# Gulf of Mexico Coastal Ocean Observing System (GCOOS)

Mike Spranger

Associate Dean - Environmental & Natural Resource Programs
Assistant Director - Florida Sea Grant Extension
University of Florida







# The ocean observing system

International Global Earth Observing System of Systems (GEOSS) includes the Global Ocean Observing System

U.S. contribution to GEOSS is the Integrated Earth Observing System of Systems (IEOSS)

The Integrated Ocean Observing System (IOOS) is the ocean component of IEOSS

The Gulf of Mexico Coastal Ocean Observing System is one of 10 COOS's that comprise the IOOS









# GCOOS Region and Subsystems









# GCOOS Status

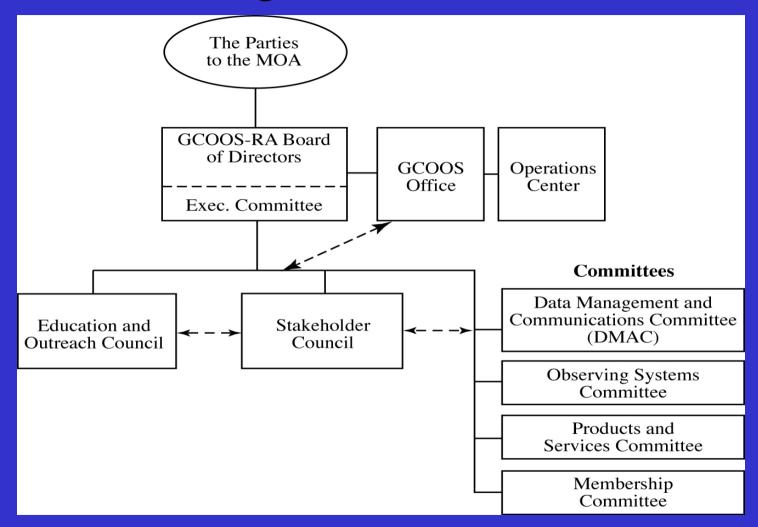
- Formal MOA established in January, 2005
- Currently 43 signatories to the MOA
- Board of Directors elected in June, 2005
- □ First BOD meeting in Houston in August, 2005
- Business Plan Reviewed by Board
- Boards and Committees established







# GCOOS Organizational Structure









## **GCOOS** Board of Directors

## Private Sector representatives

Cortis Cooper, ChevronTexaco Alfred Prelat, The Boeing Company

\*Raymond Toll, Science Applications International Corporation Jan van Smirren, Fugro GEOS

## **Governmental representatives**

\*Robert (Buzz) Martin, Texas General Land Office Chris Oynes, Minerals Management Service

\*Don Roman, University of Southern Mississippi

## Academic representatives

Mark Luther, University of South Florida

\*Worth Nowlin, Texas A&M University

Nancy Rabalais, Louisiana Universities Marine Consortium

## Education and Outreach representatives

\*Mike Spranger, Florida Sea Grant Program Sharon Walker, J.L. Scott Marine Education Center & Aquarium

\* Executive Committee







## GCOOS Stakeholder Council

Vern Asper (A) University of Southern Mississippi

Stuart Burbach (P) Retired, Pogo Oil

David Buzan (G) TX Parks & Wildlife Department

Tricia Clark, (P) Skaugen Petro Trans

Cort Cooper (P) Chervon

Jim Feeney (P) Horizon Marine

Tom Fry, (P) NOIA

Tom Gustafson, (A) Nova Southeastern University

Paul Kelly, (P) Rowan Industries

Chris Oynes, (G) Minerals Management Service

\* Robert Stickney, (A/G) Texas Sea Grant

Kerry St. Pé, (G) Barataria-Terrebonne Estuary Program

Dave Yeager, (G) Mobile Bay Estuary Program







## GCOOS Education and Outreach Council

#### <u>Alabama</u>

John Dindo, Dauphin Island Sea Lab
Lloyd Scott, Mobile Bay School District
Margaret Sedlecky, Weeks Bay NERR
Lee Yokel, Mobile Bay NEP

## **Florida**

Mike Spranger, UF/Florida Sea Grant Gary Lytton, Rookery Bay NERR Chris Verlinde, Santa Rosa County Extension Charlene Mauro, Navarre High School

## **Out of Region**

Rusty Low, UCAR-DLESE

#### Louisiana

Jessica Katler, LUMCON
Dianne Lindstedt, LSU Sea Grant
Jean May-Brett, LA Dept. of Education

## **Mississippi**

Sharon Walker, J.L. Scott Marine Center Joe Swaykos, Stennis Space Center Jennifer Buchanan, Grand Bay NERR

#### **Texas**

Rick Tinnin, University of Texas Ralph Rayburn, Texas Sea Grant Rob Smith, Shell Inc. Lisa Spence, NASA







# GCOOS Workshops

Integrated Data Systems for Oceanography
31 October-2 November, 2000 Stennis Space Center, MS

NVODS Workshop for Managers of Coastal Observing Systems 14-15 January, 2003 Stennis Space Center, MS

Private Sector Interests in IOOS: Focus on GOM and SE U.S. 2-4 March, 2004 Houston, TX

HABs: GCOOS Role in Detection, Monitoring, and Prediction 13-15 April, 2004 St Petersburg, FL

