

FINAL ASSESSMENT AND STRATEGIES

FY 2011 – FY 2015

Prepared in accordance with

Section 309 of the COASTAL ZONE MANAGEMENT ACT

By the

FLORIDA COASTAL MANAGEMENT PROGRAM

January 2011

TABLE OF CONTENTS

INTRODUCTION	2
SUMMARY OF COMPLETED SECTION 309 EFFORTS	3
ENHANCEMENT AREA ASSESSMENT	
WETLANDS	6
COASTAL HAZARDS	14
PUBLIC ACCESS	22
MARINE DEBRIS	33
CUMULATIVE AND SECONDARY IMPACTS.....	38
SPECIAL AREA MANAGEMENT PLANNING	49
OCEAN RESOURCES.....	54
ENERGY AND GOVERNMENT FACILITY SITING	61
AQUACULTURE	68
STRATEGIES	
COMMUNITY RESILIENCY: PLANNING FOR SEA LEVEL RISE	75
COORDINATED CORAL AND HARDBOTTOM ECOSYSTEM MAPPING, MONITORING, AND MANAGEMENT PROGRAM.....	81
FLORIDA ESTUARINE HABITAT RESTORATION: CREATING AND TESTING STATEWIDE PLANNING AND GUIDANCE.....	87
SPECIAL AREA MANAGEMENT PLANNING FOR FWC'S CRITICAL WILDLIFE AREAS	95
MARINE DEBRIS AND AQUACULTURE USE ZONES.....	100
AQUATIC PRESERVE MANAGEMENT PLAN UPDATES	106
5-YEAR BUDGET SUMMARY.....	110
ACRONYM TABLE	111
LIST OF FLORIDA'S 35 COASTAL COUNTIES	113

INTRODUCTION

The following Assessment and Strategy was developed pursuant to Section 309 of the Coastal Zone Management Act. The document was structured to conform to the Section 309 Program Enhancement Guidance provided by the National Oceanic and Atmospheric Administration's (NOAA) Office of Ocean and Coastal Resource Management (OCRM) and covers the planning period from FY2011-2015.

The information in the assessment is based on responses to surveys completed by several state agencies, water management districts (WMD) and others. Throughout the development of the assessment and strategies, the Florida Coastal Management Program (FCMP) consulted with state and regional agencies with responsibility for resources or issues related to the nine enhancement areas identified in the 309 Program Guidance. The assessment summarizes the needs identified by FCMP partners and identifies funding strategies to address those needs where appropriate. The proposed strategies were developed through extensive consultation with FCMP partner agencies and with consideration for other programs and initiatives to ensure that Section 309 funds achieve the most value.

The FCMP provided an opportunity for public review and comment on the Assessment and Strategy, which was published in the *Florida Administrative Weekly* on July 2, 2010. No comments were received from the public after the 30-day review period.

SUMMARY OF COMPLETED SECTION 309 EFFORTS

COASTAL HAZARDS

- ◆ **Post Disaster Redevelopment Plans: Florida Department of Community Affairs**
The Department of Community Affairs (DCA) is facilitating the development of post-disaster redevelopment plans (PDRP) statewide. The first phase involved developing draft guidelines for community redevelopment after a disaster. In the second phase, the City of Panama City served as a pilot community to develop the first PDRP; the final Panama City PDRP plan was approved and passed by resolution by Mayor and city council. DCA's statewide effort was also expanded when Federal Emergency Management Agency (FEMA) funds became available for four counties to develop PDRPs. The third phase of this initiative is ongoing – it involves analysis of tested draft guidelines based on the five pilot projects and will result in a Lessons Learned document. A Best Practice Guidelines will also be published to include lessons learned and recommended legislative changes to clarify the minimum requirements of a PDRP.

OCEAN RESOURCES

- ◆ **Ecoregional Bioassessment/GAME: DEP/Coastal & Aquatic Managed Areas**
The Office of Coastal & Aquatic Managed Areas, the Florida Fish & Wildlife Conservation Commission and other partners used 309 funds to begin Florida's Geospatial Assessment of Marine Ecosystems (GAME) project. The purpose of GAME is to describe marine ecoregions, using existing data, to serve as a management tool to assist regulatory, planning and governmental decisions. The first step in developing GAME consisted of creating a data catalog that captures the widest amount of biological, chemical, geomorphological, physical and human use information. Data set footprints were created and used in the data gap analysis, and maps of footprints were organized by category and created in an ArcMap environment. Due to budget cuts, GAME was not funded after 2006; however, the investment in developing GAME, which is continuing, remains a high priority with a wide base of support. GAME has also been embraced and supported by the Gulf of Mexico Alliance which is developing "Gulf GAME" in accordance with Section ID-1 of the "Gulf of Mexico Alliance/Governor's Action Plan" and the Environmental Protection Agency (EPA) Strategic Plan Objective 4.3: "Restore and Protect Critical Ecosystems." The GAME overview is accessible at http://research.myfwc.com/features/view_article.asp?id+27265.
- ◆ **Seagrass: Florida Fish & Wildlife Conservation Commission (FWC)**
The Seagrass Integrated Mapping & Monitoring (SIMM) project is a comprehensive, statewide effort, developed by the FWC and designed to improve the protection and management of Florida's 2.2 million acres of seagrass. SIMM program goals are to map all seagrasses in Florida on a regular schedule; monitor seagrasses annually; publish a comprehensive report every six years on monitoring data, seagrass cover (including maps of seagrass gains and losses); and investigate the feasibility of using satellite imagery to map seagrasses. Using information collected on seagrass abundance, diversity, species composition, areal coverage, time series changes and other data, FWC will assess seagrass health and report status and trends to the public, resource managers, and state and federal partners, including the NOAA Coastal Services Center. The report will also be available on FWC digital libraries, atlases and other web sites. FWC has begun serving decades of seagrass imagery on its Marine Resources Aerial Imagery Database website at <http://atoll.floridamarine.org/mraid/>.

- ◆ Blueways (FWC/FWRI)
Blueways is an integrated GIS-based natural resource, land use and land management information system used to support boating activity decisions and public access to waterways. The Florida Fish & Wildlife Conservation Commission (FWC) successfully transferred its Blueways boating characterization methodology, developed in the FCMP's FY 00-05 309 Plan, to the Charlotte Harbor, Tampa Bay regions, to and Sarasota, Brevard, Bay and Collier counties. Study results are used in support of the environmental, economic and recreational viability of coastal waterways. As examples, Sarasota County used boating characterization results in developing the City of Venice comprehensive plan, and the Bay County characterization led to a grant award from FWC's Boating Infrastructure Improvement Program for a boating facility economic assessment and enhancement plan. In 2006, Florida legislation passed that offers incentives for waterfront communities to adopt recreational surface water use policies to protect natural resources, working waterfronts, public access to water, recreation and economic needs, and to protect manatees consistent with the FWC's Boat Facility Siting Guide. This legislation provides that local governments may be eligible for assistance from the FCMP with the development of such policies. More information on Blueways is available at http://research.myfwc.com/features/view_article.asp?id=3108.

- ◆ HAB Response Plans (DOH)
The Florida Department of Health (DOH) is the lead agency in developing harmful algal bloom (HAB) response plans statewide. The DOH has developed technical manuals and guidance documents to help local County Health Departments (CHD) evaluate vulnerability and risk, develop individual response plans, determine responsibilities, and describe specific response tasks. In FY 08, the first group of CHDs developed 12 response plans; 3 plans were completed in FY 09, and an additional 9 plans are close to completion. The remaining county HAB plans will be completed in FY 10. Adoption of response plans in all 67 counties will result in a consistent statewide public health strategy and reduce public health effects from HAB outbreaks. One of the most important early accomplishments of this strategy is that the Centers for Disease Control recognized Florida's HAB response plan project as a model for other states.

SPECIAL AREA MANAGEMENT PLANS

- ◆ Waterfronts Florida Partnership (DCA)
The Florida Department of Community Affairs (DCA) created the Waterfronts Florida Partnership (WFP) to address the physical and economic decline of traditional working waterfront communities. To enhance and guide the WFP into the future, DCA developed a strategic plan that identified major new initiatives, specifically: develop regional strategies to secure and network Florida's critical maritime infrastructure; develop business continuity training to minimize losses from natural and man-made disasters; develop a process for maintaining active WFP communities over time; and develop model goals, objectives and policies on mitigating and adapting to climate change that local governments may adopt in their comprehensive plans. As part of this initiative, the South Florida Regional Planning Council is completing vulnerability and qualitative risk assessment matrices that follow the guidelines in the ICLEI publication, *Preparing for Climate Change: A Guidebook for Local, Regional and State Governments*. Completion of Waterfronts Florida Program 309 strategies is expected in fall of 2011.

- ◆ **Integrated Management Framework and Aquatic Preserve Site Plan Revisions (CAMA)**
The Office of Coastal & Aquatic Managed Areas (CAMA) is developing a comprehensive management strategy, the Integrated Management Framework (IMF), to improve protection of aquatic resources through program enhancements and delivery of services system-wide. Specifically, all CAMA activities (aquatic preserve management, National Estuarine Research Reserves (NERRs), Florida Keys NMS, the Southeast Florida Coral Reef Program and others) will be coordinated using IMF policies and procedures. CAMA has completed the annual Operations Plan and procedures documents for each program area. Under its 309 strategy, CAMA is also updating management plans for the 41 aquatic preserves (AP) using data on current health, land use, water resource management, geophysical conditions, etc., that affect the AP system. The coordinated reassessment and updating of AP plans is a centerpiece of the IMF. Plan updates have been completed for Terra Ceia, North Fork St. Lucie River and Mosquito Lagoon APs and the Guana-Tolomato-Matanzas (GTM) NERR. Six more plans will be updated in the next 1-2 years, with an overall goal to finish 3-5 plans a year until all are complete. All AP plan updates are vetted through public workshops and ultimately must be approved by the Governor and Cabinet.

AQUACULTURE

- ◆ **Improved Coordination & Monitoring (DACS)**
The Florida Department of Agriculture & Consumer Services (DACS) implemented the Improved Coordination & Monitoring strategy in FY 06. This strategy involved establishing a steering group of agency and aquaculture industry representatives that identified priority issues to be addressed through ongoing coordination, seminars, bulletins and technical reviews. DACS conducted a series of stakeholder workshops and presentations, produced technical outreach materials and completed an evaluation of water quality monitoring technology. The steering group has continued to serve as a forum for sorting through issues in pursuit of balanced coastal management approaches. The guidance documents, BMP brochures and other outreach materials produced will continue to be utilized over the long term.

ENHANCEMENT AREA ASSESSMENT

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 vegetated (Other-State Wetland pursuant to Rule 62-340 FAC)**	*(DEP-SLER)	*(DEP-SLER)	Lost-11,169.34 acres Gained-17,518 acres	4,518.58 acres	12,999.40 acres	2006-2009 DEP/SLER
Tidal non-vegetated**						
Non-tidal/freshwater**		10,318,308				2009 FNAI [†]
Other (please specify)		***Coastal <i>Public Lands:</i> 838,152 <i>Private Lands:</i> 189,403 TOTAL: 1,027,555 ----- <i>Fresh-water</i> <i>Public Lands:</i> 5,254,898 <i>Private Lands:</i> 5,063,410 TOTAL: 10,318,308				2009 FNAI

[†]Florida Natural Areas Inventory

*(DEP-Submerged Lands & Environmental Resources) No accurate data statewide based on Florida wetland definition pursuant to Rule 62-340, FAC.

**The Florida wetland definition includes tidal wetlands, tidal non-vegetated wetlands, and freshwater wetlands.

***Coastal wetlands data include Mangrove Swamps, Saltwater Marshes, Tidal Flats, Salt Flats (FLUCCS codes). Public Lands data are from FNAI Florida Managed Areas December, 2009.

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.

3. Provide a brief explanation for trends.

Increasing populations will of course lead to increasing water withdrawals. According to the Florida 2060 Report, between now and 2060 the State's population is projected to more than double and consequently, without shifts in our policies, the additional land devoted to urban use will also more than double. If roughly 7 million acres of additional land is converted to urban use, it means 2.7 million acres of existing agricultural land will be lost along with 2.7 million acres of native habitat. (Florida 2060, a research project prepared for 1000 Friends of Florida)

Data provided in the above table for certain wetlands is only for permitted activities. The trends shown are an indication of impacts to wetlands and trends from the economy on the number of permitted activities. Mitigation is not required for exempt activities or activities that qualify for a noticed general permit.

The negative trend for the coastal zone is expected to continue because permitted impacts are continuing. Development of uplands in the coastal zone has continued resulting in fragmentation of the remaining wetlands and other indirectly impacted habitats. Isolated wetlands, including some important for coastal resources, have been unregulated by the state in northwest Florida due to exclusion of the Panhandle region of Florida from the original Environmental Resource Permitting legislation. These new rules would bring protection of isolated wetlands in the Northwest portion of the state to the same level that has existed elsewhere in Florida since 1994. Implementation of the Environmental Resource Permitting program in northwest Florida, including regulation of isolated wetlands, is anticipated in 2010. Mitigation has often occurred in areas of lower land value inland from the permitted impacts.

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

The Florida Geological Survey has been conducting field work to establish Sediment Elevation Tables, which has indicated overall sedimentation loss. Funds to continue that program are no longer available, and long-term monitoring will depend on the availability of non-State funding sources. Another effort that has been underway is to characterize the interaction of coastal wetlands with ground water and the near-shore environment with special emphasis on karstic settings. This activity is largely research-oriented and its continuation and expansion will depend on the availability of research funds primarily from federal sources. A third effort is the population of a sinkhole database that has been underway for many years and is expected to continue for the foreseeable future.

The three Florida NERRs are undertaking habitat mapping and monitoring within their designated areas. Florida Aquatic Preserves (APs) are setting up mapping and monitoring programs at some sites, but these are not comprehensive programs statewide due to funding limitations.

Mitigation of wetland impacts for permitted activities is conducted through required mitigation reports and compliance inspections.

An effective monitoring program is in place for the Umbrella Regional Mitigation Plan in Northwest Florida, which provides mitigation of wetland impacts for state transportation projects. The adequacy of mitigation monitoring for state and federal permits should be closely evaluated.

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	H	Extensive	M
Alteration of hydrology	M	Extensive	M
Erosion	M	Extensive	M
Pollution	M	Extensive	M
Channelization	M	Limited	M
Nuisance or exotic species	M	Extensive	M
Freshwater input	M	Limited	M
Sea level rise/Great Lake level change	M	Limited	H
Other (Changing rainfall patterns due to climate change)	Unknown	Unknown	Unknown
Other (Ditching)	Unknown	Unknown	Unknown
Other (Transport of river/ surface water out of water-sheds for consumptive use)	M	Extensive	L
Other (Use of natural wetlands as storm-water holding areas)	M	Unknown	L
Other (Fragmentation)	H	Extensive - Due to sprawling development patterns.	H

Direct threats can be natural or man-made. The most prevalent natural threats in Florida include tropical storms, hurricanes, sinkhole development and subsidence. Anthropogenic threats include over-withdrawal of ground water, aggregate and rock mining, spills, runoff, boating activities and development in vulnerable areas. The latter has multiple impacts including paving of ground water recharge areas, increased water usage, and increased volume of runoff containing nutrients, bacteria, pesticides and fertilizers. The emerging trend of using natural springs for the bottled water industry is expected to put additional demand on ground water that will eventually result in lowering the water level in aquifers that, in turn, play a critical role in maintaining the health of wetlands. A critical factor in addressing all of the above issues is the need to develop a water budget for all coastal watersheds. Water budgets are essential for the effective implementation of environmental regulatory programs such as Minimum Flows and Levels (MFL) and Total Maximum Daily Loads (TDMLs) for these watersheds.

The rating for alteration of hydrology is based upon the prevalence of mosquito and drainage ditches in certain areas. The impacts are more moderate in other areas. Isolated and ephemeral wetlands, especially in pine flatwoods and sandhills, may be important breeding sites for amphibians, including flatwoods salamander, striped newt, gopher frog, and chorus frogs. Isolated and ephemeral wetlands are often overlooked as resources important to wildlife and are degraded or lost through fire suppression, logging, ditching and other changes to hydrology. For example, wetlands are lost due to draw-down of the aquifer from development, agriculture, and industry. Loss of seasonal flooding changes plant composition; future impacts may continue from changes in rainfall patterns due to climate change. Karst (limestone) wetlands, including freshwater caves

and sinkholes that connect to the underground aquifer, may be habitat to rare invertebrates (crayfish, cave shrimp, isopods, amphipods) and vertebrates (cave salamander). The wildlife in these karst features are threatened by changes in water quality (surface-derived pollutants and siltation) and quantity (groundwater removal to support development and agriculture water uses). Coastal wetlands may be threatened by saltwater intrusion due to sea level rise and groundwater removal.

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	Y*	NWI/FLUCCS
Beach and Dune	N	
Nearshore	N	
Other (please specify)		

*Near-shore, freshwater, and tidal wetlands have been mapped by the U.S. Fish and Wildlife Service (USFWS) as part of the National Wetland Inventory (available on the FDEP Map Direct GIS system), but the methodology used was not the same as is used in state wetland delineations.

7. **(CM)** Use the table below to report information related 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	9,612.59
Number of acres of coastal habitat protected through acquisition or easement using non-CZM or non-CELCP funds	174,678

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	Y	Y
Wetland protection policies and standards	Y	Y
Wetland assessment methodologies (health, function, extent)	Y	Y
Wetland restoration or enhancement programs	Y	Y
Wetland policies related public infrastructure funding	Y	N
Wetland mitigation programs and policies	Y	Y
Wetland creation programs and policies	Y	N
Wetland acquisition programs	Y	N
Wetland mapping, GIS, and tracking systems	Y	N

Special Area Management Plans	Y	Y
Wetland research and monitoring	Y	N
Wetland education and outreach	Y	Y
Other (please specify)		

Fish and Wildlife Conservation Commission notes that many of these programs deal with water quality and quantity, but do not specifically include potential impacts to wildlife.

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.

Wetland regulatory program implementation, policies, and standards

Currently, the Northwest Florida Water Management District (NFWFMD) and the Department of Environmental Protection (DEP) are working to implement northwest Florida Environmental Resource Permitting (ERP) Phase II, which would improve functional wetland protection and provide significant new protections for isolated wetlands. Implementation is expected to occur during 2010. These new rules would bring protection of isolated wetlands in the Northwest portion of the state to the same level that currently exists elsewhere in Florida. Stormwater ERP (Phase I) is currently in place. The NFWFMD continues to implement the Umbrella Regional Wetland Mitigation Plan in cooperation with the Florida Department of Transportation and U.S. Army Corps of Engineers. This plan provides for watershed-based mitigation of wetland impacts caused by state transportation projects. The above are all non-CZM funded efforts.

Wetland restoration or enhancement programs

The FCMP has partnered with several state and local programs using 306 funds to undertake various wetland restoration projects. DEP's Northwest District has been restoring submerged aquatic vegetation (SAV) populations in the Panhandle region through the utilization of salvaged and laboratory- grown SAV materials. Salvaged SAV is acquired only from marine construction activities that are exempt from regulation or have met applicable permits for avoidance and minimization. Since its inception in 2006, the SAV salvage program has obtained over 600-12" seagrass cores from dock construction for its restoration efforts and has used the salvaged SAV at 12 suitable receiver sites. *Ruppia maritima* is propagated at the Northwest District's laboratory, and will also be planted at restoration sites.

FWC's Florida Wildlife Research Institute (FWRI) has continued development of the Seagrass Integrated Mapping and Monitoring program to enable resource managers to track changes in the distribution, abundance, and species composition of seagrass meadows around the state. DEP/CAMA has been conducting hyperspectral mapping of the Big Bend Aquatic Preserve. CAMA staff will obtain baseline maps of bathymetry, seagrass beds and the extent of propeller scar damage in the Big Bend Seagrasses Aquatic Preserve, the largest of Florida's 41 aquatic preserves. These changes were funded with Section 309 CZM funds.

The FWC is mapping seagrass beds in eastern Choctawhatchee Bay, a large area unmapped since 1992. Significant changes to seagrasses have taken place over past 16 years due to extensive

population growth, increased recreational boating and effects from landfall of three hurricanes and one tropical storm. This effort was funded with Section 306 CZM funds.

The DEP Division of Recreation & Parks has continued seagrass restoration activities at Lignumvitae Key Submerged Land Managed Area to restore habitat damaged by boat groundings.

DEP’s Northwest District has continued work on Project Greenshores, a habitat creation and restoration project located along Bayfront Parkway in Pensacola Bay. The project is comprised of a series of salt marsh and oyster reefs totaling approximately 15 acres. This project was funded with Section 306A CZM funds.

Special Area Management Plans

DEP’s Office of Coastal and Aquatic Managed Areas (CAMA) is developing a new, program-wide comprehensive management strategy, the Integrated Management Framework (IMF), to implement special area management more effectively. The IMF directs all CAMA program activities, including not only aquatic preserve management, but also NERRs, Florida Keys NMS, the Southeast Florida Coral Reef Program, and other state and federal priority activities, in a coordinated manner using subject-specific management teams. CAMA is also undertaking a long-term project to update the management plans for the 41 aquatic preserves using data and information on current ecosystem health, land use, water resource management, human activities, and geophysical conditions affecting the preserve system. To date, five aquatic preserve management plans have been completed and approved and another seven are in progress. This effort is part of a 309-driven change.

Wetland education and outreach

The Coastal Training Programs offered by the three Florida NERRs focus on issues such as coastal habitat conservation and restoration, biodiversity, water quality and sustainable resources management. One recent workshop was entitled *Innovative Floodplain Strategies for Coastal Areas: Application of No Adverse Impact Principles*. The FCMP has provided 306 funds to assist in Coastal Training Program activities.

3. **(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 Wetlands	N*	
Beach and Dune	N	
Nearshore	N	
Other (Coastal Uplands)	N*	

*Some aquatic preserve management plans have a restoration component for tidal wetlands and coastal uplands, but they are specific to the preserve and not a comprehensive statewide plan for these habitat types.

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)
Statewide estuarine habitat restoration planning and guidance	Data, policy, communication and outreach	H
Sediment loss or gain in estuaries	Data	H
Mapping of sea floor features	Data	H
Mapping of conduits	Data	H
Research on forest response to salt water intrusion	Data	M
Statewide protection of isolated and ephemeral wetlands for amphibians	Regulatory, policy, communication and outreach	H
Protection of karst wetlands	Policy, communication and outreach	M
Improve understanding of links between groundwater withdrawals and wetlands	Data/research, potential regulatory and communication/ outreach	H
Research and specify Florida-specific riparian buffer zone BMPs: tiered according to terrain, gradient, soil type, vegetative cover, stream flow, and proximity to imperiled or declining species of wildlife or fishes	Regulatory, communication and outreach	H
Statewide periodic coastal wetland resource surveys (sea grass, mangrove, corals, etc.)	Data	H
Restoration-specific facilitated permitting criteria (living shoreline, hydrology reconnections, etc.)	Regulatory	H
Climate change and coastal resource retreat policy	Policy	M
More frequent and detailed wetland mapping	Data and capacity	H
Assessment of health, status, and trends	Data and capacity	H
(Uniform Mitigation assessment Method (continue training of staff)	Training	M
Train and support governmental entities to set up Regional Off-site Mitigation Areas in identified areas	Training, regulation, communication and outreach	H
Wetland ERP implementation (NW Florida ERP Phase II)	Regulatory (implementation anticipated in 2010)	H
Protection and restoration of coastal upland habitats that affect coastal waters and wetlands through storm-water runoff and NPS pollution	Regulatory, planning	H
State and federal mapping and monitoring of cumulative wetland impacts and mitigation	Regulatory, data and research	M
Modified CLIP (Critical Lands and Waters Identification Project) for coastal lands in need of acquisition or conservation	Identification	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 X
Medium
Low

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

Wetlands protection is a high priority in the state. Florida has a comprehensive state regulatory program that regulates most land (upland, wetland, and other surface water) alterations throughout the state. The regulatory program also includes a federal State Programmatic General Permit and implementation of a statewide National Pollutant Discharge Elimination System program. In addition, activities located on or using state-owned submerged lands also require applicable proprietary authorizations (including Consent, Leases, and Easements). Florida does not have a goal of no net loss or gain of wetland acreage. However, the regulatory rules are written so as to be implemented in a manner that achieves a programmatic goal, and a project permitting goal, of no net loss in wetland or other surface water functions (not including activities that are exempt from regulation or that are authorized through a noticed general permit).

Although the state's regulatory program is effective in protecting wetlands, several needs have been identified by agency partners that should be addressed to provide a comprehensive wetlands protection effort. One major gap is a lack of consistent survey and mapping of this resource. Wetlands also provide essential habitat for threatened and endangered species, which continue to be impacted by habitat loss. The state does not have a restoration plan for coastal habitats.

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

Yes	<u> X </u>
No	<u> </u>

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

A strategy will be developed for this enhancement area because several needs have been identified that can be addressed through the 309 program. One strategy will develop and test a statewide estuary restoration planning and guidance document. A cooperative, coordinated statewide approach to estuary restoration will provide resource managers with consistent direction, clearly defined goals, and a means of linking their efforts to the larger goal of protecting and enhancing estuarine habitats wherever they occur in Florida.

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 and Great Lakes level change

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	H	Coast-wide
Coastal storms, including associated storm surge	H	Coast-wide
Geological hazards (e.g., tsunamis, earthquakes)	L	Coast-wide
Shoreline erosion (including bluff and dune erosion)	H	Sub-region
Sea level rise and other climate change impacts	H	Sub-region, Coastal Communities
Great Lake level change and other climate change impacts	N/A	
Land subsidence	L	Coast-wide
Other (please specify)		

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?

