

# Ecosystem Coordination

## Ecosystem-Based Management Committee

Jekyll Island Club Hotel

Jekyll Island, Georgia

Tuesday, March 2, 2010

Roger Pugliese, Senior Fishery Biologist  
South Atlantic Fishery Management Council





# Overview

- IOOS / SECOORA
- Southeast Aquatic Resource Partnership (SARP)
- South Atlantic Alliance
- South Atlantic Landscape Conservation Cooperative
- SEAMAP/MARMAP
- Habitat and Ecosystem IMS and GIS Services
- Alternative Energy

# US Integrated Ocean Observing System



## **U.S. Integrated Ocean Observing System Road Map to Full Operational Capability**

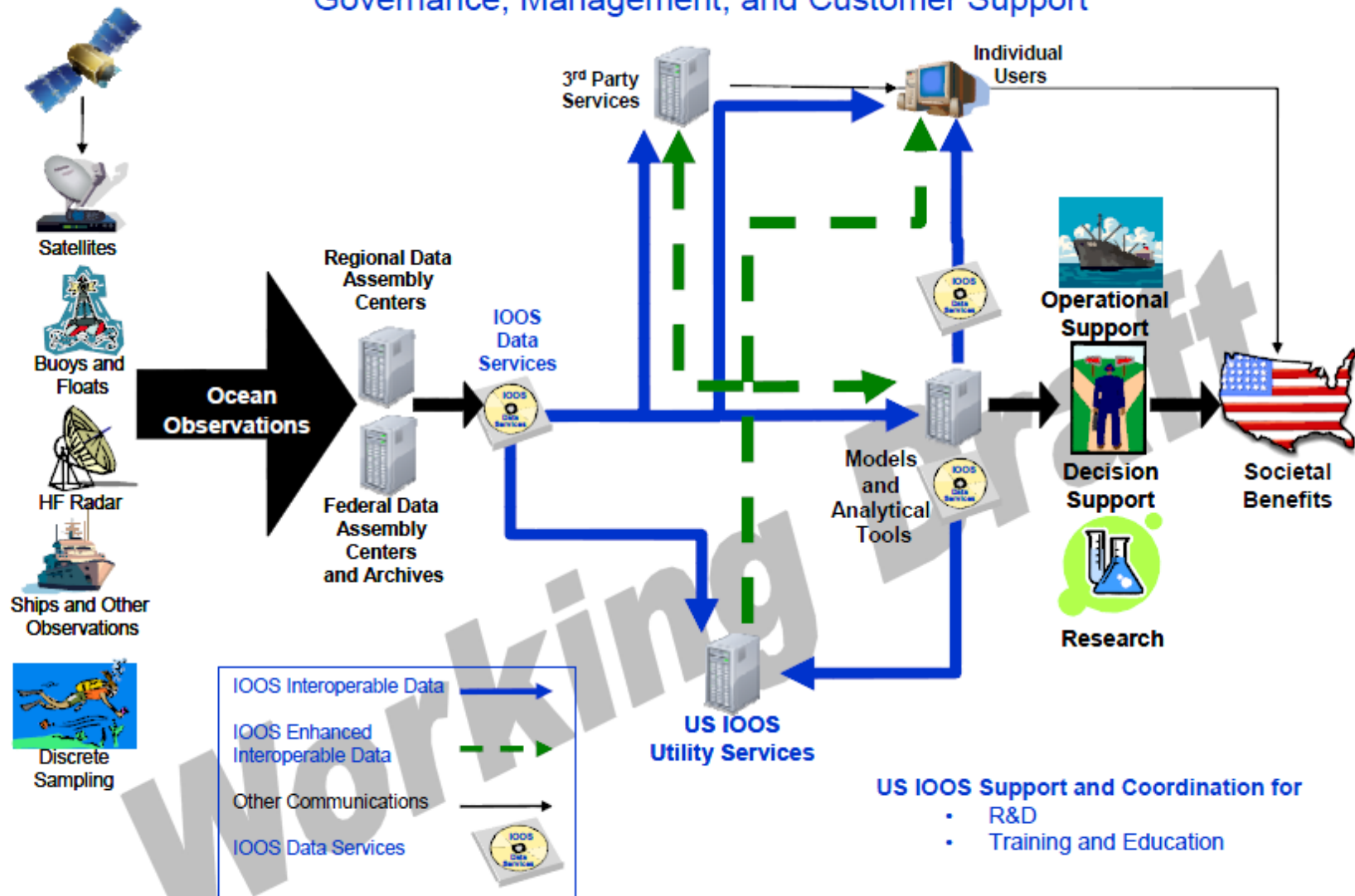
**Version 0.3**

Integrated Ocean Observing System

U.S. IOOS Office  
November 2009

# US IOOS

## Governance, Management, and Customer Support





# Southeast Coastal Ocean Observing Regional Association

OUR EYES ON THE SOUTHEAST'S OCEAN AND COASTAL WATERS

North Carolina

South Carolina

Georgia

Florida

## Our valued ocean and coasts

Do you care about the impact of rising sea level on coastal economies and communities? Do you depend on marine weather forecasts to make decisions about boating and other recreational activities on the coast? Does protecting marine mammals, oysters, and other commercial and recreational fisheries for future generations matter to you? Do you depend on coastal tourism, ports or commercial fishing for your livelihood? Do you think a coherent national energy policy should include offshore alternative energy options, like wind and currents? Does the beauty and health of the coast and ocean impact your quality of life? Then you should know about SECOORA, the Southeast Coastal Ocean Observing Regional Association.

### SECOORA helps save lives and protect property by

- ▶ improving the forecasting of hurricane-related impacts such as coastal inundation.
- ▶ supporting models that improve beach advisories for swimmers.
- ▶ improving rip current and nearshore surf zone forecasts.

### SECOORA supports ecosystem based management by

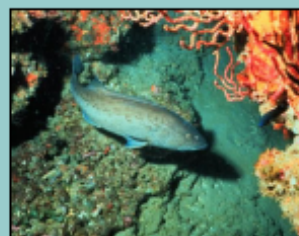
- ▶ providing critical physical and biological data for fisheries management decisions.
- ▶ providing circulation models that inform understanding of larval transport.
- ▶ linking climate and ocean circulation anomalies to harmful algal blooms and impacts on corals and fisheries.

### SECOORA improves marine safety and operations by

- ▶ generating wind, wave, and water level information necessary for marine weather forecasts.
- ▶ providing easy access to real-time weather and wave information.

