

Bi-Weekly IOOS® Z-GRAM - 4 November 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](#).

IOOS® - A Partnership supporting Lives and Livelihoods

Governance and Management Subsystem:

- **Certification:** On Monday November 7, we expect the National Science Foundation to publish a Federal Register Notice on behalf of the Interagency Ocean Observation Committee (IOOC) requesting public comments on the IOOC-approved draft Certification Criteria for RICEs. This criterion will be used to evaluate RICEs for certification and thus the extension of civil liability protection under NOAA. We look forward to your comments so that we can finalize the criteria. The US IOOS Program Office has the responsibility under the ICOOS Act is to “*promulgate program guidelines to certify and integrate non-federal assets*” based on the Certification Criteria. Dave Easter, US IOOS Program Office, is the lead to develop the guidelines and has begun preliminary work on this by reaching out to the US IOOS RCOOS Directors to seek input. This is being done in parallel with the public comment period to keep the process moving, but not to circumvent the public comment period, and comments received will be fully incorporated.

Observation Subsystem:

- **High Frequency Radar/Radio (HFR):** For more information contact the US IOOS HFR Project Manager, Jack Harlan- Jack.Harlan@noaa.gov
- **Check Out Sea Technology, Oct 2011:** Rapidly Deployable SeaSonde for Modeling Oil Spill Response - Helicopter-Deployable, High-Frequency Radar Unit Improved Operational Oil Drift Predictions in the Barents Sea; Dr. Anton Kjelass, President CODARNOR AS and Chad Whelan, Technical Projects Manager, CODAR Ocean Sensors Ltd. The Norwegian Clean Seas Association for Operating Companies and the Norwegian Coastal Administration launched the Oil Spill Response in 2010, a multi-year development program for oil-spill response technology. The concept was successful and as a result CODARNOR AS has been asked to provide a 2 year pilot service to the

Norwegian Clean Seas Association for Operating Companies that includes 3 mobile SeaSonde units deployed at different locations along the coast of Norway.

- **AOOS releases a new sensor map to beta testers:** The AOOS Data management team has released Version 2 of the sensor map to a group of beta testers. We are identifying bugs and compiling feedback. Keep your eyes peeled for a public release of the new sensor platform in mid November.

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).

- **U.S. Integrated Ocean Observing System (IOOS®) and Partners Establish Community Standards for Biological Observing Data Integration:** The week of November 7, IOOS will make community standards for biological observing data available to the nation. Biological data includes information on species' presence, absence, or abundance. The standards are designed to increase access to and availability of such data, and reduce the time that researchers must spend locating and integrating data from various providers. This activity, which supports conservation efforts such as biodiversity and ecosystem-based fishery conservation and management, is the result of a two-year pilot project between IOOS and one of its regional entities, the Pacific Islands Ocean Observing System. Other partners include NOAA, the National Park Service, the U.S. Geological Survey, and academic sources in the Pacific region.www.ioos.gov
- **GCOOS Web Pages for Boaters and Fishermen:** Real-time weather and ocean data from the GCOOS are now available for boaters and fishermen in the U.S. sector of the Gulf of Mexico. The experimental website (see <http://gcoos.tamu.edu/products/maps/boaters/>), consisting of oceanographic and meteorological conditions and forecasts out to seven days, will provide a one-stop shop of information. The website is the product of stakeholder workshops hosted by the GCOOS-RA in 2009 targeting the recreational boating and fishing communities. In 2010, the GCOOS Education and Outreach Council dedicated its annual meeting to developing the conceptual design of the web pages, which was subsequently implemented and enhanced by GCOOS product developer Dr. Shin Kobara. Incorporating information from GCOOS data providers and several NOAA Offices, the suite of information offered includes: near real-time weather radar, satellite cloud coverage, sea surface and air temperature, wind speed and direction, surface current speed and direction, and water depth. Users can select map layers to show nautical charts, marine hazard warnings, and habitat maps such as Essential Fish Habitat and Marine Protected Areas.

