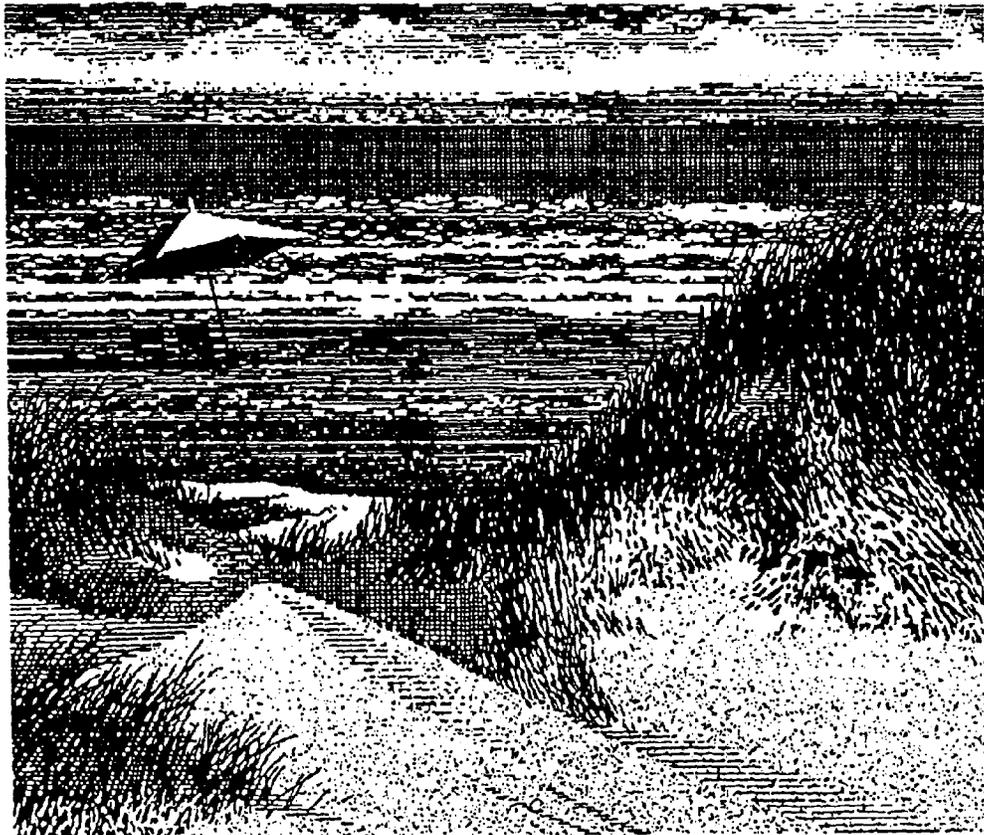




# *Biennial Report to the Congress on Coastal Zone Management*

*Volume I: Executive Summary*

*September 1992*



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**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
National Ocean Service  
Office of Ocean and Coastal Resource Management



UNITED STATES DEPARTMENT OF COMMERCE  
The Under Secretary for  
Oceans and Atmosphere  
Washington, D.C. 20230

JUL 14 1992

The President  
President of the Senate  
Speaker of the House of Representatives

Sirs:

I am pleased to submit the Biennial Report of the Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration, pursuant to Section 316 of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 et seq.) for fiscal years 1990 and 1991. The report discusses the progress made during these years in administering the coastal zone management and estuarine research reserve programs and the problems encountered.

Sincerely,

A handwritten signature in black ink that reads "John A. Knauss". The signature is written in a cursive style with a large initial "J".

John A. Knauss

THE ADMINISTRATOR



## **INTRODUCTION**

The National Oceanic and Atmospheric Administration (NOAA) is required to submit a report to Congress not later than April 1 on the administration of the Coastal Zone Management Act (CZMA) of the preceding two fiscal years. Pursuant to Section 316 of the CZMA, as amended, this report discusses the progress made during Fiscal Years 1990 and 1991 in administering the National Coastal Zone Management (CZM) and National Estuarine Research Reserve Programs and the problems encountered.

