Bi-Weekly Z-GRAM - 29 October 2010
www.IOOS.gov

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

Programmatics:

- **WE NEED YOUR Comments:** http://www.ioos.gov/library/frn_certifictn_design_procs_101510.pdf Federal Register Notice re: Certification Standards published Oct 15. Comment period closes Nov 15. Federal Register /Vol. 75, No. 199 / Friday, October 15, 2010 /Notices
- **Want to learn more about the exciting progress of US IOOS**? Join us for the The **Regional Coordination Workshop**, co-hosted by IOOS and NFRA will be held on 16, 17 Nov at the Four Points Sheraton DC, 1201 K Street N.W., Washington, DC 20005. The includes three complementary sessions focusing on: 1) Building federal and regional partnerships, 2) Ocean leader's special session and 3) Designing the path forward: A coordinated planning session. Please join us for three sessions - but we request you register - for registration please go to: http://www.usnfra.org/meetings_IFW.html

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 Efforts:** The team agreed that subset of datasets from CRED, NPS and PMNM will be large enough to start mapping with defined terminology for biological data and deploying technologies to translate, access and expose these reef fish datasets via Web services. The team also agreed that applications, demonstrated by Roy Mendelssohn in the IOOS Biological Data Workshop, that interface with live data streams and make use of data in dynamic way will be a good outcome from this project. Roy's team and Hassan will be visiting Hawaii the week of December 6th to meet with CRED, NPS and PacIOOS folks to demonstrate the data/user applications and to learn more about the customer needs.
    - I**OOS/NCCOS Water Quality Project**: The focus of the October meeting was to review the sample data encoding format for the FIU water quality data generated by NCCOS and metadata. For some water quality parameters that are not directly sampled (e.g. chlorophyll or nutrients), the IOOS encoding formats will need to be modified. Further discussion on how to incorporate metadata for the FIU data in needed because it is currently posted on the FIU Website as a single pdf file.
- **DMAC Functional Areas: no updates**

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:** IOOS Regional Interagency Water Quality Project: A white paper for this project was drafted and distributed to the water quality project team for review. The focus of the project is beach water quality forecasting and the paper will be used to build support in the regions. .
- **IOOS and National Science Foundation (NSF) - Ocean Observatories Initiative (OOI):** No Update.
- **Modeling Testbed**: Reports from the SURA Modeling Testbed Teams:
    - Cyberinfrastructure (Cy): The Cy team has developed a model catalog to allow easy browsing of different models (structured grid). Tools that are available include THREDDS, ncWMS, ncISO, F-TDS, ERDDAP, and Ramadda. Model visualization tools and a web portal are now on the project web site, including; Matlab-based skill assessment tools (IMEDS); Unstructured Grid development for NetCDF Java libraries; A Matlab-based toolbox for the testbed; Connection to the NOAA/Deltares CHPS system; Model conversion tools to provide output in compatible formats through the model liaisons; Metadata and catalogs.
    - Shelf Hypoxia: World Ocean Database files for the Gulf of Mexico for our focus period 2004 to 2009 were provided for download. Files include temperature, salinity, oxygen, phosphate, nitrate and nitrate+nitrite, and total chlorophyll.
    - Estuarine Hypoxia: Completed translation of the 20 year Ch3d hindcast for the Chesapeake Bay in binary format into a CF compliant NetCDF standard. The data has been posted on the SURA server and is available via TDS and ncWMS.
    - Coastal Inundation (CI) -Extratropical Component: Two basic efforts were selected for the testbed: (1) surge modeling (including wave forcing) in Scituate Harbor and (2) wave modeling in the larger Gulf of Maine during two major extratropical storms that affected the region in April 2007 and May 2005. Tropical Component: This is focused on storm surge modeling (including wave forcing) along the western Louisiana and northern Texas coasts from Hurricanes Rita (2005) and Ike (2008) which caused extensive inundation throughout the region.

Other:

- **NOAA's National Oceanographic Data Center (NODC) celebrates 50 years**: NODC opened its doors on November 1, 1960, with 29 employees ready to take on the challenge of compiling, sorting, and organizing the disparate collections of oceanographic data into a single system. A daunting task, considering that the U.S. Navy had already determined that data were coming in at such a rate that it was nearly impossible to keep up. The work soon began with a collection of unclassified data that consisted of approximately 2,000,000 machine-punched cards containing about 100,000 stations of oceanographic

data. This data consisted of about 3 million observations of temperatures, waves, currents, and depths. In comparison to today's data collections, NODC's archive currently contains over 44 terabytes of data packaged into more than 86,000 archived original datasets, and hundreds of different ocean data types. In January of 1961, NODC was formally dedicated by the Honorable James H. Wakelin, Jr., the Assistant Secretary of the Navy for Research and Development, and the representatives of the supporting agencies, in the presence of 300 guests, including members of Congress. Dr. Woodrow C. Jacobs was appointed the first NODC Director.In 1970, NODC was formally transferred from the U.S. Navy Hydrographic Office to the newly formed National Oceanic and Atmospheric Administration (NOAA), under the Department of Commerce. As the science of oceanography grew and developed over the decades, so did the Data Center, maintaining the world's largest collection of oceanographic data. In 2000, the National Coastal Data Development Center was incorporated into NODC expanding its focus from global oceans, to include coastal ocean areas. The mission of NODC is to provide scientific stewardship of marine data and information. Archived data includes physical, biological, and chemical measurements derived from in situ oceanographic observations and satellite remote sensing, and is also used as a leading source to monitor global environmental changes, such as global ocean heat content. Ways in which NODC has impacted the global Oceanographic Community:

