



# Biennial Report to Congress on Administrative Progress of Coastal Zone Management



2006-2007

## Message from the Director

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During the past two years, the National Oceanic and Atmospheric Administration's (NOAA's) Office of Ocean and Coastal Resource Management (OCRM) has made great strides with respect to improving the implementation of the Coastal Zone Management Act (CZMA). With new leadership, OCRM streamlined programs and processes and took on some new and ambitious challenges.

The Coastal Zone Management Act has not been reauthorized since 1996. In that time, significant management topics have risen to the forefront, challenging our understanding of effective coastal zone management, including how to address the impacts of climate change and how to prepare coastal communities to be more resilient in the face of natural hazards. For example, hurricanes in the 2005 season left an indelible mark on the Gulf Coast (and the nation), setting up recovery work that continues today. What can we do to plan more appropriately for future such impacts—coastal storms, mudslides, sea level rise and inundation?

In an innovative effort to address these emerging issues and to improve capabilities via the CZMA, OCRM joined forces with the Coastal States Organization (CSO) to reach out to stakeholders across the nation and around the globe in 2006-2007. A discussion paper published in September 2006, outlined the current and future challenges of coastal management. This paper served as the basis for more in-depth conversations with coastal zone managers and managers of national estuarine research reserves. Findings from these conversations revealed important pressures, priorities and emerging threats as perceived by state managers.

Armed with this information, OCRM and CSO initiated a wide array of open dialogs with a variety of stakeholders including all levels of government, industry and private sector business, academia, non-government organizations, the public, Congress and our counterparts within NOAA. The results were published as "core principles" whereby we will draft new language for a reauthorized CZMA that will enable us to more effectively manage our Nation's oceans and coasts.

Another major initiative begun during this biennium is our look at the integration of ocean and coastal activities. During the Fiscal Year 2008 budget process, the Office of Management and Budget (OMB) asked NOAA to take a hard look at coastal management activities that could be integrated across four offices—OCRM, National Centers for Coastal and Ocean Science (NCCOS), Coastal Services Center (CSC) and Sea Grant. OCRM took the lead on this initiative, and within four months, completed a proposal outlining all the opportunities for improved collaboration among the four offices. While this formal proposal is under consideration by OMB, OCRM has begun working with the other three NOAA offices to undertake activities to move this process forward.

Looking ahead, OCRM will continue improving the quality service we offer to coastal and estuarine managers and the public. The core principles we developed with CSO will provide a solid foundation for new legislation that will change the way we manage our coastal uses and resources. The principles touch on themes that transcend all the work we do from research to protection to education to sustainable resource use. New legislation, in combination with our increased collaborative activities within NOAA, will pave the way for effecting cleaner, healthier, more sustainable coasts for our nation. The future of coastal management is evolving and we in OCRM are proud to be leaders in shaping these changes.

David M. Kennedy  
Director, Office of Ocean and Coastal Resource Management  
October, 2007

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## **Preface**

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The National Oceanic and Atmospheric Administration's (NOAA) Office of Ocean and Coastal Resource Management (OCRM) provides national leadership, strategic direction, and assistance to state and territory coastal management programs, estuarine research reserves, and other U.S. and international partners to sustain healthy coastal and ocean ecosystems. Our work is mandated by the Coastal Zone Management Act, the Marine Protected Area Executive Order, and the Coral Reef Conservation Act. It is through the mandates of the Coastal Zone Management Act that we are submitting this biennial report to Congress.

This document presents information in a way that differs from previous biennial reports. We chose to present the information geographically and via tables to allow quick reference to state- and region-specific information. Where necessary, we appended detailed information or noted appropriate web links.

## Summary of Requirements under the Coastal Zone Management Act, Section 316

The Coastal Zone Management Act (CZMA), passed in 1972, provides for management of our Nation's coastal uses and resources, and balances economic development with environmental conservation. Section 316 of the Act requires that the Secretary of Commerce report to Congress on the administrative progress of the Act biennially. This report addresses how the National Oceanic and Atmospheric Administration (NOAA) addressed these requirements, and/or where more information can be found outside of this report. The following table contains the required information per Section 316.

(a) Biennial reports
<p>The Secretary shall consult with the Congress on a regular basis concerning the administration of this chapter and shall prepare and submit to the President for transmittal to the Congress a report summarizing the administration of this chapter during each period of two consecutive fiscal years. Each report, which shall be transmitted to the Congress not later than April 1 of the year following the close of the biennial period to which it pertains, shall include, but not be restricted to:</p>
<p>an identification of the state programs approved pursuant to this chapter during the preceding federal fiscal year and a description of those programs;</p>
<p>a listing of the states participating in the provisions of this chapter and a description of the status of each state's programs and its accomplishments during the preceding federal fiscal year;</p>
<p>an itemization of the allocation of funds to the various coastal states and a breakdown of the major projects and areas on which these funds were expended;</p>
<p>an identification of any state programs which have been reviewed and disapproved, and a statement of the reasons for such action;</p>
<p>a summary of evaluation findings prepared in accordance with subsection (a) of section 1458 of this title, and a description of any sanctions imposed under subsections (c) and (d) of section 1458 of this title;</p>
<p>a listing of all activities and projects which, pursuant to the provisions of subsection (c) or subsection (d) of section 1456 of this title, are not consistent with an applicable approved state management program;</p>
<p>a summary of the regulations issued by the Secretary or in effect during the preceding federal fiscal year;</p>

<p>a summary of a coordinated national strategy and program for the Nation's coastal zone including identification and discussion of federal, regional, state, and local responsibilities and functions therein;</p>
<p>a summary of outstanding problems arising in the administration of this chapter in order of priority;</p>
<p>a description of the economic, environmental, and social consequences of energy activity affecting the coastal zone and an evaluation of the effectiveness of financial assistance under section 1456a of this title in dealing with such consequences;</p>
<p>a description and evaluation of applicable interstate and regional planning and coordination mechanisms developed by the coastal states;</p>
<p>a summary and evaluation of the research, studies, and training conducted in support of coastal zone management; and</p>
<p>such other information as may be appropriate.</p>
<p>(b) Recommendations for legislation</p>
<p>The report required by subsection (a) of this section shall contain such recommendations for additional legislation as the Secretary deems necessary to achieve the objectives of this chapter and enhance its effective operation.</p>

## National Perspective

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NOAA's Office of Ocean and Coastal Resource Management (OCRM) works with all of our Nation's coastal states and territories to manage and conserve our ocean and coastal uses and resources. Thirty-four out of 35 coastal states and territories have active NOAA-approved coastal zone management programs. The 35<sup>th</sup> state, Illinois, is currently developing its coastal program.

During the past biennium, two states and one territory (Minnesota, New York and Guam) received full approval of their Coastal Nonpoint Pollution Control Programs and two states (New York and Washington) received full approval for their Coastal and Estuarine Land Conservation Program (CELCP) plans.

Twenty-one states and the Commonwealth of Puerto Rico have at least one designated National Estuarine Research Reserve (NERR). Two more states (Connecticut and Wisconsin) are each in the early stages of selecting a site for a new NERR. During the 2006-2007 biennium, we added one more NERR in Texas for a total of 27 reserves in the system.

No programs or reserves have been disapproved during this biennium. The most recent evaluations of each program found them to be adhering to program requirements and no sanctions were imposed.

See Table 1 to check the status of coastal programs and NERR(s) in your state or territory.

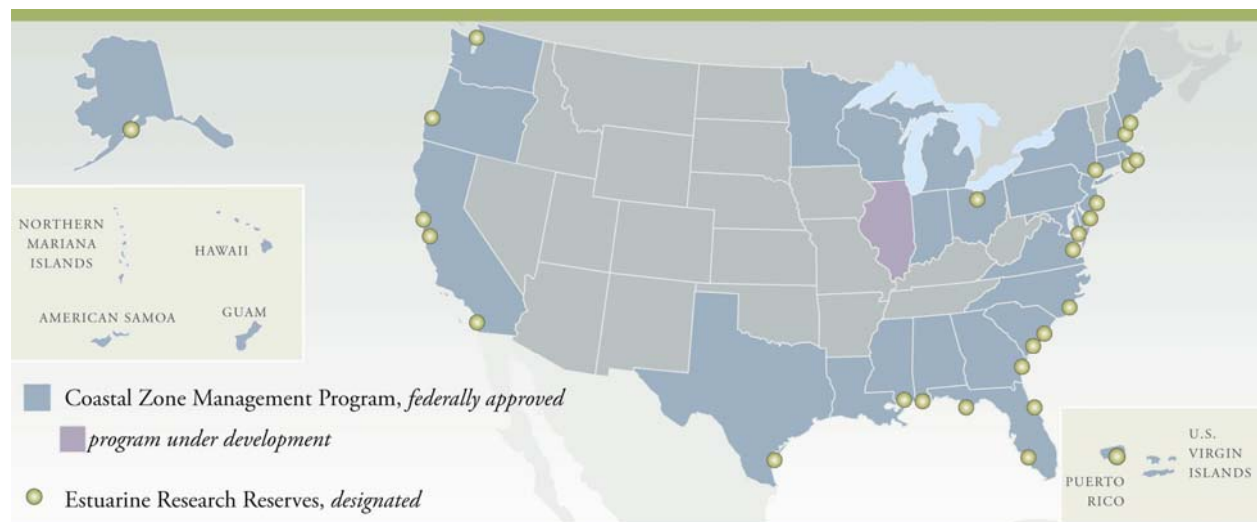


Figure 1 A map of all the states with Coastal Zone Management Programs along with all the designated National Estuarine Research Reserves.

Table 1. Status of Participation in National Coastal Zone Management Program and National Estuarine Research Reserve Program

State or Territory	Received federal approval for Coastal Management Program	Received full federal approval for Coastal Nonpoint Pollution Control Program	Federally designated as National Estuarine Research Reserve	Date of Most Recent Section 312 Evaluation	Findings and Sanctions per recent 312 Evaluation
Alabama	1979	Conditional <sup>1</sup>	1986	CZM: DEC 03 NERR: MAR 07	Adhering/ None
Alaska	1979	Conditional <sup>1</sup>	1999	CZM: Aug 07 NERR: APR 06	Adhering/ None
American Samoa	1980	2003	N/A	CZM: AUG 07	Adhering/ None
California	1978	2000	1979, 1982, 2003	CZM: JUN 05 NERRs: MAR 05, SEP 05, AUG 07	Adhering/ None
Connecticut	1980	2003	In Development	CZM: SEP 06	Adhering/ None
Delaware	1979	2002	1993	CZM: DEC 05 NERR: DEC 05	Adhering/ None
Florida	1981	Conditional <sup>1</sup>	1978, 1979, 1999	CZM: SEP 07 NERRs: MAY 06, JUN 05, JUL 07	Adhering/ None
Georgia	1998	Conditional <sup>1</sup>	1976	CZM: DEC 05 NERR: DEC 04	Adhering/ None
Guam	1979	2007	N/A	CZM: FEB 07	Adhering/ None
Hawai'i	1978	Conditional <sup>1</sup>	Designated in 1976, Dedesignated in 1996	CZM: AUG 04	Adhering/ None
Illinois	In Development	N/A	N/A	N/A	Adhering/ None
Indiana	2002	Conditional <sup>1</sup>	N/A	CZM: MAY 06	Adhering/ None
Louisiana	1980	Conditional <sup>1</sup>	N/A	CZM: MAR 05	Adhering/ None
Maine	1978	2003	1986	CZM: JUN 04 NERR: JUN 04	Adhering/ None
Maryland	1978	1999	1985, 1990	CZM: SEP 07 NERR: NOV 05	Adhering/ None
Massachusetts	1978	2001	1988	CZM: FEB 07 NERR: MAY 07	Adhering/ None
Michigan	1978	Conditional <sup>1</sup>	N/A	CZM: MAY 06	Adhering/ None
Minnesota	1999	2007	N/A	CZM: SEP 04	Adhering/ None
Mississippi	1980	Conditional <sup>1</sup>	1999	CZM: DEC 04 NERR: MAR 04	Adhering/ None



State or Territory	Received federal approval for Coastal Management Program	Received full federal approval for Coastal Nonpoint Pollution Control Program	Federally designated as National Estuarine Research Reserve	Date of Most Recent Section 312 Evaluation	Findings and Sanctions per recent 312 Evaluation
New Hampshire	1982	2001	1989	CZM: SEP 06 NERR: SEP 06	Adhering/ None
New Jersey	1978	Conditional <sup>1</sup>	1998	CZM: JUN 07 NERR: SEP 04	Adhering/ None
New York	1982	2007	1982	CZM: APR 07 NERR: SEP 04	Adhering/ None
North Carolina	1978	2003	1985, 1991	CZM: FEB 06 NERR: DEC 04	Adhering/ None
Northern Marianas	1980	2003	N/A	CZM: FEB 06	Adhering/ None
Ohio	1997	Conditional <sup>1</sup>	1980	CZM: MAY 07 NERR: AUG 06	Adhering/ None
Oregon	1977	Conditional <sup>1</sup>	1974	CZM: OCT 06 NERR: JUN 07	Adhering/ None
Pennsylvania	1980	2001	N/A	CZM: JUL 05	Adhering/ None
Puerto Rico	1978	2000	1981	CZM: JUN 05 NERR: JAN 06	Adhering/ None
Rhode Island	1978	2000	1980	CZM: NOV 05 NERR: SEP 04	Adhering/ None
South Carolina	1979	Conditional <sup>1</sup>	1992, 1992	CZM: JUL 04 NERRs: JAN 06, JAN05	Adhering/ None
Texas	1996	Conditional <sup>1</sup>	2006	CZM: DEC 06 NERR: N/A	Adhering/ None
Virgin Islands	1979	2002	N/A	CZM: JUN 03	Adhering/ None
Virginia	1986	2001	1991	CZM: MAY 06 NERR: MAR 07	Adhering/ None
Washington	1976	Conditional <sup>1</sup>	1980	CZM: SEP 04 NERR: SEP 04	Adhering/ None
Wisconsin	1978	2003	In Development	CZM: JUN 04	Adhering/ None

<sup>1</sup> All states were initially approved with specific conditions. These states are currently working to address the remaining conditions. For states that have received full approval, a date is provided.

## National Strategies

### OCRM's New Strategic Direction

Since OCRM's inception, many of NOAA's missions have been supported through partnerships with federal, state, territorial, tribal and local government agencies, regional and international institutions, other nations, universities, non-governmental organizations, and coastal- and ocean-related industries. Through the administration of the CZMA, OCRM contributes to three of NOAA's principal goals to:

- Protect, restore, and manage coastal and ocean resources through an ecosystem approach to management;

- Serve society's needs for information about weather and water; and
- **Support** the Nation's commerce with information for safe, efficient, and environmentally sound transportation.

OCRM recognizes that the complex but vital management of coastal and ocean resources requires strong commitment and sustained partnerships between federal, state, tribal, and local governments, universities, industries, and non-governmental organizations. Using a comprehensive approach on an ecosystem scale, we work through key partnership programs to address the array of management issues facing the U.S. coasts and oceans.

To better articulate our goals and specific roles and responsibilities, in 2007, OCRM launched a new strategic plan for 2007 to 2012. The strategic plan sets forth a newly defined mission "to lead the Nation's efforts to manage and conserve ocean and coastal resources." The new strategy focuses on three main goals:

- **Healthy Coastal and Ocean Resources:** Protect and restore coastal and ocean resources to sustain ecological functions, cultural heritage, and social and economic benefits.
- **Resilient Coastal Communities:** Foster resilient coastal communities that value and sustain healthy oceans and coasts.
- **Involved Coastal Citizens:** Improve people's ability and motivation to take actions that benefit coastal communities and ecosystems.

This new strategy charts the way for OCRM to continue to be a leader in our Nation's coastal and ocean management.

The Coastal Management Program (CMP) developed a strategic plan for 2007-2012. The plan guides the program in its mission "to ensure the conservation and responsible use of our Nation's coastal and ocean resources" during this critical period when a coastal visioning process and CZMA reauthorization effort are underway. Working in collaboration with the states, the following goals were established as the highest priorities for coastal management:

- **Protect, restore, and enhance** coastal ecosystems. This goal includes objectives to acquire, restore, and create key coastal habitats.
- Enable the development of **vibrant and resilient coastal communities**. This goal has objectives to improve state and local government capacity for decision-making; reduce the loss of life and property from coastal hazards; increase and enhance public access to the coast; and improve processes to redevelop port and waterfront areas.

Similarly, the National Estuarine Research Reserve System (NERRS) began following a new roadmap in 2006 with the adoption of a revised 2005-2010 Strategic Plan, which articulates how the reserve system will apply its capacity in stewardship, research, education and training to pressing coastal management challenges. Out of the wide range of topics, four rose to the top as deserving adequate and strategic investment for the national system:

- land use and population growth;
- water quality degradation;
- habitat loss and alteration; and
- changes in biological communities.

Reserve scientists, educators and land managers identified these topics as locally and nationally important as well as being appropriate to the mission of the system. Knowing more about these topics will improve the reserves' ability to protect and restore coastal watersheds and estuaries and empower individuals to make informed decisions.

