

Bi-Weekly IOOS® Z-GRAM - 3 June 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® - Our Eyes On Our Oceans, Coasts, and Great Lakes

Programmatic:

- **US IOOS Blueprint Capability Assessments:** The IOOS program has been working through the process of gathering data about each federal and non-federal IOOS partner's ability to contribute to the functions and activities required to implement IOOS as defined in the [U.S. IOOS Blueprint for Full Capability](#). This comprehensive effort will enable us to establish a current capability status on the continuum of initial capability to full capability. For those of you participating, keep working through the online assessment tool and the detailed interview questions so we can wrap up data collection in June. For more information on the Assessment process, contact Carl.Gouldman@noaa.gov.
- **Certification:** RICE Consultation sessions are in development. Meetings will likely be held at the end of June/mid July depending on scheduling. Invitations will be extended to NFRA, RA Representatives, Suzanne Bass (National Ocean Service, General Council) and others.

Data Management and Communications (DMAC) V0.9 Subsystem of IOOS® 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).

- **Data Providers: CO-OPS: The Center for Operational Oceanographic Products and Services (CO-OPS) in conjunction with the Integrated Ocean Observing System (IOOS) Program Office offer new data "Collections" service for greater interoperability, accessibility and efficiency.** CO-OPS now offers retrieval of its latest observations and time series data as a Collection from multiple stations versus a single station as a new tool in the IOOS Data Management and Communications (DMAC) toolbox. Users can now request data from multiple stations using a bounding box defined by latitude and longitude with the bounding box covering the entire network of stations or a subset of them i.e. East Coast stations only. This new data service can retrieve data twice as fast and process that data 70% faster than processing one data-file per station at a time. The following data measurements are available as a Collection of stations:
 - Currents Data
 - Water Level Data
 - Water Level Predictions Data
 - Meteorological & Ancillary Data (Air Temperature, Barometric Pressure, Conductivity, Salinity, Water Temperature and Wind)

The Collections service significantly enhances and broadens the way CO-OPS' data is disseminated and enhances IOOS data compatibility and accessibility. This service provides output in Comma Separated Values (CSV) and Tab Separated Value (TSV) formats and can be accessed at: <http://opendap.co-ops.nos.noaa.gov/ioos-dif-sos/> CO-OPS is seeking feedback on its web services and users are encouraged to submit their comments to COOPS.IOOS@noaa.gov For more information please contact Mohamed.Chaouchi@noaa.gov

- **Customer Project:**
 - Biological Data Project: The 2nd Biological Data Project Workshop was hosted by the Western Pacific Regional Fisheries Management Council (WPRFMC) in Honolulu, HI and was facilitated/attended by Hassan and Charly. The Workshop Goal: To focus on the project implementation phase, discuss the interoperability /extensibility requirement and develop plans for next Biological Observations Project. The Workshop outcomes include: Featured successful demonstration of the biological data services implemented in PacIOOS servers and access to biological data using user's tools (e.g. R project, ESRI tools); Developed a list of tasks/subtasks for the next 4 months of the life of this project; Discussed extensibility requirements; and Developed a list of ideas for next IOOS Biological data plan. The next steps include a focus on refining the data/metadata integration services, data access services including user's applications services.
- **New DMAC area on our website:** Check out <http://www.ioos.gov/dmac/workshops.html>

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:** Here is the link to the National DMAC-Steering Team web site (being administered by COL, since they are the support lead for the IOOC). <http://www.iooc.us/committee-news/dmac/>
- **Fourth in the Series of IOOC Industry Work Shops - next one in the Great Lakes:** HOW GREAT LAKES OBSERVATIONS CAN WORK FOR YOU - The Great Lakes Observing System, in coordination with the IOOC, is holding Sweet Sea Observations: Making Great Lakes Observations Work for you, a workshop to explore how Great Lakes observations programs can provide economic, environmental and safety benefits to industries, government and citizens. The workshop will be held Tuesday, June 21, 2011 at the Edison Boat Club (100 Lycaste, Detroit, Michigan 48214). Who should attend?
 - Representatives from energy and water utilities, agriculture, manufacturing and marine operations;
 - Individuals with responsibility for implementation of management systems, government relations and other regulatory-related activities;
 - Representatives from value-added services and information providers; and
 - Developers of observing platforms and sensors.