## What is SECOORA?

SECOORA is the regional solution to integrating coastal and ocean observing in the Southeast United States. SECOORA coordinates coastal and ocean observing activities and facilitates dialogue among stakeholders so that the benefits from the sustained operation of a coastal and ocean observing system are realized. SECOORA is one of 11 Regional Associations established nationwide through the NOAA Integrated Ocean Observing System (IOOS®). With the Nation's eyes on the oceans, coasts, and Great Lakes, SECOORA's goals include tracking, predicting, managing, and adapting to changes in the southeastern U.S. marine environment. SECOORA's members deliver the data and information needed to increase our understanding of our coastal waters so decision makers can take action to improve safety, enhance our economy, and protect our environment.



*Gag grouper are the most common grouper in the SECOORA region. Managing fisheries is a SECOORA priority and members are using coastal and ocean observing data to address fisheries related issues.*

Photo: NOAA Photo Library/DAR/National Undersea Research Program (NURP)/UNCW

## SECOORA Components

Buoy and Pier Moorings

Coastal High Frequency Radar Installations

Satellite Observations

Meteorological Observations

Ship-based Observations

Coastal and Riverine Sensor Networks

Computer Models

Ecological and Climate Forecasts

Education & Outreach Activities

Data Archives

Data Access and Visualization Tools



## What does SECOORA do?

- ✳ Provides data, information, and products on coastal and ocean system conditions to stakeholders in North Carolina, South Carolina, Georgia, and Florida.
- ✳ Represents the interests of those that use, depend on, study, and manage coastal and ocean environments and resources in the Southeast.
- ✳ Links data providers and users from state and federal agencies, private industry, non-governmental institutions, and academia.
- ✳ Addresses the dynamic needs of stakeholders and incorporates new marine technologies based on these needs.

"Without SECOORA, our region would be unable to adequately observe and understand the changes affecting the coasts and ocean so critical to our region's future"

*Harvey Seim,  
Chair, SECOORA  
UNC Chapel Hill*

## Interested in becoming a Member?



The USCG ELM deploys a UNCW/US Marine Corps weather and oceanographic buoy 5 miles offshore of the Camp Lejeune Marine Corps Base. The buoy provides valuable data for boaters and mariners and plays a significant role in military training and Base operations. Photo: UNCW/Jamie Moncrief

SECOORA is a not-for-profit, membership organization. Our members include academic institutions, state agencies, other non-profits, business and industry, and individuals with coastal and ocean interests. Membership in SECOORA conveys many benefits:

- ✳ Networking with others interested in ocean observing
- ✳ Access to technologies and tools workshops
- ✳ Information on grant and fellowship opportunities
- ✳ Access to coastal and ocean related educational products and materials
- ✳ A venue for supporting and being a voice in setting ocean observing priorities at the national and regional level
- ✳ Opportunities to lead and coordinate development of the integrated ocean observing system in the Southeast

Commitment to ocean observing technologies in our region is critical. Your input, guidance, support, and membership will insure that SECOORA continues to develop the products and services that you need. Join SECOORA and be a part of the Southeast's future.

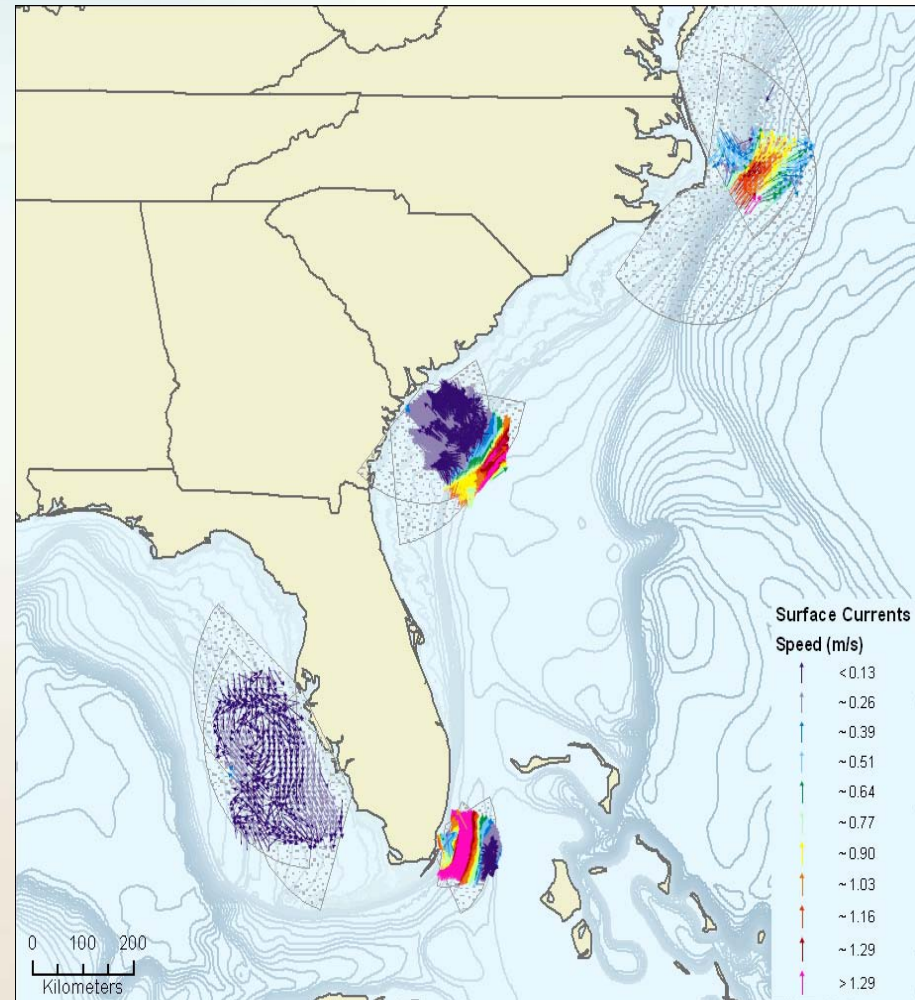
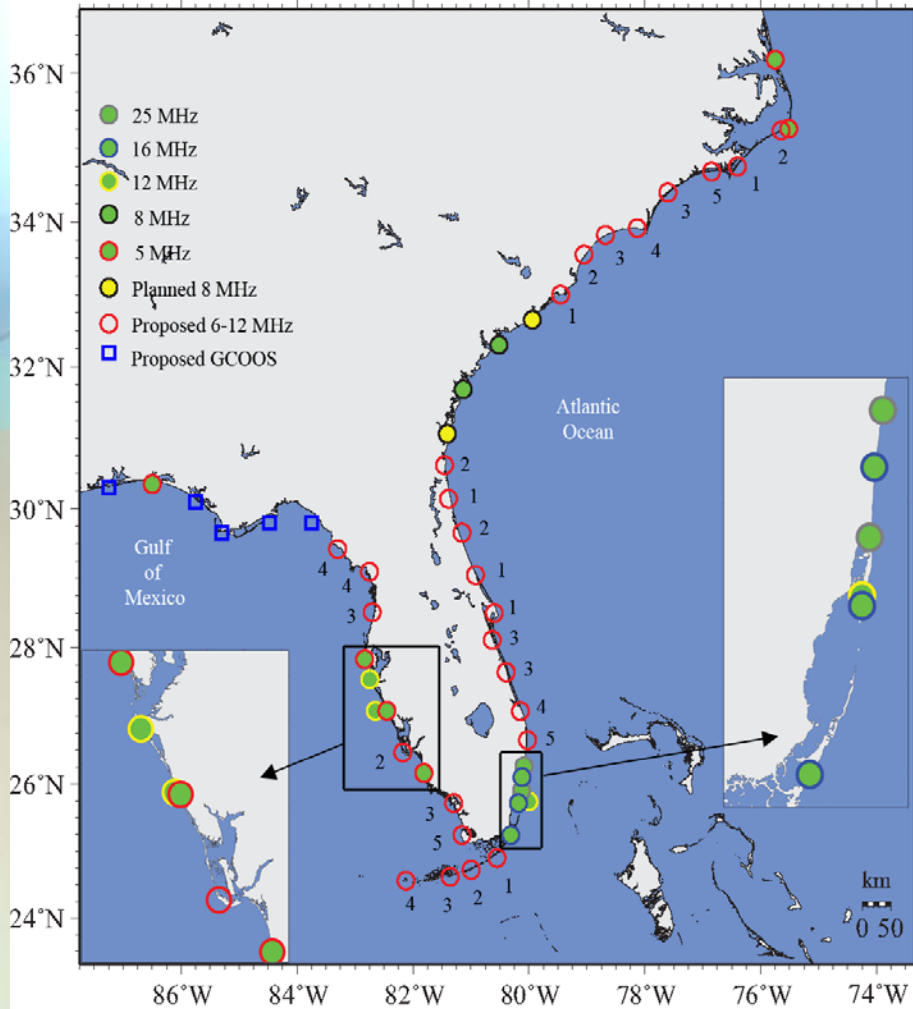