A recently updated risk assessment has been created for the update of the Enhanced State Hazard Mitigation Plan for the State of Florida. The analysis was broken down into five general areas of risk: catastrophic, extensive, high, moderate, and low. The levels of risk were then broken out by vulnerability impacts to population, property, environment and government operations. The table below shows this assessment for the State of Florida.

Vulnerability Impacts:

- L = Low
- M = Moderate
- H = High
- E = Extensive
- C = Catastrophic

The Numerical Value correlates with frequency of occurrence:

- 1 = Event occurs every year
- 2 = Event occurs every five years or less
- 3 = Event occurs every ten years or less

Statewide Hazard and Risk Assessment Summary

Hazard Category	Numerical Value	Frequency of Occurrence	Vulnerability impacts			
			Population	Property	Environment	Government Operations
Floods (including related potential for dam failure)	1	Flooding occurs every year in Florida	M	M	H	L
Hurricanes & Coastal Storms	2	66 land-falling hurricanes from 1900 through 2008. 2002, and 36% of all U.S. hurricanes hit Florida	C	C	C	H
Severe Storms, Thunderstorms & Tornadoes	1	Severe weather impacts Florida everyday during the summer. Also, extensive severe weather events occur about 5 times annually, mostly in the spring and fall.	M	M	H	L
Wildfires	1	Wildfires occur annually in Florida.	M	M	H	L
Droughts & Extreme Heat	1	Florida averages 12 heat-related fatalities annually. Vulnerability and impacts are contingent upon the duration of the drought period and area of impact.	L	L	L	L
Winter Storms & Freezes	3	Since 1970 there have been six FEMA-declared disasters related to winter weather and freezing.	L	M	E	L

Shoreline Erosion

Out of 825 miles of sandy beach fronting the Atlantic Ocean, Gulf of Mexico and Straits of Florida, 397.4 miles are designated “critically eroded” and 96.0 miles are designated “non-critically eroded.” (*Critically Eroded Beaches in Florida*, June 2009, <http://www.dep.state.fl.us/beaches/publications/pdf/CritEroRpt09.pdf>.) This is compared to 365.1 miles “critically eroded” and 110.2 miles “non-critically eroded” in 2005, at the conclusion of two years of severe hurricane activity. DEP’s Bureau of Beaches and Coastal Systems has been conducting the surveys and updating the report annually for 11 years using standardized methodology.

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.

Sea level rise (SLR) is considered a high risk based on recent projects conducted in Florida and around the nation that suggests this is a growing concern that could increase the vulnerability of coastal communities to other hazards such as coastal flooding. This is not yet acknowledged in the Statewide Hazard Mitigation Plan as a hazard due to the fact that there is no statewide risk and vulnerability assessment for sea level rise on which to base this conclusion. However, some local-level projects have looked at this issue, specifically, the:

- a) Charlotte Harbor regional climate change risk assessment (<http://www.chnep.org/projects/climate/VulnerabilityAssessment2-19-10.pdf>);
- b) Charlotte Harbor/Punta Gorda MPO project to look at SLR impacts on long-term transportation planning (<http://www.fsu.edu/~fpdl/mpoproject/>); and
- c) South Florida Regional Planning Council project to map SLR (<http://www.sfrpc.com/gis/slr.htm>).

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

The State of Florida Division of Emergency Management (DEM) and the Northeast Florida Regional Planning Council are updating storm surge vulnerability zones for each coastal county based upon the most recent LIDAR (Light Detection and Radar) data obtained, and most current SLOSH (Sea, Lake and Overland Surge Hazard) model runs. These studies are expected to be complete in the spring of 2010.

DEM recently conducted a statewide commercial wind mitigation study (final draft 12/09), and recently completed coastal LiDAR data collection for a regional evacuation study. The State's Hazard Mitigation Plan is in the final stages of its 3-year update, and the assessment referenced above is 99% complete. All 67 counties in Florida have a FEMA and State-approved Local Mitigation Strategy that is updated (including risk assessment and vulnerability) every 5 years. Many of these are in final draft form for their update schedule.

DCA's Division of Community Planning has implemented a new program to assist communities in developing Post-Disaster Redevelopment Plans, which include measures of risk. DCA is also proposing the development of a statewide risk and vulnerability assessment for sea level rise for planning purposes.

The NFWFMD has undertaken flood map modernization and the development of digital flood insurance rate maps in cooperation with FEMA (<http://www.nwfwmdfloodmaps.com/>).

The state's regional planning councils in cooperation with FEMA have updated Regional Evacuation Studies.

DEP's Bureau of Beaches and Coastal Systems provides frequent updates to the statewide critical erosion report (http://www.dep.state.fl.us/beaches/publications/tech-rpt.htm#Length_of_Shoreline).

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
	City (n=20)	County (n=21)	
Flooding	20	21	Not Available
Storm surge	19	21	Not Available
Geological hazards (including Earthquakes, tsunamis)	4	6	Not Available
Shoreline erosion (including bluff and dune erosion)	7	14	Not Available
Sea level rise	4	11	Not Available
Great lake level fluctuation	N/A		Not Available
Land subsidence	3	7	Not Available
Other (please specify): Wildfires	5	12	Not Available

*Source: 2010 Florida Local Government Coastal Trends Survey by the FSU Survey Research Laboratory for the FCMP.

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	Y
Methodologies for determining setbacks	Y	N
Repair/rebuilding restrictions	Y	N
Restriction of hard shoreline protection structures	Y	Y
Promotion of alternative shoreline stabilization methodologies	Y	N
Renovation of shoreline protection structures	Y	N
Beach/dune protection (other than setbacks)	Y	N
Permit compliance	Y	N
Sediment management plans	Y	Y
Repetitive flood loss policies, (e.g., relocation, buyouts)	N	N
Local hazards mitigation planning	Y	Y
Local post-disaster redevelopment plans	Y	Y
Real estate sales disclosure requirements	Y	N
Restrictions on publicly funded infrastructure	N	N
Climate change planning and adaptation strategies	Y	Y
Special Area Management Plans	Y	N
Hazards research and monitoring	Y	Y
Hazards education and outreach	Y	Y
Other (please specify): Mapping or GIS tracking of hazard areas	Y	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; and
- c) Characterize the outcomes and effectiveness of the changes.

Building setbacks/ restrictions

Coastal Construction Control Lines were reestablished in Walton, Gulf and Franklin Counties. This action was driven by recommendations of the 2006 Coastal High Hazards Study Committee (<http://www.dca.state.fl.us/fdcp/DCP/publications/Files/CoastalHighHazardFinalReport.pdf>) and funded by DEP's Bureau of Beaches and Coastal Systems. The new restrictive building area is more representative of the area likely to be affected by a 100 year return interval storm. This area had changed since original lines were adopted in the mid 1980s, and more landward establishment will protect future structures.

Restriction of hard shoreline protection structures

A rule was adopted specifically addressing "sand-filled geotextile dune cores." This action was not a CZM-driven change but driven by the popularity of these products under the assumption that such structures were not "armoring" and therefore not subject to existing rule. This was funded by DEP's Bureau of Beaches and Coastal Systems. There are fewer applications for these structures, but it is too early to assess the effectiveness.

Sediment management plans

Statutory changes to Chapter 161, Florida Statutes (F.S.), require additional studies and provide incentives to improve sediment management at inlets. This was not a CZM-driven change but rather by the belief that the U.S. Army Corps of Engineers, ports councils, special districts and counties were not pro-active enough in maintaining sediments around inlets. Most inlets undergo sediment management and will require data collection and analysis to determine improvements. Therefore, it is too early to determine the effectiveness of this change.

Local hazard mitigation planning

Florida counties are currently going through the local mitigation plan update process. By the end of 2009, 16 plans will have reached their expiration date and have gone through the update process. By the end of 2010, approximately 40 more additional plans will have reached their expiration date and need to be updated. The update to the last plan (Lee County) is due on in November of 2012. The update of the local hazard mitigation plans is federally mandated in order to receive hazard mitigation grant funds. It is expected that all 67 counties will complete their updates and receive FEMA approval by 2012, thus retaining their eligibility for FEMA grant funding.

In addition to this, the Florida DCA, along with DEM, completed a statewide initiative to integrate hazard mitigation into the local comprehensive planning process. This resulted in profiles for each county and 14 select municipalities with a detailed analysis of their local comprehensive plan and local hazard mitigation plan and suggested policies for further incorporating hazard mitigation into the local comprehensive planning process.

Local post-disaster redevelopment plans

DCA along with the DEM is currently in the fourth year of a statewide post-disaster redevelopment planning initiative. At this point in time, six plans have been developed (City of Panama City, Polk County, Hillsborough County, Sarasota County, Manatee County and Nassau

County) with four of them in the adoption and implementation phases and two others to follow shortly (Hillsborough and Sarasota). The next phase of this project involves the development of technical assistance tools such as a guidebook and web-based guidance tool box and regional workshops targeting both inland and coastal communities. At this point approximately 2-4 more plans will be funded using FEMA HMGP funds. The State Homeland Security Grant program has also offered funding to approximately 24 other communities in Florida; however, some of this will be focused on plan implementation rather than development. In addition to this, CZM funds will be used to supplement technical assistance funds and begin to develop a strategy for integrating sea level rise into the long-term redevelopment process.

The Statewide Post-Disaster Redevelopment Planning Initiative was a 309-driven change. Funding from this program was also received to help carry out the long-term effort.

Climate change planning and adaptation strategies

DCA’s Waterfronts Florida Program utilized CZMA 309 funds to complete a project concerning climate change impacts in Miami Dade County. The project is titled, “Waterfronts Florida Program: Conducting a Climate Change Impact Resiliency Study for Local Governments in Miami-Dade County.” This project uses the ICLEI (International Council for Local Environmental Initiatives) resiliency planning model. Tasks for this project include a risk and vulnerability analysis for climate change impacts in Miami-Dade County and four Miami-Dade jurisdictions and the development of policies and strategies for adaptation. This project is expected to be completed by the summer of 2010.

Hazards research and monitoring

DCA, along with DEM, is using CZM funds to provide technical assistance for post-disaster research, education and outreach as a part of the PDRP Statewide Initiative.

Hazards education and outreach

See comments above concerning the integration of hazard mitigation into the local comprehensive planning process and post-disaster redevelopment planning efforts.

Mapping/GIS/Tracking of hazard areas

DEM and the Northeast Florida Regional Planning Council are in the process of updating storm surge vulnerability zones based upon the most recent LiDAR data obtained, and most current SLOSH model runs. This is expected to be completed by spring of 2010.

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.	
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.	

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.	202 local governments (35 counties* and 167 municipalities†) are required to include a coastal management element in their comprehensive plans, which include policies to direct development away from hazardous areas.
Number of communities that have approved state comprehensive management plans that contain land use policies to direct development away from hazardous areas.	202 local governments have adopted coastal management elements in their comprehensive plans, which were approved by the state land planning agency.

*Florida's 35 coastal counties all border the coastline. The list of coastal counties is in the Appendix.

†The 167 municipalities may not all border the coastline. The definition of local governments pursuant to Ch. 380, F.S., *Coastal Planning and Management*, is: Units of local government abutting the Gulf of Mexico or the Atlantic Ocean, or which include or are contiguous to waters of the state where marine species of vegetation listed by rule as ratified in s. [373.4211](#) constitute the dominant plant community, shall develop a coastal zone protection element pursuant to s. [163.3177](#).

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)
Address Sea Level Rise (SLR) implication on hazards	Data: Currently no statewide risk and vulnerability set exists for sea level rise. Because of this, it is difficult to encourage local governments to integrate SLR into their local comprehensive plans, local planning. Policy/Capacity: Both of these are not only needed for local planning purposes, but are also needed in order to address sea level rise as a hazard in the Enhanced Statewide Hazard Mitigation Plan.	High
Outreach & Education on SLR	Communicating the risks posed by sea level rise to all stakeholders, including government officials, is critically needed.	High
Grass Roots Community Resiliency: Integration of hazard mitigation into local working waterfronts and grassroots communities and organizations.	Training/Capacity/Communication/Outreach: While there is an abundance of guidance available on hazard mitigation planning, the target audience is typically local governments. There is a need for guidance aimed at the unique needs and characteristics of working waterfronts and grassroots communities. This guidance should focus on the “small wins” principles in order to assist small organizations and communities without large amounts of resources to integrate hazard mitigation into their plans and projects.	High
Post-Disaster Redevelopment Plans	At the end of the FY2006 – 2010 CZM cycle, the statewide post-disaster redevelopment planning initiative will be complete. However, local governments will need funding in order to initiate the local post-disaster redevelopment planning process in accordance with the guidance developed as a part of this initiative.	Medium

Enhancement Area Prioritization

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

High X
Medium
Low

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

Development within coastal areas of Florida increases the vulnerability of both populations and structures. Development within these high hazard areas is projected to continue in the future, thus increasing the vulnerability of the state as a whole. The threat of sea level rise is projected to further increase this vulnerability. Due to the significant threat of coastal hazards in the state and the resulting need for community resiliency guidance, this enhancement area is considered a high priority.

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

Yes X
No

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

Projected sea level rise impacts threaten to greatly exacerbate the vulnerability of Florida's already at-risk coastal resources. Also, the State Hazard Mitigation Plan and local mitigation strategies do not address sea level rise due to lack of data required to complete a vulnerability analysis. There is a need to advance sea level rise adaptation through action at the state and community level. A strategy will be developed that will lay a foundation for integrating sea level rise adaptation into Florida's land use planning framework and for identifying sea level rise as an issue that affects hazards in the State Hazard Mitigation Plan. A model for simulating sea level rise impacts will be identified and guidance will be developed for local governments to incorporate sea level rise data into their local comprehensive plans, mitigation strategies, special area management plans, and post-disaster redevelopment plans.

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)	H	While pressures to convert public facilities have slackened during the recent economic downturn, communities across the state continue to deal with diminished public access due to the rapid conversion of public and water dependent facilities that took place in the mid 2000s.	Boating/visual/ pedestrian.
Non-water dependent commercial/industrial uses of the waterfront (existing or conversion)	H	While pressures to convert public facilities have slackened during the recent economic downturn, communities across the state continue to deal with diminished public access due to the rapid conversion of public and water dependent facilities that took place in the mid 2000s.	Boating/visual/ pedestrian.
Erosion	M	Erosion may threaten existing public access points. Access has been temporarily restricted and roads damaged due to erosion during storm and flooding events. Evacuation routes may be compromised.	Boating/visual/ pedestrian. All public roads / bridges along the coastline.
Sea level rise/Great Lake level change	M	Sea level rise may threaten existing public access points. Bridges destroyed during hurricanes have been rebuilt at higher elevations due to effects of sea level rise during storm events. Evacuation routes may be compromised.	Boating/visual/ pedestrian. All public roads along the coastline. Damaged or destroyed bridges may restrict access to barrier islands.
Natural disasters	H	Bridges destroyed during hurricanes have been rebuilt at higher elevations due to effects of sea level rise during storm events. Access has been temporarily restricted and roads damaged due to erosion during storm and flooding events. Evacuation routes may be compromised. Beachfront property owners attempt to protect w/ armoring which can limit access.	All public roads along the coastline. Damaged or destroyed bridges may restrict access to barrier islands. Pedestrian/ fishing access.

National security	H	Evacuation routes may be compromised. Access to and use of transportation facilities could be compromised due to acts of terrorism or hazardous material spills.	All public roads/bridges along the coastline.
Encroachment on public land	M		
Other			

- 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?

Increased conversion of residential development to condominiums that exclude public access is a new emerging issue. Also, offshore alternative energy programs that are being discussed may have the potential to impact public access in the future. Issues related to sea level rise may potentially impact future public access in coastal areas.

- (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	1,323
Number of people surveyed that responded that public access to the coast for recreation is adequate or better.	84%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	The FSU Survey Research Laboratory used a "mixed mode" approach of telephone and mailed surveys.
What was the geographic coverage of the survey?	Entire State of Florida
In what year was the survey conducted?	2009

*Source: 2009 Florida Coastal Issues Survey by the FSU Survey Research Laboratory for the FCMP.

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

The 2008 Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) provides a broad statewide and regional appraisal of the outdoor recreation needs of Florida. To estimate outdoor recreation demand in Florida, DEP's Division of Recreation and Parks conducts periodic surveys of resident and tourist participation in outdoor recreation activities. The Florida Statewide Outdoor Recreation Participation Study was completed by the University of Florida, Department of Recreation, Parks and Tourism in 2002. Random telephone surveys of residents as well as mail-out surveys of tourists were conducted regarding their participation in 29 different outdoor recreation activities. Based on the results of the surveys, the percentages of Florida residents and tourists who participated in each of the activities were calculated. These percentages were then applied to population projections for 2010, 2015 and 2020 to estimate demand.

While the SCORP does not focus on the coastal zone, it does provide some information related to demand for coastal public access. According to the 2008 SCORP, saltwater beach activities remain as the one activity with the largest percentage of participants and frequency of participation (e.g. the most popular form of resource-based recreation in Florida). Overall, 57 percent of residents and 54 percent of tourists participated statewide. The SCORP estimates that statewide,

more than 139 miles of beach will be required by 2020 if current levels of service are to be maintained. Unfortunately, providing this amount of additional beach resources will not be possible as the amount of remaining undeveloped beaches dwindles to zero. Increasing public access to the state’s existing saltwater beaches will be required to accommodate future demands.

The FCMP is currently working with the University of Florida to develop an inventory of the existing public beach access sites. This inventory will be utilized to create a comprehensive coastal access guide (interactive mapping tool) to provide residents and visitors detailed information on the access points along Florida’s 35 coastal counties. This information will also be provided to the Division of Recreation and Parks for future analyses to project the amount of additional outdoor recreation resources and facilities that will be required to maintain current levels of service as resident and tourist populations increase in the future. This information can also be utilized to estimate the amount of additional resources and facilities that will be needed to bring regions with the lowest levels of service up to a higher level of service.

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 (report both the total number of acres in the coastal zone and acres available for public access)	10,881,258 acres available to the public in the coastal counties 25,677,440 acres total number of acres in the coastal zone		DEP/ Outdoor Recreation Planning Inventory BEBR (Florida Statistical Abstract 2008)
(CM) Miles of shoreline available for public access (report both the total miles of shoreline and miles available for public access)	8,436 total miles of shoreline 1,640 public saltwater beaches, 439.950 miles (2,322,938 linear feet) of public beach		DEP/ Outdoor Recreation Planning Inventory
Number of State/County/Local parks and number of acres	3 NERRS: Rookery Bay; 96,277 acres Apalachicola; 238,079 acres GTM; 73,352 acres 160 State parks spanning 700,000 acres and 100 miles of sandy white beach *9,133 County/Local Parks; 537,694 acres	+ 1 state park	DEP/CAMA/ Division of Recreation and Parks
Number of public beach/shoreline access sites	1,683 access sites to the shoreline & public beaches (data for 27 coastal counties)	unknown, access site inventory update on-going	FCMP inventory, dated 1993

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
Number of recreational boat (power or non-power) access sites	2445 marine facilities on Florida's coasts with 615 having a boat ramp and 651 having a marina. 162 access sites along the Florida Circumnavigational Saltwater Paddling Trail		FWRI Marine Facilities database DEP/Office of Greenways and Trails (OGT)
Number of designated scenic vistas or overlook points			
Number of State or locally designated perpendicular rights-of-way (i.e. street ends, easements)	894 Street ends (data for 27 coastal counties)	Unknown. Street end inventory update is on-going	FCMP inventory, dated 1993
Number of fishing access points (i.e. piers, jetties)	325 saltwater piers, 475 boardwalks/ catwalks, and 10.2189 miles (53,956 linear feet) of jetties		DEP/Outdoor Recreation Planning Inventory
Number and miles of coastal trails/boardwalks	6060 miles of trails in coastal counties Florida Circumnavigational Saltwater Paddling Trail = 1515 miles	+ 1239 miles for Saltwater Paddling Trail	DEP/OGT
Number of dune walkovers			
Percent of access sites that are ADA compliant access			
Percent and total miles of public beaches with water quality monitoring and public closure notice programs	48% of identified beaches monitored (approx. 965 miles of beach)		DOH-Summary from EPA data
Average number of beach mile days closed due to water quality concerns	Advisories only, no closures.		

*The previous assessment reported 9,636 county/local parks. The database was updated in 2007-2008 and many records were deleted because it was discovered that many parks were entered more than once.

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	Y

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or 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	Y	N
Beach water quality monitoring and pollution source identification and remediation	Y	N
Public access within waterfront redevelopment programs	Y	Y
Public access education and outreach	Y	Y
Other (please specify): Maritime Infrastructure	Y	Y
FCMP – Public Access Enhancement	Y	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; and
 - c) Characterize the outcomes and effectiveness of the changes.

Statutory, regulatory, or legal system changes that affect the preservation of recreational and commercial working waterfronts

Since the last assessment, there have been a number of statutory changes focused on preserving recreational and commercial working waterfronts. In 2006, the legislature amended the general definition of “recreational and commercial working waterfronts” in section 342.07(2), F.S., to include hotels and motels as water-dependent commercial activities and amended section 163.3177(6)(g), F.S., to encourage coastal local governments to include recreational surface water use policies in their coastal management element of their local comprehensive plan. In 2008, the Florida legislature created a new land acquisition program for the preservation of working waterfronts with a unique programmatic definition of working and commercial waterfronts. In 2008, Florida voters approved a state constitutional amendment to assess certain categories of working waterfront property based on current use rather than best and highest use.

These changes attest to the strong public interest in protecting and enhancing Florida’s recreational and commercial working waterfronts. The changes have also produced new challenges for Florida’s coastal communities and reflect competing views of what counts as a water-dependent use. For instance, the Legislature amended the definition of “recreation and commercial working waterfronts” in section 342.07(2), F.S., (upon which a number of comprehensive planning requirements are based) to include hotels and motels which are not included in other definitions of water dependent land uses or recreational and commercial working waterfronts. These differences in the various definitions of recreational and commercial working waterfronts have created confusion at the local level about what land uses should be promoted at the shoreline and what waterfront resources should be given special protection. These recent statutory changes are described in greater detail below:

In 2006, the Florida legislature amended the definition of “recreational and commercial working waterfronts” in section 342.07(2), F.S. All coastal (shoreline) counties are required by section 163.3177(6)(a) F.S., to incorporate regulatory incentives and criteria in their future land use element of their local comprehensive plan that help preserve recreational and commercial waterfronts as defined in section 342.07(2) F.S. Section 163.3178(2)(g), F.S., requires all coastal local governments to include recreational surface water use policies in the coastal management element of their local comprehensive plan that outlines strategies to preserve recreational and commercial waterfronts as defined in section 342.07(2), F.S. The amended definition is as follows:

“As used in this section, the term "recreational and commercial working waterfront" means a parcel or parcels of real property that provide access for water-dependent commercial activities, including hotels and motels as defined in s. 509.242(1), or provide access for the public to the navigable waters of the state. Recreational and commercial working waterfronts require direct access to or a location on, over, or adjacent to a navigable body of water. The term includes water-dependent facilities that are open to the public and offer public access by vessels to the waters of the state or that are support facilities for recreational, commercial, research, or governmental vessels. These facilities include public lodging establishments, docks, wharfs, lifts, wet and dry marinas, boat ramps, boat hauling and repair facilities, commercial fishing facilities, boat construction facilities, and other support structures over the water. As used in this section, the term "vessel" has the same meaning as in section 327.02(39). Seaports are excluded from the definition.”

In 2006, the Florida legislature amended section 163.3177(6)(g), F.S. The amendment encourages coastal local governments to include recreational surface water use policies in the coastal management element that include applicable criteria for and consider such factors as natural resources, manatee protection needs, protection of working waterfronts and public access to the water, and recreation and economic demands. Criteria for manatee protection in the recreational surface water use policies should reflect applicable guidance outlined in the Boat Facility Siting Guide prepared by the Fish and Wildlife Conservation Commission. These recreational surface water use policies are exempt from the twice per year limit on comprehensive plan amendments. Development of these amendments/policies is an eligible activity under the Florida Coastal Management Program’s Coastal Partnership Initiative Grant Program.

In 2008, the Florida legislature created the Stan Mayfield Working Waterfront Acquisition Program to acquire projects supporting Florida’s seafood harvesting and aquaculture industries. The program is administered by Florida Communities Trust (FCT) in DCA and receives funding from 2.5% of the total Florida Forever program appropriation (based on historic funding levels, the Stan Mayfield appropriation is expected to be about \$7.5 million). Section 380.5105, F.S., establishes that the FCT shall implement the land acquisition program and outlines procedures for the program’s implementation, such as procedures for the approval of acquisition projects, criteria for assessing projects, reporting requirements for grant award recipients, etc., Rule 9K-9, Florida Administrative Code (FAC), further describes Stan Mayfield Working Waterfronts application procedures while rule 9K-10, FAC, outlines the procedures for land acquisition.

Section 380.503(18), F.S., defines “working waterfront” for purposes of the Stan Mayfield Working Waterfront Acquisition Program as:

- (a) A parcel or parcels of land directly used for the purposes of the commercial

harvest of marine organisms or saltwater products by state-licensed commercial fishermen, aquaculturists, or business entities, including piers, wharves, docks, or other facilities operated to provide waterfront access to licensed commercial fishermen, aquaculturists, or business entities; or

(b) A parcel or parcels of land used for exhibitions, demonstrations, educational venues, civic events, and other purposes that promote and educate the public about economic, cultural, and historic heritage of Florida's traditional working waterfronts, including the marketing of the seafood and aquaculture industries.

