



**Gulf of Mexico Alliance
Environmental Education Network
Annual Meeting
June 18-20, 2007**

Alabama Department of Conservation and Natural Resources, State Lands Division
Five Rivers Delta Resource Center
Spanish Fort, Alabama

Workshop Summary

Actions and Next Steps

The Gulf of Mexico Alliance (GOMA) Environmental Education Network (EEN) is a multi-state partnership identified in the *Governors' Action Plan for Healthy and Resilient Coasts*. This workshop report summarizes the second annual meeting which was held jointly with the Gulf of Mexico Ocean Observing System Education and Outreach Council (GCOOS EOC) in June 2007. A list of short-term actions identified at the workshop is summarized below.

Actions:

- The Gulf of Mexico Alliance (GOMA) Environmental Education Network (EEN) and Gulf Coast Ocean Observing System (GCOOS) Education and Outreach Coordinator (EOC) representatives will review the results of the collaboration break out session and proceed with high priority actions identified to be achievable over the next year.
- The GOMA Environmental Education Coordinator (EEC) will develop a strategy for identifying key individuals to participate in the Priority Interest Teams (PITs) as well as following up on identified key connections.
- The GOMA EEC will work with the GCOOS EOC representative, the EEN Steering Committee, and other entity representatives to formalize some of the processes. Engaging new Rookery Bay NERR GOMA contractors in this effort will be critical.
- Create and distribute a matrix of Gulf education organizations, their programs relating to GOMA, and contact information.

Introduction and Background

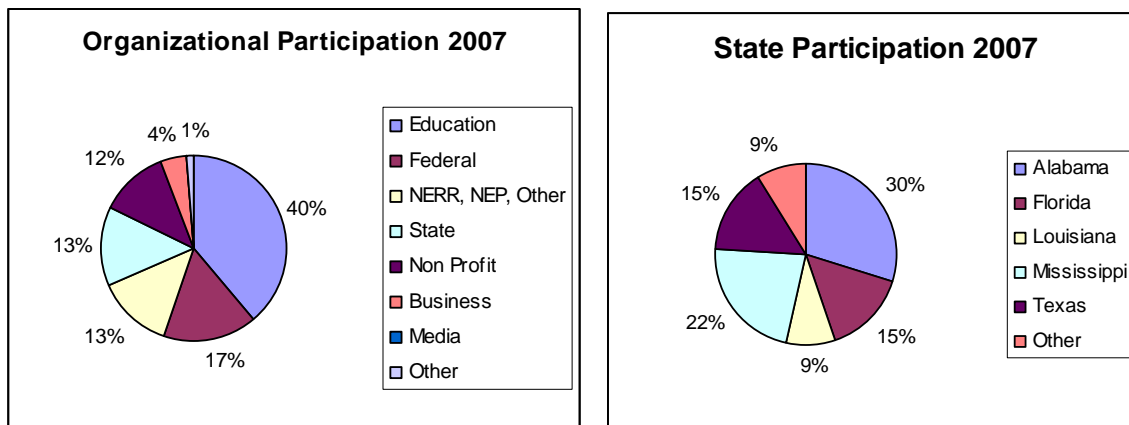
The Gulf of Mexico Alliance (GOMA) Environmental Education Network (EEN) is a multi-state partnership identified in the *Governors' Action Plan for Healthy and Resilient Coasts*. An inaugural meeting of this network was held at the Rookery Bay National Estuarine Research Reserve (RBNERR) in June 2006. At that meeting attendees agreed upon a yearly gathering of the network. The June 2007 workshop was the second annual meeting and was held jointly with the GCOOS EOC to capitalize upon shared memberships, limited resources, and common goals.

Workshop Goals:

- Increase Gulf-wide collaboration among educator's through networking, sharing best practices, communication and organizing efforts.
- Further Gulf Alliance goals by working on Environmental Education action items and bridging the gap with other priority issue teams (PITs).
- Energize participants through increased knowledge and skills of educational techniques and programs that focus on the Gulf of Mexico and its ecosystems and people.

Attendee Distribution

Regional and organizational distribution is important to the success of the EEN. Sixty –seven participated over the course of the three day workshop. Of the attendees, the representation of various groups is indicated in the pie chart. A full list of participants is in appendix I.



Agenda Review

There were several purposes for holding this workshop including identifying partnerships and projects for GOMA EEN to collaborate with the GCOOS EOC, providing status updates related to the education actions in the Governor's plan, identifying communication activities, and gaining input from participants on specific EEN actions. The full agenda can be found in appendix II.

The first day focused on GCOOS EOC priorities. The synopsis of this meeting can be found as a companion document on the hosting website. The second day focused more on the GOMA EEN and included background on the formation of GOMA, the status of current environmental education actions, and updates on activities of the other four priority issue teams (PITs). Participants were asked to participate in three interactive sessions involving collaborations with GCOOS, engaging the other PITs, and improving GOMA communications. Day three involved a critical analysis of two major actions within the EEN: the public awareness campaign and addressing underserved and underrepresented populations (UUPs). Two guest speakers presented before the audience. Participants shared public awareness activities around the Gulf of

Mexico and did an examination of actions required in developing programs for UUPs. Results of these activities are summarized below with more details in the appendices.

Initial Outcomes

The main outcomes from the workshop are summarized below. This is a preliminary list following the agenda from the meeting. These results will guide the efforts of the EEN over the next year and most items will need to be more fully developed with smaller working teams.

GCOOS EOC / GOMA EEN Collaboration

Workshop participants broke into groups focusing on identifying potential actions and products for collaboration between the EEN and GCOOS EOC based on the following three criteria: (1) it must fit a GOMA priority area; (2) it must fit an ocean observation/real-time technical program; and, (3) it must be feasible (show results quickly and implement within one year or less). The ideas were then synthesized and voted on by the group as a whole. The results were as follows.