For more information on SECOORA or to become a member, please contact  
Executive Director Debra Hernandez:  
[debra@secoora.org](mailto:debra@secoora.org)  
[www.secoora.org](http://www.secoora.org)



# SECOORA HF Radar

## Existing and Proposed



# **SECOORA - FOCUS ON FISHERIES**



**Report Availability- Workshop on Integration of Near Real-time  
IOOS and Fisheries/Biological Data -**

**Sponsors: SECOORA ODP, USC, FWRI, USF, FFWCC**

## **Workshop Primary Objectives:**

- (1) Examine integration of near real-time observations and fisheries/biological data
- (2) Describe barriers to this integration through dialogue between the technical working group and scientists (e.g., biologists, oceanographers, modelers, etc.).
- (3) Identify technical solutions to more effectively informing



# SECOORA - FOCUS ON FISHERIES



**Priority areas where SECOORA can make progress in meeting the needs of the fisheries management community include:**

- (1) providing alerts to fisheries managers and scientists when temperatures exceed self-selected parameters,
- (2) developing a searchable GIS-based database of biological, habitat and physical ocean data, and
- (3) developing a product that maps the locations of thermoclines.

The SECOORA DMAC and DMCC committees will be discussing these priorities and developing a work plan to focus efforts on addressing these priorities:

Report Available at:

[http://secoora.org/secoora\\_fisheries\\_management\\_data\\_requirements\\_](http://secoora.org/secoora_fisheries_management_data_requirements_)

# Southeast Aquatic Resource Partnership (SARP)



## Activities by State



## Quicklinks

[Home](#)

[See Past Project Sites in Google Maps](#)

[New Aquatic Habitat Restoration  
Projects Funded](#)

[SIFN Workshop 2009 Presentations](#)



NATIONAL  
FISH HABITAT  
ACTION PLAN

[Partnership](#)

[Programs](#)

[Focus](#)

[News](#)

[Opportunities](#)

[Documents](#)

[Home](#) > [Programs](#) > [Southeast Aquatic Habitat Plan \(SAHP\)](#)

[Search](#)

## Southeast Aquatic Habitat Plan (SAHP)

The Southeast Aquatic Habitat Plan (SAHP) guides the partners' projects to conserve southeastern aquatic habitats. Partners use SAHP objectives to improve, establish, or maintain riparian zones, water quality, watershed connectivity, sediment flow, bottoms and shorelines, coastal, estuarine and marine zones as well as to control hydrologic conditions and invasive or problem species. On a larger scale, this plan helps SARP identify regional priorities and facilitate action for aquatic conservation and restoration. [Read the plan.](#)



Hot spots for at-risk fish and mussel species in the continental United States

Four pilot river basin conservation plans were initially developed to serve as models for the development of SAHP. Waterbodies were then prioritized and mapped using the Geographic Information System, based upon information from the State Wildlife Action Plans, the conservation plans, and other regional and national data. This prioritization process will compare the locations of aquatic habitats in the region with greatest need of restoration or conservation, with the strongest ecological systems, and with the greatest potential for ecological and economic impact.

As a regional Fish Habitat Partnership, SARP uses the SAHP and the prioritization process in its regional implementation of the [National Fish Habitat Action Plan \(NFHAP\)](#), a nationally focused fisheries conservation effort to address the loss and degradation of fish habitats in the nation. Because these two plans share many objectives and targets, aquatic habitat conservation in the southeast can be accomplished efficiently. On the basis of the plans, SARP facilitates and coordinates projects and data, and encourages best management practices to maximize the partners' regional and national efforts.

## Programs

[NOAA Community-Based  
Restoration Program \(NOAA  
CRP\)](#)

[Southeast Aquatic Habitat  
Plan \(SAHP\)](#)

[> ANS Management Plans](#)

[> Allen Dairy Project](#)

[> Oyster Reef For Shoreline  
Stabilization](#)

[> Oconee Habitat  
Enhancement](#)

[> Bennett Bayou Tidal Marsh](#)

[> Big South Fork Recreation  
With Habitat Protection](#)

[> Habitat Data Collection On  
Buck Creek](#)

[> Cherokee National Forest  
Brook Trout Habitat](#)

[> Reintroduce Brook Trout](#)

[> Restoration Of Spawning  
Site On Ogeechee](#)

[> Improve Connectivity At  
Troup Spring](#)

[> Green River Wildlife](#)




# Southeast Aquatic Resource Partnership (SARP)

[Partnership](#) | [Programs](#) | [Focus](#) | [News](#) | [Opportunities](#) | [Documents](#)

[Home](#) > [Programs](#) > NOAA Community-based Restoration Program (NOAA CRP)

## NOAA Community-based Restoration Program (NOAA CRP)

[The NOAA Community-based Restoration Program \(NOAA CRP\)](#) began in 1996 to inspire and sustain local efforts to conduct meaningful, on-the-ground restoration of marine, estuarine and riparian habitat. While the NOAA Fisheries Southeast Habitat Conservation Division has been an integral part of SARP since its inception, the long-term partnership based upon the NOAA CRP was initiated in 2007.