The realization of the many benefits that the Great Lakes can provide depends on observing and monitoring these resources. Great Lakes observations are made by many federal, state and nongovernmental organizations, as well as by private companies. Many of these observations and data resources are being brought together by the Great Lakes Observing System – an integral part of the U.S. Integrated Ocean Observing System. These data, and the forecasts and predictions made from them, are a critical resource for managing the sustainable use of Great Lakes resources as well as contributing to understanding the role of the Lakes in weather and climate.

This workshop will provide attendees with an understanding of Great Lakes observing systems and their uses, will explore existing and emerging user needs for data and information, will provide an opportunity to match use needs with observing system capability, and will help to inform plans for the future enhancement of the Great Lakes Observing System. The focus of the day will be on the energy and water utilities, manufacturing, marine operations and agricultural sectors.

To register, and for more information, please visit www.iooc.us/greatlakes or contact Jennifer Read, Executive Director of the Great Lakes Observing System, jread@glos.us, 734-332-6101.

- **High Frequency Radar/Radio (HFR):** Jack, and Zdenka participated in discussions with the Naval Undersea Warfare Center, Keyport Washington, Rutgers, Coastal Ocean Dynamics Applications Radar (CODAR) and Ocean Power Technology to expand testing of an Small Business Innovation Research (SBIR) project combining the use of the CODAR array and Littoral Expeditionary Autonomous Power (LEAP) buoys to support Maritime Domain Awareness. This effort dovetails work through the DHS center of excellence research. The purpose of the call was to agree that US IOOS assets can be used for an upcoming demonstration in August with a goal of showing how the SeaSonde Radar can be used for both maritime domain awareness missions and oceanographic missions without degradation.
- **IOOS and Links to the National Water Quality Monitoring Network: Coordination with EPA:** EPA – IOOS Conference Call (5/26): EPA provided an overview of their Virtual Beach software and then we discussed its application, variables and sources of data used in the modeling process, and potential demonstration sites on the Atlantic and Great Lakes’ coastlines. Actions that came out of the last call include: pursuit of National Weather Service participation, and Great Lakes representation.
- **IOOS and The National Science Foundation (NSF) - Ocean Observatories Initiative (OOI):** Bi-weekly conference call with collaboration team (IOOS: Charly, Derrick; NOAA/TPIO: Jeff DLB; OOI: Matt Arrott, Chris Mueller, John Graybeal, Rich Signell). Collaboration project “use case” is on schedule and has successfully passed initial OOI-CI release one reviews. A demonstration of the software initially with the extended project team (to also include NOAA Fisheries Roy Mendelssohn, NOAA/Pacific Marine Environmental Laboratory (PMEL) Steve Hankin, Rutgers John Wilkin and UH’s Brian Powell) is scheduled for Thursday June 16th.
- **IOOS Modeling Test bed and Related Modeling efforts:** On June 22, 23 an all-hands Testbed meeting will convene at SURA headquarters in Washington DC. Dr. Louis

Uccellini, Director National Center for Environmental Predictions, has agreed to address the group on Day 2 of the meeting.

