

**U.S. IOOS Advisory Committee
Meeting Minutes
Stennis Space Center and Thad Cochran Marine Aquaculture Center, University of
Southern Mississippi
Oct. 24-26, 2017**

**October 24, 2016
Stennis Space Center**

Members Present: VADM (ret.) Conrad Lautenbacher (Chair), Tom Gulbransen (Vice-Chair, virtual), LaVerne Ragster, Justin Manley, Tony MacDonald, Tom Curtin, Jennifer Hagen, Casey Moore (virtual), Brian Melzan (Ex-Officio, virtual), Carl Gouldman (Designated Federal Official), Victoria Kromer (IOOS AC Staff), Jena Kent (IOOS AC Staff)

Members Absent: Val Klump, Doug Vandemark, David Legler (Ex-Officio), Linda Lillycrop (Ex-officio)

Speakers Present: Nicole LeBoeuf (NOAA NOS Deputy Administrator), Barb Kirkpatrick (GCOOS), Shane Glass (NOAA Big Data Project), Dr. Pamela McDowell (Navy), Pat Roscigno (BOEM), Helmut Portmann (NOAA), Josie Quintrell (IOOS Association), Kathleen Bailey (IOOS)

Public: Jen Vreeland (GCOOS), Bill Lingsch (Vencore), Pat Hogan (Navy), Kirsten Larsen, NOAA, Stephan Howden, (USM), Jean May-Brett (Louisiana Education Dept. –Retired), Ed Kearns (NOAA)

Welcome from VADM (ret.) Conrad Lautenbacher and introduction of Nicole LeBoeuf

Opening remarks: VADM (ret.) Lautenbacher

Nicole LeBoeuf, NOAA NOS Deputy Assistant Administrator

Highlights from the discussion:

The Deputy Assistant Administrator asked about her position on lessons learned from Super Storm Sandy & about interest in addressing recovery and monitoring of ecosystems after hurricanes, especially challenges of islands or non-Mainland areas.

Discussion covered the new opportunity to take advantage of leveling up our ocean data with the private consulting community and to identify a way for regulator permits to incorporate ocean data that need funding.

Ms. LeBoeuf noted the opportunities being presented and indicated that these initiatives would need further investigation. She also accepted the commendation from an Advisory Committee member regarding the value of IOOS and NOAA data and information to the people of the US Caribbean during the hurricanes.

Remarks and Discussion: The Gulf of Mexico Coastal Ocean Observing System Regional Association (GCOOS RA), Dr. Barb Kirkpatrick

Dr. Barb Kirkpatrick, Executive Director of GCOOS

Highlights from the presentation:

The Gulf of Mexico is America's Sea. It is the United States' "gas station" and the nation's "fish market." It is finding a way to balance the gasoline industry and ecosystem compete that in a way compete with one another.

What we do not know about the Gulf could be costly. There is a need for fisheries management. The Gulf is vital to our energy security.

The GCOOS Board of Directors represents a diverse group of people from private sector (5), government (federal/state or local) (5), academic (3), and outreach and education (4). The majority of funding is through IOOS and non-profits throughout Texas. Its grants are administered through Texas A&M University.

GCOOS is proud of stakeholder engagement strategy. Stakeholder priorities include:

- Outreach and education (Dr. Chris Simoniello)
- Media releases, monthly e-newsletter, outreach activities, and Outreach and Education Council
- Data Integration and Products (Dr. Matt Howard, TAMU) – Sequenced map of buoys on their website does not convey sparsity of the network
- Gulf AUV Network GANDALF (one website)
- GCOOS Data Management Projects
- HN-DSS: Hypoxia Nutrient (one website)
- Hurricane product – pulls in tweets of what's going on in your area and county
 - Will attempt to gather Google Analytics
- Citizen Science Portal – engaging kids on water quality monitoring. (one website)
- GCOOS Build Out Plan – (<http://gcoos.tamu.edu/BuildOut/BuildoutPlan>).
 - Includes 19 elements to meet stakeholder needs with cost estimates
- HF Radar critical gaps being closed
 - 2 new radars – Mouth of the Mississippi
 - Gap campaign created to include HFR impact for PORTS
 - Louisiana has no HFRs
- RA Activities: Development and publication of GCOOS RA Strategic Plan
- Publication in the Marine and Technology Journal last year, "Opportunity Lost? Ocean Observing in the Gulf of Mexico" that addresses the 19B settlement from DWH
- Continue to develop GCOOS Acidification Network (GCAN)
- Funds for Gulf wide animal tracking network workshop
- Funds for workshop for Flower Garden Banks bleaching event partners
- Congressional Action: IOOS Budget to fill critical gaps in observations
- Support the reauthorization of ICOOS Act
- Critical Coastal Infrastructure – partner observations with Mexico and Cuba

