

**ALABAMA
COASTAL AREA MANAGEMENT PROGRAM**

**SECTION 309
Enhancement Grant Program**

ASSESSMENT & STRATEGY

February 1, 2010

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SECTION I: INTRODUCTION

This document is an Assessment and Strategy for enhancing the Alabama Coastal Area Management Program (ACAMP) pursuant to Section 309 of the Coastal Zone Management Act (CZMA) of 1972, as reauthorized in 1990. The ACAMP is administered by the Alabama Department of Conservation and Natural Resources (ADCNR), State Lands Division (SLD), Coastal Section.

This document was developed by the ACAMP staff and is structured to conform to the Section 309 Program Enhancement Guidance provided by the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Ocean and Coastal Resource Management (OCRM). It contains an assessment of Alabama's coastal area resources, as they pertain to the nine enhancement areas identified by OCRM, and a multi-year strategy to implement projects that will enhance the areas determined to be a priority by the ACAMP.

This is the fifth Section 309 Assessment for the ACAMP. The first was completed and approved in March 1992; the second was completed and approved in March 1997; the third was completed and approved in March 2001, and the fourth was completed and approved in March 2006.

In Section III. Assessment, the ACAMP describes and assesses changes that have occurred in Alabama's coastal area since 2006 in relation to aquaculture, coastal hazards, cumulative and secondary impacts, energy and facility siting, marine debris, ocean resources, public access, special area management planning and wetlands. After assessing each area, the ACAMP ranked each area as high, medium or low priority for Section 309 funding for years 2011 through 2015. The ACAMP determined that the following areas are high priority: coastal hazards, cumulative and secondary impacts, ocean resources and wetlands.

In Section IV. Strategy, the ACAMP describes the projects and the funding needs to enhance these four areas during the five-year funding period.

The ACAMP prepared a draft Assessment and Strategy and made it available for public review and comment for a 30-day period from December 15, 2010 to January 14, 2011. A public notice was published in the two area newspapers during this time informing the public of the availability of the final draft assessment and strategy for review at the offices of the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section; the Alabama Department of Environmental Management (ADEM), Coastal Facility/Section and the website www.outdooralabama.com. In addition, the ADCNR and ADEM staffs submitted the document to the Coastal Resource Advisory Committee and the Technical Interagency Committee for review. Comments and response to comments are attached as appendix A.

SECTION II: OVERVIEW OF PAST 309 EFFORTS

For the 2006-2010 Enhancement Program cycle, the Alabama Coastal Area Management Program developed strategies to address the following high priority enhancement areas: Cumulative and Secondary Impacts, Wetlands and Hazards.

Cumulative and Secondary Impacts Strategy: Improve Coastal Decision Making

2008: Cumulative and Secondary Impacts

In 2008, Section 309 funds were subawarded to the Mobile County Health Department (MCHD) and the Alabama Department of Public Health (ADPH), which serves Baldwin County, to enhance their ability to monitor and track septic systems. The health departments used the GIS and GPS hardware and software that were purchased in 2004 with Section 309 funds to develop a spatial inventory of septic tank systems throughout the counties. These projects contributed towards full approval of one of the ACNPCP categories and were deemed consistent with the ACNPCP five-year plan.

The MCHD scanned 3,100 historical records into the web-based program enabling the department to send documents electronically to engineers, surveyors and some property owners. Also, the department entered into a contract with the software company, Garrison Enterprises, to build a “digital health department” for Mobile County and will build the web availability to the data that the department is scanning. Beyond the project period, the MCHD will continue to collect and enter pumper (maintenance) records and will continue to mail out voluntary notices reminding homeowners about proper septic system maintenance.

The ADPH for Baldwin County continued to collect GPS readings on new and existing septic tank systems and enter the data into an onsite sewage disposal system database. With the database, the ADPH is able to conduct the following types of activity: send monthly mailing of report forms to licensed septic pumpers; track pumped systems (630 septic tanks reported pumped during a six-month period); track re-inspections of existing systems (55 during a six-month period); track new permits issued (196 during a six-month period); track repair or upgrade permits issued for existing systems (121 during a six-month period); and send reminder letters to homeowners to have tanks checked for pumping (291 mailed during a six-month period).

2007-2009: Cumulative and Secondary Impacts - Wetlands

In 2007, Section 309 funds were subawarded to the Mobile Bay National Estuary Program to work with the U.S. Geological Service to complete the Coastal Alabama Wetlands Status and Trends Project. This project highlighted the difficulties in obtaining accurate wetlands mapping data in a timely manner and finding accurate historical data for comparison. Given the differing platforms, sensors, spatial resolution and classification schemes used by differing agencies over the years, it has proven almost impossible to develop what can be considered accurate wetlands status and trends data. Results of the project were submitted as attachments to the appropriate reports to NOAA. See “*Wetland Assessment*” section for details.

2007-11: Cumulative and Secondary Impacts

From 2007 through 2010, Section 309 funds were allocated to the Geological Survey of Alabama (GSA) to map and classify shoreline of all bays and major river systems in the two coastal counties and to produce a comprehensive dataset on shoreline armoring and the placement of structures (piers, docks, etc.) on public trust lands. The GSA mapped the shoreline characteristics of the eastern and northern shorelines of Dauphin Island, Dog River, Fowl River, Mississippi Sound, Mobile Bay, Bon Secour Bay, Weeks Bay, Gulf Intracoastal Waterway, Little Lagoon, Wolf Bay, Bayou LaLaunch, Arnica Bay, Bayou St. John, Perdido Bay, Old River, Terry Cove and Cotton Bayou, and all associated tributaries and canals.

The GSA used existing and historical data and aerial photography to develop an estimate of erosional and accretional trends and produced a GIS format suitable for use in an ArcGIS 9.1 environment. The final phase of the project will be completed by December, 2011. The final product, "Comprehensive Shoreline Mapping Report and Analysis," will provide coastal managers with a snapshot of the condition of the shorelines and will enable them to determine how best to proceed with alternative designs and related regulations to achieve resiliency from storms and erosion along the bays and inland waterways of coastal Alabama. The data will be used for education and outreach efforts, such as the inter-agency Living Shorelines Initiatives, and may also be used to develop new policy on shoreline armoring and living shoreline requirements and/or modification of current regulatory programs at the state and local level.

Wetlands Strategy: Enhance Submerged Aquatic Vegetation (SAV) Protection

In 2008 and 2009, Section 309 funds were subawarded to the Mobile Bay National Estuary Program for the mapping of submerged aquatic vegetation. During Fall 2008, seagrasses in Mississippi Sound and lower Perdido Bay were mapped. During Summer 2009, both seagrasses and SAVs in Upper Mobile Bay and the lower Mobile-Tensaw River Delta were mapped. Results of these mapping efforts were submitted as attachments to the appropriate reports to NOAA.

Regarding program changes, see last paragraph under 2011: Wetlands.

2011: Wetlands

During 2011, Section 309 funds have been subawarded to the Dauphin Island Sea Lab (DISL) to research alternatives regarding submerged aquatic vegetation restoration. The DISL will examine if sufficient seed reservoirs exist to restore two common submerged aquatic vegetation species – shoalgrass (*Halodule wrightii*) and tapegrass (*Vallisneria Americana*) – of the northern Gulf of Mexico as an alternative to the generally ineffective transplant methods used in the majority of seagrass restoration projects.

The objectives are (1) determining existence and extent of the seed reservoir for two dominant species of SAV found in the northern Gulf of Mexico, shoalgrass (*Halodule wrightii*) and tapegrass (*Vallisneria Americana*), (2) determining the most appropriate techniques for seed harvesting for *Halodule wrightii* and *Vallisneria neotropicalis*, and (3) determining whether restoration by seed planting is likely to be a viable strategy for restoring lost SAV acreage in the northern Gulf of Mexico. Results will be detailed in a final report, presented at professional meetings, published in refereed literature and posted on the DISL web site (web pages, podcasts, etc.).

The results will support the data gained from the 309-funded SAV mapping efforts, the analysis of SAV trends conducted under Section 306 during FY 2010, and other historical SAV data and will provide a more coherent picture of SAV status and trends in Alabama. As a whole, this information will provide guidance for future SAV mapping, conservation and restoration efforts in Coastal Alabama.

Taken as a whole, the SAV status and trends data, the SAV seed germination/restoration project, data from the Analysis of Historical Submerged Aquatic Vegetation (conducted by DISL utilizing FY 2010 - 306 funds) and other similar data sources will be utilized to determine if additional SAV protection policies, programs and regulations are needed in the Alabama Coastal Area. This could include additional no-motor zones, stricter regulations concerning impacts to SAVs and/or additional education and outreach programs. However, the analysis of this data may also indicate that no program changes are warranted at this time.

SECTION III: ASSESSMENTS

ENHANCEMENT AREA ANALYSIS -- AQUACULTURE

Section 309 Enhancement Objective

Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable States to formulate, administer and implement strategic plans for marine aquaculture.

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Generally characterize the private and public aquaculture facilities currently operating in your state or territory.

Type of existing aquaculture facility	Describe recent trends	Describe associated impacts or use conflicts
Local schools with aquaculture programs	Education and Research Program: School programs introduce the concepts of aquaculture through science curriculum. These programs utilize resources and information gained at ADCNR Marine Resources Claude Petite Maricultural Center (CPMC) to enhance their educational programs. The partnership may also explore the production of live bait as a new area of research that will support the growing recreational fishing industry.	Concerns exist in Alabama regarding management of the growing marine aquaculture industry. While vital to increased seafood supplies, its impact on the coastal environment and wild populations of fish and shellfish present concerns that include discharge of waste and chemicals, the destruction of the benthic community from waste feed and fecal deposition, the spread of disease or genetic changes resulting from the escape of farmed species, the demand for wild-caught fish as aquaculture feed, the conversion of sensitive habitats to create aquaculture facilities, and various concerns like noise, visual and odor pollution. Two other concerns are (1) anticipated conflicts between the traditional recreational and commercial users and the users of aquaculture and (2) designing offshore aquaculture facilities to withstand the effects of extreme waves and winds and be positioned in a way that is not a hazard to navigation. Beneficial opportunities of the growing marine aquaculture industry include the creation of jobs, the diversification of the
Marine Resources Division -- Claude Petite Maricultural Center (CPMC) in Gulf Shores	Restock / research program: MRD continues monitoring the list of fish and invertebrates that could be cultured in closed aquatic systems. The CPMC station has been used as a recovery tool in the production site of striped bass and red drum for annual restocking of depleted coastal fisheries.	
Oyster Gardening Program	Volunteer / education program: Administered by the Mobile Bay National Estuary Program (MBNEP), the Oyster Gardening Program utilizes volunteer participation of local citizens. These volunteers, located in Mobile and Baldwin Counties, are given oyster spat and shell that are placed in mesh bags, suspended from private piers, allowed to reach a larger size, transported to natural oyster bed reefs and placed on the reefs as part of a restoration project.	
Auburn University Marine Environmental Research Center (AUMERC)	AUMERC's ongoing oyster culture projects involve spawning oysters and setting larvae on whole shell and shell pieces at the Auburn Shellfish Laboratory on Dauphin Island. Resulting oysters are used for oyster restoration research, basic research and in the Oyster Gardening Program.	
Private shellfish aquaculture farm	One privately owned commercial oyster farm exists in coastal Alabama. According to the Auburn University Department of Fisheries & Allied Aquaculture and Alabama Cooperative Extension System, several other private shellfish farms are planned to open in 2011-2012.	

	This private oyster farm coordinates with Bryant High School, the Dauphin Island Sea Lab and Auburn University on various research projects at the site. The site is also used by local fishing guides due to productive fish habitat conducive for recreational fishing.	seafood industry, and environmental benefits associated with shellfish farming such as improved water quality and enhanced habitat diversity.
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Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Aquaculture regulations	N The Mississippi Alabama Sea Grant Consortium (MASGC) provides a guidance document for aquaculture, but this is not regulation of the industry. http://nsgl.gso.uri.edu/masgc/masgch97001.pdf .	N
Aquaculture policies	N ADCNR MRD has no written policies regarding offshore marine aquaculture, but the ADCNR may consider onshore or offshore marine aquaculture proposals on a case-by-case basis.	N
Aquaculture program guidance	N	N
Research, assessment, monitoring	Y Claude Petite Maricultural Center (CPMC) (see above table); various research projects at the private commercial oyster farm performed by Bryant High School, the Dauphin Island Sea Lab and Auburn University.	Y – regarding the private commercial oyster farm
Mapping	N	N
Aquaculture education & outreach	Y – tours of MRD’s CPMC; high school and college students conducting various research projects at the private commercial oyster farm.	Y – regarding the private commercial oyster farm
Other (please specify)	None	None

2. For management categories with significant changes since the last assessment, provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.

- a) Characterize significant changes since the last assessment.
- b) Specify if it was a 309 or other CZM driven change (specify funding source) or if it was driven by non-CZM efforts.
- c) Characterize the outcomes and effectiveness of the changes.

There were two significant changes since the last assessment in the categories of Research, Assessment, Monitoring and Aquaculture Education & Outreach. Since the last assessment, one privately owned commercial oyster farm was established. This farm coordinates with an area high school, as well as universities, on various research projects at the site. Aside from the research data collected by these projects, education and outreach opportunities were provided through the visitation of a commercial shellfish farm illustrating how the industry relates to the environment.

These changes were not CZM funded. This was a private citizen endeavor.

Outcomes and effectiveness of these changes are still to be determined. However, potential outcomes could result in the establishment of additional farms once it can be demonstrated that a profit could be made on a consistent basis. Other outcomes could include science to management practices and increased educational opportunities.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Definition of aquaculture, marine aquaculture and shellfish farming	Policy, communication & outreach	M
Streamline guidance of policies and regulations for starting and operating an aquaculture, marine aquaculture or shellfish farm	Regulatory, policy, communication & outreach	M
Development of aquaculture zones	Regulatory, policy	M

The lack of a commonly understood working definition of the terms aquaculture, marine aquaculture (or mariculture) and shellfish farming has caused some confusion for both planning and education and outreach.

The current permitting process for shellfish farming has been described as confusing and cumbersome. Guidance and communication could reduce this confusion and streamline the process thus making attracting more operators to this industry.

The Auburn University Department of Fisheries and Allied Aquaculture has initiated the development of aquaculture zones in areas where there is the least chance of causing user conflicts and support a large number of oyster farms.

Enhancement Area Prioritization

2. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High	_____
Medium	_____ XX _____
Low	_____

Briefly explain the level of priority given for this enhancement area.

The Alabama Coastal Area Management Program (ACAMP) staff considers this enhancement area a medium priority for the state. The aquaculture industry in coastal Alabama is in its formative stages and the identified gaps may be addressed by ACAMP partners.

3. Will the CMP develop one or more strategies for this enhancement area?

Yes _____
No XX

Briefly explain why a strategy will or will not be developed for this enhancement area.

The Alabama Coastal Area Management Program (ACAMP) recognizes the growing interest of a viable aquaculture industry in coastal Alabama. However, other means of CZM funding, such as 306 or 306A, may be used to support this enhancement area at this time.

ENHANCEMENT AREA ANALYSIS – COASTAL HAZARDS

Section 309 Enhancement Objective

Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise.

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Characterize the level of risk in the coastal zone from the following coastal hazards:

(Risk is defined as: “the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage.” *Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001*)

Type of hazard	General level of risk (H,M,L)	Geographic Scope of Risk (Coast-wide, Sub-region)
Flooding	High	Coast-wide, coastal and inland communities
Coastal storms, including associated storm surge	High	Coast-wide
Geological hazards (e.g., tsunamis, earthquakes)	Low	Coast-wide, coastal and inland communities
Shoreline erosion (including bluff and dune erosion)	High	Coast-wide, coastal communities
Sea level rise and other climate change impacts	Potential for High risk	Coast-wide, coastal communities
Great Lake level change and other climate change impacts	N/A	N/A
Land subsidence	Low	Coast-wide, coastal and inland communities
Other (please specify)	None	N/A

2. For hazards identified as a high level of risk, please explain why it is considered a high level risk. For example, has a risk assessment been conducted, either through the State or Territory Hazard Mitigation Plan or elsewhere?

Flooding

Based on statistics compiled by both counties and the state, the flooding risk has remained high since the last assessment due to the frequent occurrence of tropical and winter storms and year-round heavy rainfall that is common in South Alabama combined with urbanization, increased development in flood-prone areas and increases in impervious surfaces. Low-lying areas inland are especially vulnerable to flooding from rising rivers and streams from both storms and heavy rainfall. Low-lying areas along the coast are especially vulnerable to flooding from storm surge, in even minor hurricanes and tropical and winter storms. These risks are well documented in post-storm evaluations conducted by each community and addressed in their ordinances and adherence to their community rating system. The Mississippi-Alabama Sea Grant Consortium’s Coastal Storms Program has piloted and implemented a Resiliency Index for coastal communities. The Resiliency Index is a self assessment for communities to determine where their strengths and weaknesses are when a storm

arises. This allows communities to address weaknesses so that they become more resilient in the face of flooding, storm surge, hurricanes and other natural coastal hazards. Since the Resiliency Index's inception, the communities of Dauphin Island, Bayou La Batre, Gulf Shores and Orange Beach have participated in the assessment.

Coastal Storms/Storm Surge

Winds from hurricanes and associated tornados have a devastating effect on structures along the coast and inlands. The storm surge associated with hurricanes is equally as devastating as the winds. Storm surge can reach upwards of 15 feet of water on land, and its force decimates houses, businesses and communities. Because of the high frequency of hurricanes in the northern Gulf Coast, storm surge is listed as a high level of risk. These risks are well documented in post-storm evaluations conducted by each community and addressed in their ordinances and adherence to their community rating system.

Shoreline Erosion

The risk of shoreline erosion remains high since the last assessment. Both coastal counties experience intermittent erosion, and beach nourishment projects have been implemented and monitored on Dauphin Island, the cities of Gulf Shores and Orange Beach, and the Gulf State Park. In addition, residents in these areas constructed dune fencing in order to establish and maintain dunes and dune vegetation. The high occurrence of tropical and winter storms in the region assures a continued high risk of erosion. In addition, the after-effects of shoreline erosion can lead to a higher risk of flooding. For example, due to extensive erosion caused by Hurricanes Ivan and Katrina, areas such as the west end of Dauphin Island have become more prone to storm surges and coastal flooding even during minor storm events. The Alabama Department of Conservation & Natural Resources (ADCNR), State Lands Division, Coastal Section, through 306 funding, documents and analyzes erosion and accretion annually and also after a major storm event.

Sea Level Rise (and other climate change impacts)

The risk and affects of sea level rise in Coastal Alabama is unknown and for the most part not discussed. However, today's scientific and weather data and literature indicate that this is a risk that should be studied and planned for in all coastal areas. The International Panel on Climate Change (IPCC) estimates that the global average sea level will rise between 0.6 and 2 feet (0.18 to 0.59 meters) in the next century.

3. If the level of risk or state of knowledge of risk for any of these hazards has changed since the last assessment, please explain.

No changes to flooding, storm surge/coastal storms and shoreline erosion. Risks remain high. With respect to sea level rise, the risk is emerging according to recent scientific and weather data and literature.

4. Identify any ongoing or planned efforts to develop quantitative measures of risk for these hazards.

The Alabama Emergency Management Agency has a planning branch that is responsible for maintaining and revising the state's Comprehensive Emergency Management Plan, as well as working with county emergency management agencies in maintaining their emergency plans. The branch also oversees the agency's Hazardous Materials and Waste Isolation Pilot Programs. Those programs assist Local Emergency Planning Committees with their response plans for hazardous materials and nuclear waste shipments. The branch also oversees the mitigation program that is responsible for mitigating the state against natural disasters/events that impact the State of Alabama.

The Gulf of Mexico Alliance's Coastal Community Resiliency Team has been piloting a Community Resiliency Index that allows local community leaders to rate themselves based on this index to see where their community will fall short during and after a natural hazard. Community leaders can use this index when preparing and strengthening their communities to avoid devastation after a natural event has occurred.