NODC preserves and provides access to scientific quality ocean data and information for current and future generations.
NODC is recognized globally as an authoritative long term archive for ocean data and information.
NODC has provided oceanographic researchers around the world a place to preserve valuable ocean data for the benefit of future generations.
NODC's products are used as a leading source to monitor global ocean climate changes.
NODC contains the world's largest collection of publically available oceanographic data.

- **USACE Coastal Engineering Research Board (CERB)**: Linda Lillycrop (USACE and IOOS) and I had a chance to update the CERB led by MG Grisoli on both the programmatic and operational contributions of USACE to US IOOS. We were pleased to report the ongoing efforts of USACE participation on the IOOS Regional Associations boards and stakeholder working groups, the USACE/AOOS meeting, the MOU signed by USACE and PacIOOS, the support of USACE to the Interagency Ocean Observing Committee (IOOC) and the IOOS Blueprint implementation. Operationally we talking about the increase of wave buoys as outlined in the waves plan, the inclusion of the waves information in the PORTS®, work with Mobile district in the inclusion of water level data into SLOSH and CO-OPS and the continued coordination on US DMAC. I expressed my thanks for Linda's efforts in her role as the USACE rep to the US IOOS program and thanked USACE for their lead on a permanent billet in the US IOOS Program.
- **IRobot Visit**: Thank you to IRobot for their hospitality at their Raleigh Durham office. I had the chance to spend the day with IRobot and was able to discuss both the US IOOS and NOAA mission and organization. Harvey Seim joined us to talk about SECOORA and forged new relationships with IRobot. I had a chance to understand the impact

IRobot has made, through their autonomous ground vehicles, in saving lives of our troops in Afghanistan and Iraq. I am impressed with their efforts in the unmanned underwater vehicles, not only the Sea Glider but the Ranger and the Transphibian that our partners at Stevens Institute of Technology use. SeaGlider is a licensed technology from University of Washington, APL and having now visited both IRobot and APL it is true partnership that both sides talk about with sincere respect. Seagliders have logged over 10,000 days (24 years) of sea operations, 70% at 1,000 meter depths compiling reams of ocean data. IRobot in partnership with the University of Southern Mississippi launched SG-515 in support of Deep Water Horizon and operated 3 km to 50 km west of DWH site. By 26 July they had made 300+ dives to 1,000 m, each about 5 hrs duration, covered over 1500 km distance. Sensors onboard measured: CDOM based crude detection,Chlorophyll Flouresence, Backscatter (turbidity), O2 saturation,Salinity, Temperature, and Depth

- **MACOORA in Action:** MACOORA held its fifth annual meeting and exhibition, From Observation to Forecast: Tools for Understanding the Changing World at Stevens Institute of Technology on 28-29 October. I was only able to attend the second day but the meeting attracted over 150 participants and stakeholders from across the Mid-Atlantic region. From the US IOOS office, Dave, Hassan and Rob supported panel sessions during the meeting. Exhibitors included, YSI, Teledyne, Green Eyes, Millersville University, FUGRO, NOAA's Center of Operational Oceanographic Products and Services (CO-OPS), Sonardyne, Nortek, CODAR, MAFMC, SAIC, Battelle, MACOORA, US IOOS, and USGS. Keynote speakers included Michael Bruno, Stevens Institute; Radley Horton, NASA and Dan Goward, United States Coast Guard. The panels on Maritime Safety and Security, Fisheries and Inundation allowed the users and stakeholders to provide presentations on their needs, uses and improvements. This was followed by breakout sessions where details of how to meet the identified needs were discussed. Scott Glenn provided the State of MARCOOS briefing and for the sake of brevity I will simply report that they met 48.5 out of 49 milestones for their award FY07-FY10 - Well done. I was also impressed by the partnerships with the Federal and State Agencies in the areas of gliders and CODAR - HFR. By using the backbone of US IOOS and MARCOOS these entities are augmenting gliders and CODAR for their particular needs while making their data available for other uses and also taking advantage of the data and structure already in place - this is exemplified the concept of US IOOS.
- **AOOS in Action**: AOOS has released its new Transition Data Portal which can be found through the AOOS homepage at www.aoos.org. Axiom Consulting & Design, AOOS's new data management team, has been working steadily in their new role to develop data products and visualization tools for AOOS users. The beta release of the new system is scheduled for late January 2011, coinciding with the Alaska Marine Science Symposium. In the meantime, new prototype applications provide access to a variety of oceanographic datasets and feeds during the transition period. Current applications include: Real-time sensors and web cams, Arctic Research Assets Map, Models and remote sensing,North Pacific Seabirds,PWS-specific webcam page.
- **IOOS – NOAA Chesapeake Bay Office Collaboration:** Following-up Charly's attendance at an all day coordination meeting, at the NOAA Chesapeake Bay Program Offices, in regards to the Chesapeake Bay Executive Order, Charly and Rob discussed with Doug Wilson plans to meet in Annapolis in late Nov. – early Dec. The Executive Order provides an opportunity to advance integration of data in the Chesapeake Bay. The

purpose of meeting with Doug and others including CJ Pellerin (NCBO), Kyle Wilcox (MACOORA) and Jeff DLB (IOOS) will be on how to bring NCBO data into the IOOS system and opportunities to expand effort to include federal partners EPA and USGS.