Big Data Update and Discussion with Shane Glass, NOAA Office of the Chief Information Officer/High Performance Computing and Communications

Shane Glass:

- Background and status update of NOAA's Big Data Project (BDP)
 - Why NOAA is interested in big data partnerships

Open Data Partnerships are meeting the needs for the public and supporting NOAA with archiving storage and data dissemination volume increasing over time, but becoming less sustainable.

Why these partnerships?

- NOAA's data are increasingly popular and valuable
- Create new economic opportunities of the nation
- Leverage value of the NOAA'S data to increase their utilization the market
- Expertise – provides an easier way for users to access the data
 - Data remains open and free

BDP Strategy

- BDP Distribution Scheme –paradigm shift for providing data access
 - Distributing a single copy of the data can support all users from a data broker

BDP Tangible Benefits

- Increased in Data Utilization AWS and NEWRAD L2 exploring with NWS
- GCP and Historical Observation Data using the Google Cloud
- Positive feedback, early metrics are extremely positive
- Complete organic utilization
- More datasets available through Google Earth Engine = more usage
- International Comprehensive Ocean – Atmosphere Dataset (ICODADS)
- National Water Model (currently available in the cloud -data shipped to be entered into the cloud) and provisional GOES-16
- Enabling a new approach to Ocean Data
- Not direct interest in moving multiple datasets to a platform to facilitate use
- Compute in “Sandboxes” alongside NOAA (and other) data
- NOAA has approved the use of GitHub

Highlights from Discussion

Question: Future of NOAA Big Data Project?

Response:

- NOAA Data Project is seeking extensions of CRADAs by one year (April 2019)
- Finalizing lessons learned in document
 - Define requirements for any future agreements:
 - Level of service needed
 - Define the data broker

- Still determining optimal partnership model options for the time period beyond the CRADAs.

L. Ragster:

- Current situation provides the space for an institution to function as a power broker.

E. Kearns:

- That's the importance of defining it early
- Nobody has exclusive access to data
- Other piece related to capacity of broker
- Not sure if we are interested in delving into this, could let market forces determine that

J. Hagen:

- Need to determine what is scalable
 - Expertise
 - Sparse resources to provide support to NOAA
 - Collaborators provide the expertise of how to access and process data

T. Curtin:

- Interested in the use of the word "broker"
- Normally someone matches buyer to seller as opposed to an interface manager
- To L. Ragster: a really powerful position

S. Glass:

- Think we want the data broker as more than an interface manager
- Important: defining the role early

J. Manley

- Excited with NOAA catching up with modern best practices of the distribution of data.
- Possibility of economic generation
 - Are there any private activity spawning markets?

S. Glass:

- To see the collaborators investing in resources for the Big Data Project indicates that they see profit

T. Gulbransen:

- Scary competition from the collaborators, so no duplication of effort in products and services

S. Glass:

- Collaborators are not creating products, but providing the data in a way to make it more interesting to outside sources

E. Kearns:

- Collaborators and line office would work with the requirements of the agreement in working with how and what data is available

- NOAA BDP is fostering relationships, but not engaging in the offices business requirements and as how they construct the agreements

T. MacDonald:

- There has been progress in the conversation, but unclear about ocean observation systems
- What is the map from the “data broker” to the line offices?
- Wants to see during the next briefing because wants to better understands where the ocean data fits

T. Curtin:

- First steps was NEXRAD
 - HFR utilized as the next data set?

