

# Governors' South Atlantic Alliance

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## Action Plan

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## Introduction

North Carolina, South Carolina, Georgia and Florida share an extraordinarily rich array of ocean and coastal resources that provide enormous economic, environmental, and social benefits for each state. The similarity of issues and habitats across state jurisdictions, plus the connectivity of ocean resources such as coastal watersheds, fisheries, and ocean currents across state jurisdictions calls for collective action. Changes in economics, culture, environmental quality, resource use, and growth have occurred in the Southeast at an accelerated pace. The resulting pressures placed on these resources, as well as national defense installations, are increasing exponentially. The complexity of interdependent resource issues undergoing rapid change creates new challenges and an urgent need for new responses. Our growing understanding of the relationship of humans with the marine environment is leading us to explore new ecosystem-based approaches to coastal and marine resource management that engages multiple state jurisdictions. The urgency of the situation calls for developing coordinated regional actions by the states, in cooperation with supporting partners, and leveraging multiple resources to help address critical issues and sustain our coastal and ocean systems. The Governors' South Atlantic Alliance *Action Plan* has been formulated to provide the leadership and means by which regional Priority Issue Areas, as identified by the four states as being of mutual interest and most likely to benefit from regional collaboration, can be addressed.

In 2009, the Governors of North Carolina, South Carolina, Georgia, and Florida signed the *South Atlantic Alliance Partnership Agreement*, forming the Governors' South Atlantic Alliance (Alliance). The Alliance is led by the four states in partnership with three federal co-lead agencies - the National Oceanic and Atmospheric Administration (U.S. Department of Commerce), U.S. Environmental Protection Agency and United States Geological Survey (U.S. Department of Interior). Representatives from academia, non-governmental organizations, regional organizations and private industry also participate. This historic Agreement builds on the momentum of a multi-year effort to enhance regional collaboration around coastal and ocean issues. By establishing this voluntary partnership, the Alliance supports both national and state-level ocean policy by coordinating federal, state, and local entities to ensure the sustainability of the region's economic, cultural, and natural resources.

### **The Goals of the Alliance are to:**

- Provide an organizational structure and forum for collaboration, coordination and a clearinghouse for information. This structure will foster cooperative activities and coastal and ocean decision making that supports effective planning and ensures resource sustainability;
- Promote regional sustainability of resources that supports individual state requirements;
- Align regional decision making resulting in mutual mission accomplishment;
- Enhance cooperative planning and leveraging of resources to produce multiple state and regional benefits;
- Preserve the historical, cultural, and social heritage of each state and the region;
- Integrate research, observation, monitoring, and mapping of the South Atlantic region leading to common and coordinated data and information to enhance science-based decision making;
- Increase awareness of challenges facing the South Atlantic region; and
- Integrate solutions that consider all systems requirements (i.e., ecosystems, economic systems, social systems, and national defense systems) at state, federal and local levels.

## National Policy Context

Creation of the South Atlantic Alliance provides an additional platform for coordinated engagement in both national and regional strategies related to coastal and ocean resources. At the national level, the potential benefits of regional coordination in ocean management were highlighted in the Pew Oceans Commission Report (2003) and the U.S. Commission on Ocean Policy (2004). Since that time, states across the United States have initiated regional ocean partnerships. Among the results have been increased data collection and scientific research, engagement among a diverse group of federal, academic and private partners, increased stakeholder involvement and new funding to support marine and coastal management efforts.

The release of the South Atlantic Alliance *Action Plan* is very timely. The new National Ocean Policy (July 2010) reiterates the importance of applying a regional approach to coastal and marine decision-making. Common objectives between the two plans include scientifically sound, ecosystem-based management, strengthened and integrated ocean observation, and coastal marine spatial planning. The Alliance is now positioned to help represent the southeast region as the new national ocean policy is implemented.