- Charlton Galvarino has made impressive progress on a model output visualization tool.
 - The Shelf Hypoxia Team is reporting on their assessment of model hydrodynamic and ecosystem model skills. Jerry Wiggert will be reporting on the evaluation/pre-operational status of America Seas (AMSEAS) Navy Coastal Ocean Model (NCOM).
 - Estuarine Hypoxia will be the focus of a July meeting at NCEP to discuss Chesapeake Bay Model efforts.
 - In this role as the project Principal Investigator, Rick Luettich is in the process of preparing the proposal for year 2 of the Testbed Program.
- **Taken for the Consortium of Ocean Leadership weekly newsletter: FORWARD MOMENTUM SEEN IN IMPLEMENTING THE NATIONAL OCEAN POLICY:**
 This week, some significant progress has been made with regards to several aspects of the National Ocean Policy. On Wednesday, the National Ocean Council released the full content outlines for the nine Strategic Action Plans (SAPs) for public comment. More information on the National Policy and SAP outlines can be found in the preface. To facilitate public input on these SAPs, the National Ocean Council is holding a series of regional public listening sessions. This week, exact times and locations were announced for the listening sessions. Please see schedule below or the website for more information. On Thursday, President Obama released a [proclamation](#) that June 2011 will be officially recognized as “National Oceans Month.” In honor of this month, the President calls “upon Americans to take action to protect, conserve, and restore our oceans, coasts, and Great Lakes.” Ocean Leadership’s policy team is currently standing up working groups of experts to develop recommendations and comments on the full content outlines. If you are interested in being involved in these activities, please email Staci Lewis (slewis@oceanleadership.org) for more information.

DATE	LOCATION	VENUE	TIME
June 9, 2011	Washington, DC	Women’s Memorial at Arlington National Cemetery	6:00-8:30 PM
June 9, 2011	Barrow, AK	North Slope Borough Offices	4:00-9:00 PM
June 10, 2011	Anchorage, AK	Wilda Marston Theatre, Z. J. Loussac Library	4:00-9:00 PM
June 13, 2011	Chicago, IL	U.S. EPA Regional Headquarters	1:00-5:00 PM
June 15, 2011	Jacksonville, FL	University of North Florida	5:00-9:00 PM
June 16, 2011	Honolulu, HI	The Neal Blaisdell Center	1:00-4:00 PM
June 27, 2011	Exeter, NH	Exeter High School	11:30 AM-3:00 PM
June 27, 2011	Galveston, TX	Galveston Convention Center	5:00-8:30 PM
June 27, 2011	Ocean Shores, WA	Quinault Beach Resort and Casino	8:30 AM-5:00 PM
June 29, 2011	San Francisco, CA	TBD	1:00-5:00 PM
June 30, 2011	West Long Branch, NJ	Monmouth University	10:00 AM-5:00 PM
July 1, 2011	Portland, OR	Portland State University	TBA

Other:

- **AOOS Hosting NOAA Senior Official:** AOOS is hosting a meeting with NOAA's Principal Deputy Undersecretary Monica Medina on Tuesday, June 14 at from 8-10 am at the AOOS conference room in Anchorage (1007 W Third Ave, Suite 100). You are invited to join us in our discussions. The meeting will focus on: Taking the Pulse of Alaska's Oceans and Coasts. RSVP to Darcy Dugan at dugan@aoos.org.
 - Current status of ocean observing initiatives in Alaska
 - Integrating data from multiple sectors (federal, state, NGO, private industry) and from multiple disciplines (physical, chemical, biological, deep water, coastal) to support decision-making
 - How Alaska can be an example of a coordinated approach of using NOAA line offices, other federal agencies, NOAA externals (AOOS, Alaska Center for Climate Assessment & Policy -ACCAP, SeaGrant), state agencies and stakeholders such as industry and NGOs to tackle major problems/issues (e.g., oil and gas in the Arctic, increased marine shipping in Arctic, data integration)
- **GLOS issues a Request for Quotes (RFQ):** The Great Lakes Observing System is issuing a Request for Quotes (RFQ) for services to develop an interactive, web-based mapping search tool for the Great Lakes Acoustic Telemetry Observing System (GLATOS) database of fish tags, acoustic receivers, and related project information. The deadline for quotes is Friday, June 24, 2011. For more information see www.glos.us
- **161st Acoustical Society of America (ASA) and a Special Joint ASA and American Fisheries Society (AFS) Meeting:** Hassan provided a poster on the IOOS biological project. The conference presented an opportunity for IOOS to explore acoustic data standards representation and access. Jan Newton, NANOOS Executive Director, presented on the opportunities NANOOS was exploring to integrate acoustic sensors into ocean observing systems. More details about the conference and conference abstracts can be found here:
http://acousticalsociety.org/meetings/future_meeting/seattle/seattle_program
- **IOOS Partners are in Action across the Nation:** If you have not checked the partners website in a while - I encourage you to do so. Here is a trip around the nation with some highlights:
 - **AOOS in Action: Cook Inlet ERMA:** AOOS is collaborating with the Cook Inlet Regional Citizens Advisory Council and NOAA to develop an oil spill response tool for Cook Inlet. The goal is to develop and demonstrate a next-generation oil spill response application that combines multiple components: ERMA GIS data, AOOS real time observations and model forecasts (winds, waves and circulation), and a ShoreZone imagery and data viewer. The demonstration project is focusing on Cook Inlet because many of the needed data sets are mature and the area is relatively small and tractable; however, the application will be scalable to other areas in Alaska and across the nation.
 - **ACT and USGS in Partnership - looking for your comments:** For the past few months, staff at USGS and ACT have been hard at work building a database and website that combines National Environmental Methods Index (NEMI) methods and ACT sensors. We're calling it MEMO (Methods for Environmental