Formation of a GCOOS Education and Outreach Council 29-30 November, 2004 Biloxi, MS

Development of a Governance Structure 24-25 January, 2005 New Orleans, LA







# GCOOS Workshops

Oil and Gas Production and related industries 2-4 November, 2005 Houston, TX

Stakeholder Council and Board of Directors Meeting 10-13 January, 2006 Mobile, AL

Education and Outreach Council Meeting 24-26 April, 2006 Ocean Springs, MS

Storm Surge Workshop
24-25 January, 2007 New Orleans

Stakeholder Council and Board of Directors Meeting, 5-7 March, 2007 New Orleans







# Oil and Gas Production and related Industries Workshop Identified High Priority Needs

## **Product Needs**

Hurricane Severity Forecasts
Surface current forecast maps
Measurement & Product archive
Operation maps of SSTs
Forecast maps of winds & waves
3-D current forecasts on shelf
Probability maps of bottom
hazards

## **Measurement Needs**

Hurricane severity model improvement

Operational satellite altimeters (r/t)

Operational satellite radiometers (r/t)

Operational satellite wind (QuikSat)

Improve hurricane severity forecasts (r/t)

Offshore meteorology (real-time)

Marine mammals and sea turtle sightings

High resolution coastal bathymetry, topography, and subsidence rates







# GCOOS Education and Outreach Council

Hire Education and Outreach Coordinator

Conduct Needs Assessment of Stakeholders (with GOMA EEN)

Develop annotated catalog of GCOOS current/future products and users

Create education and outreach products to used in localized programs (i.e. powerpoint, fact sheets, flyers, display boards)

Coordinate regional workshop for Sea Grant, NERRs, and NEP







# Why Sea Grant in Leading Role?

Established relationships with coastal clientele

Track record of two-way transfer of information and research topics

■ Infrastructure in coastal states & research institutions

■ Expertise in formal and non-formal education







# **Commercial Fishing**



- Water temp
- Salinity
- Currents
- Zooplankton
- Weather







# **Recreational Fishing and Boating**











# **Coastal Communities**



- Water levels
- Storm flooding
- Sea level rise









# Oil and Hazardous Waste Spill at Sea

# **Currents**









# **Beachgoers**

- Waves
- Rip currents
- Tides





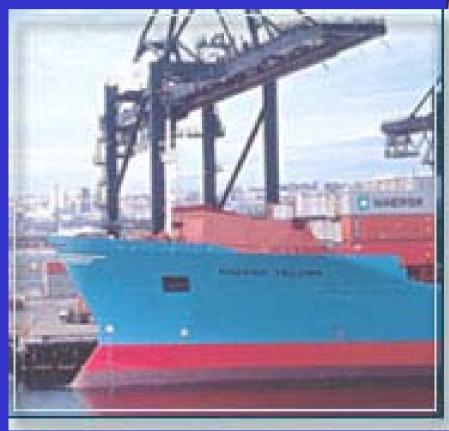






# **Commercial Shipping**

- Wave data
- Winds
- Currents
- Tides











# **Beach Communities**

- Waves
- Rip currents
- Sand for beach nourishment











# **Military**



- Coastal navigation
- Search and rescue
- Environmental hazards
- Coastal zone mgt
- Logistics and training
- Homeland security











## The Gulf of Mexico Coastal Ocean Observing System (GCOOS)

GCOOS Home

## Welcome to GCOOS

#### **GCOOS Activities**

News Board Calendar GCOOS Reports Past Meeting Reports Reports of Councils & Committees

#### Regional Association

Mission Statement Resolution Signatories Memorandum of Agreement (pdf) Parties to the MOA Board of Directors Minutes of Board Meetings Councils/Committees

#### **GCOOS System**

#### **Building Blocks**

Overview graphic In Situ Observations Satellite Observations Model Output & Products Inventory

#### **Priorities**

Top Priorities for National Backbone Additions Top Priorities for National Backbone Enhancements



#### What is GCOOS and the GCOOS-RA?

Many organizations and individuals are concerned with sustained observations and/or products and services based on such observations from the estuaries and Exclusive Economic Zone of the Gulf of Mexico. A group of these entities have signed a resolution agreeing to form a Gulf of Mexico Coastal Ocean Observing System (GCOOS)

beginning with the integration of existing observing system elements and the sharing of non-commercial and non-proprietary data and products. You are welcome to join the signatories to this resolution. General agreement has been reached on a GCOOS mission statement or vision. This regional system will be a part of the U.S. sustained and Integrated Ocean Observing System (IOOS).

The Memorandum of Agreement for the GCOOS Regional Association (GCOOS-RA) became effective on 25 January 2005. Qualified individuals are encouraged to become Parties by signing the MOA either on behalf of their organizations or as an individual. This Regional Association provides formal governance of GCOOS. The GCOOS Business Plan is in preparation. On June 22, 2005, ballots were counted and the initial Board of Directors of the GCOOS-RA was elected. Members of the Board represent the distribution of private sector, government, academia, and education and outreach Parties to the MOA.

An ongoing series of meetings and workshops are being held as part of the development of this Gulf of Mexico Coastal Ocean Observing System. Key meetings held to date have dealt with: an integrated data system for the Gulf of Mexico; the mission, initial building blocks, and tentative organization for GCOOS; a meeting to consider next research activities in the Gulf to support socioeconomic neds; the private