## Alliance Action Plan

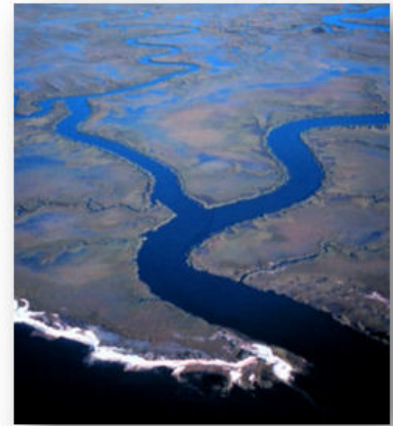
The Governors' South Atlantic Alliance *Action Plan* is a regional response to address the key environmental, economic, and cultural issues facing the Southeastern U.S. coastal and ocean region. Four Priority Issue Areas were identified by the Governors to be of mutual importance to the sustainability of the Southeastern U.S. region's resources:

- Healthy Ecosystems
- Working Waterfronts
- Clean Coastal and Ocean Waters
- Disaster Resilient Communities

The Plan includes a Description, Goal, supporting Objectives and specific Actions for each of the priorities. The Objectives and Actions were identified and developed over the past year by teams of state representatives and include federal, stakeholder and public feedback. Special consideration was given to Actions that are timely and of mutual importance to the sustainability of the South Atlantic region's resources. Therefore, the Alliance has committed to the top three Actions for the following Objectives and recognizes them as being of equal weight in importance. Additional Actions for these Objectives can be found in the Appendix.

## Healthy Ecosystems

With their expansive wetlands, coastal bays, and seagrass beds, southeastern estuaries are among the most productive ecosystems in the world. Both tropical and deepwater coral habitats provide areas of high biodiversity and key fish habitat. These coastal and marine ecosystems demonstrate the close link between natural resources and human communities. Ecological benefits include wildlife habitat, fish nurseries, and water quality improvement. Socioeconomic benefits of healthy ecosystems include hurricane and flood protection, shoreline stabilization, water quality improvement, fisheries, and tourism. For these reasons, maintaining healthy ecosystems is imperative to the region. This is a challenge considering the variety of pressures being exerted on the resources.



It is essential to preserve the biological, economic and cultural diversity of the region. Achieving this goal requires a more thorough understanding of the resource locations including integration of available data. The Alliance will enhance collaboration necessary to address these region-wide ecosystem issues.

### Goal

The Goal of Healthy Ecosystems (H.E.) is to ensure the sustainability of the diverse array of coastal and marine environments vital to the ecological and economic stability of the region by:

- enhancing and supporting ecosystem-based management of regional biological resources;
- improving ecosystem structure and function by developing and applying sound scientific data to support habitat conservation, enhancement, and restoration;
- increasing the understanding of the scope and scale of the region's human and natural resources; and
- developing communication networks, research frameworks, and outreach/education.

### Objectives and Actions

***H.E. 1 Implement regionally-coordinated, compatible, and sustainable ecosystem-based planning and management, including, but not limited to, habitat mapping, characterization, monitoring, and modeling.***

- Develop coordinated state programs to map known distributions of key estuarine and marine habitats and land use cover in the coastal watersheds of each state, and distribution of key species of management concern using a common set of standards and attributes.
- Develop an integrated database that captures existing state, federal and non-governmental organization monitoring metadata for programs that are ongoing or long-term. The database will identify monitoring locations and parameters sampled as well as data gaps and capacity needs for estuarine, coastal and offshore environments.
- Initiate and enhance interstate/regional efforts to implement ecosystem-based planning and management.



***H.E. 2 Assess the independent and cumulative impacts of development and climate change on coastal habitats, biodiversity, natural community structure/function and ecosystem services.***

- Identify priority issues (e.g., sea level rise, ocean acidification, coastal development resiliency, and other major anthropogenic issues) and evaluate coastal resources at greatest risk to (1) climate change and (2) anthropogenic effects from coastal and inland development.
- Develop indices of condition for each different habitat type, level of biodiversity, community structure/function, and ecosystem services.
- Develop a method for cumulative impact assessment of priority threats.

