The Gulf of Mexico Coastal Ocean Observing System (GCOOS)

Worth D. Nowlin, Jr.
&
Ann E. Jochens

GCOOS Office/Texas A&M University

- Recreational Boating Workshop; Eastern Gulf
- St. Petersburg, FL
- February 4, 2009
Global Ocean Observing System (GOOS)

• GOOS is an end-to-end system of observations, data management, and production and delivery of products and services.

• GOOS is coordinated by United Nation agencies and involves the participation of some 100 ocean nations.

The GOOS Modules

The Global Ocean Observing System (GOOS) has been designed and is being implemented in two modules:

• The **global module** is designed to monitor, predict, and understand marine surface conditions and climate variability/change; and

• The **coastal module** is designed to sustain healthy marine ecosystems, ensure human health, promote safe and efficient marine transportation, enhance national security, and predict and mitigate against coastal hazards.

The U.S. contribution to GOOS is called the **Integrated Ocean Observing System (IOOS)**.
Gulf of Mexico Coastal Ocean Observing System (GCOOS)

- The Gulf of Mexico Coastal Ocean Observing System (GCOOS) is an element of the U.S. IOOS Coastal Module.
- It is a System of Systems comprised of many operational elements operated by separate entities and funded by a variety of sources.
- To realize maximum benefit, the whole must operate as one; so it must be planned, coordinated, and managed as a system. It is the GCOOS Regional Association (GCOOS-RA) that plans, coordinates, and manages the system of systems that is GCOOS.
Gulf of Mexico Coastal Ocean Observing System (GCOOS)

Source: USGS
GCOOS produces data and products in response to user requirements within the seven broad objectives of U.S. IOOS:

- Improve the safety & efficiency of marine operations
- Improve national/homeland security
- Improve forecasts of natural hazards and mitigate their effects more effectively
- Improve predictions of climate change & their effects
- Minimize public health risks
- Protect & restore healthy marine & estuarine ecosystems more effectively
- Sustain living marine resources

1 System, 7 Societal Goals
The first strategic objective of the observing system is to establish and maintain an active, strong, and effective organizational structure.

- Resolution & Mission Statement adopted in January 2003
- Formal Memorandum of Agreement establishing Regional Association for governance signed in January 2005; currently 80 signatories
- Operational structure complete as of April 2006
- Development of formal proposal process January 2007
## Demographics

<table>
<thead>
<tr>
<th>Breakdown of Parties by STATE</th>
<th>Breakdown of Parties by SECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLORIDA</td>
<td>Voting Party - Academic</td>
</tr>
<tr>
<td>26</td>
<td>18</td>
</tr>
<tr>
<td>ALABAMA</td>
<td>Voting Party - Government</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>MISSISSIPPI</td>
<td>Voting Party - Private Sector</td>
</tr>
<tr>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>LOUISIANA</td>
<td>Voting Party - A / G</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>TEXAS</td>
<td>Individual - Academic</td>
</tr>
<tr>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>OTHER STATES</td>
<td>Individual - Government</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Virginia</td>
<td>Individual - Private Sector</td>
</tr>
<tr>
<td>Maine</td>
<td>0</td>
</tr>
<tr>
<td>California</td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td></td>
</tr>
<tr>
<td>Washington</td>
<td></td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
</tr>
<tr>
<td>District of Columbia</td>
<td></td>
</tr>
</tbody>
</table>
Completing the Governance Structure

• Since completing the organizational Structure in 2006, the RA has prepared
  – a Conceptual Design,
  – an Observing System Plan,
  – a Communication Strategy, and
  – an Education and Outreach Strategic Plan.

• In progress are
  – a Data Management and
  – a Business Model.

• The RA coordinates with other U.S. RAs, the Gulf of Mexico Alliance, and Mexico.
A Key Strategic Element is to Identify and Prioritize the Needs of Regional Stakeholders

• The GCOOS-RA is working to:
  – identify observations and products needed by users
  – estimate economic benefits of these needs
  – prioritize these needs
  – plan and initiate pilot projects to enable these needs to be met

• Mechanisms used:
  – Workshops & Meetings with Stakeholders
  – Task Team on Public Health
  – Observing System Plan
  – Development of our Business Model
Identify extant data and product providers and serve information

• The GCOOS-RA regularly identifies extant data and product providers who may support regional stakeholder needs.

• We are in the process of developing a GCOOS Data Portal to make non-proprietary data and products from the system of systems available to all users in machine interoperable form.

• This Data Portal is a key step in developing a Regional Operations Center from which all users can obtain real-time information on all operating systems.
Integration of Existing Sub-systems

Goal: Bringing new extant real-time data sets to the NOAA National Data Buoy Center (NDBC) and to GCOOS Data Portal for quality control and open distribution.
Enhancing the Observing System Elements of GCOOS

The GCOOS-RA strategy to enhance the GCOOS is to:

1. Develop plans for regional observing systems, models, and analyses to more fully meet the identified data and product needs of stakeholders.

2. Compare those plans with inventories of extant systems and identify gaps to create an integrated, prioritized blueprint of required enhancements.

3. Seek sources of funding for the enhancements.
Education and Outreach

• A key strategic element for the RA is to develop and maintain useful and effective education and outreach activities to support other strategic plan elements and raise more general awareness of the marine environment as well as of the IOOS.

• We have a very active Education and Outreach Council supported by a full-time Education and Outreach Coordinator.

• We reserve 10% of all financial support garnered for use in education and outreach activities.
Obtaining Support for Maintenance and Expansion

• Finally, the GCOOS-RA strives to obtain funding to continue extant activities and to establish and maintain needed enhancements to observing systems.

• We work in cooperation with neighboring Regional Associations and the Gulf of Mexico Alliance in this effort.

• We work with data/model providers willing to join the system of systems.
GCOOS Office Contact Information

Worth D. Nowlin, Jr.
Project Principal Investigator
wnowlin@tamu.edu
(979) 845-3900

Matthew K. Howard
DMAC Coordinator
mhoward@tamu.edu
(979) 862-4169

Office mailing address:
Department of Oceanography
3146 TAMU
College Station, TX 77843-3146
Fax number: (979) 847-8879

Website: http://www.gcoos.org

Ann E. Jochens
Regional Coordinator
ajochens@tamu.edu
(979) 845-6714

Susan R. Martin
Research Associate and Webmistress
srmartin@tamu.edu
(979) 845-3900

Chris Simoniello
Education & Outreach Coordinator
simo@marine.usf.edu
(727) 553-1148
E/O mailing address:
140 7th Avenue South
St. Petersburg, FL 33701
fax: (727) 553-1189
Thank You

Please visit our web site for further information.

http://www.gcoos.org

• If you wish to become a Party to the Regional Association, download the Memorandum of Agreement from the GCOOS web site, sign and fax the signature page to Worth Nowlin (979-847-8879).

• If you are a data or model provider, we would be pleased to work with you to make data/products generally available to the user community.