



2009 Regional Coordination Workshop  
Seattle, WA  
August 25, 2009

# Part 1: Project Status Report

## SECOORA IOOS Supported Projects

### 1 & 2. RA and RCOOS

R. DeVoe SCSG, D. Hernandez, H. Seim UNC CH, et. al; Yrs. 2 of 3

### 3. Carolinas RCOOS (sub-regional)

L. Leonard UNCW, M. Fletcher USC, J. Hansen USACE,  
G. Voulgaris USC, D. Porter USC, et. al; Yr. 3 of 3

### 4. Storm Surge and Inundation Model Testbed

P. Sheng, L. Xie, R. Luettich, R. Weisburg; Yr. 3 of 3

### 5. Prototype Operational Modeling System: Waves, Currents, Inundation & Hydrologic Flooding for Eastern NC

R. Luettich; UNC CH, J. Hanson, USACE, R. Kolar, UO, J. Gourley, NOAA NSSL; Yr. 3 of 3

### 6. Marine Weather Portal

J. Dorton UNCW, D. Porter USC, V. Subramanian USF, C. Galverino, Second Creek Consulting; Yr. 3 of 2

### 7. Forecasting Beach Swimming Advisories

M. Fletcher USC, D. Porter USC, H. Kelsey UMd, Carroll Hood Raytheon, S. Barry SCDHEC: Yr. 2 of 1

# Project Status Report

## SECOORA RA and RCOOS

### Project Schedule and Milestones –

- Maintain HF radar and data flow to National system (ongoing)
- Enhance web portal (ongoing)
- Transition SECOORA to independent nonprofit status (ongoing)
- Engage boater, education and fisheries stakeholders (ongoing)
- Estimate the accuracy of HF radar surface current estimates
- Physical modeling (non-Carolinas domain), ecosystem modeling, systems engineering (delayed until funding available)

### Significant Accomplishments –

- Data hub architecture upgrades
- 40+ Dues-paying members (Institutional - \$1000; Individual - \$250)
- Governors South Atlantic Alliance Executive Steering Committee

# Project Status Report Carolinas RCOOS

## Project Schedule and Milestones –

- Maintain coastal and nearshore observing system capability
- Build comprehensive database
- Optimize access to data and products via web
- Develop prototype validation module linkage to RCOOS archive
- Seek user feedback on web portal & other stakeholder engagement
- Migrate website components to SECOORA platform
- Upgrade 3 existing NERR stations to real time
- Re-deploy SUN station
- Deploy Albemarle Sound observing station via USACE
- Integrated 2 sub-regional obs systems

## Significant Accomplishments –

- Maintain inner-shelf & nearshore stations
- Access to data via web browser
- Prototype interface to link USACE AutoMEDS with real-time obs
- Carolinas RCOOS partner platforms provide 61% of observations reported by NDBC in Carolinas domain
- Support wave, rip current and beach swimming advisory model validation with RCOOS generated data



# Keys to Success and Potential Challenges

## What worked well?

- Collaboration
- Building on existing assets
- Stakeholders engagement throughout
- Enabling partners to achieve mission goals and priorities
  - Ex.: NWS – Improved forecast accuracy: 83 to 89% and 81 to 88%
  - Ex.: USMC Camp Lejeune: Buoys support go/no go for operational and tactical training
  - Ex.: Assisted FLDEP during FL Hurricane Preparedness Exercise Week May 2009

## Describe potential and/or real challenges

- Integrating accomplishments from sub-regional efforts
- Deciding what assets to maintain
- Balancing regional-level relevance with user needs for high-resolution or user specific products.
- Competition with value-added providers

## How might these challenges be resolved?

- Increased communication, in-reach and outreach
- Increasing stakeholder contributions during project & product development

- Linking IOOS capabilities with others' critical mission objective



# Current Status: Products

Products	Level One Minimal processing			Level Two Value-added			
	RT Data	Model Outputs	Remote Sensing	RT Data	Decision Support	Maps	Time Series
Ecosystem/Climate Trends							
Nearshore processes	X	X		X			
Water level trends	X			X			
Ocean color archive	x		x	x		x	x
Water Quality							
DM support				X	X	X	X
Beach Swim Advis.	x	x		x	x		x
Marine Operations							
Marine weather portal	X				X	X	
Surface currents	x	X	x	x	x	x	x
Coastal Hazards							
Inundation modeling	x	X		X		X	
Rip current modeling		X		X	X		X
Nearshore wave mod	x	X		x	X		