The goals, objectives and strategies outlined in the Strategic Plan will guide and support the National Estuarine Research Reserve System in its nationwide efforts to improve coastal management, advance estuarine research, and educate current and future generations of coastal stewards.

The National Estuarine Research Reserve System also adopted a "Research and Monitoring Plan (2006-2011)" to guide system-wide research efforts for the next five years. The plan describes the current state of reserve system research and monitoring activities, identifies five research priority areas, and outlines strategies for achieving the system's research goals. The research priorities are Habitat and Ecosystem Coastal Processes; Anthropogenic Influences on Estuaries; Habitat Conservation and Restoration; Species Management; and Social Science and Economics.

The NERRS continued to expand its strategic responsibilities, particularly in research, monitoring and education. The Coastal Training Program adopted strategies and performance measures for programs for coastal decision makers. The reserve system has conducted two teacher needs assessments to determine the best ways to provide monitoring data and estuarine science curricula for K-12 science classes, and the Estuarine Reserves Division (ERD) is currently working with contractors to develop curriculum modules. The Graduate Research Fellowship Program, which has been funding up to two fellows for each reserve for 10 years, has now funded more than 250 fellows to conduct reserve-based research. Many of the fellows have gone on to work for NOAA and other federal agencies, and six are currently working for reserves, including one manager. In 2007, the reserve system partnered with the NOAA Climate Office and the Coastal Services Center to fund five graduate fellows specifically to conduct social science research based in reserves and their communities.

OCRM will also continue mapping our collective progress through regular program reviews and evaluations, policy reviews, and the careful application and use of performance measures. OCRM developed the CZMA Performance Measurement System to assist with tracking and reporting key information to Congress, the Federal Office of Management and Budget, the Department of Commerce/NOAA, and stakeholders. OCRM's Coastal Programs Division led a pilot phase in conjunction with state programs in 2004-2005, which guided the selection of draft performance measures for the National Coastal Management Program. The Coastal Programs Division updated and finalized these measures in 2007. The state coastal programs are reporting information on the following CZMA goals in three phases:

- **Phase 1:** Public Access and Government Coordination, 2006 (completed);
- **Phase 2:** Water Quality and Habitat, 2007; and
- **Phase 3:** Coastal Hazards and Community Development, 2008.

Over time, this information will not only help us track our successes; it will enhance our ability to respond to state needs and improve our programs accordingly. The NERR System has implemented performance measures to hold the system as well as each reserve accountable for meeting targets for conservation, land acquisition, as well as education and outreach, monitoring and the coastal training program.

### ***Major Program Review***

As a complement to new strategic direction, the National Estuarine Research Reserve System marked ten years of the System-Wide Monitoring Program with the 2006 publication *10<sup>th</sup> Anniversary Report on the System-Wide Monitoring Program (SWMP) Data Applications: 1995-2005* (available online at [www.nerrs.noaa.gov/Monitoring/report.html](http://www.nerrs.noaa.gov/Monitoring/report.html)), the launch of a real-time data-sharing network, and a programmatic review.

The SWMP network began providing real-time weather and water quality observations in 2006 in support of the burgeoning Integrated Ocean Observing System. Data from SWMP are now updated regularly on websites of the National Weather Service's Hydrometeorological Automated Data System and the National Data Buoy Center. In addition, reserves in the Pacific Northwest teamed with the Northwest Association of Networked Ocean Observing Systems and the Pacific Northwest Shellfish Growers Association to develop a web site using SWMP observations so commercial shellfish farmers can monitor water quality conditions for potential problems with their stock.

The reserve system also began the second and third phases of the SWMP, establishing protocols for biological monitoring of emergent and submerged aquatic vegetation, and for habitat mapping and land use change.

In September 2007, a seven-member Blue Ribbon Panel of experts in natural resource science and management conducted a programmatic review of SWMP. The reviewers evaluated the program's ability to support applications in coastal resource management, research and education, as well as its integration with other national and regional monitoring programs. The panel is expected to provide recommendations for improvement and comment on the NERRS' vision for growth of the monitoring program.

### ***Integration Activities***

In 2007, OCRM helped tackle a unique project requested by the Office of Management and Budget (OMB). In OMB's response to the President's FY 08 budget (aka, OMB "passback"), OMB called for NOAA to identify and develop improvements that would better integrate its coastal programs, specifically Sea Grant, OCRM, Coastal Services Center, and National Centers for Coastal Ocean Science programs. As part of this effort, OMB asked NOAA to do three things: pick one to three priority challenges to focus on for increased integration and strategic planning and budget analysis, and for which there would be measures to gauge performance; create a structure that would drive coordination, yet not create new unwieldy structure or bureaucracy; and capitalize on existing activities.

OCRM led NOAA's response to this task and established an integration workgroup with representatives from each of the four offices. This workgroup developed and assembled several products that were transmitted to OMB in September 2007. The team's response included process improvements and institutional mechanisms to facilitate and ensure improved integration of coastal activities among the offices. These improvements include both near-term actions and longer-term considerations, such as:

- An analysis of the offices' strategic plans and budgets.
- A hazard resilience logic model and budget analysis to guide the offices' activities and investments, and to clarify roles and responsibilities, identify existing and potential measures to gauge progress toward meeting identified outcomes.
- A draft land use/coastal development logic model that the working group will finalize in early FY 08.

When implemented, these proposed activities will enhance NOAA's ability to respond to and meet customer needs while providing overall gains in efficiency. For further details, see Appendix C.

### ***Visioning***

Nowhere is new programmatic growth and improvement for OCRM more anxiously anticipated than through the "visioning process"—an initiative designed in partnership with the Coastal States Organization (CSO) to envision the future of coastal management. Since this visioning process is largely forward-looking, please see the Challenges and Looking Forward section of this report for more information.

## ***Federal Consistency and Energy***

The CZMA strikes a balance between the need to conserve coastal resources, and the need to provide for development, recreation, and other priority uses of the coastal zone. The Act establishes national coastal policy and authorizes states and territories to be the primary authority for determining how best to achieve this balance through the coastal states' NOAA-approved management programs; the Act requires that federally supported coastal zone management programs give priority consideration to coastal dependent activities that are of national interest, e.g., siting of energy facilities, national defense, and ports.

Under the Act, a state's primary ability to review federal actions is through Section 307, which is commonly referred to as the federal consistency provision. Through federal consistency, the Act requires that federal agency activities be consistent to the maximum extent practicable with the enforceable policies of state coastal management programs approved by OCRM. Activities by non-federal applicants carried out under federal authorizations and funding must be fully consistent with the enforceable policies of coastal management programs as well. See Appendix A for a summary of major federal consistency actions in 2006-2007.

### ***Consistency Appeals***

States concur with approximately 93-95 percent of all the federal actions that they review, although state reviews and negotiations often result in project modifications. State objections may be appealed to the Secretary of Commerce. During the 2006-2007 biennium, eight appeals of state CZMA objections were filed with the Secretary of Commerce. The Mirant-Kendall (Massachusetts), Boyer Towing (Alaska), and Bureau of Indian Affairs (California) appeals were withdrawn by the appellant. NOAA dismissed the Ammerall (New York) appeal for good cause on procedural grounds, upholding the state objection. An appeal for a small project in New York (Susan Williams) is pending. And three appeals for liquefied natural gas (LNG) storage facilities and waterway dredging associated with those projects were filed with the Secretary and are pending: AES Sparrows Point LNG (Maryland) and Weavers Cove LNG and Mill River Pipeline (Massachusetts).

In addition, in 2007, the U.S. District Court remanded the Secretary of Commerce's 2004 decision to override Connecticut's objection to the proposed Islander East natural gas pipeline to the Secretary for further consideration. The District Court found that: (1) conclusions found in the Secretary's decision were not supported by evidence in the record of the CZMA appeal particularly in regards to the alleged temporal impacts on shellfisheries; (2) the Secretary did not adequately consider whether reasonable alternatives existed that would have allowed the proposed pipeline to be located adjacent to an existing pipeline; and (3) certain inadequacies in meeting the notice and comment requirements for CZMA appeals occurred. The Secretary is currently considering these issues on remand.

### ***Interstate Consistency Reviews***

Federal consistency regulations authorize states to review federal activities occurring in other states which may have reasonably foreseeable effects within their states. States must request approval from OCRM to exercise this authority. Requests for OCRM approval must describe the activities and areas to be reviewed, and demonstrate that activities within those areas may have reasonably foreseeable effects. During 2006-2007, interstate consistency review authority was authorized in discreet geographic areas for New York for certain activities in Connecticut; for Connecticut for activities in New York, Rhode Island, and Massachusetts; and for the Commonwealth of Pennsylvania for activities occurring in Ohio.

### ***Administering OCRM's Consistency Responsibilities***

Two OCRM full-time federal employees are dedicated to meeting our responsibility to administer federal consistency provisions. The Office receives frequent inquiries from federal agencies, state agencies, and federal permit and license applicants, industry, NGOs, tribes, Congress and the public regarding the application of federal consistency provisions. OCRM reviews and determines changes to state policies as well as state requests to review activities that the state has not previously identified for review.

In 2006, OCRM updated the website to include a wide range of federal consistency information, including an overview, rulemakings, links to applicable statutory provisions and regulations, federal and state agency contacts, and information related to appeals to the Secretary of Commerce. See [coastalmanagement.noaa.gov/consistency/welcome.html](http://coastalmanagement.noaa.gov/consistency/welcome.html).

In addition, OCRM held one federal consistency workshop during this biennium and contracted logistical support for additional workshops in 2008.

### ***Recent Developments - Energy***

Following the enactment of the *Energy Policy Act of 2005*, OCRM promulgated revised federal consistency regulations in January 2006. OCRM has also seen a substantial increase in the number of proposed energy projects, particularly onshore and offshore Liquefied Natural Gas (LNG) terminals and hydrokinetic (wave, tidal and current) energy proposals. For example, more than 40 LNG projects have either been proposed or resulted in actual applications for licenses from the Federal Energy Regulatory Commission (for onshore LNG) or Maritime Administration/U.S. Coast Guard (offshore LNG). The number and complexity of these projects have challenged the resources and expertise that NOAA and states have to review these proposals.

Most states had either not reviewed an LNG project before or at least not in the past 30 years. In addition, new energy technologies such as hydrokinetic, offshore wind, and ocean thermal energy conversion are being proposed in or near state waters. The potential impacts of these technologies are often not known and there is a growing need for a more regional ocean governing regime to better manage the location and impacts of these proposals in conjunction with other uses and resources of the coastal and ocean areas. For more information, see [coastalmanagement.noaa.gov/ene\\_gov.html](http://coastalmanagement.noaa.gov/ene_gov.html)

### ***Section 1465a Funds***

OCRM issued no new loans under this section during the biennium.

## ***Summary of Regulations***

On January 5, 2006, OCRM published a Final Rule in the *Federal Register* (71 Fed. Reg. 787-831 (January 5, 2006)) making changes to CZMA federal consistency provisions. The rule changes include modified provisions that OCRM originally proposed in 2003. The Office crafted the modifications in response to two items: the 2001 Report of the National Energy Policy Development Group and amendments to the Coastal Zone Management Act in the *Energy Policy Act of 2005*.

Additional changes to federal consistency regulations in the nature of technical corrections were published in December 2006. Please see OCRM's federal consistency web page noted above for more information.

## ***Summary of Legislation***

During this biennium, the Administration has not made any recommendations for additional legislation in order to achieve the objectives of the CZMA. However, as reported elsewhere in this report, OCRM has undertaken the Envisioning the Future of Coastal Management effort in partnership with the CSO. The goal of this process was to envision the future of coastal and ocean management in such areas as stewardship, innovation and implementation. For more information, please see the Challenges and Looking Forward section of this report.

## ***Funding***

In FY06, OCRM awarded \$72.7 million to the 34 state and territory coastal management programs to support implementation of state coastal management and coastal nonpoint programs. The National Estuarine Research Reserves (NERRS) received more than \$26 million to operate and manage the 27 reserves and the Cooperative Institute for Coastal and Estuarine Technology (CICEET) received \$6.7 million for technology development projects. The Coastal and Estuarine Land Conservation Program

(CELCP) provided more than \$36 million to 31 grant recipients to protect coastal and estuarine habitats.

In FY 07, OCRM distributed nearly \$66 million to state coastal programs. We provided National Estuarine Research Reserves with \$25.7 million and CICEET with \$6.6 million to support innovative research and the application of new environmental technologies and techniques. NOAA's FY 07 Spend Plan provided \$27.5 million for CELCP. OCRM provided funding for 17 CELCP projects in FY07. For more on CELCP and CICEET, see the Challenges and Looking Forward section of this report.

Table 2 outlines funding provided by NOAA to various coastal programs as well as funding granted to the National Estuarine Research Reserves (NERRS) during the past biennium. States and territories are presented alphabetically.

Table 2. FY 2006-2007 funding for coastal programs and estuarine research reserves.

State or Territory	Coastal Zone Management Funding						Estuarine Research Reserve Funding				State Total	
	Program Administration		Program Enhancement		Coastal Nonpoint		NERRS Program Funding		NERRS Acquisition & Construction			
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Alabama	1,382,000	1,295,000	104,000	104,000	70,000	0	600,000	580,000	0	1,998,200	6,133,200	1,399,000
Alaska	2,080,000	1,967,000	536,000	536,000	102,000	0	600,000	580,000	0	197,302	6,598,302	2,503,000
American Samoa	842,000	783,000	76,000	76,000	82,000	0	0	0	0	0	1,859,000	859,000
California	2,080,000	1,967,000	536,000	536,000	187,000	0	1,785,000	1,734,000	365,246	1,027,197	10,217,443	2,503,000
Connecticut	1,998,000	1,874,000	177,000	177,000	95,000	0	0	0	0	0	4,321,000	2,051,000
Delaware	1,309,000	1,226,000	101,000	101,000	87,000	0	510,000	491,000	0	250,000	4,075,000	1,327,000
Florida	2,080,000	1,967,000	536,000	536,000	102,000	0	1,800,000	1,740,000	335,305	0	9,096,305	2,503,000
Georgia	2,080,000	1,967,000	270,000	270,000	70,000	0	600,000	580,000	0	0	5,837,000	2,237,000
Guam	866,000	807,000	77,000	77,000	70,000	0	0	0	0	0	1,897,000	884,000
Hawai'i	1,969,000	1,847,000	174,000	174,000	70,000	0	0	0	0	0	4,234,000	2,021,000
Illinois	0	0	0	0	0	0	0	0	0	0	0	0
Indiana	1,044,000	976,000	86,000	86,000	70,000	0	0	0	0	0	2,262,000	1,062,000
Louisiana	2,080,000	1,967,000	536,000	536,000	102,000	0	0	0	0	0	5,221,000	2,503,000
Maine	2,080,000	1,967,000	409,000	409,000	173,000	0	695,000	615,000	0	28,000	6,376,000	2,376,000
Maryland	2,080,000	1,967,000	521,000	521,000	187,000	0	510,000	580,000	0	0	6,366,000	2,488,000
Massachusetts	2,080,000	1,967,000	413,000	413,000	174,000	0	600,000	580,000	0	0	6,227,000	2,380,000
Michigan	2,080,000	1,967,000	536,000	536,000	102,000	0	0	0	0	0	5,221,000	2,503,000



State or Territory	Coastal Zone Management Funding						Estuarine Research Reserve Funding				State Total		
	Program Administration		Program Enhancement		Coastal Nonpoint		NERRS Program Funding		NERRS Acquisition & Construction				
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	
Minnesota	955,000	893,000	82,000	82,000	81,000	0	0	0	0	0	0	2,093,000	975,000
Mississippi	1,130,000	1,057,000	91,000	91,000	70,000	0	571,090	611,090	0	500,000	0	4,121,180	1,148,000
New Hampshire	972,000	906,000	83,000	83,000	84,000	0	627,827	580,000	0	0	0	3,335,827	989,000
New Jersey	2,080,000	1,967,000	536,000	536,000	102,000	0	600,000	600,000	0	50,000	0	6,471,000	2,503,000
New York	2,080,000	1,967,000	536,000	536,000	102,000	0	600,000	580,000	369,000	0	0	6,770,000	2,503,000
North Carolina	2,080,000	1,967,000	392,000	392,000	170,000	0	600,000	580,000	231,180	0	0	6,412,180	2,359,000
Northern Mariana Islands	905,000	845,000	80,000	80,000	83,000	0	0	0	0	0	0	1,993,000	925,000
Ohio	2,038,000	1,899,000	180,000	180,000	70,000	0	600,000	580,000	0	0	0	5,547,000	2,079,000
Oregon	2,080,000	1,967,000	216,000	216,000	70,000	0	600,000	580,000	90,000	251,500	0	6,070,500	2,183,000
Pennsylvania	1,961,000	1,841,000	172,000	172,000	94,000	0	0	0	0	0	0	4,240,000	2,013,000
Puerto Rico	2,080,000	1,967,000	215,000	215,000	103,000	0	600,000	580,000	0	0	0	5,760,000	2,182,000
Rhode Island	1,413,000	1,323,000	106,000	106,000	88,000	0	630,000	580,000	0	0	0	4,246,000	1,429,000
South Carolina	2,080,000	1,967,000	349,000	349,000	76,000	0	1,546,000	1,506,000	2,879,972	606,650	0	11,359,622	2,316,000
Texas	2,080,000	1,967,000	536,000	536,000	102,000	0	505,000	524,000	0	3,887,151	0	10,137,151	2,503,000
U.S. Virgin Islands	896,000	835,000	79,000	79,000	83,000	0	0	0	0	0	0	1,972,000	914,000
Virginia	2,080,000	1,967,000	536,000	536,000	187,000	0	600,000	580,000	0	0	0	6,486,000	2,503,000