- **CeNCOOS releases a new version of the CeNCOOS Data Portal, your access point for much of the ocean observing data collected in northern and central California.** Available <http://204.115.180.244/CeNCOOS/DataPortal.html>. POC Tom Wadsworth (twadsworth@mbari.org). Changes include:
 - A webpage entrance message summarizing uses for the CDP 2.0 (check the box at the message bottom to avoid displaying it each time you load the page).
 - Regularly updating views of the central and northern coast with 6 webcams (map markers appear as + signs)
 - Locations and links to real-time data for 32 high-frequency radar (HFR) stations that measure ocean surface currents from the shoreline (map markers appear as triangles)
 - 4 new National Weather Service (NWS) wind stations (see the Asset List on the webpage left column)
 - A new graphing system on the CDP data bubbles (when you click an asset marker on the map) that: provides quicker data plots, shows a graph legend with the depth of the measurements and allows up to 5 different depths to be graphed for a single variable measured at an asset (all depths measured are available through the download options).
 - Measurement depths are now included in the data download files (for assets with multiple depths measured).
 - 3 status options for asset markers on the CDP map (see map legend): real-time (updated within 24 hours), real-time inactive (should be updated but is experiencing problems) and non-real-time (not designed to update within 24 hours)
 - 2 new map filter drop-down menus were added to the left column (Organizations, Asset Type)
 - New option to display the name, measurements and the organization responsible for an asset when the mouse pointer hovers over an asset marker.
 - Data on the CDP are now graphed in Pacific Time (rather than UTM time) on the data bubble (note: UTM time is still used in data download files).
 - A link to the CDP mobile iPhone app is provided on the CDP webpage (Android app to follow soon!)
- **IOOS Registry, Catalog, Viewer (RCV) Development:**

- Micah, US IOOS Program Office, continued tracing ESRI Geoportal Server mapping of SOS GetCapabilities response XML and ISO 19115 and 19115-2 metadata to internal Geoportal search indexing properties and associated functionality. Certain elements within ISO metadata and GetCapabilities documents are parsed and then used for either search filtering (i.e. service keywords, abstract text, owner, etc) via REST and CS-W query, or map preview, or other functionality. In order to determine if Geoportal could serve as a service registry with the IOOS catalog, understanding and evaluating how to extend or adapt these mappings is important.
- Micah also investigated options for mapping the IOOS inventory spreadsheet on a Google Maps site using the private Google Fusion table created previously from the spreadsheet data. He created a proof of concept HTML page showing the inventory as well as a short guide on using Google Fusion tables with Google Maps and the NOAA Enterprise Google Maps license.
- **RA DMAC Reference Implementation Working Group:** *This group is led by Derrick, US IOOS Program Office as a result of the US IOOS RA DMAC meeting last march.* The group is discussing the details of deploying a reference implementation for the Sensor Observation Service. New to the RA DMAC Reference Implementation Working group are several communication mechanisms. A targeted Google site and mailing list (ioostech_dev@googlegroups.com) has been established to support discussion dedicated to the Reference Implementation development and a Google site (i.e. ioos_tech Google Code site (<http://code.google.com/p/ioostech/>) is being revived to work through ideas that may become guidance or new standards. The GEO-IDE Wiki site (https://geo-ide.noaa.gov/wiki/index.php?title=Main_Page) will serve as a host for materials and documentation.
- **SECOORA and Partners in Action - BioHab GIS Updated:** BioHAB GIS, created and maintained by the Florida Fish & Wildlife Research Institute and partially funded by SECOORA, has been updated to a new technology, using Adobe flash builder 4.5 with ESRI FLEX viewer 2.4. BioHab allows you to view multiple complex data sets and real-time observations. Data types include coral reefs, essential fish habitats, real time and near real time datasets, bathymetry, and other habitats.
http://ocean.floridamarine.org/biohab_gis/