E. Kearns:

- Could be HFR, but maybe not a large usage alone
- Integrating HFR with a dataset that users are already using to generate interest

Lunch Discussion – Q&A with Barb Kirkpatrick, GCOOS

Discussion: Barb Kirkpatrick’s presentation

- Disasters (Hurricanes Irma and Maria), focusing on effects to Puerto Rico
- U.S. Virgin Islands: case study for no cell phone service
- How networking works
 - i.e. removing gliders before storm hits
 - CariCOOS, SECOORA, and GCOOS network do it very well because they understand each other’s challenges and have many of the same issues

N. LeBoeuf:

- Need to find a way to quantify assessment needs after a severe weather event to prepare for the request for emergency supplemental funds
 - Urgent: providing a calculation for funds to respond to recovery

Federal Panel on Ocean Observing in GCOOS with Overview on Current Successes, Challenges, Partnerships, and Gaps

Dr. Pamela McDowell, Chief Scientist, Naval Meteorology and Oceanography Command Update:

- Mission: provide environmental information that ensures Naval and Joint forces
- Unmanned Systems Strategy:
 - Expand our national use
 - Engage in the future technologies
- Glider Operations Center (24 hrs/day operation) – 156 Gliders
- Strategic Focus Technology Integration:
- Strategic Focus:
 - Repository:
 - Glider Warehouse and USNS Maury

- Developing innovative approaches to acquisitions and experimentation
- Chief of Naval Operation's Task Force Ocean developed because we are losing ocean knowledge due to losing employees
 - Report to ensure that the US Navy maintains a competitive advantage in our ability to understand and exploit the ocean environment
 - Strong partnerships with industry, academia, and government agencies i.e. Shell and NOAA to leverage assets and people where it is missing in the Navy

Pat Roscigno, Bureau of Ocean Energy Management (BOEM): Environmental Studies Program

- Job: to provide fundamental assessment for environmental impacts and how to mitigate them

Presentation:

- New 5 yr. program
- Studies Development Plan:
 - Informs strategic plan
 - Studies in the Gulf of Mexico:
- Post- Deepwater Horizon Studies Planning
- Flower Gardens Bank long-term monitoring
- MS Delta Baseline Mudflow Hazard Map
- Have a demonstration of how to remap after “mass wasting events”
- History of Deepwater Studies
- Gulf of Mexico Shipwreck Corrosion, Hydrocarbon Exposure, Microbiology, and Archaeology (GOM-SCHEMA)
- Looking at the micro-environments on the shipwreck from the film of oil slips
- Protected Species Observations
 - Explosive Removal of Structures and the impacts of seismic activities
- Multiple anthropogenic outputs
- The GoMMAPPS Field Program
- Atmospheric Pollutant Transport and Dynamic Monitoring and Modeling
- Oceanographic Monitoring
 - Loop Current Circulation Program – Dedicated Issues
- History of Joint Physical Oceanography w/Mexico
- Interested in Transboundary issues
- One Gulf: International Collaborative Research
 - Working with Mexico and Cuba

Helmut Portmann, NOAA National Data Buoy Center (NDBC)

Overview

- Mission: Provide real-time data collection
 - Operates and maintains 106 met ocean buoys & 47 coastal marine stations
 - Job: measure the tsunami signals get to NWS for prediction.
 - Great leasing partnership with BOEM to get information to predict bloom, but agreement ending soon
 - Major buoys (weather & tsunami)

- Undergoing a recapitalization of the buoys network
- Measure the El Nino – La Nina Observations
- Tao Array: hourly transmission of
 - Wind speed
 - Direction
 - Air temp
 - Relative humidity, etc.
- IOOS Data Assembly Center
 - Contribute to IOOS, by disseminating data
- Gulf Ocean Energy
- Engaged oil companies to place sensors, but have legal ramifications

Public Comment Period.

There were no public comments.

Meeting Adjourned.