Measurements and Observations) and a preview is available at <http://infotrek.er.usgs.gov/pls/apex/f?p=240:1> (log-in using "ACT" as both the user and the password -- soon we will eliminate the log-in step). Please provide your input and comments. For more information please contact -Dan Sullivan, djsulliv@usgs.gov

- **GLOS in Action: New and Improved Observation Explorer:** View real-time and historic data and receive updates from the station or buoy of your choice. Check out the Record of the Day! This new explorer uses an improved, IOOS-compliant framework.
- **NANOOS in Action:** The Boater Information System (BIS) delivers the data Puget Sound boaters asked for: wind speed and direction, water temperature, currents, and tides. Boaters can display multiple weather and oceanographic products concurrently to study the interactions among the data. Funded primarily by Washington Sea Grant Program, APL-UW employed the disciplines of Cognitive Engineering and Human Computer Interaction to give boaters this decision making tool. CMOP - Center for Coastal Margin Observation & Prediction -The data center is a resource for you to access information about the Columbia River estuary, near plume, and coastal margins of Oregon and Washington. This includes access links to physical and biogeochemical data (near real-time) from SATURN endurance stations in the Columbia River estuary, glider data, forecast Surface Ocean Conditions for the Pacific Northwest and the Columbia River estuary, and climatological maps of the Columbia River estuary. Ocean Currents Mapping Lab - Daily average ocean surface currents off the Oregon coast. These surface currents are measured with a radio transmitter and receiver using an instrument, the SeaSonde, made by CODAR Ocean Sensors. Southwest Washington Coastal Mapping :Southwest Washington coastal mapping was initiated to examine the coastal evolution, processes, geology, and hazards of the Columbia River littoral cell (CRLC). The study area extends approximately 160 km along the United States' Pacific Northwest coast between Tillamook Head, Oregon and Point Grenville, Washington. This program monitors coastal erosion.
- **CeNCOOS in Action:** Wave Climatology: Coastal Data Information program (CDIP) Buoy Pt. Reyes Past/Present Wave Heights A dynamic graph of significant wave heights averaged and updated each day. This product is generated using data from the CDIP buoy (located 22 NM west of Pt. Reyes, CA), measuring the 1/3 highest waves every 30 minutes. Plots of daily wave heights for each year since 1997 are represented on the graph, with the current year data highlighted. A long-term mean line, created by averaging wave heights from all previous years (updated every year), is also included on the graph for comparing with the current year wave heights. The maximum daily averaged wave height measured since 1997 is also displayed (23.2 ft on Jan 19th 2010). Real-time Ocean Glider Data from the CeNCOOS Region This page contains links to the latest (real-time) data collected by Spray gliders operated collaboratively by Monterey Bay Aquarium Research Institute (MBARI), Scripps Institution of Oceanography and CeNCOOS with funding from NOAA and the State of California. The glider data plots at the links below - updated every 4 hours -

indicate the water temperature, salinity, chlorophyll fluorescence and acoustic back-scatter from the surface to 500 meters depth. [Access Real Time Data and the Oyster Condition Report for Humboldt Bay](#)