# Current Status: Product Examples

## 1. Real-time data that measurably improves NWS forecasts:

- NWS Wilmington: The wave prediction verification (percent correct <2 ft) was at 83% prior to utilizing Ocean Crest Pier (OCPN7). It increased to 89% afterwards (starting Dec 2006). *“It was very infrequent that we met our wave height GPRA metric prior to 2006, but we've reached our wave height forecast goal each year since.”*
- NWS Newport/Morehead City: Prior to the Onslow Bay Buoy (41035) deployment, the NWS-Morehead City marine GPRA for wave height was 81% (below the forecast goal), and after the deployment improved to 88% (exceeds the forecast goal).

## 2. Marine Weather Portal: One-stop shop for mariners

Local (3 WFO in NC) project expanded across 2 RAs with potential for nationwide application: <http://forecast.weather.gov/mwp>

## 3. Methods to compare models and improve inundation maps

Testbed provides interoperable infrastructure and common data formats to enable easy and flexible model-model and model-data comparison resulting in improved inundation forecasts & maps

## 4. Errors reduced in beach swimming advisories

Both errors of omission and commission reduced at 4 SC beaches

# Current Status: Observations

Variables/ Platforms	Fixed- in water, multi- purpose	Fixed- in water single purpose	Fixed – on land	Transects	Remote Sensing
<b>Physical</b>	<b>7, 4, 111</b>	<b>34</b>	<b>2, 12, 16</b>	<b>6</b>	<b>2</b>
<b>Meteorological</b>	<b>7, 1, 97</b>	<b>32</b>	<b>3, 30</b>	<b>-</b>	<b>2</b>
<b>Chemical</b>	<b>104</b>	<b>34</b>	<b>3, 7</b>	<b>6</b>	<b>2</b>
<b>Biological</b>	<b>104</b>	<b>28</b>	<b>3, 8</b>	<b>6</b>	<b>-</b>
<b>Geological</b>	<b>2, 4</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>