5. **(CM)** Use the table below to identify the number of communities in the coastal zone that have a mapped inventory of areas affected by the following coastal hazards. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

Type of hazard	Number of communities that have a mapped inventory	Date completed or substantially updated
Flooding	25	Recent FEMA - FIRM maps. Mobile County maps were updated in 2010; Baldwin County maps were updated in 2002.
Storm surge	Coastal counties were modeled using SLOSH; however, it is unknown how many communities utilize the models.	Storm surge maps (SLOSH models) developed region-wide by NOAA's National Hurricane Center. SLOSH models are as recent as 2009 and 2010.
Geological hazards (including earthquakes, tsunamis)	None	N/A
Shoreline erosion (including bluff and dune erosion)	Entire Gulf of Mexico shoreline of Alabama – two coastal counties and three cities	Annual survey conducted by ACAMP – CZM 306 funds. 2010 is the most recent update.
Sea level rise	None	N/A
Great lake level fluctuation	N/A	N/A
Land subsidence	None	N/A
Hardened shorelines in communities on bays and coastal rivers	Unknown	Comprehensive Shoreline Mapping survey being conducted currently.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Building setbacks/restrictions	Y – Div. 8 CCCL	N
Methodologies for determining setbacks	Y – Div. 8 CCCL	N
Repair/rebuilding restrictions	N – new building codes implemented by Local Gov't ordinances	N
Restriction of hard shoreline protection structures	N	N
Promotion of alternative shoreline stabilization methodologies	N	N
Renovation of shoreline protection structures	N	N
Beach/dune protection (other than setbacks)	Y – State Statutes protecting dune vegetation	N
Permit compliance	Y	N
Sediment management plans	Y	N
Repetitive flood loss policies, (e.g., relocation, buyouts)	Y – FEMA & Alabama Emergency Mgt. Agency (AEMA)	N
Local hazards mitigation planning	Y – FEMA & AEMA with local governments	N
Local post-disaster redevelopment plans	Y – FEMA & AEMA with local governments	N
Real estate sales disclosure requirements	N	N

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Restrictions on publicly funded infrastructure	N	N
Climate change planning and adaptation strategies employed by state/territory	N	N
Special Area Management Plans	N	N
Hazards research and monitoring	Y (CZM 306 & 309 subawards)	N
Hazards education and outreach	Y	Y
Other (please specify)	None	N/A

2. For management categories with significant changes since the last assessment, provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.

- a) Characterize significant changes since the last assessment.
- b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts.
- c) Characterize the outcomes and effectiveness of the changes.

CZM has partnered with the Gulf of Mexico Alliance (GOMA) Coastal Community Resilience team and the Mississippi-Alabama Sea Grant Consortium's Coastal Storms Program to create the Alabama Homeowner's Guide to Natural Hazards.

3. **(CM)** Use the appropriate table below to report the number of communities in the coastal zone that use setbacks, buffers or land use policies to direct development away from areas vulnerable to coastal hazards. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

For CMPs that use numerically based setback or buffers to direct development away from hazardous areas, report the following:

Contextual measure	Number of communities
Number of communities in the coastal zone required by state law or policy to implement setbacks, buffers or other land use policies to direct develop away from hazardous areas.	None
Number of communities in the coastal zone that have setback, buffer or other land use policies to direct develop away from hazardous areas that are more stringent than state mandated standards or that have policies where no state standards exist.	Two-Orange Beach and Gulf Shores are delegated to enforce the ADEM Division. 8 Beach and Dune Rules. This delegation is voluntary.

For CMPs that do not use state-established numerical setbacks or buffers to direct development away from hazardous areas, report the following:

Contextual measure	Number of communities
Number of communities in the coastal zone that are required to develop and implement land use policies to direct development away from hazardous areas that are approved by the state through local comprehensive management plans.	N/A
Number of communities that have approved state comprehensive management plans that contain land use policies to direct development away from hazardous areas.	N/A

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Research on the effects of sea level rise.	Data	H
Communication of research results related to coastal hazards and, especially, future data developed on sea level rise.	Communication & outreach	H
Established policy with regard to new threats, i.e., sea level rise.	Capacity & data, regulatory	H

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High XX
Medium
Low

Briefly explain the level of priority given for this enhancement area.

As stated above under “Resource Characterization,” the risk and effects of sea level rise in Coastal Alabama is unknown and for the most part not discussed. However, today’s scientific and weather data and literature indicates that this is a risk that should be studied and planned for in all coastal areas. The International Panel on Climate Change (IPCC) estimates that the global average sea level will rise between 0.6 and 2 feet (0.18 to 0.59 meters) in the next century.

2. Will the CMP develop one or more strategies for this enhancement area?

Yes XX
No

Briefly explain why a strategy will or will not be developed for this enhancement area.

1. A strategy will be developed under Ocean Resources that will include a sea level rise component to educate local governments in the benefits of structuring land use plans and ordinances that can reduce the threat of sea level rise to their community and can lead to the formulation of policies at the state level (especially the ACAMP and the Alabama Emergency Management Agency) that further reduce this threat, especially as it relates to the inundation of coastal wetlands that would increase the threat of flooding.
2. This strategy will also address the objectives of the Ocean Resources and the Cumulative and Secondary Impacts enhancement areas.
3. A second strategy, an integrated Alabama Coastal Restoration Program, will be developed under Wetlands that has will also address this enhancement area and Cumulative and Secondary Impacts as the strategy relates to the comprehensive protection and restoration of wetlands and buffer areas in protecting both natural resources and developed areas. A restoration program can be used by both state and local governments in planning and structuring policies and regulations to mitigate threats to developed coast lines.

ENHANCEMENT AREA ANALYSIS – CUMULATIVE & SECONDARY IMPACTS

Section 309 Enhancement Objective

Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources.

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Identify areas in the coastal zone where rapid growth or changes in land use require improved management of cumulative and secondary impacts (CSI) since the last assessment. Provide the following information for each area:

Geographic area	Type of growth or change in land use	Rate of growth or change in land use (percent change, average acres converted, H,M,L)	Types of CSI
Baldwin County	<p>Industrial/Commercial/Residential</p> <p>2010: Baldwin County population reaches more than 174,000 (from an estimate 156,701 in 2004 and 140,000 in 2000).</p> <p>2010: Baldwin County announced that developers may apply for a one-time, 12-month extension of their subdivision plans. These are approved plans that were stalled in various stages of development due to the economy. Up to 12 large subdivisions could be affected.</p>	<p>Medium to High – Industrial</p> <p>Medium to Low -- Commercial & Residential, but expected to increase as the economy improves</p>	<p>From development – increased impervious surface; stormwater runoff causing erosion and sedimentation of receiving waters; additional pressure on groundwater reserves; wetland fill outside of 10-foot contour (coastal area); increased pressure to develop in areas of unknown hazards, i.e. sea level rise; habitat loss esp. forested area, conversion of agricultural lands to residential and commercial development.</p>
Baldwin County – Inland	<p>Industrial/Commercial/Residential</p> <p>Lillian voters rejected incorporation in 2007. Therefore, this area will remain without the benefit of local ordinances and authority to determine how the area can and should be developed.</p> <p>Four connector routes to Interstate 10 are planned in primarily rural areas of Baldwin County. The \$52 million, four-phase plan could be completed by 2014.</p> <p>2007: Baldwin County school officials launch ambitious construction campaign, borrowing \$150 million for new schools.</p>	<p>Medium to High – Industrial</p> <p>Medium to High – Commercial & Residential</p> <p>A large number of partially developed subdivisions are expected to be completed as the economy recovers</p>	<p>From development – increased impervious surface; stormwater runoff causing erosion and sedimentation of receiving waters; additional pressure on groundwater reserves; wetland fill outside of 10-foot contour (coastal area); increased pressure to develop in areas of unknown hazards, i.e. sea</p>

	<p>2005-2010: Numerous fields and pecan groves and some forested areas in Baldwin County have been developed as subdivisions, from large tract subdivisions and multi-use developments to smaller one-street subdivisions; due to economic downturn, some projects remain partially developed with only streets and utilities.</p> <p>2008-2009: Widening of state highways and extensions of county roads have begun due to greatly increased traffic. as crop lands and pecan groves are developed for residential housing.</p> <p>2010-2012: Hybrid Kinetic Motors Corporation. has proposed to build a \$4.3 billion automobile plant in the northern part of Baldwin County that would employ 5,800 and produce 300,000 vehicles per year, increasing to one million a year.</p>		<p>level rise; habitat loss esp. forested area, conversion of agricultural lands to residential and commercial development.</p>
Mobile County	<p>2009: Although housing sales have stalled in 2009, as recent as 2007, Mobile was ranked by cnn.com as the “Seventh Fastest-Growing Housing Market in the Country”; home sales in the Mobile Bay area increased 18.4 percent from 2004 to 2005.</p> <p>2010: Long-range plans for improvements to transportation routes in Mobile County through 2035 include approximately \$300 million for a new bridge to cross the Mobile River; \$70 million to widen a road (Snow Road) to create an additional bypass route as the population continues to move to the western area of the county; and \$35.5 million to widen a north-south highway route (Alabama Hwy 193) in south Mobile County. The plan is based on a growth of 155,000 households in 2007 to 200,000 in 2035 and an increase in vehicle trips per day from 1.3 million in 2007 to 1.8 million in 2035.</p> <p>2010: Mobile County awarded \$13 million for 21 road projects during the first four months of the fiscal year and expects to award another \$7 million for additional projects. Officials commented that the improvements would attract people and industry.</p>	<p>Medium to High: Industrial Medium: Commercial & Residential but expected to increase as the economy improves</p>	<p>From development – increased impervious surface; stormwater runoff causing erosion and sedimentation of receiving waters; additional pressure on groundwater reserves; wetland fill outside of 10-foot contour (coastal area); increased pressure to develop in areas of unknown hazards, i.e. sea level rise; habitat loss esp. forested area, conversion of agricultural lands to residential and commercial development.</p>
Mobile County - Inland	<p>2007: German steelmaker ThyssenKrupp AG builds \$4.6 billion mill on the Tombigbee River on 8.6 sq. miles of forested land in north Mobile County; 5,000 are now employed to build the plant; once opened, expected number of employees will be 2,700; expected annual production capacity is 5.5 million metric tons of steel</p> <p>2007: Shoe Station builds megastore in Mobile.</p>	<p>Mobile County Inland – Medium to High for Industrial, Commercial, Residential – expected to increase as the economy improves</p>	<p>From development – increased impervious surface; stormwater runoff causing erosion and sedimentation of receiving waters; additional pressure on groundwater reserves; wetland fill outside of 10-foot</p>

	<p>2007: Two public housing developments near downtown are demolished to be replaced with mixed use housing.</p> <p>2010: A Swedish steel firm (SSAB) announced it will expand its steel mill in north Mobile County. The expansion is a new heat treatment line that allows strengthening of steel and will allow for an additional yearly capacity of 200,000 metric tons.</p>		<p>contour (coastal area); increased pressure to develop in areas of unknown hazards, i.e. sea level rise; habitat loss esp. forested area, conversion of agricultural lands to residential and commercial development.</p>
<p>Gulf of Mexico Beach Communities</p>	<p>2009: Perdido Beach become Baldwin County's 12th municipality and achieves the right to determine how and where growth can occur.</p> <p>2010: City of Gulf Shores approved \$4.76 million boat basin on 14 acres of municipal property along the Intracoastal Waterway; the basin will be three acres; the funding is a Federal Economic Development Administration grant; vessels serviced expected to be up to 150 tons and 115 feet long.</p> <p>2010: City of Gulf Shores approved zoning for a 250-room hotel and a 40,000-square-foot conference center including three restaurants and 500-space parking deck near the Intracoastal Waterway.</p> <p>2010: US Army Corps of Engineers approved plan that could allow developers of 15 marinas to carve out 3.1 million cubic yards of earth from the banks of the Intracoastal Waterway for almost 3,100 boat slips; 246-page environmental impact study includes predictions of effects on water quality; waterway is 10 miles long, 125 feet wide and flows through the cities of Gulf Shores and Orange Beach.</p> <p>2010: Alabama Gulf Coast Convention & Visitors Bureau (CVB) formed the Alabama Gulf Coastal Sports Commission seven years ago for the specific purpose of bringing athletic events to south Baldwin County, and the cities of Gulf Shores and Orange Beach spent millions improving their athletic facilities. The CVB now reports that tourism spending on athletic events doubled from 2008 to 2009.</p> <p>2010: Realtors reported sales for gulf-front condominiums have greatly increased, although most are short sales and foreclosures. Belief is that the industry has bottomed out and will gradually improve, bring the probability of new construction startups within the next two to three years.</p>	<p>Medium to High – Commercial & Residential</p> <p>Both the cities of Gulf Shores and Orange Beach have publicly stated that the economic development plans they have recently approved are expected to restart a lucrative resort construction business that has come to a near standstill since the economic downturn.</p>	<p>From development – increased impervious surface; stormwater runoff causing erosion and sedimentation of receiving waters; additional pressure on groundwater reserves, non-wetland habitat loss; increased pressure to develop in areas of unknown hazards, i.e. sea level rise; increase in hardened shoreline structures habitat loss esp. some beach & dune areas and wetland fill from variances on permits for single family homes.</p>
<p>Communities along bay and estuarine areas</p>	<p>2006: Magnolia Springs becomes Baldwin County's 11th municipality and achieves the right to determine how and where growth can</p>	<p>Low for Magnolia Springs area where Springs voters have</p>	<p>From development – increased impervious surface; stormwater</p>

	<p>occur.</p> <p>Industrial, Commercial, Residential</p> <p>2004: Carnival Cruise Line moved into Mobile; upgraded to a larger ship in 2009; it brings more than 120,000 tourists to the city per year and has a \$20 million annual impact.</p> <p>2005: EADS North America Inc. chooses Mobile to build refueling tankers; currently on hold pending decision by Federal government to award contract; site of plant is at Brookley Field, a 1700-acre industrial complex (formerly an Air Force base).</p> <p>2007: Airbus Engineering Center opened and employs more than 150 aerospace engineers; depending on EADS success with Federal contract, Airbus plans to expand and build commercial air freighters.</p> <p>2007: Retirement Systems of Alabama built a 35-story tower and renovated a historic hotel in downtown Mobile; construction began on hundreds of residential condominiums and, according to the city of Mobile's master plan for downtown, more retail outlets are expected to follow, revitalizing downtown.</p> <p>2009: An 80,000-sq. ft. National Maritime Museum of the Gulf of Mexico is under construction in downtown Mobile on the waterfront; included in the plan are ferries across Mobile Bay so visitors can shop and dine in towns on the Eastern Shore of Mobile Bay.</p>	<p>expressed a desire to maintain their village-like atmosphere.</p> <p>Mobile County Bay Area – Medium to High for Industrial, Commercial, Residential – expected to increase as the economy improves</p>	<p>runoff; additional pressure on groundwater reserves; increased pressure to develop in areas of unknown hazards, i.e. sea level rise; non-wetland habitat loss esp. forested area, increase in hardened shoreline structures.</p>
GAPC	<p>2008: Alabama State Port Authority and private partners open \$300 million Mobile Container Terminal.</p> <p>2006: Alabama's export sales was \$13.88 billion in 2006; Alabama exported goods to 219 foreign destinations during 2006 and was ranked 11th largest in waterborne trade by cargo volume. The top five exports from the state were vehicles (representing 35% of all Alabama exports), industrial machinery (14%), chemicals (6%), optical and medical instruments (5%) and plastics (4.5%).</p>	<p>High</p> <p>Port of Mobile is a GAPC and a source of revenue for the state. The management target is expansion.</p>	<p>Entry for invasive exotics; pollution from container ships; habitat loss from additional development; pollution from stormwater runoff</p>
Coastal Counties	<p>2010: Report that state allows 7.5 percent of the nation's garbage to be deposited in landfills in Alabama; two landfills are in the coastal counties and are allowed to accept between 251 to 7,500 tons per day; permitting process allows local governments to decide to locate a landfill, thus generating income; per ton charge is lower than many states.</p>	<p>Medium to Low</p>	<p>Mercury (and possibly other heavy metals) leaking into the environment (per EPA, all landfill liners will ultimately leak)</p>

2. Identify sensitive resources in the coastal zone (e.g., wetlands, waterbodies, fish and wildlife habitats, critical habitat for threatened and endangered species) that require a greater degree of protection from the cumulative or secondary impacts of growth and development. If necessary, additional narrative can be provided below to describe threats.

Sensitive resources	CSI threats description	Level of threat (H,M,L)
Groundwater	Overexploitation will reduce quantity and allow saltwater intrusion; coastal flooding in low-lying areas can introduce salinity into wells; lack of permitting of wells that draw less than 50 gpm in the coastal area.	H, as development pressures increase
Beach & Dune	Loss of habitat for endangered beach mouse (Alabama beach mouse and Perdido beach mouse). Increased development pressure in areas of unknown hazard potential, i.e. sea level rise.	M, the US Fish & Wildlife Service is in the process of releasing a management plan for development in the endangered species habitat. H, development pressure in areas of unknown hazard potential, i.e. sea level rise.
Habitat (forest, isolated wetlands)	Loss from increased development – residential, commercial and light industrial.	H
Seagrass Beds	Degraded Water Quality; disturbance from boating.	M-H, as population increases, boat registrations will increase causing greater impacts from boating activities.
Estuarine Near-shore Habitat	Shoreline alteration. Increased development pressure in areas of unknown hazard potential, i.e. sea level rise.	H
Floodplains	Residential and commercial development potential to shift water flow and increase flooding in traditionally non-flood area. Increased development pressure in areas of unknown hazard potential, i.e. sea level rise.	M to H, as development pressures increase

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management Categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Regulations	Y	N
Policies	Y	N – state; Y – local govts
Guidance	Y	N – state; Y – local govts
Management Plans	N	Y – state (1); Y – local govts
Research, assessment, monitoring	Y	Y

Mapping	Y	N
Education and Outreach	Y	Y
Other (please specify) Local Land Use Planning	N	Y

2. For management categories with significant changes since the last assessment, provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.

- a) Characterize significant changes since the last assessment.
- b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts.
- c) Characterize the outcomes and effectiveness of the changes.

Policies/Guidance/Management Plans (local and state)

Local

Baldwin County completed a Comprehensive Land Use Plan in 2008. The plan includes components for natural resource protection, green space and directing development to maintain sustainability of resources.
Source of funding: CZM 306.

Baldwin County is in the process of developing a Baldwin County Land Use/Land Cover Update that will include a trend analysis and update of the land use/land cover classification data using the 2009 Color Infrared Imagery.
Source of funding: CZM 306.
Effectiveness: Project is in progress.

The City of Loxley completed a Comprehensive Plan in 2009. The city is located in Baldwin County about 25 miles from the Gulf Coast. The plan includes components for natural resource protection, green space and directing development to maintain sustainability of resources.
Source of funding: CZM 306.
Effectiveness: This is still in the early stages of use; however, the goals of the city council and residents are to establish and maintain a small town atmosphere and green space while planning for commercial and light industrial areas that are necessary since the city is strategically located just off of Interstate 10, which is the primary east coast to west coast route in the southern United States.

The Town of Magnolia Springs completed and adopted a Comprehensive Plan in 2008-2009. The town is located along the Magnolia River near Weeks Bay. The plan includes components for natural resource protection, green space and directing development to maintain sustainability of resources. The plan also includes a drainage/storm water management plan, which the city further developed by preparing a comprehensive situation analysis and long-termed recommendations to address drainage basins in and around the town with the emphasis of remaining within the limits of systems attainable by low-impact standards so as to protect the Magnolia River and maintain the nature of the community and the stated goals of the comprehensive plan. The drainage plan was adopted by the town council on 09/22/2009.
Source of funding: CZM 306.
Effectiveness: This is still in the early stages of use; however, the goal of the town council and residents have been to maintain the atmosphere of the town, direct development in keeping with the town's standards and protect both the Magnolia River and the natural spring located in the town.

The inland cities of Bay Minette (Baldwin County) and Satsuma (Mobile County) developed comprehensive plans. The plans include components for natural resource protection, green space and directing development to maintain sustainability of resources.

Source of funding: CZM 306.

Effectiveness: The Bay Minette and Satsuma comprehensive plans are in final draft for adoption by the cities' planning commissions and will serve as guidance for future legal and policy decisions as determined by the city council. It was developed with public input through citizen workshops and opinion surveys and with analysis by the South Alabama Regional Planning Commission. The issues of greenspace; development in floodplains, wetlands, and forested areas; water quality; aquifer protection; and connectivity between developments are addressed throughout the plan and are included in more than one of the categories of housing, transportation, land use, natural resources, parks and recreation, downtown and historic resources, etc. Each category has via two components: an inventory of the current conditions and a list of proposed recommendations and strategies to achieve desired community goals. The final draft of the comprehensive plan will be submitted to NOAA/OCRM in the third performance report under NA09NOS4190169.

The inland City of Chickasaw (Mobile County) developed a Three-Year Coastal Community Strategic Vision Plan, 2010-2012. The plan includes components for preserving cultural heritage, natural resource stewardship, green space and low impact development for the sustainability of resources.

Source of funding: CZM 306. Effectiveness: The Chickasaw strategic vision plan is part of the city's long-termed community planning process. This plan was developed with public input through town hall meetings with analysis by the Auburn University Urban Design Studio. The issues of greenspace, low impact design, cultural heritage, sense of community and civic identity, conservation and stewardship of natural resources, and developing partnerships are addressed in the plan. The strategic vision process identified five top-level areas for the community: governance, commerce and economic development, education, civic engagement, and communications and marketing. A goal for each area was developed, as well as strategies for implementation of the goal. Success measurement indicators were established for evaluation of success level. Critical success factors were identified to determine what must be achieved for success, as well as barriers that could hinder success. The final draft of the strategic vision plan will be submitted to NOAA/OCRM in the third performance report under NA09NOS4190169.