State or Territory	Coastal Zone Management Funding						Estuarine Research Reserve Funding				State Total	
	Program Administration		Program Enhancement		Coastal Nonpoint		NERRS Program Funding		NERRS Acquisition & Construction			
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Washington	2,080,000	1,967,000	532,000	532,000	102,000	0	630,000	580,000	395,000	495,000	7,313,000	2,499,000
Wisconsin	2,080,000	1,967,000	191,000	191,000	98,000	0	0	0	0	0	4,527,000	2,158,000
<b>TOTALS</b>	<b>59,200,000</b>	<b>55,780,000</b>	<b>10,000,000</b>	<b>10,000,000</b>	<b>3,508,000</b>	<b>0</b>	<b>16,409,917</b>	<b>15,941,090</b>	<b>4,665,703</b>	<b>9,291,000</b>	<b>184,795,710</b>	<b>65,784,014</b>

## Regional Perspectives

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In each of the following sections, we present notable activities and accomplishments for the 2006-2007 biennium. Stories are organized by geographic region as follows:

**New England** (Maine, New Hampshire, Massachusetts, Connecticut, and Rhode Island)

**Mid Atlantic** (New York, New Jersey, Delaware, Maryland, and Virginia)

**Southeast and Caribbean** (North Carolina, South Carolina, Georgia, Florida, Puerto Rico, and U.S. Virgin Islands)

**Gulf of Mexico** (Florida, Alabama, Louisiana, and Texas)

**Great Lakes** (Pennsylvania, Ohio, Indiana, Wisconsin, and Minnesota)

**West Coast and Alaska** (California, Oregon, Washington, and Alaska)

**Pacific Islands** (Hawai'i, Guam, Commonwealth of the Northern Mariana Islands, and American Samoa)

Each section includes a discussion of regional planning and coordination mechanisms the Coastal Management Programs (CMP) and National Estuarine Research Reserves (NERR) are involved with along with a description of some of their many research and training efforts. A summary table for each region notes key program accomplishments during this biennium as well as the status of the CMPs and NERRs based on recent evaluations. Case studies provide further detail about select program accomplishments to highlight the variety of successes the programs have achieved over the past two years. Appendix D details the state leadership for each program.

### *New England*

Below are just a few of the many highlights from the state Coastal Management Programs (CMPs) and the National Estuarine Research Reserves (NERRs) in the New England Region.

#### *Working Collaboratively Around the Gulf of Maine*

For 18 years, the Gulf of Maine Council (Council) on the Marine Environment has convened U.S. states, Canadian provinces, federal agencies, industry, and non-governmental organizations to address priority issues that require a regional response in the shared Gulf of Maine ecosystem. The **Maine, New Hampshire and Massachusetts Coastal Management Programs** bordering the Gulf of Maine, as well as OCRM, have had active roles in the Council's work since its inception in 1989. Staff from state coastal management programs actively participate in the Working Group which guides the Council's activities as well as other Council subcommittees to promote a strategic, regional approach for addressing key issues, such as habitat restoration and Gulf of Maine mapping. State coastal management programs also provide key funding to carry out Council action items.

The Council recently revised and released a 2006-2011 Action Plan. The goals focus Council efforts in the following areas:

- Coastal and marine habitats are in a healthy, productive and resilient condition;
- Environmental conditions in the Gulf of Maine support ecosystem and human health; and
- Gulf of Maine coastal communities are vibrant and have marine-dependent industries that are healthy and globally competitive.

OCRM worked with the Council Working Group to employ a logic model process, focusing future efforts on specific planned activities that contribute to long-term changes in the ecosystem. This process will enable the Council to track its progress, maintain accountability and communicate accomplishments to member jurisdictions and citizens of the Gulf of Maine. For more information, please visit [www.gulfofmaine.org](http://www.gulfofmaine.org).

***Northeast Regional Ocean Council (NROC) Embarks on Regional Ocean Management***

As a result of Rhode Island Governor Carcieri's leadership, the New England Governors and Eastern Canadian Premiers signed Oceans Resolution 29 in August 2005, creating a U.S. Northeast Regional Ocean Council (NROC). Per the resolution, NROC facilitates coordinated, collaborative regional goals and priorities while improving responses to regional issues. NROC also communicates regional needs at the U.S. level and addresses issues of national importance in the Northeast regarding the implementation of the U.S. Ocean Action Plan.

State coastal management programs from Maine to Connecticut have been active participants in creating this new Regional Ocean Council, many serving as their state's lead representative to the body. To date, OCRM has also functioned as the federal lead for the design and implementation of NROC. NROC held its first Ocean Congress in May 2007 where representatives discussed four priority issue areas: ocean energy siting and planning, maritime security, ocean and coastal ecosystem health, and coastal hazard response and resiliency. NROC members agreed these pressing issues could be more effectively addressed through a collaborative, regional body then individually, state by state.

Since the Congress, NROC state representatives produced a report to the New England Governors and Eastern Canadian Premiers, outlining the four key issue areas and preliminary ideas for regional responses to be pursued by NROC and other regional partners. The Action Plans will detail how priority issues will be addressed, who will be involved, and in what capacity. One state and federal agency team will champion each issue to encourage leadership and accountability, much like the model set by the Gulf of Mexico Alliance.

***Research and Training Around the New England Region***

State Coastal Management Programs (CMP) and National Estuarine Research Reserves (NERRS) have undertaken a variety of research and training over the past two years to further CZMA goals in the region. Research has included water quality monitoring and benthic mapping among other topics. Training workshops offered have helped local decision makers to improve small dock and pier management, implement low impact development practices, and revitalize urban waterfronts, as well as address other issues.

For example, the **New Hampshire Coastal Management Program** financially supported the Great Bay Coast Watch to carry out their volunteer monitoring program at 16 sites throughout coastal New Hampshire. For 16 years, Coast Watch has utilized volunteers to measure salinity, dissolved oxygen, transparency, temperature, fecal *coliform* and toxic phytoplankton blooms. The monitoring program provides important information about the health of New Hampshire's coastal waters. The data collected is entered into the New Hampshire Department of Environmental Service's One Stop Reporting and Information Access Program database for use by state agencies and local groups in management decisions and to identify problem areas to target for improvements.

Building on its experience collecting and sharing digital data, maps and images, the **Wells National Estuarine Research Reserve** was selected as the Mapping and Technology Service Center for southern Maine by the Maine Coast Protection Initiative. The reserve's new role as a GIS Service Center expands its ability to provide maps, support and training to those conserving land from Kittery to Cape Elizabeth. In 2006 the reserve offered the first workshop in its new role: GIS Mapping for Land Trusts to show members of the southern Maine land conservation community how to use free software to make their own maps from data bundled and shared by the Wells Reserve. The workshop attracted participants from six conservation organizations in the service region. Other workshops concentrated on using global positioning systems (GPS), aerial photographs and user-defined data layers. For nearly a decade, the Wells Reserve geographic information systems (GIS) center has been collecting and sharing digital parcel maps, aerial photographs, satellite images, conserved lands maps, rare wildlife and plant occurrence data and other data that make maps useful for coastal management activities. The Reserve has produced hundreds of maps at the request of scientists, citizens, resource managers, students and other coastal decision-makers throughout southern Maine.

In May 2007, Connecticut's Coastal Management Program sponsored a workshop on Residential Dock and Pier Management. The growing number of small residential docks in Connecticut has been a very hot issue in recent years. Many coastal residents are concerned with the proliferation of docks and the aesthetic and environmental impacts they could have to their communities. However, few local decision makers and state regulators had the information they needed to effectively minimize these and other impacts from docks. Using training materials OCRM developed with NOAA's National Centers for Coastal and Ocean Science (NCCOS), the day-long workshop brought together 90 state regulators, local harbor masters, local planners, consultants, contractors and private citizens to discuss small dock and pier management. A suite of federal, state and local speakers provided participants with a better understanding of the impacts from residential docks and the management techniques and best management practices that can be used to minimize these impacts.

Table 3. Major Accomplishments of Programs and Reserves in the New England Region

Program	Major Accomplishments (not highlighted below)
Connecticut	
CMP	Completed Coastal Shoreline Statistic Project to quantify length and ownership of the state's coastal shoreline according to seven shoreline types. This analysis had not been performed since 1980 and will provide critical information to aid coastal management decisions.
Maine	
CMP	Completed a Bay Management Study to address ecosystem-based management issues of the nearshore environment.
NERR - Wells	Completed a revised management plan that establishes new goals, objectives and strategies for the next five years and incorporates an additional 359 acres into the reserve boundary.  Completed the Wells Reserve Site Profile that characterizes the natural and cultural setting of the reserve and describes management priorities and restoration efforts.
Massachusetts	
CMP	Led the Massachusetts Coastal Hazards Commission which released its final report, <i>Preparing for the Storm: Recommendations for Management of Risk from Coastal Hazards in Massachusetts</i> .
NERR - Waquoit Bay	Completed a revised management plan that establishes new goals, objectives and strategies for the next five years and incorporates an additional 102 acres into the reserve boundary.
New Hampshire	
CMP	Launched a successful dog waste management outreach campaign and grant program to address identified water quality impairment to Great Bay.
NERR - Great Bay	Completed a revised management plan that establishes new goals, objectives and strategies for the next five years and incorporates an additional 3,883 acres of estuarine lands and waters into the reserve boundary.  Great Bay Partnership won a second Environmental Merit Award from EPA in 2007 for land conservation efforts, including acquisition for the reserve.
Rhode Island	
CMP	Comprehensively revised its Submerged Aquatic Vegetation (SAV) regulations to better protect eelgrass beds from shading and disturbances.  Updated its marina regulations to establish new standards for marina expansions, minimizing potential environmental, navigation and aesthetic impacts.

NERR - Narragansett Bay	Updated 1996 eelgrass mapping project.
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***Rhode Island Promotes Urban Waterfront Revitalization through its Metro Bay Special Area Management Plan (SAMP)***

The Metro Bay area, composed of the cities of Cranston, East Providence, Providence and Pawtucket at the northern end of Narragansett Bay, is a former industrial hub for the region. However, over the years, the waterfront area along this region has become outdated and underutilized. With the help of the **Rhode Island Coastal Management Program**, the cities are now acting to make the region a more appealing place to live and work by improving the economic, social and environmental resources of the working waterfront; attracting major developers with more predictable and efficient permitting; and providing recreation and access to the water.

The Metro Bay SAMP established an Urban Coastal Greenway (UCG) policy, a new regulatory approach for coastal vegetative buffers in the urbanized environment of northern Narragansett Bay. The UCG provides a mechanism to redevelop the urban waterfront of the Metro Bay region in a way that integrates economic development with expanded public access along and to the shoreline, as well as the management, protection and restoration of valuable coastal habitats. For example, the policy establishes buffer width, vegetation and public access standards, and requires low impact development techniques to manage storm water. However, the UCG also provides for increased flexibility compared to Rhode Island's standard buffer regulations. It established four different urban greenway zones (residential zone, area of particular concern zone, inner harbor and river zone, and development zone). Each zone has its own buffer standards. In addition, the UCG allows development to reduce the greenway width in return for site or coastal resource enhancements such as improved public access or habitat conservation. The policy will allow for a more predictable, flexible process for developers wanting to redevelop these former industrial areas while enhancing public access and protecting coastal resources. For additional information on the Metro Bay SAMP and the Urban Coastal Greenway policy visit [www.crmc.state.ri.us/samp/metrobay.html](http://www.crmc.state.ri.us/samp/metrobay.html).

***Massachusetts Makes an Impact on Low Impact Development***

The Massachusetts Coastal Management Program coordinates an innovative public-private partnership, "The Low Impact Development (LID) Working Group" to promote development techniques that minimize polluted runoff. The Working Group, now with more than 100 members, continues to grow and includes representatives from: local, state, and federal agencies; conservation organizations and watershed associations; private law, planning and engineering firms; developers and landscape architects; regional planning agencies; universities; the Massachusetts Home Builders Association; and the Massachusetts Association of Realtors.

The LID collaborative has enabled members to pool resources to address LID issues more effectively. The group has also been very successful in connecting those with funding and expertise to those with implementation strategies. As one of its first tasks, the Working Group developed a "LID Wish List," consisting of projects, tools and resources that would be useful in furthering LID efforts thorough the state. They also identified what was already being done to address these needs and what remained to be done. This simple effort had big dividends. Within months, LID Working Group members were applying for (and receiving) grants to complete projects to address the gaps they had identified.

The collaboration and communication facilitated by the LID Working Group has led to many other successes as well. The Working Group has developed extensive guidance materials for those interested in adopting LID ordinances and implementing LID projects. In large part due to the LID Working Groups' efforts, dozens of communities have adopted LID ordinances. Numerous LID projects, many which received national awards, have also been completed throughout the coastal zone. For more information about the LID Working Group, see [www.mass.gov/czm/smartgrowth/lid/index.htm](http://www.mass.gov/czm/smartgrowth/lid/index.htm).

***All Connecticut Coastal Waters Deemed "No Discharge Areas"***

During a ceremony in Norwalk, CT, July 2007, the Connecticut Governor announced that all of Connecticut's Long Island Sound waters are now designated "No Discharge Areas" (NDAs), making it illegal for boaters to discharge sewage from vessels within the NDA. The announcement was the culmination of a multi-year process, spearheaded by the Connecticut Coastal Management Program to improve water quality, by addressing cumulative impacts of sewage discharge from boating activities in the Sound. The NDA designation will eliminate the release of sewage from boats, thus reducing human fecal waste discharge and nutrient loading to the Sound. The NDA will also reduce threats from bacterial pathogens in swimming areas, shellfish beds and other environmentally sensitive aquatic habitats.

***Wells Reserve Dedicates New Dorm for Visiting Scientists***

Rep. Tom Allen (D-ME) and Timothy R.E. Keeney, Deputy Assistant Secretary of Commerce for Oceans and Atmosphere, were among the national, state and local officials celebrating the opening of Alheim Commons, the new 20-bed lodging facility for visiting scientists, educators and students, at the Wells National Estuarine Research Reserve in June 2006. The ceremony also celebrated the recent acquisition of a 2.5-acre land parcel that preserves the view of the reserve and coast from the reserve headquarters on the Laudholm Farm.

***Wells Reserve Hosts Tour of Best Stormwater Systems***

Wells National Estuarine Research Reserve in Maine partnered with the Spruce Creek Watershed Association and the town of Kittery, Maine, to sponsor a tour of state-of-the-art stormwater systems for regional business owners and local government officials. The tour visited sites that use a variety of effective technologies to control runoff pollution of local rivers and bays. Local businesses improved stormwater control by installing larger drainage systems, diverting runoff through a series of holding ponds and a buffer area at one parking lot; building a soccer field with a drainage system that diverts nutrient-laden water into a man-made marsh to remove nutrients; a parking lot with porous asphalt to reduce surface runoff; and a restaurant parking lot that replaced its asphalt surface with porous gravel. The director of the Stormwater Center at the University of New Hampshire joined the tour to explain the porous asphalt feature to the participants, who included regional business owners and officials. Tour participants walked away with a better understanding of stormwater control systems and how they could be applied on their properties to reduce polluted runoff.

***Great Bay Reserve Opens New Education Facility***

Conrad C. Lautenbacher, Jr., Under Secretary of Commerce for Oceans and Atmosphere, joined Sen. Judd Gregg (R-NH) and other state and local officials and volunteers to celebrate the dedication of the Hugh Gregg Coastal Conservation Center at the Great Bay National Estuarine Research Reserve in June 2006. The 5,000-square foot center, named for Sen. Gregg's father, a former New Hampshire governor, provides a central meeting space for up to 100 people, exhibit space featuring upland habitats of Great Bay, and a classroom-laboratory. The building incorporates several sustainable design features, including passive heating and cooling, and two composting toilets in a small attached building. Both levels will be fully accessible. Local products have been used in construction wherever possible. The new center is located adjacent to the Sandy Point Center at the end of a circular drive.

## ***Mid-Atlantic***

Below are just a few of the many highlights from the state Coastal Management Programs and the National Estuarine Research Reserves in the Mid-Atlantic Region.