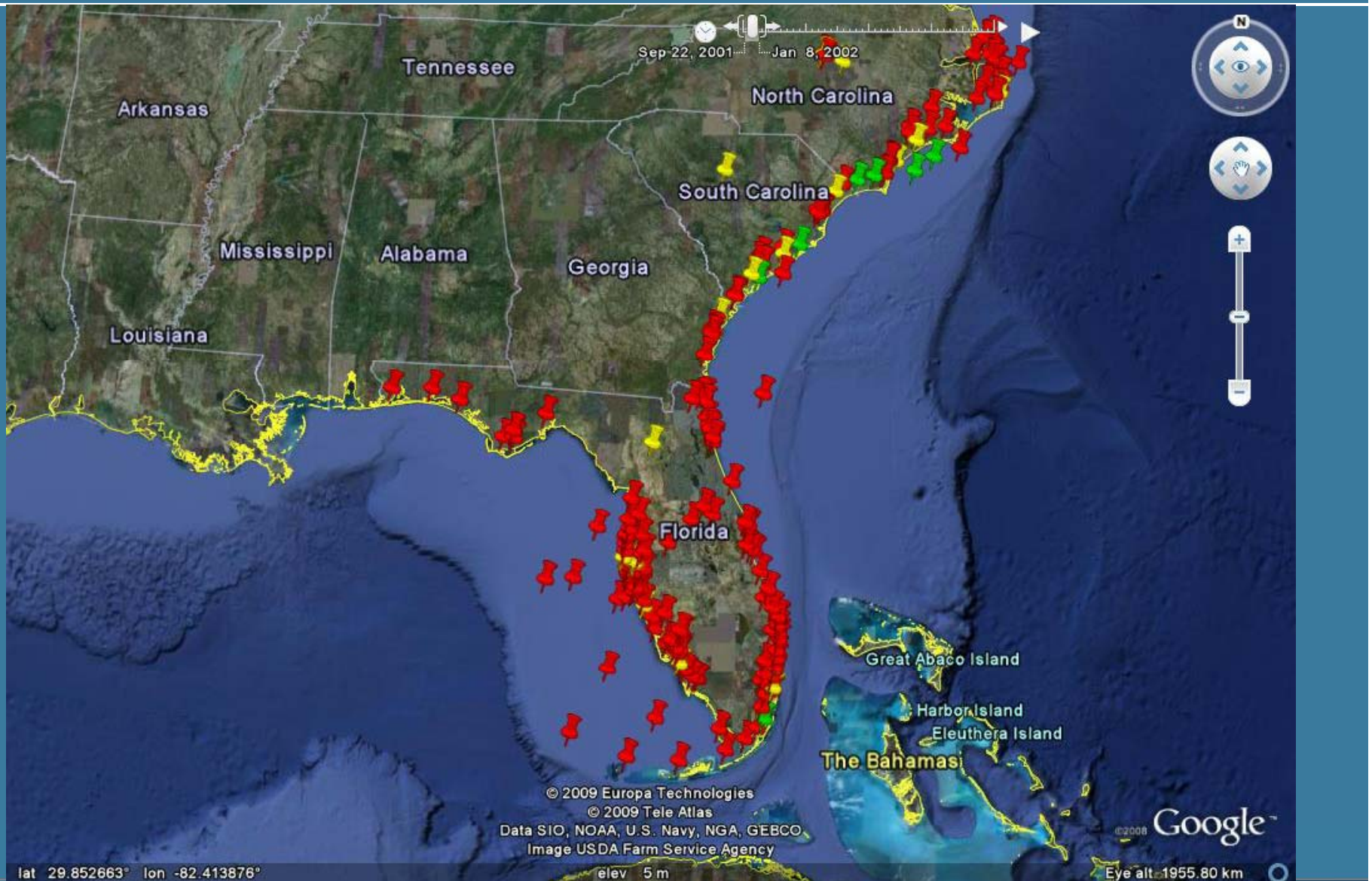
**Funded exclusively by NOAA IOOS funds (9); Funded partially by NOAA-IOOS funds (22); Funded by non-NOAA IOOS sources (175).**

## Current Status: Modeling and DMAC subsystems

Modeling*	Region-wide**	Sub-region	Not at all
Atmospheric Circulation		X	
Inundation		X	
Wave		X	
Hydrological		X	
Sediment transport			X
Water Quality/Ecosystem		X	
Fisheries			X

DMAC	On-going	In-progress	Not at all
RA Website that serves data	X		
DIF - working to ensure interoperability	X		
Regional Data Portal	X		

# Map 1a: Existing Observing Assets



# Part 2: Looking Forward: Future Plans

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# Future Plans: Major Products

Products	Level One			Level Two			
	RT Data	Model Outputs	Satellite	RT Data	Decision Support	Maps	Time Series
Ecosystem/Climate Trends: <b>Fisheries</b>	X	X	X	X	X	X	
Water Quality <b>Beach Swim Adv.</b>	X	X		X	X		X
Marine Operations: <b>S&amp;R; Commercial &amp; Recreational</b>	X		X	X		X	X
	x	X		x	X	x	
Coastal Hazards: <b>Inundation; waves; Rip currents</b>	X	X		X	X	X	X
	X	X	X	X	X		
	X	X		X	X		X

# Future Plans: Observations

Variables/ Platforms	Fixed- in water, multi- purpose	Fixed- in water single purpose	Fixed – on land	Transects	Remote Sensing
Physical	X		X		
Meteorological	X				
Chemical	X		X		
Biological	X				X
Geological				X?	