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**October 25, 2016
Gulf Coast Research Laboratory**

Members Present: VADM (ret.) Conrad Lautenbacher (Chair), Tom Gulbransen (Vice-Chair, virtual), LaVerne Ragster, Justin Manley, Tony MacDonald, Tom Curtin, Jennifer Hagen, Casey Moore (virtual), Brian Melzan (Ex-Officio, virtual), Carl Gouldman (Designated Federal Official), Victoria Kromer (IOOS AC Staff), Jena Kent (IOOS AC Staff)

Members Absent: Val Klump, Doug Vandemark, David Legler (Ex-Officio), Linda Lillycrop (Ex-officio)

Speakers Present: Dr. Kelly Lucas (Director, GCRL USM), Dan Petrolia (MSU), Josie Quintrell (IOOS Association), Ruth Perry (Shell), Lauren Showalter (NAS), Kathleen Bailey (IOOS), Nicole LeBoeuf (NOAA NOS Deputy Administrator), Barb Kirkpatrick (GCOOS)

Public: Jen Vreeland (GCOOS), Bill Lingsch (Vencore), Pat Hogan (Navy), Kirsten Larsen, NOAA, Stephan Howden, (USM), Jean May-Brett (Louisiana Education Dept. –Retired),

Welcome from VADM (ret). Conrad Lautenbacher and brief recap on discussion from previous day, what outstanding actions need to be addressed, and expectations for remainder of meeting

VADM (ret.) Lautenbacher recapped the previous day’s highlights & introduced Dr. Kelly Lucas.

Dr. Kelly Lucas, Director of the Thad Cochran Marine Aquaculture Center, University of Southern Mississippi

- Overview: university and programs
- Going to purchase a new facility dedicated to Aquaculture
- University of Marine and Coastal Science and Education
 - Only grad/undergrad program in Mississippi
 - AquaGreen-Research Building/Facilities
 - Part of the state’s recovery program
- Harbor expansion
- Port of Gulfport
- Developing a brand for USM
 - Capitalize on the Blue Economy (35% of workforce) of South Mississippi
- Unmanned Maritime Systems Certification
- Convergences – Chief of Naval Operations’ Task Force Ocean
 - Governor Bryant’s Ocean Task Force to capitalize on the “Blue Economy”
- Thad Cochran Marine Aquaculture Center
 - Cedar Point Aquaculture
 - Facility – first building 2001. TCMAC 2012
- Global Demand for Animal Protein - Need for new protein
- USA Potential for Greater Production
 - We have the land, water, and technical knowledge to help to grow the market
 - Been stagnant for decades
 - 2016 – 14 million trade deficit in seafood

Highlights from discussion

Spotted sea trout, tripletail, red snapper (difficult to culture) among what is being cultured

C. Lautenbacher:

- What is funding for O&M from partnerships (public and private).

Dr. Kelly:

- Funded from the state of Mississippi, grants for the university, private industry
 - To include providing property leasing on the campus from the private sector
- USM would like to operate on the level of University of Maine

J. Hagan:

- What is done with the fish afterwards?

Dr. Kelly:

- Put into their home waters, others given to the industry
- Nationwide aquaculture policy would help their programs
- Governor Bryant is purchasing a facility for aquaculture, but how far into the Gulf they are willing to go is unknown
- Sampling occurring quarterly through NDQ for the same thing to help USM

J. Manley:

- Is there any traction for ocean tech?

Dr. Kelly:

- Community colleges are providing education/training
- Unmanned systems has bigger interest

Dr. Kelly:

- USM recycles the aquaculture in tanks (on land) and creates its own salt water

Dr. Kelly: Disease is easier to control in recirculated systems

- Offshore aquaculture is harder to manage

Overview and discussion on the GCOOS Valuation Study, Dan Petrolia

- The Economic Benefits of the GCOOS
 - Cooperative agreement between BOEM and Coastal Marine Institute, LSU
- Valuation Strategy
- Conceptual Diagram of GCOOS Uses and Users
 - Obs. Instruments ->Obs. Data ->User of raw data (e.g. researchers)
 - >End-users products (beach conditions monitoring website, hurricane forecast)
 - > Users of final products (e.g. households, vessel)
- Measuring the benefits: What is it to be valued?
 - Shares characteristics with Ecosystem Service Valuations
 - Relevant to public forecasts, advisories
 - Background, etc. is relevant to researchers
- Proposed Approach

