

Bi-Weekly IOOS® Z-GRAM – 20 September, 2012

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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](#).

IOOS® - A Partnership Supporting Lives and Livelihoods

Governance and Management Subsystem:

- **Dr. Lubchenco met with NFRA Executive Committee:** Dr. Lubchenco met with NFRA reps Julie Thomas, Ru Morrison, Gerhard Kuska, Frank Kudrna, Molly McCammon and Josie Quintrell, and Kathleen Ritzman of Scripps. Zdenka and Scott were in attendance. This was the first formal meeting between Dr. Lubchenco and NFRA, although Dr. Lubchenco had met many of the NFRA reps in other venues. The meeting began with Dr. Lubchenco conveying her sincere appreciation for the “very important assets IOOS contributed” during the Deepwater Horizon response effort. She noted that during an event such as DWH, the value of the prior relationships developed by IOOS was evident and allowed IOOS quickly to entrain its resources to provide a rich and multifaceted response, e.g., assets and relationships and data management protocols. She noted that ADM Thad Allen, USCG (Ret.), said, “A crisis is not the time to exchange business cards.” She emphasized just how useful the IOOS partnership was. Dr. Lubchenco also noted how pleased she was with the significant progress that GLOS has made networking in the Great Lakes. She noted that her Facebook page highlighted HAB work in Lake Erie, and remarked how GLOS, GLERL, and Sea Grant had worked together to develop user products based on hydrodynamic models. These user products make a significant difference for water managers and tourists in the region. She noted that IOOS ranked “high among partners we rely upon a lot,” and said it was a “great and unique, successful Federal and non-Federal partnership.” Dr. Lubchenco shifted the conversation to a discussion of the challenges faced by NFRA--and IOOS efforts more broadly. She recommended development of a clear, easy to articulate statement of the benefits of IOOS that is regionalized but also cohesive and easy to recognize. She noted that people care about the “value proposition,” and crisp, easy to understand stories resonate when they are things people care about.
- **NFRA Executive Committee met with IOOS Program Office:** On Sep 20, NFRA reps Julie Thomas, Ru Morrison, Gerhard Kuska, Frank Kudrna, Molly McCammon and Josie

Quintrell, as well as Jan Newton (by telephone), and Zdenka, Suzanne, Charly, Carl and Scott met to have a wide-ranging discussion about continuing to develop the relationship between NFRA and the Program Office. The conversation went very well. The discussion was divided into three portions. The first portion focused on the role of NFRA, the second portion was a strategic conversation that focused on synchronized planning and third portion centered on operational/tactical efforts.

- **IOOS Advisory Committee:** New materials including presentations are now posted on the Committee website. Please note - the URL has changed to be shorter and easier - www.ioos.gov/advisorycommittee

Observation Subsystem:

- **High Frequency Radar/Radio:** (Lead Jack Harlan, Jack.Harlan@noaa.gov): No update
- **National Glider Plan/Team** (Lead Becky Baltes, Becky.Baltes@noaa.gov): Drafting specifications for what a national glider data assembly center would look like, data exchange formats and standards for everyone to add historical and current glider tracks to the glider asset map.
- **NOAA Gulf Sentinel Site Management Team Drafts Implementation Plan with GCOOS as a partner:** NOAA has initiated a Sentinel Site Program (SSP), starting with five cooperatives, to engage a continuum of NOAA capabilities to address local impacts of sea level change and inundation. The initial five cooperatives are in the following areas: Chesapeake Bay, Hawaii, North Carolina, San Francisco, and the Gulf of Mexico. Led by Dr. David Kidwell, Program Manager of the Ecological Effects of Sea Level Rise and Hypoxia Programs in NOAA's Center for Sponsored Coastal Ocean Research, the Gulf Sentinel Site Management Team met on 12 September 2012 in Mobile, AL, to begin drafting an implementation plan that is anticipated to be completed by the end of September. The GCOOS-RA was invited to participate.
- **The Beginnings of an Animal Tagging Network for Alaska:** AOOS is looking at adding animal telemetry observations into the AOOS data system. Focusing first on marine mammals, telemetry was initially used for studies of individual species. The data gathered, however, also samples the marine environment – so making this data more accessible can lead to greater ecosystem understanding. Because an animal's location can be related to oceanographic parameters (such as currents and up-welling zones or patches of ice), marine mammals can be used as another type of mobile "sensor". As has been demonstrated in other marine systems, we expect to gain insights into animal migration, distribution and interactions with their environment, and, ultimately greater use of marine mammals as mobile platforms for oceanographic studies. This approach could be especially useful in the ice-dominated Arctic where the vast scale, remoteness and extreme conditions often limit sampling. A steering committee is now designing a workshop to be held in spring 2013.
- **A story of tying gliders to data to science:** Off the coast of Oregon, gliders collect data along the Newport line. The glider is funded by IOOS/NANOOS; NSF and the Moore Foundation. Since 2006, the glider has traveled 45,000 km - more than once around the world and collected some 160,000 vertical profiles - alot of data. When compared to