State

Corridor Management Plan for the Coastal Connection Scenic Byway was completed and the Byway Management Team organized committees to take on Action Items identified in the plan. (Plan is online at www.agccvb.org/stats.)

Source of funding: CZM 306 and partners.

Effectiveness: Early progress includes public outreach, mapping and additions to the byway.

Research, Assessment & Monitoring

The University of Alabama conducted a multi-phase groundwater resources study that was completed in 2009 and produced the "Characterization of Groundwater Resources in Southern Baldwin County, Alabama: Geophysical and Geochemical Surveys of Saltwater Intrusion and Groundwater Evolution."

The study involved detailed geochemical and isotope study of the aquifers in the region in order to assess primary recharge sources, groundwater ages and associated residence times, and evolution of groundwater along major flow paths. In addition, a geophysical study implementing ground penetrating radar was conducted to refine the extent of the saltwater/freshwater interface to determine areas either experiencing saltwater intrusion directly or most vulnerable to these sources of contamination.

The study concluded that southern Baldwin County is susceptible to seawater because of the following factors: (1) Groundwater is the county's only source of freshwater for industrial, municipal and private use. (2) The county's freshwater source is subject to overexploitation since it is a popular destination for visitors from all over the nation and world on a year round basis because of beautiful beaches, unlimited recreational opportunities, health and economy. The county has attracted a larger

and larger residential and industrial population, which contributes to the county's explosive population growth since the 1980s. (3) Saltwater spray and coastal flooding of lowland areas as a result of tropical storms and hurricanes in the Gulf of Mexico can increase the salinity of water in the shallow aquifers as well. The study did not address the potential of sea-level rise.

Source of funding: CZM 306.

Effectiveness: No action to date.

Education & Outreach

FLOODPLAIN HABITAT: The 2008 Coastal Alabama Regional Curve Workshop was developed and presented by the Coastal Training Program, Weeks Bay National Estuarine Research Reserve (WBNERR), to educate participants regarding Alabama's first Riparian Reference Reach and Regional Curve Study that was developed for the Lower Coastal Plain. Participants were instructed on the application of the regional curve and reference reaches information that should be utilized as a tool for regional stream restoration or large local stormwater projects in order to approximate natural conditions that benefit associated stream functions for Southwestern Alabama.

Source of funding: CZM 310.

Effectiveness: Information disseminated to participants employed by local governments, engineering firms and non-profit organizations.

SUSTAINABLE DEVELOPMENT: The Alabama Gulf Coast Convention and Visitors Bureau (AGCCVB) sponsored and facilitated a sustainable/ecotourism summit on November 1, 2007. The summit was attended by approximately 125 local business people. In addition, the AGCCVB has a continuing sustainable tourism program to promote the area's nature-based assets through advertising, websites, welcome center displays and public relations efforts. In addition to the information gathered on an ongoing basis through the AGCCVB's Visitor Profile Study (online at www.agccvb.org/stats), the Nature Tourism Specialist continued collection of economic data from the nature-based businesses in order to provide another benchmark for tourism dollars spent on nature based activities.

Other activities by the AGCCVB include the following:

Posting Clean Marina designations on the AGCCVB's website, www.orangebeach.com and coordinating with the Mississippi-Alabama Sea Grant Consortium to periodically distribute program materials to marinas.

- Developing a Clean Island Initiative with the cities of Gulf Shores and Orange Beach to implement an island-wide stewardship, recycling and anti-litter program.
- Developed a Certified Nature Guide training program in conjunction with the Weeks Bay NERR and held the first training workshop in February, 2010; follow-up evaluations for certification are underway.
- Produced and installed 28 interpretive sign templates of the newly designated National Scenic Byway, the Alabama Coastal Connection Scenic Byway.

ADCNR, Marine Resources Division: Currently developing the CFISH program to promote marine conservation and stewardship training for Alabama charter captains and deckhands.

Source of funding: CZM 306; 315; non-CZM grants.

Effectiveness: The AGCCVB tracks progress and confirms ongoing implementation.

Local Land Use Planning

There are no comprehensive state planning programs; however, some activities of state agencies affect local planning activities:

WATER QUALITY: The Mobile County Health Department (MCHD) staff completed in 2009 a pilot OSDS Inventory Project designed to create, define and map GIS layers of private septic tank information that will provide an efficient sub-watershed based desktop inventory, with utility-based ground-truthed reference maps for Onsite Sewage Disposal Systems. In addition, the MCHD scanned

historical records into the web-based program enabling the department to send documents electronically to engineers, surveyors and some property owners regarding rules and maintenance of OSDS.

Source of funding: CZM 306 & 309.

Effectiveness: MCHD now operates a significantly more effective and efficient program and has an improved permitting, monitoring and enforcement ability.

The Alabama Department of Public Health (Baldwin County) continues the practice of mailing report forms to licensed septic pumpers monthly and mailing pump-out reminder letters to homeowners. The county significantly increased their onsite sewage disposal system database with accurate information on pump-out activities and improved monitoring and enforcement. The database contains the pump out dates, re-inspection dates and reports, permits issued for installation of new septic tank systems; permits issued for repair or upgrade of existing systems; and GPS readings on new and existing septic tank systems. The ADPH promotes proper installation and maintenance of OSDS through public education/outreach activities including an information booth and display at the Baldwin County Fair. The ADPH staff engages in ongoing training such as the Onsite Sewage Conference at Auburn University to learn about new technologies and onsite system maintenance. Timeframe is 2007 and ongoing.

Source of funding: CZM 306 & 309.

Effectiveness: MCHD operates a significantly more effective and efficient program with improved permitting, monitoring and enforcement.

STORMWATER: For the past three years, Mobile Bay National Estuary Program (MBNEP) has facilitated efforts with 14 municipalities and Baldwin County to develop a regional watershed-based approach to managing stormwater and, as a first step, placed a referendum to pave the way for state legislation to establish a public corporation and garner additional revenue to support stormwater management in Baldwin County.

Source of funding: non-CZM.

Effectiveness: Referendum was on the ballot November 2, 2010, but was rejected by voters.

COASTAL DEPENDENT USES-WORKING WATERFRONTS: House Joint Resolution 656 passed during the 2008 Legislative Session places Alabama in the forefront along with Florida, Maine and North Carolina in addressing waterfront access. Issues related to access to the working waterfront have come to the national forefront. The Waterfront Access Study Committee provided the Final Recommendations Report to the Alabama Legislature in March 2010, which detailed the loss and potential loss of the diversity of uses along the shorelines of Alabama, and how these losses impact access to the public trust waters of the state.

Source of funding: non-CZM.

Effectiveness: Project in progress through the state legislature.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H, M, L)
Awareness of cumulative and secondary impacts by the majority of citizens and public officials is limited as exhibited in the way the resources are used and in the planning decisions made by local coastal governments.	Data, training, communication & outreach	M
Comprehensive planning tool(s) to address	Regulatory, policy, data, training,	H

potential opportunities and possible threats that the coastal area could face in future years, especially as a result of sea level rise.	capacity, communication & outreach	
Lack of planning for alternatives to hard structures along the shorelines of estuaries, rivers, bays and bayous.	Regulatory, policy, data, training, communication & outreach	H
Lack of a program or strategy that integrates state management and restoration plans that exist for the coastal area, including refined boundaries for GAPCs - APRs.	Policy, data, training, communication & outreach.	H
Lack of a comprehensive spatially oriented map of nearshore and offshore resources and uses.	Data	H

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High XX
Medium
Low

Briefly explain the level of priority given for this enhancement area.

While the development of land use and comprehensive plans by local governments located in Alabama’s two coastal counties has increased, the focus of each plan is confined to the municipalities’ boundaries and to traditional resources, uses and threats (especially flooding and stormwater issues). In addition, state plans for development and for preservation are confined to a particular agency. These individual views do not take into consideration the interdependency of the region and neighboring locales and the interdependency of nearshore and offshore resources and uses and the potential threat of sea level rise, which is estimated to be between 0.6 and 2.0 feet in the next century, according to the International Panel on Climate Change (IPCC). Thus, the assessment of and planning for ongoing and potential cumulative and secondary impacts, the assessment of and use of ocean resources, and the implementation of coordinated coastal area restoration plans are hampered.

2. Will the CMP develop one or more strategies for this enhancement area?

Yes XX
No

Briefly explain why a strategy will or will not be developed for this enhancement area.

The ACAMP will develop a strategy that includes issues relating to this enhancement area.

1. A strategy will be developed to address the gaps in comprehensive planning, guidance and regulatory tools that both coastal counties and all coastal county municipalities can use in structuring land use plans and ordinances complementary to the entire region in addressing increasing coastal population and related infrastructure, need for alternative energy, sustaining coastal resources, protection of natural processes and potential threats to coastal resources (such as overexploitation of groundwater resources and sea level rise). The tools would include spatial data that maps both land and ocean resources, uses and capacities.

2. Included in this strategy will be a sea level rise component that can educate state and local decision makers and benefit efforts in formulating local ordinances and state regulations.
3. This strategy will also address the objectives of the Coastal Hazards, Energy and Government Facility Siting, and Ocean Resources.
4. A second strategy, an integrated Alabama coastal restoration program, will be developed under Wetlands that will also address this enhancement area and the Coastal Hazards enhancement area as the strategy relates to the comprehensive protection and restoration of wetlands and buffer areas in protecting both natural resources and developed areas. A restoration program can benefit both state and local governments when planning and structuring policies and regulations to mitigate the effects of coastal hazard threats (including sea level rise) in coastal communities.

ENHANCEMENT AREA ANALYSIS – ENERGY & GOVERNMENT FACILITY SITING

Section 309 Enhancement Objectives

Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and government facilities and energy-related activities and government activities, which may be of greater than local significance.

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below, characterize the types of energy facilities in your coastal zone (e.g., oil and gas, Liquefied Natural Gas (LNG), wind, wave, Ocean Thermal Energy Conversion (OTEC), etc.) based on best available data. If available, identify the approximate number of facilities by type.

Type of Energy Facility	Exists in CZ (# or Y/N)	Proposed in CZ (# or Y/N)	Interest in CZ (# or Y/N)	Significant changes since last assessment (Y or N)
Oil and gas facilities	Y	Y	Y	Y
Pipelines	Y	Y	Y	N
Electric transmission cables	Y	N	N	N
LNG	N	Y	Y	Y
Wind	N	N	N	N
Wave	N	N	N	N
Tidal	N	N	N	N
Current (ocean, lake, river)	N	N	N	N
OTEC	N	N	N	N
Solar	N	N	N	N
Other (Natural gas drilling and production)	Y	Y	Y	Y

2. Please describe any significant changes in the type or number of energy facilities sited, or proposed to be sited, in the coastal zone since the previous assessment.

Oil and Gas

On December 10, 2009, MoBay Storage Hub filed an application with the Federal Energy Regulatory Commission (FERC) and on December 23, made application to the appropriate state agencies to amend its application for the installation of nine new injection and withdrawal wells north of Dauphin Island. In addition, 21 previously approved withdrawal wells will be activated. Construction on the project was expected to begin April 2010. All of these wells will be for the recovery of natural gas. The overall impact is minimum and all land impacted is owned by the State of Alabama. Any discovery of additional natural gas will pose particular interest on energy exploration in the shallow waters of Mississippi Sound, Mobile Bay and the Gulf of Mexico.

One note of interest, last year the number of drilling rigs in the Gulf of Mexico dipped to an all-time low of 25. Ten years ago, the number of active rigs was 140. Once the production gas rigs are depleted, they are dismantled and capped.

LNG

Conoco Phillips

As mentioned in the last Section 309 Assessment and Strategy, a baseline assessment was conducted by the Dauphin Island Sea Lab of the impacts of the Conoco Phillips project. However, because of concerns from the fishing interest in the Gulf, Governor Bob Riley threatened a veto of the project to FERC. Conoco Phillips withdrew its bid for a liquefied natural gas terminal in June, 2006. Critics claimed the Open Loop technology could harm gulf fisheries and marine life. Independent studies by the Dauphin Sea Lab indicated scientific studies predicting minimal impact. Limited time and information was not conclusive in indicated negative impacts. At Governor Riley's request, ConocoPhillips began evaluating the economics of utilizing a closed loop warming system as an alternative to Open Loop Vaporization. Compass Port remains an attractive location, and the decision on whether or not to proceed with re-filing an application will be made after consideration of all the economic factors."

The Governor of Alabama holds the power to kill the project entirely because the gas would come ashore in the state ([Deepwater Port Act of 1974 \(DWPA\)](#), as amended by the [Maritime Transportation Security Act of 2002](#)). The project permits were withdrawn.

TORP Terminal

The U.S. Coast Guard and the U.S. Maritime Administration (MARAD) prepared an environmental impact statement (EIS) as part of the environmental review of this license application. The application describes a project that would be located in the Gulf of Mexico, in Main Pass Block MP 258, approximately 63 miles south of Mobile Point, Alabama. The proposed terminal would unload natural gas imported from foreign countries. TORP Technology, the Houston-based company behind the Bienville Offshore Energy Terminal, originally proposed using 46 billion gallons of warm gulf water each year to turn the super chilled natural gas into a useable product. Federal scientists believe the seawater warming method - known as "Open Loop" - would kill billions of eggs and larvae each year, representing the young of nearly everything that swims in the Gulf of Mexico, including red snapper, mackerel, amberjack, grouper, redfish, speckled trout, shrimp and crabs. However, it remains unclear what effect the terminal ultimately would have on fish populations. In August, 2009, TORP applied for an amendment to its application that describes the proposed change in project re-gasification technology from the "Open-Loop" LNG Vaporization System to a "Closed-Loop" LNG Vaporization System. Project approval was given in September 2010, and Federal Consistency was issued.

3. Does the state have estimates of existing in-state capacity and demand for natural gas and electric generation? Does the state have projections of future capacity?

Production of gas from the State's coastal waters, at its peak, was more than 230 billion cubic feet annually. In 2005, offshore gas production flowed through 47 fixed structures and totaled nearly 154 billion cubic feet. This accounts for approximately 50% of the total gas production in Alabama, which now ranks as one of the top ten gas producing states in the nation. Production capabilities for individual wells range from a few million to more than 110 million cubic feet per day, and the original recoverable reserves for the established fields are estimated to be more than five trillion cubic feet.

According to Alabama Power, the existing use and gas capacity is approximately 10 percent for the State of Alabama. Alabama Power does not have plans in the near future to build additional generation units. Most of the natural gas produced in waters offshore Alabama are pipelined out of state. A major portion of Alabama natural gas is transported by the Sunshine Pipeline for use in the State of Florida. Other southeastern states have major projects power production plants that could impact Alabama's offshore natural resources.

4. Does the state have any specific programs for alternative energy development? If yes, please describe, including any numerical objectives for the development of alternative energy sources. Please also specify any offshore or coastal components of these programs.

In February 2007, Governor Bob Riley and Alabama Department of Agriculture and Industries Commissioner Ron Sparks announced they had jointly formed a committee charged with developing a comprehensive alternative energy policy for the state. The Alabama Alternative Energy Committee is made up of about 65 members that include energy experts and leaders from the state's universities, forestry and agriculture sectors, manufacturers, energy providers, and state and local government officials. The goal is to promote homegrown sources of energy and advance the development of renewable energy resources that help secure Alabama's energy future and provide an opportunity for rural economic development in Alabama. In their Plan 2010, unveiled in fall 2006, the Governor said he wanted to encourage the commercial development and private use of alternative fuels in Alabama. Commissioner Sparks created the Center for Alternative Fuels within the state agriculture department, which is focused on promoting the development and usage of alternative fuels. The committee will make recommendations that can be implemented by executive order from the Governor and new laws passed by the Legislature. To date, no new laws or executive orders have been executed.

At this time, the State of Alabama has no major programs in place for alternative energy development offshore. The Alabama Department of Economic and Community Affairs (ADECA) has a few programs that deal with alternative energy as part of grant funding from the Department of Energy, of which two are the following:

Alternative Transportation Fuels Program. The ADECA Energy Division's Alternative Transportation Fuels Program encourages and promotes the use of alternative transportation fuels as a way to increase the overall efficiency of the transportation system, improve air quality and promote energy independence. An extensive network of alternative fuel stakeholders has been established and is working to accelerate the availability and use of alternative fuels, especially renewable fuels such as biodiesel and ethanol. In addition, a Biomass Energy Program is being implemented that promotes wood waste as an alternative biomass energy source. Wood-industry participants have been able to reduce production costs by using waste in the form of wood chips, sawdust and bark in new and/or converted wood-fired combustion systems. The steam or hot air produced from combustion is often used in dry kilns or in electric power generation. As a result, millions of dollars are saved annually, not only in avoided energy costs, but also in costs associated with waste disposal.

Energy Efficiency and Renewable Energy. The ADECA Energy Division develops and implements energy efficiency programs that are funded by the U.S. Department of Energy (DOE). Energy efficiency programs serve a dual purpose. First, they reduce the need to burn limited fossil fuels, thereby reducing the emissions of pollutants and gasses. Second, they reduce the cost of energy paid by consumers, thus allowing the savings to be spent in other areas of the economy. The State Energy Program (SEP) involves a wide range of mandatory and optional measures targeted toward reducing energy consumption, increasing energy efficiency and protecting the environment. Programs are conducted in the areas of residential and commercial building energy codes, agriculture energy, energy education, recycling, renewable fuels, performance contracting and alternative fuel vehicles. The mission of the ADECA Energy Division is to increase energy-efficiency, reduce energy consumption, and promote market acceptance and deployment of energy-efficiency and renewable-energy technologies.

5. If there have been any significant changes in the type or number of government facilities sited in the coastal zone since the previous assessment, please describe.

Five Rivers Delta Resource Center (ADCNR)

The Five Rivers Delta Resource Center is managed by the Alabama Department of Conservation and Natural Resources (ADCNR). It aims to promote outdoor recreation, conservation education and land stewardship. Five Rivers occupies more than 80 acres in Spanish Fort. It features wharfs, walking trails, and landings for canoe and kayak tours. It is designed to serve both as a recreational gateway to the Delta and as a focal point for conservation and environmental education efforts. The center includes a Visitors' Center, a facility for renting or buying canoes and kayaks, walking trails, picnic shelters, educational kiosks, exhibit hall, theater, classrooms and Coastal Stewardship offices. The

ADCNR Coastal Section, which manages the Alabama Coastal Area Management Program (ACAMP), is in this facility.

State Docks (Alabama Port Authority)

The State Docks (Alabama Port Authority/Port of Mobile) passed Los Angeles in 2008, to become the ninth-biggest port in the nation in terms of tonnage according to the U.S. Army Corps of Engineers (USACE) Waterborne Statistics Center. The State Docks has spent hundreds of millions of dollars in Mobile in past years. New facilities are a \$300 million Mobile Container Terminal and an \$86 million Pinto Island Terminal to serve the German steelmaker, ThyssenKrupp, in its steel manufacturing plant in Mobile County. According to the USACE data, the Mobile State Docks moved 67.7 million short tons in 2008, up from 64.5 million in 2007. ThyssenKrupp is expected to bring about 2 million tons of steel into the Docks beginning in 2011. This could boost Mobile to the number seven spot nationwide.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. Does the state have enforceable policies specifically related to energy facilities? If yes, please provide a brief summary, including a summary of any energy policies that are applicable to only a certain type of energy facility.

Through the Division 8 Coastal Regulations implemented by the Alabama Department of Environmental Management (ADEM), there is a regulation that all new energy facilities located wholly or partially within the coastal area, including those located in federal waters off Alabama, and which require a federal license or permit or a state agency permit, must also receive coastal consistency from the ADEM. ADEM rules also prohibit the discharge of produced waters, drill muds and/or cuttings, and/or other discharges resulting from energy exploration or production activities, to the coastal waters of Alabama. In an average year, ADEM reviews 40 coastal consistency requests for natural gas and oil exploration and production activities in the federal waters off the Alabama Gulf coast.

2. Please indicate if the following management categories are employed by the state or territory and if there have been significant changes since the last assessment.

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Statutes or regulations	Y	N
Policies	Y	N
Program guidance	Y	N
Comprehensive siting plan (including SAMPs)	N	N
Mapping or GIS	Y	N
Research, assessment or monitoring	Y	Y
Education and outreach	Y	N
Other (please specify)	None	N/A

3. For management categories with significant changes since the last assessment, provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.

- a) Characterize significant changes since the last assessment.
- b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts.
- c) Characterize the outcomes and effectiveness of the changes.