- Select “key” final products relevant to general public explicit or implicit in buildout
- Use survey-based valuation methods to estimate incremental value of each component
- Populations of Interest
 - Expanded Gulf-wide beach conditions monitoring program
 - Improved coastal-marine forecast:
 - Improved hurricane forecast
- OMB Clearance/BOWM Coop Agreement
 - Survey must go through OMB clearance - ongoing
 - Must be cleared by sponsoring agency (BOEM)
- Coastal Marine Vessel Pilot Survey
 - Valuation Scenario created for voting (vessel owner/operators)
 - Sample is not accurate representative of this population
 - Estimated value of expansion found aggregation of welfare estimates to a population of interest is not recommended
 - They need funding to complete work
 - If unable to obtain funding, it’s possible that the overall project and objectives will need to be abandoned

Highlights from discussion

In order to move forward needs to go through OMB to receive funding.

C. Lautenbacher:

- This lessons learned needs to be documented and shared with the other RAs
 - Regions are interested in evaluating their impact, but need to find a new avenue to retrieve it

L. Ragster:

- Hearing talk about different partners and stakeholders –good to go through partner/stakeholder who won’t be accused of special interest
- Not much Committee can do, but need to find mechanisms that don’t run into these traps

T. Gulbransen:

- What advice would you offer orphan subset type of data that would never get valuation studies?

D. Petrolia:

- Many datum hard to track back to a final user
- Early idea - survey researchers and how they value it
 - Can get good grasp on particular types of data without saying here’s the type of economic value of it

IOOS Strategic Plan Status Update, Carl Gouldman, IOOS

- Reached out to the stakeholders to review
- 5 Goals with 5 objectives with each goal
- Document needs to go through NOAA’s Observing Systems Council before finalized

- The Fall Meeting in Seattle, WA was helpful
- Plan component: Vision and Mission, guiding principles, 5 strategic goals

Highlights from discussion

Committee agrees should create a welcome letter articulating the value of integrated ocean observing data

T. McDonald:

- Have opportunity to make a difference and building on past recommendations
 - Maybe a message about the strengths and opportunities with integration and how we can be more effective to elevate IOOS
 - Total Water Initiative is seemingly in-house, but has been requested for many years.

Strategic Plan emphasis balance seems good, and responsive to trends FAC has observed.

- Obj. 1.4 acknowledges IOOS role in tech development
 - Specifically toward operational, albeit as a relatively smaller target.
 - Interagency collaboration emphasis is preserved justifiably because we have seen need to improve it, & have seen successes

GCOOS' Econ investigation effort was worthwhile even if incomplete due to politics

- Core method should be shared with RAs
- Need advice on how to ensure less sexy observations, or observations which are less directly connected to poll-able public users
 - Are not orphaned by monetization of the few observations which can be valued quantifiably
- Commented that the vision, goals and objectives reflect what IOOSAC has offered over the last few years
- Recommend: final objective under Goal#5 be moved to a more prominent position in the listing of objectives
- Suggest: addition of an introductory or umbrella paragraph that describes and highlights the structure and unique value of the structure and mandate for of IOOS.
- Committee consider the structural/mandate-related value of IOOS as a point to emphasize in our advice to the Administrator
- Nothing explains reason this is a good and powerful institution

IOOS Association Update, Josie Quintrell

- Supporting and sustaining the system through Gaps campaign
- US IOOS FY17 HFR Request
 - Increase in the region Line IOOS + 1.2 M