the National Ocean Data Center, World Ocean Atlas for this area from 1950-2005 there were 4000 profiles. In a study from 1998 to present and including the glider data, when compared to the 1960 there is a noticeable decline in oxygen in the subsurface waters upwelled onto the Oregon shelf, consistent with what we are seeing worldwide. For the full story technology to monitoring off the Oregon coast see the Barth and Smith article in Maritime Museum of San Diego's Mains' L Haul Journal of Maritime History (Vol. 48: 3 & 4 Summer/Fall 2012). For more information on the study see Pierce, S. D., J. A. Barth, R. K. Shearman and A. Y. Erofeev, 2012: Declining oxygen in the Northeast Pacific. Journal of Physical Oceanography: DOI: <http://journals.ametsoc.org/doi/abs/10.1175/JPO-D-11-0170.1>

Data Management and Communications (DMAC) Subsystem: Lead Derrick and Rob
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- **IOOS in [Ocean.data.gov](http://ocean.data.gov):** U.S. IOOS supplies reliable and timely access to data and information that informs decision making. The IOOS Data Catalog and Asset Viewer provide a visual inventory of the in water assets (buoys, sensors) from the distributed network of data access services deployed nationwide according to the IOOS Data Management and Communications (DMAC) guidelines. The metadata describing these services are discoverable through multiple web service interfaces including OGC Catalog Services for the Web, OpenSearch, and ESRI REST.
- **Vocabulary Development and Management per Non-Federal Asset Inventory:** John Ten Hoeve (IOOS Program Office) has expanded on the development and management of vocabularies work by Sara Haines (SECOORA) by mapping all IOOS Parameter Vocabulary v2.0 on the MMI Ontology Registry and Repository Website to IOOS Essential Variables. He has also mapped all variable vocabulary currently in use throughout all SOS services across the RAs to IOOS Essential Variables. This mapping is necessary to develop a trackable number of variables to report in the IOOS Asset Inventory. John will now start validating his classifications.
- **US IOOS QARTOD:**
 - Progress on Procedures Manuals: Heads Up: *Dissolved Oxygen* draft will be sent to the IOOS Regional Association Directors and IOOC members next week – comments will be due 14 November. (Per the QARTOD plan approved by the IOOC). *Currents and Surface In-Situ Waves:* We have determined that these manuals will be completed without any additional QARTOD meetings. To finalize these manuals we will have 2 steps. First selected subject matter experts will do a review commencing on Sept 28 followed by the official review by the IOOS Regional Association Directors and IOOC.
 - Board of Advisors recommendations for FY2013: (1) Finalize Temperature, Salinity, and pH (Acidity) information in QC Manual from QARTOD V. (2) Accumulate Sea/Water Level information from agencies in QC Manual (may require QARTOD meeting) and (3) Extract Wind Speed and Direction QC from NDBC into QC Manual.

- Assessment of IOOS Core Variables: The variables have been prioritized in 3 tiers. The QARTOD team will work with NFRA to ensure the following tiers match the RAs priorities:
 - TIER 1: Stream Flow, Dissolved Nutrients, CO₂, Fish Abundance, Zooplankton Abundance
 - TIER 2: Heat Flux, Optical Properties (includes Ocean Color, CDOM, Total Suspended Matter, and Optical Properties)
 - TIER 3: Fish Species, Zooplankton Species, Phytoplankton Species, Contaminants, Pathogens

Missing from the list are Ice Distribution, Bottom Character, and Bathymetry. Bottom Characteristics and bathymetry are derived products and the BOA don't see any real-time QC function for these two core variables. Ice Distribution also appears to be a derived product but we will consult with the National Ice Center/Naval Ice Center.

- **IOOS RA DMAC Workshop** (Sep. 11-13, 2012; Silver Spring, MD): The purpose of the workshop was to coordinate regional data management activities. In addition to the 11 RAs, we had reps from USACE and NOAA (NODC, CO-OPS, Chesapeake Bay Office, NGDC). Three major results - better communications on end state/expectations of the DMAC subsystem; national build out of the Sensor Observation Service and registration of all regional data assets in the IOOS Catalog. An interesting discussion on how to use cloud services better to provide a glimpse of where we might go in the future.