The document is comprised of two volumes. Volume I provides a summary of the CZM and estuarine reserve programs and describes the accomplishments of state CZM programs in selected national interest areas — coastal hazards, wetlands protection, coastal water quality, public access, and waterfront redevelopment. In addition, Volume I describes the highlights of CZMA administration during the biennium, including implementation of the Coastal Zone Act Reauthorization Amendments of 1990 (1990 CZMA Amendments), and delineates future directions for these efforts, including coastal management issues of national importance and administrative planning.

Volume II highlights NOAA administration of the CZM and estuarine reserve programs and states' accomplishments during the biennium. Chapter 1 includes a brief description of the CZM program and details NOAA's implementation of the key provisions of the 1990 CZMA Amendments, including the Coastal Nonpoint Pollution Control Program, the Coastal Zone Enhancement Grants Program and the new procedures for evaluating state CZM and estuarine reserve programs. This chapter also describes NOAA's activities during the biennium regarding Federal consistency actions.

In Chapter 2, individual state CZM programs are described, highlighting significant accomplishments made during the report period. Each state listing includes a summary of program accomplishments, significant program changes and evaluations of the state's performance. Chapter 3 presents a description of the National Estuarine Research Reserve System (NERRS), including its mission and structure. Program accomplishments during the biennium are provided in detail, as well as reflections on future program directions. Chapter 4 describes each estuarine reserve. Information is provided on reserve resources and facilities, important improvements during the biennium, education, research and monitoring activities, and state performance in managing the reserve.

The status of state CZM programs is provided in Appendix A. Appendix B itemizes state funding under sections 306, 309 and 315 of the CZMA during fiscal years 1990 and 1991. Appendix C summarizes Federal consistency appeals. Guidance regarding processing fees for Federal consistency appeals is provided in Appendix D. Proposed regulations implementing sections 309 and 312 of the Coastal Zone Act Reauthorization Amendments of 1990 are printed in Appendix E. Finally, a list of the estuarine reserves, the reserves' acreage and the year of designation is provided in Appendix F.

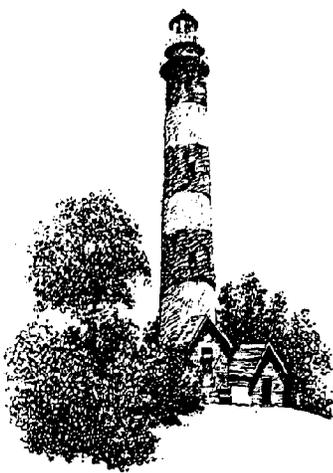
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## *The Value of the Coast and its Resources*



The Nation's coasts are among America's most valuable and diverse resources. Extending over 95,000 miles and bordering three oceans and the Great Lakes, this narrow strip of continent, where land meets the sea, is used for diverse, critical and often competing uses. The waters off the coast are among the most biologically productive regions in the Nation. Coastal wetlands and estuaries provide the nutrients, nursing areas and spawning grounds for 70 percent of the commercial and recreational fisheries harvest in the United States. In addition to providing critical habitat for fish and wildlife, coastal wetlands help reduce flood damage and serve as natural filtering systems to protect water quality.

Fish and wildlife are not the sole inhabitants of the coastal zone. Over 50 percent of the Nation's population already lives along the coasts, which comprise only 11 percent of the total land of the United States. Coastal areas are the most densely populated in the U.S., supporting more than 750 people per square mile. This figure is expected to increase by 15 percent over the next 20 years. Most of America's large metropolitan centers, such as San Francisco, Seattle, Chicago, New York, Boston, Miami and New Orleans, are also located in coastal regions. These centers bring a vast array of industrial and service activities to this limited resource area.

The recreation and tourism industries, which stimulate billions of dollars in economic activity, also have a large stake in coastal areas. Along some coasts, recreation and tourism are the dominant industries, attracting millions of Americans annually to coastal beaches and estuaries for recreational enjoyment. Several of the Nation's manufacturing facilities are also drawn to coastal areas, due to the dependence on access to water transportation and port facilities. These leisure and trade industries are vital to the Nation's economy and provide jobs for many Americans, but also put additional strain on valuable coastal resources.