Collaborative Action/Product	Votes
Gulf wide Web page targeting fishers/anglers/boaters (near shore-data, buoy, fish regulations, habitat, etc.)	12
Useful Visualization Data Sets Grades 6-12 swamp data; WQ	11
Make data available & user friendly for coastal decision makers (WQ) – workshops	9
Geo-tech on-line in services for informal educators	8
GCOOS data used for storm surge resiliency models	7
Use same theme and language for GOMA/GCOOS information. Focus on vulnerable communities (e.g. socially vulnerable – aging, etc.)	4
K-12 real time data education with everyday life decisions; curriculum and critical thinking	4
Coastal research experience bridge program (GOMA/GCOOS) Use high school interns	3
Early evacuation warning system for hurricanes, storms, etc. based on high waves & winds; On cell phone Web site NOAA weather radio Blackberry	3
Create asset maps that are user friendly as education tool that both groups (GOMA & GCOOS) could use	2
Develop teaching tools using GCOOS data & GOMA PIT information	2
Human health & safety – practice applications with GCOOS real time data: Connections School announcements	2
Site specific locations for users to provide access to real time ocean and weather info	1
Build additional partnerships & collaborations (watershed watchers) to spread message and products to general public (e.g. NERRS, COSEE etc.)	0
Use technology for a network of schools to compete across schools to answer questions Real to swim or boat	0

In follow-up to this working session, the GOMA EEC will work with the GCOOS EOC to review the list and establish a means to move forward on appropriate items. A more thorough description of these actions/products is listed in appendix IV.

Engaging the Priority Issue Teams

The Gulf of Mexico Alliance is comprised of four other priority issue areas in addition to environmental education. These issues are:

- Water quality for healthy beaches and shellfish beds
- Wetland and coastal conservation and restoration
- Identification and characterization of Gulf habitats
- Reductions in nutrient inputs to coastal ecosystems

Environmental education is the lynch pin across all priority issue teams (PITs). Each issue has a set of identifiable education needs such as workshop development and communication. Environmental education should be communicating the issues of the Alliance, thereby acting as the link between science and other target audiences. In order to better facilitate these needs and communicate more effectively, a brainstorming session was held to identify potential ways to support and interface with the other PITs. Representatives from each team were available to provide input to the breakout groups during the session.

In reviewing the suggestions made, some were cross cutting for all areas while others were specific to a priority issue. The following is a summary of potential cross cutting strategies identified by the participants. The raw text of flipcharts can be found in appendix V.

Strategies for the EEN to better engage with the other priority teams include:

- acting as the disseminator for products produced by the PITs
- having liaisons in the other PITs which report back to the full EEN group once a month
- testing new systems or products developed by the PITs
- supporting other PIT workshops/activities/products
- translating other PIT science for other target audiences
- publicizing other PIT activities in appropriate venues

It is important to note that participation on behalf of the EEN does not necessarily constitute working with the general public or K-12 environment. Many have the expertise to interface with other audiences such as elected officials, resource managers, researchers in academia, and other settings. By utilizing this network, it may be possible to enhance participation in certain activities of other PITs.

The follow-up to this activity will involve the EEC developing a strategy for identifying key individuals to participate in the PITs as well as acting upon key connections identified.

GOMA Communication and Information Sharing

Effective communication and information sharing is the core to the initial development of the EEN. The entire workshop audience discussed potential ways to improve communication within GOMA as well as with other constituents. These ideas included:

- Developing an Online Calendar:
 - Centralized, web-based
 - Regionally sorted (i.e. gulf educators)
 - PIT update items
- Organization representatives sharing information:
 - Email, listserv
 - Facebook style for all groups
- Working and linking with existing groups / existing calendars
- Using multiple methods to reach audiences (not all web based)
- Sharing GOMA and other newsletters broadly (ex. Listserv)
- Creating themed emails or newsletters focused on new products:
 - Top 10 WQ resources
 - Top 10 coastal restoration
 - Environmental education research

Next steps for this activity will involve the EEC working with GCOOS EOC representative, the EEN Steering Committee, and other entity representatives to formalize some of these processes. Engaging new Rookery Bay NERR GOMA contractors in this effort will be critical. Finally, a formal website will help facilitate some of the actions described.

Public Awareness Campaign

A key action within the *Governors Action Plan* is to develop a public awareness campaign. This session reviewed successful and unsuccessful programs as well as critical components for any program. It also included an in depth presentation of a successful campaign from Linda Brunette, St. Johns River Water Management District, Indian River Lagoon National Estuary Program (see related website at: <http://floridaswater.com/>).

The necessary components for a successful campaign include:

- Extensive research – on your subject matter as well as target audiences
- Know your audience and their values
- Know your issue and problem
- Use integrated ways to reach the public
- Have partners to accomplish your program
- Be consistent in your message across partners
- Conduct an assessment to provide results – prove your program worked

Following these presentations, participants listed one behavior change to target in the Gulf which might be used in a Gulf-wide public awareness campaign after hearing about what makes both a

good and bad public awareness campaign. This listing exercise was synthesized into several broad categories. Nutrient related behavioral changes received the most notes many specifically addressing fertilizers. Coastal development related to habitat and restoration was next though there was no easily discernable behavior alteration. The remaining items related mainly to littering. See full list in appendix VI.

Gulf Outreach and Education Activities

After a review of ongoing GOMA activities related to the *Governors' Action Plan*, participants broke into groups to discuss the most relevant existing outreach and education activities their organizations are currently doing that contribute to the goals of the Alliance Plan. They then brainstormed ideas for potential new projects to help contribute to the Plan. The full list, including contact information, can be found in appendix VII.