*Indicate the # of observations needed for your system*

# Future Plan: Modeling and DMAC

<b>Modeling*</b>	Region-wide	Sub-region	Not at all
Atmospheric	?		
Circulation	X	X	
Inundation		X	
Wave	X?	X	
Hydrologic		X	
Sediment transport			X
Water quality/ecosystem		X	
Fisheries	X		

<b>DMAC</b>	Yes	In-progress	No
RA Website that serves data	X		
DIF - working to ensure interoperability	X		
Regional Data Portal	x		
THREDDS Server, and Data Archival Plan		X	

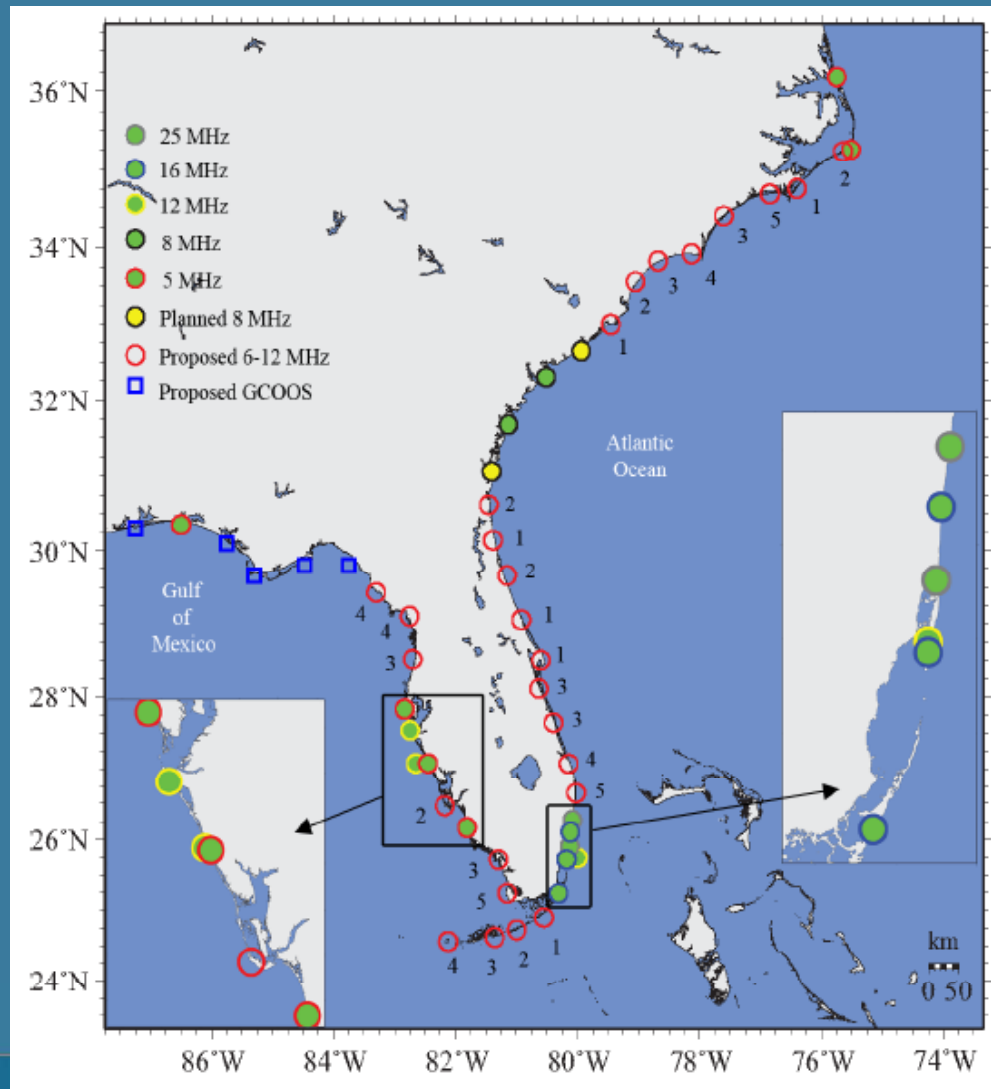


\* See Guidelines for definitions \*\* Region-wide means entire region



# UNDER DEVELOPMENT

## Future Plans: Map (HF Radar only)



# Funding Scenario

*Briefly describe the major CUTS to the subsystem under the reduced funding scenarios*

Funding Scenarios	\$3 million	\$1 million
Modeling	500,000	100,000
Observing	1,500,000	600,000
DMAC and Product Development	600,000	150,000
RA Management and Outreach	400,000	150,000