- **SURA Coastal & Environmental Research Committee Meeting:** Doug supported the presentation of information regarding the Testbed and, with Harvey Seim, and Don Wright discussed possible SURA/Testbed roles with Deepwater Horizon. I had the chance to attend the awards reception where Former Senator and Governor of VA Chuck Robb was honored for his efforts as a Friend of Science.
- **20th Annual Clean Gulf Conference:** Jack Harlan attended the 20th Annual Clean Gulf Conference, which included numerous discussions with Deepwater Horizon Spill responders. While in the Tampa area, Jack met with USF partners: Cliff Merz and Bob Weisberg to discuss HFR and modeling.
- **Marine Biodiversity Symposium:** Hassan attended a Marine Biodiversity Symposium: "Oceans" and the Census of Marine Life - A Symposium on Ocean Exploration, Governance and Ten Years of Discovery hosted by the French Embassy in Washington, D.C. The symposium was sponsored by The French National Center for Scientific Research (CNRS), the Census of Marine Life, La Maison Francaise at the Embassy of France and The Richard Lounsbery Foundation. Insights on current marine biodiversity issues, from scientific exploration to international governance were explored and the first official presentation in the United States was made of the Census of Marine Life Findings. The key speakers were Olli Barbe (Galatee Films, Executive Director of the film "Oceans"), Ron O'Dor (Census of Marine Life), Michael Vecchione (NOAA/ Smithsonian), Philippe Bouchet (Museum of Natural History, France), Philip Goulletquer (Ifremer, France), Elizabeth Moore (NOAA/NOS) and Jesse Ausubel (Alfred P. Sloan Foundation).

Congressional: No Update
Communications and Outreach:

- NOS Podcast on Hawaii Obs now live: http://oceanservice.noaa.gov/podcast.html.
- CeNCOOS and MBARI - Bloom Tracking in the News: THE CALIFORNIAN.COM - *Monterey Bay researchers use underwater robots to track toxic algae,* by Sandeep Ravindran - October 21. Scientists are tracking toxic algal blooms in Monterey Bay using a combination of ships, underwater robots, and floating instruments. The idea is to be able to follow marine organisms as they move around in ocean currents, said Jim Bellingham, chief technologist at the Monterey Bay Research Institute.

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

- **CZ2011**: From the national level US IOOS submitted two special panels and one café conversation. I am also encouraged that we have received a large number of abstracts for the theme on Observations and Modeling. Look for a strong US IOOS presence at this meeting.

- **November 3-4:** Renewable Ocean Energy & the Marine Environment: Responsible Stewardship for a Sustainable Future.
  Don't miss this important opportunity to interact with researchers, developers, policymakers, and scientists to discuss and identify gaps in the current state of knowledge regarding the environmental impacts of renewable ocean energy. SECOORA is a major sponsor this conference and is helping to coordinate the "Coastal and Marine Spatial Planning" plenary session and also a "Managing Information to Support Decision Making" track. **Register today at:** http://www.ces.fau.edu/coet/. SECOORA will also be hosting a workshop entitled, "Data and Information for Offshore Energy Development in the Southeast: How Ocean Observing Can Help to Fill the Gaps," on November 2, 2010, just prior to the conference.

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/

- **Annual Ocean Tracking Network Conference:** Hassan Moustahfid; November 2 – 5; Halifax, NS, Canada.
- **Ocean Energy Conference:** Jack Harlan; November 2 – 5; Palm Beach, FL.
- **Seventh Plenary Session of the Group on Earth Observations (GEO-VII) & Beijing Ministerial Summit:** November 3-5 in Beijing, China; Dr. Robinson will be the NOAA principal attending; Zdenka will attend as NOAA's representative to U.S. GEO along with other NOAA colleagues who are on the U.S. delegation and are supporting this summit.
- **WIGOS Meeting**: Derrick; November 1 – 3; Oosetende, Belgium
- **Ocean Energy Conference**: Jack H.; November 2 – 5; Palm Beach, FL
- **MPA Federal Advisory Committee** (Santa Barbara, CA - 11/2) and **OOI-CI Planning Meeting** (San Diego, CA – 11/3) - Charly
- **The National Research Council's Ocean Studies Board:** Seattle, Washington from November 10-11, 2010 - 10-11 Nov: US IOOS is one of the agenda items

Cheers,
Zdenka

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