

Bi-Weekly Z-GRAM - 23 July 2010

[www.ioos.gov](http://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

### Programmatic:

- **FY10 RCOOS Awards:** No Update.
- **FY11 Proposal:** FY11 NOAA Omnibus was published July 16, 2010. The full funding announcement was made available on [www.grants.gov](http://www.grants.gov) July 19, 2010. Proposals are due October 1, 2010. Reminder - If you have a question, we have posted an FAQ on [www.ioos.gov](http://www.ioos.gov). Please submit all questions to our office and we will provide answers back via our website.

The FAQs will be updated online as questions trickle in from potential applicants

**Initial Operating Capability - Data Management and Communications (DMAC) Subsystem of IOOS®** [http://ioos.gov/library/dmac\\_implementation\\_2010.pdf](http://ioos.gov/library/dmac_implementation_2010.pdf)

- **Customer Projects:** **Contact Charly Alexander** at [Charles.Alexander@noaa.gov](mailto:Charles.Alexander@noaa.gov) if you want to be part of the action.
  - **IOOS Biological Data Project:** Monthly Conference Call (7/15). Members of the IOOS Biological Data Project technical team discussed the IOOS data structure and convention standards and whether they could be adopted for the biological data project. The following are discussion topics that were covered: Which informatics/terminologies to use? What data schema/data models are suitable? What encoding conventions are needed? Which Web services could be adopted?
  - **IOOS Biological Observing System Efforts:** Hassan contacted Susan Dufault (Ocean Tracking Network [OTN] Manager) about the OTN annual meeting and about the possibility of coordinating a telemetry workshop to link all of the regions in the U.S. together. The OTN annual meeting is scheduled for November 3-5 in Halifax, Nova Scotia, Canada. Hassan contacted Dr. John Payne (U.S. coordinator for Pacific Ocean Shelf Tracking [POST]), Dr. Barbara Block (Tagging Of Pacific Predators [TOPP]), and Dr. John Kocik (NOAA/NEFSC Gulf of Maine station) to talk about the OTN workshop.

- **USACE Water Level SOS Project:** Joint meeting was held (7/21) with USACE/Mobile and CO-OPS to share information. CO-OPS is interested in receiving the USACE data.
- **Climate Project with NCCOS/National Marine Sanctuaries:** A kick-off meeting with Doug Pirhalla (NCCOS) to discuss Phase I of this project, which will involve planning for access to Florida International University's (FIU) long-term water quality data sets, has been scheduled for August 5, 2010.
- **Technical Updates:**
  - **SOS CONFORMANCE TESTING:** Working with NDBC and Image Matters to improve OGC test script and NDBC server code. The goal is to obtain a test methodology that is suitable for IOOS use (e.g. removing too-strict tests such as requiring that all times be precise to the second) and for NDBC code to constitute a reference implementation of SOS. Note that the tests for acceptance into the IOOS Catalog are (for now) less strict than the OGC tests.
  - **IOOS GML SCHEMA:** Schema files being migrated from NOAA CSC to the NOAA IOOS web server. We are working with new IOOS webmaster to make this happen. Advance notice was sent to data providers, with more detail expected in August. Normal data users should not notice any change unless they attempt to validate old IOOS GML documents that reference the old schema; the plan is to mitigate that risk by suitable use of http redirection from CSC to IOOS.
  - **NDBC:** Mike Garcia (NDBC) modified NDBC SOS services and they are now accessible from the production server located at <http://sdf.ndbc.noaa.gov/sos/>. Changes made include: (1) Removed the trailing colon (:) from the station and sensor URNs, (2) Corrected exception report for a bad version in the AcceptVersions of the GetCapabilities request, and (3) Corrected the exception report for a bad operation (request) value.
- **IOOS Data Catalog and Viewer Version 1.0 is now live at <http://ioos.gov/catalog/>.** Currently doing only minor enhancements and bug fixes, adding any new servers as available and tested, and planning for more substantial work. Firefox, Safari, and Chrome browsers were found to work much more rapidly than MSIE with this Google Maps-based interface. GMRI is obtaining a Windows machine to do testing and performance enhancements for MSIE. Catalog harvests SOS and TDS data servers. Email [ioos.catalog@noaa.gov](mailto:ioos.catalog@noaa.gov) to request that your server be added, to provide feedback, or to report errors.
- **IOOS Regional DMAC Team Efforts:** No Update.
- **Modeling Testbed Project:** Doug Levin (IOOS) met with Southeastern University Research Association (SURA) program management to review the progress of the Testbed. Coastal Inundation and Cyber Infrastructure teams have already started their tasks. Each team lead has been asked to fill in the project's milestone matrix (posted on

program website: <http://testbed.sura.org>). There has been no recent information received from the estuarine hypoxia team.