### **DAWN - Delmarva Atlantic Watershed Network**

In 1996, the Maryland Coastal Bays Program was officially established as one of EPA's National Estuary Programs. Maryland's Atlantic Coastal Bays are a popular tourist destination located within Worcester County, home to Ocean City. The **Maryland Coastal Program** has provided extensive financial and technical support to the Maryland Coastal Bays Foundation implement the approved Coastal Bays Comprehensive Conservation and Management Plan. To facilitate broader regional coordination in a four county area crossing the eastern shores of three Atlantic states - Delaware, Maryland, and Virginia - the Delmarva Atlantic Watershed Network (DAWN) was formed in 2005. With a significant \$60,000 investment in 2007, the Maryland Coastal Management Program has helped DAWN bring together key local decision-makers to shape future growth patterns in their communities by focusing on technology transfer, outreach and education, and improved policies and planning. Using advanced software called "Community Viz", partners are constructing "build out scenarios," which consider factors such as zoning, water and sewer infrastructure, agricultural lands and uses, transportation, and natural resources to forecasts and options for future growth and development patterns. The partners are committed to sharing and using technologies to reach agreement on managing coastal resources in a more collaborative manner. **Coastal program managers and leaders from Delaware and Virginia** have been active participants in DAWN workshops. For additional information, see [thedelmarvanetwork.org/pages/about1.html](http://thedelmarvanetwork.org/pages/about1.html).

### ***Research and Training Around the North Atlantic-Mid-Atlantic Region***

State CMPs and NERRs have undertaken a variety of research and training over the past two years to further CZMA goals in the region. Research has involved studying the impacts of invasive species and fringe marsh restoration techniques. For example, in 2006, the **Virginia Coastal Management Program** funded applied research to assess the impacts of the common reed (*Phragmites australis*) on rare birds in high marsh environments. The results indicated that native high marsh environments unaffected by common reed harbor both a greater diversity and a greater abundance of rare birds. Most strikingly, rare birds were virtually never found in areas impacted by common reed during the research period, and rare birds only inhabited areas with well connected expanses of native high marsh vegetation. The research results are being used to eliminate common reed in areas where its eradication should result in immediate habitat use by rare and threatened species.

The state CMPs and NERRs have also been very engaged in providing needed training and technical assistance to improve management of coastal resources and uses across the region. Training offered over the last two years has covered a variety of pressing issues including shoreline erosion, waterfront revitalization, public access, and many more.

For example, **New York's Coastal Management Program** developed a Community Seminar Series to provide guidance to community leaders on the planning, design, and implementation of projects funded through the New York State Environmental Protection Fund Local Waterfront Revitalization Program (EPF LWRP) and the Brownfield Opportunity Areas Program (BOA). The seminars covered a range of topics, including: an overview of the LWRP process; how to develop and implement a vision; the role of consultants; using the adopted LWRP; grant administration/project management; and harbor management. Local government officials and representatives, civic and business leaders, community consultants, advisory committee members, and nonprofit organization leaders are all encouraged to attend the seminars. More than 150 people participated in the first two seminars, and the 2007-2008 seminars are expected to include more than 200 people representing 70 communities. As a result of these seminars, participants and communities have the tools and information to develop projects that will be successful, and to effectively implement projects and manage grants to achieve



the desired results. More information on the seminar series is available at [www.esf.edu/outreach/nyseminars/](http://www.esf.edu/outreach/nyseminars/).

The Maryland and Virginia Coastal Management Programs and the Maryland and Virginia Chesapeake Bay NERRs also teamed up to hold the first Living Shorelines Summit for the Chesapeake Bay region in December 2006. The Summit brought together over 180 participants—contractors, landowners, environmental groups, coastal resource managers, scientists and others—to learn and share information about "green" alternatives to shoreline protection.

Many people in the region were concerned about the increasing "hardening" of the Bay's shoreline as more rock revetments and bulkheads are installed to protect property from eroding shorelines. Natural shorelines such as marshes, beaches and mudflats provide important habitat for coastal species, including important commercial species. Continued shoreline hardening was destroying these critical natural habitats.

Discussions at the Summit focused on facilitating and promoting Living Shoreline techniques (vegetative planting coupled with low rock sills) as an alternative to shoreline hardening. Sessions included current research, site suitability and design methods, decision-making tools, state-specific regulations and policy, and education and outreach. As a result of the Summit, Living Shoreline partners throughout the region are now working together to address a list of scientific, policy, regulatory, management and educational actions that could be taken to help curb the growing shoreline hardening trend. More information on the Summit can be found on Virginia's Living Shorelines page at [www.deq.state.va.us/coastal/livingshore.html](http://www.deq.state.va.us/coastal/livingshore.html).

Table 4. Major Accomplishments of Programs and Reserves in the Mid-Atlantic Region

Program	Major Accomplishments (not highlighted below)
Delaware	
CMP	Collaboratively worked with the City of Wilmington to develop a comprehensive Special Area Management Plan for the revitalization of South Wilmington.
NERR - Delaware	In partnership with Delaware Department of Natural Resources and Environmental Control, took first place in the curriculum category of the National Association for Interpretation's awards for <i>Green Eggs and Sand: The Horseshoe Crab/Shorebird Education Project</i> .
Maryland	
CMP	Completed a preliminary assessment of the importance of engaging on ocean management issues, especially energy siting and sand management.
NERR - Chesapeake Bay	Completed a curriculum for teacher training that uses water quality data collected through SWMP.
New Jersey	
CMP	Established a clean marina program with nine certified marinas and over twenty marinas who have pledged their commitment to participating in the program.  Initiated a Hudson River Walkway strategic planning team to revitalize efforts to complete a contiguous public access way along the Hudson River waterfront.
NERR - Jacques Cousteau	Awarded new Graduate Research Fellowships for master's and doctoral students to study social science issues within NERRS beginning July 1, 2007.  Offered the first-ever on-line Coastal Training Program class twice during spring 2006 and three times in 2007.
New York	

CMP	Developed a monitoring process for approved Local Waterfront Revitalization Programs (LWRP) to evaluate their effectiveness and identify areas for improvement.  Created a multi-media package (video, guidebook and web based content) on "Watershed Plans: Protecting and Restoring Water Quality" that will be used to strengthen existing and grow new partnerships across the State to achieve State and local water quality goals.
NERR - Hudson River	Published a comprehensive "Ecological Profile of the Hudson River National Estuarine Research Reserve."
Virginia	
CMP	Expanded Coastal Geospatial Education and Mapping System which is now the state's most extensive GIS database covering both "green" (land) and "blue" (water) infrastructure, allowing agency collaboration that simplifies decisions by showing data from multiple agencies in one place.  Developed the Virginia Seaside Water Trail to build ecotourism infrastructure along the Eastern Shore. The trail system offers over 100 miles of paddling routes through the barrier island system.
NERR - Chesapeake Bay	Completed a curriculum for teacher training that uses water quality data collected through SWMP.

***New York Ocean and Great Lakes Ecosystem Conservation Act***

On August 9, 2006, the State passed the New York Ocean and Great Lakes Ecosystem Conservation Act, establishing a nine-member council that will coordinate programs and activities to help protect and restore the state's coastal ecosystems. To that end, the council has adopted an ecosystem-based management approach towards achieving the following goals: clean coastal waters and beaches, safe seafood, healthy marine life, vibrant coastal communities, and resilient coastlines. This landmark legislation provides a model for other states that are considering how to implement ecosystem-based management.

The New York Coastal Management Program has a significant role in carrying out the legislation's directives providing staff support for the council. The Deputy Secretary of State for Coastal Resources also serves as the council's executive director. The Coastal Management Program, in conjunction with other agencies on the council, must deliver a report to the Governor and State Legislature on how to implement ecosystem-based management across the State by November 2008. To meet this mandate, New York's Coastal Management Program provided a report to the council in September 2007 that detailed progress to date, proposed a framework for how to achieve the charge of the Act, and provided recommendations about the structure of the council, how the work of the agency and ecosystem-based programs can be strengthened to advance ecosystem-based management, and how the council can support the development of ecosystem-based management components. Visit [www.nyoglecc.org/](http://www.nyoglecc.org/) for more information.

***New Directions for Public Access in New Jersey***

The New Jersey Coastal Management Program published a proposal November 2006 that would repeal the existing Public Access to the Waterfront rule and replace it with a new Public Trust Rights rule. The new proposed rule strengthens the existing public access requirements and sets forth specific public access requirements for projects that receive Shore Protection Program or Green Acres (land acquisition) funding. In addition, a new special area rule is proposed that would protect tidal waterways and their shores and ensure public access to these lands is provided. (While outside of this biennium, the New Jersey Public Access rules were officially adopted on December 17, 2007.) Highlights of the proposal can be found on the Department's website at: [www.nj.gov/dep/cmp/access/pa\\_rule\\_highlights.pdf](http://www.nj.gov/dep/cmp/access/pa_rule_highlights.pdf).

To further promote public access within the state, the New Jersey Coastal Management Program also completed an interactive coastal access website ([www.state.nj.us/dep/cmp/access/](http://www.state.nj.us/dep/cmp/access/)) that provides a map of public access points, including information on facilities and fees for all of New Jersey's Atlantic Ocean beach access sites. Work is planned to expand this effort to include river and bay access sites.

### ***Managing Coastal Hazards and Sea Level Rise in Maryland***

Maryland's coast is particularly vulnerable to episodic and chronic hazards associated with shore erosion, coastal flooding, storm surge, and inundation. These hazards are driven and exacerbated by climate change, particularly sea level rise, which is occurring in the mid-Atlantic region at a rate nearly double the global average.

For the past several years, the **Maryland Coastal Management Program** has focused largely on climate change and sea level rise planning. In addition to providing personnel support, Maryland's coastal management funding has also supported collaborative research needed to assess the physical impact of coastal hazards and sea level rise and to identify ways to mitigate for associated impacts. Recent accomplishments include:

- Successfully advancing sea level rise and coastal hazard planning objectives through ongoing planning and policy initiatives;
- Making significant progress acquiring technology and data to support sea level rise and coastal hazard planning activities: completing historic shoreline position maps; a statewide calculation of historic erosion rates; a comprehensive inventory of shoreline features and conditions for Maryland's coast; and a sea level rise economic cost study;
- Completing sea level rise modeling for Worcester and Dorchester Counties, and pilot areas within Anne Arundel and St. Mary's Counties. High resolution topographic data for the majority of Maryland's coastal counties can help develop models that demonstrate the impact of gradual sea level rise inundation over time as well as impacts associated with increased storm surge from episodic flood events;
- Launching Shorelines Online ([www.shorelines.dnr.state.md.us/](http://www.shorelines.dnr.state.md.us/)), which centralizes information and data on coastal hazards management and sea level rise in Maryland; and
- Playing a key role in developing an Executive Order establishing a Commission on Climate Change to advise the Governor and Maryland's General Assembly on matters related to climate change which was signed by the governor on April 20, 2007. The Commission is developing a Plan of Action that will address both the drivers and consequences of climate change, particularly those associated with sea level rise and coastal hazards. Coastal Management Program staff are chairing and staffing the Adaptation and Response Working Group.

### ***Hudson River NERR Celebrates Three Times Over***

**Hudson River National Estuarine Research Reserve** in New York observed 2007 National Estuaries Day with a triple celebration in Staatsburg, NY. National Ocean Service Assistant Administrator John H. Dunnigan joined state officials, reserve partners, staff and volunteers to help the reserve celebrate its 25th anniversary and dedicate the Norrie Point Environmental Center, the reserve's new headquarters, built with more than \$1.3 million in NOAA grants. In addition, the New York Department of Environmental Conservation Commissioner Pete Grannis announced that the 1,722-acre Tivoli Bays component of the Hudson River reserve is the first state Natural Heritage Area in a new program designed to protect rare animals, plants and habitats in the state. The 4,838-acre Hudson River Reserve is in four components spread along 100 miles of the tidal Hudson River in New York State. NOAA's partner in the reserve is the New York Department of Environmental Conservation.

## ***Southeast and Caribbean***

Below are just a few of the many highlights from the state Coastal Management Programs and the National Estuarine Research Reserves in the Southeast and Caribbean Region.

### ***New Regional Alliance for the Southeast***

Recent regional efforts in the southeastern United States have resulted in an emerging alliance between the governors of **North Carolina, South Carolina, Georgia and Florida**. The governors and their appointees, established the Southeast Regional Coastal Alliance in 2007. The coastal management programs from all four states have been involved at varying levels in the establishment of this new alliance, and have been participating in the both the South Atlantic Alliance Executive Team and Steering Group to identify issues and priorities for the Alliance. The Alliance will complement existing regional arrangements, and will serve to regionally implement science-based actions to sustain coastal and ocean ecosystems, and provide a state partnership supported by federal and local governments. The current regional priorities for the alliance are: healthy ecosystems; working waterfronts; clean coastal and ocean waters; and disaster-resilient communities.

### ***Southeast Reserves Set Out to Work Regionally to Tackle Invasive Species***

Managers and core staff from the **Reserves in the Carolinas and Georgia** identified invasive species management as the most pressing regional issue during the first-ever region-wide conference at North Inlet-Winyah Bay Reserve in Georgetown, South Carolina, in August 2007. Reserve managers and coordinators for research, education, stewardship and coastal training programs, as well as some technical and support staff members, gathered to discuss the most pressing management issues and set priorities for research, education, stewardship and coastal training programs in the region.

During the three-day meeting, managers and coordinators examined three issues previously identified as critical in the southeastern U.S.: invasive species, shoreline change and responses, and habitat loss and restoration. The group agreed that invasive species management is an issue on which the reserves can demonstrate and measure progress and which they can address regionally across all the reserve mission sectors. While staff from the **Guana Tolomato Matanzas Reserve** in Florida was not able to attend the meeting, they plan to participate in the regional effort.

### ***Research and Training Around the Southeast and Caribbean***

State CMPs and NERRs have undertaken a variety of research and training over the past two years to further CZMA goals in the region. Research has included monitoring of invasive species, causes of marsh creek erosion, agricultural impacts on mangroves and stormwater management. The Southeast Region was involved in many training workshops with topics ranging from low impact development to marsh bird identification.

For example, the **North Carolina and Georgia Coastal Management Programs** both sponsored Low Impact Development (LID) workshops. The coastal areas of North Carolina and Georgia continue to see increased growth and development as more and more people want to enjoy the benefits of coastal living. However, if development is not done well, it can cause significant impacts to coastal resources and water quality—making the coast a less desirable place to live and work. Employing LID techniques helps preserve valuable natural areas and reduce water pollution. The LID trainings the coastal programs have sponsored have played an important role in educating local planners, developers and other decision makers about LID concepts and how they can be implemented during development and redevelopment projects. For example, the North Carolina workshop for Brunswick and New Hanover Counties—attended by over 90 people—brought in nationally recognized LID proponent Larry Coffman to train the counties in implementing their new draft LID ordinances. Mr. Coffman had previously worked with the counties to develop the ordinances through another North Carolina Coastal Management Program grant.

Recognizing that realtors play a critical role in educating prospective homeowners about coastal policies, regulations and best management practices, the **South Carolina Coastal Management Program** and **ACE Basin Reserve** developed a workshop specifically for real estate professionals. The four-hour course answers commonly asked questions regarding property in the coastal zone, including critical area permitting, wetland protection and alteration, storm water, septic systems, well-water supply and beachfront management. This course is accredited for continuing education credit for real estate professionals by the South Carolina Department of Labor, Licensing and Regulation. In 2006, the South Carolina Coastal Management Program presented four workshops for nearly 250 real estate professionals.

Three southeastern reserves also collaborated to present a three-day workshop on marsh birds at the **North Inlet-Winyah Bay Reserve** in May 2007. Co-sponsored by the **Grand Bay (Mississippi)** and **Ace Basin Reserves**, as well as the U.S. Geological Survey (USGS), the workshop was designed to train participants to identify all the common calls of secretive marsh birds, and how to use the National Marsh Bird Monitoring Protocol. The workshop included early morning and late afternoon field training, as well as afternoon classroom sessions and call identification quizzes. Marsh-dwelling waterbirds are difficult to survey because many species are inconspicuous, and their habitat is often inaccessible. Population sizes and trends for most species are largely unknown, but it is important to track the birds because they face numerous challenges including continued habitat loss and fragmentation, sea level rise eliminating coastal wetlands, and the influence of various marsh management practices. How they fare is an indicator of overall marshland quality.

Table 5. Major Accomplishments of Programs and Reserves in the Southeast and Caribbean Region

Program	Major Accomplishments (not highlighted below)
Florida	
CMP	See Gulf of Mexico Region for accomplishments and more in depth case study.
NERR - Guana/ Tolomato/ Matanzas	Environmental Educator awarded John Beakley Marine Science Educator of the Year award, presented by the Florida Marine Science Educators Association.
Georgia	
CMP	Adopted its first ever rules implementing the Coastal Marshlands Protection Act, providing for more stringent storm water management measures, a fifty-foot buffer on coastal marshlands, and limitations on effective impervious cover on upland project components.
NERR - Sapelo Island	Offered teacher training workshops throughout the year which incorporated educational resources, field based learning activities, and lecture sessions to enhance knowledge of estuarine systems and processes.  Celebrated its 30th anniversary in 2006.
North Carolina	
CMP	Awarded approximately \$140,000 in Coastal Nonpoint Source Program grants to seven local governments to improve storm water management by developing storm water management plans, ordinances, best management practices manuals, and low impact development plans and designs.  Established four new compliance and enforcement positions, placing one in each field office.
NERR - North Carolina	Reinstated sea turtle nest monitoring at the Masonboro Island component of the North Carolina reserve after a five-year hiatus.
Puerto Rico	

CMP	Established a web-based permit tracking database, allowing the public and developers to check the status of a permit online.  Initiated an effort to delineate the maritime zone island-wide, including updated aerial photography and a GIS-based map.  Celebrated its 25 <sup>th</sup> anniversary in June 2007.
NERR - Jobos Bay	Celebrated 25 <sup>th</sup> anniversary in November 2006.  Expanded its role as a living laboratory as NOAA and the U.S. Department of Agriculture have established a Special Emphasis Watershed study in the Reserve to explore the environmental effects of agricultural conservation practices on the coral reef ecosystem.
South Carolina	
CMP	Implemented marine debris removal projects in the Charleston, Georgetown, and Beaufort county areas resulting in the removal of 30 large debris items including abandoned boats and miscellaneous hoses, cables, and tires.  Awarded \$97,000 in pass through grants to four local governments to enhance beach access.
NERR - ACE Basin	Led effort to inform homeowners as the Town of Edisto Beach implemented a city-wide planning effort in conjunction with the Property Owners Association.
NERR - North Inlet/Winyah Bay	Facilitated the installation of a demonstration project for pervious concrete parking at the new Georgetown Chamber of Commerce building.
Virgin Islands	
CMP	Developed rules and regulations for the Territory's first marine park, the St. Croix East End Marine Park.