***H.E. 3 Develop and employ economic, science-based land-use, coastal and ocean planning and management that support healthy ecosystems. This should include, but not be limited to, the conservation and restoration of key habitats, evaluation of ecosystem health using appropriate measures, and evaluation of direct and cumulative impacts.***

- Initiate a joint federal-state agency marine spatial plan that identifies the location of key coastal and marine resources and activities (e.g., commercial and recreational fishing areas, shipping lanes, military areas, energy development areas, sand resource areas used for beach nourishment, etc.) for incorporation into multi-use management decisions.
- Use results from resource mapping and evaluation of impacts from climate change and coastal development to make regional recommendations for ecosystem-based land-use planning.
- Expand on existing educational outreach efforts to alert the public about types of risk and major areas at risk.

***H.E. 4 Determine long term impacts and remediation strategies for existing invasive species while implementing strategies to prevent further introductions.***

- Inventory national, regional and state efforts that identify invasive species and their current regional distributions and compile data into an integrated regional map.
- Enhance educational, outreach and enforcement strategies to prevent further introductions and to aid in current remediation efforts.
- Identify life history information for each invasive species and conduct studies to determine the level of risk associated with established invasive species.

### **South Atlantic Facts**

- Regional tourism generates annual sales of over \$9 billion.
- Over 75% of the region's commercial and recreational fisheries make use of coastal estuaries at some point in their lifecycle.

## Working Waterfronts

The South Atlantic states have a tradition of water-based activities that have influenced, and have been influenced by, the region's economy, natural environment, and culture. Fishing communities, tourism and recreation, ports, marine transportation and commerce, and national defense operations are all vital contributors to regional culture and economies. The Southeastern states contains one-third of the nation's 100 fastest-growing counties, with much of the growth concentrated in coastal counties. Sustaining robust waterfront cultural traditions, commerce, adequate access and use of public trust waters, and infrastructure in the face of this growth is crucial.

Regional cooperation through the Alliance will provide opportunities to conserve working waterfronts by sharing, developing and enhancing tools, such as coastal and land use planning, incentives to preserve and enhance the region's coastal waterfront heritage, and increased public access. Finally, to be sustainable, working waterfronts will need to confront emerging issues, including climate change, gradual sea level rise and potential increased storm intensity.

### Goal

The Goal of Working Waterfronts (W.W.) is to more effectively manage the future of our ports and other water access points, by striking a balance among new development, historic uses, port expansion, and sustaining resources for the future by:

- sustaining and enhancing robust waterfront cultural traditions, commerce, and uses of public trust; and
- integrating coastal and land use planning tools to balance new development, historic uses, port expansion, and sustained resources for the future.

### Objectives and Actions

***W.W. 1 Improve the capability and vitality of ports and working waterfronts through expansion of infrastructure and modes of access while addressing cargo and ship-borne invasive species, dredging impacts, and protection of natural resources.***

- Integrate regional long-range planning for both commercial and federal ports emphasizing multi-modal, multi-use capacity and promoting the use of existing infrastructure and navigational channels through increased communication between member states.
- Conduct research and studies that forecast long-range needs of coastal ports.
- Support community-based mapping work to identify contemporary and historical recreational and commercial working waterfront sites.



***W.W. 2 Ensure sustainable economic viability of working waterfronts while preserving traditional uses, including national defense, by balancing suitable public, commercial, port, residential and environmental uses with best management practices.***

- Limit the loss of recreational and commercial waterfronts by:
  - promoting public/private partnerships;
  - supporting the use of flexible incentives;
  - predicting the effects of working waterfront resource loss and/or conversion;
  - encouraging the use of waterway and land-use planning and policy options;
  - expanding the level and type of technical assistance; and
  - promoting the development of heritage and nature-based tourism opportunities.
- Protect U.S. military waterfront access and water-dependent land use related to military footprint, operational readiness, and training missions by engaging military representatives in the identification of sites that support military operational and training capacity and national defense mission.
- Inventory public access infrastructure and support facilities within the four states.