NOAA CRP catalyzes partnerships at the national and local levels to maximize resources such as funds, technical expertise, land and volunteers to undertake sound restoration projects that promote stewardship and a conservation ethic. In cooperation with the NOAA Restoration Center, SARP identifies potential projects and facilitates the formation of local partnerships to conduct on-the-ground restoration.

In 2007, NOAA CRP and SARP formed a long term partnership to fund, implement and monitor restoration projects benefitting marine and anadromous fish habitat in the nine southeastern states that border the Gulf of Mexico and the south Atlantic. This partnership supports the goals of the [National Fish Habitat Action Plan](#) as well as the [Southeast Aquatic Habitat Plan](#).

The first projects implemented by this partnership are located in the Altamaha River (Georgia) and Roanoke River (North Carolina and Virginia) watersheds. Previously, SARP had assessed these two watersheds to identify habitat needs and threats. More information about these watersheds:

### Programs

- NOAA Community-based Restoration Program (NOAA CRP)
  - > [Oyster Restoration With Artificial Cultch](#)
  - > [Jockey's Ridge Living Shoreline Protection](#)
  - > [Community Control Of ANS](#)
- [Southeast Aquatic Habitat Plan \(SAHP\)](#)
- [Southeastern Instream Flow Network \(SIFN\)](#)






# Southeast Aquatic Resource Partnership (SARP)



## Activities by State



## Quicklinks

- [Home](#)
- [See Past Project Sites in Google Maps](#)
- [New Aquatic Habitat Restoration Projects Funded](#)
- [SIFN Workshop 2009 Presentations](#)



- Partnership
- Programs
- Focus
- News
- Opportunities
- Documents

[Home](#) > [Programs](#) > NOAA Community-based Restoration Program (NOAA CRP)

## NOAA Community-based Restoration Program (NOAA CRP)

[The NOAA Community-based Restoration Program \(NOAA CRP\)](#) began in 1996 to inspire and sustain local efforts to conduct meaningful, on-the-ground restoration of marine, estuarine and riparian habitat. While the NOAA Fisheries Southeast Habitat Conservation Division has been an integral part of SARP since its inception, the long-term partnership based upon the NOAA CRP was initiated in 2007.

NOAA CRP catalyzes partnerships at the national and local levels to maximize resources such as funds, technical expertise, land and volunteers to undertake sound restoration projects that promote stewardship and a conservation ethic. In cooperation with the NOAA Restoration Center, SARP identifies potential projects and facilitates the formation of local partnerships to conduct on-the-ground restoration.

In 2007, NOAA CRP and SARP formed a long term partnership to fund, implement and monitor restoration projects benefitting marine and anadromous fish habitat in the nine southeastern states that border the Gulf of Mexico and the south Atlantic. This partnership supports the goals of the [National Fish Habitat Action Plan](#) as well as the [Southeast Aquatic Habitat Plan](#).

The first projects implemented by this partnership are located in the Altamaha River (Georgia) and Roanoke River (North Carolina and Virginia) watersheds. Previously, SARP had assessed these two watersheds to identify habitat needs and threats. More information about these watersheds:

### Programs

- NOAA Community-based Restoration Program (NOAA CRP)
  - > [Oyster Restoration With Artificial Cutch](#)
  - > [Jockey's Ridge Living Shoreline Protection](#)
  - > [Community Control Of ANS](#)
- [Southeast Aquatic Habitat Plan \(SAHP\)](#)
- [Southeastern Instream Flow Network \(SIFN\)](#)

# Southeast Aquatic Resource Partnership (SARP)

[Web](#) [Images](#) [Videos](#) **Maps** [News](#) [Shopping](#) [Gmail](#) [more](#) ▼

Google maps

Find businesses, addresses and places of interest.

Search Maps

[Show search options](#)

[Get Directions](#) [My Maps](#)

[Save to My Maps](#)

## SARP Project Site Map

Locate and view project information from the Southeast Aquatic Resources Partnership.


351 views - Public


Created on Jul 28, 2009 - Updated Jul 28, 2009

By [Emily](#)


[Rate this map](#) - [Write a comment](#)

 [Oconee River Gravel Bar Habitat Enhancement \(Phase I\)](#)  
Click here to learn more about this project.


 [Troup Spring and Spring Run Restoration](#)  
Click here to learn about this project.


 [Lake Oconee Littoral Habitat Enhancement](#)  
Click here to learn more about this project


 [Stream Restoration and Protection on Agricultural Land](#)  
Click here to learn more about this project.


 [Bennett Bayou Tidal Marsh Restoration](#)  
Click here to learn more about this project.


 [Gravel Augmentation at Spawning Habitats \(Phase II\)](#)  
Click here to learn more about this project.