**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):** HF Radar Technical Steering Team: KICK-OFF meeting will be held on July 28 at the Consortium for Ocean Leadership (COL) in Washington, D.C.
- **IOOS and Links to the National Water Quality Monitoring Network:**
  - **Water Project Conference Call (7/12):** This conference call reengaged key participants to start planning for a multiregional water quality project. Identifying pilot beaches, developing workflows to show specific community needs, and start work on NEXRAD precipitation data interoperability were primary tasks to start from this discussion. The next meeting is planned for the first or second week of August.
  - **WaterML 2.0:** Jeff is participating in standardization discussions within OGC Hydrology Domain Working Group. USGS and others interested in serving data via SOS in WML2 when complete.
- **IOOS and National Science Foundation (NSF) - Ocean Observatories Initiative (OOI):** No Update.
- **DMAC Steering Team:** No Update.

#### Other:

- **Response to Deepwater Horizon:** Ocean Veritas - The National Oceanic and Atmospheric Administration (NOAA), the U.S. Environmental Protection Agency (EPA) and the White House Office of Science and Technology Policy (OSTP) today released its second peer-reviewed, analytical summary report about subsurface oil monitoring in the Gulf of Mexico. The report contains preliminary data collected at 227 sampling stations extending from one to 52 kilometers from the Deepwater Horizon/BP wellhead. Data shows movement of subsurface oil is consistent with ocean currents and that concentrations continue to be more diffuse as you move away from the source of the leak. This confirms the findings of the previous report. The report comes from the Joint Analysis Group (JAG), which is comprised of the aforementioned agencies and was established to facilitate cooperation and coordination among the best scientific minds across the government and provide a coordinated analysis of information related to subsea monitoring in the Gulf of Mexico. The JAG report contains data analysis of fluorometric measurements and comments on the methods used to monitor dissolved

oxygen levels. Data were collected on the R/V Brooks McCall, R/V, R/V Walton Smith, NOAA Ship Thomas Jefferson and NOAA Ship Gordon Gunter between May 19 and June 19, 2010. The fluorometric data provide additional information on the likely presence of sub-surface oil and its location in the water column. The report indicates that subsurface oil concentrations are highest near the wellhead and become more diffuse farther away from the source. Over the course of multiple research missions conducted in the last three months, scientists have employed and tested many techniques to better understand the extent of this unprecedented oil spill and have found fluorometric sampling to be useful to help identify the location and concentration of subsurface oil. Fluorometers use light waves to detect anomalies in the water column. Researchers deployed water sampling devices in areas where the anomalies were detected to collect samples, which are undergoing chemical analysis in the labs to determine the actual levels of hydrocarbons present. Conclusions based on the fluorometric data in this report include:

- Fluorometry measurements show repeated signals between approximately 3,300 feet (1,000 meters) and 4,300 feet (1,300 meters) deep that are consistent with diffused oil in the water.
  - The fluorometric signal is strongest near the wellhead and decreases with distance, which is consistent with previous sampling.
  - Average fluorescence in the depths of interest -- 3,300 feet and 4,300 feet -- at sampled locations range from 4 to 7 parts per million (ppm). This estimated value is slightly higher than the laboratory-confirmed values previously reported by the JAG, which, at their highest near the wellhead, were approximately 1 to 2 ppm.
  - It is important to note that fluorescence techniques also detect other natural organic substances in the water, leading to the existence of a background level of fluorescence throughout the water column. This means that the measured fluorometer signal is not solely attributable to Deepwater Horizon/BP oil.
  - For the areas sampled, the fluorescence data indicate movement primarily west-southwest until June 2. In mid-June, fluorescence indicates movement toward the northeast within the Gulf. These movements are generally consistent with observed ocean currents in the area.
- **AOOS In Action - Arctic Research Assets Map Launched:** This web-based, interactive map shows the locations of moorings, buoys, transects, and other instrumentation in the Arctic during the 2010 field season ([http://dev.axiomalaska.com/AOOSdev/maps/arctic\\_assets.html?v=5.0](http://dev.axiomalaska.com/AOOSdev/maps/arctic_assets.html?v=5.0)). It provides information on which sensors are collecting data, the dates they are in the water, contact info for PIs, and other metadata. The map is designed to assist with planning, collaboration, and conflict avoidance. Many entities contributed to this map, including academic institutions, government agencies, and industry. We hope that you will take a minute to open the link and explore the site. Our long-term goal is to maintain and update