***W.W. 3 Address the viability and effects of energy development on natural and human communities and uses through planning and public education.***

- Plan for the local and regional economic, ecological, and social effects of emerging industries by encouraging placement of local workforce in new jobs associated with emerging industries.
- Encourage the adoption of model land-use and water body management policies that address the interface between energy development and other working waterfront issues.
- Ensure no-net loss of public access facilities during development of new off-shore energy industries.

### **South Atlantic Facts**

- The region's 14 ports handled over 133,053,000 tons of cargo in 2007.
- The Port of Savannah and the Port of Brunswick, Georgia's deepwater ports and inland barge terminals, support more than 286,476 jobs throughout the state annually and contribute \$14.9 billion in income, \$55.8 billion in revenue and \$2.8 billion in state and local taxes to Georgia's thriving economy.
- More than a dozen major coastal military installations are spread throughout the region, including Marine Corps Base Camp Lejeune, Charleston Air Force Base, Ft. Stewart Army Base and Jacksonville Naval Air Station.

## Clean Coastal and Ocean Waters

Healthy water quality underlies human health as well as the health of estuarine and coastal habitats and safe seafood. The condition of our coastal and ocean waters also affects other human uses of the coast, such as boating, ecotourism, swimming and other recreational activities. However, increasing human activity and the effects of climate change are placing significant pressure on our water resources. Land-based and atmospheric sources are impacting our ground water, rivers, estuaries, and the oceans, as evidenced by the increased number of advisories and closures caused by high bacteria levels and harmful algal blooms. Maintaining clean coastal and ocean waters is essential for our region's economic vitality and high quality of life.



Regional cooperation through the Alliance will provide the states with opportunities to share, develop and enhance specific tools to protect water quality. For example, cooperation will facilitate using shared monitoring data, regional climate change impact assessments will assist in state planning, and cooperative educational resources can improve prevention and removal of marine debris.

### Goal

The Goal of Clean Coastal and Ocean Waters (C.C.O.W.) is to enhance managers' abilities to effectively target prevention, enforcement, response, mitigation activities, and integrate coastal and ocean observing systems in the South Atlantic. The Alliance will achieve this goal by:

- enabling coastal managers and decision-makers to predict, prevent, enforce, respond, and mitigate ecosystem and human health impacts; and
- providing consistent data through an integrated coastal and ocean observing and monitoring system.

### Objectives and Actions

***C.C.O.W. 1 Improve watershed management of point and non-point source pollution to reduce adverse impacts to water quality.***

- Establish a regional technical level work group for the purpose of sharing watershed water quality improvement processes.
- Improve the ability to model loading coefficients for point and non-point sources of nitrogen in coastal ecosystems using the best available technology and information including climate change information.
- Develop recommendations on processes and protocols to transfer knowledge and implement best management practices for point and non-point source controls, and to encourage smart growth and green infrastructure (including monitoring-based performance measures).



***C.C.O.W. 2 Enhance understanding of climate change impacts to water quantity and water quality and develop avoidance, mitigation and adaptation strategies.***

- Develop interactive map-based assessment tool(s) to support climate change mitigation and adaptation strategies.
- Develop opportunities and partnerships with federal, state, and local agencies in their sustainability initiatives.
- Support research to study regional water quality impacts due to climate change.

***C.C.O.W. 3 Increase data comparability across the region by improving standardization of water quality data collection and reporting and increasing monitoring where needed.***

- Establish a regional level monitoring work group to address compatibility among states.
- Catalogue and describe existing nearshore and offshore monitoring programs, designs, and data accessibility.
- Identify state and regional monitoring needs and implement monitoring programs to the extent possible through identifiable funding sources.

***C.C.O.W. 4 Improve marine debris removal programs, especially for abandoned and derelict vessels, traps, equipment and navigation hazards.***

- Increase inter-state communication between agencies to aid in identification of owners of abandoned or derelict vessels.
- Establish a sampling program to estimate the baseline density of marine debris on the shoreline, within open waters, and in submerged habitats. The program will be designed to detect significant change at broad and fine scales and adapt or improve existing marine debris projects to provide complementary data.
- Develop educational materials on the ramifications of marine debris of all types, both from direct and indirect inputs.