Underserved and Underrepresented Populations

The final session addressed the *Governors' Action Plan for working with Underserved and Underrepresented Populations (UUP)*. Hilda Castillo, North America Association for Environmental Education Diversity Committee presented to the audience and answered questions regarding reaching diverse populations. There were two presentations highlighting lessons learned from UUP programs by Richard Gonzales, Science and Spanish Club, Gulf of Mexico Foundation and Greg Ira, Florida Department of Environmental Quality. Following these presentations the group went through a critical review of elements needed in the development of a UUP program addressing the K-12 community.

Next Steps and Moving Forward

Four short-term actions were identified during the workshop:

- The GOMAEEN and GCOOS EOC representatives will review the results of the collaboration session and proceed with high priority actions identified to be achievable over the next year.
- The GOMA EEC will develop a strategy for identifying key individuals to participate in the PITs as well as following up on identified key connections.
- The GOMA EEC will work with the GCOOS EOC representative, the EEN Steering Committee, and other entity representatives to formalize some of the processes.
- Create and distribute a matrix of Gulf education organizations, their programs relating to GOMA, and contact information.

In addition, there is a need to continue developing the items from the Governor's Action Plan related to conducting a public awareness campaign for the Gulf of Mexico and designing a Web site. There is also a need to improve internal communication within the Alliance between the PITs as well as outreach to the public. Over the next year, working groups within the EEN will continue to meet regularly with the GOMA EOC to try to move these items forward.

List of Appendices

- I. Meeting Participants
- II. Full Agenda
- III. GCOOS Summary
- IV. GCOOS EOC / GOMA EEN Collaboration List
- V. Engaging the Priority Issue Teams
- VI. Public Awareness Campaign: Behavior Changes
- VII. Outreach and Education Activities by Organization Matrix

APPENDIX I

Gulf of Mexico Alliance - Environmental Education Network Gulf Coastal Ocean Observing System Education and Outreach Council 2007 Registered Meeting Participants

First Name	Last Name	Organization	E-mail
Melissa	Applegate	Alabama Coastal Foundation	missy@joinacf.org
Desiree	Bishop	Environmental Studies Center	dvbishop@mcpss.com
Pam	Blanchard	LSU Educational Theory, Policy, and Practice	PamB@LSU.EDU
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Linda	Broussard	DOI / U.S. Geological Survey, National Wetlands Research Center, Library	linda_broussard@usgs.gov
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Rafael	Calderon	The Nature Conservancy - Texas	rafael_calderon@tnc.org
Hilda	Castillo	North American Association of Environmental Educators	hcastillo@istep.com
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Marian	Dicas	Grand Bay NERR	marian.dicas@dmr.ms.gov
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Quenton	Dokken	Gulf of Mexico Foundation	qdokken@gulfmex.org
Carl	Ferraro	ADCNR-SLD-Coastal Section	carl.ferraro@dcnr.alabama.gov
Bryan	Fluech	Florida Sea Grant	fluech@ufl.edu
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Marco	Giardino	NASA	Marco.J.Giardino@nasa.gov
Richard	Gonzales	Gulf of Mexico Foundation	richard@gulfmex.org
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Karen	Gross	Environmental Studies Center	kgross@mcpss.com
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Phillip	Hinesley	AL. Dept. of Conservation and Natural Resources	Phillip.hinesley@dcnr.alabama.gov

Sharon	Hodge	Northern Gulf Institute, Mississippi State University	shodge@ngi.msstate.edu
Lei	Hu	Dauphin Island Sea Lab	lhu@disl.org
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Greg	Ira	Florida Department of Environmental Protection	Greg.Ira@dep.state.fl.us
Ann	Jochens	GCOOS Regional Coordinator, Department of Oceanography, TAMU	ajochens@tamu.edu
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Karla	Klay	Artist Boat	kklay@artistboat.org
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Charlene	Lee	Smart Coast	info@smartcoast.org
Dianne	Lindstedt	LSU, Louisiana Sea Grant	dlindst@lsu.edu
Jose Manuel	Lopez	University of Puerto Rico: Department of Marine Sciences	jlopez@uprm.edu
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Russanne (Rusty)	Low	GLOBE Program, University Corporation for Atmospheric Research	rlow@globe.gov
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Cheryl	McClary	UGA	Mcclaryc@uga.edu
Mary	Mekkers	US Army Corps of Engineers, Mobile District	mary.j.mekkers@usace.army.mil
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Denise	Runnels	Radiance Technologies	drunnels@radiancetech.com
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Steve	Sempier	Sea Grant Mississippi State University	stephen.sempier@usm.edu
Kris	Shipman	Texas Parks and Wildlife Coastal Fisheries	kris.shipman@tpwd.state.tx.us
Lynn	Sisk	AL Department of Conservation and Natural Resources	ls@adem.state.al.us
Rob	Smith	Fugro GEOS Inc.	r.smith@geos.com

Mike	Spranger	Florida Sea Grant, University of Florida	spranger@ufl.edu
Tabitha	Stadler	Rookery Bay Research Reserve	tabitha.stadler@dep.state.fl.us
LaDon	Swann	Mississippi-Alabama Sea Grant Consortium	swanndl@auburn.edu
Joseph	Swaykos	Univ of Southern Mississippi	joe.swaykos@usm.edu
Pamela	Terasaki	GCOOS-Education & Outreach	pterasaki@springisd.org
Cassie	Thibodeaux	IAP World Services at the USGS National Wetlands Research Center	cthibodeaux@usgs.gov
Jody	Thompson	AUMERC/AL Sea Grant Extension	jody.thompson@auburn.edu
Chris	Verlinde	UF/IFAS Santa Rosa County Sea Grant Extension	ChristinaV@santarosa.fl.gov
Sharon	Walker	University of Southern Mississippi-Scott Marine Education Center	sharon.walker@usm.edu
Christine	Walters	Grand Bay NERR	christine.walters@dmr.ms.gov
Ann	Weaver	NOAA Coastal Services Center	ann.weaver@noaa.gov
Tami	Wells	The University of Southern Mississippi - GCOOS EOC	tami.wells@usm.edu
Lee	Yokel	GOMA - DISL	lyokel@disl.org
Fred	Zeile	NOAA	Fred.seile@noaa.gov