See LNG above under Resource Characterization #2. The scientific research performed by the

Dauphin Island Sea Lab for Conoco Phillips and TORP projects were not CZM 309 driven.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Mapping of appropriate sites for alternative energy facilities, such as LNG projects	Marine Spatial Planning and fisheries data	M

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High _____
Medium XX
Low _____

Briefly explain the level of priority given for this enhancement area.

The Alabama Coastal Area Management Program (ACAMP) staff considers this enhancement a medium priority since siting of LNG and alternative energy facilities remain a future possibility, given the strong political interest to reduce dependence on oil and gas.

2. Will the CMP develop one or more strategies for this enhancement area?

Yes _____
No XX

Briefly explain why a strategy will or will not be developed for this enhancement area.

The ACAMP staff will consider a strategy under Ocean Resources that will include consideration of siting alternative energy facilities, such as LNG in state waters.

ENHANCEMENT AREA ANALYSIS – MARINE DEBRIS

Section 309 Enhancement Objective

Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris.

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below, characterize the significance of marine/Great Lakes debris and its impact on the coastal zone.

Source of marine debris	Extent of source (H,M,L)	Type of impact (aesthetic, resource damage, user conflicts, other)	Significant changes since last assessment (Y or N)
Land Based – Beach/Shore Litter	M	Aesthetically detrimental to tourism industry; unsanitary; damaging to recreational activities; damaging to living resources.	N
Land Based – Dumping	M	Human health and safety hazard; damaging to living resources; aesthetically detrimental to tourism industry; damaging to recreational activities.	N
Land Based – Storm Drains and Runoff	M	Human health and safety hazard; damaging to living resources; aesthetically detrimental to tourism industry; damaging to recreational activities; impaired water quality.	N
Land Based – Fishing Related (e.g. fishing line, gear)	M	Aesthetically detrimental to tourism industry; damaging to recreational activities; damaging to living resources.	Y Monofilament Recycling Program was initiated. This is a volunteer program with outdoor recycle bins installed at various fishing locations.
Ocean Based – Fishing (Derelict Fishing Gear)	M	Aesthetically detrimental to tourism industry; damaging to recreational activities; damaging to living resources.	N

Source of marine debris	Extent of source (H,M,L)	Type of impact (aesthetic, resource damage, user conflicts, other)	Significant changes since last assessment (Y or N)
Ocean Based – Derelict Vessels	L	Intermittent hazard as result of hurricanes and large storm events. The impact is more an economic impact and safety issue than an environmental impact. Human health and safety hazard; damaging to living resources; aesthetically detrimental to tourism industry; damaging to recreational activities.	N
Ocean Based – Vessel Based (cruise ship, cargo ship, general vessel)	L	Aesthetically detrimental to tourism industry; damaging to recreational activities; damaging to living resources.	N
Hurricane/Storm	H	Human health and safety hazard; damaging to living resources; aesthetically detrimental to tourism industry; damaging to recreational activities; water quality impacts; high economic impacts.	N
Other (please specify)	None	N/A	N/A

2. If information is not available to fill in the above table, provide a qualitative description of information requested, based on the best available information.

N/A

3. Provide a brief description of any significant changes in the above sources or emerging issues.

Comparison to last assessment is not clearly possible due to the change in definition of categories. However, based on cross references with the previous assessment's categories, there have been no significant changes.

4. Do you use beach clean-up data? If so, how do you use this information?

Beach cleanup data is collected through the annual Alabama Coastal Cleanup. Information regarding the debris collected is used at public events, such as festivals and expos, and at guest speaking engagements.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Employed by local governments (Y, N, Uncertain)	Significant changes since last assessment (Y or N)
Recycling requirements	N	Y – county and city volunteer recycling including volunteer grease recycling programs	N
Littering reduction programs	N	Uncertain	N
Wasteful packaging reduction programs	N	N	Y – implementation of volunteer grease recycling programs
Fishing gear management programs	Y – monofilament recycling program; Clean Boaters and Anglers Program; Gill net “buy-out” removal program	Uncertain	Y – implementation of volunteer monofilament recycling program; gill net removal program
Marine debris concerns in harbor, port, marine & waste management plans	Y – Clean Marina Program	Uncertain	Y – implementation of approved Clean Marina Program
Post-storm related debris programs or policies	N	Uncertain	N
Derelict vessel removal programs or policies	Y – Coastal Impact Assistance Program funding (CIAP); Alabama Department of Conservation & Natural Resources (ADCNR), Marine Resources Division (MRD) law enforcement practice	N	Y – approval of CIAP projects
Research and monitoring	Y – Alabama Coastal Cleanup data collection	Uncertain	N
Marine debris education & outreach	Y – through beach cleanup events that include some rivers; Boater’s and Angler’s Pledge programs; public events and guest speaker activities	Uncertain	N
Other (please specify) – Reduce litter along rivers; programs to reduce litter in the coastal region	Y – through the annual Fish River cleanup; monofilament program	Y – City of Mobile with Clean Water Partnership; programs to reduce usage	Y

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
- Characterize significant changes since the last assessment;
 - Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - Characterize the outcomes and effectiveness of the changes.

Derelict vessel removal programs or policies were initiated through the approval of the Alabama Coastal Impact Assistance Program and their projects that focus on the removal of derelict vessels and of the ADCNR, Marine Resources, Police Division’s law enforcement practices. (This was not a 309-CZM driven program change.)

Other: Volunteer grease recycling programs were introduced by local municipalities. These programs encourage the exchange of empty specified containers for containers full of used grease. The grease is used in bio-fuel programs of the cities, and containers are cleaned and reused for the same purpose. (This was not a 309-CZM driven program change.)

Other: Fishing gear management programs continue through the implementation of the Clean Boaters & Anglers Program and the introduction of the volunteer Monofilament Recycling Program and the ADCNR Marine Resources Division (MRD) voluntary gill net 'buy-out' program. Through the Monofilament Recycling Program, ACAMP funded the production and installation of recycling containers. Volunteers monitor, clean and maintain the containers. The monofilament contents are shipped to a certified recycling center where contents are recycled into a variety of products, most notable artificial fish habitats. The MRD received funding to implement a commercial gill-net buy-out program by paying gill-net fishermen for lost income based on an average of recent income if they volunteered to opt out of fishing using this gear. Both new programs have an education and outreach component. (This was not a 309-CZM driven program change.)

Other:

- 1) **The annual Fish River cleanup** is conducted by the Weeks Bay NERR (Section 315 funding).
- 2) **The Derelict Crab Trap Removal Program** is a coordinated effort by several agencies and local environmental and conservation groups to remove abandoned crab traps from local waters. The event occurs every three to four years. (The is a non-CZM program.)

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
None	N/A	L

Enhancement Area Prioritization

- 1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High _____
Medium _____
Low _____ **XX**

Briefly explain the level of priority given for this enhancement area.

Marine debris issues are being adequately addressed through the annual cleanup events and the ongoing programs described in the "Management Characterization" above.

- 2. Will the CMP develop one or more strategies for this enhancement area?

Yes _____
No _____ **XX**

Briefly explain why a strategy will or will not be developed for this enhancement area.

As stated above in #1, marine debris issues are being adequately addressed.

ENHANCEMENT AREA ANALYSIS – OCEAN/GREAT LAKES RESOURCES

Section 309 Enhancement Objective

Planning for the use of ocean resources

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below, characterize ocean and/or Great Lakes resources and uses of state concern and specify existing and future threats or use conflicts.

Resource or use	Threat or use conflict	Degree of threat (H,M,L)	Anticipated threat or use conflict
Marine Mammals	<p>1) The most immediate threats to manatees and dolphins are watercraft related mortality and injury and cold-related stress.</p> <p>2) Other threats to manatees and dolphins include destruction and degradation of their coastal and freshwater habitat, loss of habitat in near shore waters and estuaries.</p>	<p>1) Moderate</p> <p>2) High</p>	<p>1) Power boats and shipping vessels.</p> <p>2) Increased recreational boating and construction of piers in sensitive areas. Commercial net fishing.</p>
Invasives (i.e., jellyfish)	<p>1) Interference with fishing operations can result in a reduced catch.</p> <p>2) May harm native fish and other marine species.</p>	1) Low	<p>1) The invasive Australian jellyfish, <i>Phyllorhiza punctata</i>, first reported in great quantities in the Gulf of Mexico in 2000, has made a vigorous reappearance this summer in waters from southwestern Louisiana to Morehead City, North Carolina. Beachgoers and boaters are encouraged to report their sightings of these exotic jellies to the Dauphin Island Sea Lab's jellyfish website, Dockwatch, at http://dockwatch.disl.org. Anticipated threat at this time is unknown.</p>
Shipping/ Transportation	1) Ballast water discharge can cause extensive ecological and economic damage to aquatic ecosystems.	1) Low	1) Increased future port traffic.
Water Quality/ Hypoxia	1) Low dissolved oxygen problems continue in Mobile Bay and the Gulf of Mexico. Formation of both the Gulf of Mexico's low-oxygen area, known as the dead zone, and the smaller dead zone that develops in Mobile Bay each summer.	1) Moderate	1) Nitrogen and phosphorus are key ingredients in fertilizers and organic waste. Overuse of fertilizers and increased development can lead to degraded water quality in the future.

Inlet Management	1) Continued dredging of the Mobile Ship Channel at the mouth of Mobile Bay has been attributed to erosion problems on Dauphin Island.	1) High	1) Increased shipping traffic and the lack of maximum use of beneficial use of dredged material could lead to future erosion problems at the mouth of Mobile Bay and Perdido Pass.
Marine Recreation	1) Recreational watercraft can discharge petroleum products, human and pet waste, trash, and potentially toxic metals into coastal waters, lakes and rivers. 2) Recreational vessels also slice swaths through slow-to-heal marine vegetation.	1) High	1) With the increase in coastal population, problems with marine recreation will increase over the next few years. This can lead to degraded water quality. 2) Increased number of recreation vessels in the future can lead to serious damage to grass beds.
Marine Fisheries	1) Coastal storms 2) Overharvesting of particular species 3) Introduction of nuisance species through ballast water or other means. 4) Proposed operation of LNG ports offshore.	1) High 2) High 3) Low 4) Low	1) Damages by the multiple disasters of 2005 and 2006 have caused the loss of shellfish and finfish. 2) Fisheries harvest of finfish is regulated by the State and the Gulf of Mexico Fisheries Management Council. However, the potential for overfishing remains, especially for red snapper. 3) The introduction of nuisance species is expected to remain a concern. Regulations to manage ballast water could result in negative economic impacts for the Port of Mobile. 4) Open loop warming of LNG will be particularly problematic to fisheries unless the impacts can be reduced to an acceptable level or a Closed Loop System is constructed. So far, one LNG has been permitted 63 miles offshore of Alabama and is a Closed Loop System.
Offshore gas production, LNG and other energy types	1) Negative aesthetics for the tourism industry.	1) Low	1) Gas drilling rigs and production platforms are within view of the Mobile County and Fort Morgan coastlines but are a less likely visual threat to the Gulf Shores/Orange Beach tourism industry due to a state-mandated moratorium on siting energy facilities on new leases within 15 miles of these coastlines.
	2) Potential for accidents or oil spills.	2) Moderate	2) Accidents on gas drilling rigs and production platforms, pipeline construction, spills from tankers utilizing waterways and the Port of Mobile are concerns. Damage to drilling rigs and production platforms caused by storm events (high winds and wave action) can result in navigation hazards. BP/Transocean's Deepwater Horizon incident.
	3) LNG - See #4 above in Fisheries.	3) Low	3) The industry has proposed Closed Loop only. Until an Open Loop system is proposed, this will not be an issue.

Offshore sand resources	1) Lack of regional management of sand removal/disposal activities and improper siting of dredged material disposal areas.	1) Moderate	1) Removal of sand from the littoral system and improper dredged material disposal negatively impact the dynamics of the Gulf of Mexico shoreline.
	2) Degradation of the natural beach/dune systems in the face of increased tropical storm activity.	2) High	2) Development on the beaches continues to be a problem along with coastal storms.
	3) Lack of sand material resources to construct future beach nourishment projects.	3) High	3) Competition among local governments for offshore sand resources could result in an imbalance of protective measures from one local community to another. Other future concerns could include damage to essential fish habitat and benthic habitat. However, according to environmental assessments prepared before and after the Baldwin County Beach nourishment projects, no impact has been noted.

2. Describe any changes in the resources or relative threats to the resources since the last assessment.

Overfishing of commercial and recreational gulf fisheries continues to be a concern. Overfishing has mainly occurred in the Gulf of Mexico. However, some nearshore species have also been impacted, such as mullet. There are four stocks subject to overfishing in the Gulf of Mexico. These include red snapper, greater amberjack, gag grouper and gray trigger fish.

Ending overfishing and rebuilding depleted stocks will positively contribute to these values, adding jobs, while creating sustainable fishing for long-term economic health.

The State of Alabama must work with the Gulf of Mexico Fisheries Management Council to develop framework and measures that benefit such species as the red snapper. Red snapper is one of our most important fish in the Gulf of Mexico, where fishermen have caught them for more than 125 years. Overfishing and mismanagement have driven down the spawning population of red snapper to a small percentage of historic levels.

BP/Transocean's Deepwater Horizon incident (also referred to as the BP oil spill, the Gulf of Mexico oil spill, the BP oil disaster) was an oil spill in the Gulf of Mexico that flowed for three months in 2010. The impact of the spill still continues even from the well being capped. The long term environmental implications are unknown at this time. It is the largest accidental marine oil spill in the history of the petroleum industry. On September 19, the relief well process was successfully completed, and the federal government declared the well "effectively dead."

Given early indications of physical conditions in the Gulf of Mexico (warm waters), numbers of *Aurelia* sp. Jellyfish, which negatively affect the seafood industry, are to be above average during the period of late summer through fall 2010 (August – November) (source: Dauphin Island Sea Lab).

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment.

Management Categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Comprehensive Ocean/Great Lakes Management Plan or system of Marine Protected Areas	N	N
Regional Comprehensive Ocean/Great Lakes Management Program	Y	Y
Regional Sediment or Dredge Material Management Plan	Y	Y
Intra-governmental coordination mechanisms for Ocean/Great Lakes management	N	N
Single-purpose statutes related to Ocean/Great Lakes resources	Y	N
Comprehensive Ocean/Great Lakes Management Statute	N	N
Ocean/Great Lakes resource mapping or information system	N	N
Ocean Habitat Research, Assessment or Monitoring Programs	Y	Y
Public education and outreach efforts	Y	N
Other (please specify)	None	N/A

2. For management categories with significant changes since the last assessment, provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
 - a) Characterize significant changes since the last assessment.
 - b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts.
 - c) Characterize the outcomes and effectiveness of the changes.

Regional Comprehensive Ocean/Great Lakes Management Program -- Gulf of Mexico Alliance

The Gulf of Mexico Alliance is a partnership of the states of Alabama, Florida, Louisiana, Mississippi and Texas, with the goal of significantly increasing regional collaboration to enhance the ecological and economic health of the Gulf of Mexico. The five U.S. Gulf States have identified six priority issues that are regionally significant and can be effectively addressed through increased collaboration at local, state and federal levels: water quality for healthy beaches and seafood, habitat conservation and restoration, ecosystem integration and assessment, reducing nutrient impacts to ecosystems, coastal community resilience and environmental education. The Governor's Action Plan II was completed in 2009 and serves as a regional comprehensive plan for the Gulf of Mexico.

Source of funding: GOMA; limited CZM-306.

Effectiveness: Ongoing collaboration with the new National Ocean Policy Council and the Gulf of Mexico Alliance is expected.

Regional Sediment or Dredge Material Management Plan -- Regional Sediment Management (RSM)

The Mobile District of the U.S. Army Corps of Engineers is working on the development of a Regional Sediment Management (RSM) Plan for the central Gulf of Mexico. The final product of the RSM demonstration program is a Regional Sediment Management Plan consisting of a calibrated regional sediment budget, a calibrated numerical regional prediction system, and a regional data management and Geographic Information System. These tools will assist in making management decisions and increase benefits resulting from improved sand management throughout the region. A RSM Technical Working Group (TWG) was established with members from state and federal agencies in Alabama, Florida and academia. The purpose of the TWG is to assist in development and implementation of the RSM Demonstration Program.

Source of funding: limited CZM-306; other.

Effectiveness: Ongoing collaboration has resulted in more effective use of dredge material. Work with the Gulf of Mexico Habitat and Restoration Priority Issue Team has also increased federal and state cooperation in RSM.

Ocean Habitat Research, Assessment or Monitoring Programs

a) Coastal Water Quality Monitoring

ADCNR, in conjunction with Weeks Bay National Estuarine Research Reserve (NERR), Dauphin Island Sea Lab and the Mobile Bay National Estuary Program (NEP) conduct real-time monitoring of environmental conditions at Meaher Park, Middle Bay Lighthouse, Weeks Bay Reserve, Dauphin Island Sea Lab and Grand Bay, with links to other monitoring sites.

Source of funding: CZM-306, other non-CZM.

Effectiveness: Monitoring continues and provides data to researchers for use and to disseminate information to the general public.

b) Dolphin SMART

In an effort to protect and conserve Alabama's bottlenose dolphin population, members of the Alabama dolphin tour industry have volunteered to become "Dolphin SMART." Dolphin SMART is a voluntary recognition and education program designed to inform tour operators about the importance of sustainable dolphin viewing practices, as well as responsible advertising. The goal is for tour operators to educate their customers regarding responsible viewing of wild dolphins.

In response to local tour operators' requests for an Alabama Dolphin SMART program, the Alabama Department of Conservation and Natural Resources (ADCNR) State Lands Division, Coastal Section committed to implementing the program locally. ADCNR has partnered with Mississippi-Alabama SeaGrant Consortium and the Alabama Gulf Coast Convention and Visitors Bureau to offer the program to Alabama operators. The first training session for operators was held on October 6, 2008, with eight operators in attendance. In order to be recognized as Dolphin SMART, operators must complete a four-hour training workshop, as well as demonstrate that their business meets program requirements during an evaluation process. Once recognized, participants receive vessel flags and decals with current year Dolphin SMART logos and various educational outreach materials. Recognized participants also receive their own press release and a link to their business website on the Dolphin SMART site (www.dolphinSMART.org).

Source of funding: CZM-306, other non-CZM.

Effectiveness: Participating vessel owners and operators report a positive response from clients. Other cruise operators have requested information for participating.

c) Mobile Manatee Sighting Network (MMSN)

The MMSN was established by researchers at the Dauphin Island Sea Lab (DISL), in collaboration with Wildlife Trust in Florida. This network was established to receive and track manatee sightings in Alabama waters to determine where manatees live and what they eat while visiting local waters and to share these data with other researchers, resource managers and the public. DISL Professor, Dr. Ruth Carmichael, and her collaborators hope this data will increase awareness of manatees in the region, provide public education, and guide local conservation and management decisions.

Source of funding: limited CZM 306.

Effectiveness: The MMSN successfully processed 104 sightings in 2007 and 105 in 2008, compared to only 156 sightings recorded for the state over the previous 20-year period.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need Description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H, M, L)
Need to identify, characterize, inventory and map ocean resources, such as sand resources and fish and shellfish resources.	Policy, data	H
Need to identify areas best suited for recreation, best suited for a designation as GAPC or APR, etc.	Regulatory, policy, data	H
Need for key spatial/baseline data for energy siting such as resource uses, energy infrastructure, seafloor habitats, etc.	Data	H

Potential needs that can be related to the first need listed above: study of coastal and Gulf habitats, including scientific information on their ecological function and importance to coastal fisheries resources; identification of threats to each habitat; and recommendations for needed research and steps that should be taken to protect and enhance each habitat.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High XX
Medium
Low

The ACAMP has identified a need to identify, characterize, inventory and map ocean and nearshore resources, in order to direct planning for an increasingly intense interest in utilizing ocean resources for a variety of industrial and recreational endeavors. The ACAMP needs to map and identify the resources and conflicts as outlined above. Major areas of concern include the following:

- Sand resources and the location of these resources
- Mapping of wetlands and SAV's to avoid conflicts among users
- Identifying and mapping of GAPC's, APR's and GEM's
- Identifying and mapping of offshore living resources, including offshore reefs and oyster beds
- Mapping of impaired waters
- Hydrologic mapping currents and flow data
- Mapping of offshore historical and cultural sites
- Mapping of sites suitable for recreation purposes
- Mapping of shorelines
- Mapping data on bathymetry

The high level of priority is in line with the June 12, 2009, a memorandum signed by President Obama establishing an Interagency Ocean Policy Task Force, led by the White House Council on Environmental Quality. On July 19, 2010, the Task Force released a set of final recommendations that set a new direction for improved stewardship of the ocean, coasts and the Great Lakes.