- 3.1M to install 12 HFR systems
- FY18 jumping over due to the CR – Hope to maintain funding
 - Census and cross the board cuts could affect the bottom line
- FY19 IOOS Request
 - Mapping surface currents (HFR)
 - Coastal Gliders - Making adjustments because HF's are not priority for all regions
- Gulf of Mexico Briefing: March 2017 - Great crowd and everyone present was advocating for IOOS
- Senate Ocean Caucus Briefing: Sept 2017
 - Learned not to do in September because Congress was on recess, but otherwise successful
- Working on Hurricane Supplemental - For rebuilding and replacing observing systems for the next storms
- Reauthorization
- Weather Research and Forecasting Innovation Act of 2017 and HABS
- IOOS Coordination Meetings-March & September
 - Sustaining IOOS – PAC funding for recap (exploring PAC)
 - O&M costs 20M to recapitalize the HFR system
 - Mooring Strategy
 - IOOS Modeling Working Group, Water, Ecological
 - Inundation water and ecological forecasting
 - Trying to provide an advising team on how to articulate to NOAA capacity
 - Figure out IOOS roll in modeling and be a sounding board for expertise
- RA Certification - 8 RAs certified
- IOOS Web Survey
 - Who is using the data and why?
 - On website for 2 wks. between now and end of December 2017
 - Better understand and show how IOOS is making a difference
- IOOS Foundation Project
 - Is there the capability to fund charitable aid projects?
 - Looking for projects common across all RAs

Highlights from Discussion

T. MacDonald:

- There's a lot of opportunities with fisheries
 - Whether IOOS is right - different question
- Overall doing a good job with fisheries
- Concerned about the breath of program reach.
- Gliders - Is there a demand for Gliders?
- Can IOOS play more of a data broker role to leverage tools?

B. Kirkpatrick:

- Gliders are used for projects and then they sit

Question:

Quintrell: RA certification is providing brokering (PacIOOS) jobs

Answer:

T. Curtin: Need more observations.

- Sustained observation is a challenge
- IOOS should create the IOOS Foundation instead of looking into other foundations to donate to

Webinar on partnerships and interactions between Shell and GCOOS/IOOS, Ruth Perry, Shell: The Role and the future of Public-Private Collaborations in the Gulf-wide Monitoring

- Looking at opportunities to share the data they are collecting
- Shells' Deepwater Evolution
 - Most current projects are in 3,000 meters of water depth
- Gulf of Mexico Regional Footprint
 - Very few instrumentations on the ground
 - Most are on ships
- Working at finer resolution time scales than academia to make sound and safe decisions to protect their employees on and off shore
- Co-existing with the environment:
- They want to help decision makers with information
- How is Shell Collaborating to Monitor the Gulf of Mexico?
 - Advancing ocean tech and capability
 - Using Gliders to improve hurricane forecasting
 - Providing offshore data to GOM communities
 - Working with NOAA to share real-time ocean data
 - 4 gliders through summer, fall, and winter
 - Using ADCP's that goes into NDBC - they are helping with quality control standards
 - Underwater communications, looking at wind data profiles most recently
 - Exploring and monitoring the deep GOM
 - Using industry ROV's to study deep sea
 - Supporting the next generation
 - Offshore collaborators are Gulf-wide and cross all sectors. (i.e., Navy, BOEM)
 - Monitoring the Flower Garden Banks
 - Includes a coastal survey, and monitoring oceanographic parameters
 - 5-year program between partners then NOAA will take over the site
 - Newest collaboration – Stones Metocean Observing Station (Ship)
 - Unique system, has moorings
 - Monitoring ocean currents, continuous real-time monitoring from 30-1000m
 - Building the Collaboration for the Stones Metocean Mooring
 - Looking to assist in filling gaps in observations

Highlights from discussion

J. Manley:

- What are other oil companies doing with ocean observations?

R. Perry:

- Have engaged two other companies
- Trying to generate an industry story

T. Gulbransen:

- Where are Shell's interest?
 - What is Shell doing that NOAA or GCOOS isn't?
 - Have they influenced other companies to start collecting other ocean datasets?

R. Perry:

- Oxygen
- Good for observing the broader ecosystem
- Next is acoustics
 - The Gulf is behind in acoustics

C. Lautenbacher:

- Does Shell use GCOOS data?