APPENDIX II

GCOOS Education and Outreach Council Annual Meeting Five Rivers-Delta Center Spanish Fort, AL

Agenda

17 June **Travel Day**

18 June

- 0830 1.0 Morning Social – Coffee, Juice, Fruit**
- 0900 2.0 Welcome, Introductions, purpose of meeting, Agenda Adoption**
- Mike Spranger, Assistant Director, Florida Sea Grant Program
- 2.1 Introductions (All)**
- Mike Spranger, Assistant Director, Florida Sea Grant Program
- 2.2 Purpose of Meeting**
- Mike Spranger, Assistant Director, Florida Sea Grant Program
- Lee Yokel, Education Coordinator, Gulf of Mexico Alliance
- 2.3 Formal Introduction of EOC Coordinator**
- Sharon Walker, Professor Emeritus, University of Southern Mississippi
- Tami Wells, Education and Outreach Coordinator, GGOOS
- 2.4 Agenda Adoption**
- 0915 3.0 GCOOS Update**
- Ann Jochens, Regional Coordinator, GCOOS
- 3.1 GCOOS Board Semi-Annual Meeting**
- 3.2 GCOOS Workshops in 2006-2007**
- 3.3 Grant Proposals in Process**
- 3.4 Questions and discussion**
- 0945 4.0 IOOS Update**
- Ann Jochens, Regional Coordinator, GCOOS
- 4.1 Questions & discussion**
- 1015 BREAK**
- 1030 5.0 International Collaborations**
- Mike Spranger, Assistant Director, Florida Sea Grant Program
- 5.1 Mexico Interactions**
- Ann Jochens, Regional Coordinator, GCOOS
- 5.2 Caribbean Regional Association**
- Jose Lopez, Professor, University of Puerto Rico
- 5.2 Questions and discussion**
- 1100 6.0 Education and Outreach Council Activities**
- Mike Spranger, Assistant Director, Florida Sea Grant Program
- Jessica Kastler, Marine Educator, Louisiana Universities Marine Consortium

- 6.1 **Hiring of EOC Coordinator**
 - Sharon Walker, Professor Emeritus, University of Southern Mississippi
- 6.2 **Review of EOC Work Plan and Budget**
 - Mike Spranger, Assistant Director, Florida Sea Grant Program
- 1145 **LUNCH (On Your Own)**
- 1315 7.0 **Overview of GOMA Environmental Education Network**
 - Lee Yokel, Education Coordinator, Gulf of Mexico Alliance
- 7.1 **Environmental Education Network Membership/Activities**
- 7.2 **Opportunities for Collaboration**
- 7.3 **Questions and discussion**
- 1345 8.0 **Review of EOC Working Committees**
 - Mike Spranger, Assistant Director, Florida Sea Grant Program
 - Jessica Kastler, Marine Educator, Louisiana Universities Marine Consortium
- 8.1 **Regional EOC Coordinator Committee**
- 8.2 **Resource Committee**
- 8.3 **Public Relations Committee**
- 8.4 **Education Advisory Committee**
- 8.5 **Strategic Planning Committee**
- 1430 9.0 **GOMA EEN –GCOOS EOC Potential Collaborations**
 - Jessica Kastler, Marine Educator, Louisiana Universities Marine Consortium
- 1500 **BREAK**
- 1515 10.0 **2007- 2010 EOC Work Plan**
 - Jessica Kastler, Marine Educator, Louisiana Universities Marine Consortium
- 10.1 **Identified work items and timeline**
- 10.2 **Discussion of Work Plan Activities for 2007-2010**
- 10.3 **Assignments for EOC members/Committees**
- 1700 **Adjourn for day**
- 1830 **Reception with GOMA EEN Blue Gill Restaurant**
- 19 June **Joint Meeting with Gulf of Mexico Alliance Environmental Education Network (Separate Agenda)**

**Environmental Education and Outreach Network (EEN)
Annual Meeting
June 18-20, 2007
Five Rivers, Spanish Fort, AL**

Goals:

- Increase Gulf-wide collaboration among educator's through networking, sharing best practices, communication and organizing efforts
- Further Gulf Alliance goals by working on Environmental Education action items and bridging the gap with other priority issue teams
- Energize participants through increased knowledge and skills of educational techniques and programs that focus on the Gulf of Mexico and its ecosystems and people

DAY 1 -Monday, June 18, 2007

8:00- 5:00 **Gulf Coast Ocean Observing System (GCOOS)** – *see separate agenda*

6:30 pm **Reception** – *All Invited Blue Gill Restaurant* www.bluegillrestaurant.com
Sponsored by Fugro-GEOS – *thank you!*

**Environmental Education and Outreach Network (EEN)
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DAY 2

Tuesday, June 19, 2007

8:30 Light Continental Breakfast

9:00 Welcome and Purpose of Workshop

Objectives:

Lee Yokel, Environmental Education and Outreach Network Coordinator,
Gulf of Mexico Alliance and Dauphin Island Sea Lab, AL

9:10 Introductions

Objectives: Participants introduce themselves

9:20 Gulf Alliance Perspectives Sharon Walker

Objectives: Share local knowledge and experience related to the Gulf of Mexico
and Alliance efforts

Sharon Walker, Education Director, Mississippi-Alabama Sea Grant

9:40 Gulf of Mexico Alliance and Education Network Overview

Objectives: Understand the history of the Alliance and the purpose and goals of
the EEN

10:00 Break

10:15 Environmental Education Action Items & Workgroups (Panel Session)

Objectives: Understand what the EEN is charged with and what they have
accomplished to date

Coastal Ecosystem Learning Center Network

Sharon Hayes, EPA Gulf of Mexico Program, MS

*ED-1(2) Expand the existing Coastal Ecosystem Learning Center network so one
facility exists in each of the five US Gulf States and the Mexican Gulf State of
Veracruz*

Underrepresented and Underserved Communities Workgroup

Bryan Fluech, Florida Sea Grant

ED-1(5) Develop an environmental education pilot program targeted towards underrepresented and underserved communities in the Gulf region.