The recommendations provide (1) our nation's first ever national ocean policy; (2) a strengthened governance structure to provide sustained, high-level and coordinated attention to ocean, coastal and Great Lakes issues; (3) a targeted implementation strategy that identifies and prioritizes nine categories for action that the United States should pursue; and (4) a framework for effective coastal and marine spatial planning. These documents are available on their website.

2. Will the CMP develop one or more strategies for this enhancement area?

Yes XX
No

Briefly explain why a strategy will or will not be developed for this enhancement area.

A strategy will be developed. The intent is to develop a Coastal Marine & Spatial Planning (CMSP) tool that would involve a comprehensive, adaptive, integrated, ecosystem-based and transparent spatial planning process, based on sound science, for analyzing current and anticipated uses of coastal areas. CMSP identifies areas most suitable for various types or classes of activities, in order to reduce conflicts among uses, reduce environmental impacts, facilitate compatible uses and preserve critical ecosystem services to meet economic, environmental, security and social objectives. In practical terms, CMSP provides a public policy process to better determine how the coasts are sustainably used and protected now and for future generations. The final product will be a mapping of ocean and nearshore resources and recommendations for planning and regulatory actions to afford the State an opportunity to regulate, monitor and promote wise use of its resources for the benefit of Alabama's coastal communities and various user groups.

In addition to Ocean Resources, the strategy will address the following enhancement areas: coastal hazards, cumulative and secondary impacts, and energy and government facility siting.

ENHANCEMENT AREA ANALYSIS – PUBLIC ACCESS

Section 309 Enhancement Objective

Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Characterize threats and conflicts to creating and maintaining public access in the coastal zone.

Type of threat or conflict causing loss of access	Degree of threat (H,M,L)	Describe trends or provide other statistics to characterize the threat and impact on access	Type(s) of access affected
Private residential development (including conversion of public facilities to private)	Low	None	N/A
Non-water dependent commercial/industrial uses of the waterfront (existing or conversion)	Low	None	N/A
Erosion	High	Erosion caused by catastrophic storm events. Access is usually repaired over the next year or two, depending on the severity of the storm.	Boat launches, fishing sites, boardwalks, dune walkovers, restroom facilities and showers. Interpretive signage, picnic tables and pavilions.
Sea level rise/Great Lake level change	Moderate	Current studies are predicting a rate of 1.4 mm rise in sea level each year.	Boat launches, fishing sites, boardwalks, dune walkovers, restroom facilities and showers. Interpretive signage, picnic tables and pavilions.
Natural disasters	High	Hurricanes, storm surge, flooding. Access is usually repaired over the next year or two, depending on the severity of the storm.	Boat launches, fishing sites, boardwalks, dune walkovers, restroom facilities and showers. Interpretive signage, picnic tables and pavilions.
National security	Low	None	N/A
Encroachment on public land	Low	None	N/A
Other	Low	None	N/A

2. Are there new issues emerging in your state that are starting to affect public access or seem to have the potential to do so in the future?

No.

3. **(CM)** Use the table below to report the percent of the public that feels they have adequate access to the coast for recreation purposes, including the following. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

Contextual measure	Survey data
Number of people that responded to a survey on recreational access	425
Number of people surveyed that responded that public access to the coast for recreation is adequate or better	238
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Telephone
What was the geographic coverage of the survey?	Mobile and Baldwin counties
In what year was the survey conducted?	2007

4. Briefly characterize the demand for coastal public access within the coastal zone, and the process for periodically assessing public demand.

The demand for coastal public access includes canoe/kayak launches, walking trails, boardwalks leading to public beaches to avoid decimating natural vegetation, adequate parking, including handicapped, at public access sites, etc. The Coastal Section's process for assessing public demand for coastal public access involves regular communication with local governments to determine needs for public access.

5. Please use the table below to provide data on public access availability. If information is not available, provide a qualitative description based on the best available information. If data is not available to report on the contextual measures, please also describe actions the CMP is taking to develop a mechanism to collect the requested data.

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
(CM) Number of acres in the coastal zone that are available for public access (report both the total number of acres in the coastal zone and acres available for public access)	262,396 / 101,680	These items were not included in the last assessment.	FY09 Performance Measures document
(CM) Miles of shoreline available for public access (report both the total miles of shoreline and miles available for public access)	2,273 / 653	These items were not included in the last assessment.	FY09 Performance Measures document
Number of state/county/local parks and number of acres	43 / acreage unknown	+12	Public Access Inventory 2006
Number of public beach/shoreline access sites	Exact number unknown. Baldwin County: Several Gulf-fronting beach access points owned and/or operated by state, local and federal governments. Mobile County: Access on Dauphin Island is limited to a few access points. Along Mobile Bay: there are numerous bay-front access points.	N/A	Public Access Inventory 2006
Number of recreational boat (power or non-power) access sites	59	+31	Public Access Inventory 2006

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
Number of designated scenic vistas or overlook points	Exact number of designated scenic vistas/overlook points is unknown. The Dauphin Island fishing pier was converted to a scenic boardwalk due to northward migration of Sand Island to converge with Dauphin Island directly under the pier, rendering the pier unfishable.	1 Added: The completed Coastal Connection scenic byway, which follows the Gulf Coast shoreline as well as the Battleship Causeway.	Previous 309 assessment.
Number of State or locally designated perpendicular rights-of-way (i.e. street ends, easements)	Exact number of sites is unknown. Baldwin and Mobile counties have numerous identified rights- of-way (ROW) that provide access to bay and river waters.	No changes or additions have been noted.	Previous 309 assessment.
Number of fishing access points (i.e. piers, jetties)	8	+1 Baldwin County: The Gulf State Park in Gulf Shores was rebuilt after Hurricane Ivan. One pier was added at Bayfront Park in Daphne. NOTE: The Dauphin Island pier now sits atop Sand Island, which migrated to connect with Dauphin Island.	Public Access Inventory 2006
Number and miles of coastal trails/boardwalks	10 / Exact mileage unknown but well exceeds 160 miles since this includes the City of Orange Beach's canoe & kayak trail and the State Lands Division's Bartram Canoe Trail.	+2 The City of Orange Beach will complete two canoe/kayak access points to their canoe/kayak trail. Funding: 306A award for FY11. Dauphin Island Park and Beach Board extended boardwalks with Public Access funds.	Previous 309 assessment, recent 306a awards & general knowledge.
Number of dune walkovers	Exact number unknown. There are several Gulf-fronting dune walkovers in Mobile and Baldwin counties.	Exact numbers were not provided in previous assessment.	Previous 309 assessment.
Percent of access sites that are ADA compliant access	The Public Access survey did not include this information. Based on the previous assessment and general knowledge since the last survey, the estimated percentage is 53%.	+7%	Previous 309 assessment.

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
Percent and total miles of public beaches with water quality monitoring and public closure notice programs	Alabama has approximately 50 miles of Gulf Beach and approximately 65 miles of bay beaches where the adjacent waters are classified for swimming under the State's Water Use Classification System. 25 "beach" sites are sampled from Perdido Bay to Dauphin Island.	N/A	Alabama Department of Environmental Management.
Average number of beach mile days closed due to water quality concerns	Public beaches in Alabama are not closed, but are issued advisories if there are water quality concerns. Number of beach days affected by advisories is 24.	N/A	Alabama Department of Environmental Management.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment.

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Statutory, regulatory, or legal system changes that affect public access	Y	N
Acquisition programs or policies	Y	Y
Comprehensive access management planning (including GIS data or database)	Y	N
Operation and maintenance programs	Y	N
Alternative funding sources or techniques	N	N
Beach water quality monitoring and pollution source identification and remediation	Y	N
Public access within waterfront redevelopment programs	N	N
Public access education and outreach	Y	N
Other (please specify)	None	None

2. For management categories with significant changes since the last assessment, provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.

- a) Characterize significant changes since the last assessment;
- b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
- c) Characterize the outcomes and effectiveness of the changes.

The State Lands Division acquired a 600 acre parcel of land in 2009 along the Perdido River using funds from the Coastal and Estuarine Land Conservation Program (CELCP). This parcel is now a part of the 18,000 acre Perdido River Nature Preserve, Recreation Area, and Wildlife Management Area in Baldwin County. Public access plans for these lands include hiking/biking trails, canoe/kayak trails, as well as birding opportunities.

3. Indicate if your state or territory has a printed public access guide or website. How current is the publication and/or how frequently is the website updated? Please list any regional or statewide public access guides or websites.

The Coastal Section plans to develop an updated public access brochure to distribute to the public with an anticipated completion of 2012. The Coastal Section is also constructing a website, which will include links to maps and lists of public access sites that have been funded through the CZM grant.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Distribution of updated information to the public.	Communication & outreach	M

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High _____
Medium _____
Low XX

Briefly explain the level of priority given for this enhancement area.

Public access in coastal Alabama is a high priority at all levels of government and is adequately addressed by the state of Alabama as a whole as well as by CZMA using 306A funds; therefore, because public access receives priority through 306A, it does not warrant a high priority rating for 309 funds. Facilities have been developed or improved on existing or recently acquired sites with frequency, especially since the 2004 and 2005 hurricane seasons. Public access is an amenity so well used and enjoyed by residents that it has come to be an expected resource provided by government. In addition, the number and availability of public access sites draws tourists to the area and increases the revenue base of state, county and local governments.

2. Will the CMP develop one or more strategies for this enhancement area?

Yes _____
No XX

Briefly explain why a strategy will or will not be developed for this enhancement area.

The CZM-public access program continues to be successful. Since last assessment, both county governments and six municipalities have applied for and received the 10 percent of 306 funding

that the ACAMP sets aside annually. Other funding sources used by state and local governments for public access are local government funds, state government funds, Wallop-Breaux funding with a non-federal match and Coastal Impact Improvement Program funds.

ENHANCEMENT AREA ANALYSIS – SPECIAL AREA MANAGEMENT PLANNING

Section 309 Enhancement Objective

Preparing and implementing special area management plans for important coastal areas

The Coastal Zone Management Act (CZMA) defines a Special Area Management Plan (SAMP) as “a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone. In addition, SAMPs provide for increased specificity in protecting natural resources; reasonable coastal-dependent economic growth; improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence; sea level rise; or fluctuating water levels of the Great Lakes; and improved predictability in governmental decision making.”

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Identify geographic areas in the coastal zone subject to use conflicts that can be addressed through special area management plans (SAMP). Also include areas where SAMPs have already been developed, but new issues or conflicts have developed that are not addressed through the current plan. If necessary, additional narrative can be provided below.

Geographic Area	Major conflicts	Is this an emerging or a long-standing conflict?
None		

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. Identify below any special management areas in the coastal zone for which a SAMP is under development or a SAMP has been completed or revised since the last Assessment:

SAMP title	Status (new, revised, or in progress)	Date approved or revised
NONE		

2. For management categories with significant changes since the last assessment, provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
- a) Characterize significant changes since the last assessment (area covered, issues addressed and major partners).
 - b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts.
 - c) Characterize the outcomes and effectiveness of the changes.

There have been no changes since the last assessment.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy).

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
None		

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High _____
Medium _____
Low _____ **XX**

Briefly explain the level of priority given for this enhancement area.

This enhancement area is considered a low priority level by the Alabama Coastal Area Management Program staff. No gaps have been identified that can be addressed by a SAMP, which targets use conflicts within a geographic area.

2. Will the CMP develop one or more strategies for this enhancement area?

Yes _____
No _____ **XX**

Briefly explain why a strategy will or will not be developed for this enhancement area.

The staff is confident that needs and information gaps relevant to the Alabama Coastal Area are more appropriately addressed under one of the other eight enhancement objectives. Given the experience of the staff, a SAMP approach would be a less effective method of addressing use conflict issues in Coastal Alabama. No matter the issue or the geographic area, more effective results have been achieved via one of the other eight enhancement categories.

ENHANCEMENT AREA ANALYSIS – WETLANDS

Section 309 Enhancement Objective

Protection, restoration or enhancement of the existing coastal wetlands base or creation of new coastal wetlands.

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Please indicate the extent, status and trends of wetlands in the coastal zone using the following table.

Wetlands type	Estimated historic extent (acres)	Current extent (acres)	Trends in acres lost since 2006 (Net acres gained & lost)	Acres gained through voluntary mechanisms since 2006	Acres gained through mitigation since 2006	Year and source(s) of data
Tidal (Great Lakes) vegetated						
Tidal (Great Lakes) non-vegetated						
Non-tidal/freshwater						
Other (please specify)						

2. If information is not available to fill in the above table, provide a qualitative description of information requested, including wetlands status and trends, based on the best available information.

Extent of Wetlands in the coastal area: As reported in the 2001 309 assessment, the general description of wetlands in the Alabama Coastal Area (area below the continuous 10-foot contour seaward three miles) were as follows:

Wetland Type	Acreage
Non-fresh marsh	29,282
Fresh marsh	2,867
Scrub-shrub	6,109
Forested	19,839
Total	58,097

Status and Trends of wetlands in the coastal area: It is difficult to confidently assess either the current status of wetlands in the Alabama Coastal Area or related trends or changes in the resources. This is supported by an Alabama Coastal Area Management Program (ACAMP) 309 project completed under the previous 309 Assessment and Strategy. As reported in the third period of NA07NOS4190175, the Wetlands Status & Trends Report included data from 1974 to 2008 and “highlighted the difficulties in obtaining accurate wetlands mapping data in a timely manner and finding accurate historical data to compare it too. Given the differing platforms, sensors, spatial resolution and classification schemes used by differing agencies over the years, it has proven almost impossible to develop what can be considered accurate wetlands status and trends data.” The Coastal staff and the Mobile Bay National Estuary Program (MBNEP) are dedicated to working with stakeholders, including a commitment by NASA to assist, in resolving this problem.

The following two studies and reports also highlight the challenges in obtaining accurate wetlands acreage estimates, as well as the challenge of tracking wetlands losses and gains.

The Wetlands Conservation and Management Initiative (WCAMI) Final Report Vol. 1, "Status of Coastal Wetlands of Alabama 1995," provides a general description of the wetlands in the coastal counties of Alabama (below and above the 10-foot contour). The following is a statement from page 135,

"[According to] the most recent inventory (Field and others, 1991), there are approximately 437,400 acres of wetlands in Mobile and Baldwin Counties and 1,070,500 acres of wetlands in coastal Alabama drainage areas. The majority of these wetlands are of the scrub-shrub/forested types (96 percent)."

In the Mississippi Sound, Mobile Bay and Perdido Bay estuarine drainage areas, 1,893,600 acres were delineated, portions of which are in Mississippi and Florida.

However, during 2008, the ACAMP partnered with MBNEP and NASA to produce the Land-Use and Land-Cover Change from 1974-2008 around Mobile Bay, Ala. (November 2008). Specifically, numerous years of Landsat derived imagery of Mobile and Baldwin Counties were used to document changes in land use and land cover from 1974 through 2008. The table below summarizes the changes observed using the Landsat imagery (source: page nine of the report).

Class	Coverage (acres)								
	1974	1979	1984	1988	1991	1996	2001	2005	2008
Open Water	450,543	461,839	462,655	463,506	464,225	460,829	469,246	471,609	465,750
Barren Upland	2,521	4,058	4,492	2,672	4,965	4,709	7,046	7,731	5,305
Herbaceous Non-woody Wetland	180,295	265,938	158,592	257,969	254,973	282,511	258,913	159,564	197,118
Upland Forest	37,475	42,214	30,139	33,749	36,321	36,081	34,430	32,964	35,080
Woody Wetland	493,301	359,217	480,289	390,702	388,236	340,497	347,224	442,474	406,703
Urban	203,704	213,013	210,440	196,284	195,727	215,731	218,139	217,327	210,192
Urban	80,972	102,416	102,400	104,125	104,338	108,455	113,815	117,144	128,664
Total Wetlands (woody & non-woody):	241,179	255,227	240,579	230,033	232,048	251,812	252,569	250,291	245,272

The estimated quantity of wetlands in Mobile and Baldwin Counties fluctuates from year to year and is significantly lower than the estimate of 437,400 acres from the Wetlands Conservation and Management Initiative (WCAMI) Final Report Vol. 1, "Status of Coastal Wetlands of Alabama, 1995". Wetlands located inside of the Alabama Coastal Area are more regulated than those outside of the boundary. Thus, the number of wetland acres in the coastal area that are publicly acquired and/or protected through mitigation agreements, conservation easements, permit conditions and deed restriction is expected to increase. Because wetlands outside the coastal area are less regulated, greater impacts to these wetlands are expected, especially those located in the fast-growing coastal counties. While these wetlands are outside the coastal area, the filling of these wetlands will have an impact on coastal watersheds and possibly lead to secondary impacts inside the coastal area.

Submerged Aquatic Vegetation (SAV)

Extent of SAVs in the coastal area: The extent of SAVs in the Alabama Coastal Area were documented in three separate projects.

In 1980-81, the Coastal Area Board (now the ACAMP) mapped 5,391 acres.

In July 2001, the ACAMP and MBNEP partnered to map 6,641 acres, an increase of 1,250 acres over 1980-81. This mapping effort took place after at least two years of drought conditions, which reduced SAV coverage.

In 2008 and 2009, the ACAMP partnered with MBNEP to map SAVs in the coastal area. In fall of 2008, area containing “seagrasses,” Mississippi Sound, lower Mobile Bay, Wolf Bay and lower Perdido Bay were mapped. During Summer 2009, the entire project area was mapped, including re-mapping seagrass coverage. This mapping effort took place following a number of very active tropical storm seasons and two years of severe drought, which again impacted SAV coverage on upper Mobile Bay and the lower Mobile-Tensaw River Delta.

Significant differences in seagrass coverage is noted from 2001, 2008 and 2009 and are summarized in the following table (source: *MAPPING OF SUBMERGED AQUATIC VEGETATION IN MOBILE BAY AND ADJACENT WATERS OF COASTAL ALABAMA IN 2008 AND 2009* by Vittor and Associates).

Table ES-1. Difference in total SAV acreage by U.S.G.S. 7.5-Minute Quadrangle, comparing 2009 with the 2002 baseline survey.			
USGS QUADRANGLE1	2009 ACREAGE2	2002 ACREAGE2	DIFFERENCE
Bridgehead	3,450.3	3,641.0	-190.7
Chickasaw	21.2	26.9	-5.7
Daphne	35.1	9.5	+ 25.6
Fort Morgan NW	25.2	0.0	+ 25.2
Grand Bay	364.2	296.4	+ 67.8
Grand Bay SW	61.8	79.9	-18.1
Gulf Shores	1.5	1.2	+ 0.3
Hollinger’s Island	0.0	126.7	-126.7
Hurricane	1.9	517.3	-515.4
Isle aux Herbes	129.2	87.6	+ 41.6
Kreole	218.8	295.9	-77.1
Mobile	509.8	1,007.0	-497.2
Orange Beach	150.8	60.0	+ 90.8
Perdido Bay	135.4	114.6	+ 20.8
Petit Bois Pass	142.3	59.6	+ 82.7
Pine Beach	1.2	0.1	+ 1.1
The Basin	0.0	265.2	-265.2
TOTAL	5,248.7	6,588.9	-1,340.2

Table ES-2. Difference in total SAV acreage by U.S.G.S. 7.5-Minute Quadrangle, comparing 2009 with 2008.			
USGS QUADRANGLE1	2009 ACREAGE2	2008 ACREAGE2	DIFFERENCE
Fort Morgan	0.0	6.8	-6.8
Fort Morgan NW	25.2	31.4	-6.2
Grand Bay	364.2	548.1	-183.9
Grand Bay SW	61.8	86.8	-25.0
Gulf Shores	1.5	1.4	+ 0.1

Isle aux Herbes	129.2	355.7	-226.5
Kreole	218.8	230.1	-11.3
Orange Beach	150.8	147.0	+ 3.8
Perdido Bay	135.4	135.1	+ 0.3
Petit Bois Pass	142.3	142.1	-30.9
Pine Beach	1.2	1.2	--
TOTAL	1,230.4	1,685.7	-455.3

1 Quadrangles not listed did not have mapped SAV; 2 Includes continuous and patchy SAV.

The ACAMP obtained and digitized SAV mapping data of upper Mobile Bay and the lower Mobile-Tensaw River Delta from 1987 and 1994. These mapping efforts also show drastic changes in SAV coverage in what appears to be in response the very severe drought of 1985-86 (with significantly reduced SAV coverage) and the above average rainfall during 1992-93 (with significantly increased SAV coverage). The ACAMP is considering funding a project to analyze the 1981, 1987, 1994, 2001 and 2009 SAV coverage in comparison to precipitation and river flow level data.

3. Provide a brief explanation for trends.

Wetlands: Losses of wetlands in Coastal Alabama are from two (2) primary sources: man-made losses and natural erosion.

Man-made losses appear to be primarily from development, including direct fill, as well as the loss of fringe marsh due to bulk heading landward of mean high tide.