R. Perry:

- Yes, they have been good at providing quality assured and controlled data; use modelling available
 - In comparison, NDBC only provides just a display of data.
 - Outreach is a big deal especially since the Gulf has 75,000 employees to include
 - 13,000 in the Gulf of Mexico

Overview on the NAS Gulf Research Program and the Loop Current Study, Lauren Showalter, National Academy of Sciences

- Loop Current study
 - Cannot provide results bc it's under peer review
- The Gulf Research Program (GRP): Division of the NASEM (2013) – 30 yr. program
- Defining the feature for the GRP
- Grants: (4) from 2016-2017
 - Exploratory, Synthesis
 - Capacity Building
 - Research-Practice
 - Research & Development
- Fellowship programs -
 - Experience with science-policy interface
 - 1-year placement on staff of site
- Early-Career researchers - Provide funding and mentoring
- Expert Reports/Workshops in Process
 - Loop Current Campaign
 - Important to the Gulf of Mexico - can shut down plants

- Primary physical oceanographic feature in the Gulf
- Importance of Loop Current System - understanding of the physical forces that share and energize the Gulf Loop Current
- Longitudinal Community Data Project
 - Multiple stressors affecting Gulf Coast communities
 - Provides information and insights into the impacts & resilience
- GRP Data Management
 - Accessible to researchers in the region & globally
- Train and educate personnel in data management practices
- Build data management capacity of Gulf of Mexico
- Data Outline:
 - Data Management policy, repositories, and data portals on website

Highlights from Discussion

T. MacDonald:

- Little discussion on what success looks like and metrics
- Understand can't talk about it much but maybe should be pushed up more

J. Manley:

- See opportunity to work with IOOS

T. Gulbransen:

- What is needed to take advantage of the data?
- Do we have personnel that has this knowledge?

L. Showalter:

- Have found that there is a need to be interdisciplinary

C. Lautenbacher:

- Five hundred million of DWH money went to NAS, but no money went to observing

IOOS Program Office update from Kathy Bailey on Moorings Strategy: National Strategy for a Sustained Network of Coastal Moorings

- Motivation behind the Strategy
 - Sponsored buoys: Funded from other NOAA Line Offices or other agencies apart of the NWS backbone
 - Sponsored buoys are no longer supported (4).
 - Congressional language for FY16 encouraged NOS to collaborate with NWS to prioritize buoys
- Development
 - Small writing team to ID critical network of existing moorings
 - Scope:
 - Geographic: Head of tide to US EEZ, federal networks, sustained observations (vs. experimental)
 - Does not include stationary, shore-based stations

- Supports National Strategy Planning
- Not a standalone document
- Mooring contributes to societal benefits (stakeholders)
- Nonfederal moorings (many in the RAs): 155, federal moorings 215=370 moorings
- High-level regional analysis: 7 major regions
- Major observation categories: met data (228), waves (247), physical (107), and biochemical (84)
- Moorings need to be sustained system, and need to identify priority stations
- Next steps:
 - Not intending to add multiple sensors to every mooring
 - Striving to make the existing network for efficient
- National Ecosystem Moorings Workshop (ACT), March 20-21, 2018 in Seattle, WA

Highlights from Discussion

J. Hagen:

- Not clear on how stakeholder inputs going to be designed?
- K. Bailey:
- Still designing but good input.

T. Curtin:

- Seems a piece of this is coast guard

C. Lautenbacher:

- Encourage to accelerate the strategy and how to get the partners in the game
 - Everyone is running out of money so may be more openness for interagency collaboration

Committee Discussion

C. Lautenbacher:

- Committee members -what things can complete by August 2018
- Global Ocean Observing System (GOOS), who takes care of GOOS?
- Managed through OAR
- Perception that nothing happening at GOOS

T. MacDonald:

- Why can't the GOOS framework can't be used the for the IOOS Program?
- Could put us in a good position politically

C. Gouldman:

- Ocean Observations 2019 in Hawaii
 - US Program Office participating
 - 20th anniversary of IOOS

J. Manley:

- Welcome letter to the new administrator

- Highlight IOOS as a special way to Integrate
- Send a similar letter to the IOC about expanding their membership

T. MacDonald:

- Think there's some actionable item around Big Data

T. Gulbransen:

- Recognize how the data management process should be easier
- Continue dealing FOO/finish
- Make statement about IOOS and IOOC that we stay connected to the IOC

Public Comment

There were no public comments.

Meeting adjourned.

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Open discussion

Continued discussion of topics from previous day.