Website/Clearinghouse

Linda Broussard, USGS National Wetlands Research Center, LA

ED-1(7) Design and host a Web site to support education and outreach efforts of the Network, including an electronic clearinghouse to disseminate effective Gulf coast related educational information and materials via the Internet.

Public Awareness Campaign

Lee Yokel

ED-2(1&2) Design and conduct a strategic public awareness campaign that will encourage Gulf stewardship and coastal hazard identification and prevention. Identify strategies for sustaining the public awareness campaign in the short-term and long-term.

Community Workshops

Tabitha Stadler, Rookery Bay Research Reserve, FL

ED-1(1) Hold a series of Community Workshops, at least one in each Gulf State, to solicit citizen input into Alliance priorities and actions.

11:00

Priority Issue Team Reports (panel session)

Objectives: Learn about the progress of other Alliance priority issue teams

Water Quality for Healthy Beaches and Shellfish Beds

Kris Shipman, Texas Parks and Wildlife, TX

Wetland and Coastal Conservation, Restoration and Resiliency

Quenton Dokken, Gulf of Mexico Foundation, TX

Identification and Characterization of Gulf Habitats

Mary Mekkers, US Army Corp of Engineers, District of Mobile, AL

Reducing Nutrient Inputs to Coastal Ecosystems

Lynn Sisk, AL Department of Environmental Management, AL

Q&A

12:00

Lunch (on site)

1:00

International and Gulf Coast Ocean Observing Systems

Objectives: Increase understanding of IOOS and GCOOS, specifically the plans for the Education and Outreach Committee, including history, goals, projects and

timelines

Mike Spranger, Assistant Dean University of Florida, Assistant Director
Florida Sea Grant and GCOOS Board of Directors

Jessica Kastler, Marine Education Instructor, Louisiana Universities
Marine Consortium and Chair of GCOOS Education and Outreach Committee
(EOC)

1:30 GCOOS/GOMA Break Out Session

Objectives: Participants will create a list of potential actions for the EEN to collaborate with the GCOOS Education and Outreach Committee

2:30 Report Out and Prioritize

3:00 Break

3:15 Engaging the Priority Issue Teams

Objectives: Addressing ways to support and interface with the other GOMA priority issue teams

4:15 Information Sharing Session

Objectives: Create systems or processes to better communicate with each other

5:15 Closing and Announcements - Lee Yokel

Departure Dinner on Your Own – Informal Gathering

DAY 2

Wednesday, June 20, 2007

8:00 am Light Continental Breakfast

8:30 Public Awareness Campaign
Speaker – Linda Burnette, Director of Communications and Governmental Affairs, St. Johns River Water Management District, Indian River Lagoon National Estuary Program
Sponsored by NOAA, National Coastal Data Development Center
Questions and Answers

9:30 Public Awareness Campaigns Case Studies
Successful and not-so-successful campaigns and their components
Tampa Bay Manatee Watch Boater Education Program
Tabitha Stadler, Rookery Bay NERR
South Carolina Littering Campaign
Ann Weaver, NOAA Gulf Coast Services Center

10:00 Break

10:15 What makes a good campaign?
Objectives: Get participants thinking about the elements of an effective public awareness campaign

10:45 GOMA Public Awareness
Objectives: Create a list of action items related to the EEN public awareness campaign that can be used to move the project forward

11:45 Lunch

12:00 Speaker – Hilda Castillo, NAAEE Diversity Committee
Sponsored by EPA, Gulf of Mexico Program

1:00 Underserved and Underrepresented Populations
Science & Spanish Club Richard Gonzales, Gulf of Mexico Foundation

1:15 Learning in Florida’s Environment Program Greg Ira, Florida Department of

Environmental Quality

- 1:30** **Critical examination of strategies for reaching underserved and under-represented or low performing audiences – Greg Ira**
- 2:00** **Networking Time (funding and other resources to support these efforts)**

- 2:30** **Other GOMA Business**
Objectives: To discuss, synthesize and consolidate ideas generated from the past three days – items for July meeting consideration and other actions to pursue post meeting

- 3:00** **Next Steps, Wrap Up & Meeting Evaluation**
Objectives: Thank participants and speakers for attendance and clarify roles and responsibilities after the meeting concludes

- 3:30** **Departure**

APPENDIX III

GCOOS EOC Meeting Summary

- See separate document: Final GCOOS EOC 06_07 Mtg Minutes -

APPENDIX IV

GCOOS EOC / GOMA EEN Collaboration List

Breakouts – Raw Flip Chart Information

Tara Schultz, Desiree Bishop, Jennifer Buchanan, Pamela Blanchard, Kris Shipman, Amy King, Lynn Sisk