Natural losses are due to natural erosion. There have been significant losses of tidal salt marsh along the shoreline and islands of Mississippi Sound. Based on available shoreline data and imagery from 2008-2009, erosion rates in this area range from two to eight feet per year. Islands such as Marsh Island, Raccoon Island, Cat Island and Isle aux Herbes (Coffee Island) in Porterville Bay and Point Aux Pins and Marsh Island in Grand Bay have lost 25-75 percent of the 1958 acreage.

SAVs: The acreage and species composition of SAV coverage in Coastal Alabama has fluctuated widely from 1980-2009. Mapping results from 2008-2009 indicate that since the 2002 mapping efforts, significant acreage of SAVs were lost on the lower Mobile-Tensaw River Delta and upper Mobile Bay. These losses primarily involved the loss of large acreages of Milfoil on the lower Delta and a reduction in the acreage of Vallisneria on the upper bay. These losses appear to be the result of recent drought and tropical storm events.

In regards to seagrass coverage (*Halodule wrightii* and *Ruppia maritima*) in Mississippi Sound, Little Lagoon and lower Perdido Bay, a comparison between 2002 and 2008-2009 data indicates an increase in coverage. This may have been the result of the recent drought. When comparing the 2008 and 2009 data, there was significantly more seagrasses in Mississippi Sound during 2008 (the last year of the drought) than 2009 (a year of above normal rainfall). Overall, the 1980-2009 trend in SAVs appears to be precipitation and tropical storm event driven, with minimal direct losses due to docks, piers and dredging.

4. Identify ongoing or planned efforts to develop monitoring programs or quantitative measures for this enhancement area.

Wetlands: The ACAMP plans to continue to track wetlands fill resulting from development through the permitting/CZM Consistency Certification process. The Alabama Department of Environmental Management (ADEM) is actively developing the ability to track impacts through the permitting and consistency process and will continue these efforts.

Large scale wetlands mapping continues to be a challenge. The ACAMP will continue to actively work with partners to identify more accurate mapping of wetlands in Coastal Alabama.

A recent study was conducted by the Alabama Department of Conservation and Natural Resources (ADCNR), State Lands Division, Natural Heritage Section (NHS) and funded by Section 306 to monitor marsh birds in the coastal area because past research shows that these birds are considered an indicator species of wetland health (Eddleman et al. 1988). Researchers from the NHS contributed to this effort by establishing a methodology to survey and then actually survey marsh birds during the breeding season along the coastal marshes and barrier islands and within the Mobile-Tensaw River Delta. The data obtained from the survey resulted in 1,265 geo-referenced database records of the targeted species and an additional 2,379 ancillary records were developed, accounting for a combined total of 3,644 records currently housed in the NHS database. The goal of the ACAMP in funding such studies is to contribute to better management of coastal resources. The NHS met this goal by using its findings to contribute to a number of projects and presentations that would promote a better understanding of the current distribution, status and ecology of coastal marsh bird populations in Alabama and beyond. These projects and presentations are listed below:

- “Alabama Breeding Bird Atlas,” on line at www.una.edu/faculty/thaggerty/BBA%20website/Index.htm.
- US Fish & Wildlife Service “King Rail Conservation Plan (2008),” where the NHS project not only identified the current distribution of King Rails along coastal Alabama, but also established a baseline that can now be comparable with future King Rail surveys.
- “National Marsh Bird Monitoring Program,” which has a database that serves as a repository for all marsh bird data to be used for ongoing national and regional monitoring efforts.

This study will be ongoing as the NHS continues to document conditions of indicator species in wetland habitats.

SAVs: There are over 20 species of submerged aquatic plants from the northern extent of the Mobile-Tensaw Delta to the southern portions of Mobile Bay and Mississippi Sound. The ACAMP strategy is to continue to map SAVs in order to better establish the causes of fluctuations in SAV coverage. Pending funding, the ACAMP will work with partners to map SAVs on a three to five year cycle and use the results to further understand the long- and short-termed trends in SAV coverage. The next cycle begins in 2011-2012.

The ACAMP is funding an analysis of historic SAV through a sub-award with the Dauphin Island Sea Lab (DISL) for the purpose of comparing SAV coverage and species composition from 1980-81, 1987, 1994, 2002 and 2008-09 mapping efforts to historical precipitation, river flow and tropical storm event data in order to determine if a statistical relationship exists between these data. To date, the DISL has begun gathering and processing GIS data in order to perform a statistical analysis of SAV coverage in the Alabama coastal area. Final results from this study will be compiled in a report and will be submitted to a peer-reviewed scientific publication for consideration.

5. Use the following table to characterize direct and indirect threats to coastal wetlands, both natural and man-made. If necessary, additional narrative can be provided below to describe threats.

Type of threat	Severity of impacts (H,M,L)	Geographic scope of impacts (extensive or limited)	Irreversibility (H,M,L)
Development/Fill	L-M	Extensive	M
Alteration of hydrology	M	Limited	M
Erosion	H	Extensive	Variable
Pollution	L	Limited	L

Channelization	L	Limited	L
Nuisance or exotic species	M	Varies	M
Freshwater input	Unknown	Unknown	Unknown
Sea level rise/Great Lake level change	M	Extensive but Variable	L
Other (Habitat Loss)	M	Extensive	M-H

Development/Fill

While wetlands located inside of the Alabama Coastal Area are better protected than those outside the coastal area, development pressure in the coastal counties continues to increase with increased population. As prime locations are acquired and developed, less ideal properties, including those with numerous wetlands are under increased development pressure. The ADEM actively works with applicants to limit wetlands impacts, and on many occasions, the permitted impacts are much less than those proposed during the pre-application process. These efforts greatly reduce the overall severity of wetland impacts in the coastal area.

Mitigation is required in the Alabama Coastal Area, but potential for a net loss within particular watersheds exists where mitigation occurs far from the area of impact. Industrial expansion poses a threat in specific areas. Acres being filled on smaller developments under the Nationwide and General permitting process are not being adequately tracked and have the potential to pose the largest cumulative threat to wetlands and habitat loss in the Alabama Coastal Area. Impediments to addressing threats are a lack of wetlands statutes at the state and local levels, lack of land use controls, limited approved mitigation banks within the watershed being impacted and ineffective or inappropriate BMPs.

While mitigation and wetlands restoration programs may help to reverse the impacts of current, future and historic wetlands dredge and fill activities, there is currently inadequate state and federal funding to pursue large scale habitat restoration programs.

Alteration of Hydrology

It has become widely accepted that the presence of the Mobile Bay Causeway at the head of Mobile Bay has had, and is having, a negative effect on the ecosystems of the shallow bays located north of the Causeway. This includes altered sediment flows and sediment quality, alteration of SAV communities, alteration in hydrology and impaired water quality. A number of different entities have been actively involved in documenting these negative effects and debating an approach to resolving this issue. Two proposals, one to put in large box culverts between lower Justin's Bay and upper John's Bend Bay, as well as bridging significant portions of the Choccolatta Bay portion of the Causeway have been put forth. However, no formal action on pursuing these options has taken place to date. Impediments to taking action include lack of consensus on the impacts of these actions, as well as the significant funds that will be required. Other instances of altered hydrology can be found around the Alabama coastal area. The main impediment to reversing these changes in hydrology is funding. Given the proven use of enlarged culverts, bridging and other techniques demonstrated around the country, if adequate funding became available, the implementation of a large scale hydrology restoration program could be pursued.

Erosion

Shoreline bulkheads in residential areas increase the potential for wetland erosion. Erosion in the Weeks Bay watershed has been documented by the Weeks Bay NERR researchers and volunteers.

Erosion from residential, commercial and road construction contributes to the filling of wetlands throughout both coastal counties. Impediments are a lack of appropriate land use controls, failures to protect riparian buffers, and ineffective or inappropriate BMPs.

As stated under #3, chronic natural erosion along the Mississippi Sound shoreline and islands is causing significant losses of salt marsh habitat along these shorelines. Anecdotal evidence indicates that this erosion is being caused by natural events, including the shifting of Petit Bois Pass earlier this century, the shifting of the Escatawpa River during recent geological time, and the opening of "Katrina Cut in Dauphin Island during Hurricane Katrina. While a large scale restoration project is underway along the shoreline of Little Bay just west of the mouth of Bayou la Batre, small scale projects are taking place along Point aux Pins, and another effort will soon commence along the southeastern shore of Coffee Island (Isle of Herbes). Significantly more funding and efforts are needed in this area.

Shoreline restoration, including small scale living shorelines techniques, can be used to slow or reverse chronic erosion in many instances. However, in some areas, the lack of sediment in the local systems may inhibit such efforts. Further, proving living shorelines techniques, demonstrating their effectiveness to the public and implementing them on a large scale has proven to be a long term process in Coastal Alabama. And, as with other measures to reverse threats to coastal ecosystems, the lack of adequate funds continues to frustrate efforts to implement large scale efforts.

Pollution -- Not considered a significant or medium threat to coastal Alabama wetlands. While contaminated sediments do exist in the Alabama coastal area, mainly in industrial areas, stringent EPA and ADEM regulations on the dredging and disposal of such sediments appear to be adequate in addressing this issue.

Channelization -- Not considered a significant or medium threat to coastal Alabama wetlands.

Nuisance or exotic species

Threats from terrestrial nuisance species (cogon grass, Japanese honeysuckle, Chinese tallow, Chinese privet, etc.) are increasing. Giant Salvinia, which is a major problem in parts of Louisiana and Mississippi, is a threat to coastal Alabama as well. As stated under #3, Eurasian water milfoil, which previously dominated the lower Mobile-Tensaw River Delta, has significantly decreased coverage since 1994. Drought and increased tropical storm activity may be the cause. However, with the return of normal rainfall in 2009, milfoil coverage is expected to increase.

During 2009, a new threat to SAVs, the Amazonian apple snail, was discovered in the lake at Mobile's Langan Park. The lake is connected to the Mobile-Tensaw Delta and Mobile Bay via Three Mile Creek, thus the snails have the potential to cause significant impacts to SAVs in the entire coastal area. The ADCNR Wildlife and Freshwater Fisheries Division undertook significant and drastic measures to control and/or eliminate the snails in the lake and Three Mile Creek but were not entirely successful. Efforts will continue in 2010 and beyond.

Trends show acceleration in the occurrence of nuisance species. Impediments are lack of state plans and policies; lack of understanding by the citizens, municipal officials, road crews, gardeners, nursery owners and related associations; and lack of ability to connect past mistakes to current situations. An invasive species task force was developed by ADCNR Wildlife & Freshwater Fisheries in 2005.

Freshwater Input – Unknown. The impacts of freshwater input or lack of freshwater input, primarily during drought years, is unknown or not well documented.

Sea Level Rise

The impact of subsidence and/or sea level rise on the salt marshes of coastal Alabama and the freshwater wetlands of the Mobile-Tensaw Delta is unknown. However, given known tide gauge data from Mobile and Pensacola and the current Intergovernmental Panel on Climate Change (IPCC) projections of sea level rise over the next 100 years, significant changes to these ecosystems due to sea level rise has already occurred and/or will occur. Therefore, it is prudent to classify this threat as moderate at this time. Impediments to action on this issue include lack of

funding for restoration, lack of habitat buffers to allow for the retreat of salt marsh wetlands and similar issues. Additionally, the lack of public understanding of this issue is also a major impediment to the implementation of policies, ordinances, regulations, planning and actions to address sea level rise.

Other: Habitat Loss

Threatened habitats in the coastal counties include boggy pine savannas and bottomland hardwood forests. Impediments are lack of proper stewardship by the general public, lack of land use management by local governments, increasing population with a desire to live on or near water, and high land values and profit potential of waterfront or near waterfront developments.

While land acquisition, mainly through the Alabama Forever Wild Program, has been incredibly successful and is largely supported by the public, the increased cost of land in the coastal area limits the amount of land that is set aside for protection through acquisition. However, once these lands are acquired, active restoration efforts do take place. The restoration and protection of habitat on private lands continues to be problematic. However, interest in conservation easements and other similar programs appears to be growing.

6. **(CM)** Indicate whether the Coastal Management Program (CMP) has a mapped inventory of the following habitat types in the coastal zone and the approximate time since it was developed or significantly updated.

Habitat type	CMP has mapped inventory (Y or N)	Date completed or substantially updated
Tidal (Great Lakes) Wetlands	Yes	2001/02
Beach and Dune	No	N/A
Nearshore	No	N/A
SAVs	Yes	2008/09

7. **(CM)** Use the table below to report information related to coastal habitat restoration and protection. The purpose of this contextual measure is to describe trends in the restoration and protection of coastal habitat conducted by the State using non-CZM funds or non-Coastal and Estuarine Land Conservation Program (CELCP) funds. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

Contextual measure	Cumulative acres for 2004-2010
Number of acres of coastal habitat restored using non-CZM or non-Coastal and Estuarine Land Conservation Program (CELCP) funds	There is no mechanism in place to collect such data. Given the unfunded reporting burden this would place on other state agencies, none is anticipated to be in place in the future
Number of acres of coastal habitat protected through acquisition or easement using non-CZM or non-CELCP funds	\$18,108,936.00 **

** This is the total value of tracts purchased under the Alabama Forever Wild Program during 2004-2009. The funds used to purchase these tracts may have included federal grant dollars. Not other State dollars spent on coastal habitat acquisition are reflected due to the lack of a mechanism to collect such data.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the wetland management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment.

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Wetland regulatory program implementation, policies, and standards	Yes	Yes
Wetland protection policies and standards	Yes	No
Wetland assessment methodologies (health, function, extent)	Yes	No
Wetland restoration or enhancement programs	Yes	Yes
Wetland policies related to public infrastructure funding	No	No
Wetland mitigation programs and policies	Yes	No
Wetland creation programs and policies	Yes	Yes
Wetland acquisition programs	Yes	No
Wetland mapping, GIS and tracking systems	Yes	Yes
Special Area Management Plans	No	No
Wetland research and monitoring	Yes	Yes
Wetland education and outreach	Yes	Yes
Other (please specify)	None	N/A

2. For management categories with significant changes since the last assessment, provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.

- a) Characterize significant changes since the last assessment.
- b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts.
- c) Characterize the outcomes and effectiveness of the changes.

Wetland Regulatory Programs Implementation, Policies and Standards:

The ADCNR designated two areas in lower Perdido Bay as “No Motor Zones” to protect seagrass beds from prop scaring. Efforts are being conducted in partnership with the ADCNR-SLD-Coastal Section, DISL, City of Orange Beach, The Nature Conservancy and ADCNR Marine Police. Source of funds: NGO, State (AMP) and City). Effectiveness: The ADCNR Marine Police Division enforces the order. However, an analysis of 2002 SAV mapping and 2009 SAV mapping has not been conducted to determine if prop-scaring has been reduced.

Wetland Restoration or Enhancement Programs /Wetland Creation Programs and Policies:

Following Hurricane Katrina, the ADCNR received \$4 million for wetlands restoration and enhancement from NOAA National Marine Fisheries Service. ADCNR-SLD-Coastal Section is managing the SLD portion of this project. Source of funding: NOAA NMFS) Effectiveness: The funds are being used to design and construct a 32-acre salt marsh restoration project west of the mouth of Bayou La Batre to be completed in Fall 2010. The effectiveness cannot be evaluated at this time.

Helen Wood Park: The park fronts Mobile Bay and is the site of two projects.

- (1) The Mobile Bay National Estuary Program (MBNEP) is conducting restoration activities at Helen Wood Park by excavating Phragmites and planting native march vegetation. (Funding source: GEMS Community Restoration Program – NOAA). Effectiveness: Short term, the project was successful in restoring the marsh. Monitoring continues through a DISL monitoring program described below.
- (2) The Dauphin Island Sea Lab (DISL) and The Nature Conservancy (TNC) are conducting a Living Shorelines Demonstration Project on ADCNR-owned Helen Wood Park. Project activities are bagging oyster shell, building oyster shell breakwaters and planning oyster-ball reef breakwaters. Source of funding: EPA) Effectiveness: The project is recently completed and monitoring will continue through a DISL monitoring program that is described under “Wetland Research and Monitoring” below.

TNC and DISL are conducting restoration activities along Coffee Island and the Dauphin Island Causeway.

Source of funds: EPA, NOAA Non-309-CZM, State, NGO) Once completed, monitoring will be conducted through a DISL monitoring program described under "Wetland Research and Monitoring."

Wetland mapping, GIS, and tracking systems: During 2008 and 2009, SAV mapping was conducted by the ADCNR and the MBNEP using 309 funds.

Source of funding: 309. Effectiveness: The results are noted under Resource Characterization #4 above and are being used by the DISL to investigate the link between precipitation and tropical storm event and SAV coverage. Results of this investigation will assist the ACAMP and partners in determining if changes to Wetlands and SAV enforceable policies, regulations, enhancement policies and programs are needed.

Note: Recently developed by the Mississippi-Alabama Sea Grant Consortium and managed by the Mobile Bay National Estuary Program (MBNEP) is a GIS tool called a Habitat Priority Planner. Not 309-CZM funded. The tool was used to develop a Prioritization Guide for Coastal Habitat Protection in Mobile and Baldwin Counties, Alabama (the "Guide") in 2008-2009 as part of a collaborative project undertaken by the (MBNEP), the Coastal Habitats Coordinating Team (CHCT), The Nature Conservancy (TNC), the Coastal Services Center (CSC) and the Office of Habitat Conservation (OHC) of the National Oceanic and Atmospheric Administration (NOAA). The project team expanded, improved and updated the 2004-2005 Mobile Bay acquisition and restoration plan, *Conserving Alabama's Coastal Habitats: Acquisition and Restoration Priorities for Mobile and Baldwin Counties*.

Wetland Research and Monitoring: Following Hurricane Katrina, the ADCNR received \$1.5 million in a post-Hurricane Katrina fisheries restoration grant from the National Oceanic and Atmospheric Administration funding for wetlands research and monitoring.

These non-CZM funds were provided to the DISL by the ADCNR. Of the \$1.5 million, \$400,000 were used to construct projects and \$1.1 million will be used in a three-year intensive monitoring and research effort that will investigate innovative shoreline, marsh and SAV restoration and protection techniques, as well as monitoring the efficacy of a number of existing and newly constructed restoration projects.

The following sites are to be monitored:

- DISL-constructed restoration projects at the northeast and southern shorelines of Point aux Pins. On both projects, oyster shell breakwaters are being used to protect eroding shorelines and promote the re-establishment of marsh plants and seagrasses along the shoreline.
- A seagrass restoration project in Little Lagoon adjacent to the Bon Secour National Wildlife Refuge was significantly expanded. This project will compare the feasibility and cost-efficacy of several seagrass planting methods.
- A large-scale project planned for Little Bay.
- The Mobile County Bay Front Park Oyster Reef Breakwater research project
- The Helen Wood Park Living Shorelines Demonstration project, constructed as part of a partnership between the DISL, ADCNR and The Nature Conservancy and the 32-acre salt marsh project west of the mouth of Bayou LaBatre. Both projects are described under "Management Characterization" #2 – "Wetland Restoration or Enhancement Programs."

All sites will be monitored for a wide range of parameters, including oyster, fish, shellfish and benthic macro-invertebrate abundance; water quality and chemistry; shoreline stabilization; and other related parameters. This will provide the scientific data to determine restoration project efficacy, validate project designs and guide the design and construction of future habitat restoration and shoreline stabilization projects. Results will provide cost efficacy data to promote and construct "living shoreline" alternatives to bulkheads and seawalls and guide future restoration efforts.

Wetland Education and Outreach: The Coastal Training Program at the Weeks Bay National Estuary Research Reserve significantly increased the number of wetlands training activities. The primary audience is coastal decision-makers.

Source of funding: NOAA-ERD The training is popular with engineers, developers and local planning groups.

Two ongoing education projects are the Mobile County Grasses in Classes Program, established by the MBNEP, and the Baldwin County Grasses in Classes Program being implemented by the Weeks Bay NERR. Partners in these programs include the Mobile County Public Schools Environmental Studies Center, Baldwin County Board of Education, U.S. Fish & Wildlife Service, DISL, Weeks Bay NERR, Alabama Coastal Foundation, ADCNR State Lands Division, and Mobile County Parks & Recreation Department. Four Mobile County public high schools participate – Alma Bryant, Baker, Murphy, and Satsuma – and all seven Baldwin County public high schools participate – Bay Minette, Spanish Fort, Daphne, Fairhope, Robertsedale, Foley and Gulf Shores. Students are growing smooth cord grass, black needle rush, panic grass, and sea oats, which they routinely plant at restoration sites during the school year.

Source of funds: NOAA-ERD; EPA, county school boards. Success has been documented by the projects' coordinators.

(CM) Indicate whether the CMP has a habitat restoration plan for the following coastal habitats and the approximate time since the plan was developed or significantly updated.