### **South Atlantic Facts**

- Plastic specks from marine debris in water and sediment can bond with highly toxic and pervasive pollutants, such as polychlorinated biphenyls (PCBs) and pesticides, which may be passed through the food chain.
- Symptoms of eutrophication have been documented in nearly half of the major southeastern estuaries, with future deterioration predicted.

## Disaster Resilient Communities

Citizens in the region face many challenges presented by episodic natural hazards, such as hurricanes and coastal storms, as well chronic pressures from rising sea levels and increasing ocean temperatures. The Alliance's goal related to disaster-resilient communities is to enable our citizens to absorb, adapt, and rebound from changes or shocks to both the built and natural environment. Coastal storms alone account for 71 percent of recent U.S. disaster losses annually. Hurricanes Hugo, Andrew, Isabel and Wilma have underscored the need for the region to better prepare our communities through risk reduction and damage prevention, mitigation, response, and recovery strategies.



The Alliance seeks to understand potential risks and threats, take steps to prepare and adapt to chronic and episodic events, and effectively deal with post-disaster response. Understanding our vulnerability to the impacts of storms and climate change will enable coastal managers and community decision-makers to adapt their management strategies, improve planning and preparedness, and develop mitigation strategies to address impacts to public safety, shoreline change, coastal infrastructure, national defense, habitat loss, and species migration and natural resources. Further, mapping and observation information that leads to valuation of coastal infrastructure and supports development of an integrated regional strategy will enable our citizens to adapt to threats to natural, environmental, economic, national defense, and cultural resources.

### Goal

The Goal of Disaster-Resilient Communities (D.R.C.) is to greatly enhance the understanding of ocean and weather dynamics and improve prediction, observation and forecasting capabilities for both episodic (e.g., hurricanes) and chronic (e.g., sea level rise) impacts from weather and climate change. The Alliance will undertake activities by:

- enhancing understanding of ocean and weather dynamics, including short-term coastal hazards and long-term climate change; and
- sharing best practices to minimize losses and accelerate recovery, while implementing new and more effective coastal and land use strategies to minimize future risk.

### Objectives and Actions

***D.R.C. 1 Conduct regional and state-specific vulnerability assessments of: a) public infrastructure, social assets, and economies to hazards and climate change (including sea level rise) and b) natural processes and features that support resilience, including economic valuation of these ecosystem services.***

- Identify and evaluate alternative approaches to “risk assessments” for state hazard mitigation planning with consideration of unique socioeconomic and natural resources in the South Atlantic Alliance region.
- Enhance pilot initiatives to integrate sea level rise into state and local hazard mitigation plans.
- Develop a regional strategy for economic valuation of ecosystem services for both general characterizations and case-by-case decision making.

***D.R.C. 2 Develop and implement adaptation and mitigation strategies for climate change impacts (including sea level rise), with plans for retreat of natural and human communities.***

- Identify and characterize the full range of potential climate impacts on coastal and ocean resources in the South Atlantic Alliance Region.
- Develop standards, best practices, and adaptation options for addressing sea level rise at the regional, state and local level.
- Improve understanding of socioeconomic vulnerabilities and perceptions, with a particular focus on human responses to chronic erosion and storm events.

***D.R.C. 3 Improve post-disaster redevelopment planning for coastal communities, including infrastructure and business continuity.***

- Evaluate nationwide Post-Disaster Redevelopment Planning initiatives (e.g., Florida) to improve understanding of post-disaster redevelopment options.
- Develop guidance to improve redevelopment considerations in state and local hazards mitigation plans and local comprehensive and growth management plans.
- Explore short-term economic recovery aspects of long-term redevelopment, and opportunities to create partnerships in support of local business recovery.

***D.R.C. 4 Create and employ incentives for locating and relocating development away from high risk areas, minimizing subsidization of development in high risk areas, and reevaluating of building standards (flood, storm, wind).***

- Identify the most vulnerable areas along the coast and improve understandings of incentives and disincentives for development in those areas.
- Conduct regional legal and economic analysis of the full range of federal, state, and local subsidies, issues related to withdrawal of public subsidies, and analysis of past property relocations and related incentives/disincentives.
- Explore building standards and incentives that allow options for sheltering in place, vertical evacuation, and commercially feasible homeowner mitigation improvements.