Concern for the condition of America's coasts has grown rapidly over the years, spurred by accelerating demands for development in coastal areas, population increases along the coast, and severe degradation of the environment. Burgeoning population creates growing demands for commercial, residential, and recreational development, placing tremendous pressure on the Nation's coasts and coastal resources. Lives and property are continually placed at risk from coastal storms and natural erosion processes. Coastal water pollution has increased and the productivity of estuarine ecosystems continues to decline. The influence of coastal development is observed in the increase of closed shellfish growing waters, which are affected by urban runoff and malfunctioning septic systems. A recent National Oceanic and Atmospheric Administration (NOAA) study disclosed that 18 of 23 coastal states are experiencing an increase in closed shellfish beds.<sup>1</sup> Coastal wetlands loss also

<sup>1</sup>The report, entitled "1990 National Shellfish Register of Classified Estuarine Waters," was prepared by the Strategic Assessment Branch, Office of Ocean Resources Conservation and Assessment, National Ocean Service, NOAA, 6001 Executive Boulevard, Rockville, Maryland 20852.

continues. The U.S. loses 40,000 acres of coastal emergent wetlands annually. The State of Louisiana is experiencing the largest loss, with over 50 square miles (approximately 32,000 acres) disappearing each year.

To address these issues, Congress passed the Coastal Zone Management Act (CZMA) in 1972. The goal of the CZMA is to promote orderly development and protect the Nation's coastal resources to provide suitable housing for people and areas for recreational enjoyment, opportunities for maritime and commerce, and preserve and protect living resources. Without rational, balanced management, the economic growth and development of the coasts could be jeopardized. Since 1974, the Federal government has invested over \$700 million in the CZMA, which recognizes that all levels of government — Federal, state and local — have a common interest in the coasts and must share the responsibility for effectively managing coastal areas and resolving conflicts between competing uses.

The CZMA established a voluntary partnership among these units of government, with states and their local partners on the front line. States have the lead role in developing coastal zone management (CZM) programs which are specifically tailored to meet their individual needs, but also take into account the broader national interest in wise management of coastal resources. The Federal government provides financial assistance and policy guidance and assures that the broader national interest is considered in the framing of state and local decisions.

Two kinds of Federal incentives are built into the CZMA to foster state participation: (1) Federal matching funds, which help states meet the cost of implementing and enhancing CZM programs, and (2) Federal consistency authority, which requires that Federal actions and federally permitted activities be consistent with a state's federally approved CZM program if those actions or activities affect natural resources, land uses or water uses in the state's coastal zone.

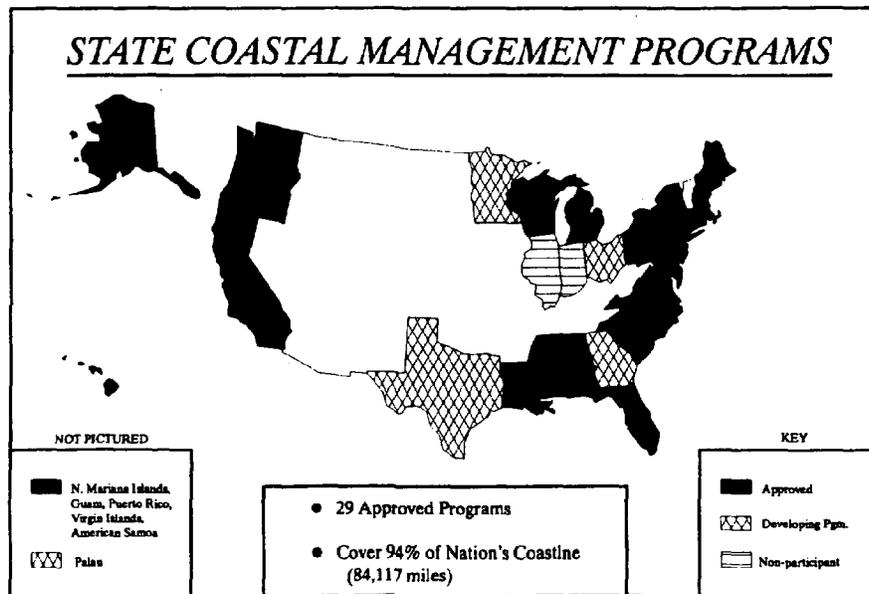
At the Federal level, the CZMA is administered by NOAA<sup>2</sup>, which provides financial assistance, policy guidance and technical assistance to states in establishing and implementing the CZM programs. Additionally, NOAA assures that state programs comply with Federal guidelines and national goals by providing continuous oversight of the programs, with in-depth formal evaluations of state performance at least every three years. NOAA encourages public involvement in this evaluation process.