Habitat type	CMP has a restoration plan (Y or N)	Date completed or substantially updated
Tidal (Great Lake) Wetlands	No	N/A
Beach and Dune	No	N/A
Nearshore	No	N/A
Other (please specify)	No	N/A

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the Coastal Management Program and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Select type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H, M, L)
Comprehensive tracking of wetland impacts.	Regulatory/Policy/Data	H
Use of innovative approaches such as transfer of development rights and conservation easements to protect coastal wetlands.	Regulatory/ Policy/Training	M
Lack of restoration funding/Federal funding match requirements	Policy/Funding	H
Inaccuracy and/or expense of wetlands mapping.	Capacity/Funding/Technology	H
Lack of a comprehensive restoration plan and/or planning tools to address threats and opportunities.	Funding/Capacity/Policy	H
Lack of an integrated habitat restoration program.	Capacity	H
Need for additional continuing SAV mapping to understand status and trends.	Funding/Data	H
Lack of living shorelines guidance and policies to provide alternatives to bulkheading and reverse loss of intertidal habitats from shoreline armoring.	Regulatory, Policy, Training, Capacity, Communication & Outreach	H

Major gaps: Wetlands:

1. Continued inadequate tracking and/or trends information to understand wetlands losses.
2. Lack of a sense of stewardship by the general public.
3. Over-reliance on U.S. Army Corps of Engineers by local/state governments and agencies.
4. Lack of wetlands protection regulation outside of the defined coastal area.
5. Limited restoration funding.

6. Lack of a comprehensive restoration strategy to address threats and opportunities.
7. Lack of an integrated habitat restoration program.
8. Lack of Living Shorelines Guidance and Policies to provide alternatives to bulkheading and reverse loss of intertidal habitats from shoreline armoring.

These major gaps inhibit the ACAMP's ability to protect or restore wetlands and other coastal habitats, to respond to habitat restoration funding opportunities, to employ more effective mitigation requirements, to reduce impacts from shoreline armoring and/or to encourage voluntary programs to reduce habitat loss.

Major gaps: SAVs:

1. Lack of understanding of the link between drought, freshwater inflow, and other factors on SAV distribution and coverage.
3. Need for additional education and outreach efforts to stress the importance of SAVs and the sensitivity of seagrasses to human impacts.
4. Need for continued mapping efforts to establish status and trends, and the factors driving those trends.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High	<u> XX </u>
Medium	<u> </u>
Low	<u> </u>

Briefly explain the level of priority given for this enhancement area.

While the economic down-turn may have reduced wetland impacts from development due to chronic erosion, coastal wetlands, especially salt marsh, continue to be lost at an alarming rate.

2. Will the CMP develop one or more strategies for this enhancement area?

Yes	<u> </u>
No	<u> XX </u>

Briefly explain why a strategy will or will not be developed for this enhancement area.

With the emphasis placed on coastal restoration through the Gulf of Mexico Alliance, Gulf of Mexico Foundation CRP Program and other similar programs, the need for an integrated Alabama coastal restoration program is becoming more apparent. Such a program will assist the state in acquiring and managing funds for coastal restoration, such as funds that may result from the BP-Deepwater Horizon incident, increased federal funding for restoration and other programs.

SECTION IV: STRATEGY

Strategy Coastal Area and Marine Spatial Planning Program

I. Issue Area(s)

The proposed strategy or implementation activities will support the following priority (high or medium) enhancement area(s) (*check all that apply*):

- | | |
|---|--|
| <input type="checkbox"/> Aquaculture | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input checked="" type="checkbox"/> Energy & Government Facility Siting | <input type="checkbox"/> Wetlands |
| <input checked="" type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input checked="" type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input type="checkbox"/> Special Area Management Planning | |

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type(s) of program changes (*check all that apply*):

- A change to coastal zone boundaries;
- New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- New or revised local coastal programs and implementing ordinances;
- New or revised coastal land acquisition, management, and restoration programs;
- New or revised Special Area Management Plans (SAMP) or plans for Areas of Particular Concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- New or revised guidelines, procedures and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government and other agencies that will result in meaningful improvements in coastal resource management.

B. Describe the proposed program change(s) or activities to implement a previously achieved program change. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

The proposed activity, Coastal Area and Marine Spatial Planning Program, will include the development of a program document that could lead to local and state program changes or policies in the coastal area and a set of GIS data layers that will assist the review process for planning and permitting activities in the coastal area by both state and local governments. Included in this program will be a new education and outreach component.

Development of the program document would involve a comprehensive, adaptive, integrated, ecosystem-based and transparent spatial planning process based on sound science for analyzing current and anticipated uses of coastal areas. The document would assist in identifying areas most suitable for various types or classes of activities in order to reduce conflicts among uses, reduce environmental impacts facilitate compatible uses, and preserve critical ecosystem services to meet economic, environmental, security and social objectives. In practical terms, the guide would provide a process to better determine how the coasts are sustainably used and protected now and for future generations.

Existing spatial data for the coastal waters as well as the landward boundary of the coastal area, and beyond if feasible, will be inventoried and evaluated to determine which data would support this project. Sensitive habitat data will be compiled; appropriate sites for certain types of activities

(alternative energy sites, sand deposits, conservation, etc.) will be identified; Geographical Areas of Particular Concern (GAPC) will be better defined; areas for consideration as a GAPC or Area of Preservation and Restoration (APRs) will be geographically defined and evaluated in accordance with NOAA criteria; sea-level rise vulnerability will be compiled; guidance on the placement and environmental review of the siting of energy facilities/pipelines in coastal waters and on the siting of sand mining operations in coastal waters will be developed; and an opportunity for coordinated planning, management and environmental review with local governments, other divisions of the Alabama Department of Conservation and Natural Resources (ADCNR), and other state agencies will be provided. Data gaps will be identified and recommendations made to address gaps. The data and results will be compiled and incorporated into both the ACAMP and other functioning programs and plans, such as the Mobile Bay National Estuary Program and the Weeks Bay National Estuarine Research Reserve Management Plan.

Included in this program will be the development of an education and outreach tool to address sea level rise issues in coastal Alabama. Using the collected data regarding sea-level rise vulnerability, a white paper discussing on-the-ground activities, established policy and regulatory measures, and projects that other coastal states have implemented to address sea level rise will be developed. This effort will provide the framework to develop components for a sea level rise education and outreach tool that will be used to educate state and local decision makers.

III. Need(s) and Gap(s) Addressed

Identify what priority need the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority need. This discussion should reference the key findings of the Assessment and explain how the strategy addresses those findings.

Alabama's two coastal counties contain over 1,000 square miles of marine waters and over 600 linear miles of coastal shoreline. As a result, Alabama is particularly reliant on healthy coastal waters and both land and water resources. A wide range of coastal uses (some conflicting) drive the state's economy, such as the maritime shipping industry, commercial fishing and shellfish industries, recreational boating and fishing, the tourism industry, real estate development and both conventional and alternative types of infrastructure associated with an increasing residential population. Energy facilities and the need for sand for beach nourishment present potential conflicts. Impacts of increased impervious surfaces, sea level rise and loss of sensitive habitat areas are other concerns.

This project is intended to address the following gaps:

In general, limited availability and use of spatially oriented data in the policy and regulatory process and especially for the effective implementation of existing coastal area policies and regulations of the Alabama Coastal Area Management Program. (Cumulative & Secondary Impacts, Energy & Government Facility Siting, and Ocean Resources)

Lack of a comprehensive and spatially oriented map of nearshore and offshore resources and uses. (Cumulative & Secondary Impacts)

Lack of key spatial/baseline data to develop comprehensive guidance or a plan for guiding for energy siting, including resource use and energy infrastructure, and for identifying areas and use related to recreation and commercial fisheries. (Energy & Government Facility Siting and Ocean Resources)

Lack of data that identifies, characterizes, inventories and maps ocean resources, such as sand resources, seafloor habitats and fish and shellfish resources, and that lead to improved policy. (Ocean Resources)

Lack of data to develop policy, regulation, a comprehensive planning tool and an education and outreach tool to address potential opportunities and possible threats that the coastal area could face

in future years, especially as result of sea level rise. (Cumulative & Secondary Impacts)

Need to increase the capacity (personnel that are knowledgeable and trained) for researching and analyzing data, illustrating cause and effect of potential threats, generating public discussion and developing policy, regulation and guidance that address potential threats, especially sea level rise to an already highly developed coastline. (Cumulative & Secondary Impacts and Coastal Hazards)

Lack of data to define boundaries for current Geographic Areas of Particular Concern (GAPC) and Areas of Preservation and Restoration and areas that would benefit from a GAPC or APR designations and lead to improved policy and regulation. (Cumulative & Secondary Impacts)

Lack of comprehensive data to increase awareness of cumulative, secondary and coastal hazard impacts of citizens and public officials by illustrating the effects of indiscriminate development in relation to the effects of storms, drainage, salt water intrusion, sea level rise, decreasing wetlands and green space. (Cumulative & Secondary Impacts and Coastal Hazards)

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities, including a clear articulation of the scope and value in improved coastal management and resource protection.

Protecting and sustaining coastal and marine resources, while allowing use of resources in the appropriate location, is critical. Spatial planning is a process that can assist the Alabama Coastal Area Management Program in achieving a balance in a comprehensive manner. Spatial planning can improve the assessment of cumulative impacts across various sectors of activities occurring in and affecting the coastal area and marine environments and identify management strategies that will sustain coastal and ocean resources as well as coastal communities over the long-term. Finally, a spatial plan assists in setting and implementing the goals, policies and management for marine and coastal activities and resources.

The development of a sea level rise education and outreach program for coastal Alabama will provide a tool for educating state and local officials on the effects of sea level rise in coastal Alabama. This tool, specifically adapted and designed for coastal Alabama, is intended to provide graphic examples of differing sea level rise scenarios and how these scenarios will impact specific local communities and infrastructure. Additionally, it will provide examples from around the country of how coastal Alabama can adapt to changes caused by sea level rise.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities.

The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

Likelihood of success is high. The ACAMP has been involved with GIS mapping and data collection for a number of years and has on staff a GIS Specialist. The ACAMP will establish a steering committee and will partner with the Alabama Geological Survey, the Dauphin Island Sea Lab and the Mobile Bay National Estuary Program on aspects of the project.

The GSA performs coastal research using Geographic Information System (GIS) and remote sensing platforms and field mapping techniques. GIS technology is used to develop, maintain, model, and disseminate high-quality, accurate geospatial data related to minerals, energy, geomorphology, water, habitat and other aspects of coastal Alabama.

The DISL is a research and teaching institution dedicated to marine and coastal area issues and is a consortium of Alabama's state universities.

The Mobile Bay National Estuary Program is an EPA-funded program that promotes conservation and protection of Mobile Bay and surrounding areas.

Data will be gathered, analyzed and used to develop the program for use as decision-support tools for coastal decision makers.

The CSMP will be implemented by the ACAMP. Local, state, regional and academic partners that are continually involved in coastal decision making will be included in the implementation phase. Public outreach and education will be achieved through the ACAMP, the Weeks Bay National Estuarine Research Reserve and partners (such as the Alabama Geological Survey, Mobile Bay National Estuary Program and the Dauphin Island Sea Lab), the network of partners and the relationships with local governments.

A sea level rise education and outreach program specific to coastal Alabama will enable local decision makers to directly relate to how sea level rise will affect their communities and help promote action on this issue.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps necessary for achieving the program change and/or implementing a previously achieved program change. The plan should identify significant projected milestones/outcomes, a schedule for completing the strategy, and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3).

Total Years: 5

Total Budget: \$368,400

Year(s): 1 and 2 (of 5)

Description of activities:

Coastal Area and Marine Spatial Planning Program (CMSP) Phase I & II

1) Establish steering committee.

ACAMP staff will establish a steering committee. Staff will determine the number and affiliation of the committee. The committee members would come from the appropriate federal and state agencies, academic institutions, local or regional governments and the private sector.

The steering committee will assist the ACAMP staff in all phases of this strategy

The public and NGOs will be given the opportunity to provide input prior to finalizing the program and document.

2) Collect datasets.

Determine a list of datasets, desired scale, quality necessary for a CMSP, sources of existing data, method of obtaining new data and method to evaluate datasets that will be utilized.

3) Categorize uses.

Inventory, review and categorize uses of the resources, including existing and potential uses. Determine management of the uses (both existing and potential).

4) Modeling activities.

Collect and evaluate existing sea level rise and storm surge models to integrate in the GIS to serve as a component of the sea level rise education and outreach tool, which is a component of the Coastal Area and Marine Spatial Planning Program.

5) Review programs and regulations.

Inventory and review related programs and regulations within the coastal area. Determine applicability and/or feasibility of including in the program and program document. Determine gaps and resolve issues.

6) Program and Program Document

Determine effective program and program document structures that can most efficiently lead to program change(s), improved coordination among state agencies and direct ACAMP-supported research activities that could support program change.

7) Education Outreach/Tool.

Determine elements to incorporate into a sea-level rise education and outreach tool that will effectively disseminate the program elements to state and local governments. This will include

- a) Identify and compile existing sea level rise modeling efforts and the results.
- b) Compile a white paper discussing on-the-ground activities, policy and regulatory measures and projects that other coastal states are using to address sea level rise and developing components for a sea level rise education and outreach tool for state and local decision makers.

Final Outcome(s) and Products:

- (1) Established steering committee.
- (2) Collection of natural resource related data such as oyster beds, artificial reefs, wetlands, SAV's and other critical habitat areas.
- (3) Compilation of programs and/or regulations to be included in the Coastal and Marine Spatial Planning Program.
- (4) Structure for the program document.
- (5) Compilation of sea level rise models that have been interpreted for use in a sea level rise education and outreach tool and a white paper for use in developing a sea level rise education and outreach tool.

Budget: \$122,600

Year(s): 3, 4 and 5 (of 5)

Description of activities:

Coastal Area and Marine Spatial Planning Program (CMSP) Phase III, IV & V

Develop a Coastal Area and Marine Spatial Planning Program document using the outcome/products produced in years 1 and 2 above.

Final Outcome(s) and Products:

A CMSP program document that will include the following:

- a) A set of GIS data layers that will assist the review process for planning and permitting activities in the coastal area by both state and local governments.

- b) A comprehensive framework to manage proposed uses of coastal waters that can be implemented through existing state programs/regulations, including the GAPC and APR designations. The framework will be in the form of a set of documents and maps and will provide guidance to resource agencies, organizations and interests for achieving the goal of balancing multiple objectives, as described under "Goal" below.
- c) A coastal area and marine spatial GIS and related data managed by the ACAMP.
- d) An evaluation of potential Geographical Areas of Particular Concern (GAPCs) and a refined definition of the boundaries of existing GAPCs.

Goal: The program is intended to balance multiple objectives, including ecological, social, economic and governance; clearly define and manage ocean areas that are large enough to incorporate relevant ecosystem processes; and address the interrelationships and interdependence of the natural processes, human uses and appropriate authorities. The goal is to coordinate the planning, review and management of a growing number of coastal and marine activities; add new protections for marine life habitats; identify areas suitable for development; and designate multi-use areas.

The program would evaluate areas for additional development such as the Port of Mobile. Port expansion could be conducted in a manner to benefit the economy while avoiding sensitive environmental areas.

The program would characterize the environment and uses to the extent possible with the data gathered and identify key gaps that should be addressed. It will provide an analysis of the interaction between the conflicting uses and groups and has the potential to aid the regulatory review process so that uses are evaluated using a comprehensive analysis, thus lessening the impact of cumulative and secondary impacts. Determination to revise and/or add enforceable policies to ACAMP would be made by the Alabama Department of Environmental Management based on evidence and data collected and developed in this strategy.

Budget: \$215,800

Year(s): 4 and 5 (of 5)

Description of activities:

CMSP Program – Education Component Phase I & II

- (1) Develop a public outreach and education tool related to sea level rise using the outcome/products produced in years 1 and 2 above.
- 2) In cooperation with local, state and federal partners, conduct sea level rise workshops (2 or 3) for state and local coastal decision makers, produce educational/outreach materials, meet with local interest groups and conduct other similar education/outreach activities.

The intended effect is to allow local decision makers to directly relate to the effects of sea level rise on their communities in the form of revised ordinances and revised strategic, comprehensive and hazard mitigation plans.

Final Outcome(s) and Products:

- (1) An education and outreach tool to educate state and local officials on the effects of sea level rise on coastal Alabama.
- (2) Workshops for state and local coastal decision makers.
- (3) Educational materials for distribution.

Budget: \$30,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.

309 Funds are sufficient to carry out these tasks.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out the proposed strategy, identify these needs. Provide a brief description of what efforts the applying agency has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The ACAMP intends to enter into cooperative agreements with other state and local agencies, such as the Mobile Bay National Estuary Program, the Dauphin Island Sea Lab, the Geological Survey of Alabama, the private sector and/or NGOs in order to complete certain portions of this task. The ACAMP has the technical expertise and staff to oversee such agreements and to implement the coastal area and Marine Spatial Planning Guidance.

VIII. Projects of Special Merit (PSM) (Optional)

If desired, briefly indicate what PSMs the CMP may wish to pursue to augment this strategy. Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above. The information in this section will not be used to evaluate or rank PSMs and is simply meant to provide the CMPs the option to provide additional information if they choose. PSM descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the PSM competition.

The ACAMP may pursue PSMs to obtain additional mapping and modeling data and similar projects related to the implementation of this guidance. The ACAMP may also pursue PSMs to enhance the permitting and re-permitting processes, especially after a major storm, and to more accurately enforce setbacks along the Gulf of Mexico shoreline to prevent redevelopment in high hazard areas.

Strategy
Integrated Coastal Alabama Comprehensive Habitat Restoration Program

I. Issue Area(s)

The proposed strategy or implementation activities will support the following priority (high or medium) enhancement area(s) (*check all that apply*):

- | | |
|--|--|
| <input type="checkbox"/> Aquaculture | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input checked="" type="checkbox"/> Wetlands |
| <input type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input type="checkbox"/> Special Area Management Planning | |

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type(s) of program changes (*check all that apply*):

- A change to coastal zone boundaries;
- New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- New or revised local coastal programs and implementing ordinances;
- New or revised coastal land acquisition, management, and restoration programs;
- New or revised Special Area Management Plans (SAMP) or plans for Areas of Particular Concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- New or revised guidelines, procedures and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government and other agencies that will result in meaningful improvements in coastal resource management.

B. Describe the proposed program change(s) or activities to implement a previously achieved program change. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

The Alabama Coastal Area Management Program will initiate a program change through the development and implementation of an Integrated Coastal Alabama Comprehensive Habitat Restoration Program.

Implementation of this program will be funded under Section 306.

III. Need(s) and Gap(s) Addressed

Identify what priority need the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority need. This discussion should reference the key findings of the Assessment and explain how the strategy addresses those findings.

Major Gaps and Needs to be Addressed:

- Lack of an integrated habitat restoration strategy and program. (Cumulative & Secondary Impacts and Wetlands)
- Lack of a comprehensive planning tool to address potential opportunities and possible threats that the coastal area could face in coming years. (Wetlands)
- Lack of living shorelines guidance, policies and regulations specific to coastal Alabama. (Cumulative & Secondary Impacts and Wetlands)

By addressing these major gaps and needs, the ACAMP will create an integrated coastal habitat restoration program. This program will include compiling a Comprehensive Restoration Plan for the coastal area; updating the Gulf Ecological Management Site Program and developing living shorelines guidance and policy documents to assist and facilitate the implementation of that Plan. Taken as a whole, the Program will enhance, encourage and facilitate the implementation of habitat restoration projects in the coastal area.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

Integrated Comprehensive Habitat Restoration Program will provide the focus and direction needed to adequately direct resources to address habitat restoration needs in coastal Alabama. The program is intended to address, in a comprehensive manner, the impacts of potential threats to the coastal area: intense development pressure, extent of impervious surface, sea level rise, shoreline armoring and preservation of sensitive habitat and lands that provide protection from coastal hazards.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

The likelihood of success is high. The ACAMP has been actively involved in habitat restoration activities for at least 10 years. Such activities are strongly supported by the Alabama Department of Conservation and Natural Resources (ADCNR) and have resulted in the ACAMP gaining valuable expertise on habitat restoration issues, policies and funding as well as project management. Further, given prospective funding sources, such as the Coastal Impact Assistance Program, NOAA-Community Restoration Program, Alabama's Forever Wild Program and possible restoration funding resulting from the BP-Deepwater Horizon Incident, the ADCNR will continue to rely on the ACAMP for its expertise in such issues.

VI. Strategy Work Plan

Total Years: 5

Total Budget: \$100,000

Year(s): 1, 2, and 3 (of 5)

Description of activities:

Development of a Coastal Alabama Comprehensive Habitat Restoration Program

(1) Establish a steering committee.