In 2008, Florida's voters approved an amendment proposed by the Florida Tax & Budget Reform Commission to assess working waterfront property based on current use rather than highest or best use. The amendment specifies the following categories of working waterfront property that shall be assessed based on current use:

- Land used predominantly for commercial fishing purposes.
- Land that is accessible to the public and used for vessel launches into waters that are navigable.
- Marinas and drystacks that are open to the public.
- Water-dependent marine manufacturing facilities, commercial fishing facilities, and marine vessel construction and repair facilities and their support activities.

Since 2006, the FCT Act and its associated rules have also undergone several amendments beyond those establishing the Stan Mayfield Working Waterfront Acquisition Program. Changes to the FCT Act, Chapter 259.105, F.S., include:

2006 Amendments:

Chapter 259.105, F.S., was amended to prioritize projects that ensure the sustainability of military missions through the protection and buffering of military installations and lands.

2008 Amendments:

Chapter 259.105, F.S., was amended to establish the Stan Mayfield Working Waterfront Acquisition and Program and affirm the state's commitment to preserving working landscapes. The chapter was also amended to encourage the use of techniques other than fee-simple acquisition for preserving Florida's lands. It was amended to acknowledge the state's commitment to preserving uplands and springheads and restoring natural water systems. It was amended to provide for rule making to address the intersections among land acquisitions, carbon sequestration, mitigation and offsets, and to provide for the Division of State Lands to develop a work plan for acquisition activities in the state.

Acquisition programs or policies

As mentioned above, in 2008 the Stan Mayfield Working Waterfront Acquisition Program was created to acquire projects supporting Florida's seafood harvesting and aquaculture industries. In 2008, three projects were selected for funding under the Stan Mayfield Working Waterfronts Program to support Florida's seafood harvesting and aquaculture industries:

Recipient Name	Project Name	Acres
City of Sebastian	Sebastian Working Waterfront Collaborative	2.01
Brevard County	Blue Crab Cove	3.03
City of Apalachicola	Apalachicola Boat Works	0.5

As part of the Parks and Open Space Florida Forever Grant Program, FCT made significant acquisitions since the last assessment. From January 1, 2006 to June 30, 2009, FCT acquisitions totaled 16,250.54 acres, of which 6,071.262 acres were in shoreline counties.

Florida Forever is the state's premier conservation and recreation lands acquisition program. It replaced the highly successful Preservation 2000, the largest program of its kind in the United States. Preservation 2000 acquired more than 1.78 million acres of land for protection. The Florida Forever Act, implemented in 2000, reinforced Florida's commitment to conserve its natural and cultural heritage, provide urban open space, and better manage the land acquired by the state. Between its inception in July 2001 to the present, the Florida Forever program has acquired more than 652,203 acres of land with \$2.67 billion. During the recent economic downturn, the funding level for Florida Forever has been substantially reduced. As the economy improves, it is hoped that funding will return to normal levels.

With the passage of the Florida Forever Act, the State of Florida has one of the most aggressive conservation and recreation land acquisition programs in the United States and the world. Since 1963, Florida has invested approximately \$7.5 billion to conserve around 3.8 million acres of land for environmental, recreational and preservation purposes. This has been accomplished with a number of programs, including the Environmentally Endangered Lands, Outdoor Recreation, Save Our Coasts, Save Our Rivers, Conservation and Recreation Lands, Preservation 2000, and Florida Forever. These programs are not CZM-driven although the CELCP program is used to supplement Florida Forever projects.

The state's land acquisition programs have a long history of cooperative partnerships with local and national land trusts, counties, cities and other local governments, as well as the federal government. The successful acquisition of many state projects is the direct result of these partnerships. Nearly all of the projects on the Florida Forever list have partners.

Partnerships with local governments have increased in recent years. Of Florida's 67 counties, 28 have land acquisition programs. Voters throughout Florida have approved local referenda to raise more than \$1.7 billion to acquire environmentally sensitive and recreation lands. These local government initiatives have dramatically enhanced the state's ability to protect its remaining important natural areas.

CELCP was established in 2002 by NOAA. The primary purpose of this CZM-driven program is to acquire property in coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values, or that are threatened by conversion from a natural or recreational state to other uses. The program provides up to \$3 million dollars for each eligible project.

To participate in the program, states must submit a Coastal and Estuarine Land Conservation Plan to NOAA for approval. The Florida CELCP was approved by NOAA in 2008. Since the plan was approved, the FCMP has been administering CELCP and submitting three projects per year for the competitive national selection process. In 2009, 54 proposals were submitted by coastal states and Florida had two projects funded (Cayo Costa State Park and Guana Tolomato Matanzas NERR). In 2010, 60 proposals were submitted by coastal states and territories. Florida's Keewaydin Island, Rookery Bay NERR project was selected and funded in the FY 2010 cycle.

Public Access within waterfront redevelopment program

The WFP (funded from section 309 funds) provides financial and technical assistance to designated waterfront partnership communities for the development of special area management plans. These plans focus on public access, environmental and cultural resource protection, hazard mitigation, and enhancement of working waterfront economies. As part of their planning work, designated partnership communities create strategies for the enhancement and protection of public access facilities. Since 2007, the WFP has helped the community of Carrabelle (one of the three partnership communities designated from 2007-2009) create two additional boat access points.

Public access education and outreach

The WFP (funded from section 309 funds) hosts quarterly training sessions for local practitioners on a variety of subjects related to working waterfront resource protection and enhancement. Past meetings have addressed public access through presentations on local experiences securing funding and permitting for a mooring field; grant program availability; managing visitor use issues in coastal areas; the connection between public space and civic life; waterfront debris management; and planning policies to preserve recreational and commercial working waterfronts.

Other

Maritime Infrastructure: Using section 309 funds, the Waterfronts Florida Program has partnered with the University of Florida to do an analysis of the significance of maritime infrastructure as components of a regional system and to explore how comprehensive planning can account for the regional significance of infrastructure components. This project is currently underway and has thus far produced a flexible assessment methodology to capture the significance of individual maritime components to regional infrastructure networks.

Public Access Enhancement: The FCMP utilizes its Coastal Partnership Initiative grant program (section 306 funds) to provide grant funding to local governments for planning and constructing access facilities, such as dune boardwalks and crossovers; fishing piers and overlook/observation structures; waterfront park improvements; canoe and sailboat launch facilities; and Riverwalk/Baywalk thoroughfares.

FCMP has provided funding for the following Public Access-Related Subgrants (2006-2010):

Subgrant #	Title	Amount
FY 06-07		
CZ704	Museums in the Sea	83,325
CZ712	Egan's Creek Boardwalk & Overlook	100,000
CZ715	Big Bend Maritime Center	50,000
CZ719	Cocoplum Beach Park Enhancement	50,000
CZ720	Castaways Cove Beach	50,000
CZ721	Queen's Island Lagoon Access	50,000
CZ722	Pelican Park Beach Restroom Replacement	50,000
CZ826	Coastal Access Guide	49,984
CZ802	Museums in the Sea, Phase 2	86,476
CZ829	Buoy System Replacement in FKNMS	88,701
CZ808	Jax Beaches Paddling ICW Trail	22,100
CZ809	Big Bend Maritime Center Interpretation Plan	50,000
CZ815	Joe's River Park Access & Restoration	50,000
FY 08-09	Coastal Access Guide	50,000
CZ904	Composting Toilets, Pennekamp Paddling Trail	33,511
CZ912	Create the Living Museum	50,000
CZ916	Fort Steinhatchee Pier	38,250
CZ917	Carrabelle Wharf Improvements	50,000
CZ928	Castaway Point Park Improvements	60,000
FY 09-10	Coastal Access Guide	50,000
CM013	Florida Sea Islands Paddling Trail	20,250
CM016	Zeke's Park Marina Restoration	50,000
CM019	Weaver Park	50,000
CM020	Waterfront Park	50,000
CM021	Veterans Riverfront Park Kiosks	15,000
FY 10-11	Coastal Access Guide	50,000
CM111	Millville Boardwalk	37,500
CM117	Bagdad Mill Site Trail, Design & Permitting	30,000
CM120	Bella Vista Park	60,000
		1,475,097

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 FCMP is currently developing a comprehensive coastal access guide. FCMP is designing an online coastal access guide (interactive mapping tool) to provide residents and visitors detailed information of the access points for the 35 coastal counties in Florida. The access guide should be available in late 2010.

DEP's Division of Recreation and Parks maintains an online State Park Guide. Additionally, the DEP Office of Greenways & Trails maintains an online State Greenways and Trails Guide (guide includes paddling trails) and produces brochures for equestrian, paddling, biking and hiking trails. The brochures are dated from 2006 through 2009.

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 needed to explore the connections between climate change mitigation and adaptation, and the preservation of recreational and commercial waterfronts. Such research should look at strategies for promoting and maintaining public uses at the waterfront and examine risks and vulnerabilities of regional maritime infrastructure networks.	Research/Policy/Training	H
There is a need to increase support to local governments for the preservation of recreational and working waterfronts.	Training	H
There should be comprehensive assessments of the public access and water recreational needs within different regions in Florida	Research	H
Coastal marine spatial planning	Regulatory, policy, and data	H
More comprehensive statutes and rules	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 X
Medium
Low

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

Public access is a high priority for the state. Although the state’s land acquisition programs have added significant acreage for the public benefit, there is still a great demand for public access. Also, during the recent economic downturn, funding levels for the state’s land acquisition programs have been substantially reduced. There continues to be a need for additional public boat access, and while pressures to convert public facilities have slackened during the recent economic downturn, communities across the state continue to deal with diminished public access due to the rapid conversion of public and water dependent facilities.

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

Yes
No X

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

Although public access remains a high priority for the State of Florida, a strategy will not be developed at this time. The various state land acquisition programs and other technical assistance programs appear to be addressing the State’s needs.

The FCMP will continue to use the Coastal Partnership Initiative program (306 funds) to provide grant funding to local governments for public access projects and will continue development and maintenance of the coastal access guide.

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	H	User conflicts, aesthetic, resource damage	Y
Land Based – Dumping	M	Resource damage	N
Land Based – Storm Drains and Runoff	M	User conflict, aesthetic, resource damage	N
Land Based – Fishing Related (e.g. fishing line, gear)	M	Resource damage	N
Ocean Based – Fishing (Derelict Fishing Gear)	M	Resource damage, aesthetic, user conflicts	Y
Ocean Based – Derelict Vessels	L	Aesthetic, resource damage	N
Ocean Based – Vessel Based (cruise ship, cargo ship, general vessel)	M	Resource damage	N
Hurricane/Storm	H	User conflict, aesthetic, resource damage	Y
Other (Shellfish aquaculture production gear)	H	User conflict	Y
Other: (Tire artificial reef)	H	Aesthetic, resource damage	Y

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

Hurricane/Storm

Marine Debris and Aquaculture Use Zones

Severe weather events (esp. hurricanes) distribute natural and anthropogenic debris over shellfish aquaculture lease areas smothering and killing growing shellfish, creating hazardous conditions for farmers and the public, and imposing unexpected cleanup and disposal costs that cannot be absorbed by small, family-operated farms.

Marine Debris and the Indian River Lagoon

DACS' Division of Aquaculture has focused on hurricane generated and distributed marine debris cleanup in the Indian River Lagoon (IRL) for several years. Main stem and shoreline debris has been assessed and documented, safely removed and transported, and then sorted, recycled or

appropriately disposed. Much of this debris was large (parts and pieces of homes and businesses, boats and other marine recreation equipment, appliances, and docks, piers, and pilings) which posed considerable extraction, handling and disposal challenges. Less obtrusive but of greater potential to affect wild flora and fauna was the distribution of micro-marine debris (synthetic sheeting, netting, rope and twine, bottle caps, toys, and the shattered remains of all of these items). The Division expended considerable effort to develop effective, non-damaging micro-marine debris extraction, collection and accounting means and methods and is of the opinion that micro-debris collection and disposal is well within the capability of trained volunteers.

Ocean-Based Fishing (Derelict Fishing Gear)

The FWC implemented closed seasons for the harvest of blue crabs with traps beginning in July 2009 to facilitate the identification and removal of lost and abandoned blue crab traps (all blue crab traps that remain in the water during these closed seasons are determined to be derelict and may be removed). The FWC also streamlined the application and review process for community-based volunteer group derelict trap cleanup events.

Land-Based/Shore Litter

Several coastal counties reported that there was more trash collected off the beach in 2009 than in previous years; however, there were also more volunteers participating in the cleanup efforts than in the past.

Tire Artificial Reef

A significant change is underway for the waste tire artificial reef off the coast of Broward County. DEP has been working with the County and military divers to remove an estimated 670,000 tires placed in the 1970's. To date, 71,733 tires have been removed. Efforts will continue when military assets become available again.

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

Some local governments use data collected by the local *Keep America Beautiful* affiliate programs operating in Florida's coastal communities for targeting outreach programs and community activities to keep beaches cleaner.

The FWC does not use beach cleanup data, but they do collect data from derelict stone crab, spiny lobster and blue crab traps removed during the respective closed seasons to assess trap owners a retrieval fee of \$10 per trap retrieved. A commercial harvester cannot renew their commercial saltwater fishing license until the retrieval fee has been paid.

The FCMP uses beach clean-up data in its outreach efforts to encourage participation in the annual coastal cleanup event.

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	N
Littering reduction programs	Y	Y	N
Wasteful packaging reduction programs	Y	N	N
Fishing gear management programs	Y	Y	N
Marine debris concerns in harbor, port, marine, & waste management plans	Y	Y	N
Post-storm related debris programs or policies	Y	Y	Y
Derelict vessel removal programs or policies	Y	Y	Y
Research and monitoring	Y	Y	N
Marine debris education & outreach	Y	Y	Y
Other (Derelict trap retrieval programs)	Y	Y	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; and
 - c) Characterize the outcomes and effectiveness of the changes.

Post-Storm Related Debris Programs or Policies

Marine Debris and Aquaculture Use Zones

Long-term shellfish aquaculture production has resulted in lost or abandoned production materials in and around aquaculture use zones. A cooperative effort to utilize production netting as an erosion prevention tool has met with mixed success. CZM 309 funds were utilized during 2006-07 to survey Coastal Aquatic Managed Areas managers and farmers to ascertain the identity and scope of issues of joint or particular interest. Lost or abandoned gear was not identified as an issue at that time but has become a management challenge for farmers and the agency since that assessment.

Marine Debris and the Indian River Lagoon

Micro-marine debris items (i.e., bottle caps, sandwich bags, zip ties, plastic foam, solid plastic pieces, monofilament line, etc.) entangle, disrupt or halt: feeding, resting and nesting birds; aquatic and wetland plant growth; feeding or spawning fish; and feeding or molting crustaceans. However, a variety of debris survey, retrieval, handling, and accounting methods that ensure cleanup success, prevent collateral environmental damage, provide for volunteer and wildlife safety, and facilitate performance measurements and efficient material handling and disposal/recycling must be developed and tested.

Derelict Vessel Removal Programs or Policies

Using CZM 306 funds, the FWC is developing a secure web-enabled database application for marine law enforcement officers and local governments to monitor and track information on vessels at anchor located on waters in the state. The system will also house data on abandoned or derelict vessels (DVs). Many of the documented DVs threaten the safety of navigation and recreation; pollute state waters from decomposition of fuel, oil tanks, batteries and hazardous

chemicals; and harm benthic habitats after sinking. A preemptive DV tracking application will provide a management tool to protect seagrasses, oyster beds and hard bottom; serve as hazard mitigation; and provide for safer navigable waterways.

The Derelict Vessel Removal Grant Program administered by the FWC provides grants to local governments for the removal of derelict vessels from Florida waters. Funding for this program was not appropriated for FY09/10.

Marine Debris Education and Outreach

[Reef Relief, Inc.](#), a non-profit group, used CZM 306 funds to train volunteers for the Reef Ranger Program which aims to protect coral reefs in the Florida Keys. Reef Rangers conduct marine debris clean-ups, reef monitoring, and environmental education about protecting coral reefs. Reef Relief collaborated with the City of Key West, Fort Zachary Taylor State Park and the USFWS in implementing the Reef Ranger Program. The project included the printing and distribution of a poster on proper disposal of debris; distribution of a “No Discharge Zone” brochure to marine interests; design of an outdoor coral reef exhibit for display at the Reef Relief Center; near-shore waters monitoring; and removal of marine debris from offshore coral reefs and coastal mangroves.

Using CZM 306 funds, the [Friends of the A1A Scenic & Historic Coastal Byway](#), a non-profit organization, in partnership with the Town of Marineland, is engaging communities, municipalities and civic associations along the A1A coastal corridor in a litter control and education campaign. The Friends of A1A are conducting two beach cleanups per month at targeted areas; educating residents in conservation strategies; performing mini-projects to improve coastal habitats; and promoting awareness of litter as a negative experience for A1A travelers.

The City of Tampa and the Mayor’s Beautification Program partnered to enhance and expand the effectiveness of the Tampa Shoreline Restoration Initiative (TSRI). The TSRI focuses on community outreach and volunteer development, and planning and coordination activities related to the Hillsborough River Clean-Up and Adopt-A-Shoreline Program. This was a CZM 306 funded project.

Derelict Trap Removal Program

The FWC implemented closed seasons for the harvest of blue crabs with traps beginning in July 2009 to facilitate the identification and removal of lost and abandoned blue crab traps (all blue crab traps that remain in the water during these closed seasons are determined to be derelict and may be removed). The FWC also streamlined the application and review process for community-based volunteer group derelict trap cleanup events. These programs and supporting rules were driven by public and Legislative interest, not a CZM driven change. Derelict trap removal programs targeting derelict blue crab traps removed a total of 3,063 derelict blue crab traps during the months of July and August 2009, and additional efforts were planned for the month of January 2010. Derelict trap removal programs targeting derelict stone crab and spiny lobster traps have removed a total of 6,108 derelict traps during the months of June and July.

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)
Litter Enforcement	Regulatory	H
Recycling Requirements	Regulatory	M
Full assessment of marine debris issues	Data	H
Create an aquaculture lease marine debris policy	Policy	L
Educate aquaculture lease holders on safe debris handling and disposal	Training, communication, outreach	M
Educate aquaculture lease holders to manage shellfish farming equipment to reduce/eliminate marine debris	Training, communication, outreach	H
Collect and properly dispose of shellfish production materials (i.e., synthetic netting)	Capacity	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 _____
Medium X
Low _____

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

Marine debris is an important issue in Florida. Coastal storms and hurricanes contribute significant amounts of debris to coastal waters. These severe weather events are a particular problem for aquaculture use zones as they dislodge shellfish production materials such as polyester netting, polyethylene netting, polyester nursery and grow-out bags and other gear, and redistribute the material in and around these areas. The distribution of lease areas over a large region of shallow, near shore waters plus a lack of infrastructure to easily remove, collect, transport and properly dispose of this debris has hampered both the farm community and DACS.

Marine debris is also a problem in many of the estuaries around the state. DACS has been testing effective techniques and methods for micro-marine debris removal in the IRL. Further work may be needed to utilize the methods developed for marine debris cleanup in the IRL.

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

Yes X
No _____

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

A strategy will be developed for marine debris because there is a need for best management practices that focus on marine debris management, collection and proper disposal in aquaculture use zones. An outreach and education effort is also needed to address this issue. There is also a need for a marine debris handbook to guide volunteer, state/local agency or commercial entities in micro-debris cleanup management, assessment, retrieval and accounting.

Cumulative and 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:

The following describes areas where rapid growth and land use changes have resulted in, or are anticipated to result in, widespread effects throughout specific coastal watersheds, or to specific types of resources statewide. Also noted, where applicable, are special protection or management strategies that are already underway to address identified issues.

Geographic area	Type of growth or change in land use	Rate of growth or change in land use (% change, average acres converted, H,M,L)	Types of CSI
Everglades Ecosystem Comprehensive Everglades Restoration Plan (CERP) and the Northern Everglades and Estuaries Protection Program (NEEPP) (South Florida)	All sectors with an emerging high tech manufacturing emphasis for the future. Increases in urban land use suggest a conversion of agricultural land use to urban and other uses.	Slow-down expected in So. Fla. population growth due to downturns in housing and national economy.	*See discussion following table regarding CERP and NEEPP implementation.
Florida Keys Area of Critical State Concern	Development pressures continue to threaten the highly sensitive coastal resources in the Florida Keys. Under the Areas of Critical State Concern Program, the Department of Community Affairs has a high level of oversight over development decisions in the Keys to moderate the threat of environmental or cultural impacts. At-risk coastal resources include: wetlands and traditional working waterfront land uses. Increase boat anchoring, groundings and live-aboards	M-H	Loss of coastal wetlands/mangroves may impact ecosystem, Key's economy and fishing industry because of potential water quality declines (not trapping sediments, less nutrient reduction of runoff, less organic material may affect food chain of invertebrates and juvenile fish, loss of marine nursery). Non-point source pollution-decline of coral reef. Loss of protection from erosion, storms, waves and floods.

			<p>Loss of open space.</p> <p>Increased fragmentation may lead to additional exotic invasion or habitat loss. Decreased ecosystem function</p> <p>Impacts to reefs and seagrass beds from prop dredging, shading and boater impacts</p> <p>Loss of access to waterfront resources and decline of water-dependent uses</p>
Southeast Florida reef tract	Increased development-residential and commercial	H	Water quality issues; impacts on reefs and habitat; boater impacts.
Apalachicola Area of Critical State Concern	Waterfront residential development; decline of water-dependent uses	M	Continued stormwater runoff & potential water quality impacts; decline of seafood industry & working waterfront uses; loss of access to waterfront and historic resources
Northwest Florida-(Apalachicola)	Coastal & up-basin development	M	Water quality; habitat impacts; upstream freshwater diversion
Northeast Florida-Duval & St. Johns counties	Increased development-primarily residential & supporting infrastructure	H-located in one of the fastest growing counties in U.S.	Water quality; habitat impacts
Southwest Florida-Collier & Lee counties	Increased development-primarily residential and supporting infrastructure	H-Rapid; highest in the nation	Water quality; algae blooms; habitat impacts; boater impacts
Big Bend Region	Development of privately-owned land; change from agriculture & silviculture to development	Unknown	Water quality & water quantity (aquifer) declines; dredging; seagrass loss, fragmentation of habitat & loss of buffers around wildlife managed areas & corridors; impacts from fire management; human/wildlife interactions (nuisance) increasing; light pollution wetland & seagrass losses; water quantity (aquifer) impacts; fragmentation, loss of wildlife managed areas, buffers and corridors; dredging; light pollution.

	Coastal development	M	Eutrophication
	Changes in Suwannee watershed land use	H	Eutrophication
Big Cypress Area of Critical State Concern	Increased use of off-road vehicles.	L-M	Impacts to wetlands & surface water flow; intrusion of exotic vegetation
Green Swamp Area of Critical State Concern	Increase in development and associated impacts to wetlands; water withdrawals.	L-M	Loss of biological filtering capacity of wetlands; increased development and impervious surfaces can result in declines of aquifer recharge and ground water supply
Pine Rocklands (Miami-Dade County, Florida Keys, Everglades National Park)	Some continuing development	M	Habitat loss/ fragmentation & edge effects; invasive exotic species; lack of management (prescribed fire); pesticide spraying
Tropical hardwood hammocks	Some continuing development	H	Habitat loss/ fragmentation; edge effects; invasive exotic species
Intertidal habitats – sandy beaches, mudflats, shoals, sandbars	Development & activities to support development (nourishment, armoring, beach cleaning); increased number of people on beaches	H	Loss of habitat available to wildlife through activities designed to maintain recreation & development: beach cleaning, nourishment, armoring, recreation, debris on beach and many others
Coastal scrub	Continuing development	M	Habitat loss/ fragmentation; edge effects; invasive exotic species; lack of management (prescribed fire)
Florida Springs	Increased development and associated impacts to sensitive resources	M	Water quality declines
Statewide – Coastal Lands	Change of land use to residential/ commercial uses leading to increased residential and transportation related growth	H	Increased habitat loss and conversion; increased impervious surface for stormwater; increased pollution and habitat degradation resulting in water quality declines; increased invasive and exotic species; increased water use resulting in reduced groundwater; saltwater intrusion into coastal aquifers

*In general, CERP implementation will increase the spatial extent of wetlands and other natural areas, recovery of 68 listed species, get the water right (right place, right time, right quality and quantity), maintain flood management levels of service and water supply for the 2050 population. Land acquisition in the Water Preserve Area may slow expansion of lower east development to the west. Water storage and seepage control will act to restore more natural freshwater flows to Biscayne Bay. Estuaries will benefit from a reduction in freshwater discharges, Lake Okeechobee will be enhanced with lower levels, which will enhance submerged aquatic vegetation and improve commercial and recreational fisheries. Recreational opportunities will be enhanced by improvements in water quality and recreational opportunities created on CERP lands.

NEEPP recognizes the importance and connectivity of the entire Everglades ecosystem both north and south of Lake Okeechobee. Implementation of this program will improve the quality, quantity, timing and distribution of water to the natural system and re-establish salinity regimes suitable for maintaining healthy, naturally diverse and well-balanced estuarine ecosystems. The health of the Northern Everglades will be enhanced by improving land management to reduce nutrient run-off, by constructing treatment wetlands to improve water quality and by completing water storage projects to better connect, manage and distribute water to the natural system.