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<sup>2</sup>The National Oceanic and Atmospheric Administration is part of the U.S. Department of Commerce. Within NOAA, the CZMA is administered by the National Ocean Service's Office of Ocean and Coastal Resource Management.

## *Coastal Management: Program Overview*

To date, 29 states and U.S. island territories (hereafter, "state" refers to states, territories and commonwealths) have developed federally approved CZM programs, which balance local, state and national interests. NOAA expects the number of participating states to increase in the near future. Over the past two years, NOAA has assisted the States of Ohio, Minnesota, Georgia and Texas with the development of CZM programs. The State of Indiana and the Republic of Belau (formerly Palau), a trust territory, have also expressed an interest in joining the national program.



The approved CZM programs encompass 94 percent of the Nation's coastline. These comprehensive, state-operated programs seek a balance between preservation and protection of coastal resources and the development of those resources. The programs cover a wide range of issues, including:

- reducing the risk to life and property from coastal storms and erosion by directing coastal development away from hazardous areas and developing evacuation plans and early warning systems,
- protecting dunes, the first line of defense against storms,
- protecting wildlife and fisheries habitats,
- regulating land use impacts on water quality,
- increasing public access to our Nation's coastal resources for recreational enjoyment,
- assisting cities in revitalizing urban waterfronts,

- assuring that industries dependent on coastal locations, such as ports, marinas, commercial fish landings and boat repair yards, are not preempted by land uses that do not require a waterfront location, and
- resolving complex interagency conflicts that can arise in land use decisionmaking.

**A**lmost two decades have passed since the establishment of the coastal zone management program. The experiences of the last 19 years demonstrate that this Federal-state partnership is working well and is producing measurable, beneficial changes in the management of coastal resources. Despite the continuing challenges, the 29 states with approved CZM programs have made substantial progress in responding to threats to coastal resources, including the loss of marine resources and wildlife habitat, and decreased public open space. State CZM programs have also made significant strides in addressing shoreline erosion problems, including planning for the effects of future sea and Great Lakes level rise.

The state programs also promoted water dependent uses of the coast, such as ports and marinas, commercial fisheries and recreation. Examples of this progress over the last two years are documented below. States have made improvements in ocean resource planning, special area management planning and improved government operations. Volume II of the Biennial Report on the CZMA for FY 1990-91 provides detailed information on these and other state accomplishments.



## *Coastal Management: Contribution to the Nation*

***Protecting Life  
and Property  
from  
Coastal Storms***

Coastal states play a positive role in reducing the risk to life and property from coastal storms by deterring development in highly vulnerable areas of the shoreline. States adopted setback regulations (currently, 13 states have setback requirements for coastal development), laws to protect dunes, construction standards, evacuation plans, and early warning systems in an effort to protect coastal development from natural hazards.

Perhaps the most notable progress over the last two years was in response to a series of major storms along the east coast and in the Caribbean. For example, throughout 1990 and 1991, CZM program offices in the Virgin Islands, Puerto Rico, and South Carolina responded to the disastrous effects of Hurricane Hugo, which struck in September 1989. CZM efforts included streamlining the permit process for reconstruction, providing technical assistance through workshops, evaluating evacuation techniques based on storm surge models, and modifying and implementing a South Carolina law enacted to prevent reconstruction in high hazard areas. In response to Hurricane Bob (summer of 1991) and a severe northeaster (fall of 1991), mid-Atlantic and North Atlantic state CZM programs assisted with coastal cleanups, damage assessments, and the revision and implementation of shoreline protection and mitigation measures.