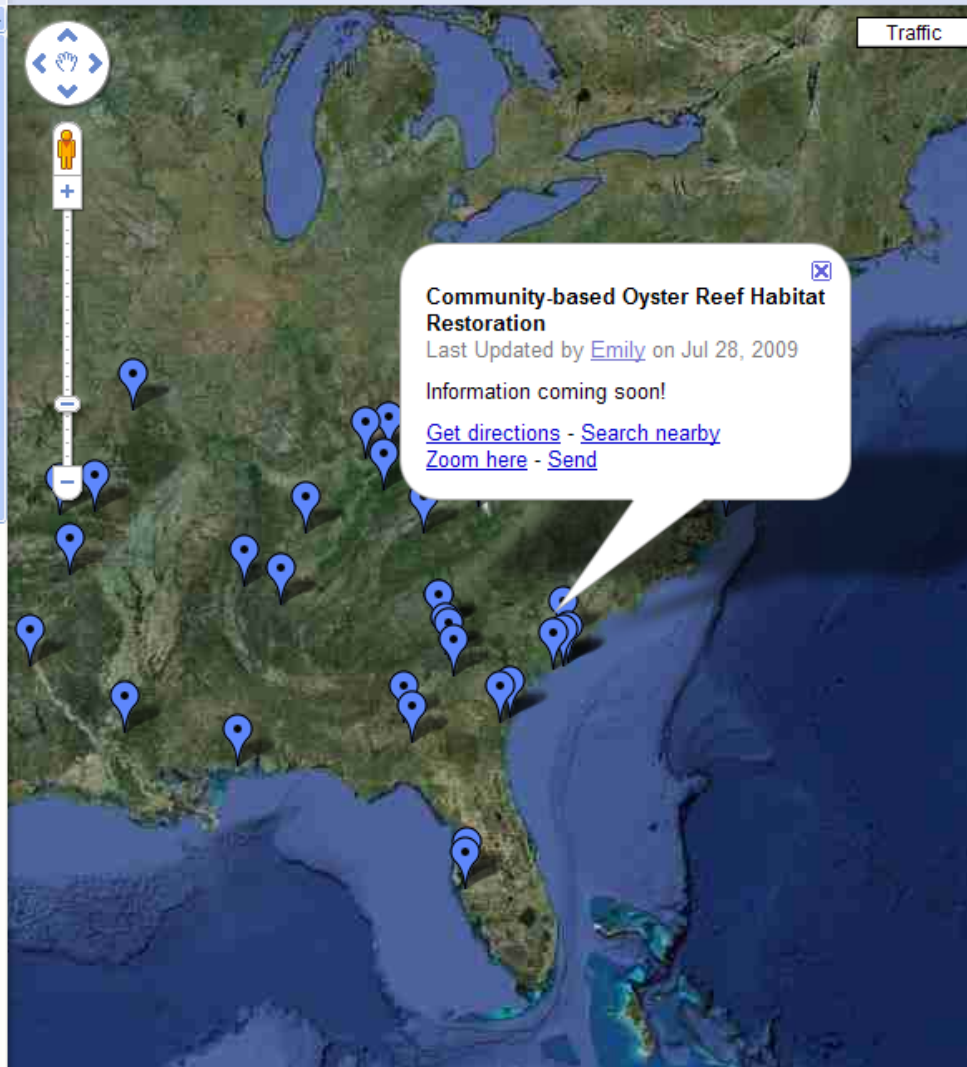
 [Reintroduction of Native Brook Trout](#)  
Click here to learn more about this project.

 [Habitat Data Collection to Aid Buck Creek Watershed](#)  
Click here to learn more about this project.

 [Restoration of Critical Habitat for Listed Mussels and I](#)  
Click here to learn more about this project.

 [Oyster Reef Shoreline Restoration and Stabilization](#)  
Click here to learn more about this project.

 [Habitat Restoration for Brook Trout in 5 Streams](#)  
Click here to learn more about this project.



# South Atlantic Alliance

## ALLIANCE HISTORY

- The Alliance initiated in 2006 under the Department of Defense SERPPAS Initiative (Southeast Regional Partnership for Planning and Sustainability), with a focus on mapping coastal and upland areas and promoting natural resource and land management compatible with military installations. This intent expanded and by the end of 2007 an ad hoc planning team, now the Executive Planning Team (EPT), created a framework for the Governors South Atlantic Alliance. The formal agreement between the four states (NC, SC, GA, and FL) was executed in May 2009. The Agreement specifies that the Alliance will prepare a “Governors South Atlantic Alliance Action Plan” which will be reviewed annually for progress and updated every five years for relevance of content.
- *Alliance Mission and Purpose:* The intent of the Alliance is to promote collaboration among the four states, and with the support and interaction of federal agencies, academe, regional organizations, non-governmental organizations, and the private sector, to sustain and enhance the region’s coastal and marine resources. The Alliance proposes to regionally implement science-based actions and policies that balance coastal and marine ecosystems capacities to support both human and natural systems.



# South Atlantic Alliance

## ESTABLISHMENT OF PRIORITIES

The Framework document specified four initial Priority Issue Areas and broad goals identified by the Executive Planning Team (EPT) as being of concern to all four states:

Healthy Ecosystems

Working Waterfronts

Clean Coastal and Ocean Waters

Disaster-Resilient Communities

These four Priority Issue Areas will form the basis for the developing Alliance Action Plan and address each of these themes.

# South Atlantic Alliance

Establishment of Supporting State Technical Teams

Development of “A Primer” for Issue Area Technical Teams

Teams to Draft Sections of Alliance Action Plan for Executive Planning Team Consideration

Schedule of Action Plan Development:

- **February-April 2010** Teams Draft Sections for EPT Consideration
- **May 2010** EPT Provides Final Draft to Steering Group for Governors (Executive Group)
- **September 2010** Executive Group adopts Alliance Action Plan

# **South Atlantic Landscape Conservation Cooperative (SALCC)**

- Landscape Conservation Cooperatives (LCCs) are applied conservation science partnerships focused on a defined geographic area that inform on-the-ground strategic conservation efforts at landscape scales. LCC partners include DOI agencies, other federal agencies, states, tribes, non-governmental organizations, universities and others.



# Landscape Conservation Cooperative

## LCC Information Bulletin #1

Form and Function

Office of the Science Advisor  
US Fish and Wildlife Service  
January 2010

## **Guiding Principles for Landscape Conservation Cooperatives (LCCs)**

Fundamental units of planning and science capacity that will facilitate strategic on-the-ground conservation at landscape scales through a partnership approach.

Principal function will be to provide scientific and technical expertise to produce landscape-scale conservation designs.

Secondary function will be building interdependent partnerships to develop shared conservation goals and satisfy shared science needs.

States will be essential partners, along with other federal agencies, especially the U.S. Geological Survey (USGS) and other DOI bureaus, tribes, and private organizations.

Will provide the principal scientific and technical support for implementation of landscape conservation; in the FWS, this framework is called Strategic Habitat Conservation.

Will be part of a seamless national network of LCCs supporting geographically defined landscapes capable of sustaining abundant, diverse and healthy populations of fish, wildlife and plants.