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)
Wetlands statewide	Wetland loss from lowering of aquifers; changes in wetland habitat from altering hydrology by pumping and releasing water	H
High groundwater recharge areas	Paving over by development	H
First magnitude springs and spring sheds	Cessation of flow to springs, pollution and development within spring protection areas	H
Source water for public water supply well fields & wellhead protection areas	Pollution and lowering of water levels in aquifers	M
High energy beaches	Erosion	M
Shellfish beds	Commercial harvest closure and reduction in productivity	M
Coral Reefs	Loss of reefs entirely due to pollution and anchoring effects	H
Seagrass	Water quality declines; increased boating & prop scarring; shading from construction of marine facilities (docks/marinas).	M
Intertidal habitats – sandy beaches, mudflats, shoals, sandbars	Nesting for shorebirds/seabirds: disturbance from recreation; beach cleaning; creation of reproduction sinks from building temporary habitat during beach nourishment, which pulls shorebirds from protected areas to breed where there is no protection and more disturbance. Foraging: removal of major component of food chain for shorebirds/seabirds during and after beach nourishment.	H
Sea turtles	Disorientation resulting for lighting and other activities and loss of nesting habitat from continued development	M
Florida Keys wetlands & mangroves	Water quality declines; shoreline erosion; damage & habitat loss	M
Florida Keys nearshore waters	Pollution from stormwater & wastewater, water quality declines, decline of marine nurseries and fishing industry, decline of coral reefs	M to H

Marine benthic habitats	Exotic predatory species affect native vertebrate/ invertebrate communities	M
Big Cypress Wetlands	Impacts to wetlands and surface water flow from off-road vehicles; exotic vegetation intrusion; impacts to T&E species and habitat	L to M
Green Swamp Wetlands	Impacts to wetlands and surface water flow from development	L to M
Apalachicola nearshore waters	Pollution from stormwater & wastewater; water quality declines; decline of marine nurseries and fishing industry	L to M
Coastal strand	Loss of habitat & fragmentation to development; loss of fresh-water habitats; lighting; introduced exotic species; disturbance; armoring (loss of sand to continue natural accretion)	H
Dune and interdunal swales (beachfront and interior relict dunes)	Residential, transportation and other development. Loss of rare and endangered species and ecosystems	H
Lake Okeechobee, remnant Everglades marsh; Caloosahatchee & St. Lucie Estuaries; Florida Bay; Biscayne Bay; habitat for approx. 68 state and federally listed species, including the Florida panther, manatee, Woodstork, Everglades Kite, Roseate Spoonbill and Cape Sable Seaside Sparrow	Urban expansion, pollutant (primarily nutrients) discharges and high freshwater discharges	H
Florida statewide	Increased potential from residential and non-residential development as measured by comprehensive plan amendments (over 1162 million gross ft ² in 2007 & 2008); comprehensive plan amendments also allowed 418,162 additional dwelling units in 2007 & 2008, primarily in coastal counties.	

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	Y
Policies	Y	Y-See Research, assessment and monitoring discussion
Guidance	Y	Y-See Research, assessment and monitoring discussion
Management Plans	Y	Y
Research, assessment, monitoring	Y	Y
Mapping	Y	Y
Education and Outreach	Y	Y- See Research, assessment and monitoring discussion

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.

Regulations

Three Comprehensive Everglades Restoration (CERP) Projects were authorized by Congress in 2008. They include Picayune Strand, Indian River Lagoon – South and the Site 1 Reservoir. Funds were appropriated for the construction of the Merritt Canal Pump Station, which will begin the restoration of over 55,000 acres of drained wetlands and restore more natural flows to the Ten Thousand Island Estuary. Additional appropriations are expected in for 2010 to begin construction of the C-44 Reservoir/STA and the Site 1 Reservoir. These projects will help moderate high flows to coast and help to maintain higher water levels in the Loxahatchee National Wildlife Refuge. Over 60 percent of the lands or 242,500 acres have been acquired for CERP project implementation.

In 2007, the Florida Legislature enacted the NEEPP, which broadened the Lake Okeechobee Protection Program enacted in 2000, to include the Caloosahatchee and St. Lucie River watersheds along with the Lake Okeechobee watershed. The primary goal of NEEPP is to restore and protect the state's surface water resources in the watersheds by improving the quality, quantity, timing, and distribution of water in the northern Everglades ecosystem. The main water quality concern in all three watersheds is excessive nutrients.

NEEPP directs the South Florida Water Management District (SFWMD), in collaboration with the Florida Department of Environmental Protection (DEP) and the Florida Department of Agriculture and Consumer Services (DACS), to develop protection plans for Phase II of the Lake Okeechobee Watershed Construction Project and the St. Lucie and Caloosahatchee River watersheds. The Phase II Technical Plan for the Lake Okeechobee Watershed Construction Project was submitted to the legislature on February 1, 2008. The St. Lucie and Caloosahatchee River Watershed Protection Plans were submitted to the legislature by January 1, 2009. These were not 309 or other CZM-driven changes.

The NEEPP requires the development of protection plans for Phase II of the Lake Okeechobee Watershed Construction Project and the St. Lucie River and Caloosahatchee River watersheds, which will provide a reasonable means of achieving any adopted Total Maximum Daily Loads (TMDLs) and maintaining compliance with state water quality standards. Under the NEEPP legislation, the protection plans must contain an implementation schedule for pollutant load reductions consistent with any adopted TMDLs and state water quality standards. The NEEPP states that the phased, comprehensive, and innovative protection plans must include long-term solutions based upon TMDLs established under Section 403.067, F.S. The development of TMDLs for these watersheds is a critical component of NEEPP and, more importantly, contributes significantly to the restoration and protection of these surface waters.

For Lake Okeechobee, the total phosphorus (TP) TMDL, adopted by DEP in 2001, is 140 metric tons (mt) per target goal. The objective of the Lake Okeechobee Phase II Technical Plan (P2TP) is to achieve the 140 mt/yr TMDL for the lake by 2015. To meet the Lake Okeechobee TP TMDL, the P2TP includes the implementation of many types of water quantity and water quality measures, such as the use of reservoirs, source control programs (*e.g.*, best management practices

(BMPs) and changes to regulatory programs), stormwater treatment areas, deep injection wells, and innovative nutrient control technologies (*e.g.*, chemical treatment and hybrid wetland treatment technology). Working with DEP, the EPA has adopted final TP and total nitrogen (TN) TMDLs necessary to protect Lake Okeechobee tributaries. Information on impaired waters, adopted and pending TMDLs can be found on DEP's website at <http://www.dep.state.fl.us/water/tmdl/index.htm>.

Although TMDLs for the Caloosahatchee River watershed were initially scheduled for development in 2009, NEEPP fast-tracked the nutrient and dissolved oxygen (DO) TMDLs for the tidal portions of the Caloosahatchee River and Estuary, and those TMDLs were proposed for final agency action by December 31, 2008. The Caloosahatchee TMDLs are based on achieving adequate reduction in total nitrogen (TN) loads in order to be consistent with a healthy sea-grass meadow in San Carlos Bay (at the mouth of the Caloosahatchee Estuary) and critical locations mid-estuary. The TMDLs require a 23% reduction in current loads. The Caloosahatchee River Watershed Protection Plan was developed by the SFWMD, DEP, and DACS with involvement from local stakeholders. The final protection plan was submitted to the legislature on January 1, 2009. Currently, the DEP is working on the development of a Basin Management Action Plan (BMAP), which will be coordinated with the protection plan, but focused on implementation of the TMDLs. The BMAP process, driven by intense stakeholder participation, typically includes review and evaluation of local government development regulations, such as local ordinances that promote low impact development. Thus, the BMAP process represents another opportunity to enhance local government planning and regulatory mechanisms to benefit water quality, in coordination with state agencies.

For the St. Lucie River watershed, TMDL development progressed under a deadline established as part of the TMDL process; NEEPP did not alter the due dates for that watershed. The St. Lucie TMDLs were based on nutrient and environmental response targets established for the estuary. The DEP selected the TP and TN targets from the Indian River Lagoon-South Plan (IRL-S Plan) as the end point for calculating the TMDLs for the various impaired water body segments (identified using water body identification numbers). These targets, 81 µg/L TP and 0.74 mg/L TN, were applied at the Roosevelt Bridge, and they are supported by several additional lines of evidence developed through subsequent evaluations by DEP and the SFWMD. The St. Lucie River Watershed Protection Plan was developed by SFWMD, DEP, and DACS, and the final protection plan was submitted to the legislature in January 1, 2009. The DEP is currently working on the development of a BMAP, which will be coordinated with the protection plan.

Research, assessment and monitoring programs have been reviewed by involved agencies to ensure that each effort is cost effective, providing meaningful information and to reduce any duplication of effort. Adaptive Management (AM) is an iterative and deliberate process of applying principles of scientific investigation to design and implementation in order to better understand the ecosystem and reduce the key uncertainties and as a basis for continuously refining the program/project design and operation. The CERP is being planned, implemented, assessed and refined using the principles of AM. Adaptive Management for CERP will aid in defining a restoration strategy that recognizes present-day solutions may be deficient for future conditions and that the future will be influenced by unanticipated internal and external events, particularly at the large-scale of the south Florida Ecosystem. RECOVER (Restoration, Coordination and Verification) is an arm of the CERP responsible for linking science and the tools of science to a set of system-wide planning, evaluation and assessment tasks. The objectives of RECOVER are to: Evaluate and assess CERP performance, refine and improve the plan during the implementation period, and ensure that a system-wide perspective is maintained throughout the restoration program.

Management Plans

The Florida Beaches Habitat Conservation Plan (HCP) is being developed by DEP and FWC with input from a broad range of contributing partners. The HCP seeks to help preserve the unique wildlife and natural resources of Florida's coastline. The HCP is in the early stages of development, and a steering committee has been formed to help guide the planning process. Staff has also convened a Science Committee to provide recommendations on threatened and endangered species accounts and monitoring and mitigation programs. NERR staff will be considered for inclusion on the Science Committee and consulted about opportunities to utilize their habitat mapping and change efforts and their system-wide monitoring program to support the HCP. This is not a 309 driven initiative.

Research, Assessment, Monitoring

FWC/Fish and Wildlife Research Institute has developed the Seagrass Integrated Mapping and Monitoring program to enable resource managers to track changes in the distribution, abundance, and species composition of seagrass meadows around the state. This project is a result of a 309 strategy. The project has documented seagrass loss, density declines and species shifts. Aside from providing data for the Fish and Wildlife Legacy Initiative report, it has served as the foundation of the seagrass Natural Resource Damage Assessment (NRDA) baseline effort in Florida for the Deep Horizon Oil Spill, providing up to date information on seagrass imagery, mapping, and monitoring. These data are indispensable in documenting conditions prior to any oil or dispersant related impacts. Florida submitted the NRDA Submerged Aquatic Vegetation (SAV) plan early in the spill response process to NOAA, and they have incorporated all the substantive elements in the Gulf-wide NRDA SAV plan.

Florida instituted a coordination mechanism for coastal research needs through the Florida Ocean & Coastal Council to identify and fund projects. This is not a 309 driven initiative although the FCMP has supported the Council activities.

DEP's Florida Geological Survey (FGS) is currently evaluating water quality changes from flooding and storm surge in one coastal county served by centralized sewer vs. septic systems. To provide county and state decision-makers with data-based scientific information on water quality impacts stemming from flooding and/or storm surges and the potential release of raw or inadequately-treated domestic effluents to the environment, the FGS will 1) determine impacts on ground- and surface-water quality from storm surges at two community locations; 2) track the source of fecal coliform bacteria in this area during non-storm and post-storm surge periods; and 3) predict nitrate concentrations and the path effluents are transported from septic tanks and sewer lines through the subsurface to discharge points in near-shore waters during both non-storm and post-storm surges. This is a 306-funded project.

Direct conveyance of contaminants and nutrients in groundwater to the marine environment is an emerging issue; thus, the amount and quality of submarine groundwater discharge is a concern in developing Total Maximum Daily Loads (TMDLs) for impacted estuaries and marine environments. FGS is currently using a 306 grant to locate and obtain data from near- and offshore springs to advance understanding of geology and groundwater flow and to better quantify groundwater discharge. This understanding can assist in establishing more accurate MFLs and TMDLs and result in better management of the state's freshwater resources, including Florida springs and marine resources.

Mapping

See research, assessment, monitoring above.

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 additional data on impacts to surface waters from aquifer withdrawals	Data	M
Increase awareness of beach surf zone as habitat critical for wildlife	Outreach and communication	H
Need regional coordinators to better organize and expand regional shorebird partnerships to monitor shorebird populations, educate the public on coastal conservation issues and reduce disturbance and impacts to shorebirds at the local level. www.flshorebirdalliance.org .	Includes regulatory, data, training, capacity, communication and outreach	H
Nearshore seagrass mapping	Data needed to determine if TMDL efforts result in seagrass gains; Data needed to include as much of near-shore seagrasses as can be mapped by aerial photo or satellite imagery	H
Develop techniques and map deepwater seagrass and hard bottom communities in Florida's Big Bend	Data need to assess potential far-field impacts of river runoff on deep water grass beds and hard bottom	H
Accurate habitat mapping with regular updates	Data and capacity	H
Long-term assessment of status, health and trends of habitats and water quality	Data and capacity	H
More comprehensive land use regulations	Regulatory and policy	H
Expedite restoration projects	Funds for land acquisition & construction costs (Everglades)	H
Cost, risk and effectiveness evaluation of different wastewater management approaches	Provide information for policy and regulations	H
Maintenance and assessment of existing wastewater infrastructure, either centralized (sewer) or decentralized (onsite systems)	Gather data and provide information for policy and regulations, capacity, outreach	M
Knowledge base about interaction between surface and ground water and the influence of tides on this interaction, especially in karstic settings	Research data and development of predictive models to forecast impacts.	H
Inventory of water resources on a watershed basis, and critical need for minimum volumes of water to sustain the health of watersheds	Development of quantifiable water budgets for coastal watersheds and development of minimum flows/ levels in surface and groundwater.	H
Inventory of submarine springs and assessment of their role in maintaining ecology of the nearshore environment. Inventory of karstic features that will maximize the interaction between uplands and the nearshore environment	Development of BMPs to address water withdrawal and land use issues in order to maintain well-balanced water budgets. Development of long-term (≥ 20 yrs) water use projections on watershed basis for merging into regional plans.	H

Development of maps identifying areas of vulnerability to pollution on watershed and regional basis	Requiring such maps for all permits that manage discharge to State waters and for permits that regulate the consumptive use of water. These maps will also be critical to delineate watershed boundaries and areas of protection around spring-sheds, public water supply wells and facilities.	H
Financial support for the FWC's "Do not release your pet" and the national Habitattitude campaign	Communication and outreach	M
Systematic habitat survey and species risk assessment	Data, capacity	M

Enhancement Area Prioritization

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

High X
Medium
Low

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

The FCMP and partner agencies have consistently identified issues related to cumulative and secondary impacts as a high priority. Numerous gaps in regulatory, data, training, capacity, communication and outreach have been noted in the assessment process. A wide range of resources were also identified as being affected by cumulative and secondary impacts.

For example, FWC staff has indicated that existing regulations and policies do not adequately protect Florida wildlife from cumulative and secondary impacts. Declining wildlife populations and increasing human populations will likely increase conflicts between humans and wildlife. Also, Florida's Big Bend nearshore seagrass beds are the second largest contiguous seagrass beds in the continental United States comprising over 240,000 acres of essential fisheries habitat. This resource is under pressure from rising nutrient loads from the Suwannee River and, to a lesser extent, the Ochlockonee, St. Marks and Fenholloway Rivers. A multi-year seagrass mapping and monitoring program (funded by FCMP Section 309 funds in 2006-2010) has shown that seagrass losses related to river discharge extend up to 40 km from the mouth of the Suwannee River. Far-field impacts of river discharge have not been assessed but might be considerable.

Also, the introduction of exotic marine species in Florida waters has been identified as a problem that needs to be addressed. Systematic surveys are needed to: 1) determine the distribution, number and identity of nonnative marine fish and invertebrates; 2) collect, preserve and store captured specimens; 3) determine reappearance, recruitment patterns and population dynamics; and 4) identify and confirm specific locations that could be sampled periodically as sentinel locations for the appearance of these species. In addition, public education efforts are needed to help minimize the risk of introduction of exotic marine species in Florida waters.

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

Yes _____
No X

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

Several strategy ideas have been discussed by partner agencies for this enhancement area, but none have been formally proposed. Given the scale and complexity of the issue, the numerous large-scale state and federal programs already addressing it, and the limited resources available through section 309 funding, there were few specific strategy recommendations.

Addressing the indirect consequences of individual projects has a limited effect on managing the broad-based environmental impacts commonly associated with accelerated growth and development and other significant land use changes. Florida's wetland permitting program incorporates a very limited consideration of the secondary effects of individual permit actions, but would have minimal influence in a large area experiencing widespread impacts from multiple activities. Florida's land acquisition programs, comprehensive planning process, watershed and water management programs, and numerous special area management initiatives are much more effective and proactive means of addressing the cumulative effects of land use decisions and activities in large areas.

For example, restoration of the Everglades has long been a high priority of the State and Federal governments. Florida's investment of approximately 2.4 billion in CERP to date, as well as an additional \$1.8 billion to improve the quality of the water flowing to the ecosystem, demonstrates the state's commitment to this restoration effort.

Although strategies for cumulative and secondary impacts will not be developed at this time, the FCMP may propose strategies later in the planning period to address needs identified during the assessment of this enhancement area.

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 SAMP 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?
Big Bend region	Recreation; development; aesthetics; existence of wildlife; biodiversity values; public trust protection of ecosystem services.	Emerging
Panhandle barrier islands	Development; recreation; aesthetics; existence of wildlife; biodiversity values; public trust protection of ecosystem services	Emerging
Coastal strand/marine & upland ecotone	Human use/disturbance, habitat loss	Long-standing
Critical Wildlife Areas	Disturbance/recreation; private landowner conflicts-posting for seasonal nesting; public access; lack of clear statutory authority; aesthetics; existence of wildlife; biodiversity values; public trust protection of ecosystem services	Long-standing
Spoil islands and emerging shoals/sandbars	Disturbance from recreation	Emerging
Urban/Wildland interface	Residential development	Long-standing
Florida's shoreline	Climate change impacts and potential threats to public access points, economic viability of coastal communities, and natural and cultural resources	Emerging
State of Florida jurisdictional waters	User conflicts/public use/commercial use/species & habitat management	Long-standing need but emerging issue
Southeast Florida Reef Tract, north of Biscayne National Park	Degradation of coral habitat with many potential user conflicts	Long-standing but has only received attention in the past 5 years
Nassau Shoals	Public access & listed species (primarily birds)	Long-standing

Keewaydin Island	Public access/user conflicts & listed species/habitat restoration	Long-standing
Spoil and natural islands statewide	Public access/user conflicts & listed species/habitat restoration	Long-standing

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
Florida silviculture BMPs (DACs)	Revised	2008
WAVES: Bradenton Beach Vision Plan (Bradenton Beach, FL) (Section 306 funded) (DCA)	New	2006
Waterfront District Master Plan (Bagdad, Santa Rosa County, FL) (Section 306 funded)	New	2006
Port St. Joe Waterfront Partnership Strategic Plan (City of Port St. Joe, FL) (Section 306 funded) (DCA)	New	2006
Charting the Course: Fort Walton Beach Waterfront Vision Plan (Fort Walton Beach, Okaloosa County, FL Section 306 funding) (DCA)	New	2006
Steinhatchee 2008 Vision Plan (Steinhatchee, Taylor County, FL) (Section 306 funded) (DCA)	New	2008
St Marks Waterfronts Florida Partnership: A Vision for our Future (St. Marks, FL) (Section 306 funded) (DCA)	New	2008
Charting the Course for the Carrabelle Waterfront: Vision and Implementation Plan (Carrabelle, FL) (Section 306 funded) (DCA)	New	2008
Jena Springs Area Vision Plan (non CZM effort) (DCA)	New	2008
St. Joseph Bay Aquatic Preserve Mgmt Plan (CAMA)	revised	Approved 9/16/08
Guana Tolomato Matanzas NERR Mgmt Plan (includes Guana River & Pellicer Creek aquatic preserves) (CAMA)	revised	Approved 5/16/09
North Fork of the St. Lucie River Mgmt Plan (CAMA)	revised	Approved 8/11/09
Mosquito Lagoon Aquatic Preserve Mgmt Plan (CAMA)	revised	Approved 8/11/09
Terra Ceia Aquatic Preserve Mgmt Plan (CAMA)	revised	Approved 8/11/09
Rookery Bay NERR Mgmt Plan (includes Rookery Bay & Cape Romano - Ten Thousand Islands aquatic preserves) (CAMA)	In progress	
Apalachicola NERR Mgmt Plan (includes Apalachicola Bay Aquatic Preserve) (CAMA)	In progress	
Wekiva River Aquatic Preserve Mgmt Plan (CAMA)	In progress	
Nassau River – St. Johns River Marshes Aquatic Preserve Mgmt Plan (CAMA)	In progress	
Estero Bay Aquatic Preserve Mgmt Plan (CAMA)	In progress	
Biscayne Bay Aquatic Preserve Mgmt Plan (CAMA)	In progress	
Big Bend Aquatic Preserve Mgmt Plan (CAMA)	In progress	

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; and
- c) Characterize the outcomes and effectiveness of the changes.

FCMP has continued its partnership with DCA in the implementation of the Waterfronts Florida Partnership (WFP) Program. This section 309 program enhancement provides technical assistance, training and networking opportunities to Waterfronts Florida communities, including designation of new communities to participate in the program. A new major focus of the program was to expand activities to increase disaster-resilience in the communities, which includes a climate change resiliency study. DCA is also expanding its efforts to develop business continuity plans in waterfront communities and providing recommendations that will help local governments ensure that they are resilient to threats from the loss of critical maritime infrastructure.

FCMP has also funded several visioning and implementation plans for WFP designated communities through our Coastal Partnership Initiative Program, which is funded through section 306 grant funds.

Another section 309 SAMP strategy involves the development of a new management framework for the state’s aquatic preserve program and the updating of preserve management plans. DEP’s Office of Coastal and Aquatic Managed Areas (CAMA) is developing a new, program-wide comprehensive management strategy, the Integrated Management Framework (IMF), to implement special area management more effectively. The IMF directs all CAMA program activities, including not only aquatic preserve management, but also NERRs, Florida Keys NMS, the SE Florida Coral Reef Program, and other state and federal priority activities, in a coordinated manner using subject-specific management teams. CAMA is also undertaking a long-term project to update the management plans for the 41 aquatic preserves using data and information on current ecosystem health, land use, water resource management, human activities, and geophysical conditions affecting the preserve system. To date, five aquatic preserve management plans have been completed and approved and another seven are in progress.

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)
Reduce conflicts between users and wildlife in Critical Wildlife Areas	Communication and outreach to build local partnerships and increase awareness. Map and make public CWA’s. Capacity: additional funding and use of local interest groups to post and manage CWA’s; explore posting “strike teams” Regulatory: support and implement the proposed CWA rule revision	H
Reduce conflicts between users and wildlife on emerging shoals and spoil islands.	Regulatory/outreach/policy: develop SAMP for emerging shoals statewide to balance recreation and wildlife need.	H

Manage habitat within Critical Wildlife Areas and other important wildlife areas	Regulatory, policy, communication, outreach; Use vegetation management and other management tools to improve habitat suitability for nesting shorebirds and other wildlife. May require new policies for vegetation removal in coastal zone/foredune areas	H
Education	Training	H
Prepare SAMPs at the regional level to address common challenges facing the state's waterfront communities such as the threat of climate change impacts, public access issues, the loss of working waterfronts, the need for economic development, threats to critical maritime infrastructure	Planning	H
Complete SAMPs for each of the state's 41 aquatic preserves	Planning	H
Coastal Marine spatial planning	Regulatory, policy, and lack of data	H
More comprehensive statutes and rules	Regulatory	H
Long-term monitoring of coastal resources and habitats	Lack of data and capacity	H
A comprehensive assessment of visitor user needs and activities	Lack of data. This type of assessment will allow outreach plans to be based on the habits of visitors and be targeted to specific user groups.	H

Enhancement Area Prioritization

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

High X
Medium
Low

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

Special area management is a proven, widely used strategy for comprehensive resource protection in Florida. Increasing populations are leading to increasing conflicts between wildlife and users. SAMP development could be a strong tool for developing mechanisms for addressing these conflicts. The protection of water quality and flow into the estuarine environment is also a priority in Florida that could be addressed through SAMPs. There is also strong need for SAMPs that can help address emerging challenges affecting contemporary waterfront communities such as climate change.

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

Yes X
No

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

Although there were several needs identified in the 309 consultation process, only two SAMP strategies will be developed at this time. Limiting human-wildlife conflicts in the coastal zone has

been identified as an important need. Critical Wildlife Management Areas (CWA) can be designated to help address these conflicts, but additional measures are needed to reduce the human-wildlife conflicts and maintain suitable wildlife habitat. By including the CWA system as a Special Management Area, policies and procedures for management can be adopted statewide.

A strategy to update the management plans for the 41 aquatic preserves will be proposed under the SAMP Enhancement Area. The plans will be revised using data and information on current ecosystem health, land use, water resource management, human activities, and geophysical conditions affecting the preserve system.

