

GCOOS Build-out Plan

Update and Ideas for the GOMA Data
and Monitoring Team

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*Stephanie Watson and Chris Simoniello,
Gulf of Mexico Coastal Ocean Observing
System Regional Association (GCOOS-RA)*

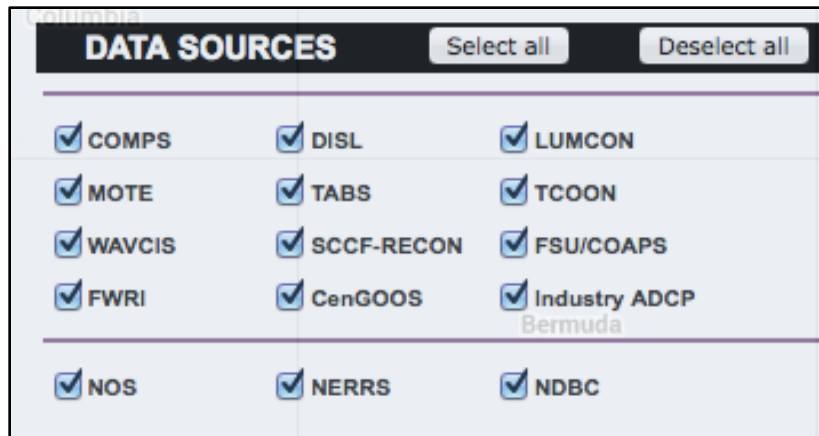


Overview

- Quick History: GCOOS-RA
- GCOOS Build-out Plan (BOP) and timeline
- User requirements into BOP
- BOP alignment with Post-DWH needs
- BOP Implementation – current GCOOS-RA project examples
- Ideas for the Data and Monitoring PIT

Quick GCOOS-RA History

- Global Ocean Observing System >U.S. IOOS>GCOOS (2005)
- 5 themes of GCOOS
 - [Public Health and Safety](#)
 - [Healthy Ecosystems and Water Quality](#)
 - [Mitigation of Effects of Coastal Hazards](#)
 - [Safe and Efficient Marine Operations](#)
 - [Long-Term Ocean Variability and Changes](#)
- Membership and Partnership Model



Data Portal and Products:

- Integrated Data for Emergency, Resource Managers and Others
- Data Products for User Needs
- Integrated Data for Private Sector Use in Building Businesses

GCOOS Build-out Plan (BOP)

A long-term vision of a comprehensive Gulf observing system with costs



Post-DWH updates on broader ecosystem monitoring, enhancing water quality monitoring, improving DMAC and modeling

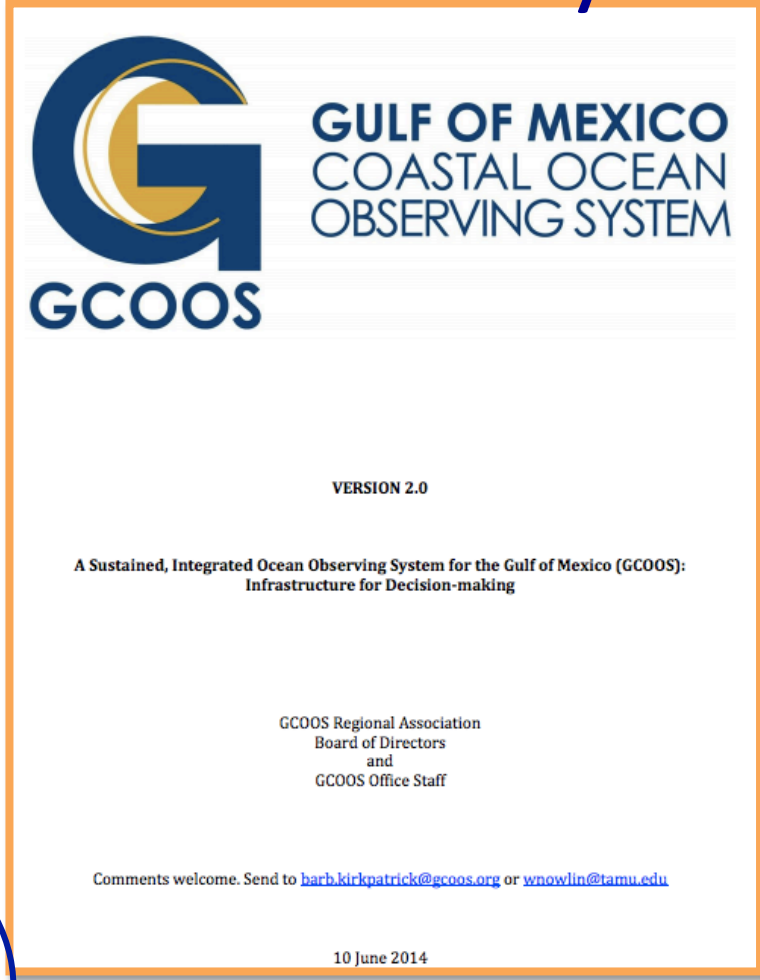
User Requirements into the BOP:

6 Pathways

17 GCOOS workshops+:
631 Contributors from 297 organizations

90 existing plans:
Requirements incorporated

Email/listserv Requests for Information:
50 additional contributors



GCOOS-RA Products and Services Advisory Committee

Other stakeholders' meetings:
Direct engagement

13 writing teams:
subject matter experts & Board Members

BOP Includes 19 Elements to Meet Common Stakeholder Priorities, with Cost Estimates

- Surface currents and waves network
- Fixed mooring network
- Autonomous meteorological measurement network,
- Glider and AUV network
- Satellite observations and products
- Aircraft observations
- Bathymetry and topography mapping network
- Water level network
- Enhanced PORTS® network
- Outreach and Education
- Harmful Algal Bloom Integrated Observing System
- Ecosystem monitoring
- Water quality and beach quality monitoring
- Hypoxia monitoring
- Monitoring of river discharge
- Physical modeling
- Ecosystem modeling
- Data management and communications system
- Research – input into new technology development

Match of Stakeholder-based Elements in GCOOS BOP to RESTORE Priorities

RESTORE Priorities – Common Themes Across S.1603,1604,1605	GCOOS Build-out Plan Elements Examples
Restoration and protection of fish, wildlife, and natural resources	Integrated Water Quality Monitoring Network, Ecosystem Monitoring, Ecosystem Modeling, Hypoxia Monitoring, Data Management, O/E
Restoration and protection of marine and coastal resources, including barrier islands, beaches, and wetlands	Bathymetry and Topography, River Discharge Monitoring, Enhanced Water Level Network, PORTS, Ecosystem Monitoring, Surface Currents & Waves Network, Data Management, O/E
Restoration and protection of ecosystems	Ecosystem Monitoring, Ecosystem Modeling, Surface Currents and Waves, Data Management
Observing and monitoring	Observing System (14 Elements)
Restoration and protection of economy, sustainable development and sustainable technology	PORTS, Research and Development, Surface Currents and Waves, Circulation Modeling, Beach Monitoring

BOP Includes Observations to Help Protect Valuable Ecosystem Services

Ecosystem Services (NAS, 2013)	GCOOS BOP V.2.0 Section Examples
Provisioning services (e.g., material goods such as food, feed, fuel, and fiber)	Fisheries Monitoring, Physical and Ecosystem Modeling,
Regulating services (e.g., climate regulation, flood control, water purification)	River Discharge to the Gulf, Enhanced Water Level Network, Integrated Water Quality Network, Autonomous Meteorological Stations, Harmful Algal Bloom Monitoring
Cultural services (e.g., recreational, spiritual, aesthetic)	Beach Quality Monitoring, Surface Currents and Waves Network
Supporting Services (e.g., nutrient cycling, primary productions, soil formation)	Integrated Water Quality Monitoring, Hypoxia Monitoring, Plankton Monitoring

NAS. 2013. An Ecosystem Services Approach to Assessing the Impacts of the Deepwater Horizon Oil Spill in the Gulf of Mexico



BOP Implementation Examples and Relevance to GOMA PITs

Implementation Project Example	Relevant to GOMA PITs
Citizen Science Data Portal (Pilot Project partners: Galveston Bay Foundation, TX; Natures Academy, Bradenton, FL; FL Aquarium, Tampa, FL; GCOOS OEC) <i>Dr. Shin Kobara, GCOOS, Developer</i>	Data and Monitoring, Engagement & Education, Water Resources, Wildlife & Fisheries
Hypoxia-Nutrients Portal: Integrated Nutrient Portal <i>Dr. Matt Howard/Marion Stoessel, GCOOS</i>	Data and Monitoring, Water Resources
CASE-EJIP/Loop Current and Eddy Forecasts	Data and Monitoring, Coastal Resilience, Wildlife & Fisheries
iTAG –integrated tracking of aquatic animals in the GOM, <i>Dr. Sue Barbieri, FWC, Committee Lead</i> <i>Bob Currier, GCOOS, Data Base Developer</i>	Data and Monitoring, Wildlife and Fisheries, Engagement & Education
MBON—Marine Biodiversity Observation Network- <i>Dr. Frank Muller Karger, USF Lead, Howard & Simoniello, GCOOS</i>	Data and Monitoring, Habitat Resources, Wildlife and Fisheries

Ideas for Data and Monitoring PIT

- Take what is useful from BOP, e.g.,
 - DMAC Guidance – includes community agreements on open data standards/web services, QA/QC manuals from QARTOD (wind, water levels, ocean optics, temperature, salinity, waves, currents, dissolved oxygen)
 - Identification of gaps and potential partnerships
 - Incorporate and implement other BOP priorities that make sense
- Submit ideas for BOP updates
- Use BOP to help justify funding requests
- Leverage ongoing GCOOS-RA projects

Questions?

Stephanie.watson@gcoos.org or
chris.simoniello@gcoos.org

Links:

GCOOS BOP -

<http://gcoos.tamu.edu/BuildOut/BuildOutPlan-V2-1.pdf>

QARTOD Manuals -

<http://www.ioos.noaa.gov/qartod/welcome.html>

Thank you!