Modeling and Analysis Subsystem:

- **Announcing Global RTOFS !** The first operational global eddy resolving ocean modeling capability for weather time scales at NOAA was implemented at 1200 UTC 25 October. The accomplishment provides a critical numerical guidance element to support OPC, NHC, the US Coast Guard and many other institutions. It also will serve as a

foundational component to building an operational earth system prediction capability for the agency. The system is based on the HYbrid Coordinate Ocean Model (HYCOM) developed by the NAVY. The implementation was made possible in part by a strong NAVY-NOAA collaboration facilitated in part by the National Oceanographic Partnership Program (NOPP) consortium. Brief details of the system, daily graphics and monitoring can be accessed at: <http://polar.ncep.noaa.gov/global/> Models and examples for data access are available at: http://polar.ncep.noaa.gov/global/data_access.shtml

- **US IOOS Modeling Testbed:**

- **Cyber-Infrastructure Team:** The Cyber Infrastructure team has had several phone meetings over the past 2 weeks to refine and focus the collaborative website. A new revision is underway to tie together the Cyber Infrastructure efforts from the past year and to create a more user friendly tool for the sustainable vision of the Testbed.
- **Coastal Inundation Team:** Members of the Inundation Team (Don Slinn and Rick Luettich) held a coordination meeting with Jaime Rhome from the National Hurricane Center (NHC) to plan a December meeting and to organize a plan for Don S. to deliver/transition a model to NHC for incorporation.
- **Coastal Inundation and Shelf Hypoxia:** Both the Inundation and Shelf Hypoxia teams held meetings to discuss and develop final results for Phase 1 of the Testbed.
- **Defining a Sustainable Testbed:** Becky and Charly from the U.S. IOOS Program Office are working on a description of what the end-product will be at the end of the current grant per an operational/sustainable testbed. The subsequent draft will then be circulated Testbed leadership for review/discussion. They anticipate this definition/description will be expanded to a more detailed “ConOps” that describes key infrastructure, processes and organizational elements of the Testbed.

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):** No Update

Other:

- **Gulf of Mexico Data Atlas Available:** NOAA's National Coastal Data Development Center (NCDDC) has released the initial prototype of the developing Gulf of Mexico Data Atlas (<http://gulfatlas.noaa.gov>). In 1985, NOAA's National Ocean Service published the Gulf of Mexico Coastal and Ocean Zones Strategic Assessment Data Atlas, which has served as one of NOAA's primary references for the spatial footprint of key ecosystem components. The newly released data atlas is comprehensive, high-resolution, and Internet-based. This initial release has 95 map plates in 31 different subject areas. Additional maps are under development and planned for inclusion in 2012. The atlas is designed to provide information necessary to answer questions regarding the current conditions of the coastal/marine environment, coastal infrastructure, and the socioeconomic status and trends of the Gulf of Mexico. "Though published by NOAA, the Gulf of Mexico Data Atlas is truly a collaborative effort," said Russell Beard, Director of NCDDC. "The Atlas has data from federal, state, non-governmental agencies, and academia. We also had representatives from a cross section of those data providers on the Gulf of Mexico Data Atlas Prototype Executive Steering Committee who provided guidance on the plates and the supplementary information." Dr. Matthew K. Howard, GCOOS Data Manager, and active member of the Atlas' Executive Steering Committee. "GCOOS prepared and provided a comprehensive, oxygen data set containing observations from 14 cruises of the Mechanisms that Control Hypoxia Program," said Howard. "We provided this data set to the NCDDC group that prepared the oxygen plate." said Dr. Shinichi Kobara, GCOOS GIS Manager, who prepared a plate on GCOOS-RA for NCDDC that is planned for addition in 2012.
- **University of Maryland, Baltimore County Campus -Storm Center Technology Incubation Center:** US IOOS Program Office (Derrick, Charly, Zdenka and Marina) along with staff from CO-OPS and Office of Response and Restoration visited the UMBC's Technology Incubation center near BWI to visit with staff from the Storm Center for a demonstrations of real-time collaboration and visualization as a follow-up to a recent visit to this facility during the NOAA SES Summit. The result was a very stimulating morning with the Storm Center's staff, generating some very interesting ideas and opportunities. Storm Center already works with several parts of NOAA's National Weather Service to provide collaborative tools.
- **Challenger 1 - Silbo- Glider Mission - Abort or Not:** It has been several months since I included an update on this mission. Currently, the team is working hard to save the mission. Silbo reported a leak and the team has been testing her all weekend. The go/no go decision will be made on Monday - follow along on <http://www.i-cool.org/?cat=77>.