Ocean 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
Sand Resources -state and federal waters		M	Oil and gas, pipelines, renewable energy facilities, artificial reefs.
Fishery and other plankton resources	Deepwater Horizon Oil Spill	M	Deepwater Ports (water use for cooling engines or regasification); oil spills.
Mangroves	Direct impacts from development/public infrastructure; water quality degradation; Deepwater Horizon Oil Spill	M	Loss of resource coverage from development; oil spills
Saltmarsh/Coastal Marshes	Development, fresh water diversion, and shoreline hardening; Deepwater Horizon Oil Spill	M	Loss of resource coverage; sea level rise; lack of areas to migrate; oil spills
Bivalve reefs and Shellfish beds	Overharvest; altered hydrology (fresh- water consumptive use); water quality; pathogens; user conflicts; human health	H	Loss of ability to maintain reef profile; Same as "Threat or use conflicts; oil spills"
Coral reefs , hard-bottom habitats, worm reefs and other benthic habitats	Temperature rise, ocean acidification, water quality, sedimentation; disease, vessel groundings, anchor damage; beach restoration; Deepwater Horizon Oil Spill	H	Development; climate change; increased disease and bleaching, decreased growth rates, loss of area extent/reef, increased sedimentation, mortality, physical impacts; oil spills
Seagrass	Coastal development water quality; boat scaring; shoreline change; sea level rise; hydrological changes; Deepwater Horizon Oil Spill	H	Development, boater impacts; nonpoint source pollution; increased macroalgal growth; reduced light penetration, physical degradation, damage/loss of areal extent; oil spills
Marine mammals	Boating, water quality; Deepwater Horizon Oil Spill	M	

Sea turtles	Coastal development, fresh water diversion, shoreline hardening; Deepwater Horizon Oil Spill	M	Same as “Threat or use conflict”
Springs and spring run streams/all tributaries of coastal estuaries	Water quality change	H	Urban and agricultural nonpoint source pollution, wastewater generation and discharge
Estuaries	Shoreline alteration, water quality impacts, sedimentation	M-H (high in developed and developing areas)	

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

Sand Resources

Sand resources for beach restoration have become scarcer offshore Florida, especially in state waters. Subsequently, local governments are being forced to look further offshore in federal waters. A deepwater port proposed offshore Tampa has been required to relocate the pipeline and assist in acquiring sand resources that remain in the pipeline right-of-way.

Deepwater Horizon Oil Spill

On Tuesday, April 20, 2010 an offshore oil drilling platform, Deepwater Horizon, exploded in the Gulf of Mexico near Louisiana. The rig, owned by Transocean Ltd, was under contract to British Petroleum (BP). Submerged at the bottom of the Gulf, the rig continues to discharge in the range of 12,000 to 19,000 barrels per day. BP, the United States Coast Guard and the Minerals Management Service (MMS) are the lead response agencies on the oil spill. While Florida’s shoreline has been spared direct impacts to date, it is expected that at a minimum tar balls and sheen will impact coastal areas, especially if the discharge of oil cannot be stopped rapidly. Oil coming ashore can affect sensitive habitats such as seagrasses, marshes, mangroves and shellfish beds. In addition, surface and dispersed submerged oil plumes can affect the sensitive habitats of south Florida including coral reefs should they be entrained in the Loop Current and carried to the area. Oil, currently floating offshore at the surface or in the water column, continues to affect resources that are important to the state including fisheries, birds, and marine mammals and turtles. Florida should be prepared to assess the damages and effects of the oil on its resources, as well as to develop and implement restoration plans where applicable. Monitoring of the recovery of species and habitats will also be necessary.

Coral Reefs

Threats to coral reef ecosystems have increased due to anchoring incidents, increased boater activity, and the potential of climate change. Percent live coral cover has remained relatively constant since 2006. However, the coral cover is known to be very low when taken in the longer-term context, where live coral cover has declined by 86% since 1996. Over the past 5 years, there is a greater understanding of the threats to coral reefs.

Shellfish Beds

Threats to shellfish beds have risen due to increasing coastal development and resulting increase in pollution threats.

Seagrass

Health and benthic cover of seagrass is not uniform for the state. There has been an increase in seagrass coverage in Tampa Bay, but a decrease in the Indian River Lagoon and little is known for the change for the Big Bend area.

General

Some changes in policy have enhanced protection of ocean resources, but permitting still allows for development-related destruction with mitigation. Mitigation is often out of kind, and does not provide directly applicable ecological functioning of the resources damaged. Climate change has accelerated, so the need for beach nourishment continues to grow. Limited resource areas for bivalve harvest has increased aquaculture operations, and increased harvest pressure on oyster reefs. Human population growth in areas both within and outside of the state has increased consumptive need and use of available surface and ground water dramatically changing estuary hydrology's. The boating public in Florida waters has increased exponentially as well. A focus on nutrient contributions to receiving waters has helped reduce loading into ambient waters, but population growth continues to cause an increase in pollution over all.

The FWC Harmful Algal Bloom (HAB) Program at the Fish and Wildlife Research Institute (FWRI) is tasked by the state of Florida with monitoring coastal waters for marine and estuarine HAB species for the protection of human and environmental health. Much effort is directed towards monitoring for two toxin-producing dinoflagellates: *Karenia brevis* (the Florida Red Tide organism) and *Pyrodinium bahamense*. Blooms of *K. brevis* occur almost annually in the eastern Gulf of Mexico most frequently impacting southwest Florida. Blooms of *P. bahamense* can also occur statewide, but this species typically blooms extensively in the Indian River Lagoon and upper Tampa Bay in the summer months. With the assistance of an extensive sampling network consisting of HAB staff, charter captains, state and local agencies and academics, the FWC-FWRI HAB Program monitors *K. brevis*, *P. bahamense*, and more than 70 other species of harmful microalgae, producing and disseminating twice-weekly state-wide bulletins of red tide location and severity. In collaboration with the Florida Department of Agriculture and Consumer Services, the group also tests shellfish for biotoxins produced by *K. brevis* and *P. bahamense*, providing data used for the regulation of shellfish harvesting areas within Florida waters. The HAB group also coordinates and/or participates in investigations of HABs and potential HAB-associated mortality events in Florida and conducts an extensive local, state and federally-funded research program investigating aspects of the toxicology, ecology, taxonomy, and genetics of Florida's HAB species.

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 management plan or system of Marine Protected Areas	Y	N

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Regional comprehensive ocean management program	Y	Y
Regional sediment or dredge material management plan	Y	N
Intra-governmental coordination mechanisms for Ocean management	Y	Y
Single-purpose statutes related to ocean resources	Y	Y
Comprehensive ocean management statute	N	N
Ocean resource mapping or information system	Y	Y
Ocean habitat research, assessment, or monitoring programs	Y	Y
Public education and outreach efforts	Y	Y
Other (please specify)		

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.

Regional Comprehensive Ocean Management Program

The Gulf of Mexico Alliance (GOMA) is a partnership between 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](#); [Habitat Conservation and Restoration](#); [Ecosystem Integration and Assessment](#); [Nutrients & Nutrient Impacts](#); [Coastal Community Resilience](#); and [Environmental Education](#). Although GOMA was established before the last 309 assessment, it has gained momentum, particularly in the area of community resiliency. This is not related to a 309 driven change although the FCMP has been a partner with GOMA.

The South Atlantic Alliance (SAA) was established in May 2009 with the states of North Carolina, South Carolina, Georgia and Florida. The SAA mission is to significantly increase regional collaboration among the states to sustain and enhance the region's coastal and ocean resources. The FCMP will be providing 306 funds to assist with coordination of the Alliance activities.

Intra-Governmental Coordination Mechanisms for Ocean Management

In 2005, the Florida legislature passed the Ocean and Coastal Resources Act (http://www.floridaoceanscouncil.org/meetings/files/Oceans_Council_Act.pdf) which created the Florida Oceans and Coastal Council (FOCC) (<http://www.floridaoceanscouncil.org/>). The FOCC is charged each year with developing priorities for ocean and coastal research and establishing a statewide ocean research plan. The FOCC also coordinates public and private ocean research for more effective coastal management. The FOCC is comprised of three non-voting members and fifteen voting members appointed by the DEP, FWC and DACS. Marine resources mapping and monitoring is consistently ranked very highly in the annual research plan. FOCC was created as

part of the Florida Oceans and Coastal Act. It was not a 309 or other CZM-driven change, although the FCMP has funded 306 and 309 projects that address the FOCC priorities. The FOCC provides a forum to bring together government, university, non-governmental organization (NGO) and private sector representatives. The FOCC examines the management needs of those Florida agencies having coastal and marine resource management responsibilities. The research needed to address these management needs is identified and prioritized based upon overall state importance. This prioritized list is sent to the Legislature each year for use in constructing the state budget. To date, several initiatives have been funded including: the development of a strategic plan for the Florida Coastal and Ocean Observing System; the Florida Ocean and Coastal Economies Report; an integrated data management plan; a special report on the Effects of Climate Change on Florida's Ocean and Coastal Resources; the Research Review, which is an online catalog listing all known projects in State waters; and user and functional requirements for a data portal known as the Resource Assessment.

Single-Purpose Statutes Related to Ocean Resources

The Florida legislature enacted Chapter 403.93345 F.S., which outlines the penalties and fines for damage to corals and the method to use when assessing coral damage. This was not a 309 or CZM driven change. The new statute clearly defines the penalties and the manner in which the penalties will be assessed. This clarity should result in more enforcement of impacts to corals and more restoration of those impacts.

Ocean Resource Mapping or Information System

FWC/FWRI developed an Internet Map Service called the Coastal Resources Information System (<http://ocean.floridamarine.org/CRIS/>) as part of the Blueways initiative. This statewide system serves spatial data and metadata to support resource management. Data served include: coastal and marine natural resources; human use such as boating activities, ramps and marinas; and managed areas. The development of the Blueways Coastal Resources Information System (CRIS) received significant funding from a 309 grant. The Blueways CRIS is used by resource managers statewide as a spatial decision support tool. FWRI staff also use CRIS as a vehicle to serve data to managers, researchers and the public. The FOCC Resource Assessment mentioned above is being designed and a prototype built using major components from the FCMP-funded Blueways CRIS.

There has been an increased use of GIS for mapping coastal and estuarine habitats.

Ocean Habitat Research, Assessment, or Monitoring Programs

Coastal and estuarine monitoring efforts in CAMA programs have expanded.

Public Education and Outreach Efforts

There has been an increase in CAMA programs to educate public.

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)
Staff training to assess coral damage	Training	H
Inventory of viable offshore renewable energy sites	Policy	M
Coral and seagrass mapping and monitoring	Data	H
Coastal marine spatial planning	Regulatory, policy, and data	H
Long-term monitoring of resources and habitats	Data and capacity	H
More comprehensive statutes and rules	Regulatory	H
Exotic invasive species early warning monitoring system	Monitoring	H
Oiling impacts in relation to location and characterization of Florida's coral resources	Data and Information	H

Coral and Seagrass Mapping and Monitoring

Significant data gaps exist for coral reef habitat mapping. Only 60% of the Florida Keys National Marine Sanctuary (FKNMS) is mapped and no single mapped product exists for the full Florida reef tract. This means that there is a lack of necessary baseline data to answer basic questions, such as how much coral reef exists in Florida. For seagrass, mapped products are used to enhance monitoring efforts, but many areas have not been mapped for a decade or more, making change analyses difficult or not possible at all.

Exotic Invasive Species Early Warning Monitoring System

New challenges from invasive exotic species appear probable based on past history, both in Florida and elsewhere. Such events have caused severe ecological effects (e.g., hydrilla, exotic apple snail, Pacific lion fish, Burmese pythons, Brazilian pepper, zebra mussels, brown tree snake, and many other examples). If not caught very early, exotic infestations cannot usually be extirpated (e.g., apple snail, hydrilla, python, lion fish, etc.). Invasives caught early, however, have reportedly been extirpated – e.g., algae *Caulerpa taxifolia* found in California in 2000.

Sensitive ecosystems in Florida are increasingly vulnerable to invasive exotics due to continued trade and travel, together with a subtropical climate and stressed natural ecosystems. Implementation of annual or semi-annual monitoring in selected vulnerable areas has the potential to be much lower in cost and probably more successful than perpetual maintenance control efforts targeting newly established invasive species.

Oiling Impacts in Relation to Location and Characterization of Florida's Coral Resources

Toxicity of Gulf of Mexico oil types affecting key Florida coral species needs to be better understood to facilitate planning, response and damage assessment. If impacts occur in one location and we understand that location's damages relative to a secondary site, then we can quantify potential degradation consistently across the full range of the ecosystem.

Enhancement Area Prioritization

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

High X
Medium
Low

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

FCMP partners have consistently ranked ocean resources as a high priority. This enhancement area covers a vast range of issues that are being addressed by numerous programs and agencies. Coastal resources are under continued stress due to population increase and climate change, which continue to dominate Florida's coastal ecological impairment trajectory. Considering the length of Florida's shoreline, the extent of its natural resources, and the pressures bearing on the coastal environment, it is understandable that ocean resources receives a high level of priority.

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

Yes X
No

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

A strategy will be developed for this enhancement area because of the multiple threats to ocean resources in Florida. Numerous needs have been identified by FCMP partners that can be addressed through the development of a strategy that will provide for long term ocean resource protection.

There is a need for a single coordinated perspective on the mapping, monitoring, and management of the Florida reef tract. The focus should be to leverage the methods that are actively being used by federal, state and university scientists to map, monitor, and manage Florida coral reefs and hardbottom communities.

Characterizing Ocean Resources through coordinated and standardized mapping and monitoring activities is critical to developing baseline data and information to support ecosystem management. This is especially important in the presence of a the changing global climate, which has the potential to dramatically impact Florida's marine resources, disrupt marine-based economies, and cause significant damage to coastal development.

Other possible strategies include identifying suitable locations for renewable energy development and training staff to properly assess coral damage.

Energy & Government Facility Siting

Section 309 Enhancement Objectives

Adoption of procedures and enforceable policies to help facilitate the siting of energy and Government facilities, and energy-related and Government activities that 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	Not available	Not Available
Electric transmission cables	Y	Not available	Not available	Not available
LNG	N	Y	N	Y
Wind	N	Y	Y	N
Wave	N	N	Y	N
Tidal	N	Y	Y	Y
Current (ocean, lake, river)	N	N	Y	Y
OTEC	N	N	Y	N
Solar	Y	Y	Not available	Not available
Other (please specify)				

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

Oil and gas facilities

In January 2006 the U.S. Department of the Interior, MMS under the authority of the Outer Continental Shelf (OCS) Lands Act, adopted new oil and gas leasing program planning area boundaries (boundaries drawn for administrative purposes) for federal waters. Approximately 9.4 million acres were moved from the Eastern Gulf of Mexico Planning area to the Central Gulf of Mexico Planning area. The Gulf of Mexico Energy Security Act of 2006 required the MMS to open specific areas in the newly formed Central and Eastern Planning Areas for oil and gas leasing. Leasing in these areas has resulted in more exploration and development/production offshore Florida. In addition, the President recently announced a national energy strategy that will allow additional oil and gas leasing 125 miles off the Florida west coast in the event that the Congressional moratorium is repealed. Due to the Deepwater Horizon incident, further development of these OCS strategies is currently under review. Should increased leasing occur, however, increased exploration and production would be expected.

LNG

Deepwater ports have been proposed offshore Florida on both the east and west coasts. In October 2006, Calypso submitted a deepwater port (DWP) Application to MARAD/USCG to construct an

offshore LNG facility located 8 to 10 miles northeast of Port Everglades in 800-950 feet of water. Following an expression of non-support by the Governor, Calypso withdrew its DWP application.

In March 2007, Port Dolphin Energy, LLC submitted a DWP Application to MARAD/ USCG to construct an offshore LNG facility in federal waters 28 miles southwest of Tampa Bay. The port, located in approximately 100 feet of water, will connect to the Port Manatee shore landing via a 36” pipeline. The state is currently reviewing the application including requirements for mitigation and monitoring.

Current Energy Development

Through the MMS’ Interim Lease process several companies and the Florida Atlantic University’s Center of Excellence in Ocean Energy Technology (COET) expressed interest in renewable energy development offshore southeast Florida using the Gulfstream current. COET is working with a variety of academic, industry and government partners to study the Gulfstream current and test prototype turbines to determine their potential to produce commercial quantities of electricity. Because little is known about the environmental effects of ocean current energy development, COET’s partners will also study the effects of these turbines on marine life and the environmental impacts of placing them in the ocean off southeast Florida. These projects are currently at various stages of testing.

Tidal

A demonstration project has been proposed by the “Florida Keys Hydropower Research Corp” to construct and observe a tidal current hydro-turbine for a 60-day period in order to determine the feasibility of tidal-generated electricity in the Florida Keys. Application to the Army Corps of Engineers was noticed November 2008 and a state permit was authorized. The applicant is completing model prototype turbine #2 and testing individual components as they are produced and assembled on land. The permits require there to be no on-site deployment or testing during the hurricane season. The earliest date of deployment will be November 2010. Prototype turbine #4 will be the energy conversion system that will be ultimately deployed for the sixty day test in Bahia Honda Channel.

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? Please discuss.

Florida has estimates of existing in-state capacity and demand for natural gas and electric generation, as well as, projections of future capacity. The Florida Reliability Coordinating Council, Inc. (FRCC) is a not-for-profit company in Florida with the mission of ensuring that the bulk power system in Florida is reliable, adequate and secure. The FRCC annually updates its Regional Load and Resource Plan using a 10 year planning horizon to estimate existing in-state capacity and demand as well as projections for future capacity.

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.

The 2006 Florida Energy Act established provisions for sales tax exemptions and corporate income tax credits aimed at promoting infrastructure development that supports hydrogen and biofuels technologies. In addition, the Act created a production tax credit that provides a

corporate income tax credit based on the amount of electricity produced from renewable energy sources at a new or expanded Florida facility.

The Renewable Energy Technologies Grants Program (Program) was established in 2006 by the Florida Renewable Energy Technologies & Energy Efficiency Act to provide renewable energy matching grants for demonstration, commercialization, research and development projects relating to renewable energy technologies. The Program was designed to stimulate capital investment in the state and promote and enhance the statewide utilization of renewable energy technologies.

The 2008 Florida Legislature expanded the Program to include energy efficient technologies as well as renewable energy resources, including hydrogen, biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat and hydroelectric power. Governor Crist and the Florida Legislature appropriated \$15 million in FY08 for the newly expanded Renewable Energy and Energy-Efficient Technologies Grant Program, with at least \$8 million to be spent for bioenergy projects.

The Program made grant funds available to: Florida municipalities and county governments; established for-profit companies licensed to do business in Florida; universities and colleges in Florida; utilities located and operating within Florida; not-for-profit organizations; and State of Florida agencies. Eligible proposals were evaluated based on a number of different criteria including cost share percentage, economic development potential, energy efficiency and how well the project fosters public awareness of renewable energy technologies.

During the 2008 Regular Session, the Florida Legislature amended Section 366.92, F.S., to require the Florida Public Service Commission to adopt rules establishing a renewable portfolio standard (RPS), in consultation with the Department of Environmental Protection and the Florida Energy and Climate Commission. The RPS rule requires each investor-owned electric utility to supply a percentage of retail electricity sales from renewable energy resources located in Florida. As part of the rule development process, the FPSC evaluated the current and forecasted availability and cost through 2020 of each renewable energy resource.

Florida Atlantic University's Center of Excellence in Ocean Energy Technology (COET) includes industrial, government and academic partners. COET, started in 2007, has received about \$15 million in state and federal funding to create, develop and sustain an industry that can provide clean, reliable and renewable energy sources. COET's interest in renewable energy development is focused on the Gulfstream current located in federal waters offshore southeast Florida. They are presently studying ocean currents to determine the best location for future testing of prototypes and are working with the MMS on leasing of areas for testing.

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

During the period since January 1, 2006, federal government facility siting decisions considered by the state continue to be primarily limited to minor facility construction or reconstruction on existing military installations. One noteworthy exception is the recent federal decision to fund the reconstruction and expansion berthing at Naval Station Mayport (Duval County/Jacksonville) to accommodate the pending relocation of a nuclear aircraft carrier to that facility.

Continued development in the vicinity of the City of Mexico Beach (Bay County, immediately east of Tyndall Air Force Base) increases the likelihood that listed animal species on the Base will become isolated. This will increase the management obligations of the Base to protect the on-base habitat for these species.

The Accident Potential Zone and areas of high noise impact associated with Homestead Air Force Reserve Base (Miami-Dade County) extends to the northeast over the Mangrove Preserve and into Biscayne Bay. Land acquisition and land use controls to buffer this military installation from urban encroachment would also serve to protect coastal resources.

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.

There are several provisions in the FCMP that directly relate to energy facilities. Chapter 403, Part II, F.S., addresses electrical power plant and transmission line siting. State policy recognizes the pressing need for increased power generation facilities while ensuring through available and reasonable methods that the location and operation of electrical power plants will produce minimal adverse effects on human health, the environment, the ecology of the land and its wildlife, the ecology of state waters and aquatic life, and will not unduly conflict with the goals established by the applicable local comprehensive plans. The intent of the policy is to seek courses of action that will fully balance the increasing demands for electrical power plant location and operation with the broad interests of the public.

Chapter 403, Part VIII, F.S., addresses natural gas transmission pipeline siting by requiring the state to fully balance the need for natural gas supplies with broad public interests. There must be a reasonable balance between the need for the natural gas transmission pipeline as a means of providing abundant clean-burning natural gas and the impact on the public and the environment resulting from the location of the natural gas transmission pipeline corridor and the construction and maintenance of the natural gas transmission pipelines.

Chapter 377, F.S., deals exclusively with energy resources in the state. This statute specifically addresses the regulation of oil and gas resources, the planning and development of energy resources and renewable energy and green government programs. The Legislature has established that it is state policy to: (1) Develop and promote the effective use of energy in the state, discourage all forms of energy waste, and recognize and address the potential of global climate change wherever possible; (2) play a leading role in developing and instituting energy management programs aimed at promoting energy conservation, energy security, and the reduction of greenhouse gas emissions; (3) include energy considerations in all state, regional, and local planning; (4) utilize and manage effectively energy resources used within state agencies; (5) encourage local governments to include energy considerations in all planning and to support their work in promoting energy management programs; (6) include the full participation of citizens in the development and implementation of energy programs; (7) consider in its decisions the energy needs of each economic sector, including residential, industrial, commercial, agricultural, and

governmental uses, and reduce those needs whenever possible; (8) promote energy education and the public dissemination of information on energy and its environmental, economic, and social impact; (9) encourage the research, development, demonstration, and application of alternative energy resources, particularly renewable energy resources; (10) consider, in its decision making, the social, economic, and environmental impacts of energy-related activities, including the whole-life-cycle impacts of any potential energy use choices, so that detrimental effects of these activities are understood and minimized; and (11) develop and maintain energy emergency preparedness plans to minimize the effects of an energy shortage within Florida.

The state has requested that the MMS, through its authorities under the Renewable Energy and Alternate Uses of OCS facilities regulations (30 C.F.R. 285.102), develop a state/federal task force (inclusive of all state and federal agencies with authorities pertinent to renewable energy development) to address issues and policies of renewable energy development offshore Florida. The state is currently assisting MMS in setting up the task force.

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	Y
Policies	Y	Potentially
Program guidance		
Comprehensive siting plan (including SAMPs)		
Mapping or GIS	Y	
Research, assessment or monitoring	Through COET & partners	
Education and outreach	Y	Y
Other (please specify)		

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; and
 - c) Characterize the outcomes and effectiveness of the changes.

Statute or regulations

In 2006, section 259.105(2)(h), F.S., was revised to give increased priority to the use of Florida Forever funds for land acquisition projects that serve a military base buffering function, as well as a conservation function. This was not a 309 or other CZM-driven change. It is unknown whether the users of Florida Forever funds (primarily DEP, FCT and the WMDs) have implemented this priority requirement, although FCT has recently (October 2009) proposed a rule change to recognize projects that might serve a military base buffering function with a compatible land use.

Education and outreach

The Department of Community Affairs coordinates with the state’s 14 major military installations and the 40 proximate local governments to ensure that local comprehensive plans are revised to

implement the requirements of section 163.3175, F.S., and section 163.3177(6)(a), F.S., regarding coordination and the inclusion of land use compatibility criteria. This was not a 309 or other CZM-driven change. Many local governments have implemented these requirements and others are awaiting the completion of Joint Land Use Studies (conduction in partnership with the military) to inform their comprehensive plan amendment.

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)
Identification of areas where coastal needs and military base buffering needs coincide	Data	M
Resource information in state waters (especially along the west coast of FL if oil and gas activities are allowed in state waters) and nearshore federal waters (especially off SE FL for renewable energy development)	Data	H
Effects of current turbines	Data	H
Assess potential impacts to wildlife from renewable energy development	Regulatory, data, policy, capacity, communications	H
Develop recommendations for siting renewable energy facilities to minimize impacts to wildlife	Policy	H
Address potential wildlife impacts for non-renewable offshore energy production, including increased boat traffic, oil spills, and pipelines	Policy, data	H
Need research to determine BMPs for minimizing bird strikes and electrocution from power transmission lines	Regulatory, data, outreach	M

Enhancement Area Prioritization

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

High _____
Medium **X** _____
Low _____

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

Onshore and offshore wind-turbines have documented negative impacts to wildlife, specifically birds and bats. If increased windmill density in Florida is proposed, policies should be enacted to prevent negative impacts to Florida’s wildlife. Agency coordination is needed to conduct research to determine methodologies that would best minimize impacts (e.g., prop guards or other Bird Exclusion Devices, predatory bird screamers, etc.). Furthermore, onshore and offshore wind-

turbine sites need to be acceptable for development as a renewable energy resource, while minimizing encroachment on migratory or diurnal bird and/or bat pathways.