# LCC Governance, Structure and Function

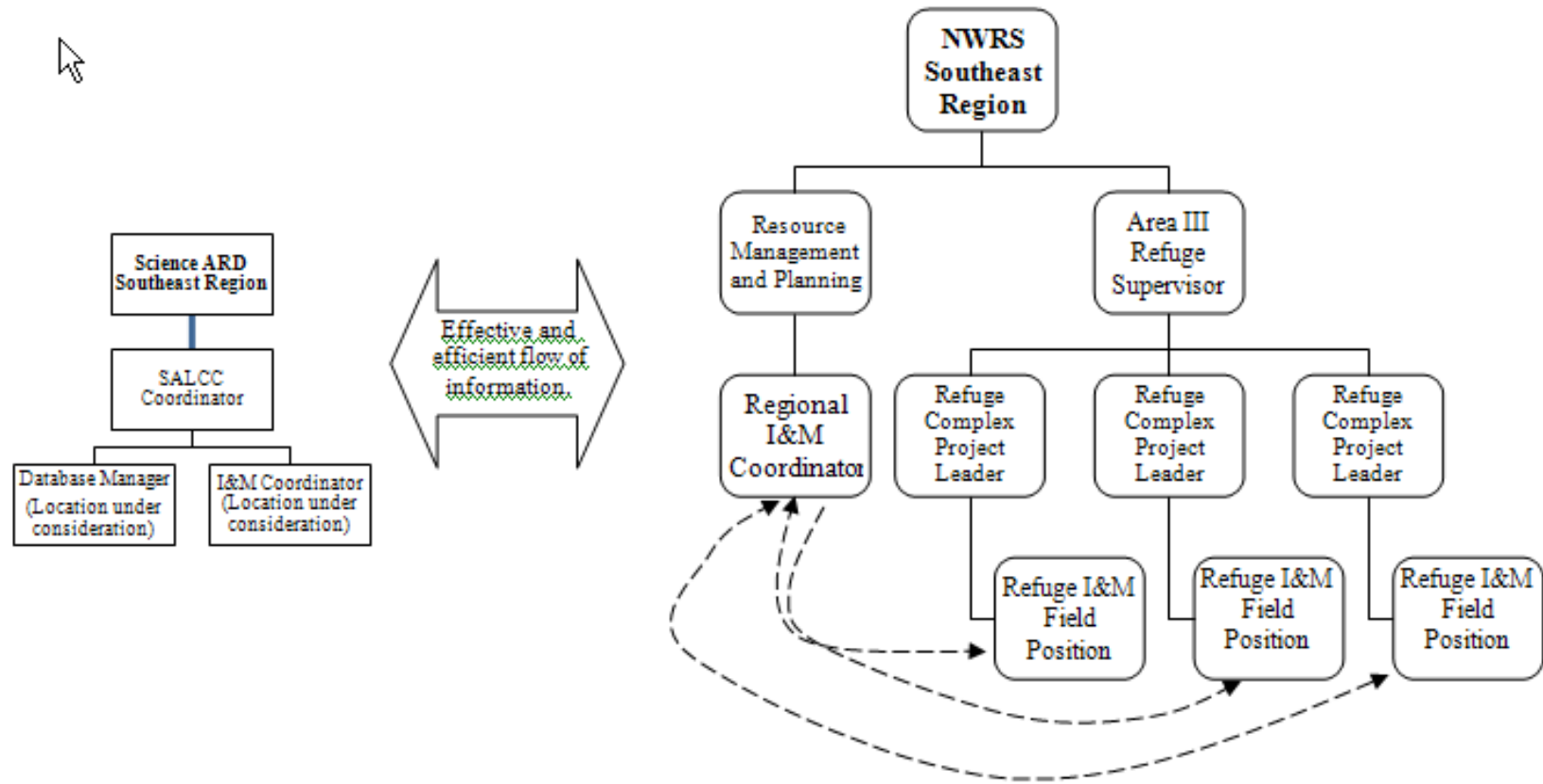
For LCCs to function as a national framework, and ultimately, as a model for collaborative landscape conservation internationally, each LCC will have:

- A Steering Committee of executive and management level representatives from partner organizations, which will provide management direction and set priorities;
- An LCC coordinator;
- A science and technology coordinator;
- GIS capacity;
- Population modeling capacity;
- Monitoring and evaluation capacity; and
- Decision analysis expertise.



# South Atlantic Landscape Conservation Cooperative (SALCC)

The recommended organizational structure is depicted below:



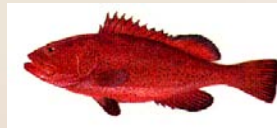
# **Southeast Monitoring and Assessment Program (SEAMAP)**

## **South Atlantic Activities - 2010**

- **South Atlantic Coastal Survey**
- **Bottom Mapping, Fish Habitat Characterization and Assessment**
- **Pamlico Sound Survey**
- **Southeastern Regional Taxonomic Center**
- **Data Management**

# Southeast Monitoring and Assessment Program (SEAMAP)

- Expanded funding started summer of 2008 - complement and expand MARMAP sampling to address high priority needs for over-fished species in the snapper-grouper complex.
- The primary objective was to enhance the fishery-independent reef fish data collected by MARMAP by increasing sampling in underrepresented regions of the sampled area.
- The effort included a plan to develop a phased in SEAMAP sampling protocol for a near-shore ocean/larval/sub-adult/adult finfish survey associated with live/hard bottom habitat from Cape Hatteras, North Carolina to Sebastian Inlet, Florida to complement offshore sampling conducted through the MARMAP survey.
- In addition, additional expansion of offshore site sampling through SEAMAP has resulted in more complete coverage and is addressing identified shortfalls of the MARMAP sampling regime.





# Southeast Monitoring and Assessment Program (SEAMAP)

- Estuarine reef fish ingress sampling in tidal creeks (March-June)  
- all reef fish post larvae will be counted and identified to species. A subsample kept for future aging and genetic studies.



- The MARMAP reef fish survey, during which new inshore and deepwater stations will be investigated, during summer (May-September). If sea days remain to be used after the summer, additional near-shore and deepwater reconnaissance will take place during fall (October-November).
- Nearshore site identification and sampling will focus on hard bottom areas, which will be the only areas providing adult reef fish habitat, and may be the predominant juvenile habitat as well. Sites to be investigated will be identified from a variety of sources. Sampling effort in deeper waters off North Carolina and central and south Florida will similarly identify and sample habitats supporting reef species and reef associated species.