***New Beach Fill Rules Effective in North Carolina***

A new set of rules designed to ensure the quality of sand used for beach nourishment projects in North Carolina took effect February 1, 2007. The rules, extensively reviewed by scientists, academics, engineers, local government officials and environmental groups, represent a vigorous three-year-long integration of science and policy by the **North Carolina Coastal Management Program**. The rules, governing Technical Standards for Beach Fill Projects, require those projects to meet a new set of criteria for determining compatibility of the sand used to nourish North Carolina beaches.

The new rules are a significant step forward in North Carolina's efforts to improve the quality of material used in beach nourishment projects and will greatly reduce the possibility of finding rocks, mud and other incompatible materials on nourished beaches along the coast. The North Carolina Coastal Management Program's previous rule, which stated only that sand used for beach nourishment must be compatible with existing grain size and type, was deemed vague and subjective. The new rules provide an objective definition of sediment compatibility for beach fill projects, and outline specific protocols for sampling both the beach scheduled to receive nourishment and the proposed borrow site, in order to correctly characterize the material found there. These methods will help ensure future beach fill projects will closely mimic the native characteristics of North Carolina's beaches. For additional information, visit [www.nccoastalmanagement.net/sediment.htm](http://www.nccoastalmanagement.net/sediment.htm).

***North Carolina NERR Celebrates New Building Completion***

NOAA and North Carolina officials celebrated the opening of a new joint facility to house a teaching laboratory, classrooms, meeting rooms and offices for NOAA's Center for Coastal Fisheries and Habitat Research and the **North Carolina National Estuarine Research Reserve** in a ceremony on Pivers Island in Beaufort in September 2007. Speakers and guests toured the \$4.6 million facility and took boat trips

to the Rachel Carson component of the Reserve. The 2,675-acre Rachel Carson Reserve is one of four components of the North Carolina NERR. The new building provides permanent space for reserve education and research programs that have not previously been available for the Rachel Carson component. The building is a joint venture between the reserve and the Center for Coastal Fisheries and Habitat Research (CCFHR), an office of NOAA's Centers for Coastal Ocean Science.

#### ***South Carolina Protects Thousands of Marsh Islands***

The South Carolina Coastal Management Program played an integral role in developing new regulations for marsh islands. The South Carolina General Assembly passed the new regulations in April 2006 to afford more protection to the approximately 3,500 marsh islands located along the State's coastline, as well as provide more concrete guidelines for applicants interested in developing on the islands. Marsh islands in South Carolina provide critical habitat for wildlife, and the former regulations that addressed access to marsh islands, written in the early 1990s, did not provide adequate guidance to would-be developers, the environmental community, or regulators making permit decisions. The South Carolina Coastal Management Program assembled a diverse six-member stakeholder committee, including conservationists, developers and legal professionals. The goal of the committee's work was to build consensus among stakeholder groups to provide regulatory recommendations to the General Assembly. The new regulations, based on the work of the stakeholder committee and the South Carolina Coastal Management Program staff, afford protection to the marsh island habitat and better guidance for applicants.

#### ***Georgia's Green Growth Guidelines***

In response to the need for innovative tools to manage growth on the Georgia coast, the Georgia Coastal Management Program funded the development of the "Green Growth Guidelines." Green Growth Guidelines serve as a practical guide to designing with the coastal landscape utilizing techniques such as site fingerprinting, low impact development practices for storm water and bank stabilization techniques. Intended for developers, engineers, land planners, local governments, natural resource managers and citizens, the Guidelines provide design specifications for a variety of low impact techniques as well as a discussion of the economic benefits of conservation development. The Georgia Coastal Management Program is working to make the Green Growth Guidelines available to every coastal county and municipality as well as the coastal development community. New chapters are also being prepared to ensure the manual is consistently up to date with cutting edge information. For additional information, see [crd.dnr.state.ga.us/content/](http://crd.dnr.state.ga.us/content/).

#### ***New Researchers' Dorm Dedicated at Sapelo Island NERR***

Rep. Jack Kingston, R-Ga., joined University of Georgia and NOAA officials in dedicating the new Barrier Island Research and Learning Center in the Sapelo Island National Estuarine Research Reserve in Georgia in May 2007. Built with \$1.49 million in direct grants and \$400,000 in competitive NOAA grants, as well as state funding, the center provides temporary living quarters for visiting scientists and graduate students conducting research on the barrier island. The Sapelo Island NERR has controlling interest in one wing of the building.

#### ***Significant Land Acquisition Agreement in Puerto Rico***

Through efforts of the Puerto Rico Coastal Management Program and many other agencies in Puerto Rico, the Puerto Rico Department of Natural and Environmental Resources entered into a land acquisition agreement in March 2007 that will protect a highly significant piece of coastal land on the northeast coast of Puerto Rico. This land has high natural and ecological values and is adjacent to the largest mangrove lagoon in Puerto Rico: the Piñones Natural Reserve. The land previously had been slated for a large development which had received approval over a decade ago, and would have included the largest hotel development in Puerto Rico. The Puerto Rico government purchased over 250 acres of land in the Northeast Corridor, and the Puerto Rico Coastal Management Program is actively participating in the process to designate the corridor as a natural reserve—the primary method of land and resource protection in Puerto Rico.

## ***Gulf of Mexico***

Below are just a few of the many highlights from the state Coastal Management Programs (CMPs) and the National Estuarine Research Reserves (NERRs) in the Gulf of Mexico.

### ***Gulf of Mexico Alliance Addressing Key Issues in the Region***

The Gulf of Mexico Alliance (GOMA) is a state and federal partnership with the goal of significantly increasing regional collaboration to enhance the environmental and economic health of the Gulf of Mexico. To accomplish this goal, GOMA focuses its efforts on 73 action steps outlined in a Governors' Action Plan. The Gulf state CMPs and NERR, along with OCRM, have significantly contributed to the GOMA partnership, by facilitating regional coordination and implementation of several key action steps. Results have exceeded initial expectations—22 percent of GOMA action steps are complete and 68 percent are in progress towards completion by March 2009. Below are a few actions the coastal management programs and NERRs have been very involved with:

- *Science-to-management workshops and coordination to improve water quality:* OCRM has taken a lead role within GOMA to identify key management needs related to nutrient pollution of coastal waters and estuaries. In 2007, OCRM and GOMA conducted four regional workshops that brought together the expertise needed to address identified management needs.
- *Regional Group for Coastal Community Resiliency:* In 2007, the **Mississippi Coastal Management Program** led GOMA in the development of a Resilience Working Group to coordinate and enhance efforts to increase resilience in the region. Representatives from the Coastal Programs and NERRs, as well as OCRM, serve as members of the working group and contributed to the development of the group's mission and initial action items.
- *Gulf CMP and NERR Programs Active in Environmental Education Actions:* The **Alabama Coastal Management Program** leads GOMA education efforts, including the development of the GOMA Environmental Education Network (EEN) and a region-wide education campaign. NERRs have been instrumental in GOMA's EEN. For example, the **Rookery Bay NERR** conducted a series of educational workshops to increase public input on regional issues important to the Alliance. **Weeks Bay NERR** facilitated increased collaboration between the EEN and the Gulf of Mexico Coastal Ocean Observing System (GCOOS) regional association. Both **Rookery Bay** and **Apalachicola Bay NERRs** are implementing a public awareness and involvement campaign for key environmental issues in the region.

For additional information on the Gulf of Mexico Alliance see [www.dep.state.fl.us/gulf/](http://www.dep.state.fl.us/gulf/).

### ***Research and Training Around the Gulf of Mexico***

State CMPs and NERRs have been involved with a variety of research and training over the past two years to further CZMA goals in the region. Research has focused on habitat mapping and mercury monitoring. For example, NOAA's Air Resources Laboratory (ARL) has established a long term atmospheric mercury monitoring site at the **Grand Bay National Estuarine Research Reserve** in Moss Point, Mississippi, to study the emission, transport, and atmospheric deposition of mercury compounds in coastal waters. NOAA selected the Grand Bay NERR because of its existing meteorological and water quality monitoring infrastructure, which is part of the SWMP, as well as its location relative to the Gulf and potential sources of airborne mercury.

Training and technical assistance focused on storm water management, coastal hazards and other pressing topics. For example, on December 6, 2006, the **Alabama Coastal Management Program** and the **Weeks Bay National Estuarine Research Reserve**, along with the Coastal States Organization and other local partners, hosted a *Soils, Stormwater and Watershed Protection: Tools for Managing Erosion* workshop. The workshop was the first in a series of community workshops convened under the U.S. Ocean Action Plan in order to address nonpoint source pollution at a local level. This one-day training workshop brought together over 90 elected officials, developers, planners, engineers, and national resource managers from Alabama in order to improve their knowledge of the effective methods for managing erosion and preventing impacts of sediment-laden runoff.



Table 6. Major Accomplishments of Programs and Reserves in the Gulf of Mexico Region

Program	Major Accomplishments (not highlighted below)
Alabama	
CMP	Completed the first comprehensive, baseline habitat mapping project describing wetland and upland habitats for all of Mobile and Baldwin Counties.  Held 3 <sup>rd</sup> Annual Alabama Coastal BirdFest in October 2006 in partnership with Weeks Bay Reserve Foundation and many others, which attracted 376+ registrants and raised funds to preserve bird habitat.
NERR - Weeks Bay	Completed a revised management plan that establishes new goals, objectives and strategies for the next five years and incorporates an additional 333 acres into the reserve boundary.  Took third place in the Youth/Education category of EPA's Gulf Guardian Awards (2006).
Florida	
CMP	Awarded roughly 20 grants to local communities, leveraging nearly \$1M for local coastal projects for public access, waterfront redevelopment and management of cultural resources.  Obtained legislative authorization for its Waterfronts Florida Partnership Program to address the decline in traditional working waterfronts.
NERR - Apalachicola Bay	Added more than 250 acres to its management area, protecting the parcels from being auctioned off as "surplus" lands.  Heavily involved in removing debris and repairing facilities damaged in recent hurricanes, including the lighthouse on Little St. George Island.
NERR - Rookery Bay	Reserve Manager invited to China to advise a group of 60 Chinese coastal managers.
Louisiana	
CMP	Drafted proposed amended Coastal Use Permit Mitigation Rules to reflect updated restoration costs, evaluate time-based mitigation requirements, and increase the ability of Local Coastal Programs to successfully achieve mitigation.
Mississippi	
CMP	Enhanced its wetland permits database by improving its permit tracking and analysis capabilities and making the data available to the public through the online interactive mapping application.
NERR - Grand Bay	Completed an Ecological Characterization of Grand Bay Reserve.  Took 3 <sup>rd</sup> place in the Gulf Guardian awards in the Partnership category for its "Grand Bay Bioblitz Program," a 24-hour marathon inventory of flora and fauna in the 18,400-acre reserve conducted every spring.
Texas	
CMP	Successfully completed the first phase of a programmatic self-assessment to determine how effective the program has been and what changes are necessary to ensure the sound management of the state's coastal resources.
NERR - Mission-Aransas	Designated new reserve.  Acquired permanent conservation easement with Fennessy Ranch and developed management plan for ranch activities.

### ***Mission-Aransas NERR Officially Designated***

The National Estuarine Research Reserve System added a new reserve for the first time in three years when Conrad C. Lautenbacher, Jr., Under Secretary of Commerce for Oceans and Atmosphere, signed official designation papers for the **Mission-Aransas National Estuarine Research Reserve** in Texas on May 3, 2006. Mission-Aransas is the 27<sup>th</sup> and third largest in the system, with more than 185,000 acres. It is managed by the University of Texas at Austin Marine Science Institute, in cooperation with the Texas General Land Office, the U.S. Fish and Wildlife Service, the Texas Parks and Wildlife Department, the Coastal Bend Land Trust and the private Fennessy Ranch, a working cattle ranch, all of which are property owners within the Reserve, as well as local municipalities and non-governmental organizations.

Named for the two major rivers that flow into the estuary, Mission-Aransas supports a wide variety of natural systems, including upland fresh water streams and riparian habitats, coastal prairie, seagrass meadows, mangroves, oyster reefs, open bays and beaches. The new reserve also supports a wide variety of human activities, including cattle ranching, oil and gas exploration, commercial and recreational fishing and shellfishing, hunting, camping, and birdwatching. Under the reserve's management plan, all of these activities continue.

### ***GIS-based Building Permitting in Alabama***

The **Alabama Coastal Management Program** worked with several local communities to implement GIS-based Building Permit programs. This included funding and technical assistance through the South Alabama Regional Planning Commission (SARPC). These new programs will allow the local communities to closely monitor, track and map active building permit sites as well as map trends in development. In addition, given that GIS layers such as wetlands, flood zones and other pertinent data can be overlain on parcel data, citizens requesting permits can be made aware of special permitting requirements, base flood elevations and other natural hazard related issues. The Alabama coastal program and SARPC plan to transfer this technology to other local communities.

### ***Florida Shipwreck Interpretation and National Register Nomination***

In 1733, 13 ships of the Spanish Plate Fleet were sunk along 80 miles of the Florida Keys during a hurricane. These shipwreck sites represent some of the oldest artificial reefs in North America, supporting a complex assemblage of marine life. To preserve this significant historical coastal resource, the **Florida Coastal Management Program** awarded a grant to the Florida Department of State, Bureau of Archaeological Research to explore, document and assess the sunken vessels in order to establish the foundation for a multiple property nomination to the National Register of Historic Places. The Florida Coastal Management Program funds also supported the design and printing of an interpretive guide booklet and development of website about the shipwrecks. As a result of these efforts, the nomination was successful. The National Park Service listed the 1733 Spanish Plate Fleet in the National Register in June 2006, ensuring the protection, management and enhancement of these unique coastal resources. For additional information visit [dhr.dos.state.fl.us/services/magazine/index.cfm?action=article&season=05Fall&article=59](http://dhr.dos.state.fl.us/services/magazine/index.cfm?action=article&season=05Fall&article=59).

### ***Louisiana Launches Innovative Online Permit Application System***

The **Louisiana Coastal Management Program** formally launched an online permit application system in November 2005, making it the first state program to have such a system. This innovative system was developed in response to an efficiency study to improve customer service, which identified several ways to improve the permit application process. The new online system has the following benefits: permit applications are filed and modified online, applications are processed electronically, an application's progress is tracked in real-time, comments are submitted online, users are notified via email, and anyone can access the application online. Thus, the system has resulted in a more streamlined process for permit applicants, and increased public access to the information. The state continues to update and improve the system, but it has already received praise from both external and

internal users and it serves as a successful model for other states. To check out the online permit system go to [workflow.dnr.state.la.us/sundown/cart\\_prod/pkg\\_dnr\\_wf.initiate](http://workflow.dnr.state.la.us/sundown/cart_prod/pkg_dnr_wf.initiate).

### *Good News on Public Access from Galveston, Texas*

The Texas Coastal Management Program and the Texas General Lands Office worked with Galveston County to fully certify the County's Beach Access and Dune Protection Plan, ensuring that public access to the coast is protected. After more than 10 years of negotiations, the Plan was fully certified by the Texas General Land Office in January 2006. The Galveston County Dune Protection and Beach Access Plan accomplishes the following: protects the public's right to access public beaches; promotes dune protection and ensures that adverse effects on dunes and dune vegetation are avoided whenever possible; fosters mutual respect between public and private property owners; provides coordinated, consistent, responsive, and timely governmental decision making and permitting processes; and provides for public participation in the protection of the beach and dune system and in the development and implementation of the Texas Coastal Management Program.

## *Great Lakes*

Below are just a few of the many highlights from the state Coastal Management Programs (CMPs) and National Estuarine Research Reserves (NERRs) in the Great Lakes Region.