ACAMP staff will establish a steering committee. Staff will determine the number and affiliation of the committee. The committee members would come from the appropriate federal and state agencies, academic institutions, local or regional governments and NGOs. The steering committee will assist the ACAMP staff in all phases of this strategy.

(2) Define the scope and project types and geographical area of consideration in order to develop a restoration strategy that can be implement through a restoration program.

(3) Prepare and conduct a needs assessment of habitat restoration needs intended to identify gaps and guide the process.

- (4) Compile and review existing plans, programs and funding sources.
- (5) Draft a strategy for review and approval by the steering committee and the ACAMP. The Regional Sediment Management, Beneficial Use of Dredged Materials and the objectives of the Gulf of Mexico Alliance-Habitat Conservation and Restoration Team (GOMA-HCRT) will be considered for inclusion in the strategy. The strategy document will describe the protocols for implementing a comprehensive restoration program. The document will include a timeline for updates, as initiatives are addressed and new initiatives become a priority.

Final Outcome(s) and Products:

Products: A Coastal Alabama Comprehensive Habitat Restoration Strategy.

Outcome: Implementation of a Coastal Alabama Comprehensive Habitat Restoration Program.

Budget: \$50,000.00

Year(s): 1 (of 5)

Description of activities:

GEMS/GMF-CRP Program Update and Revision

- (1) Update and revise the GEMS site list.
- (2) Develop a more defined geographical boundary for each site.
- (3) Develop an ArcGIS shapefile containing the boundaries for each site.
- (4) Develop a fact-sheet for each site, in PDF and/or HTML format.
- (5) Integrate the GEMS into the Integrated Coastal Alabama Habitat Restoration Program.

Final Outcome(s) and Products:

- (1) Updated Gulf Ecological Management Site (GEMS) list.
- (2) Fact sheet on each site.
- (3) Finalized GEMS component for the Integrated Coastal Alabama Habitat Restoration Program.

Budget: \$15,000.00

Year(s): 1 and 3 (of 5)

Description of activities:

Develop Coastal Alabama Living Shorelines Guidance & Policy/Models Rules

- (1) Work with the steering committee established for this strategy.
- (2) Conduct interagency and stakeholder meetings.
- (3) Compile and review programs and guidance from other states and localities.
- (4) Review Alabama state policies and rules.
- (5) Developing draft guidance, polices, rules and ordinances.
- (6) Conduct public presentations and workshops for the purpose of gathering input and recommendations.
- (7) Insure that pertinent shoreline data, including the recent Comprehensive Shoreline Mapping Project data funded under the last 309 program, will be considered and integrated.

Final Outcome(s) and Products:

- (1) A Coastal Alabama Living Shorelines Guidance document and education documents for decision makers, homeowners and the public.

- (2) Draft policies on living shorelines for consideration for inclusion in the ACAMP.
- (3) Draft model rules and ordinances that promote living shorelines implementation for consideration by state and local governments.

This project will be included in the Integrated Coastal Alabama Habitat Restoration Program.

Budget: \$35,000.00

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.

309 Funds are sufficient to carry out these tasks.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out the proposed strategy, identify these needs. Provide a brief description of what efforts the applying agency has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The ACAMP intends to enter into cooperative agreements with other state and local agencies, such as the Mobile Bay National Estuary Program, the Dauphin Island Sea Lab, the Geological Survey of Alabama, the private sector and/or NGOs. The ACAMP has the technical expertise and staff to oversee such agreements and to implement the Integrated Coastal Alabama Habitat Restoration Program.

VIII. Projects of Special Merit (Optional)

If desired, briefly indicate what PSMs the CMP may wish to pursue to augment this strategy. Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above. The information in this section will not be used to evaluate or rank PSMs and is simply meant to provide the CMPs the option to provide additional information if they choose. PSM descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the PSM competition.

The ACAMP may pursue PSMs to obtain additional benthic mapping data, to pre-design and permit project contained in the Coastal Alabama Comprehensive Habitat Restoration Plan, and other similar projects related to the implementation of this program.

5-Year Budget Summary by Strategy

At the end of the Strategy section, please include the following budget table summarizing your anticipated Section 309 expenses by strategy for each year.

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Coastal Area Marine Spatial Planning Program	Coastal & Marine Spatial Planning Program Phase I 54,000	Coastal & Marine Spatial Planning Program Phase II 68,600	Coastal & Marine Spatial Planning Program Phase III 68,600	Coastal & Marine Spatial Planning Program Phase IV; CMSP Education Component Phase I 83,600	Coastal & Marine Spatial Planning Program Phase V; CMSP Education Component Phase II 93,600	368,400
Comprehensive Habitat Restoration Program Development, Integration	Comprehensive Restoration Plan Phase I; GEMS Update; Shorelines Guidance \$50,000	Comprehensive Restoration Plan Phase II \$25,000	Comprehensive Restoration Plan Phase III; Living Shorelines Policy/Model Rules \$25,000	\$0	\$0	100,000
Administration – 309 preparation for FY2017-2021				10,000		10,000
Total Funding	104,000	93,600	93,600	93,600	93,600	478,400

Description: Administrative Task
Year 4 of 5
Funding: \$10,000

In preparation for the next Section 309 Assessment and Strategy for FY2017-2021, the ACAMP staff will begin formulating an assessment of activities, achievements, concerns, threats and opportunities that have occurred during the FY2012-FY2017 regarding the nine enhancement areas. Activity will be in the form of collecting data from and initiating discussions with relevant groups regarding the current state of the nine enhancement areas and determining possible approaches to addresses continuing or new threats. Work will include data gathering regarding contextual measures related to each enhancement area. Work will be conducted by both staff and contractors.

APPENDIX A

Comments and responses are attached.

Four comments were received:

(1)

Steve Crockett, email dated January 12, 2011

Response from ADCNR, State Lands Division, Coastal Section Chief Phillip Hinesley, email dated January 19, 2011

(2)

Vice President, Bon Secour Fisheries, Inc., Chris Nelson, email dated January 13, 2011

Response from ADCNR, State Lands Division, Coastal Section Chief Phillip Hinesley, email dated January 19, 2011

(3)

Auburn University Assistant Professor and Marine Fisheries Extension Specialist William Walton, email dated January 14, 2011

Response from ADCNR, State Lands Division, Coastal Section Chief Phillip Hinesley, email dated January 14, 2011

(4)

Mobile Baykeeper (NGO) Executive Director Casi Callaway and Program Director Donna Jordan, letter dated January 14, 2011

Response from ADCNR, State Lands Division, Coastal Section Chief Phillip Hinesley, letter dated January 19, 2011

Hinesley, Phillip

From: Hinesley, Phillip
Sent: Wednesday, January 19, 2011 8:54 AM
To: 'Steve Crockett'
Cc: King, Amy; Helton, Janis
Subject: RE: ACAMP draft

Steve,

Thanks for your comments. We are in the process of revision the 309 Assessment and Strategy document.

Phillip Hinesley
Coastal Section Chief
State Lands Division
Alabama Department of Conservation and Natural Resources
5 Rivers Delta Center
31115 Five Rivers Boulevard
Spanish Fort, AL. 36527
(251) 621-1216 (P)
(251) 621-1331 (F)
www.outdooralabama.com

From: Steve Crockett [mailto:scrocket@iglou.com]
Sent: Wednesday, January 12, 2011 4:59 PM
To: Hinesley, Phillip
Subject: ACAMP draft

Dear Phillip,

I would like to indicate my interest in shellfish aquaculture in our state waters. I have been raising native hatchery spawned oysters at my site on Point aux Pins since 2001 after I began participation in the Volunteer Oyster Gardening program. I am using the Australian long line method for a shallow bay intertidal area. After a taking a breather after Katrina and with the major support of the Auburn University Shellfish Laboratory, we are finally getting our product on the half shell marked. I dare say that my operation is the only source of Alabama oysters at the present time.

Our efforts are dedicated to enhancing the market for Alabama oysters and to providing an alternative, complementary source of high quality, premium specimens to the wild caught reef oyster. Local oystering families could easily set up a farm in addition to continuing to conducting their wild harvest. However, the farm would be less susceptible to the vicissitudes of predators and storms.

We at last have the data that show that such an operation can be run at a profit.

I would point out that aquaculture is mentioned as contributing to Alabama's coastal resilience in the Recovery Commission's recently released report.

Bryant High School teachers and students as well as DISL and AUSL personnel have conducted research projects at my site as well.

Our site is regularly visited by local fishing guides. Apparently thousands of oysters hanging in baskets at the top of the water column provide attractive fish habitat.

In conclusion, I would like to see at least a statement that marine aquaculture, esp. shellfish, is of interest, and of growing interest, to the state. I would like also to see that the ACAMP include statements that describe the benefits that would accrue to the residents and coastal environment from an orderly developed marine aquaculture effort.

I, and I'm sure the shellfish lab personnel, would be pleased to work with the department in revising the draft ACAMP in these regards.

Sincerely,
Steve Crockett

Hinesley, Phillip

From: Hinesley, Phillip
Sent: Wednesday, January 19, 2011 8:57 AM
To: 'Chris Nelson'
Cc: Bill Walton; King, Amy; Helton, Janis
Subject: RE: Comments regarding AL Coastal Area Management Program draft

Chris,

Thanks for your comments. We are in the process of revising the 309 Assessment and Strategy document for submission to NOAA.

Phillip Hinesley
Coastal Section Chief
State Lands Division
Alabama Department of Conservation and Natural Resources
5 Rivers Delta Center
31115 Five Rivers Boulevard
Spanish Fort, AL 36527
(251) 621-1216 (P)
(251) 621-1331 (F)
www.outdooralabama.com

From: Chris Nelson [mailto:cnelson@bonsecourfisheries.com]
Sent: Thursday, January 13, 2011 6:07 AM
To: Hinesley, Phillip
Cc: Bill Walton
Subject: Comments regarding AL Coastal Area Management Program draft

Philip:

I am traveling this week so not sure that I will be able to comment other than saying that I want to echo and reinforce what Bill Walton has submitted regarding marine aquaculture. His comments are consistent with the position of Bon Secour Fisheries. Alabama definitely needs to embrace aquaculture in general and more specifically along the coast as a means of diversifying our supply of seafood.

chris

Christopher L. Nelson,
Vice President
Bon Secour Fisheries, Inc.
P.O. Box 60
Bon Secour, AL
251-949-7411

Hinesley, Phillip

From: Hinesley, Phillip
Sent: Friday, January 14, 2011 3:54 PM
To: 'William Walton'
Cc: Blankenship, Chris; Chris Nelson; Pete Barber; Steve Crockett; Ruth Carmichael; Crozier, George; LaDon Swann; Scott Rikard; Brantley, Will; Powell, Patti; Helton, Janis; King, Amy
Subject: RE: ACAMP Section 309 Public Comments about marine aquaculture

Bill,

Thanks for your comments. They will be included under the Section 309 public comment section along with my response. We have two weeks to finalize the draft and submit it to NOAA. I have a staff meeting first thing Tuesday morning and we will consider your comments. I think you have some valid points.
Have a good weekend!

Phillip Hinesley
Coastal Section Chief
State Lands Division
Alabama Department of Conservation and Natural Resources
5 Rivers Delta Center
31115 Five Rivers Boulevard
Spanish Fort, AL. 36527
(251) 621-1216 (P)
(251) 621-1331 (F)
www.outdooralabama.com

From: William Walton [mailto:billwalton@auburn.edu]
Sent: Friday, January 14, 2011 3:27 PM
To: Hinesley, Phillip
Cc: Blankenship, Chris; Chris Nelson; Pete Barber; Steve Crockett; Ruth Carmichael; Crozier, George; LaDon Swann; Scott Rikard
Subject: ACAMP Section 309 Public Comments about marine aquaculture

Dear Phillip,

In regards to the Alabama Coastal Area Management Program Section 309
(http://www.google.com/url?sa=t&source=web&cd=1&ved=OCBcQFjAA&url=http%3A%2F%2Fwww.outdooralabama.com%2Fpublic-lands%2FstateLands%2FSLPublic-Notice%2FACAMP309%2FACAMP%2520-%2520309%2520Assessment%2520and%2520Strategy%25202010%2520Alabama%2520-%2520DRAFT.pdf&rct=j&q=alabama%20coastal%20management%20program&ei=SRouTY76KMP48Aafu932CA&usg=AFQjCNGSeCi7EydQRmXdEkMUpst-LdiTg&sig2=8_fnaJ633zphCfQFjkgs2A&cad=rja), I offer the following comments.

Comments on ACAMP 309 Assessment and Strategy

Provided by William C. Walton, Assistant Professor, Department of Fisheries & Allied Aquacultures, Auburn University
January 14, 2011

I have significant concerns with the draft version of the Alabama Coastal Area Management Program 309's Section III: Assessments of aquaculture. As stated, the enhancement objective is:

“Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable States to formulate, administer, and implement strategic plans for marine aquaculture.”

My understanding is that the Section 309 Program must result in a Coastal Zone Management Program change. These include, among others, new regulations, administrative decisions, memoranda of understanding, and changes in ordinances that improve Alabama’s ability ‘to attain one or more of the enhancement objectives.’ While aquaculture research may be supported by other sections (e.g., Sections 306 and 306A), I believe that the 309 draft, as written, ignores the opportunities presented by marine aquaculture for the state of Alabama.

(If it is determined that aquaculture is not appropriate to address under Section 309, I would urge its complete removal from the report. I, however, believe that it is appropriately included as an enhancement objective. Based on its current inclusion in the program as it could lead to formulation of policy, I note the following issues.)

1. In the current resource characterization section, the report focuses solely on the potential negative impacts and conflicts posed by marine aquaculture. There is no attempt to characterize the potential opportunities of marine aquaculture (though the noted purpose of the resource characterization includes identifying opportunities), which include the creation of jobs, increasing incomes of coastal residents, the diversification of the seafood industry, and the environmental benefits associated with shellfish farming. I would gladly supply a detailed and referenced listing of these benefits for any potential revisions.
2. In the management characterization section, the report concludes that essentially no management effort has been made nor needs to be made by the State. As written, decisions about marine aquaculture operations are left on a case by case basis. This approach provides unnecessary barriers to individuals hoping to start marine aquaculture operations. Having gone through the permitting and operation of an oyster farm, I see significant benefits to the development of clear and fair policies and regulations, and increased communication among the regulatory agencies. The current process is cumbersome and confusing.
3. The report concludes that “establishing a marine aquaculture industry is not a priority for the State of Alabama” and goes on to note “neither the state nor commercial and sport fish interests have indicated a need or desire for marine aquaculture.” In my position, I have now met and answered questions for a large number of Alabama citizens who are, in fact, extremely interested in oyster farming and are exploring the potential opportunities. We have a commercial oyster farm now in operation and several more hope to launch this coming year. We are also in the formative stages of an oyster farming opportunity zone, which could support a large number of new oyster farms.
4. The report draws no distinction between shellfish farming and other types of marine aquaculture. This oversight could lead to a great deal of confusion given the significant differences in these types of marine farming (e.g., groups opposed to open water fish farming in the Gulf might very well not oppose nearshore oyster farming).
5. Finally, the stated enhancement objective seems to recognize the potential for proactive management of marine aquaculture, but the following sections seem to completely ignore this opportunity. This is a chance to develop a strategy that addresses potential concerns, reduces conflicts of use in the coastal zone, and creates new opportunities for a struggling industry in the State of Alabama. This strikes me as an ideal opportunity for coastal zone planning.

As written, I believe this section at a minimum misses an opportunity for the State of Alabama and ignores the surge in interest in oyster farming. The draft concludes that there is no interest in marine aquaculture and there is no need for changes in management, and I disagree with both those assessments. Given the level of interest in oyster farming alone, I would urge a major revision of this entire section.

Sincerely,

Bill Walton

Bill Walton

Assistant Professor/Marine Fisheries Extension Specialist

Auburn University Dept. of Fisheries & Allied Aquacultures & Alabama Cooperative Extension System

Walton Lab Website

AU Shellfish Lab Facebook Page

Mailing Address & *Directions*

Auburn University Shellfish Laboratory

150 Agassiz Street

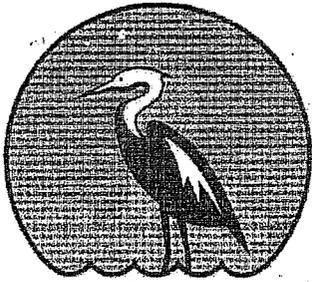
Dauphin Island, AL 36528 USA

Office Telephone: 251.861.3018, x2

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Fax: 251.861.2344

Providing citizens a means to protect the beauty, health and heritage of the Mobile Bay Watershed.



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Email: info@mobilebaykeeper.org



January 14, 2011

Alabama Department of Conservation and Natural Resources
State Lands Division, Coastal Section
31115 Five Rivers Boulevard
Spanish Fort, AL 36527

RE: Draft Section 309 Enhancement Grant Program Assessment and Strategy

Submitted email to Phillip.Hinesley@dcnr.alabama.gov

Dear Mr. Hinesley:

We are Mobile Baykeeper, a 14 year old nonprofit organization with the mission of providing citizens a means to protect the beauty, health and heritage of the Mobile Bay watershed, Alabama's waterways and coastal communities. We are writing on behalf our Board, Officers and more than 4,000 members on the draft Assessment and Strategy plan for enhancing the Alabama Coastal Area Management Program.

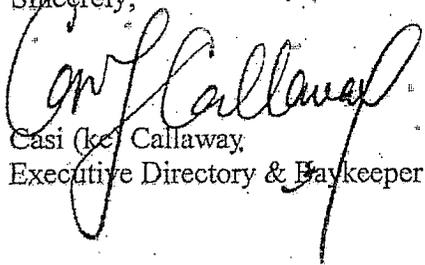
Overall, we are pleased with the Strategies the Department has chosen to address in the next 5-year period, particularly the Integrated Coastal Alabama Comprehensive Habitat Restoration Program and Coastal and Marine Spatial Planning Guidance. Coastal Alabama's natural resources have been damaged by decades of neglect and misuse due to the increased conversion of land and wetlands to developed areas and poor planning practices. While there are some municipalities and local government agencies that have developed comprehensive plans, overall, Mobile and Baldwin Counties still lack many tools to allow adequate consideration of proper land uses in planning and permitting activities. The status of current wetland acreage and trending data is mostly unavailable and it is absolutely vital to track wetland fill occurring in Mobile and Baldwin Counties to inform permitting processes. The data gathering, modeling projects and resulting Coastal Area and Marine Spatial Planning Guidance document will be a valuable tool for policymakers in identifying best land uses, reducing environmental impacts and aiding coastal resource sustainability.

The development and implementation of an Integrated Coastal Alabama Habitat Restoration Plan is a positive step in combating the degradation of our coastal areas through unified policy. The most effective way to ensure Coastal Alabama's natural resource resiliency is to properly enact sound environmental restoration. Guidance,

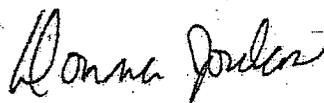
outreach, and promotion of Living Shoreline Guidance is a needed strategy in restoration efforts to reduce the hardening of shorelines and resulting shoreline erosion. The conducting of a needs assessment and production of a restoration project list is a critical component of the proposed Coastal Alabama Habitat Restoration Plan. We recommend the inclusion of a broad array of local stakeholders, such as community-based and environmental groups, be included in this process. We also recommend the inclusion of the public in this process as well. Public participation and transparency in the process are essential to enact the changes that will achieve comprehensive restoration goals for Coastal Alabama. The creation of a unified comprehensive environmental restoration plan which integrates true environmental restoration into a focused vision for a resilient Coastal Alabama is a goal we wholeheartedly support and a project in which Mobile Baykeeper would gladly participate.

Thank you in advance for consideration of these comments. Please feel free to contact us with any questions you might have.

Sincerely,



Cassi (ke) Callaway
Executive Director & Baykeeper



Donna Jordan
Program Director



STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
STATE LANDS DIVISION, COASTAL SECTION
5 Rivers ~ Alabama's Delta Resource Center

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January 19, 2011

Ms. Casi Callaway
Executive Director
Mobile Bay Keeper
300 Dauphin Street
Suite 200
Mobile, Alabama 36602

RE: Section 309 Enhancement Program Document

Dear Casi:

Thank you for your comments on the Draft Section 309 Enhancement Grant Program Assessment and Strategy. We are pleased that you agree that Coastal and Marine Spatial Planning and Habitat Restoration are a priority for the State of Alabama and the Alabama Coastal Area Management Program.

As part of the comments we received, the Coastal Section, in cooperation with, local, state, federal and non-governmental organizations plan development of a Coastal Alabama Comprehensive Habitat Restoration Plan with input from a steering committee which will involve representatives from a number of organizations.

Again, thank you for your comments and if you have questions please contact me.

Sincerely,

A handwritten signature in cursive script that reads "Phillip".

Phillip Hinesley
Coastal Section Chief