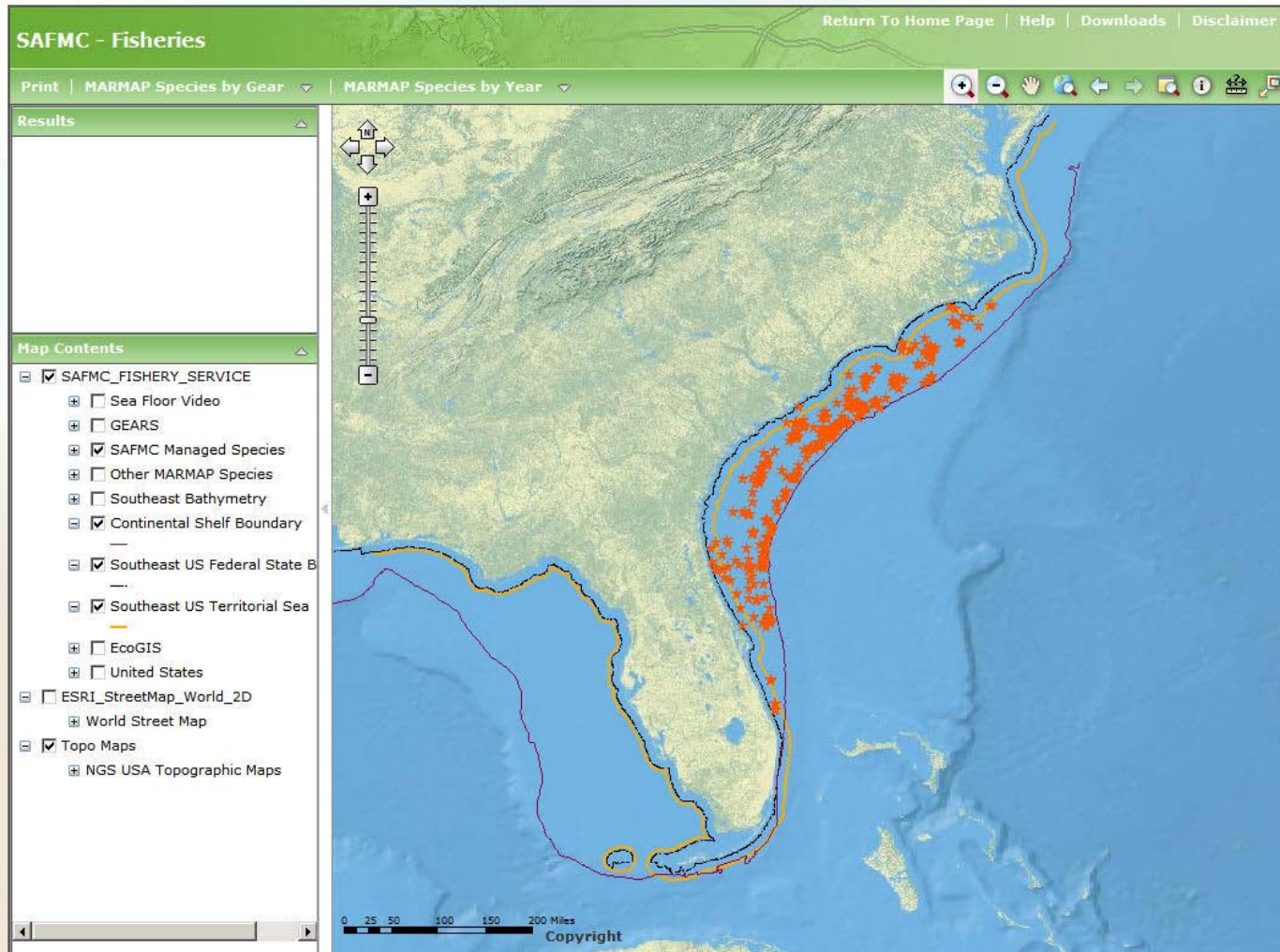
# Habitat and Ecosystem Webpage and Internet Map Server

## South Atlantic Habitat and Ecosystem Internet Map Server (IMS) Refinement Workshop September 9-10, 2008

- Development of Habitat and Ecosystem Internet Map Server as a support tool for Ecosystem-Based Management
- Present and future structure
  - Researcher Section
  - EcoFish Module
  - EcoSpecies Module
  - Ecosystem Partners
- IMS and identification of GIS needs supporting management, research, and regional collaboration
- Identification of additional data and GIS for possible inclusion into the IMS