1. Product/Action: Webpage for fishermen to get climate & buoy data (tide charts, fishing regulations, reef sites/map, red tide, etc). Advertise website on bookmarks, fish rules
 - a. Which Organization: GCOOS – real time data / education & outreach; GOMA – WQ, EEN, Nutrients, Hab ID
 - b. Time: short term – clean boater and angler pledge
 - c. Cost: Low-medium
 - d. Partners: GCOOS, GOMA, GMP, webmaster (must be updated); state regulatory agencies, NOAA, CCA, Fishing organizations, charter boats, big fish rodeos
 - e. Benefit: tourism, educators, fishers/boaters, rec & commercial

 2. Product/Action: Early evacuation system
 - a. If wave height reaches certain level, send email/voice message/text message to potentially evacuate
 - i. To prepare to evacuate
 - ii. For public (similar to NOAA weather radio)
 - iii. Based on water height buoy
 - b. Which organization: GCOOS (resiliency & outreach)
 - c. Time: Long-term (with short-term pilot)
 - d. Who: GCOOS / FEMA
 - e. Cost: med-high
 - f. Partners: NOAA Weather Radio, Cell Phone Providers – do as public service

 3. Product/Action: Partners collaborate with storm surge model related to development of city to prepare help better for hurricanes using archive data & real time data (wind speed, wave height, PPT)
 - a. Organization: GCOOS/GOMA – coastal resiliency education & outreach
 - b. Time: Long-term
 - c. Who: FEMA, GCOOS, State Emergency Agencies
 - d. Cost: High
 - e. Partners: NOAA, NASA
-

1. Product/Action: Useful datasets
 - a. 6-8 teacher friendly (visual); 9-12
 - b. Which Organization: GCOOS create matrix of datasets for GOMA
 - c. Time: 1 year
 - d. Cost: > \$100,000; \$10,000 - \$15,000 20 teachers' workshops

NERRS – SWMP data 9-12 doing now – system wide monitoring program

2. Product/Action: Make data available & user friendly to:
 - a. Coastal decision makers/resource managers
 - b. Adult non-educators that make decisions
 - c. Tide stations – establish
 - d. NOAA Stations
 - e. Who: GCOOS
 - f. Time: 2-3 years
 - g. Partners: NERRS provide workshops to audiences; state survey associations

3. Geo-teach on-line in-service for informal educators
 - a. Which organization: GCOOS/GOMA product for individual participants or those who choose to collaborate
 - i. Mapping coastal restoration
 - ii. Mapping endangered species
 - iii. Exhibit/curriculum
 - b. Time: Fall '07 4-6 weeks
 - c. Cost: Stipend
 - d. Contact: Rusty Lowe, Carlan Booker

4. Product/Action: Coastal Research Experience bridge program (CREbp) (All PIT) HS summer research experience at CELC or NERRS paid intern target UUP – action lasts 3 to 4 weeks
 - a. Which organization: GCOOS/GOMA
 - b. Time: short-medium
 - c. Cost: \$1000/student
 - d. Partners: USFWS, NERRS

Connect GCOOS real time data (wind weather etc.) with user to promote ocean awareness.
Make it across all Gulf States

Could be happening already in other outlets

Add “ed messages” to the real time information like good will messages or 365 messages

Tie into weather thresh holds such as safe boating / good surfing / swimming

Audience could be anglers/weekend warriors

Formal education use raw GCOOS weather data and let students solve a case study and make decision based on data

Use real time to make a decision base on environment/GCOOS information – human health, UV factor/wind

This can be in school announcements & health classes

Identify top 10 beach problems, turn into EE strategies

Get information to anglers writing organizations

Focus on places where monitoring sites are with users in that area

Practical Applications

GOMA WQ/GCOOS have kids learn about chlorophyll and learn to predict HABS
Use technology and pose a question to schools and have them compete to see who can solve it
Assess education programs that are using technology already to investigate ocean issues
 Aside – surfers are engaged with ocean but not necessarily stewards
How does technology affect me?
Teachers make students use PPT to teach the class

Other languages for brochures

Vulnerable communities

Target message to different audience

Gear GCOOS & GOMA message to work together, compliment

Teaching tools – operational data

Continuing collaboration/other groups

In-reach

Watershed Watchers

In depth training – develop common level of understanding

GCOOS/GOMA Resilient Communities

Storm H2O retrofit infrastructure – provide community-based nutrient reduction, methods list i.e.
Rain gardens; partnerships C of C

Needs Assessment – Rutgers, NERRs has needs assessments, GCSC has needs assessments

GCOOS – review existing

Asset map – made user friendly; SE Atlantic example, same message, storm surge models,
resiliency models – visualization and animation

Curriculum using OOS data/wave data surge, COSEE website

APPENDIX V

Engaging the Priority Issue Teams

Breakouts – Raw Flipchart Information

Water Quality – Alison Hammer
Restoration & Resiliency – Ann Weaver
Habitat Identification – Becky Boudreaux
Reducing Nutrients – Chris Verlinde

Lead idea – find someone in EEN with interest in other PIT areas to act as liaison

Is there a lead in the PITs to interact with Lee? What do we need to communicate to educators?

Quenton – lead R&R, Not as good.
Have EEN rep at PIT meetings
Meeting dates on GOMA working web

*www2.nos.noaa.gov/gomex

If get coordinator for all PITs will help improve communications with EEN

Have educator on all teams, represent education/outreach

GCOOS/GOMA collaboration with E/O other PIT areas

PHINS – is it difficult?

Online tool/map service
Training available? To add layers

Any states dedicated to support tasks? Not yet –

In-kind support
NOAA's office of Ed pays Lee's position might be able to do similar for other coordinators

Nutrients

Identify data sources within each state (could be GCOOS/GOMA) states & feds available

Need from these sources:

University research programs
AL. research roundup (not functioning but example)
Mississippi River Watershed Group

Who are collecting data and what are they collecting?