***D.R.C. 5 Consider management and financial options for addressing short and long-term beachfront and estuarine shoreline migration.***

- Model future shoreline migration patterns given present and future development and shoreline protection scenarios.
- Develop regional standards or best practices for monitoring and mapping beachfront and estuarine shoreline changes for the purpose of targeting specific areas for adaptation responses.
- Compile research and examine differences in “retreat” and shoreline and land use policies across the South Atlantic Alliance region, including lessons learned from case law.

### **South Atlantic Facts**

- The top five costliest hurricanes in U.S. history (Katrina, Andrew, Charley, Wilma and Ike) originated from the Atlantic basin and have combined insured losses of more than \$99.6 billion, excluding flood damage.
- Future hurricane damages, projected from past storms, could average \$5 billion per year.
- One study estimates that with a 46-cm (18 inch) rise in sea level by 2080, the total loss in residential and nonresidential property values in just four coastal counties in North Carolina could amount to over \$2.8 billion.
- Estimates suggest that the present value of the welfare costs to beach recreation inflicted by an increase of 46-cm (18 inch) in sea level by 2080 could be as high as \$10.6 billion, assuming a 2% discount rate.

## Moving Toward the Future

The South Atlantic Alliance is designed to provide for the sustainability of our economic, environmental and social resources. This *Action Plan* provides a starting point, identifying both Priority Issue Areas and specific Actions where the states are dedicated to working together. Successful implementation will require a continued commitment from the states and active engagement from federal, academic and private partners. The Alliance has the opportunity to build upon existing regional collaborations as it moves forward. Several of these regional groups have been engaged in the development of the Alliance, including fisheries management, ocean observing and research communities. There are clear links between the *Action Plan* Objectives and those of the existing groups. A successful Alliance will complement existing efforts by building capacity and increasing coordination across jurisdictional boundaries and issue areas, while recognizing existing programs and authorities.

### The Governors' South Atlantic Alliance Information

General information regarding the South Atlantic Alliance, including documents and contact information, is available online:

<http://www.southatlanticalliance.org>

### State Steering Group

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Photos used courtesy of the National Oceanic and Atmospheric Administration (NOAA) photo library and NASA Visible Earth. Both collections were accessed through <http://www.search.usa.gov>.



## Appendix: Supplemental Action Items

### Healthy Ecosystems

#### Objectives and Actions

*H.E. 1 Implement regionally-coordinated, compatible, and sustainable ecosystem-based planning and management, including, but not limited to, habitat mapping, characterization, monitoring, and modeling.*

- Enhance and expand coastal and marine managed areas across the region in order to conserve ecosystems and connect gaps at local/state/regional scales.

*H.E. 2 Assess the independent and cumulative impacts of development and climate change on coastal habitats, biodiversity, natural community structure/function and ecosystem services.*

- Inventory federal and state activities to address climate change and coastal development impacts.

*H.E. 3 Develop and employ economic, science-based land-use, coastal and ocean planning and management that support healthy ecosystems. This should include, but not be limited to, the conservation and restoration of key habitats, evaluation of ecosystem health using appropriate measures, and evaluation of direct and cumulative impacts.*

- Initiate remediation and conservation projects that provide local governments with an incentive to implement ecosystem-based land-use planning, upgrade wastewater treatment facilities, improve storm water management techniques, and conserve land.

### Working Waterfronts

#### Objectives and Actions

*W.W. 1 Improve the capability and vitality of ports and working waterfronts through expansion of infrastructure and modes of access while addressing cargo and ship-borne invasive species, dredging impacts, and protection of natural resources.*

- Control the threat of invasive species at the regional level through supporting the identification of alternative ballast water management systems and other activities.
- Review, analyze, and assess current models of multi-modal transportation for ports including the identification of best practice recommendations.
- Identify and compile strategies to minimize environmental impacts during port operation and expansion, including beneficial public use of dredge spoil material.
- Identify underutilized brownfields for port expansion opportunities.
- Share lessons learned and best management practices gleaned from the Savannah Harbor, GA deepening project and the Southport, NC project.