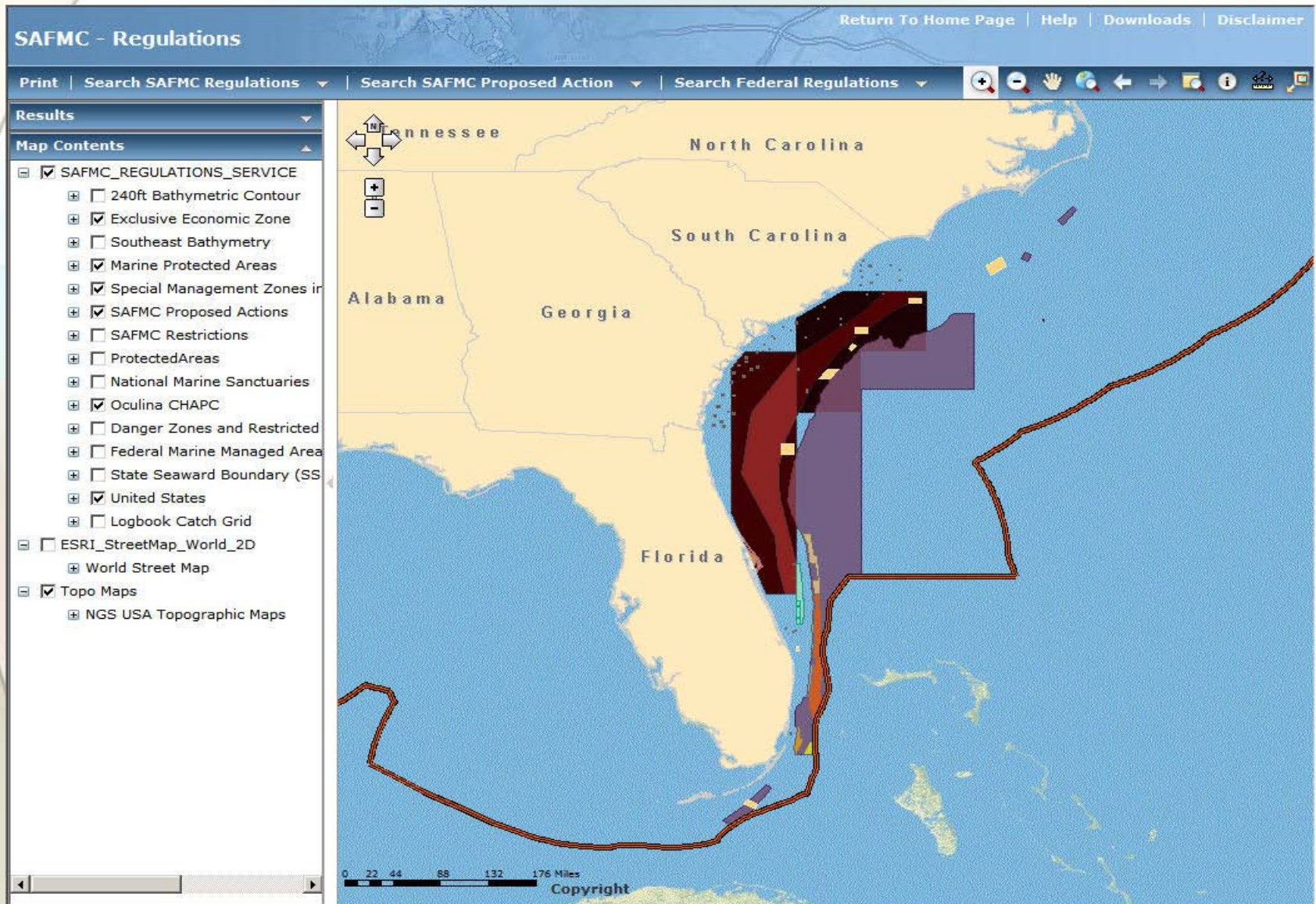


# Fishery Independent Data Service Researcher Access



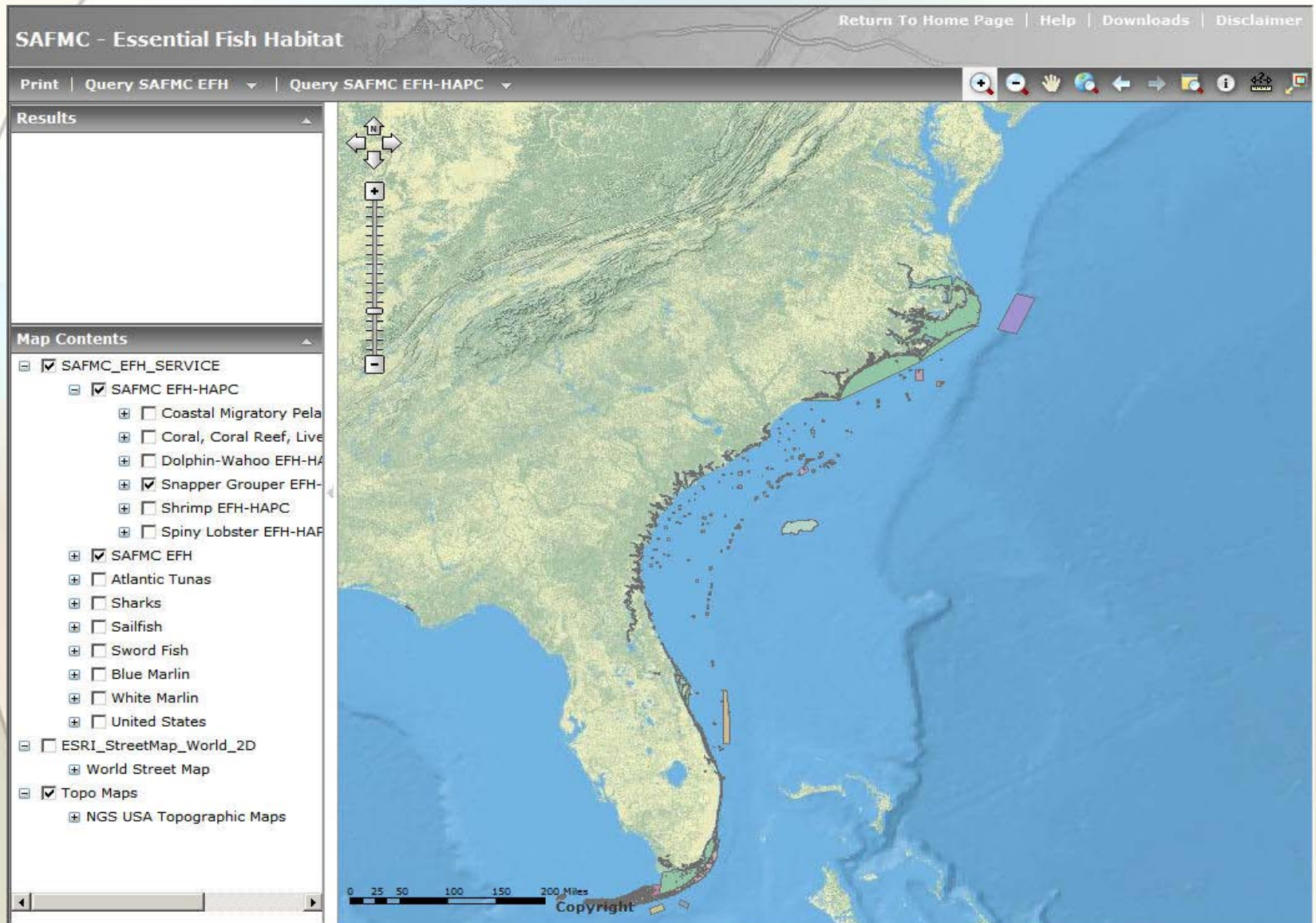


# SAFMC Regulations Service





# SAFMC Essential Fish Habitat Service



# EcoResearch and Ecospsecies Databases





# **Alternative Energy**

## **SCDNR Ocean Energy Workshops**

### **Workshop on Offshore Wind Energy Development: Establishing a Policy and Management Framework for South Carolina**

Wednesday, March 24th -- 8:30am-4:30pm

SCDNR Marine Resources Research Institute, Fort Johnson – Charleston, SC

- Explore the next steps necessary for South Carolina to develop its offshore wind energy potential
- Exchange of experiences, with perspectives from other states, the private sector, the military, as well as some of our state's regulatory and policy leaders.
- Initiate the development of an action plan for South Carolina to maximize the potential of offshore wind for the state

### **Onshore Implications of Ocean Energy Development**

Thursday, March 25th -- 9:30am-12:30pm

SCDNR Marine Resources Research Institute, Fort Johnson – Charleston, SC

- DHEC's Office of Ocean and Coastal Resource Management and the SC Ocean Planning Work Group facilitated session about onshore implications of ocean energy development.

# Alternative Energy

## South Carolina's Role in Offshore Wind Energy Development

---

Prepared in response to Act 318 of 2008

A Joint Resolution Requiring Recommendations from the Wind Energy  
Production Farms Feasibility Study Committee

- SAFMC Habitat and Ecosystem Homepage

<http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx>

- SAFMC Habitat and Ecosystem Internet Map Server

- <http://www.safmc.net/EcosystemManagement/EcosystemBoundaries/MappingandGISData/tabid/62/Default.aspx>

- SAFMC – Regulations Service

[http://ocean.floridamarine.org/SAFMC\\_Regulations/](http://ocean.floridamarine.org/SAFMC_Regulations/)

- SAFMC – EFH Service

[http://ocean.floridamarine.org/SAFMC\\_EFH/](http://ocean.floridamarine.org/SAFMC_EFH/)