the map periodically, as well as stream any real-time data. During this initial launch, we are eager to hear any feedback from you, including look and feel, ease of use, or assets that may be missing. You may notice that a fair amount of transects are not included (particularly vessel tracks) in this first round. We had trouble getting people's firm plans prior to the field season, and needed lat/long or shapefiles (instead of jpgs) to be able to incorporate them in the map. If you have precise locations for transect research that could be added, please email Darcy Dugan at [dugan@aoos.org](mailto:dugan@aoos.org) and we will do our best to include them in the next update.

- **NANOOS In Action:** The Washington Buoy team successfully deployed the NANOOS/Murdock Cha-ba "Whale Tail" buoy on Friday, July 18 at 11:30 PDT. Suzanne Skelley (IOOS) delivered remarks at the dedication ceremony before the buoy's launch. Congressman Norm Dix (D-WA) attended this event. The deployment was done from APL's 58' R/V Robertson in her first voyage outside Puget Sound. Though the seas were rough, the deployment was smooth, and data are now being recorded, transmitted back in real time, and served at [http://www.nanoos.org/nvs/nvs.php?path=NVS-Assets&infoWindow=action::auto\\_open||asset\\_class::siso||tab::observations||asset\\_id::APL\\_Chaba](http://www.nanoos.org/nvs/nvs.php?path=NVS-Assets&infoWindow=action::auto_open||asset_class::siso||tab::observations||asset_id::APL_Chaba) (or by visiting: <http://tiny.cc/7dscv>). The buoy, which is 13 miles off La Push at 47-58'N, 124-57'W in 100m of water, measures meteorological quantities, vector velocity from surface to bottom, and chlorophyll, turbidity, dissolved oxygen, temperature, and salinity at discrete depth intervals. PCO<sub>2</sub> and pH are also measured at the surface. Nitrate measurements will be added in the spring. This buoy, a totally new system, came together on a very fast time-frame, owing to the hard work of many people. The development team, led by Dr. John Mickett, went to truly Herculean efforts to get the system working and deployed. Special thanks go out to John, Mike Carpenter, Zoë Parsons, Nick Michel-Hart, and Mike Kenney for their hard and skillful work. I want to acknowledge Matthew Alford (co PI on the Murdock grant; NANOOS PI) who designed/deployed the system). He and his skilled team did a most excellent job. The buoy could not have been deployed safely without the excellent ship handling of Eric Boget and Andy Reay-Ellers. Thanks also go out to Emilio Mayorga for getting the data served on NVS within several hours of deployment. A special thanks to the Quileute Nation for the terrific name for the buoy, and for their warm welcome of us on our arrival in La Push. We also want to thank the La Push Coast Guard station for their help and support. Last but not least, we thank the Murdock Foundation, and the University of Washington, who provided significant matching funds for the support that made the system possible. The new Washington coast seaglider, also purchased on the Murdock grant, was also successfully deployed at the same location, which will repeatedly sample a line normal to the coastline between the buoy and 186km offshore. Thanks to Troy Swanson for preparing and deploying it, and to Craig Lee's group for their assistance in piloting it. NANOOS will recover the system in October to inspect all of its components and will not attempt to overwinter until next year, 2011-2012. In the spring, the full system, which will also include a subsurface

profiling mooring measuring T, S, dissolved oxygen, nitrate and velocity, will be deployed permanently.

