Outreach and Education in a Regional Ocean Observing System:

The SEACOOS Example

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Assistant Director - Florida Sea Grant Extension
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SEACOOS
an information system
that collects, manages,
and disseminates
observations and
information products of
the coastal ocean off
North Carolina, South
Carolina, Georgia and
Florida.
...an effort to develop an umbrella organization to coordinate observing related activities in the four states that will address scientific and societal issues in the coastal ocean.

A consortium of 11 institutions from the four states are involved with funding from the Office of Naval Research that began in September 2002.
Who Are SEACOOS’ Partners?

- University of North Carolina
- North Carolina Sea Grant
- University of South Carolina
- S.C. Sea Grant
- S.C. Dept of Natural Resources
- Skidaway Institute of Oceanography
- Georgia Sea Grant
- Florida Sea Grant
- University of Miami
- University of South Florida
SEACOOS – Envisioned as one of the regional systems ringing the U.S. to form the coastal component of the integrated ocean observing system (IOOS).
Organizational Structure

- Observations Working Group
- Information Management Working Group
- Modeling/Products Working Group
- Extension and Education Working Group
The Basic Components of SEACOOS

SEACOOS endeavors to significantly increase the quantity and quality of environmental information from the coastal ocean of the SE U.S.

- Observations
- Data Management & Information Products
- Modeling
- Extension & Education
Observations Working Group

Role:

- collect observations, platform design, and data transmission
- support infrastructure for all components
- selection of measurement sites
Information Management Working Group

Role:

- Coordinate activities relating to data storage, transfer and archiving
- Support SEACOOS website and portal

- Data standardization
- Data server technology
- Data quality assurance and quality control
- Graphical presentation
Modeling & Products Working Group

Role:

- coordinate activities related to modeling and/or synthesis of observations
- all forms of modeling (e.g. circulation, surface wave, new production, biogeochemistry)

Modeling

“Making sense of it all”

Forecasts
Hindcasts
Blended models

Sea Surface Temperature (SST)
Wind Speed and Direction
Sea Surface Height
Surface Currents
Extension and Education Working Group

- Identify user groups
- Identify user group’s informational needs
- Determine best methods to provide information
- Introduce models, services and products to users
- Match capabilities with user needs
- Provide program evaluation for impacts, benefits and effectiveness to user and science community
Extension and Education
Two Way Feedback

SEACOOS
- Universities
- Research Community
- Sea Grant Network
- Others

SEACOOS Extension and Education

User Groups
- Coastal Client Groups
- Local Government
- State Agencies
- NGO's
- Private Businesses
- Coastal Residents
# Extension and Education Work Group

## Institutional Coordinators

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Bob Bacon, Chair</td>
<td>SC Sea Grant Extension</td>
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<tr>
<td>Mike Spranger</td>
<td>FL Sea Grant Extension</td>
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<tr>
<td>David Stooksbury</td>
<td>GA Sea Grant</td>
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<tr>
<td>Jack Thigpen</td>
<td>NC Sea Grant</td>
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<tr>
<td>Lundie Spence</td>
<td>Southeast COSEE</td>
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<tr>
<td>Barbara Spector</td>
<td>Florida COSEE</td>
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<tr>
<td>Mike Spranger</td>
<td>CGOM COSEE</td>
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Extension and Education Work Group

Staff

Sandy Bernard  SC Sea Grant/SECOORA

Chris Simoniello  SEACOOS Regional Education Coordinator
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
In-Reach (internal education)

- Regional Educational Workshops
- Email Surveys to identify current partners and to identify potential partners
- Develop foundational materials (powerpoint presentation, factsheets) for internal/external use
- State faculty and staff in-service trainings
- Cultivate understanding of roles of each work group, building internal partnerships within
Initial Email Survey to identify users

- SEACOOS partners identified 11 distinct user groups
- Built beginning awareness of SEACOOS
- Valuable contact information for in-depth follow up interviews
Commercial Fishing

- Water temp
- Salinity
- Currents
- Zooplankton
- Weather
Recreational Fishing and Boating

- Water Temp
- Salinity
- Currents
- Zooplankton
- Weather
Coastal Communities

- Water levels
- Storm flooding
- Sea level rise
Search and Rescue

HF Radar Vectors

- Wave data
- Winds
- Currents
- Tides
Oil and Hazardous Waste Spill at Sea

Currents
Paddlers

- Waves
- Winds
- Tides
- Currents
Surfers

Waves
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
Summary of Email Survey

- SEACOOS partners identified 11 distinct user groups
- Wave, current and wind information most often mentioned
- Valuable contact information for in-depth follow up interviews
Extension & Education Workgroup

Targeted “Super-User” Meetings

- Marine Weather and Emergency Management
  - Miami NWS Weather Forecast Office
  - NOAA AOML
  - NOAA HazMat

- Fisheries and Habitats
  - NOAA SE Fisheries Science Center
  - NOAA AOML

- Use of SEACOOS data in management applications/joint pilot projects, etc.

