treml@gmail.com.

- **IOOS Program Office Meeting With iRobot:** iRobot has been a strong partner in DWH with the deployment early on of their SeaGlider and their continued support. As it turns out, their Chief Operating Officer is a friend from my Navy days. VADM (Ret.) Joe Dyer and I had a chance to meet and catch up on where we have been since working together in the mid 1990s and his efforts now with iRobot. I will visit their operations in North Carolina in late October 2010.
- **Highlights From CeNCOOS: Data Portal (CDP Version 1.0) Released!** View graphs, tables, or download data from 80+ buoys and coastal stations collecting real-time ocean data throughout the CeNCOOS region. Currently we display data from 17 organizations that are providing us with data on ocean: temperature, salinity, waves, level, winds and currents. <http://www.cencoos.org/sections/data/index.html>. **El Niño is gone, but La Niña begins in the Pacific:** IOOS Catalog Reports show La Niña conditions began at the equator in June 2010 and the impacts are predicted to continue until 2011. This event may impact California weather and ocean conditions. See the CeNCOOS report on the 2010 La Niña. Also, catch up on what happened last year with the CeNCOOS report on

the 2009/10 El Niño; **Point Reyes Wave Climatology:** A new product displays the current wave height (updated daily) compared with an average of wave heights since 1997 at a buoy offshore Pt. Reyes, California. The data comes from the [California Data Information Program](#) (CDIP). The maximum wave height at this buoy since 1997, was 23.2' on January 19, 2010. Visit

http://www.cencoos.org/sections/products/wave_climatology.shtml. **Watching for Harmful Algal Blooms:** CeNCOOS and their partners have been monitoring a HAB composed of the diatom, *Pseudo-nitzschia spp.*, in central California since spring 2010. Algae concentrations in seawater have recently increased at both the Monterey and [Santa Cruz Wharf](#) stations. [Satellite imagery from the CeNCOOS website](#) indicates the presence of a dense bloom along most of the CeNCOOS region nearshore (red areas indicating high chlorophyll in Monterey Bay on recent monthly image, at left). Stay tuned for updates on this HAB event.

Congressional: No Update.

Communications and Outreach:

- **August 26:** Sam Walker was interviewed on NBC Nightly News about subsurface oil monitoring - http://www.msnbc.msn.com/id/3032619/ns/nightly_news/
- **September 2:** Space News printed a commentary from Vice Admiral Lautenbacher on the response in the Gulf.
- **August 30:** NANOOS in the News - Voice of America News article, "Monitoring Ocean Acidification" – <http://www.voanews.com/policy/editorials/Monitoring-Ocean-Acidification-101819148.html>

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

- **IOOS and ASLO Meeting - Call for Abstracts:** The next ASLO meeting will be the 2011 Aquatic Sciences Meeting in San Juan, Puerto Rico, February 13-18, 2011. The call for papers is now available and the website (<http://www.aslo.org/meetings/sanjuan2011/>) is live. We look forward to your attendance. The deadline for both abstract submission and early registration is **October 11, 2010**. Please consider submitting a paper for Session S75: Coastal and Marine Spatial Planning: Current Needs and Future Challenges; Conveners: Dr. Nasseer Idrisi, University of the Virgin Islands, nidrissi@uvi.edu; Simon Pittman, NOAA Center for Coastal Monitoring and Assessment, simon.pittman@noaa.gov; and Zdenka Willis, NOAA IOOS Program, zdenka.s.willis@noaa.gov. This will be a great opportunity to showcase IOOS regional association activities in the Administration's priority of Coastal and Marine Spatial Planning.
- **GEOSS Forum on Ocean Observing, Ahead of MTS/IEEE Oceans 2010 - Register Now For This Event On September 19:** Want to hear about ocean observing worldwide? Sign up for the [GEOSS](#) (Global Earth Observation System of Systems) [Workshop XXXVIII - Evolution of Ocean Observing Systems](#) – building on infrastructure for science. The workshop, sponsored by OES, is being held just prior to the OCEANS 2010 in Seattle, WA.

- When: September 19, 2010 - 8:30 a.m. - 6:00 p.m. It will feature speakers from OOI, IOOS, IMOS, Japanese Ocean Observing Systems, Neptune Canada, and several European Directors. Moderators will include Dr. Rick Spinrad (VP of Research of Oregon State University), and Craig McLean (Acting Assistant Administrator for NOAA's OAR). It is no-cost but we ask that you still register at: <http://www.oceans10mtsieceeseattle.org/main.cfm/CID/35/>.
- **NERACOOS 2010 Ocean Literacy Summit Information**: New England Ocean Sciences Education Collaboration (NEOSEC) is a collaboration of institutions from across New England, with the goal of promoting Ocean Literacy. This year's Ocean Literacy Summit, which is being held from November 11-13, 2010, is our third biennial event and will feature discussions of the findings of the Census of Marine Life in the Gulf of Maine. In addition to a keynote address by Dr. Paul Snelgrove and an evening lecture by Dr. Sylvia Earle, the Summit will provide scientists and educators opportunities to network and connect, perhaps opening new means for scientists to meet broader impact requirements and strengthen and expand educational components of their own research. NERACOOS is working with NEOSEC to promote ocean literacy through ocean observations. NERACOOS will be hosting the session below: "From Intertidal to Deep Sea: Monitoring Ecosystem Diversity." NERACOOS (Northeastern Regional Association of Coastal Ocean Observing Systems) will showcase how ocean observing is being used in both formal and informal education. Participants will see how the Earth as a System is Essential (EaSiE) project of the Maine Mathematics and Science Alliance and the Seasons of the Sea exhibit at the Seacoast Science Center in Rye, NH has utilized the dynamic nature of ocean observing information. Participants will take home lesson plans and explore the valuable resources of ocean observing systems, including NERACOOS' real-time buoy data, and learn how to engage audiences in understanding the interactions between the Earth's land, oceans, atmosphere, and living world. By looking at the sea's seasonal patterns through ocean observing information, individuals can better understand their vital connections to the ocean and the diversity of life within it. For more info, please visit <http://www.neosec.org>.

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/>

- **California and the World Ocean 2010 Conference**: September 7-10, 2010: U.S. IOOS/CeNCOOS, SCCOOS and NANOOS - Bronze Sponsor - a number of papers, sessions and a booth display.
- **IOOS Biological Data Workshop**: Hassan and Charly to attend, September 20-22, 2010, Honolulu, HI.
- **OOI-CI Architectural Review**: Jeff, August 24-26, 2010; San Diego, CA.
- **MTS/IEEE Oceans 2010**: Seattle, WA; September 21-23, 2010; Zdenka Willis, Carl Gouldman, April Black, Jeff de La Beaujardière, and Jack Harlan to attend.
- **Taxonomic Database Working Group (TDWG) Annual Conference**: Hassan; September 26 – October 1, 2010; Woods Hole, MA.
- **SECOORA Fall Meeting**: September 29-30, 2010 at the Hilton Garden Inn Tampa Ybor Historic District.

- [MACOORA Annual Meeting](#): October 28-29, 2010; Stevens Institute of Technology, Hoboken, NJ.
- [Alaska Marine Science Symposium](#): January 17-21, 2011 - Begin Planning Now!

Cheers,
Zdenka

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