### *Working Collaboratively through the Great Lakes Regional Collaboration*

The seven Great Lakes state coastal management programs and Illinois have been working to implement the Great Lakes Regional Collaboration Strategy. The Strategy was written by a coalition of local, state, tribal, and federal agencies in response to a May 2004 Executive Order signed by President Bush, which recognized the Great Lakes as a "national treasure" and created a Federal Great Lakes Interagency Task Force to improve federal coordination on the Great Lakes. The Strategy has nine priority issue areas and the coastal programs contribute to meeting several of the goals. In the area of invasive species, state coastal management programs sponsor research into methods to control invasives, develop invasive species management plans, and update, as needed, the list of species that are considered invasive and therefore are subject to regulation. In the area of sustainability, state coastal management programs provide support for comprehensive planning and offer training on Low Impact Development (LID). In addition, state programs support efforts in other priority areas such as habitat protection and nonpoint source pollution.

### *Research and Training Around the Great Lakes*

State CMPs and the Old Woman Creek NERR have undertaken a variety of research and training over the past two years to further CZMA goals in the region. For example, the **Michigan Coastal Management Program** supported a partnership project between the Alliance for the Great Lakes, Michigan State University, and Ford Motor Company to study the feasibility of halting coastal dune mining. Michigan's Great Lakes sand dunes, providing habitat for numerous threatened and endangered species, have been threatened by continual sand mining. The dunes have been an important source of sand to the foundry industry making metal castings for auto manufacturing. Despite state laws enacted to minimize the effect of coastal dune mining, more than two million tons of sand were mined annually from 1978-1999. The research report, *"Coastal Dunes and the Auto Industry: Investigating Alternatives to Mining,"* lays out specific recommendations for transition to inland mining. The landmark study is the first official look into potential alternatives to coastal dune mining in nearly 30 years—and the first to conclude that sources of inland sand could be an alternative to coastal dunes. For additional information, see [www.greatlakes.org/news/012507.asp](http://www.greatlakes.org/news/012507.asp).

The **Old Woman Creek National Estuarine Research Reserve** partnered with the Ohio Lake Erie Commission (LEC) to help with its ongoing Balanced Growth Training Program which was funded in part by a grant from the **Ohio Coastal Management Program**. Each class was taught by a certified planner and includes an overview of development and protective regulations such as conservation

development, compact development, riparian and wetland protection and a specific focus on stormwater management. Participants received a CD containing model ordinances and continuing education credits are available to planners, attorneys, engineers and water/wastewater operators. To date, training has been provided to nearly three hundred local officials, and developers at eight locations throughout the Lake Erie watershed. As a result, 148 participants pledged to take steps toward implementing best local land use practices in their communities. Pledged actions ranged from introducing or enacting wetland and riparian setbacks to incorporating smart/balanced growth concepts in comprehensive plans and educating others about these approaches to development.

The Ohio Coastal Management Program also funded three watershed coordinator positions throughout the Lake Erie watershed. The Watershed Coordinators provide assistance to local stakeholders in developing comprehensive watershed plans to address nonpoint source pollution impacts to Lake Erie. While Ohio's statewide Watershed Planning Program is voluntary, there is a strong incentive for local groups to develop watershed plans as many of Ohio's federal and state water quality programs give priority funding to implement endorsed watershed plans. However, developing an acceptable watershed plan can be a daunting undertaking for most local groups that lack specific training in watershed planning. The assistance the Ohio Coastal Management Program has provided through the watershed coordinators has been critical for furthering watershed planning efforts within the Lake Erie Basin and helping local stakeholder groups be more competitive for state and federal water quality funding. Within the Lake Erie Basin, four watershed plans have been fully endorsed and eleven others are in development or partially endorsed.

The Ohio Coastal Management Program-supported watershed plans provide a strong foundation on which to build support for community priorities. For example, the West Creek Preservation Committee and local partners utilized their community's watershed plan in order to successfully compete for more than \$250,000 in state and federal funding supporting stream restoration, conservation easement acquisition, and sediment control projects within the West Creek watershed.

Bluff recession and erosion threatens many homeowners along Pennsylvania's Lake Erie shoreline. The Pennsylvania Coastal Management Program has undertaken several training and assistance projects to better educate Erie County residents about these threats and what they can do to help minimize bluff recession and shoreline erosion on their property. For one project, the Pennsylvania Coastal Management Program partnered with the Pennsylvania-Lake Erie Watershed Association to conduct two public workshops addressing bluff recession and erosion for Erie County residents. The workshops were very successful with about 40 people attending each session. The Pennsylvania Coastal Management Program also worked with Mercyhurst College to produce a useful and well-received manual of recommendations for landowners that face erosion and bluff recession challenges.

Table 7. Major Accomplishments of Programs and Reserves in the Great Lakes Region

Program	Major Accomplishments (not highlighted below)
Indiana	
CMP	Restored approximately 30 acres of natural plant communities associated with a dune and swale system, achieving a 90% reduction of the invasive plant species <i>Phragmites australis</i> at Pine Station Nature Preserve.
Michigan	
CMP	Funded bathymetric surveys of ancient shorelines along the submerged Trans-Huron Land Bridge to gain a better understanding of prehistoric benthic communities and forest remains in the area as well as search for evidence of Paleo-Indian culture along the ancient shores.
Minnesota	

CMP	Competitively awarded over \$1.3M to support coastal management projects at the local level to enhance public access, protect natural and cultural resources, update land use plans, and improve outreach and education.
Ohio	
CMP	Released the 2 <sup>nd</sup> edition of the Ohio Coastal Atlas, an online tool that combines GIS mapping capabilities with text, graphics, pictures, and contact sources to produce an easy-to-understand guide to many resources in the Lake Erie Watershed.
NERR - Old Woman Creek	Hosted one of the first Hollings Scholars in Summer 2006. Hosted the reserve system annual meeting in October 2006.
Pennsylvania	
CMP	Finalized the Pennsylvania Aquatic Invasive Species Management Plan which sets policies for minimize the introduction of invasive species into the state's waterways. Developed <i>Commonwealth Model Submerged Lands Legislation</i> , which serves as a boilerplate for proposed submerged lands legislation and contains important language on protecting and enhancing public access to coastal resources.
Wisconsin	
CMP	Comprehensively updated its coastal program for the first time since 1991 to reflect changes in state legislation. Contributed funding and significant staff time to the state's National Estuarine Research Reserve site-selection process, which made progress toward establishing the first NERR on Lake Superior.

#### ***Wisconsin Promotes Great Lakes Circle Tour***

Utilizing technology to connect people to the coast, the Wisconsin Coastal Management Program funded a unique interactive website to highlight Wisconsin's portion of the Great Lakes Circle Tour. The Great Lakes Circle Tour is a designated 6,500-mile scenic, international road system connecting the five Great Lakes and the St. Lawrence River. The Wisconsin Coastal Access Guide lets users easily navigate an online map of Wisconsin's coastline to discover the great natural, cultural and recreational opportunities the state has to offer. The interactive map includes 360 degree photos of public access sites, boat ramps, beaches and parks located on Lakes Superior and Michigan. The site also notes the location and provides information about Wisconsin's lighthouses and many of its shipwrecks. The online Coastal Access Guide has increased people's awareness of the state's many coastal access sites and other coastal treasures. The website is located at [www.aqua.wisc.edu/GLCT/Home/tabid/36/Default.aspx](http://www.aqua.wisc.edu/GLCT/Home/tabid/36/Default.aspx).

#### ***Indiana's Restoration Efforts Received National Award***

The Indiana Coastal Management Program received an Award of Excellence from the National Association of Conservation Engineers (ACE) for the Dunes Creek restoration project in Indiana Dunes State Park that was completed in February 2006.

Dunes Creek empties into Lake Michigan, adjacent to a popular state park bathing beach. In the 1930s, the Civilian Conservation Corps had directed the creek underground into approximately 1,300 feet of concrete pipe beneath a parking lot. Recently, high fecal *coliform* levels at the beach had forced beach closures during the summer. After studying the issue for several years, multiple state and federal agencies concluded that the elevated *coliform* levels were caused by runoff from the adjacent woods into the creek during heavy rainfall. Restoring Dunes Creek offered an opportunity to rectify the water quality and erosion problems as well as improve habitat in the area.

The Indiana Coastal Management Program funded the Dunes Creek restoration project which daylighted approximately 500 feet of stream. "Daylighting" is an industry term for taking a stream that has been routed through a culvert and restoring it to an open, natural channel.

This project is showing early signs of success. The newly planted vegetation has begun to grow and stabilize the bank. Bacteria monitoring in 2006 and 2007 found significant coliform reductions as well. Ultimately this restoration project should lead to lower bacteria levels at the Indiana Dunes state park beach, and thus fewer beach closures.

#### ***Joint Resource Management in Michigan***

Traditional models of planning and zoning discourage communities from thinking outside their borders. Yet, watersheds, wildlife habitat and prime agricultural land are just a few examples of land resources that are unconstrained by political boundaries and commonly span multiple governmental units. Thanks in part to progressive state laws enacted in recent years and the support of the Michigan Coastal Management Program, some Michigan communities are beginning to adjust their approach to planning and zoning to be able to cooperatively manage shared natural resources.

The Michigan Coastal Management Program provided funding to a Joint Planning Commission that oversees five townships in north central Muskegon County to develop a joint comprehensive development plan. Through the planning process, the townships delineated the 43 square-mile joint planning area rich in recreational lands including Lake Michigan lakefront, part of the Muskegon State Game Area, internationally-renowned Blue Lake Fine Arts Camp, and Owasippe Scout Reservation, the oldest continuous scout camp in the Nation. In August 2007, the Joint Planning Commission adopted the joint comprehensive land use plan which presents a coordinated vision for future growth and resource protection for the five communities—something that would not have been possible without this collaborative planning effort supported by the Michigan Coastal Management Program. The Joint Planning Commission is now working with the five townships as they consider formal approval or endorsement of the joint comprehensive development plan.

#### ***Revitalizing Waterfront in Minnesota***

The Minnesota Coastal Management Program provided critical funding for the planning and construction of a new Harbor Park in Grand Marais, MN. The park, situated where an aging gas service station once stood, significantly enhanced public access to Lake Superior and revitalized the Grand Marais waterfront. Today, visitors can walk the paths of Harbor Park to enjoy unlimited views and access to Lake Superior. The Park has become a central gathering place for the community during the summer, hosting festivals and other events. The success of this project has motivated Grand Marais to seek additional funding to expand its revitalization effort into other parts of its waterfront as well. In addition, the community is also planning several storm water improvement projects to improve water quality along the Harbor now that it has become a focal point for the community. The Grand Marais Harbor Park demonstrates that coastal management funding not only directly impacts one project but can be the spark that generates many other beneficial projects as well.

### ***West Coast and Alaska***

Below are just a few of the many highlights from the state Coastal Zone Management Programs (CMPs) and the National Estuarine Research Reserves (NERRs) in the West Coast and Alaska.

#### ***West Coast Governors Band Together to Tackle Ocean Health***

The Washington, Oregon and California Coastal Management Programs have all been actively involved in implementing the new West Coast Governors Agreement. Motivated by recommendations from the U.S. Commission on Ocean Policy and the Pew Oceans Commission, the governors of Washington, Oregon and California signed the West Coast Governor's Agreement on Ocean Health on September 18<sup>th</sup>, 2006. The Agreement seeks to take a collaborative, ecosystem approach to protecting and managing ocean resources along the entire west coast and includes an aggressive timeframe for

achieving seven major goals: clean coastal waters and beaches; healthy ocean and coastal habitats; effective ecosystem-based management; reduced impacts of offshore development; increased ocean awareness and literacy among the region's citizens; expanded ocean and coastal scientific information, research, and monitoring; sustainable economic development of coastal communities. West Coast Governors Agreement staff, with input from state coastal management programs and others, published a Draft Action Plan in October 2007 that is slated for completion and release in early 2008. For additional information about the West Coast Governors Agreement see [westcoastoceans.gov/](http://westcoastoceans.gov/).

#### ***Research and Training Around the West Coast and Alaska***

State Coastal Management Programs (CMPs) and National Estuarine Research Reserves (NERRs) have undertaken a variety of research and training over the past two years to further CZMA goals in the region. Research has focused on oyster restoration, tide gates, marsh restoration and invasive species among other topics. For example, the **South Slough Reserve** in Oregon is conducting a community-based project to restore native Olympia oysters on the West Coast. The project is gathering information about the genetic signature of existing oyster populations to identify potential broodstock sources and conduct experiments to assess oyster survivorship, growth, and reproduction. The project also brings together scientists, commercial shellfish growers and other local stakeholders interested in the success of native oysters. NOAA's Community-based Restoration Center and the Nature Conservancy also provided funding to support the project.

Instruments at the **South Slough Reserve** near Charleston, Oregon, detected the November 15, 2006 tsunami that was generated by a magnitude 8.3 earthquake near Russia's Kuril Islands, 4,000 miles away. The water level rise at South Slough was tiny—just 3.5 inches—but distinct, a small blip that occurred at 11:30 a.m., shortly before low tide. The Yellow Springs Instruments Model 6600-EDS datalogger maintained by South Slough Reserve as part of the SWMP was one of two in the area that measured the small rise and reverberations that took place over the next 12 hours throughout the estuary. The other instrument in the area is maintained by NOAA's National Water Level Observation Network. The recording at South Slough confirmed predictions by the West Coast and Alaska Tsunami Warning Center about the arrival time and amplitude for the diminished tsunami, demonstrating the broad value of the SWMP to coastal management.

The **Elkhorn Slough NERR** in California also hosted a research symposium to highlight scientific studies that have been conducted in the 1,400-acre reserve near Monterey Bay. Reserve staff organized the symposium to enhance collaborations between researchers from different organizations and to share the latest findings about Elkhorn Slough ecosystems with organizations that can use the information to improve conservation strategies. A dozen presentations covered a range of subjects from oxygen dynamics and biogeochemical processes to amphibian habitat use and the effects of cattle grazing in coastal prairie. The event also featured nine posters covering topics from organic mosquito control to the role of wetlands in improving water quality.

Training offered to address pressing coastal management issues over the past two years included energy facility siting, federal consistency review, coastal hazards, and land use planning. For example, the **Oregon Coastal Management Program and South Slough National Estuarine Research Reserve** partnered with the NOAA Coastal Services Center to hold a week-long computer-lab training for local planning staff in GIS applications to support coastal planning and management decisions. GIS can be a valuable tool to help local planners visualize and assess coastal resources and uses to ensure coastal management goals are carried out. However, local planners often do not have the technical training needed to be able to effectively apply GIS. Therefore, this training was critical in getting local planners the skills they needed to make improved coastal management decisions.

To improve its training capabilities, **Alaska's Coastal Management Program** made major improvements to its website ([www.dnr.state.ak.us/acmp/](http://www.dnr.state.ak.us/acmp/)), providing online technical training on such subjects as Alaska coastal consistency review regulation changes and State standards. On-line training modules

like these are critical in Alaska due to the distance and cost involved in travel for district planners and others involved in permit application review.

Table 8. Major Accomplishments of Programs and Reserves in the West Coast and Alaska Region

Program	Major Accomplishments (not highlighted below)
Alaska	
CMP	Approved 16 of the 28 district coastal plans to meet new coastal standards and guidelines.
NERR - Kachemak Bay	Completed a revised management plan that establishes new goals, objectives and strategies for the next five years.  Worked with U.S. Fish and Wildlife Service to support investigation into sea otter die off in 2007.
California	
CMP	Comprehensively revised San Francisco Bay Conservation and Development Commission Recreation Policies - the first update since 1968.  Continued to work through the California Coastal Commission to ensure that 125 public access easements along the coast were accepted by other state agencies or nonprofits, preventing them from expiring.
NERR - Eikhorn Slough	Completed a revised management plan that establishes new goals, objectives and strategies for the next five years.  Dedicated new NOAA-funded research and teaching complex at reserve in 2007.
NERR - Tijuana River	Partners with the California Biodiversity Council to initiate and fund several actions to protect the estuary. Actions included first steps to build sediment basins on both sides of the border with Mexico, add package sewage plants in the San Bernardo community in Tijuana, Mexico, and manage tires and trash on both sides of the border.  Celebrated 25 <sup>th</sup> anniversary in 2007.
NERR - San Francisco Bay	Dedicated new headquarters building, a Navy warehouse converted with NOAA support, in 2007, in Tiburon.  Created interpretive exhibits at the Rush Ranch site in partnership with the Solano Land Trust.
Oregon	
CMP	Upgraded the content and functionality of the on-line Oregon Coastal Atlas ( <a href="http://www.coastalatlantlas.net/">www.coastalatlantlas.net/</a> ) including searchable information on public access sites and amenities.  Worked with Clatsop County, the cities of Astoria and Warrenton, and the Oregon Department of Transportation to complete a regional transportation model and a sub-regional refinement plan to address transportation and land use issues within the area.
NERR - South Slough	Completed a revised management plan that identifies nine priority areas and establishes new goals, objectives and strategies for the next five years.  Attracted national attention for installing fish-friendly, low-impact ramp for canoe and kayak access on a tributary creek.



Washington	
CMP	Created a pilot Wetlands Mitigation Banking Program in partnership with the Department of Ecology, to focus many small mitigation projects into larger, more ecologically valuable sites.
NERR - Padilla Bay	Completed 4-year construction program, resulting in new training rooms and teaching space in the Breazeale Interpretive Center, a new laboratory and dormitory building, and remodeling of the small house and storage barn. Solar panels enable the reserve to generate "green" electricity into the "grid" for credits against power used.