To catch you up she has been at sea for 136 days. An inspection at day 130 showed no biological growth. The team has observed the immense difference in temperature and pressure the glider sees every time it goes from the surface to depth. As of this morning the mission continues but with the glider diving to only half our normal inflection point (500m). We shall see what the day brings.

- **World Ocean Council Launches “Smart Ocean / Smart Industries” Program on Ocean & Climate:** Maersk, Transocean and other leadership companies are joining forces to create an international program for data collection from vessels and platforms. Leading ocean companies are working to expand and better coordinate the collecting of ocean and atmospheric information from ships and offshore structures through the [“Smart Ocean / Smart Industries”](#) program developed by the World Ocean Council (WOC). The UNESCO Intergovernmental Oceanographic Commission (IOC) is hosting the initial WOC workshop on 12-13 December 2011 in Paris. The need to better understand and monitor the ocean and climate has never been greater. Government and scientific institutions have limited facilities and resources to obtain marine and atmospheric data. Shipping, offshore oil and gas and other ocean industries, e.g. ferries, fisheries, offshore wind, aquaculture and others, operate thousands of vessels and platforms. These provide tremendous potential for cost-effectively collecting ocean and climate data. Expanded information will help improve the modeling and predictability of weather, ocean conditions and climate change, and will support responsible use of ocean space and resources – with clear benefits for science, government, society, and business. The IOC will host the initial WOC “Smart Ocean / Smart Industries” workshop. The meeting will convene industry, science and government representatives to develop: a) a shared understanding of the program need and opportunity, b) the initial design of the process and institutional framework and c) the road map and work plan for moving forward. The workshop will bring together representatives from: a) shipping, oil and gas, ferry, offshore wind, mining, fisheries, navies, etc; b) existing voluntary observation programs; c) marine technology, instrumentation, IT/communications; and d) international and national oceanographic/metrological organizations. Space is limited. Interested parties should contact: paul.holthus@oceanCouncil.org, http://www.oceanCouncil.org/site/smart_ocean.php
- **Aquarius Yields NASA's First Global Map of Ocean Salinity:** The first global map of the salinity, or saltiness, of Earth’s ocean surface produced by NASA's new Aquarius instrument reveals a rich tapestry of global salinity patterns, demonstrating Aquarius' ability to resolve large-scale salinity distribution features clearly and with sharp contrast. From NASA Press Release: "PASADENA, Calif. – NASA's new Aquarius instrument has produced its first global map of the salinity of the ocean surface, providing an early glimpse of the mission's anticipated discoveries. Aquarius, which is aboard the Aquarius/SAC-D (Satélite de Aplicaciones Científicas) observatory, is making NASA's

first space observations of ocean surface salinity variations -- a key component of Earth's climate. Salinity changes are linked to the cycling of freshwater around the planet and influence ocean circulation. The map shows several well-known ocean salinity features such as higher salinity in the subtropics; higher average salinity in the Atlantic Ocean compared to the Pacific and Indian oceans; and lower salinity in rainy belts near the equator, in the northernmost Pacific Ocean and elsewhere. These features are related to large-scale patterns of rainfall and evaporation over the ocean, river outflow and ocean circulation. Aquarius will monitor how these features change and study their link to climate and weather variations." The link is for the 1st light for Aquarius.