*W.W. 2 Ensure sustainable economic viability of working waterfronts while preserving traditional uses, including national defense, by balancing suitable public, commercial, port, residential, and environmental uses with best management practices.*

- Increase public awareness and marketing of the value of working waterfronts to local economies, environmental stewardship, and cultural heritage.

- Support creative reuse of working waterfront machinery, vessels, and property for educational, commercial, and display purposes.
- Support efforts by military operations to source their supplies from local and regional providers.
- Develop and disseminate a toolkit that describes effective strategies for addressing working waterfront issues including, but not limited to, public policy, zoning ordinances, legislative changes, and tax incentives.
- Identify funding sources at the state or regional level that support water-dependent industries.
- Establish a regional committee to comprehensively and routinely review and analyze trends impacting diversity of working waterfront use within the region.
- Provide the public with maps showing current military footprint and specifying prohibited activities.

***W.W. 3 Address the viability and effects of energy development on natural and human communities and uses through planning and public education.***

- Support collaborative decision making processes for all aspects of energy development planning.
- Prioritize undeveloped coastal access sites suitable to conducting resource management activities in the region, such as water quality monitoring and shellfish restoration.
- Create an inventory of all existing sites that may be viable locations for landward collection sites.
- Develop outreach resources to educate a variety of stakeholders on issues related to energy development in the region.

## **Clean Coastal and Ocean Waters**

### **Objectives and Actions**

***C.C.O.W. 1 Improve watershed management of point and non-point source pollution to reduce adverse impacts to water quality.***

- Develop biological indicators of nutrient enrichment for estuarine and coastal waters as recommendations for assessment criteria.
- Review federal, state, and local rules and regulations and make recommendations that address specific pollution sources.
- Enhance regional watershed educational programs and opportunities to promote awareness of the connections between watersheds and clean coastal waters.
- Explore the cost and benefits of implementing a framework for sediment quality standards for priority pollutants.
- Using existing datasets, identify and track sources of persistent organic pollutants (including endocrine disruptors) that are exhibiting increasing trends, or sustained concentrations considered biologically relevant.

***C.C.O.W. 2 Enhance understanding of climate change impacts to water quantity and water quality and develop avoidance, mitigation and adaptation strategies.***

- Develop avoidance, mitigation, and adaptation strategies to respond to long-term environmental issues.

***C.C.O.W. 3 Increase data comparability across the region by improving standardization of water quality data collection and reporting and increasing monitoring where needed.***

- Develop and coordinate bacteriological monitoring strategies utilizing new, existing, and emerging methods.
- Unify data management for ease of access among all users, to preserve pertinent data and ancillary information for regional uses.

***C.C.O.W. 4 Improve marine debris removal programs, especially for abandoned and derelict vessels, traps, equipment, and navigation hazards.***

- Identify existing legislation and policies that could be applied within the region to strengthen enforcement capabilities.
- Promote recycling and reduction+B185 programs through education and outreach, including the South Atlantic Alliance Web site.
- Host community level workshops targeting public agencies, landowners, businesses, and elected officials to facilitate the transfer of information to decision makers and generate support for regional collaboration on all marine debris, including, but not limited to, removal of abandoned and derelict vessels, traps, equipment, and navigational hazards.

## **Disaster Resilient Communities**

### **Objectives and Actions**

***D.R.C. 1 Conduct regional and state-specific vulnerability assessments of: a) public infrastructure, social assets, and economies to hazards and climate change (including sea level rise) and b) natural processes and features that support resilience, including economic valuation of these ecosystem services.***

- Identify gaps in regional risk assessments with a particular focus on earthquakes and tsunamis.

***D.R.C. 5 Consider management and financial options for addressing short and long-term beachfront and estuarine shoreline migration.***

- Explore long-term potentials for "living shorelines" or alternatives to traditional bulkheads for erosion control.