***Northwest Shellfish Growers Get Real-time Data from System-Wide Monitoring Program***

Shellfish growers in the Pacific Northwest can now get near real-time water quality data from the SWMP operating at **National Estuarine Research Reserves in Alaska, Washington, and Oregon**. The data are available through telemetering capabilities, which measure, receive and transmit data automatically from distant sources. Through a website jointly sponsored by the NERR System and the Northwest Association of Networked Ocean Observing Systems, growers can view up-to-date water temperature, salinity, oxygen, turbidity, pH and chlorophyll data from reserves in Kachemak Bay, Alaska, South Slough, Oregon and Padilla Bay, Washington, as well as from four buoys in Hood Canal—a long arm of Puget Sound west of the main basin—operated by the University of Washington's Oceanic Remote Chemical Analyzer project. Accurate, current water quality data from NERR System helps Northwest shellfish growers maintain healthy stocks.

***San Francisco Bay Conservation and Development Commission Planning for Climate Change***

Historical records show that sea level in San Francisco Bay has risen 18-20 cm (7 inches) over the past 150 years and it is predicted to rise an additional 24 to 48 cm by the end of the 21st century. Sea level rise models indicate that a 30 cm (11.8 inch) rise in sea level would shift the 100-year storm surge-induced flood event to once every 10 years. At those levels, with each flood event, the Bay Area stands to lose valuable real estate, critical public infrastructure, and natural resources.

To prepare for climate change and sea level rise, the **San Francisco Bay Conservation and Development Commission (BCDC)**, our state partner in coastal management, is conducting a climate change study. The study's goals are three-fold: (1) identify the impacts of climate change on San Francisco Bay; (2) update the pertinent San Francisco Bay Plan findings and policies pertaining to global climate change effects on San Francisco Bay; and (3) organize and participate in a regional program to address climate change in the Bay Area. As part of the study, BCDC is mapping San Francisco Bay shoreline areas that are vulnerable to sea level rise and increased storm frequency and intensity. The maps are available at [www.bcdc.ca.gov/index.php?cat=56](http://www.bcdc.ca.gov/index.php?cat=56).

***Elkhorn Slough NERR Dedicates New Research and Teaching Lab***

Former Congressman and White House Chief of Staff Leon Panetta was the keynote speaker when **Elkhorn Slough NERR** cut the ribbon on its new \$2.7 million Research and Education Laboratory in August 2007, in Watsonville, California. The 3,500-square-foot building includes new research and teaching laboratories, office and meeting space for reserve staff and visiting scientists and students. A small studio apartment will provide temporary quarters for visiting scientists who need to stay on site overnight. NOAA contributed more than \$1.9 million in competitive construction grant funding for the building.

***New Headquarters for San Francisco Bay NERR***

Timothy R.E. Keeney, Deputy Assistant Secretary of Commerce for Oceans and Atmosphere, helped to celebrate the opening of a refurbished headquarters for the **San Francisco Bay NERR** in August 2007 in Tiburon, California. Keeney joined California Secretary for Resources and San Francisco State University's (SFSU) President to honor the \$2.5 million transformation of a former Navy warehouse into office and laboratory space for the reserve and the university's Romberg Tiburon Center for Environmental Studies, which is NOAA's primary partner in the management of the reserve.

The renovation created 17 new offices, a library and reading room, and a comfortable conference room. The building also includes two new classrooms to provide space for university classes during the school year and for professional development workshops for science teachers on weekends and during the summer. The ceremony also recognized the transfer of 10.5 acres of land from NOAA to SFSU to complete the transfer of a former NOAA Fisheries facility to the Romberg Tiburon Center.

### ***Updating Alaska's Coastal Program***

In late 2005, the Alaska Coastal Management Program received OCRM approval for major revisions to its state standards and guidelines. These revisions improved the state consistency review process. Timing and predictability were enhanced by reducing duplication of permit review through broadly defined statewide standards, revised roles for coastal district government in the permitting process and implementing a streamlined consistency review process for certain activities.

The Alaska Coastal Management Program has spent the majority of its efforts over the last three years working closely with coastal districts to update their district coastal management plans to reflect these revised statewide standards and guidelines. The state has held several workshops and provided numerous one-on-one consultations with coastal districts to achieve 100 percent participation in the revised program. The coastal management program is currently developing a plan to improve communication with the districts and provide additional training to district planners and state and federal officials. The training will focus on how these entities, all involved in the permitting process, can best work together on interpretation and implementation of the state standards and guidelines.

### ***Shoreline Master Programs Approved in Washington***

The Washington Coastal Management Program approved the first three of 125 comprehensive updates to local Shoreline Master Programs (SMPs) located in their coastal zone. SMPs are local government plans for addressing development issues along their marine and freshwater shorelines. The SMPs are being revised to incorporate substantial changes to the SMP guidelines. The Guidelines were rewritten in 2003 in response to major updates to the state's Shoreline Management Act (SMA), the first major update since its 1972 inception.

The SMA and SMPs are the cornerstone of Washington's coastal program, encouraging water-dependent uses, the protection of shoreline natural resources, and increased shoreline public access. Among many other improved requirements, SMPs must now ensure that regulated development results in "no net loss of ecological function." Local governments demonstrate this tenant by undertaking a cumulative impacts analysis of their proposed polices and regulations. SMPs must also contain restoration plans that identify and prioritize restoration sites.

Washington Coastal Management Program staff provides significant technical assistance to local jurisdictions to help them with their plan updates. Washington is scheduled to complete and approve all 125 SMPs by 2014. For additional information about Washington's Shoreline Master Program, visit [www.ecy.wa.gov/programs/sea/sma/st\\_guide/SMP/index.html](http://www.ecy.wa.gov/programs/sea/sma/st_guide/SMP/index.html).

## ***Pacific Islands***

Below are just a few of the many highlights from state and territory Coastal Management Programs in the Pacific Islands.

### ***Micronesia Challenge: A Regional Initiative for Guam and the Northern Mariana Islands***

Through the "Micronesia Challenge" regional conservation partnership, the Governors of the Commonwealth of the Northern Mariana Islands (CNMI) and Guam charged the **Guam and CNMI Coastal Management Programs** with coordinating the U.S. contributions to their commitments to "effectively conserve at least 30% of the near-shore marine and 20% of the forest resources across Micronesia by 2020." The CNMI and Guam coastal program offices have led their jurisdictions in the development of their own draft strategies to address this goal, in coordination with other local agencies, federal

partners and non-governmental organizations. This commitment has received world-wide attention and acclaim. For additional information, see [www.nature.org/success/art16924.html](http://www.nature.org/success/art16924.html).

***Sea Change in the South Pacific: the Future of Coastal Management in the Samoan Archipelago***

American Samoa shares the marine ecosystems of the Samoan Archipelago with Western Samoa. Recognizing that the Samoan Archipelago's coastal and ocean resources and marine ecosystems are influenced by actions from both island jurisdictions, the **American Samoa Coastal Management Program** is carefully rethinking how to effectively address the numerous coastal and marine issues in the region. Several of these issues will require careful, regional policy coordination between the two Samoan governments to be effectively addressed. In 2007, the American Samoan Governor and the Western Samoan Prime Minister met and agreed on the need for increased collaboration between the two jurisdictions and their coastal management programs. In moving toward their vision, the American Samoa Coastal Management Program has begun to work with agencies jointly in both Samoan jurisdictions, including convening transnational policy meetings, fostering discussions between both governments to share lessons learned and best practices and beginning to coordinate multi-jurisdictional action to address regional conservation issues. Information on this new initiative can be found at [www.asdoc.info/CZM/1CZMGT.htm](http://www.asdoc.info/CZM/1CZMGT.htm).

***Research and Training Around the Pacific Islands***

State and territory Coastal Management Programs (CMPs) have undertaken a variety of research and training over the past two years to further CZMA goals in the region. Research and studies have included coral reef monitoring, mangrove restoration and others.

For example, the **Commonwealth of the Northern Mariana Islands (CNMI) Coastal Management Program** has continued to work with the Division of Environmental Quality to lead an interagency marine monitoring team (MMT). The MMT, which celebrated its 10<sup>th</sup> anniversary this biennium, is a holistic program designed to gain a critical understanding of nearshore coral reef ecology by annually surveying over 40 sites around the islands of Rota, Tinian, Agijuan and Saipan. These surveys provide the basis of a series of State of the Reef Reports for CNMI. The studies conducted by the MMT have also contributed to technical reports and peer reviewed publications.

The MMT is also completing an intensive marine habitat mapping effort in the 18 km long Saipan lagoon which will support decisions regarding the placement of marine protected areas and boost local capability to assess environmental change.

One of the outstanding aspects of the MMT's efforts is the direct applicability of the data gathered to local management issues. The MMT's surveys have documented a continued decline of coral communities at Lau Lau Bay, despite initial restoration efforts. This information was used to secure funding for a watershed restoration initiative. Though coral reef recovery is still a few years away, the ability to monitor change over the long-term is a critical tool for assessment of the eventual success of this project. For additional information about the MMT visit [cnmicoralreef.net/monitoring.htm](http://cnmicoralreef.net/monitoring.htm).

Applied research was also conducted in the South Pacific during 2006 and 2007. At the request of local village leaders, the **American Samoa Coastal Management Program** has completed the restoration of a few acres of mangrove forest within a highly degraded but biologically significant wetland. The applied research project was aimed at providing and documenting the degree of mangrove ecosystem services that can be provided as a result of the successful replanting of mangrove forests to the local people of Nu'uuli town. The project has demonstrated how restored mangroves not only provide invaluable coastal erosion protection to families and landowners, but also critical nursery habitat for important food fish stocks, improved water quality as a result of buffering and controlling upland storm water runoff, and natural filtration and trapping of land-based pollution sources.

Local town residents actively participated in the mangrove project's planting, rehabilitation, and monitoring activities. As a result of an ongoing partnership with island educators, school students have

been able to learn about local mangrove ecology in a hands-on classroom setting, and directly witness the social benefits of mangrove forests while also exposing them to and developing their interests in the natural sciences and mathematics. To learn more about the Program's wetlands management efforts, visit [www.asdoc.info/CZM/wetland.htm](http://www.asdoc.info/CZM/wetland.htm).

The Pacific Island coastal management programs have provided trainings and technical assistance on a range of important coastal management topics including coastal hazards preparedness and geospatial analysis. For example, recognizing the increasing rates of rapid residential growth and development along the waterfront of the main Hawaiian Islands, the **Hawai'i Coastal Management Program** published the "Natural Hazard Considerations for Purchasing Coastal Real Estate in Hawai'i – A Practical Guide of Common Questions." The publication provides basic information on coastal hazards that waterfront property investors and developers should consider when purchasing coastal land. The guide also helps to address common concerns and questions, and provides options and resources to protect coastal real estate and safeguard the lives of residents. It has been well received by the public, and is being widely circulated by real estate companies with potential buyers.

In addition, the **Hawai'i Coastal Management Program** co-hosted a training course for 260 industry and government professionals on the application of international building codes within development projects in Hawai'i. These codes require the adoption of state-of-the-art engineering as mitigation against historically common coastal hazards in the islands, such as flash floods, earthquakes, tsunamis, and hurricanes. The consensus of attendee feedback was that such training is essential to the development of a highly qualified public and private building industry focused on safeguarding lives and property.

**Guam's Coastal Management Program** developed an introductory geospatial analysis course designed for new users within the Guam government and federal agency employees working on Guam. GIS can be an important tool for coastal management planning and decision making as it allows users to map and assess critical coastal resources and uses. A similar, inter-agency geospatial training program offered in the Northern Marianas over the past two years has been led by the **CNMI Coastal Management Program**. In both cases, the coastal programs' GIS training courses have greatly increased the geospatial analysis capabilities and applications across a number of agencies in the CNMI and Guam Governments.

Table 9. Major Accomplishments of Programs in the Pacific Islands Region

Program	Major Accomplishments (not highlighted below)
American Samoa	
CMP	Provided students with exciting, hands-on learning opportunities, exposing them to the application of science and mathematics in addressing critical island environmental issues through Enviro-Discovery Summer Camps and Adopt-A-Teacher Program.
Guam	
CMP	Raised support and awareness for sea turtle conservation through a public school student project which created 20 full-scale fiberglass sea turtles for display throughout the territory at fine art galleries and public events.
Hawai'i	
CMP	Completed wind speed and flow testing on Maui, coupled with geographic data allowing development of State-approved hurricane-resistant building code amendments.
Northern Marianas	
CMP	Successfully reduced juvenile sea turtle (egg and hatchling) mortality and protected nesting grounds from disturbance through its "Walk It, Don't Drive It" public campaign to restrict vehicular beach traffic.

***Ocean Resources Management Plan: Charting a 30-Year Vision in Hawai'i***

The Hawai'i Coastal Management Program successfully led the development and legislative adoption of a comprehensive ocean resources management plan (ORMP), in coordination with relevant State agencies and a citizen advisory board. A draft version of the plan was reviewed and discussed among federal and non-government organizations as well as through eight public hearings held across the islands, including 122 sets of written comments from community members. The ORMP outlines a vision for marine resources in Hawai'i, identifying priority actions and goals to be achieved through a set of focused, 5-year work plans that will be implemented through public-private partnerships. A collaborative, multi-agency team is currently initiating the ORMP implementation. The new ORMP is available online at [www.hawaii.gov/dbedt/czm/](http://www.hawaii.gov/dbedt/czm/).

***Reducing Hazard Risk in American Samoa***

People looking to build their homes or other structures on Tutuila Island are now able to rapidly identify and obtain information on the potential hazard risks they face in any location thanks to the integration of the Tutuila Hazard Assessment Tool (T-HAT) into the American Samoa Coastal Management Program's development permit application and review process. Through a simple, online computer interface, T-HAT makes use of geographic and hazards data (such as flood plain maps and tsunami inundation zones). The tool allows users to select and enlarge any specific location on an island map and quickly obtain the potential natural hazard risk levels for that specific location. The technology is being credited with helping to safeguard lives and property in the islands.

***Restoring Water Quality and Corals in the Marianas***

Nearly 900 saplings of nine native tree species were successfully planted and cared for throughout the Laulau Bay Watershed by 150 community volunteers over the past two years in the Commonwealth of the Northern Mariana Islands (CNMI). This project was led by the CNMI Coastal Management Program in an effort to re-vegetate this critical watershed on Saipan, in response to illegal burning of the forest by hunters and farmers. The reforestation is helping to reduce soil erosion, storm water runoff and other 'down-stream' effects in the bay adjacent to the watershed. As a result of this effort, improvements in both water quality and coral reef health have been observed in the bay by CNMI government biologists.

***Leading an Environmental Partnership with the Department of Defense***

The U.S. Department of Defense (DoD) announced their plan to relocate 26,000 military personnel and dependents and infrastructure from Okinawa, Japan to Guam by 2014 to increase the national strategic defense role of the Mariana Islands. The planned build-up will have significant social, economic, and environmental impacts, including increasing Guam's population by 40 percent in less than 10 years. The increased construction, housing, consumption, and recreation impacts associated with this expansion will directly and indirectly impact Guam's marine and terrestrial ecosystems. In a proactive effort to address these issues, the Governor of Guam charged the Guam Coastal Management Program to lead an environmental Task Force in partnership with the DoD to assess environmental impacts and identify mitigation solutions. In close coordination and partnership with the CNMI Coastal Management Program, the Guam Coastal Program is providing leadership on balancing military development needs and ecosystem functioning throughout the Mariana Islands. The vision is for these archipelago-wide planning efforts is to satisfy national defense priorities while maintaining local environmental health and services.

## Challenges and Looking Forward

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The past biennium continued to reveal myriad challenges for OCRM and the many partners in the coastal zone. Consistently, states and territories noted that development pressures were a leading challenge. Coordinating responses to adequately address development issues is complex, particularly when multiple jurisdictions must be consulted. Another related and frequently cited challenge was how to best handle energy development needs. As technology increases the ability to harness energy from new sources increases, so do the number of permits to test these new technologies in the coastal zone, e.g., wind power, ocean thermal energy conversion projects, liquefied natural gas facilities, wave energy projects, etc. Personnel time is often limited and, in some cases, there is not adequate expertise. As such, new and expanding resources will be required to meet the demand for these types of projects in the future.

In an effort to address the changing scope of coastal management, OCRM took on a significant initiative in 2006-2007: *Envisioning the Future of Coastal Management*. This endeavor solicited new ideas and approaches for updating the ways in which we manage our oceans and coasts by asking the following questions: How are state managers' concerns about development and climate change impacts addressed? Are there ways to adequately streamline permitting and other consultation processes? OCRM spoke to hundreds of people nationwide about their issues, which will inform our efforts to reauthorize the Coastal Zone Management Act. The section *Envisioning the Future of Coastal Management* offers more in-depth information on this initiative.

Aside from legislative changes, OCRM recognizes that it is important to support programs and partnerships to address the concerns of coastal resource managers. The Cooperative Institute for Estuarine and Environmental Technology (CICEET), a unique partnership with the University of New Hampshire, has historically provided managers with innovative tools and solutions to address growing problems, such as coastal development. Continuing this applied research link will be important to the success of coastal management. In addition, the Coastal and Estuarine Land Conservation Program (CELCP) provides managers with a tool to conserve and preserve coastal lands. The program allows states to purchase tracts of lands that can provide economic, social, or environmental benefits. Thus, this program offers a mechanism for managers to address coastal development issues.