EEN provide:

Local knowledge of H2O quality sampling groups (NGOs too) provide data, criteria & methods, parameters

Database from licensed pesticides applicators (OK., FL,?)
Provide local municipality H2O quality efforts in state databases included
Northern Gulf Institute Research

Strategy: EEN:

Workshops for H2O quality sampling groups that provide training that meet state sampling standards (Lee's comment – AL Water Watch example)

Nutrient PIT: provide what we would want to ask

HAB ID Breakout

EEN develops specific curriculum on habitats (based on data) (online & HS curriculum) local – GOM

Citizen science inputs into system “citizen gulfwatch” = PIT develops a place for citizens to enter observations and photos

PIT develops maps, PDF, species list, to give to EEN for dissemination

PIT makes priority list for public use e.g. Endangered species and habitats for EEN to utilize

EEN distributes/spreads word about PHINS, etc to target audiences

Develop WETMAAP site together (EEN + PIT)

Mechanisms for Working Together

ID target audience for EEN

ID needs of target audience

PIT informs EEN of our role

EEN helps PIT develop outreach materials for University Teachers and students and other target audiences

EEN can serve as Guinea pigs for test driving the system/training

PIT translates science for the EEN to use for outreach

EEN co-sponsors training workshop on database

PIT creates online tutorial/or manual (data use for dummies) – PIT develops and EEN disseminates

An EEN member joins HAB ID PIT

PIT trains some EEN members on how system works

EEN helps figure out how to get the users to participate and input data

EEN liaison in PIT reports to EEN group once/month on their progress
PIT generates habitat facts/messages for the 365 messages

EEN liaison in PIT takes EEN ideas back to PIT

Water Quality Breakout

Greg Ira, Richard Gonzales, Karen AL, Stacey FL, Kris Shipman

Water Quality Ideas to EEN

1. alert WQ PIT to potential GOMA funding for projects
2. Assist WQ PIT to find best people to design pilot projects. Improving coordination within WQ arena in different states
3. Using WQ as entry to introduce environmental science education
 - Help to ID parameters to use & use same ones
 - Centralized way to gather information i.e. salinity D.O.
 - How use GOMA PIT parameters in the classroom
4. After standard data collection methodology identified, EEN translates information to users (i.e. teachers, students, public, volunteers?active?)
 - a. NCDC/GCOOS already doing this
5. EEN works with existing state WQ restoration projects to provide students – to provide more volunteers – students learn hands on water chemistry
 - a. US wildlife field biologist
 - b. Park rangers
6. In support of ocean literacy standards (for state standards) show equal importance of salt & fresh water quality standards (not just safe drinking water, etc.)
 - a. Upstream & on coast
7. Publicize benefits of establishing nutrient criteria for the coastal waters
8. Help use WQ data in an exhibit in FL
9. Collate list of experts to be used in classrooms
10. Create a theme to focus on (i.e. HAB)
11. Educational loaner kits related to WQ

Restoration & Resiliency PIT Breakout

Team meeting in each of the states

Quality of life is based on the quality of the habitat

Maximum holding capacity

Long-term planning-lifetime

How do we get the right people at the table?

Kids, college, students

Grassroots groups
Rotary
Lions Club
County Commission
Models
Visualization Centers

Understand the pressure points
Suitable safe places for restoration
Ways to build green homes
GOMA stamps of approval
Drive perceptions & market
Incentives
Population growth over a lifetime – visualization center
Impervious surface additions in last year
Models

APPENDIX VI

Public Awareness Campaign: Behavior Changes

Behavior Change	Topic	Votes
A solution to water pollution in Gulf areas	Nutrients	12
I will reduce nutrients flowing to the gulf by a) using fertilizer wisely and b) making sure my septic system works properly		
Farmers Use Precision Farming to reduce N @ P runoff		
Reducing nutrient inputs (fertilizing - behavioral change)		
Reduce the amount of fertilizer being used		
I'd like to see planning commissions, counties, states, developers, & the public build more water conscious development (e.g. reduce nutrient-runoff) & less irrigation		
Reduced nutrient loads to the Gulf from over-fertilization by homeowners		
Improve water quality by reducing fertilizer & pet waste (e-coli)		
Proper lawn fertilization or none at all		
Use fertilizer properly		
reduce/Stop pesticides use - it ends up in Gulf water		
Use of Native Plants so that water & fertilizer use is reduced plus it is better habitat		
Responsible Planning & Development to conserve our natural resources	Restoration	10
Elected officials (county commissioners) voting responsibly to protect environmentally sensitive areas from development	Development	
Protect our wetlands. Stop making excuses for wetland fill and development. Why don't we just say No.	Resiliency	
Population growth & development - lack of land use planning - restrained growth smaller foot prints		
Conserving Natural Buffers along coastal shorelines		
Research (smart code) incentives to encourage green building & smart growth (sustainable design) in coastal areas: adopt energy code of international building code connect: GB saves money & pollution effects of building		
Reduce coastal development		
focus on sustainable development on coast and retention of unique coastal communities		
consider employment of non-impervious alternatives in replacement or construction		
reduce use of seawalls jetties bulkheads		
I will recycle plastics _	Education	5
A reduction in marine debris in the Gulf of Mexico & near coastal waters		
Everything you take to the beach, take home w/you i.e. trash fishing line		
Reduction of litter along our coasts		
Stop dumping human waste in Gulf - sewage & garbage		
Vote for environmentally responsible officials - see voting record on environmental issues - have environmental issue debates	Other	2
More formal and informal programs/curriculum relating to ocean observing		