Possible offshore and riverine hydro-turbines are now being explored and federal offshore lease sites established by MMS are being proposed for FERC permitting. Florida needs to address this issue to assure that such leases are not being granted in areas that impede natural migration routes of whales or other marine mammals, sea-turtles, tunas or other migratory fishes; known commercial or recreational fisheries sectors; fish spawning–aggregation sites; or other significant offshore breeding sites.

Power transmission lines are an attractive nuisance for birds and results in numerous mortalities from electrocution and aerial impact and injury. Research needs to be conducted to reduce or eliminate these mortalities.

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

Yes	<u> </u>
No	<u> X </u>

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

The FCMP is not proposing specific strategies at this time but may sometime during the five year planning period as renewable energy and offshore oil and gas development become more active in Florida.

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
State Hatcheries	Planned expansion	Further conversion of coastal land, increased water use, effluent discharge, no use conflicts
Academic Hatcheries	Stable	Increased water use, no use conflicts
Private FW Production	Stable to expanding (some contraction of ornamental production at this time)	Increased water use, effluent discharge, no use conflicts
Private SW Hatcheries	Stable to expanding	Increased water use, effluent discharge, no use conflicts
Florida aquaculture grew rapidly from 1987 to 1997 (the first aquaculture survey was in 1987). Farm gate value tripled from \$35 million sold by 342 farms during 1987 to \$102 million sold by 696 farms during 1997. The 2004-05 hurricanes and global competition caused a decline in farm-gate sales to \$74.9 million by 359 farms in 2005. However, Florida's aqua-culturists are adapting to change by investigating new species to culture (e.g., marine ornamentals, mollusks, and food fish), new markets (e.g., biofuel), and new production systems (e.g., marine net pens)	All Florida aquaculturists are experiencing declining profitability from: 1) increasing price competition with Asian produced live species or products that are direct substitutes for Florida products, 2) higher energy prices, 3) higher labor costs, 4) higher land costs, 5) higher insurance costs, or 6) reduced consumer demand due to national economic conditions.	Rural encroachment by residential development is creating farm-homeowner conflict. The Right to Farm Act (Section 823.14, F.S.) affords some relief for farms but homeowners are sensitive to threats that they perceive to their lifestyle or property value.
Outdoor ponds, raceways and tanks	Decline in the number of small, family operated farms that were growing high-volume, low-value species. Some consolidation into large farms that grow high-volume, low-value species to take advantage of economies of scale. Slow growth in farms that are producing higher value species.	Current regulations effectively prevent potential impacts

Indoor tank systems that clean and recirculate production water	Slow growth in number of farms growing high-value species that can support these production systems that are expensive to operate and require considerable experience and technical expertise to operate.	Current regulations effectively prevent potential impacts
Indoor tanks that flush and discharge production water to anaerobic treatment ponds	Stability in the number of farms that utilize this type of production system.	Current regulations effectively prevent potential impacts
Coastal, submerged land leases located in Brevard, Charlotte, Collier, Dixie, Franklin, Indian River, Lee, Levy, Manatee, Monroe, Palm Beach, Pinellas, St. Johns, and Volusia counties (533 aquaculture leases containing about 1,217 acres and 71 shellfish leases containing about 1,184 acres)	Stability in the number of farms that utilize this type of production system.	Societal conflict concerning use of public resources was avoided or mitigated by collaborative agency and farmer activities to post aqua-culture lease boundaries and local boat ramps with educational signage that describes shellfish aqua-culture, shellfish production practices, and identifies sensible boater and fisher practices to avoid farmer and shellfish production equipment conflict.

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:
- 2.

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Aquaculture regulations	Y	Y
Aquaculture policies	Y	Y
Aquaculture program guidance	Y	N
Research, assessment, monitoring	Y	Y
Mapping	Y	N
Aquaculture education & outreach	Y	Y
Other (please specify): Regional cooperation	Y	Y

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; and
 - c) Characterize the outcomes and effectiveness of the changes.

Aquaculture regulations

Aquaculture regulations are promulgated in Chapter 5L-3, FAC, *Aquaculture Best Management Practices*. A marine net pen Best Management Practice was added to enhance the comprehensive

character of Florida's aquaculture regulatory program and to anticipate public interest in marine aquaculture. Chapter 18-21, FAC, was amended to provide rules for sovereign submerged land leasing by the state for aquaculture. Developing and implementing agency rules relative to these topics were not CZM or 309 driven activities, but a 309 driven collaborative process to develop Best Management Practices was implemented that includes the creation of a technical advisory committee (TAC) composed of agency, academic, farmer, and environmental advocates. The group drafts language that undergoes agency and public scrutiny during the administrative rule-making process. The marine net pen Best Management Practice was extremely valuable to Florida during the CZMA Section 307 federal-state consistency review when the Gulf of Mexico Fishery Management Council created an offshore marine aquaculture fishery management plan. Florida responded to several consistency requests with comments concerning permit life, candidate species, water quality and benthic monitoring, and marketing and sales.

Aquaculture policies

The Florida Legislature created a statutory mechanism for interagency cooperation in the form of a state agency aquaculture council. The Division of Aquaculture (Division) has built upon this approach and expanded its interagency outreach activities as a result of the 309 funding that was used to strengthen the programmatic relationship between CAMA, FWC, and the state's five WMDs. The project, "Aquaculture Coordination and Monitoring", resulted in: 1) 15 statewide workshops to trigger agency communication, programmatic improvements, and farmer-agency dialogue; 2) a technical bulletin directed to Florida aquaculturists that describes the aquatic preserve system size and scope, environmental and economic value, and the potential to develop a working relationship with the aquatic preserve managers; and 3) an assessment of coastal water quality monitoring. Beyond the project, the Division has taken advantage of the relationships created to: investigate the development of a coastwise estuarine restoration plan; share submerged lands lease size and location information with CAMA and FKNMS managers; and provide comments during the CAMA management review process.

Aquaculture research, assessment, monitoring

Applied research was completed by the University of Florida, Florida Sea Grant, Florida State University, University of Miami, Florida Institute of Technology, Florida Atlantic University-Harbor Branch Oceanographic Institution, and Mote Marine Laboratory. This research encompassed species biology and husbandry, socio-economic analysis, production system improvement, aquatic animal drug approval, and stock enhancement. None are supported by 309 or CZM. The results are utilized to expand the variety of culturable and marketable species, reduce production costs, restore or enhance the stock structure of special concern, threatened, or endangered species or measure the socio-economic size and scope of Florida aquaculture.

The Division has managed or participated in three risk analyses concerning the stocking of triploid grass carp in open waters, marine ornamental aquarium trade pathway, and the culture of barramundi in ponds. None of these multi-partner, stakeholder inclusive efforts have utilized CZM or 309 funds but were driven by a variety of factors that include the loss of fluridone as an effective herbicide, the appearance of the Pacific lionfish in Florida waters, and the potential for escape from open ponds. As outcomes, there were no regulatory changes made to prohibit stocking triploid grass carp in open waters. Recommendations were provided to several state agencies to increase nonnative species public education efforts, and open ponds production for barramundi was prohibited (Zajicek et al 2009; Zajicek et al 2009).

The Division maintains five water quality sensing units located in proximity to aquaculture leases near Cedar Key and in Alligator Harbor, Pine Island Sound and the Indian River Lagoon. The monitoring units have been operational since 2002 with five units electronically linked to a webpage for real-time reporting of localized weather (temperature, wind speed and direction, and relative humidity), water temperature, salinity, dissolved oxygen, and turbidity. None of this work is supported by 309 or CZM, but the availability of real-time data significantly reduced mortality during the planting of hatchery seed for grow out to plantable-sized seed clams, and the harvest, sales and planting of plantable seed for grow out to marketable clams. Farmers that reside inland utilize localized weather information for decision making concerning working and safety conditions on the water. Archived weather and water quality information is used to support crop insurance loss claims (Bergquist et al 2009).

Aquaculture education & outreach

Over 20 public schools and at-risk youth programs currently operate fish production systems as integrated biology, chemistry, math, writing, and social knowledge and skill educational programs. The Aquaculture Review Council, an advisory body to the Commissioner of Agriculture, has recommended agency funds be devoted to individual program creation and curriculum development. Florida Agriculture in the Classroom, Inc. has also supported curriculum development. No 309 or CZM support has been utilized, but the growth of these programs has been steady over the last five years and actively supported by farms located near the schools and by aquaculture equipment suppliers (Florida is home to two out of the three major U.S. aquaculture equipment providers).

Florida is very fortunate to have a wide variety of educational, training, research and extension programs to benefit students of any age, and new or existing aquafarmers. Two public and two private universities offer basic and applied research into species and production systems, and educational opportunities that result in undergraduate, graduate, or post-graduate degrees. Two community colleges offer Associate degree programs and Florida Atlantic University-Harbor Branch Oceanographic Institution offers customized programs to train aquaculture technicians or production facility managers.

The University of Florida provides outreach in the form of aquaculture production, technical, and aquatic animal health assistance through the Florida Cooperative Extension Service, the Program of Fisheries and Aquatic Sciences, and the Florida Sea Grant Program. Each of Florida's 67 counties has a Florida Cooperative Extension Service Office with an extension agent to answer aquaculture questions.

The Florida Aquaculture Policy Act (Chapter 597, F.S.) requires the annual production of a state aquaculture plan. The plan summarizes farming efforts, market conditions, and production trends. The plan must also include prioritized recommendations for research and development as suggested by the Aquaculture Review Council, the Aquaculture Interagency Coordinating Council, and public and private institutional research, extension, and service programs. The current edition is posted to <http://www.floridaaquaculture.com/publications/aquaplan.pdf>. The Division also produces and publishes a quarterly newsletter for all Aquaculture Certificate of Registration holders and interested federal, state or local agency representatives, media, legislators and legislative staff and the public. Its focus is to provide timely regulatory, production, or technical information. Current and past issues are available at <http://www.floridaaquaculture.com/newsletters.htm>. The Division also produces technical

bulletins to address complex regulatory or technical topics that require in-depth analysis and explanation. Topics include shellfish regulations, red tide, hurricane preparedness, apple snails, and aquatic preserves. Technical bulletins can be found at <http://www.floridaaquaculture.com/technicalbulletins.htm>.

None of these outreach efforts are supported by 309 or other CZMA funds. Public interest in aquaculture as a supplementary or alternate source of income is strong in Florida with several thousand production or technical queries received by the university programs and the Division. The principle goal of the variety of education and outreach workshops, fact sheets, reports, and one-on-one information exchange is to provide a realistic appraisal of the challenges and costs associated with commercial aquaculture so that Floridians can make financially sound and personally wise decisions before committing time, money, land and resources to an agricultural activity that is risky, has a relatively low return on investment, and is labor intensive.

Regional cooperation

Several organizations have been developed, or are being developed, to create regional cooperation across state boundaries to address a broad array of issues related to aquaculture management and research. Existing organizations such as the Gulf States Marine Fisheries Commission and Atlantic States Marine Fisheries Commission were created in 1949 and 1942, respectively, by Congressional action and are supported by state compacts to create sensible and workable coastal marine resource regulation commonalities. Within the last five years, organizations such as the Gulf of Mexico Alliance, South Atlantic Alliance, Gulf and South Atlantic Regional Panel on Aquatic Invasive Species, and Southeast Aquatic Resource Partnership have been created to develop a unified focus on aquatic habitat and species (i.e., regulation, policy, research, and management). Each organization has a programmatic component or components that encompass aquacultural regulations, policies, or management or are focused on a particular issue associated with aquaculture. Unfortunately, most of these organizations are configured upon membership from natural resource management agencies. Agriculture-oriented agencies generally are not offered or considered as potential members and are infrequently included in critical decision making. Although CZMA funds have been utilized to help support activities of the Gulf of Mexico Alliance and the South Atlantic Alliance, they were not specifically directed at aquaculture policy and management development.

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)
Increased monitoring of ornamental fish imports to prevent illegally imported prohibited fish getting to market alive	Regulatory	H
Genetic “fingerprinting” of imported potentially invasive species to identify sources of released fishes	Regulatory, policy, data	M
Exotic species - farm level	Data, policy, capacity	M

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Exotic species – consumer level	Communication & outreach capacity	M
Marine net pen environmental affects	Data	H
Statewide oyster reef restoration plan	Policy, communication & outreach	H
Marine debris assessment	Capacity	M

For offshore net-pen aquaculture to expand without negatively impacting fishery resources, the state must identify appropriate sites for this activity. Florida Administrative Code rules have been implemented to address a wide variety of environmental concerns: avoidance of migratory wildlife pathways (whales, tuna, cobia, king mackerel, migratory seabirds, sea turtles); avoidance of known commercial and recreational fishery harvest sites; avoidance of known fishery spawning-aggregation sites; avoidance of proximity to energy lease sites; shellfish aquaculture leases; sufficient local currents to continually flush net-pen to maintain local water quality standards within State and federal limits; and sufficient depth to bottom for the same reason. Furthermore, cages are required to be hurricane, *Orca*, dolphin, and shark-proof to prevent escapement; potential genetic mixing between wild and cultured stocks; transmission of parasites and disease to wild stocks; and, to avoid siting sea cages in proximity to hard bottom or coral reefs.

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 X
Low _____

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

Aquaculture continues to be medium priority for the state. The potential effects of aquaculture have been balanced with adequate regulatory oversight and aquaculture is well coordinated in publicly owned and managed preserve areas. Aquacultural activity in Florida is increasing; however, aquaculture practices and technologies are expected to continue to expand and diversify. In particular, farmers periodically express interest in culturing a variety of vertebrate and invertebrate exotic species that are of higher value to certain segments of U.S. society; marine net pen environmental affects data is needed for Florida waters less than 40 meters deep; Florida lacks a statewide planning document focused on oyster reef restoration activities in estuaries; and increased attention and action should be directed to macro- and micro-marine debris that affects nearshore and inshore marine aquaculture. Consequently, there is a need and opportunity for strong collaborative interagency partnerships and initiatives that can be effectively addressed through a 309 strategy to create a statewide estuary restoration planning and guidance document.

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

Yes X
No _____

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

A strategy will be developed that will address priority needs identified for the Wetlands, Aquaculture and Ocean Resources enhancement areas. A variety of public and private estuarine restoration activities (submerged aquatic vegetation, oyster reef, salt marsh, mangroves, and coral reef) occur within Florida primarily as standalone efforts. These efforts have a variety of valuable restoration goals:

Fisheries: oyster reef restoration or construction.

Ecological: sea grass, oyster or coral reef restoration.

Regulatory: environmental mitigation.

Storm damage: living shorelines

However, the State of Florida lacks a statewide planning and guidance document focused on restoration activities in estuaries. This lack of statewide planning and guidance has led, or will lead to uncoordinated, poorly planned, or duplicative estuarine restoration efforts; lost opportunities to leverage or qualify for private, state, or federal funding; and dysfunctional estuarine restoration project outcomes.

A collaborative effort by the Department of Agriculture and Consumer Services, Department of Environmental Protection, and Fish and Wildlife Conservation Commission is needed to develop statewide estuary restoration planning and guidance.

STRATEGIES

COMMUNITY RESILIENCY: PLANNING FOR SEA LEVEL RISE

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 type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input type="checkbox"/> Wetlands |
| <input checked="" type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input checked="" 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 strategy will lay a foundation for integrating sea level rise adaption into all levels of hazard mitigation and land use planning in the state of Florida. The project will identify a model for mapping Florida's coasts for sea level rise impacts (including its impact on storm surge) that meets federal and state data and analysis requirements for treating sea level rise as an issue that affects hazards in the State Hazard Mitigation Plan, local mitigation strategies, local comprehensive plans, and other relevant planning platforms.

The proposed strategy will apply the model for simulating sea level rise impacts on a pilot basis and will create a risk assessment and adaptation plan for at least two pilot communities. Based on lessons learned from this work, the project will recommend statutory and rule changes to formally integrate sea level rise into all levels of hazard mitigation and land use planning in the state and will identify best practices for engaging citizens in sea level rise adaptation planning.

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.

Projected sea level rise impacts threaten to greatly exacerbate the vulnerability of Florida's at-risk coastal resources. The Coastal Hazards Enhancement Area Assessment identified a need to advance sea level rise adaptation through actions at the state and community level. Adapting to and mitigating sea level rise impacts will require that sea level rise be incorporated into all levels of hazard mitigation and land use planning in Florida. The Department of Community Affairs, as the state land planning agency, is the appropriate state agency to coordinate the proposed project.

This strategy will develop a suggested methodology to complete a statewide risk assessment for sea level rise impacts. This will allow for sea level rise to be identified as an issue that affects hazards in the State Hazard Mitigation Plan and in local mitigation strategies. This strategy will also recommend statutory and rule changes to incorporate sea level rise into local comprehensive plans.

This issue was identified as a need in the Coastal Hazards Assessment with a high level of priority. In addition, the Special Area Management Planning Assessment identified a need to prepare plans at the regional level to address common challenges facing the state's waterfront communities such as the threat of climate change impacts. Also, the Coastal Hazards enhancement area overall was given a high priority in the Assessment.

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.

This strategy will have two principle effects. First, it will lay the groundwork for the completion of a statewide sea level rise risk assessment that will support the designation of sea level rise as an issue that affects hazards in the State Hazard Mitigation Plan and in local mitigation strategies. Such designation will allow hazard mitigation projects that address sea level rise to be eligible for hazard mitigation grant funding.

Second, the project will provide local governments with a vetted framework for incorporating sea level rise into their local comprehensive plans, local mitigation strategies, special area management plans, and post-disaster redevelopment plans, as applicable. The project will produce guidance for sea level rise adaptation by developing adaptation plans for two pilot communities. The purpose of preparing pilot plans will be to: 1) evaluate planning guidance, modeling and risk assessment methodologies; 2) determine effective modes for communicating sea level rise risks and delivering technical assistance to support sea level rise adaptation to diverse audiences including, local governments, non-governmental organizations, citizens, WFP and Main Street Communities, and community redevelopment agencies; and 3) suggest statutory and rule changes to incorporate sea level rise into local land use planning. By providing local governments with guidance for addressing sea level rise through land use and community planning, this strategy will ensure that local efforts to promote sea level rise adaptation have the strength of the local comprehensive plan behind them, that local adaptation efforts are enforceable, are tied to the schedule of local capital expenditures, and fully address vulnerable land use conditions.

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.

In recent years, Florida has made significant progress in integrating green house gas emission reduction strategies into state government operations and growth management legislation. There is a clear recognition that the next logical step in responding to climate change is to address sea level rise adaptation. Florida is an active member of both the Gulf of Mexico Alliance and the South Atlantic Alliance—two multistate partnerships tasked with promoting coastal resiliency among other goals. Sea level rise adaptation is a priority issue addressed in *Florida's Energy and Climate Change Action Plan* prepared by the Governor's Action Team on Energy and Climate Change. The action plan describes a need for uniformity and coordination among local adaptation planning efforts and a need for sea level rise adaptation to be integrated into land use planning decisions: "Florida's local, state, and regional comprehensive plans should be amended based on the best available data, including goals, objectives, and policies that will prepare the state for adapting to the future impacts of climate change, such as SLR" (Center for Climate Strategies; pgs. 8-3). Similarly, the State Hazard Mitigation Plan prepared by the Florida DEM commits the state to, "Monitor climate change and sea level rise research; create a compendium of existing studies and data" (Florida Division of Emergency Management; pgs. 4-10).

This proposed strategy will lay a foundation for the Florida DEM to map Florida's coast for projected sea level rise impacts in order to create a statewide sea level rise risk assessment. This work builds on the successful collaboration between the Department of Community Affairs and the DEM in previous planning initiatives.

Other coastal states have already begun to integrate sea level rise into hazard mitigation and land use planning. California has mapped its coast for projected sea level rise impacts and is in the process of incorporating climate change impacts, including sea level rise, into the California State Hazard Mitigation Plan. In 2009, North Carolina received a \$5 million grant from the U.S. Department of Homeland Security's FEMA to complete a statewide risk assessment for sea level rise, which will require that the state map its coast for sea level rise impacts. Florida is closely monitoring the North Carolina and California sea level rise planning projects. The proposed project will prepare Florida to create its own risk assessment for sea level rise and incorporate sea level rise into hazard mitigation and land use planning at the state and local level.

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). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 5

Total Budget: \$899,245

Final Outcome(s) and Products: Identification of a modeling technique to simulate sea level effects; preparation of pilot sea level rise adaptation plans; recommendations for integrating sea level rise adaptation into local comprehensive plans, special area management plans, local post-disaster redevelopment plans, regional strategic policy plans, and the State Hazard Mitigation Plan; identification of all needed statutory and rule changes to support sea level rise adaptation planning, and development of technical assistance resources.

Year(s): 1

Description of activities:

- 1) Inventory sea level rise research and adaptation initiatives underway across the state, including the degree to which sea level rise is addressed in local comprehensive plans.
- 2) Identify technical assistance resources currently available to support community sea level rise planning/mitigation/adaptation and identify gaps and strategies for more effectively delivering resources.
- 3) Form a project focus group to include representation from the Florida Energy and Climate Commission, and other state, local, and federal stakeholders to provide guidance, oversight, and advice throughout the five-year project period. In the first year, the focus group will:
 - Establish sea level rise scenarios;
 - Determine appropriate comprehensive and other planning horizons;
 - Based on requirements of Title 44, Part 201 of the Code of Federal Regulations (describes data requirements for hazard to be addressed in state and local mitigation plans), determine data requirements for addressing sea level rise in the State Hazard Mitigation Plan.
 - Explore the feasibility of developing memoranda of understanding (MOUs) among regulatory authorities and other stakeholders affirming agreement to sea level rise scenarios.

Outcome(s): Creation of a digital clearinghouse of technical assistance resources; consensus recommendation from the project focus group on sea level rise scenarios including any relevant memorandums of agreement; and consensus recommendation from the project focus group on appropriate planning horizons for comprehensive plans and other planning documents for addressing sea level rise.

Budget: \$140,000

Year(s): 2

Description of activities:

- 1) Select two or more pilot communities that exemplify a range of geographic and socio-economic conditions representative of the state to prepare sea level rise adaptation plans to reflect the social and geographic diversity of Florida's coastal communities.
- 2) Identify and calibrate as necessary a model for simulating effects of sea level rise taking into account, cost, precision, accuracy, and capacity of the model to provide sufficient data for sea level rise to be addressed in the State Hazard Mitigation Plan with assistance from the project focus group.
- 3) Produce guidance for how data outputs from sea level rise modeling can support the integration of sea level rise into local comprehensive plans, local special area management plans, regional strategic policy plans, and the State Mitigation Plan in cooperation with the project focus group.

Outcome(s): Identification of two or more pilot communities; identification of sea level rise simulation model; and consensus recommendation from the project focus group on sea level rise adaptation planning strategies and processes.

Budget: \$179,000

Year(s): 3

Description of activities:

- 1) Apply simulation model in selected pilot communities.
- 2) Develop a methodology for conducting a vulnerability analysis suitable for state application. The methodology will be tested on the pilot communities in preparation for the development of pilot sea level rise adaptation plans in 2014-2015. The vulnerability analyses will address likely sea level rise impacts based on the simulation model test-run; likely human responses to sea level rise impacts; and other socio-economic and geographic factors affecting adaptive capacity. The vulnerability analysis will also be consistent with the guidance found in 44 CFR, Part 201.4(2), concerning risk assessments for state hazard mitigation plans. The vulnerability analysis methodology will be approved by the project focus group.

Outcome(s): Vulnerability analysis methodology with statewide application for pilot communities; and outputs from test-run of sea level rise simulation model.

Budget: \$195,000

Year(s): 4

Description of activities:

- 1) In cooperation with the project focus group, prepare sea level rise adaptation plans for the pilot(s) through updating existing special area management plans and integrating sea level rise adaptation into the local comprehensive plan, local mitigation strategy, and local post disaster redevelopment plan as applicable.
- 2) Develop presentation materials and educational techniques to facilitate community involvement in the sea level rise planning process.
- 3) Fine-tune model based on pilot run.

Outcome(s): Pilot plans and implementing ordinances; and documentation of any change to the sea level rise simulation model.

Budget: \$195,245

Year(s): 5

Description of activities:

- 1) Prepare plain-language education materials targeting community-based audiences to promote more awareness of hazard mitigation planning processes, funding sources, and best practices and how they can be used for both hazard mitigation and sea level rise adaptation projects. Work with pilot communities on a more targeted basis to identify strategies for implementing sea level rise adaptation plans.
- 2) Based on lessons learned during the development of vulnerability analyses and sea level rise adaptation plans, revise recommendations for integrating sea level rise into local comprehensive plans, special area management plans, local post disaster redevelopment plans, regional strategic

policy plans, and the State Hazard Mitigation Plan.

- 3) Analyze vulnerability analyses for statewide application and work with the project focus group to make a statewide recommendation for the creation of a statewide vulnerability analysis.
- 4) Promulgate lessons learned through a range of information technologies and media.

Outcome(s): Documented recommendations for integrating sea level rise adaptation into all levels of planning in Florida and a recommendation for statewide application of sea level rise vulnerability analysis.

Budget: \$190,000

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.

The requested funding should be sufficient to carry out the proposed strategy. Due to the current budget crisis in the state, efforts have not been made to secure funds from the legislature to support this strategy.

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).

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 do provide detailed project descriptions that would be needed for the PSM competition.