T. MacDonald:

- Welcome letter to the new administration should speak about integration and Strategic Plan

C. Lautenbacher:

- Have a common language in the ocean world because each office/agency (FOO)
- Climate – should be sensitive about how we use the word “climate”

J. Manley:

- Can decouple ourselves from climate because we are in the operational world

C. Lautebacher:

- Need to find use for ocean data in Big Data Project

J. Manley:

- Advise/inform companies and entities to engage about data collection in the Gulf Region
- Bridging the gap between observations and research

T. Curtin:

- Key word is integrate, no one is integrating

J. Manely:

- In welcome letter, have info session to provide more information
- Provide a specific invitation to meet Carl and the IOOS Advisory Committee meeting in the Spring 2018
 - Highlight current members can provide information before members and chair change

T. MacDonald:

- In the welcome letter - how far IOOS has come
 - Is there anything else that we can engage them on?

C. Lautebacher:

- Give Gallaudet a win that he can have in NOAA

C. Lautenbacher:

- Industry likes to collaborate when it is in their best interest.
- Needs to be standardization.
- Need government regulation and controls
- Private industry is more effective at accomplishing more than the government in many aspects (i.e. SpaceX)

T. Gulbreansen:

- We can make a regulation that private industry companies need to collect baseline observations as a part of their operations.

Committee discussion and working group time

Updated IOOS Advisory Committee Actions Tracker Actions (4-19-17) and added new topics.

October 26, 2017 IOOS Advisory Committee Actions:

#:	Due Date:	Topic Area:	Owner:	Action:	Status:
		National Academy of Sciences (NAS) – how can IOOS take advantage of opportunity and reap monetarily (GRP). State how IOOS is an asset to NAS/GRP. Ask how using IOOS assets.	J. Manley (lead), T. MacDonald, J. Hagen	Be prepared at next call to advocate/define strategy around topic	
		Letter to IOOC – importance of staying connected to IOC, informal communications and support to IOC even when US not formal voting member (UNESCO), state why beneficial to IOOS	J. Manley (lead)	Short memo	
		Strategic Plan Focus Group	V. Kromer	Collect comments from group from minutes and send to IOOS PO.	
	First draft due 11/9/2017	Letter to incoming leadership expanding on previous letter.	T. MacDonald (lead), J. Manley, L. Ragster	Draft document. Show opportunities and easy wins. Ex. Add “easy wins”. Ex. Add recommendation that	Open

				IOOS be led as a Program Office at a level which will enable more senior recognition during marketing and communication with partner agencies.	
	ongoing	FOO/letter to follow up to IOOC request	J. Manley, J. Hagen	Letter that issue exists, challenge to integration of ocean systems, notes lack of harmonization/hurtful to IOOS PO? Not responsibility for IOOS PO to solely fix. (should be short/couple paragraphs) Add opp a Obs19 – letter highlight IOOS “20 yr anni”	Open
		Improve recognition of IOOS enterprise roles, value and leadership – brand survey	C. Moore, J. Quintrell. Need to identify a lead	Frame questions for possible brand survey, <i>evaluate and figure what want to do with this</i>	Deferred
		Continue to work on gaining a better understanding on big data topic to figure out how to best advice NOAA and IOOC.	T. Curtin (Lead), T. Gulbransen	Big data – identify new data set – HFR, need next letter in series of dialogue to Ed, support evolution big data – ocean obs, try to take advantage “offer of cycle”	Ongoing
		Investigate precedents and mechanisms which can enable coastal use permittees, eg NPDES or energy facilities,	V. Klump (lead) T. MacDonald, J. Hagen, T. Gulbransen	Reach out to Nicole LeBoeuf based on discussion and Nicole’s response on permitting to see her interest and see if we can help (find notes in minutes and send	Ongoing

		to contribute to IOOS		to T. Gulbransen – ask Tom to craft question)	
		Quality Management Indicator development due to evaluations implicit within certifications	n/a	Deferred	
	12/31/2017	Capture summary of work products the IOOS AC has completed the last 6 years for incoming members. Capture successes/failures	J. Manley, V. Kromer		

Public Comment.

There were no public comments.

Meeting adjourned.