- **PACIOOS in Action:** [Model Forecasts](#) -Tide, wave and ocean circulation model forecasts for the Hawaiian Islands; [High Sea Level Forecasts](#) -Forecasts of water level inundation provide advance notice of the potential for high sea level. [Water Quality](#) -Real-time water properties and Department of Health warnings for the south shore of Oahu. [Each region of PacIOOS has their own page with local conditions/models accessible.](#)
- **SCCOOS in Action:** [Harmful Algae and Red Tides Regional Monitoring Program](#) -Monitoring for harmful algal blooms (HAB) occurs at six piers along the southern California coastline:**Cal Poly Pier** in Avila Beach,-**Stearn's Wharf and Goleta Pier** in Santa Barbara,-**Santa Monica Pier**,-**Newport Beach Pier** and **Scripps Pier** in La Jolla. Real-Time Storm water tracking the Tijuana River. The display shows the results of a lagrangian particle tracking algorithm applied to hourly surface currents. The plot indicates the tracking of water from the mouth of the Tijuana River within the domain observed by SCCOOS. On an hourly basis, 100 particles are released at the river mouth and tracked for a 3 day period to provide a better estimate of where the Tijuana River plume may be impacting the coast. New positions within the region are updated hourly and the color of the particle represents the age of the particle since it was released.
- **GCOOS in Action:** The GCOOS Data Portal provides timely information about the environment of the United States portion of the Gulf of Mexico and its estuaries for use by decision-makers, including researchers, government managers, industry, the military, educators, emergency responders, and the general public. Observing stations in the region are monitored constantly. Model Resource Center and Regional Model Forecasts; The Phytoplankton Time Series at Port Aransas is part of the Mission-Aransas National Estuarine Research Reserve (MANEER) program. The images were captured using the Imaging FlowCytobot, an imaging-in-flow instrument that combines video and flow cytometric technology to capture high resolution (1 μm) images for plankton identification and to measure chlorophyll fluorescence associated with each image. Organisms ranging from ~ 10 to >100 μm can be identified often to genus and, in some cases, to species.
- **CariCOOS in Action:** Check out the [easy to use display of winds, waves and currents](#) both observations and forecasts; [Nearcoastal zone Puerto Rico and US Virgin Islands](#) - Click an area on the map to get the forecast for that colored area. Coastal Marine Zone Forecasts by the National Weather Service-San Juan, PR Forecast Office; Navy Aerosol Analysis and Prediction System (NAAPS) and a [suite of buoys](#): CariCOOS Data Buoy B (Mooring PR202) serving the north coast of Puerto Rico located 770 yards north of San Juan.CariCOOS Data Buoy A (Mooring PR104) serving the south coast of Puerto located 2 nautical miles southeast of Caja de Muertos Island,CariCOOS Data Buoy C (Mooring VI101) serving the US Virgin Islands located 7 nautical miles south of Rendezvous Bay, St. John and CariCOOS Data Buoy D (Mooring 4115) serving the east coast of Puerto located about 1 nautical mile in the vicinity of Punta Higuero in Rincon.