**COORDINATED CORAL AND HARDBOTTOM ECOSYSTEM MAPPING, MONITORING,
AND MANAGEMENT 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 type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input type="checkbox"/> Wetlands |
| <input type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input checked="" type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input checked="" 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 project addresses the need for a single coordinated perspective on the mapping, monitoring, and management of the Florida reef tract. The idea is not to introduce new methods but to leverage the methods that are actively being used by federal, state and university scientists to map, monitor, and manage Florida coral reefs and hardbottom communities. There is active discussion along several different management fronts where the proposed coordination would be vital. The first is the expected rezoning of key areas of the FKNMS. This new rezoning effort would be designed to incorporate healthy coral areas not captured in the original 1995 effort. Current patch reef habitat mapping and characterization by the FWC is already being used to help guide the possible rezoning effort. By combining FWC's in situ Coral Reef Evaluation and Monitoring Program (CREMP) and the extensive mapping projects in south Florida; including the FKNMS, Dry Tortugas National Park and Biscayne National Park, a more robust and synoptic dataset will be made available for resource managers. This effort will also include other established in situ coral reef assessment projects (e.g., Miller and Chiappone, University of North Carolina at Wilmington).

The second effort is focused on the southeast coast of Florida where there are coral reef areas that currently have no management zones. Again, the goal is to build upon and combine robust data that are currently available to provide a highly detailed and synoptic view of the ecosystem. FWC and the National Coral Reef Institute (NCRI) have partnered to map the majority of the coral reef ecosystems of southeast Florida and the CREMP (as SECREMP) protocols have been carried north into this geographic region.

The mapping and monitoring product would include several datasets to best meet the needs of resource managers for data to make management decisions. As research on these areas is continuous, there will be a need to maintain a dynamic online location where these data can be updated, maintained and disseminated.

Once these data are compiled, the best available tools will be utilized to assess the worth of the ecosystem services and validate the location and boundaries of any existing or proposed management zones. This strategy supports the ongoing efforts of CAMA's FKNMS and the Coral Reef Conservation Program (CRCP). Specifically, this project will assist the Coral Program in working with the public to decide if the development of marine zone(s), over the northern extent of the Florida reef tract would support the wants and needs of the community; with respect to preservation and multiple use of the resources dependent upon the reef ecosystems. It will also validate the proposed location and boundaries any potential zones to best ensure their success.

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.

Threats to coral reef ecosystems have increased due to anchoring incidents, increased boater activity, and the potential of climate change. Live coral cover has remained relatively constant since 2006. However, the coral cover is known to be very low when taken in the longer-term context, where live coral cover has declined by 86% since 1996. Over the past 5 years, we have gained a better understanding of the threats to coral reefs. The Special Area Management Planning Enhancement Area Assessment highlighted the degradation of coral habitat and user conflicts as a major issue along the Southeast Florida reef tract. The Ocean Resources Enhancement Area Assessment identified coral mapping and monitoring as a high priority need. Significant data gaps exist for coral reef habitat mapping. Only 60% of the FKNMS is mapped and no single mapped product exists for the full Florida reef tract. This strategy will address these needs identified in the Assessment.

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.

In order for effective resource management to occur, the resource manager must have information on the resource they are managing. This may include information regarding: 1) the location of the resource; and 2) an assessment of its health. The proposed plan will address both of these issues in a novel manner by discussing both in a single product. The outcome will provide a synoptic view to provide information for the 'where' and highly detailed and localized data to address the

'how healthy'. This project will also help provide a single base map to work from. The single Florida reef tract habitat map will range from Martin County in the northeast to the Dry Tortugas in the southwest. This will be the first time this product will be attempted and will provide resource managers throughout the region a single map, and set of terminology, that will enable a one-to-one comparison of ecosystems.

Beyond the single mapped product, great effort will be made to link the detailed in situ data to the larger-scale benthic habitat map. Along with CREMP and SECREMP, other in situ data sources will be integrated into the dynamic data map to provide as up to date and accurate a picture as possible of the potential scope of management zoning options to accommodate a comprehensive, system-wide, publicly backed plan for the management of these critical resources.

This strategy would enable DEP, FWC, and all of our management partners to coordinate on a comprehensive approach to the management of the entire Florida reef tract. A formal process will be designed to allow for full public involvement in the discussions regarding potential management options. Staff will be hired to initiate and facilitate public meetings to ensure that public interests are addressed throughout the process. The information obtained from the public process will result in the creation of new and/or revised management plans, including new and/or revised coral reef management zones. Once completed/updated, the management plans will be publically reviewed, and then submitted to the Governor and Cabinet for adoption.

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.

There is a high likelihood of success for the reasons listed below:

- The groundwork has been laid for this project, including a pilot website with available data.
- There is already active 'buy in' to the process from NOAA, the National Park Service, NCRI, the University of Miami, the University of North Carolina at Wilmington, the counties and all associated sections of FWC and DEP.
- Previous linking of mapping and field data have already provided the basis for possible future rezoning within the FKNMS, in terms of near-shore patch reefs.
- The partnerships already in place will make the possibility of a final, agreed-upon product manageable within the time requested.
- As FWC and DEP are state agencies, the long-term maintenance of the products produced will be made possible.
- Building on existing coral reef education and outreach activities will provide access to the information for a broad range of recipients (e.g., Southeast Florida Coral Reef Initiative, Teen Research Underwater Explorers).
- Outcomes regarding the need or location of any new/revised management zones are not predetermined. The public, along with all of our partners will be intimately involved throughout the process, which will enable the development of a long-term, comprehensive, system-wide management strategy that is driven by the people.

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). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 5 years

Total Budget: \$707,092

Final Outcome(s) and Products: The final outcome will be a suite of products that will provide resource managers the most accurate, synoptic and current data with which to determine management zonation concerns for coral reefs and hardbottom using mapped and field data.

Products will include:

- Aggregation of different in situ data from state, federal and university sources.
- A single Florida reef tract wide benthic habitat map that uses the same terminology across the geographic range.
- Updates to both products listed above over the five year, and beyond, time frame of this project.
- A mechanism to leverage other field and map projects and single dissemination point.
- An online dynamic database to include benthic maps and in situ data from several data sources
- Education outreach products using existing mechanisms and venues.
- Report summaries from each series of public meetings.
- A final report on the aggregate recommendations from all the public meetings and any subsequent assessment of proposed marine zones.
- New and/or revised management plans, including new and/or revised zoning/marine spatial planning.

Year(s): 1-2

Description of activities: Conduct meetings with federal, state and university partners to determine single mapped/in situ data classification scheme. Complete online dynamic database structure for internal and partner testing. Apply single Florida reef tract classification to existing benthic habitat maps using a cross-walk system. Begin to attribute the single mapped product with current in situ data fields. Complete dynamic online database. Begin education and outreach dissemination structure.

Outcome(s): Single classification scheme for Florida reef tract benthic habitat map inclusive of mapped and in situ data. Vetted online database structure. A Florida reef tract-wide benthic habitat map. An online tool accessible by all that contains the above mentioned map and in situ data on coral reefs and hardbottom.

Budget: Yr 1- \$85,321, Yr 2-\$85,210

Year(s): 3-5

Description of activities: Complete correlation between habitat map and in situ data. Release updated version of all data products. Provide outreach (e.g., training) to those who request and

promote education and outreach using predetermined venues and mechanisms. Build upon results of related projects completed by the SEFCRI, specifically the results of Fishing, Diving, and Other Uses (FDOU) Project 18 & 20B: “Development of Management Alternatives for the Southeast Florida Region According to Stakeholder Working Panels.” The FDOU project is currently in progress and will be completed concurrently with this project. It will establish stakeholder panels representing the major coral reef stakeholder groups in the SEFCRI region. The panels will provide specific, detailed information about how they perceive the current status of coral reefs and associated resources in the SEFCRI region, ongoing threats to these ecosystems, and identify potential management approaches that will result in a set of preferred and non-preferred management alternatives for the southeast Florida region. Plan and begin holding public meetings, at a minimum in southeast Florida, to present data and request additional stakeholder input on public use, needs, conflicts, etc. As this information is compiled and conclusions begin to become apparent, continuously vet the information, conclusions, and evolving direction of input received through all available tools, appropriate agencies, and the public. The mapping, data collection, data analysis, and public input will result in changes to coral reef management zones, including the potential addition of new zones in southeast Florida. Pending the results of the public process, the FDEP CRCP will lead the effort to implement the resulting preferred alternative management strategy and management plan development for southeast Florida.

Outcome(s): Final and continually updated coral reef and hardbottom online tool for resource management as well as a mechanism to better coordinate large-scale mapping and fine-scale field surveys. Report summaries from each series of public meetings. A final report on the combined recommendations from all the public meetings and any proposed marine zoning plans that are supported through the public process. The information obtained from the public process will result in the creation of new and/or revised management plans, including new and/or revised coral reef management zones.

Budget: Yr 3-\$181,444, Yr 4-\$175,438, Yr 5-\$179,679

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.

As a part of NOAA’s CRCP, DEP has received support for the Southeast Florida Coral Reef Initiative (SEFCRI) for more than six years. This strategy is part of the long-term goals of the SEFCRI and any support received through the CZM 309 program will augment the CRCP funding and achieve our end goals sooner than otherwise possible.

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 state does possess the technical knowledge and skills to carry out the proposed project.

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 do provide detailed project descriptions that would be needed for the PSM competition.

**FLORIDA ESTUARINE HABITAT RESTORATION: CREATING AND TESTING STATEWIDE
PLANNING AND GUIDANCE**

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 checked="" type="checkbox"/> Aquaculture | <input 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.)

This strategy will provide for a program change that will result in new coastal restoration programs new guidelines. The focus will be to develop and test a statewide estuary restoration and guidance strategy. A pilot area specific estuarine restoration plan will also be developed for Apalachee Bay. The framework developed in the statewide plan will be used to draft the local plan for Apalachee Bay.

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.

Statewide estuarine habitat restoration planning and guidance was identified as a need in the Wetlands Enhancement Area Assessment. Data, policy, communication and outreach were noted as necessary to address the identified need. This need was identified as a high level of priority in the Assessment. Overall, the Wetlands Enhancement Area also received a high level of priority in the Assessment. Estuarine habitat restoration planning and guidance was also identified as a need in the Aquaculture Enhancement Area Assessment.

A variety of public and private estuarine habitat restoration activities (submerged aquatic vegetation, oyster reef, salt marsh, mangroves, and coral reef) occur within Florida primarily as standalone or regionally coordinated efforts. These efforts have a variety of valuable restoration goals:

Fisheries enhancement: oyster reef restoration or construction.

Ecological function: sea grass, oyster or coral reef restoration.

Regulatory mitigation: environmental damage offset.

Storm damage/climate change/living shorelines efforts: oyster reef, saltmarsh, mangroves.

However, the State of Florida lacks a statewide planning and guidance document focused on coordinated habitat restoration activities in state estuaries. For the purposes of this project, estuaries are: aquatic regions of interaction between rivers and nearshore ocean waters having unimpaired connection with the open sea, where sea water is measurably diluted with fresh water derived from land drainage. Such areas include but are not limited to bays, mouths of rivers, and lagoons.

Lack of statewide-level planning and guidance has led, or will lead, to:

- Less well coordinated, poorly planned, or duplicative estuarine habitat restoration efforts.
- Lost opportunities to leverage or qualify for private, state, or federal funding.
- Greater numbers of estuarine habitat restoration project failures.

As a collaborative effort, the departments of Agriculture and Consumer Services (DACS), Environmental Protection-Coastal and Aquatic Managed Areas (DEP-CAMA), and the Florida Fish and Wildlife Conservation Commission (FWC) propose to develop and test a statewide estuary restoration planning and guidance strategy.

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.

One of the critical purposes of the statewide planning and guidance approach will be to provide increased support for and greater statewide consistency in the implementation of estuarine habitat restoration. Statewide guidance will also minimize or avoid the three negative outcomes listed above that Florida is experiencing, or will experience, without such a document. A cooperative, coordinated statewide approach of this type will provide resource managers with consistent direction, clearly defined goals, and a means of linking their efforts to the larger goal of protecting and enhancing estuarine habitats wherever they occur in Florida waters.

We recognize that for a statewide estuarine habitat restoration planning and guidance approach to be successful, it must be practical, adaptable and forward-looking. Estuarine restoration planning and guidance should be flexible; allowing goal revision over time, as conditions change and new information becomes available (i.e., adaptively managed). It should also provide clear and concise local, regional and statewide guidance that can be implemented across jurisdictional boundaries. And the plan should serve as an overarching blueprint for all levels of government and the public, including the private sector, civic organizations, academics and other NGOs. It should recognize, support and incorporate successful existing management programs, build upon the accomplishments of local programs rather than duplicating their efforts, and should promote the development and implementation of new policies to fill identified gaps and ensure that adequate management attention is paid to estuarine habitats in all regions of the state.

The statewide planning and guidance document will be periodically revised as estuarine habitat restoration projects are completed, performance evaluations accumulate on past projects, and the science associated with ecological restoration and assessment progresses. At a minimum, the Florida estuarine habitat restoration planning and guidance strategy will address but not be limited to:

1. Florida Estuaries: Situation Analysis

- Florida's estuaries as ecologically distinct regions.
- Upland impacts: habitat alteration, surface water flow and quality.
- Geographical, ecological and socio-economic analysis.
- Current estuarine restoration activities: Size/scope, goals/objectives, performance, future plans.
- Current federal, state, and local authorities and capabilities.

2. Estuarine Habitat Restoration Planning Components

- Status of Florida's estuarine habitats.
- Evaluating habitat degradation: causes and rates of decline.
- Quantify upland impacts and potential impact on restoration success.
- Flora and fauna inventory and assessment.
- Realizing ecological benefits, ecosystem services, and socio-economic needs.
- Predicting and accommodating upland impacts.
- Establishing realistic and measurable restoration goals and objectives.
- Integrating effort across jurisdictional boundaries.
- Coordinating estuarine habitat restoration research activities.
- Developing a system for reporting regional and statewide estuarine habitat status and trends information.
- Public support and outreach: creating stakeholder buy-in and commitment.
- Linking estuarine habitat restoration science and management.
- Federal, state, and local regulatory and management authorities.

3. Florida Estuarine Habitat Restoration Guidance Components

- Developing, vetting, and implementing a Florida estuarine habitat restoration plan.
- Quantitative prioritization, planning, design, and assessment tools for regional projects.
- Project management and restored site evaluation.
- Project assessment: meeting functional goals and objectives, and design and performance parameters or measures.

- Cost analyses.
- Adaptive management principles applied.
- Creating an open and public process.
- Standardized estuarine habitat mapping and monitoring.
- Communication tools and methodologies.
- Resources and references.
- Policy, regulatory and technical program resources.

The planning and guidance will focus on estuarine habitat restoration activities in Florida waters, and will build on accomplishments at the state and local levels. It will also be developed through a collaborative process jointly managed by the three agencies. The process will incorporate:

- Consensus-based, stakeholder derived effort to integrate estuarine habitat restoration knowledge and experience at regional and statewide levels.
- Integration of existing management plans and strategies.
- Broad partnership with federal, state, and local agencies and offices and non-governmental organizations.

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 three agencies have been strategizing the creation of an estuarine planning document since March 2009. The agencies are committed to the development and testing of this plan and recognize its value to the State of Florida. We have the necessary personnel and expertise to manage and guide this project to its completion and existing authorities and programs to require the implementation of the planning and guidance document upon completion.

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). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 3

Total Budget: \$282,000

Final Outcome(s) and Products:

A statewide planning and guidance for estuary restoration, Apalachee Bay Estuaries Restoration Plan, a final project report describing a progression of events throughout the project, lessons learned, and recommendations, and recommendations from the project partners for future regional estuary restoration plans.

Tasks	Year 1				Year 2				Year 3			
	1	2	3	4	1	2	3	4	1	2	3	4
Advertise RFP/Hire contractor	x	x										
Draft estuarine restoration planning/guidance document		x	x	x								
Contractor presentation to DACS/CAMA/FWC				x								
Organize statewide TAC				x								
First TAC meeting to review draft estuarine restoration planning/guidance					x							
Revise draft estuarine restoration planning/guidance					x							
Second TAC meeting to finalize estuarine restoration planning/guidance						x						
Final report: statewide estuarine restoration planning/guidance						x						
Organize Apalachee Bay TAC						x						
First Apalachee Bay TAC Meeting							x					
Draft Apalachee Bay Estuarine Restoration Plan							x	x				
Second Apalachee Bay TAC Meeting								x				
Revise Apalachee Bay Estuarine Restoration Plan									x			
TAC meeting for final comments on the Apalachee Bay estuarine restoration plan										x		
Revise Apalachee Bay estuarine restoration plan											x	
Contractor presentation to the TAC and other interested parties												x
Revisit estuarine restoration planning/ guidance										x	x	
DACS/CAMA/FWC planning for development of additional regional estuarine restoration plans												x
Final report: statewide estuarine restoration planning/guidance & Apalachee Bay Estuarine Restoration Plan												x
Post statewide estuarine restoration planning/guidance to partner agencies websites. Joint press release												x
Post Apalachee Bay Estuarine Restoration Plan to partner agencies websites. Joint press release												x

Year(s): 1

Description of activities: The statewide planning and guidance will be developed and include the following framework components: Situation Analysis, Planning Components, and Guidance Components.

The selected contractor will draft the framework components and the project managers will provide oversight and guidance. The framework for the project will focus on Florida estuarine biotic and abiotic characteristics and the socio-economic factors unique to Florida. The development of the planning and guidance framework will incorporate and benefit from the considerable literature on the subject (see Selected References).

A technical advisory committee will be formed composed of representatives from state or federal estuary programs, parks and preserves, local governments, colleges and universities, non-governmental organizations and other stakeholders with an interest in estuarine management. Project managers will chair all TAC meetings and supervise all contractor work. The TAC will

hold one or more public meetings. The meetings will be advertised, and provide an opportunity for input from all stakeholders. Communication between the contractor, project team, and the TAC will occur via electronic mail and planned meetings to revise the situation analysis and restoration plan.

Outcome(s): Final revisions by the project team and contractor will yield as a final report: 1) a statewide planning and guidance for estuary restoration, and 2) a final project report describing a progression of events throughout the project, lessons learned, and recommendations.

Budget: \$156,000

Year(s): 2

Description of activities: The contractor will draft the framework components and manage the development of an Apalachee Bay estuarine restoration plan and the project managers will provide oversight and guidance. The draft framework will focus on Florida estuarine biotic and abiotic characteristics and the socio-economic factors unique to Florida. The development of the planning and guidance framework will incorporate and benefit from the considerable literature on the subject (see Selected References).

An Apalachee Bay technical advisory committee will be formed with representatives from state or federal estuary programs, parks and preserves, local governments, colleges and universities, nongovernmental organizations and other stakeholders with an interest in estuarine management. Project managers will chair all TAC meetings and supervise all contractor work. The TAC will hold one or more public meetings. The meetings will be advertised, and provide an opportunity for input from all stakeholders. Communication between the contractor, project team, and the TAC will occur via electronic mail and planned meetings to revise the situation analysis and restoration plan.

The TAC will utilize the framework document to provide input to the contractor that will draft an Apalachee Bay estuarine restoration plan. Initially, the contractor will write a draft situation analysis for TAC comment and revision. The situation analysis will be advertised for public comment and publicly presented by the TAC. With final revision of the situation analysis, the TAC will provide guidance to the contractor in creating a draft estuarine restoration plan.

Outcome(s): Final report containing: 1) a draft Apalachee Bay Estuarine Restoration Plan, and 2) description of the progression of events throughout draft development lessons learned, and recommendations.

Budget: \$81,000

Year(s): 3

Description of activities: The draft plan will be made available for public comment and the final draft will be presented to the TAC. Throughout the process the framework document will be adaptively managed to incorporate valuable “lessons learned.”

Outcome(s): Final revisions via TAC and public comment will yield an Apalachee Bay Estuarine Restoration Plan and the estuarine planning/guidance document. A final project report describing the progression of events throughout the project, lessons learned, and recommendations.

Budget: \$46,956

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.

The requested 309 funds should be sufficient to carry out the proposed strategy without the need for additional funds.

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).

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 do provide detailed project descriptions that would be needed for the PSM competition.

Selected References

- D'Avanzo, C. 1990. Long-term evaluation of wetland creation projects. In: Kusler, J.A., M.E. Kentula, eds. *Wetland Creation and Restoration: The Status of the Science*. Island Press. Washington, DC.
- DuBowy, P.J. 1997. Assessing and monitoring the ecological integrity of restored wetlands. *Texas Restoration Notes* 2:3.
- DuBowy, P.J. 2000. The role of control and reference sites in wetland restoration. *Ecological Restoration and Management*.1:74-75.
- Fonseca, M.S., W.J. Kenworthy, G.W. Thayer. 1998. *Guidelines for the Conservation and Restoration of Seagrasses in the United States and Adjacent Waters*. NOAA's Coastal Ocean Program. Decision Analysis Series 12.
- Japp, W.C. 1998. Coral Reef Restoration. In: Wilber, P., G. Thayer, M. Croom, and G. Mayer, eds. Goal setting and success criteria for coastal habitat restoration, *Journal of Ecological Engineering*. Invited papers from a symposium held in Charleston, S.C. January 13-15, 1998.
- Kuslr, J.A., M.E. Kentula, eds. 1990. *Wetland Creation and Restoration: The Status of the Science*. Island Press. Washington, DC.
- Lugo, A.E., M. Sell, S.C. Snedaker. 1999. Mangrove ecosystem analysis. In: Yanez-Arancibia, A., A.L. Lara-Dominguez, eds. *Ecosistemas de Manglar en America Tropical*. Instituto de Ecologia A.C. Mexico, UICN/ORMA Costa Rica, NOAA/NMFS Beaufort, NC.
- Matthews, G.A., T.J. Minello. 1994. Technology and success in restoration, creation, and enhancement of *Spartina alterniflora* marshes in the United States. NOAA Coastal Ocean Program Decision Analysis Series No. 2.
- Mitsch, W.J., J.G. Gosslink. 1986. *Wetlands*. Van Nostrand Reinhold. New York.

- Neckles, H., M. Dionne, eds. 1999. Regional standards to identify and evaluate tidal wetland restoration in the Gulf of Maine. Global Programme of Action Coalition for the Gulf of Maine workshop June 2-3, 1999. Wells National Estuarine Research Reserve. Wells, Maine.
- Niedowski, N.L. 2000. New York State salt marsh restoration and monitoring guidelines. New York Department of State and Department of Environmental Conservation. Albany, N.Y.
- Restore America's Estuaries and Estuarine Research Federation. 1999. Principles of estuarine habitat restoration. (<http://era.noaa.gov/pdfs/principles.pdf>).
- Restore America's Estuaries. 2002. A national strategy to restore coastal and estuarine habitat. Restore America's Estuaries and National Oceanic and Atmospheric Administration. (http://era.noaa.gov/htmls/support/sup_natstrat.html).
- Salmon, J., D. Henningsen, T. McAlpin. 1982. *Dune Restoration and Revegetation Manual*. Florida Seagrass College Publication SGR-48, University of West Florida, Pensacola, FL.
- Stauble, D.K., J. Hoel. 1986. Physical and biological guidelines for beach restoration projects, Part II: Physical Engineering Guidelines. Florida Seagrass College Publication SGR-77, Florida Institute of Technology, Melbourne, FL.
- Thayer, G. W., Teresa A. McTigue, Russell J. Bellmer, Felicity M. Burrows, David H. Merkey, Amy D. Nickens, Stephen J. Lozano, Perry F. Gayaldo, Pamela J. Polmateer, and P. Thomas Pinit. 2003. Science-Based Restoration Monitoring of Coastal Habitats, Volume One: A Framework for Monitoring Plans Under the Estuaries and Clean Waters Act of 2000 (Public Law 160-457). NOAA Coastal Ocean Program Decision Analysis Series No. 23, Volume 1. NOAA National Centers for Coastal Ocean Science, Silver Spring, MD.
- Thayer, G. W., Teresa A. McTigue, Ronald J. Salz, David H. Merkey, Felicity M. Burrows, and Perry F. Gayaldo, (eds.). 2005. Science-Based Restoration Monitoring of Coastal Habitats, Volume Two: Tools for Monitoring Coastal Habitats. NOAA Coastal Ocean Program Decision Analysis Series No. 23. NOAA National Centers for Coastal Ocean Science, Silver Spring, MD.
- Thom, R.M. 1997. System-development matrix for adaptive management of coastal ecosystem restoration. *Ecological Engineering*. 8:219-232.
- Thom, R.M. 2000. Adaptive management of coastal ecosystem restoration projects. *Ecological Engineering*. 15:365-372.
- US EPA. 1992. Monitoring guidance for the National Estuary Program, Final. US Environmental Protection Agency Report EPA 842-B-92-004. Office of Water, Office of Wetlands, Washington, D.C.
- US EPA. 1993. *Volunteer Estuary Monitoring: A Methods Manual*. US Environmental Protection Agency Report EPA 842-B-93-004. Office of Water, Washington, DC.
- Weinstein, M.P., J.H. Balletto, J.M. Teal, D.F. Ludwig. 1997. Success criteria and adaptive management for a large-scale wetland restoration project. *Wetlands Ecology and Management*. 4:111-127.
- Wilber, P., G. Thayer, M. Croom, and G. Mayer, eds. 1998. Goal setting and success criteria for coastal habitat restoration, In: *Journal of Ecological Engineering*. Invited papers from a symposium held in Charleston, S.C. January 13-15, 1998.

SPECIAL AREA MANAGEMENT PLANNING FOR FWC'S CRITICAL WILDLIFE AREAS (CWAS)

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 type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input 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 checked="" 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.)