http://www.nasa.gov/mission_pages/aquarius/news/aquarius20110922.html

- **CenCOOS, NANOOS, SCCOOS Hook Up!** The three West Coast regional components of the U.S. Integrated Ocean Observing System (IOOS) are expanding and strengthening ocean observing collaboration under a newly signed Memorandum of Understanding (MOU). The MOU represents a formal commitment to work together with governmental and non-governmental entities to serve requirements for ocean observations, data, and information at the scale of the California Current Large Marine Ecosystem (CCLME). The Southern California Coastal Ocean Observing System (SCCOOS), the Central and Northern California Ocean Observing System (CeNCOOS), and the Northwest Association of Networked Ocean Observing Systems (NANOOS) agreed jointly to plan CCLME observations and share information that will mutually benefit each sub-region and the West Coast as a whole. Visit www.ioos.gov, where a copy of the MOU can be found on all three RA websites, here is one of the links - www.sccoos.org/as-org.html.
- **Open Geospatial Consortium (OGC) Major Interoperability Experiment (OWS-9) Sponsors Meeting:** Derrick attended. The OGC interoperability experiments are OGC mechanisms to test and extend standards in realistic data access scenarios. While IOOS is not sponsoring the IE this year, it was useful to see the suite of problems other federal agencies are facing in the area of geospatial data management.
- **IWG-Ocean Partnership Ad Hoc Group on Biodiversity Quarterly Meeting:** Hassan briefed the IOOS Biological Data services that have been implemented by PacIOOS. Jim Price, Bureau of Ocean Energy Management (BOEM), asked about the Web service implemented in PacIOOS and whether it: 1) Could work with BOEM's customized software and 2) if other species could be accommodated. Hassan cited the service's (i.e. ERDDAP's) scalability, interoperability and extensibility to connect to other software and services. Of note, Mark Fornwall (OBIS) presented an overview on the interoperability of standards implemented in PacIOOS with standards used within the OBIS community and Global Biodiversity Community and explanation of Darwin Core's potential to encompass more biological variables. Look for his briefing posted on our website this week.

Congressional: No update

Communications/Outreach:

- NOAA Awards \$15 Million to Train New Generation of Scientists; USBE Online, Nov 1, 2011: "Florida A&M University has been awarded an education and research grant totaling \$15 million from the National Oceanic and Atmospheric Administration (NOAA) to meet the agency's workforce needs in areas of science, technology, engineering and mathematics that support NOAA's mission." GCOOS is a partner in this award.
- NOS website - Diving Deeper Shorts Features: US IOOS - Listen to the episode at: <http://oceanservice.noaa.gov/podcast.html>

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

- **EARTH 2012 Hosted by MBARI & SECOORA 8-13 July at University of North Carolina, Wilmington:** The Monterey Bay Aquarium Research Institute (MBARI) and SECOORA are currently soliciting applications for the 2012 EARTH workshop to be held at UNCW. The focus of the 2012 workshop will be on ocean observatories and South East Coastal Research. If you have an interest and would like to be contacted about the 2012 workshop, please send an email to George Matsumot, mage@mbari.org. A requirement of the application process is to trial an EARTH activity, complete the rubric, and mail the rubric to George. Ten of the twenty participants will be from SECOORA states (North Carolina, South Carolina, Florida, Georgia); if you are from one of these states, please send your application to [Lisa, Adams \(Ladams@knewsaw.edu\)](mailto:Lisa.Adams@knewsaw.edu) - you can contact Lisa if you have any questions. Applications are due by March 21, 2012 and selections will be made by early April.

Upcoming Meetings: To see the IOOS calendar, please visit:

<http://www.usnra.org/calendar.html> or <http://www.ioos.gov/about/calendar.html>

Cheers,

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Zdenka Willis

Director, US IOOS Program Office

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