Modeling and Analysis Subsystem: Lead for the US IOOS Coastal Modeling Testbed, Becky Baltes, Becky.Baltes@noaa.gov

- **U.S. IOOS Testbed:**
 - Modeling Capabilities: We have added model run time as an additional measure of model performance. This was completed for Hurricane Ike in the Gulf of Mexico. Results illustrate both the differences in run-times and the scalability of each model for increased numbers of processors.
 - Cyberinfrastructure: There is a new ADCIRC visualization tool which leverages work done with THREDDS and NCTOOLBOX. This was made available to the National Hurricane Center during Hurricane Isaac, who saw potential for regular use once it is fully tested on the operational system.

Interagency Collaboration:

- **IOOS and Links to the National Water Quality Monitoring Network:** Webinar to implement the Network: Mike Yurewicz (USGS) led this meeting, and Rob Ragsdale attended, that centered on reviewing the "Draft Action Plan of the National Water Quality Monitoring Council to further implement the National Monitoring Network for Coastal Waters and Their Tributaries." There was a discussion on the possible next steps to further implement the network. The next step going forward is to develop more

specific details and provide details during a November meeting of the National Water Quality Monitoring Network. To bring the IOOS RAs up to speed, Rob will get this topic on an upcoming monthly call.

Other:

- **SCCOOS supporting the Orange County Sanitation District Outfall (OCSD) Repair:** The second SCCOOS rapid response operation, focusing on support of ocean outfall repairs on the emergency Orange County Sanitation District outfall located 1 mile off the coast of Newport Beach. This includes realtime observations from HF Radar and glider operations, modeling from SCCOOS particle tracking and 75m resolution ROMS model nowcasts, forecasts, trajectories, and reports.
- **National Phenology Network Webinar:** Hassan spoke on the US IOOS Biological Observations Data Project to the National Phenology Network (USA-NPN, <http://www.usanpn.org/>). Kathryn Thomas is the Information Management Liaison and is working with USA-NPN and NOAA NMFS on a scoping project related to Marine and Coastal Phenology to support the National Ocean Policy. More information about the project is on the landing page, <http://www.usanpn.org/mcpp>) The initial approach is focused on better understanding and what is available and how they may be “discovered” and accessed. The Draft scoping report is expected to be released in October. Kathryn approached IOOS to help her locate marine data relevant to Phenology.
- **Marine Biodata Working Group:** Hassan attended via phone. The topics discussed were mostly focused on Marine mammals data (line transect and passive acoustic), including 1. Federal marine biological database capability using OBIS (leads Jim Price/BOEM, Joel Bell, Anu Kumar/Navy), 2. Update on NOAA Cetacean & Sound Website (Leila Hatch, Jolie Harrison, Sofie van Parijs; NOAA), 3. Biological data standards development for visual line transects (Philip Goldstein, OBIS USA, U Colorado), 4. Passive Acoustic Monitoring data standards (Deborah Epperson/BOEM; Leila Hatch, NOAA; Pat Halpin, OBIS SEAMAP, Duke U.), 5. Acoustic data warehousing at NGDC (Sofie VanParijs), 6. Interaction with IOOS (Fornwall, OBIS USA USGS; Goldstein, OBIS USA, U Colorado).
- **Gulf Watch Alaska Project Breaks New Ground:** AOOS is part of new collaborative long-term monitoring effort in the Gulf of Alaska, funded by the Exxon Valdez Oil Spill Trustee Council. The program, known as GulfWatch Alaska, focuses on the 1989 spill-affected areas, and seeks to provide data to identify and help understand the impacts of multiple ecosystem factors on the recovery of injured resources. This program is expected to be 20 years in total length, and builds upon the past 23 years of restoration research and monitoring. The program involves 25 principal scientists from a variety of state and federal agencies and research institutions. AOOS Director Molly McCammon is the program’s coordinator, and the AOOS data team is providing data management services. <http://www.aos.org/gulfwatchalaska/>
- **Interactive Kiosks Introduce Public to Ocean and Coastal Information with GCOOS:** Interactive kiosks are now helping the public understand how the Gulf of Mexico influences their lives and livelihoods and are helping scientists track changes in public

understanding of major ocean issues. This week the Gulf of Mexico Coastal Ocean Observing System, a regional member of the U.S. Integrated Ocean Observing System, opened the first of six kiosks at the Institute for Marine Mammal Studies in Gulfport, Miss. These kiosks—which feature interactive games about the societal value of real-time ocean and coastal information—aid in the informal education of the public on the topics of water quality, nutrients and nutrient reduction, coastal community resilience, habitat conservation, and ecosystem integration and assessment. Additional kiosks will be installed at the Florida Aquarium, Texas State Aquarium, Audubon Aquarium of the Americas, Dauphin Island Estuarium, and Secrets of the Sea Marine Exploration Center and Aquarium. Combined, these facilities host millions of visitors annually.

Congressional: No update

Communications/Outreach: No update

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

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

Cheers,

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