APPENDIX VII

Outreach and Education Activities by Organization Matrix

State	Program	Contact Person	Email
FL	USFL POC: Ali Hudon – Ocean Modeling Prediction Lab	Ali Hudon	ahudon@marine.usf.edu
	a. Watershed watchers (K-12), Campbell Park Elementary school, real data, virtual tours, monitoring @ station behind school		
	b. Recreational boater outreach about buoy – find out about wave conditions		
AL	Greenhouse Program –grassroots native plants and trees as riparian buffers	Ann Crawford	hammockhaven@gulftel.com
	Junior Fishing Tournament – 3-16 year olds		
	a. Outside education day for parents		
	b. Scholarship programs partners		
FL	MRRP = effort to get fishing line disposal marine debris	Bryan Fluech	fluech@ufl.edu
	Kids Fishing Clinic (KFC) Fish Florida		
	a. Stations to teach ethics, habitat		
	b. No habitat = no fish		
	c. Keep rod and reel		
AL	Smart Coast	Charlene Lee	info@smartcoast.org
	a. Land use & coastal development, coastal sprawl, wq		
	b. Smart growth conference (connecting those issues to H2O shed effects)		
	c. Greencoast conference (coming in April 2008)		
	d. Mixed use development conference (within city limits)		
FL	Living Shorelines Initiative – regional	Chris Verlinde	ChristinaV@santarosa.fl.gov
	a. Includes grasses in classes		
	b. Soften shoreline and rip rap		
LA	LA Sea Grant	Diane Lindstedt	dlindst@lsu.edu
	a. Teacher inservice training, workshops on coastal issues (K-12)		
	b. Curriculum & lesson plans		
	c. Stewardship projects with students & teachers e.g. invasive species		
	d. Ocean commotion (K-8) hands on ocean related activities		
	Ocean Commotion – university sponsored level		
	a. 60 exhibitors (k-8 target, 2000 kids)		
	b. Coast and sea focus		
	a. Rod and reel		

PR	University of Puerto Rico	Jose Manuel Lopez	jlopez@uprm.edu
	a. Develop educate & outreach part of the web page (strategies) for caribbean reg association		
	b. Outreach in Spanish		
	c. Develop low-power public information (5-mile radius) radio station		
FL	Estuaries Day Festival Florida	Eric Lovestrand	erik.lovestrand@dep.state.fl.us
	a. Local community festival		
FL	Learning in FL Environmentals – LIFE Program	Greg Ira	Greg.Ira@dep.state.fl.us
	Research Experience for Middle School Teachers		
	Adult Day Camp – Jacksonville, FL	?	
	a. Master naturalist programs	?	
MS	Leave No Trace - Northern Gulf of Mexico	Jennifer Buchanan	jennifer.l.colee@sam.usace.army.mil
	Establish Americorps Facilitites for Ecological Restoration – Jennifer		
AL	Clean Water Guardians	Jody Thompson	jody.thompson@auburn.edu
	Alabama Clean Marina Program		
MS	Native Gardens – private citizens	June Reddix-Tennis	juner@cityofpascaougoula.com
	Shrimpboat museum – trying to save		
	Finding Nemos's Friends	Karen Gross	kgross@mcpss.com
	Marine Debris Display/Exhibit		
TX	Eco Art & Adventure Program – K-12 School Groups,	Karla Klay	kklay@artistboat.org
	a. Curriculum, get out into habitats		
	b. With online estuarine education (18 lesson plans)		
	c. Art residency program – elementary school kids, public		
	Adult Kayak Program – general public		
TX	Coastal Expo	Kris Shipman	kris.shipman@tpwd.state.tx.us
	Loaner Trunks for Teachers – Fish / Ecosystems		
LA	Library Exhibit – Habitat T&E species	Linda Broussard	linda_broussard@usgs.gov
	Gulf Coast Hurricanes Website NBII		
AL	Coastal Ecology Fieldtrips – habitat restoration and characterization 'grassroots classes'	Lloyd Scott	dscott@mcpss.com
	Teacher inservice on all environmental issues (wq) watersheds, endangered species		
	a. Environmental studies center – Mobile Public Schools		
MS	Grand Bay NERR Coastal Training Program	Marian Dicas	marian.dicas@dmr.ms.gov
	a. Wetland Plant ID Class		

	b. Grant writing Class		
	c. Focus on WQ, sustainable development, wetland protection		
LA	Coastal Roos (LSU) Program – precollege stewardship habitat restoration grow & plant trees, variety of states doing with different program names	Pam Blanchard	PamB@LSU.EDU
TX	Youth Leadership in Stewardship Conference	Richard Gonzales	richard@gulfmex.org
MS	Phytoplankton Monitoring Outreach	Sharon Hodge	shodge@ngi.msstate.edu
	Coordinating Eco Research		
MS	Visibility of Gulf Problems through CELC –	Sharon Walker	sharon.walker@usm.edu
MS	Smithsonian Msgs for GOM issues –	Sharon Walker / Sharon Hodge	
FL	Florida Aquarium	Stacy Graison	sgraison@flaquarium.org
	a. Teacher training on wetlands and seas		
	b. Develop new interpretation station, pollution, connections between humans and ocean animals		
FL	Rookery Bay NERR	Tabitha Stadler	tabitha.stadler@dep.state.fl.us
	a. Professional training for landscapers, fertilization, water, pesticides, and right plant right place – now a city ordinance and will include homeowners		
	b. Translate into Spanish		
TX	Keepsrs of the Coast K-12 (3-8 grades) outreach/teacher training community program, Tx State Aquairum	Tara Schultz	tschultz@txstateaq.org
AL	Promoting Stormwater Legislation	Tom Herder	therder@mobilebaynep.com
	Living Shoreline Promotion (vs. amory)		
AL	Floating Debris Barrier – across stream collects floating trash – DRWR	Valerie Blankenship	val@dogriver.us
	Improvements to City Park to improve stewardship and access		
	New trash cans with business owners “keg it clean dog river watershed”		