

# GCOOS Build-out Plan

Update and Ideas for the GOMA Data  
and Monitoring Team

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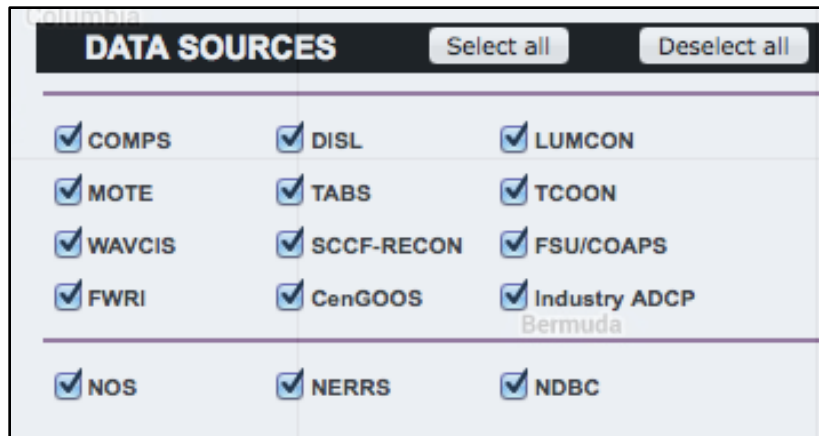


# Overview

- 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



The screenshot shows a web interface titled "DATA SOURCES" with "Select all" and "Deselect all" buttons. Below is a grid of data sources, each with a checked checkbox:

DATA SOURCES		
<input checked="" type="checkbox"/> COMPS	<input checked="" type="checkbox"/> DISL	<input checked="" type="checkbox"/> LUMCON
<input checked="" type="checkbox"/> MOTE	<input checked="" type="checkbox"/> TABS	<input checked="" type="checkbox"/> TCOON
<input checked="" type="checkbox"/> WAVCIS	<input checked="" type="checkbox"/> SCCF-RECON	<input checked="" type="checkbox"/> FSU/COAPS
<input checked="" type="checkbox"/> FWRI	<input checked="" type="checkbox"/> CenGOOS	<input checked="" type="checkbox"/> Industry ADCP Bermuda
<input checked="" type="checkbox"/> NOS	<input checked="" type="checkbox"/> NERRS	<input checked="" type="checkbox"/> NDBC



## 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**

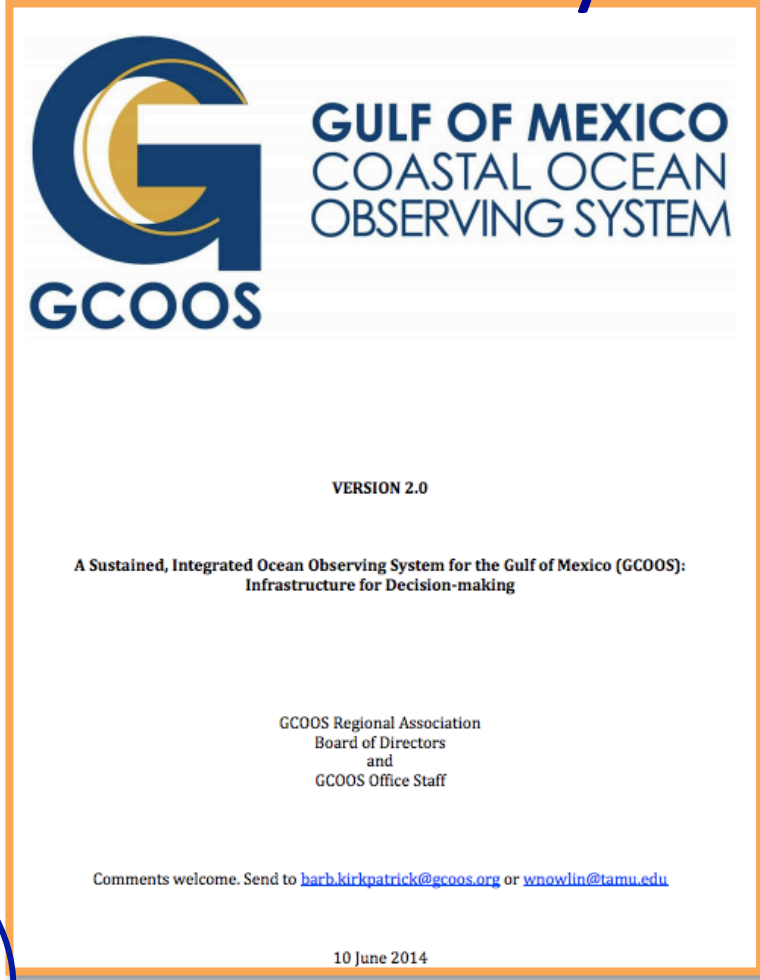
# User Requirements into the BOP:

## 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

<b>RESTORE Priorities – Common Themes Across S.1603,1604,1605</b>	<b>GCOOS Build-out Plan Elements Examples</b>
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

<b>Ecosystem Services (NAS, 2013)</b>	<b>GCOOS BOP V.2.0 Section Examples</b>
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 &amp; 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?

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Links:

GCOOS BOP -

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

QARTOD Manuals -

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

Thank you!