- **PacIOOS Trip:** Thank-you to: Many thanks to Chris Ostrander (PacIOOS Director) who orchestrated the trip, and Jim Potemra (PacIOOS DMAC lead), who joined us for the trips to Saipan and Guam. I started in Oahu, meeting with the PacIOOS team. I appreciated seeing the data capabilities that are being compiled by John, Abe, and Brain, and the new products development under Jen. From there we spent the day on Hawaii Island and at Liquid Robotics. We had the chance to swim with the wave glider, to understand how this new technology works. From there we flew to Saipan and my thanks to John Starmer (Coral Reef Monitoring Biologist, CNMI Coastal Resources Management Office and PacIOOS liaison) for his hospitality. We snorkeled and checked out the base of the new ICON station which will also carry the PacIOOS water quality station. We had a stakeholders meeting on Monday with the Coast Guard, State Agencies, NOAA's Coastal Zone Manager, and local divers. We had a chance to describe the U.S. IOOS and PacIOOS mission and efforts in data management. We then listened to stakeholder needs. The needs centered around understanding winds, waves and currents in the local areas. For divers, understanding what the currents are doing at particular dive spots are both a safety and business issue. In Saipan and Guam, the erosion from the land has had great effects on the reefs, so in both cases the need for integrated, interdisciplinary data collection, from Ridge to Reef, is critical. From Saipan we then repeated the Stakeholder engagement in Guam. My thanks to Dr. Jason Biggs (Assistant Professor of Marine Biology, University of Guam and PacIOOS liaison), who was our host. We met with Congresswoman Bordallo, see below under **Congressional**. We held two stakeholder meetings and again we had representatives from NOAA's National Weather Service, and representatives from the State, the University, the fishing industry, and local NGOs. Similar needs were expressed, particularly the need for additional wave buoys on the western side of the island. There was strong emphasis on the Ridge to Reef and the need for stream gauge information. The water quality station in Guam in Cetti Bay will be part of a larger effort that will include the reforestation effort of the ridge above the bay and the monitoring of land practices to try to return the bay back to its previous condition. The trip provided me with an appreciation for the distance that the PacIOOS region encompasses and the different infrastructures between the various islands in the region. I had the chance to understand the challenges that the entire regions faces and some of the unique aspects that the islands face. As with all regions, the observation and data management efforts are highly leveraged and this is no different in PacIOOS. Some of those partnerships include the sharing of costs for the [up to] 8 CDIP buoys that will be in the region by next year, capitol costs funding came from NSF, USACE, JIMAR, and PacIOOS with PacIOOS talking over the operations and maintenance costs. PacIOOS is working with local communities for their involvement with the IOOS observing equipment and included a buoy naming competition held at the

College of the Marshall Islands in January 2010. The winning name, Kalo, is the name of a Marshallese bird that flies only near land. Whenever a sailor sees a Kalo, the sailor automatically knows that land is near.

### **Congressional:**

- Tuesday, July 20, 2010: Zdenka (IOOS), Chris Ostrander (PacIOOS), and Jason Biggs (IOOS liaison in Guam) met with Congresswoman Madeleine Z. Bordallo (D-GU) on July 20th. The Congresswoman graciously gave us one hour and was engaged and supportive of IOOS. Guam is working through the challenges and opportunities that the military build-up is presenting and we discussed a number of environmental challenges this build-up will present.

### **Communications and Outreach:**

- Sunday, July 18, 2010 - Ben Chambers (Palm Beach Post Staff Writer) - *"Where will spilled Gulf oil go? Three months later, officials and residents are still asking."*  
<http://www.palmbeachpost.com/news/where-will-spilled-gulf-oil-go-three-months-809772.html>.
- Follow-up to the Murdock Foundation/NANOOS/UW buoy launch: Monday, July 12, 2010. Seattle Post Intelligence Blog Highlights -  
[http://www.seattlepi.com/local/423250\\_sound12.html](http://www.seattlepi.com/local/423250_sound12.html); KOMO TV 4 Seattle -  
<http://www.komonews.com/news/local/98296409.html>.

**IOOS Conference Involvement:** This section will highlight those conferences where IOOS is a sponsor or has a session: No Update.

**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/>

- **IEEE Geoscience and Remotes Sensing Society (IGARSS) 2010:** Jeff de La Beaujardiere, July 26-30, Honolulu, HI.
- **Bay and Estuarine Sensor Technologies (BEST) Workshop:** Doug Levin, Rob Ragsdale, and Hassan Moustahfid, July 27 – 30, Oxford, MD.
- **OOI Meeting:** Jeff de La Beaujardiere; August 2-3; Rutgers University
- **IOOS MPA Task Team Workshop:** Charles Alexander, week of August 30, 2010, Monterey, CA (tentative).

Cheers,  
Zdenka