SEACOOS Fall Workshop, November 2004
Extension & Education Workgroup Progress

Cape Lookout Buoy (NC)

- Determine user information needs
- Improve the safety for boaters, anglers, divers, sailors
- Focus groups / Interviews
- Web-based, radio and telephone delivery methods
Extension & Education Workgroup Progress

HF Radar

• SC Sea Grant facilitating PI interaction with property owners/managers to site HF installation.
• HF Primer and Siting Guidelines.
• NC Sea Grant working with PI to determine offshore fishermen's needs and preferences for CODAR information.

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# Extension & Education Workgroup Progress

## Workshops

<table>
<thead>
<tr>
<th>&quot;SEACOOS User Needs Workshop for Georgia&quot;</th>
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<tbody>
<tr>
<td>- Introduce GA user communities to SEACOOS</td>
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<tr>
<td>- Commercial &amp; Rec. Fishing Industries</td>
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<td>- Marine Operators</td>
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<td>- Emergency Managers</td>
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<tr>
<td>- Prioritization of needs</td>
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<tr>
<td>- Workshop report completed and available</td>
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## Reports/Surveys

<table>
<thead>
<tr>
<th>&quot;State Coastal Observations and Monitoring Needs: Results of a Survey to Assess Coastal Management Needs&quot; 06/04</th>
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<tr>
<td>&quot;The Potential Economic Benefits of Integrated and Sustainable Ocean Observation Systems&quot; 09/04</td>
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<tr>
<td>&quot;Promoting Lifelong Ocean Education: Using IOOS” In-press</td>
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Extension & Education Workgroup
Progress

“Making Waves!” Poster & Web Pages

• 10,000 printed
• Sea Grant distributes regionally
• NOAA distributes nationally
• Presentations at NMEA, GAME, SC Science Council

12 SEPORT Events at aquariums, museums and other nonformal settings in S.C.

SEACOOS a part of GCOM-COSEE summer institutes and informal education workshops

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“Boats Buoys and Science Teachers”
A SEACOOS/Florida COSEE Workshop

Results
- “How To” Manual
- 3 Lesson Plans
- Web ready video clips
- NMEA Conference Presentation
- Research Paper
- Follow-up Workshop

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Workshops

SEACOOS Extension Workshop
• 30 participants
• 8 OOS Programs
• Federal agencies
• “Best Extension Practices” document in process

National IOOS/COOS Education Workshop
• 60 participants
• SEACOOS, SouthEast COSEE, NOAA/CSC and OceanUS
• Proceedings document in process

SEACOOS Fall Workshop, November 2004
SEACOOS is a collaborative university partnership that collects, manages, and disseminates integrated regional ocean observations and information products for the coasts of North Carolina, South Carolina, Georgia, and Florida. Funding for this effort has been provided by the Office of Naval Research.

General Information – For background and more details about ocean observations, the SEACOOS partnership and related news and events, visit our general information pages.

Data Access & Mapping – For user-friendly access to regional SEACOOS data products including near real-time and time series ocean observations and modeling products, visit our data access and mapping pages.

Research and Technology – For updates about completed and ongoing research efforts associated with SEACOOS observations, modeling, or information management, please visit our research activities pages.

Community and Classroom – For ocean users and educators to learn more about SEACOOS, visit the community and classroom pages.

SEACOOS Partnership
The SEACOOS partnership is a consortium of eleven institutions from the four coastal Southeastern states. A number of sub-regional ocean observing systems (shown above) are partners in this effort. For more information about these systems, visit their web sites through the linkable map above.
What's in the News?

150 ‘dead zones’ counted in oceans - U.N. report warns of nitrogen runoff killing fisheries…see article

New addition to PORTS observations - “Air Gap” Sensor Provides Bridge Clearance Data to Help Avoid Dangerous Collisions…see article

Coast Guard pulls three Georgia fishermen to safety in 20-foot seas…see article

What’s That?

Learn more about ocean observation variables including wind, sea surface temperature, surface currents, wave heights, water level, etc…

SEACOOS Classroom

SEACOOS Data Live

COOS Instrumentation

Careers in COOS

Links for Educators

Lessons for Educators

Where Can I Learn More?

Links to other ocean observation data and information sites.
Extension & Education Workgroup
2005 Planned Efforts

• Continue “Superuser”/PI Exploratory Interviews and Meetings

• Continue awareness campaigns with fishing industry (NC) marine and boating community (FL), emergency first responders (SC, GA), and educators (all)

• Create SEACOOS digital photo file, conduct case studies, improve website

• Complete SouthEast & Florida COSEE’s educational DVDs and regional SEACOOS public awareness DVD

• Expand E&E interaction with sub-regional systems

• Produce HF radar primer/siting guide

• Develop educational kiosks (Explorer of the Sea) and Nags Head Public Pier (NC)

• Facilitate User Evaluation of SEACOOS products

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Extension and Education Work Group

Funding

- 10% of total SEACOOS budget ($531 k)
- ~ 80% of E/E budget to Extension Outreach ($433 k)
- ~ 20% of EE budget to Education ($ 98 k)
Questions

and

Comments