### *Envisioning the Future of Coastal Management*

In FY 06, OCRM, in partnership with the Coastal States Organization (CSO), launched an initiative to envision the future of coastal zone management. By discussing coastal management issues and brainstorming solutions with a diverse set of stakeholders, OCRM sought to develop a suite of core principles that would guide the reauthorization of the CZMA.

This ambitious three-phase process began with a joint OCRM-CSO discussion paper identifying issues, constraints, and opportunities under the current coastal management system. The document, released in September 2006, identified topics and questions to be examined in subsequent phases.

During Phase II, interviews were conducted with state coastal program managers, estuarine research reserve managers, and other state-level officials to ascertain their perspectives on current and emerging coastal management priorities. Recommendations were also gathered on how coastal management might be improved.

In Phase III, OCRM and CSO convened five large-scale stakeholder workshops around the nation to gather ideas about priority challenges for coastal management along with suggestions for improving the CZMA and the National Coastal Management Program. To assist with process design and meeting

facilitation of the Phase III meetings and workshops, a consulting firm specializing in stakeholder involvement was hired.

A careful examination of all contributions from stakeholders around the country and throughout government (federal, state, and local) resulted in the four cornerstones of an improved Coastal Zone Management Act:

- The CZMA should ensure the long term sustainability of coastal resources and communities;
- The CZMA should be goal-driven and results-oriented;
- The CZMA should coordinate and align federal, state, and local governments to address issues of national importance; and
- The National Coastal Management Program should remain a voluntary partnership between the Federal Government and the states in which each bears responsibilities for achieving program goals.

The results of Phase III were published in a final report, *Envisioning Our Coastal Future*, in October 2007. This report, along with Phase I and Phase II documentation are available online: [www.coastalmanagement.noaa.gov/czm/czma\\_vision.html](http://www.coastalmanagement.noaa.gov/czm/czma_vision.html).

The four cornerstones outlined here, coupled with the core principles and feedback received throughout the process, will guide NOAA through the reauthorization of the Coastal Zone Management Act. The charge is clear—to put forth a new Act that will set the course toward sustainable, thriving coastal communities. OCRM is well on its way to achieving this end and look forward to reporting on the new legislation in our next biennial report.

### ***The Coastal Estuarine Land Conservation Program***

The Coastal and Estuarine Land Conservation Program, established in FY 02 as a companion to the Coastal Zone Management Act (See Appendix C), has matured and transitioned during FY 06-07 from an earmark program to a competitive program. In FY 06, Congress directed NOAA to develop a competitively-ranked list of projects for funding in FY 07 and again in FY 08. All projects supported with FY 07 funds were selected through a national competitive merit-review process. Eighteen projects from the 2007 competitively-ranked list received funding. These projects are located in California, Connecticut, Delaware, Georgia, Maine, Massachusetts, Michigan, New Jersey, North and South Carolina Ohio, and Oregon.

Throughout the Coastal Management Visioning process, coastal managers and stakeholders cited the need for protecting key coastal habitats, including lands that buffer the impacts of coastal storms. The CELCP will remain an important complement to the CZMA and will support protection of priority lands identified by state coastal programs.

In addition to the CZMA, NOAA has other statutory responsibilities that place priority on natural shorelines and other essential habitat for fish, threatened and endangered species, and other species at risk, as well as lands that help protect coral reefs. The CELCP contributes directly toward NOAA's success in protecting these types of habitats long-term.

To date, the CELCP has protected more than 30,000 acres, including more than 11,000 acres for acquisitions that were completed in FY 06 and FY 07. The number will continue to grow as the 60+ on-going projects come to closing.

NOAA is also working with coastal states to complete strategic land conservation plans for coastal areas. Many states are using the CELCP plan as an opportunity to integrate existing plans that may have been developed for a single purpose or geographic area. CELCP plans are identifying state's

priority conservation needs and the geographic areas that address those needs. In FY 07, NOAA approved the State of Washington's plan, which focuses on protecting high quality, ecologically significant wetlands, shorelines and adjacent upland. NOAA also approved the State of New York's plan, which among its priorities, focuses on coastal hazard areas and significant coastal fish and wildlife habitat.

After five years implementing the program, NOAA plans to update CELCP guidelines in FY 08. The revision will be done in consultation with coastal states and other interested parties, and will take into consideration changes proposed within pending authorization bills for the program.

Interest in this program continues to grow, as do its successes. OCRM looks forward to completing more cycles of competitively-selected projects in the coming years. Making CELCP officially part of the CZMA through the reauthorization process will ensure that the legacy of sustainable coastal conservation in cooperation with state and local governments and willing landowners will continue.

### ***The Cooperative Institute for Coastal and Estuarine Environmental Technology Addressing Important Coastal and Estuarine Issues***

The Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) is a partnership between NOAA's OCRM and the University of New Hampshire. The institute is a national leader in transforming the best available science into practical, innovative tools for coastal managers. CICEET and its colleagues nationwide develop and demonstrate cutting edge technologies and methods to aid managers in addressing priority challenges such as coastal pollution and habitat degradation.

Since its inception in 1997, CICEET has been a valued resource for the coastal management community, and is an integral part of OCRM's vision for the future. CICEET-supported research and technology development, funded by OCRM, has greatly advanced the technological capabilities of coastal management. In addition, CICEET's long-standing relationship with coastal managers has led to a highly focused, strategic approach to developing—and delivering—the technology and know-how needed to address coastal environmental challenges. CICEET bridges academia, government, private industry, and NGOs to analyze coastal resource managers' technology needs. This careful analysis, forms the basis of highly collaborative, end user-driven funding opportunity programs through which CICEET develops practical tools for coastal managers. These tools are made available through outreach, demonstration, training, and an evolving technology utilization program.

The following stories illustrate how CICEET is working around the country to meet the technology needs of coastal managers.

#### ***Stormwater Center***

The CICEET-sponsored University of New Hampshire Stormwater Center (UNHSC) completed its third year of operation. The only one of its kind, the center provides independent, third party evaluation on the ability of stormwater treatment systems to remove pollution from stormwater and manage the quantity of runoff. For example, researchers at the center found that porous asphalt is a durable, effective tool for stormwater management, and its use could reduce the need for road salt in winter conditions by more than 75 percent. With support from CICEET, the center is expanding its outreach program to collaborate with NOAA's Coastal Services Center and the NERRS Coastal Training Program to develop a stormwater training based on UNHSC data that will be available nationwide in 2008. In a time when water resources are becoming increasingly scarce, and nonpoint pollution carried by stormwater is the single greatest threat to water quality nationwide, the center's work is especially critical.



### *Treating Polluted Water*

With support from CICEET, scientists at Louisiana State developed a vertical-flow constructed wetland treatment that encourages the growth of anaerobic bacteria that break down chlorinated, toxic compounds into harmless byproducts. This natural, energy efficient way to clean up polluted groundwater is currently being employed in North Carolina, and has received significant interest from managers in other states.

### *Real-time Water Quality Data*

The CICEET-sponsored Remote Access Satellite Sensor Link (RASSL), developed by a Maryland-based company, is an affordable, data communications system that provides real-time communication with water-quality sensor platforms in the field. Such timely water quality data is critical to coastal management efforts such as managing shellfish beds. The unit is field-ready, commercially available, and in use at National Estuarine Research Reserves in Delaware, Florida, Maryland, New Hampshire, South Carolina, and Virginia.

### *Seafloor Mapping and Monitoring Habitat Change*

CICEET sponsored the development of an integrated remote sensing and multibeam sonar modeling system. This system, developed by a California State University scientist, is an innovative solution to the challenge of mapping seafloor and monitoring habitat change in turbulent and shallow tidal waters. The tool has been used by the U.S. Army Corps of Engineers, National Marine Sanctuary Program, California Coastal Conservancy, National Science Foundation, and the USGS in the following California locations: San Francisco, San Pablo Bay, Monterey Submarine Canyon, Elkhorn Slough, Monterey Bay National Marine Sanctuary, and the Cordell Bank National Marine Sanctuary.

In step with OCRM's future vision, CICEET entered its 10th year (2007) with a new strategic plan to focus its resources on activities with the greatest potential for impact in a time of escalating coastal development and climate change. This plan is helping CICEET address those issues that most impact human communities and ecosystems, such as land-use change, habitat degradation, and nonpoint source pollution. Each of these issues is relevant to the core work we do within OCRM. As such, continuing our partnership with CICEET is important to our collective success. By codifying this institute in legislation, we can continue paving the way for innovative solutions to the nation's ever-changing management challenges.

### *Where do we go from here?*

The growing interest in coastal management and increased recognition of the accomplishments of the coastal management programs, research reserves, CELCP, and CICEET, coupled with widespread support for a new Coastal Zone Management Act make for a powerful and positive outlook for the future of OCRM. With increasing attention on ways that coastal management can address climate change impacts, OCRM is poised to play an ever more important role in the management of our nation's ocean and coastal resources. The future holds significant challenges for balancing coastal development and conservation. Yet, we are eager to face those challenges and to continue our role as champions of our coasts. OCRM looks forward to developing and implementing sustainable solutions in concert with our federal and state partners. And, OCRM welcomes the opportunity to continue leading the nation's efforts to manage and conserve ocean and coastal resources for decades to come.

## Appendix A: Federal Consistency

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### Major federal consistency actions in 2006-2007

<p>Rule Changes</p>	<p>Rule changes including modified provisions originally proposed in 2003 in response to the 2001 Report of the National Energy Policy Development Group and amendments to the Coastal Zone Management Act in the Energy Policy Act of 2005. (71 Fed. Reg. 787-831 (January 5, 2006))</p> <p>Additional changes to the federal consistency regulations in the nature of technical corrections. (71 Fed. Reg. 75864-75865 (December 19, 2006))</p>
<p>Major Consistency Appeals</p>	<p>Weavers Cove LLC/Mill River Pipeline appeals of objection by the Commonwealth of Massachusetts to dredging associated with the construction of a LNG storage and transfer facility at Fall River, MA. (pending)</p> <p>AES appeal of objection by the State of Maryland to the construction of a LNG storage and transfer facility at Sparrows Point, MD. (pending)</p>
<p>Unlisted Activity Requests</p>	<p>Review by the California Coastal Commission of NMFS issuance of a long-line fishery permit (request granted).</p> <p>Review by the State of New Jersey of Deepwater Port Act license for a liquid natural gas facility (request denied for failure to meet timeframe requirements).</p>
<p>Interstate Consistency Review Authority</p>	<p>New York request to review activities in Connecticut in Long Island Sound (granted)</p> <p>Connecticut request to review activities in New York (Long Island Sound) and Rhode Island (Fishers Sound) (granted).</p> <p>Pennsylvania request to review activities within a specified area along the Ohio shoreline relating to the littoral drift of sediment (granted).</p> <p>New Jersey request to review dredging and dredged disposal activities within the Pennsylvania and Delaware portions of the Delaware River (granted October 15, 2007).</p>
<p>Consistency Website</p>	<p>See <a href="http://coastalmanagement.noaa.gov/consistency/welcome.html">http://coastalmanagement.noaa.gov/consistency/welcome.html</a>.</p>

## Appendix B: NOAA Coastal Program Integration Activities

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In FY 08, the Office of Management and Budget (OMB) directed NOAA to make meaningful improvements in the strategic mission and management structure for its coastal and ocean programs, specifically Sea Grant, the Coastal Services Center (CSC), the National Centers for Coastal Ocean Science (NCCOS), and the Office of Ocean and Coastal Resource Management (OCRM). OMB asked NOAA to: pick 1-3 priorities for increased integration and strategic plan and budget analysis, and for which there would be measures to gauge performance; create a structure that would drive coordination yet not create a new unwieldy structure or bureaucracy; and capitalize on existing activities. More specifically, OMB and NOAA agreed that the following items would be provided by September 2007: 1) process improvements to facilitate and ensure increased integration on coastal activities among the offices, including near-term and longer-term actions; 2) an analysis of the offices' strategic plans and budgets; 3) a final hazard resilient coastal communities logic model and budget analysis to guide the offices' activities and investments, and measures to gauge progress toward meeting outcomes; 4) a draft coastal development logic model that we will finalize by October 2007.

In response, OCRM, CSC, NCCOS, and Sea Grant formed an integration workgroup with representatives from each of the offices. The group did considerable work in terms of how to improve integration to address the issues and how to improve planning, budgeting, and execution processes to foster future integration. The final package was submitted to OMB in late September and included the following:

- A final hazard resilient coastal communities logic model;
- A draft land use/coastal development logic model;
- An analysis of current and planned expenditures and strategic plans;
- Recommendations for improvements to the integration process; and
- Recommendations to institutionalize integration in the future.

## Appendix C: Codification of the Coastal Estuarine Land Conservation Program

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### TITLE 16--CONSERVATION

#### CHAPTER 33--COASTAL ZONE MANAGEMENT

##### Sec. 1456d. Coastal and Estuarine Land Conservation Program

The Secretary shall establish a Coastal and Estuarine Land Conservation Program, for the purpose of protecting important coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values, or that are threatened by conversion from their natural or recreational state to other uses: Provided further, That by September 30, 2002, the Secretary shall issue guidelines for this program delineating the criteria for grant awards: Provided further, That the Secretary shall distribute these funds in consultation with the States' Coastal Zone Managers' or Governors' designated representatives based on demonstrated need and ability to successfully leverage funds, and shall give priority to lands which can be effectively managed and protected and which have significant ecological value: Provided further, That grants funded under this program shall require a 100 percent match from other sources.

(Pub. L. 107-77, title II, Nov. 28, 2001, 115 Stat. 776.)

#### Codification

Section was enacted as part of the Department of Commerce and Related Agencies Appropriations Act, 2002, and also as part of the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2002, and not as part of the Coastal Zone Management Act of 1972 which comprises this chapter.

## Appendix D: State Agency Program Leads

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State or Territory	Program	Lead Agencies
Alabama	CMP& NERR	Alabama Department of Conservation and Natural Resources
Alaska	CMP	Alaska Department of Natural Resources
	NERR	Alaska Department of Fish and Game
American Samoa	CMP	American Samoa Department of Commerce
California	CMP	California Coastal Commission, San Francisco Bay Conservation and Development Commission, and California Coastal Conservancy
	NERR	Elkhorn Slough: California Department of Fish and Game San Francisco Bay: San Francisco State University Tijuana River: California Department of Parks and Recreation
Connecticut	CMP	Connecticut Department of Environmental Protection
Delaware	CMP& NERR	Delaware Department of Natural Resources and Environmental Control
Florida	CMP& NERR	Florida Department of Environmental Protection
Georgia	CMP& NERR	Georgia Department of Natural Resources
Guam	CMP	Guam Bureau of Statistics and Plans
Hawai'i	CMP	Hawai'i Department of Business, Economic Development and Tourism
Illinois	CMP	Illinois Department of Natural Resources
Indiana	CMP	Indiana Department of Natural Resources
Louisiana	CMP	Louisiana Department of Natural Resources
Maine	CMP	Maine State Planning Office
	NERR	Wells Reserve Management Authority
Maryland	CMP& NERR	Maryland Department of Natural Resources
Massachusetts	CMP	Executive Office of Environmental Affairs
	NERR	Massachusetts Department of Conservation and Recreation
Michigan	CMP	Michigan Department of Environmental Quality
Minnesota	CMP	Minnesota Department of Natural Resources
Mississippi	CMP& NERR	Mississippi Department of Marine Resources
New Hampshire	CMP	New Hampshire Department of Environmental Services
	NERR	New Hampshire Department of Fish and Game

New Jersey	CMP	New Jersey Department of Environmental Protection and the New Jersey Meadowlands Commission
	NERR	Rutgers University, Institute of Marine and Coastal Services
New York	CMP	New York State Department of State
	NERR	New York State Department of Environmental Conservation
North Carolina	CMP & NERR	North Carolina Department of Environment and Natural Resources
Northern Marianas	CMP	Northern Marianas Coastal Resources Management Office
Ohio	CMP & NERR	Ohio Department of Natural Resources
Oregon	CMP	Oregon Department of Land Conservation and Development
	NERR	Oregon Department of State Lands
Pennsylvania	CMP	Pennsylvania Department of Environmental Protection
Puerto Rico	CMP & NERR NERR	Puerto Rico Department of Natural and Environmental Resources
Rhode Island	CMP	Rhode Island Coastal Resources Management Council
	NERR	Rhode Island Department of Environmental Management
South Carolina	CMP	South Carolina Department of Health and Environmental Control
	NERR	Ace Basin: South Carolina Department of Natural Resources North Inlet-Winyah Bay: University of South Carolina Branch Institute for Marine and Coastal Sciences
Texas	CMP	Texas General Land Office
	NERR	University of Texas
Virginia	CMP	Virginia Department of Environmental Quality
	NERR	Virginia Institute of Marine Science
Virgin Islands	CMP	U.S. Virgin Islands Department of Planning and Natural Resources
Washington	CMP & NERR	Washington State Department of Ecology
Wisconsin	CMP	Wisconsin Department of Administration, Bureau of Intergovernmental Relations