This strategy will result in new Special Area Management Plans for the state's Critical Wildlife Areas. These changes will be implemented through rule revisions and guidelines that will be adopted by the state.

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.

Limiting human-wildlife conflicts in the coastal zone, specifically in Critical Wildlife Areas, has been identified as a high priority need in the Special Area Management Planning Enhancement Area Assessment. Human-wildlife conflicts increase as the human population increases and areas available to wildlife decrease. The Florida Fish and Wildlife Conservation Commission (FWC) has the authority to protect areas that are critical to wildlife through our rule making process,

primarily through the Critical Wildlife Area (CWA) system (Rule 68A-19.005, FAC). CWAs are designated through establishment orders to protect wildlife in areas where they congregate for roosting or nesting. Concerns from stakeholders about the CWA system, and the ability to respond quickly to newly identified areas of congregating wildlife have led to the need for a revision of the rules governing the CWA system. Under the revised rule, the establishment of CWAs increases wildlife protections while improving recreational user access; some CWAs are protected for a short term (single nesting season). The rule allows a larger CWA boundary to be established, but requires fewer restrictions on use within the CWA. While the revised rule provides the outline for CWA establishment, the currently existing CWAs will need to have their establishment orders revised to fully implement the revised rule.

CWAs are designed to provide areas where important congregations of wildlife can be protected from human impacts during critical parts of their life cycle (such as nesting and migratory stopover sites). Even with the protections provided by the CWA, conflicts still occur and additional management strategies are needed to reduce human-wildlife conflicts and to maintain habitat suitability for wildlife. An additional identified need is to manage vegetation in the coastal zone to improve suitability for wildlife. Enhanced coordination with DEP (Bureau of Beaches and Coastal Systems) is needed for more effective management of coastal vegetation. Current rules do not account for management of coastal vegetation to increase suitability of CWAs or other sites for wildlife. By including the CWA system as a Special Management Area, policies and procedures for managing the CWAs can be adopted statewide as the establishment orders are revised.

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.

The CWA system can protect shorebirds and other wildlife while relieving the regulatory burden of individuals and municipalities from potential take of wildlife. Working with partners to create and implement a special area management plan for the CWA system will improve communication between partners and improve compliance for existing regulations. Stronger conservation for shorebirds and other wildlife can be achieved while maintaining the recreational use of the beaches.

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 developing a SAMP for the CWA system is high. FWC has the constitutional authority to designate CWAs. Existing partnerships and collaborations also increase the chance of success; these existing partnerships can provide support and lines of communication for the development of the SAMP. FWC is currently working with DEP in the development of a Beaches HCP and in developing the Coastal Wildlife Conservation Initiative (CWCI). Existing programs within Florida, including the Florida Bird Conservation Initiative and the Florida Shorebird Alliance, are supportive and can play an important role in the education, outreach, and implementation components of the SAMP.

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). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Element 1: Map the CWA system. The locations of existing CWAs are not easily available to the public. Providing current locations, species of interest, and details on closure can assist with compliance.

Task 1: Identify current CWAs, develop species list specific to each CWA, and target closure dates.

Task 2: Identify CWAs that need to be re-established under the revised CWA rule and initiate the establishment process. The authority for establishing (and re-establishing) CWAs is found in Rule 62A-19.005, FAC; the procedure for re-establishment will follow the process laid out in Rule 68A-14.001, FA.C., to update the legal description, boundaries, and terms and conditions for CWA management, including the appropriate guidelines or strategies developed in Elements 2 and 3.

Task 3: Develop an interactive web accessible GIS database for CWAs.

Task 4: Incorporate products from Elements 2 and 3 into the mapping product.

Element 2: Develop and implement management strategies to minimize conflicts. Some management strategies include posting of zones with varying uses (closed to vessels, vehicles, dogs, pedestrians), using volunteers to monitor and educate recreational users, development of outreach on the importance of maintaining disturbance free zones

Task 1: Convene a meeting of partners and stakeholders to identify sources of human wildlife conflict and potential management strategies.

Task 2: Hire and train OPS technicians to begin using known management strategies and those identified in Element 1, Task 1.

Task 3: Link the management strategies identified to the mapping product from Element 1.

Element 3: Develop strategies to maintain and improve habitat for wildlife use, including vegetation management, nesting/roosting structures, and the use of decoys or lures.

Task 1: Convene a partners meeting with DEP to discuss current vegetation management limitations.

Task 2: Propose new guidelines or undertake rule development specific to vegetation management. These guidelines will be adopted by FWC.

A. FWC will use the existing Agency Policies, Positions, and Guidelines (APG) process to adopt guideline use. The APG process is a formal process by which FWC leadership and the Commission approve the development, implementation, and use of policies, positions, or guidelines.

B. Develop an MOU with DEP for the use of the guidelines in coastal areas within CWA system.

Task 3: Develop a prioritized list of sites with vegetation management needs, and begin to implement proposed management.

Element 4: Utilize existing and developing partner networks to implement management strategies.

Task 1: Identify the capacity for participation existing within partner groups.

Task 2: Utilize technicians to train partners and volunteers in methods

Total Years: 2

Total Budget: \$209,000

Final Outcome(s) and Products: Revised CWA system that protects shorebirds and allows continued recreational use. Interactive Map of CWA System Management strategies for minimizing conflict and improving habitat, included in the mapping system

Year(s): 1

Description of activities:

1. Hire a program coordinator to begin implementing Elements and Tasks (\$60,000).
2. Element 1: Tasks 1 and 2: ID CWAs and begin re-establishment as necessary.
3. Element 2: Tasks 1 and 2: Convene partners and stakeholders meetings (\$2000 during the 1st half of fiscal year) and hire technicians (3 OPS technicians for 4 months each: \$10,000 each or \$30,000 total during 2nd half of fiscal year; OPS technicians will work for 8 concurrent months split between 2 fiscal years.)
4. Element 3: Tasks 1 and 2: Meet with DEP and develop rule or guideline changes.
5. Element 4: Task 1: identify partner capacity.

Outcome(s): Revised guidelines or new rules for minimizing conflicts and improving vegetation management.

Budget: \$92,000

Year(s): 2

Description of activities:

1. Element 1: Tasks 3 and 4: Interactive GIS database with products for year 1 incorporated (GIS consultant: 240 hours at \$100/hour - \$24,000).
2. Element 1: Task 2 - ongoing re-establishment of CWAs (by coordinator hired in Year 1: \$60,000)
3. Element 2: Tasks 2: ongoing - technicians continue to implement management strategies. (3 technicians for 4 months each: \$10,000 each or \$30,000 total during 1st half of the fiscal year; OPS technicians will work for 8 concurrent months, split between 2 fiscal years)
4. Element 2: Task 3: inclusion of strategies in mapping product (cost incorporated in Element 1).
5. Element 3: Task 3: ongoing - technicians will implement management strategies (cost included in Element 2 task)
6. Element 4: Task 2: Technicians train volunteers and partners. (\$3,000)

Outcome(s): Interactive map of the CWA system.

Budget: \$117,000

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.

FWC has developed requests for additional staff persons in each region, which would allow for better management of CWAs. Those requests have not been funded by the legislature because of the current economic conditions in Florida.

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 state has the necessary knowledge, skills, and equipment to carry out the proposed strategy. The primary agencies, FWC and DEP (Division of State Lands) contain expertise in GIS mapping, database development, and website design, and their expertise will be used to provide metadata and insure that any mapping products are compatible with existing systems. An outside consultant will be hired to assist the agencies with the workload.

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 do provide detailed project descriptions that would be needed for the PSM competition.

MARINE DEBRIS AND AQUACULTURE USE ZONES

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 checked="" type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input type="checkbox"/> Wetlands |
| <input type="checkbox"/> Coastal Hazards | <input checked="" 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.)

This strategy will seek to revise Chapter 5L-3, Florida Administrative Code (FAC), which details the state's Aquaculture Best Management Practices (BMPs). The rule revisions will provide guidance for the problem of marine debris in aquaculture use zones. The BMPs will be outlined in a technical bulletin, which will be distributed to appropriate user groups and will provide information on marine debris management, collection and proper disposal.

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.

Severe weather events dislodge shellfish production materials (polyester or polyethylene netting, polyester nursery and grow out bags, and miscellaneous gear) and redistribute the gear in and around Aquaculture Use Zones (i.e., State of Florida identified blocks of sovereign submerged lands that can be leased for shellfish culture). The distribution of Aquaculture Use Zones over a

large region of shallow, near shore waters plus a lack of infrastructure to easily remove, collect, transport and properly dispose of this debris has hampered both the farm community and agency capacities to restore lease areas after storm events.

There are no existing resources to educate the shellfish farming community in the issues and appropriate practices that can reduce marine debris. This strategy addresses these gaps and needs with education, training, and action. These were identified as high priority needs in the Marine Debris and Aquaculture Enhancement Area Assessments.

The Florida Department of Agriculture's Division of Aquaculture (Division) proposes an integrated effort that will focus on 1) shellfish farmer education and 2) farmer-extension agent-agency partnership to prevent future marine debris accumulation and a method to remove, collect, transport and properly dispose of lost or discarded production materials. This project will lead to: 1) long-term adoption of decision making at the personal level that will reduce the potential for marine debris, 2) periodic, self-starting clean-up activities managed by shellfish farmer organizations, and 3) an improved effort by the shellfish farming community that builds upon their prior cleanup and management efforts and revisions to Ch. 5L-3, FAC, Aquaculture BMPs.

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.

Severe weather events (esp. hurricanes) distribute natural and anthropogenic debris over shellfish aquaculture lease areas smothering and killing growing shellfish. This debris also creates hazardous conditions for farmers and the public, and imposes unexpected cleanup and disposal costs that cannot be absorbed by small, family-operated farms.

The goals and objectives of this strategy will educate shellfish farmers to: 1) adopt behavioral patterns and decision making that will result in the potential for less marine debris in the future, and 2) the means and methods to appropriately remove and dispose of existing marine debris.

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 for success is very high for implementation and long term continuity. The Division has extensive experience with marine debris assessment, collection, handling and disposal as well as statutory authority regarding shellfish farm location and production practices. Once the educational guidance is created (technical bulletin) and the training activities completed, the farming sector will have the tools to effectively implement marine debris cleanup as self-starting activities. These tools will become a component of the Division's ongoing statutorily-mandated aquaculture management activities, pursuant to Ch. 5L-3, FAC. The Division's partner, the multi-county shellfish aquaculture extension agent, will adopt project outcomes within her program that will lead to long-term continuity of the goals and objectives presented here.

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). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years:3

Total Budget:\$180,322

Final Outcome(s) and Products: A final report describing: the activities, successes and failures, experienced during the three years of marine debris collection and stakeholder educational efforts; a technical bulletin; six farmer workshops; a self-propelled, flat-deck barge for on-site marine debris collection; and revisions to Chapter 5L-3, Aquaculture BMPs, FAC.

	Year 1				Year 2				Year 3			
	1	2	3	4	1	2	3	4	1	2	3	4
Partner meetings	x		x		x				x			
BMP workshops		x										
BMP development/ adoption		x	x	x	x							
Develop and revise technical bulletin		x	x	x								
Marine debris workshops					x (3)				x (3)			
Deck barge purchase				x								
Marine debris collection (deck barge deployment)					x	x	x	x	x	x	x	x
Marine debris disposal					x	x	x	x	x	x	x	x
Final Report												x

Year: 1

Description of activities: Removing & Disposing of Marine Debris from Aquaculture Use Zones

1. Initiate Revision of Aquaculture Best Management Practices.

The Division will review and revise existing Best Management Practices relative to shellfish equipment usage as a result of the farmer workshops. Revisions to aquaculture BMPs will require the following rulemaking steps:

- a) Conduct public meetings/workshops to obtain input on revisions to aquaculture BMPs from stakeholders and affected parties;
- b) Incorporate changes in BMP rule and obtain agency approval to proceed;
- c) Publish the Notice of Rule Development in the *Florida Administration Weekly* to solicit state-wide comments on BMP revisions;
- d) Hold a hearing on the rule;
- e) If no objection, adopt the rule; and

- f) Distribute the final, revised BMP rule to aquaculturists and other stakeholders via Division produced *Florida Aquaculture* newsletter and marine debris workshops.
2. Produce a shellfish farmer-oriented technical bulletin focused on marine debris management, collection, and proper disposal.

The Division periodically produces technical bulletins to advise and educate Florida aquaculturists about complex technical or regulatory issues. Current bulletins address: Aquaculture and Aquatic Preserves, Red Tide, Shellfish Nets and Net Coatings, and Cultured Hard Clam Handling and Harvesting. Bulletins are distributed by mail to affected aquaculturists and posted to the Division's website as a free download or ready resource. See <http://www.floridaaquaculture.com/technicalbulletins.htm>.

A marine debris technical bulletin will be developed in concert with the project partner and NOAA's marine debris program (<http://marinedebris.noaa.gov/>) that will: 1) inform shellfish farmers how to safely remove, handle and dispose of damaged farming gear, and 2) suggest alternative production gear management practices to prevent or reduce the likelihood that used or derelict gear will become marine debris.

3. Purchase a self-propelled barge to implement revised shellfish aquaculture BMPs and remove, collect, transport and properly dispose of damaged shellfish production gear and marine debris.

The Division will purchase a self-propelled, 800 square-foot deck barge of several dry ton capacity. The barge will be anchored in proximity to Aquaculture Use Zones. Division personnel at the receiving barge will accept marine debris collected and delivered by shellfish farmers. The barge will be used to transport the debris to a landing site for offloading, transport and disposal at a publicly operated landfill.

Outcome(s):

1. Initiated revisions to shellfish aquaculture BMPs.
2. Finalized Technical Bulletin.
3. Barge acquisition.

Budget: \$59,000

Year: 2

Description of activities: Complete the revision of the shellfish aquaculture BMPs, hold farmer marine debris workshops, and deploy a barge for marine debris cleanup.

1. Complete Revision of Aquaculture Best Management Practices.

The Division will finish revision of the Best Management Practices relative to shellfish equipment usage as a result of the farmer workshops.

2. Coordinate statewide, farmer-focused workshops to: 1) communicate marine debris management, collection, and proper disposal techniques, and 2) schedule and coordinate debris collection and disposal.

Three regional workshops (Nature Coast, Charlotte Harbor, and Indian River Lagoon) will be organized by the project partnership to: 1) present the information that will appear in a marine

debris technical bulletin as well as to promote the responsible handling, retrieval and disposal of shellfish farming equipment to mitigate future marine debris contributions, and 2) establish a calendar for debris collection and disposal.

3. Use the self-propelled barge to cooperatively remove, collect, transport and properly dispose of damaged shellfish production gear and marine debris.

The deck barge will be anchored in proximity to Aquaculture Use Zones. Division personnel at the receiving barge will accept marine debris collected and delivered by shellfish farmers. With a capacity of several dry tons, the barge will be used to transport the debris to a landing site for offloading, transport and disposal at a publicly operated landfill.

Outcome(s):

1. Final, revised shellfish aquaculture BMPs.
2. Completed regional marine debris workshops.
3. Collected, transported, and disposed of marine debris.

Budget: \$59,661

Year: 3

Description of activities: Removing & Disposing of Marine Debris from Aquaculture Use Zones

1. Coordinate statewide, farmer-focused workshops to: 1) communicate marine debris management, collection, and proper disposal techniques, and 2) schedule and coordinate debris collection and disposal.

Three regional workshops (Nature Coast, Charlotte Harbor, and Indian River Lagoon) will be organized by the project partnership to: 1) present the information that will appear in a marine debris technical bulletin as well as to promote the responsible handling, retrieval and disposal of shellfish farming equipment to mitigate future marine debris contributions, and 2) re-establish a calendar for debris collection and disposal and make adjustments to barge handling/availability to improve collection/disposal practices.

2. Use the self-propelled barge to cooperatively remove, collect, transport and properly dispose of damaged shellfish production gear and marine debris.

The deck barge will be anchored in proximity to Aquaculture Use Zones. Division personnel at the receiving barge will accept marine debris collected and delivered by shellfish farmers. With a capacity of several dry tons, the barge will be used to transport the debris to a landing site for offloading, transport and disposal at a publicly operated landfill.

Outcome(s):

1. Completed regional marine debris workshops.
2. Collected, transported and disposed of aquaculture marine debris.

Budget: \$61,661

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.
- 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).

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 do provide detailed project descriptions that would be needed for the PSM competition.

AQUATIC PRESERVE MANAGEMENT PLAN UPDATES

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 type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input 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 checked="" 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.)

This strategy would assist with the ongoing effort to update the management plans for Florida's Aquatic Preserves (AP). The funds would be used towards OPS staff to help develop the plans, to hold public meetings, and for the needed supplies to print the plans for distribution. Finalized, updated AP plans are submitted to the Governor and Cabinet for approval.

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.

This strategy will address the need identified in the SAMP Assessment to develop management plans for the state's extensive aquatic preserve system. DEP/CAMA is responsible for the state's 41 aquatic preserves and with close to two million acres of submerged lands to manage, effective and efficient management is critical for the long-term protection of Florida's most valuable coastal

resources. The management plans will offer guidance for the protection, maintenance, restoration, and sustainable public use of natural resources and habitats within each aquatic preserve.

Long-term goals for management include: Protect and enhance the ecological integrity of the aquatic preserves; restore areas to their natural condition; and encourage sustainable use and foster active stewardship by engaging local communities in the protection of aquatic preserves. In order to address the significant resource management challenges for these aquatic systems, the following focus areas have been identified: Community outreach and stewardship; adjacent land uses and conservation; public access and use; water resource monitoring; water quantity; and habitat impacts.

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.

This strategy would enable CAMA to define specific key issues (e.g., ecosystem health, land use, water resource management, human activities and geophysical conditions) associated with each site, and to identify goals, objectives and strategies on how to address those issues through active management.

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 for this strategy is high. The revision of these management plans has been a priority of CAMA's for several years, and is an initiative that CAMA actively works on whenever possible. It is anticipated that as the economy improves, and the majority of these management plans are updated, that DEP will have the capacity to maintain a cycle which would keep each of the plans updated at least every 10 years.

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). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 4

Total Budget: \$185,985

Final Outcome(s) and Products: Draft or final management plan for all sites initiated.

Year(s): 1

Description of activities: Develop and receive public input on 3-5 site management plans (including: development of background information and initial issue development, holding public scoping meetings, revision of management plans, and if possible, holding formal public meetings to receive input on the draft plans).

Outcome(s): Draft management plans, and if possible, conduct public meetings.

Budget: \$62,679

Year(s): 2

Description of activities: Pursue final approval [by the Acquisition Restoration Council (ARC) & Board of Trustees (BOT)] on all management plans that have gone through the public review process. In addition, develop and receive public input on an additional 3-5 site management plans (including: development of background information and initial issue development, holding public scoping meetings, revision of management plans, and if possible, holding formal public meetings to receive input on the draft plans).

Outcome(s): Final draft management plans (ready for the ARC and BOT approval process), draft management plans, and if possible, conduct public meetings.

Budget: \$20,190

Year(s): 4

Description of activities: Pursue final approval (by ARC & BOT) on all management plans that have gone through the public review process. In addition, develop and receive public input on an additional 3-5 site management plans (including: development of background information and initial issue development, holding public scoping meetings, revision of management plans, and if possible, holding formal public meetings to receive input on the draft plans).

Outcome(s): Final draft management plans (ready for the ARC and BOT approval process), draft management plans, and if possible, conduct public meetings.

Budget: \$52,056

Year(s): 5

Description of activities: Pursue final approval (by ARC & BOT) on all management plans that have gone through the public review process. In addition, develop and receive public input on an additional 3-5 site management plans (including: development of background information and initial issue development, holding public scoping meetings, revision of management plans, and if possible, holding formal public meetings to receive input on the draft plans).

Outcome(s): Final draft management plans (ready for the ARC and BOT approval process), draft management plans, and if possible, conduct public meetings.

Budget: \$51,060

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.

The revision of these management plans has been a priority of CAMA's for several years, and CAMA has presented legislative budget requests to cover these efforts in the past. However, with

the current economic crisis, no “new” concepts have been supported. It is hoped that DEP will have the resources to maintain a revision cycle in the future.

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 state does possess the technical knowledge and skills to carry out the proposed strategy.

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 do provide detailed project descriptions that would be needed for the PSM competition.

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
Community Resiliency: Planning for Sea Level Rise	\$140,000	\$179,000	\$195,000	\$195,245	\$190,000	\$899,245
Coordinated Coral Reef and Hardbottom Ecosystem Mapping and Monitoring Program	\$85,321	\$85,210	\$181,444	\$175,438	\$179,679	\$707,092
Florida Estuarine Habitat Restoration: Creating and Testing Statewide Planning and Guidance	\$156,000	\$81,000	\$46,956			\$283,956
Special Area Management Planning for Critical Wildlife Areas	\$92,000	\$117,000				\$209,000
Marine Debris and Aquaculture Use Zones			\$59,000	\$59,661	\$61,661	\$180,322
Aquatic Preserve Management Plans	\$62,679	\$20,190		\$52,056	\$51,060	\$185,985
Total Funding	\$536,000	\$482,000	\$482,000	\$482,000	\$482,000	\$2,465,600

ACRONYM TABLE	
AM	Adaptive Management
AP	Aquatic Preserve
BMAP	Basin Management Action Plan
APG	Agency Policies, Positions, and Guidelines
BMP	Best Management Practices
BP	British Petroleum
CAMA	Coastal and Aquatic Managed Areas within DEP
CELCP	Coastal and Estuarine Land Conservation Program
CERP	Comprehensive Everglades Restoration Plan
CHD	County Health Department
CLIP	Critical Lands and Waters Identification Project
COET	Center of Excellence in Ocean Energy Technology
CRCP	Coral Reef Conservation Program
CREMP	Coral Reef Evaluation and Monitoring Program
CRIS	Coastal Resource Information System
CSI	Cumulative And Secondary Impacts
CWA	Critical Wildlife Management Area
CWCI	Coastal Wildlife Conservation Initiative
CZMA	Coastal Zone Management Act
DACS	Florida Department of Agricultural and Consumer Services
DCA	Florida Department of Community Affairs
DEM	Florida Division of Emergency Management
DEP	Florida Department of Environmental Protection
Division	Division of Aquaculture
DO	Dissolved Oxygen
DOH	Florida Department of Health
DV	Derelict Vessel
DWP	Deepwater Port
EPA	(United States) Environmental Protection Agency
ERP	Environmental Resource Permit
FAC	Florida Administrative Code
FCMP	Florida Coastal Management Program
FCT	Florida Communities Trust within DCA
FDOU	Fishing, Diving, and Other Uses
FEMA	Federal Emergency Management Agency
FGS	Florida Geological Survey
FKNMS	Florida Keys National Marine Sanctuary
FNAI	Florida Natural Areas Inventory
FOCC	Florida Oceans and Coastal Council
FRCC	Florida Reliability Coordinating Council, Inc.
F.S.	Florida Statute
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute within FWC
GAME	Geospatial Assessment of Marine Ecosystems
GIS	Geographic Information System
GOMA	Gulf of Mexico Alliance

GTM	Guana-Tolomato-Matanzas
HAB	Harmful Algal Bloom
HCP	Habitat Conservation Plan
ICLEI	International Council for Local Environmental Initiatives
IMF	Integrated Management Framework
IRL	Indian River Lagoon
LIDAR	Light Detection and Radar
LNG	Liquefied Natural Gas
MFL	Minimum Flows and Levels
MMS	Minerals Management Service
MOU	Memoranda of Understanding
NCRI	National Coral Reef Institute
NEEPP	Northern Everglades and Estuaries Protection Program
NERR	National Estuarine Research Reserve
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration
NRDA	Natural Resource Damage Assessment
NFWFMD	Northwest Florida Water Management District
NWI	National Wetlands Inventory
OCRM	Office of Ocean and Coastal Resource Management within NOAA
OGT	Office of Greenways & Trails within DEP
OTEC	Ocean Thermal Energy Conversion
PDRP	Post-Disaster Redevelopment Plan
P2TP	Lake Okeechobee Phase II Technical Plan
PROGRAM	Renewable Energy Technologies Grants Program
RECOVER	Restoration, Coordination and Verification
RPS	Renewable Portfolio Standard
SAA	South Atlantic Alliance
SAMP	Special Area Management Plan
SAV	Submerged Aquatic Vegetation
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SEFCRI	Southeast Florida Coral Reef Initiative
SFWMD	South Florida Water Management District
SIMM	Seagrass Integrated Mapping & Monitoring
SLOSH	Sea, Lake and Overland Surge Hazard
SLR	Sea Level Rise
TAC	Technical Advisory Committee
TSRI	Tampa Shoreline Restoration Initiative
TMDL	Total Maximum Daily Loads
TN/TP	Total Nitrogen/Total Phosphorus
USFWS	United States Fish and Wildlife Service
WFP	Waterfronts Florida Partnership
WMD	Water Management District

FLORIDA'S 35 COASTAL COUNTIES

COUNTY
BAY
BREVARD
BROWARD
CHARLOTTE
CITRUS
COLLIER
DIXIE
DUVAL
ESCAMBIA
FLAGLER
FRANKLIN
GULF
HERNANDO
HILLSBOROUGH
INDIAN RIVER
JEFFERSON
LEE
LEVY
MANATEE
MARTIN
MIAMI-DADE
MONROE
NASSAU
OKALOOSA
PALM BEACH
PASCO
PINELLAS
SANTA ROSA
SARASOTA
ST. JOHNS
ST. LUCIE
TAYLOR
VOLUSIA
WAKULLA
WALTON