- **SECOORA in Action:** The FL Fish & Wildlife Research Institute developed the SECOORA Biological and Habitat GIS site to provide biological data to researchers who want to link biological data with oceanographic data. The specific data sets that were requested to create this prototype were habitats and species distribution models. Currently, the site links the SECOORA asset inventory with individual asset inventory pages and is viewable in conjunction with biological data and specific events (such as red tide or hurricanes). A model gallery to 13 models available within the region. Outreach to teachers -Boats, Buoys, and Science Teachers: A Winning Combination! How to create a week long summer physical science workshop to introduce SECOORA science concepts to middle and high school teachers and provide them with training and resources needed to use SECOORA science data products in the classroom. The workshop consists of inquiry based activities coordinated around three distinct events: an introduction to buoy technology, a research cruise, and opportunities to interface with the SECOORA website. Teachers take part in local tours and observe onboard activities such as buoy monitoring, maintenance, and deployment followed by opportunities to share what they have learned, discuss best teaching practices, and develop activities using SECOORA science and data as the foundation for the creation of classroom inquiry based experiences.
- **MARACOOS in Action:** A Glider Fleet home page that directs you all the glider missions and those current missions; Real-time satellite images on google earth; NOAA HazMat oil spill response benefits from MARACOOS real-time surface current maps and statistical short-term current forecasts delivered through the NOAA Environmental Data Server; State Agency response to floatable sighting reports benefit from MARACOOS real time surface current maps and dynamical forecasts delivered via a web portal.
- **NERACOOS in Action:** Real-time Data from NERACOOS - The map displays real-time observations from buoys and monitoring stations in the Northeast region, click a station icon to get the latest observations, click a variable name to see 12-hour trend, click tide stations to see tide graph. The Northeast Coastal Ocean Forecast System that produces a 3 day forecast of Regional conditions. Supports 3 buoys arrays: The Gulf of Maine array consists of 5 buoys, deployed by the University of Maine. Buoy N monitors the Northeast Channel where deep slope waters enter the Gulf of Maine with a high load of silica and nitrate that fuel the high primary productivity for which the region is renowned. Buoy M monitors the water properties in Jordan Basin and thereby the inventory of the slope waters within the interior of the Gulf of Maine, the strength of the cyclonic Jordan Basin Gyre, and the impact of fluctuations such as the North Atlantic Oscillation (NAO). Buoys I and E, respectively, monitor the transport in the Eastern Maine Coastal Current (EMCC) and the Western Maine Coastal Current (WMCC) on either side of a key branch point near Penobscot Bay. Buoy B, in the western end of the WMCC, is well positioned for HAB monitoring since it is in a location that is impacted during major Paralytic Shellfish Poisoning (PSP) events. In New Hampshire, the Great Bay Coastal Buoy is an estuarine water-quality buoy, deployed during ice-free seasons since 2005. Measurements include meteorology, temperature, salinity, current profiles, wave properties, nitrate,

phosphate, colored dissolved organic matter and chlorophyll-a fluorescence, turbidity, and the above- and under- water light field at over one hundred wavelengths. The Long Island Sound Array consists of 3 buoys in Long Island Sound, the western-most, central, and eastern-most of the existing Long Island Sound Integrated Coastal Observing System (LISTCOS) buoys, monitor the evolution of the circulation, hydrography, dissolved oxygen and nutrients near the connections between Long Island Sound and the adjacent basins.

- **Congressional Staff Update Meetings:** Quarterly, the US IOOS Program Office updates Congressional staff on progress towards implementing the ICOOS ACT. The following meetings have been scheduled:
 - June 14th – 2:00 pm – Karen Hyun (House Natural Resources Subcommittee)
 - June 15th – 11:00 am – Catherine Hazelwood & Kelly Pennington (Senate Commerce Committee)
 - June 15th – 12:00 pm – Anna-Marie Laura (Senator Sheldon Whitehouse, D-RI)
 - June 16th – 11:00 am – Nick Battista & Hannah Dean (Congresswoman Pingree, D-ME); Jennifer Salerno (Congresswoman Capps, D-CA)

Communications/Outreach and Website Updates:

- **West Coast Radar Network is World's Largest** - University of Southern California - San Diego news release - features a quote by David Kennedy, Assistant Administrator of the National Ocean Service - <http://ucsdnews.ucsd.edu/newsrel/science/05-24WestCoastRadar.asp>
- **CHECK OUT our NEW PODCAST** - Diving Deeper episode focused on the IOOS partnership with the Animal Tracking and Telemetry community: <http://www.ioos.gov/messaging/outreachmaterials.html>

IOOS Conference Involvement: This section will highlight those conferences where US IOOS is a sponsor/has a session/relevant sessions of interest to US IOOS:

- **MTS/IEEE Oceans 2011:** As one of the reviewers for the technical program, the 60 or so papers I reviewed show that this conference will be loaded with outstanding papers. The MTS/IEEE team is letting folks know now if their papers/town halls have been accepted. Stand by for word on the 2 US IOOS/IOOC sponsored town halls. Carl Gouldman, US IOOS Program Office, has lead for coordination.

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

Cheers,
Zdenka