One highly successful effort that developed into a new initiative for the national program was the volunteer technical assistance provided to the Virgin Islands in February 1990, in response to the crisis created by Hurricane Hugo. The storm ravaged homes, businesses and infrastructure in the territory. NOAA, in cooperation with the Coastal States Organization, dispatched a team of state coastal permit experts to the Virgin Islands to assist in recovery efforts. John Meyer from Florida, Michael Slattery from Maryland, and

Charles Jones from North Carolina, spent three weeks in the Virgin Islands working with Virgin Islands' staff. The team conducted field inspections, evaluated environmental assessment reports, and processed major and minor coastal permit applications. These collective efforts helped reduce the overwhelming workload that resulted from the widespread damage, thereby speeding recovery efforts.

A legislative outcome of this well-executed response to the Virgin Islands crisis was the inclusion of a provision in the 1990 Amendments to the CZMA which authorized NOAA to provide emergency assistance to states in the aftermath of disasters. This provision has proven extremely useful. One year after the amendment passed, NOAA assisted American Samoa in the aftermath of Hurricane Val, which struck the territory in December 1991. NOAA provided travel funds for emergency personnel from the Hawaii and California CZM programs to assist in the territory's rehabilitation efforts, and sent a scientific assessment team to the territory to evaluate impacts of the storm on the Fagatele Bay reef system.

Over the past two years, state CZM programs have also addressed coastal natural hazards through the following mechanisms:

- The American Samoa CZM program worked with the U.S. Soil Conservation Service to develop a strategy for mitigating the effects of potential landslides. In addition, American Samoa trained other territorial agencies on methods for reducing risks from landslides.
- Florida conducted research projects to implement post-disaster redevelopment planning along its beaches. Information generated from this research will be used to develop a statewide policy for redevelopment after disasters.
- The Hawaii CZM program completed a shoreline management plan for Oahu, which lays the foundation for preserving the Island's natural resources and certain beaches threatened by erosion. This activity is part of a multi-year statewide beach management program aimed at identifying coastal erosion trends and developing plans to preserve Oahu's 66 miles of sandy shoreline.
- The Puerto Rico CZM Program assisted in the development of hurricane evacuation plans for the San Juan metropolitan area. Areas of the territory that followed the draft plan suffered no deaths during Hurricane Hugo in 1989.
- The Rhode Island Coastal Resources Management Council adopted regulations which established post hurricane and storm permit proce-



## *Wetlands*



dures. A 30-day moratorium is now imposed to provide time to assess damages, determine changes in natural features, and identify mitigation opportunities, including purchase. These emergency procedures were effectively implemented during the two major storms that struck the Rhode Island coast in late 1991.

- The Virginia CZM program developed regulations for barrier islands that address cumulative and secondary impacts of development. The state will submit the policy to NOAA for incorporation into the Virginia CZM program.
- The Washington CZM program developed a sea level rise response program, which forms the nucleus of the global warming component in the state's Environment 2010 project. Program activities included conferences, workshops, technical and policy studies and public information efforts.

**I**n recent years, state CZM programs have placed a renewed emphasis on wetlands protection. In the late 1960s and early 1970s, the states focused on establishing basic wetlands protection programs. However, the basic programs, even if implemented well, were not enough to totally protect valuable wetland resources. In many states, vast acreages of the most critical wetlands were destroyed long before regulatory programs were put into place.

During the last two years, many new statutes, regulations and initiatives for wetlands protection and restoration have been developed and passed by the states, signalling a growing level of state interest. American Samoa and the Commonwealth of the Northern Mariana Islands, for example, developed comprehensive management plans for wetlands. These plans identified and classified wetlands, defined authorities and established strategies to enhance the protection and management of these important ecosystems. In addition, Maryland and South Carolina established new programs to address non-tidal wetlands.

The focus in many states shifted to restoring lost wetlands and enhancing those that have been damaged. Connecticut and Delaware are both implementing multi-year wetlands restoration projects. To date, thousands of wetlands acres have been restored by these states; much larger areas are scheduled for restoration. In the Great Lakes, Michigan adopted a new wetlands policy with a goal of creating 150,000 new acres of coastal wetlands by the year 2000.

States also developed plans and guidelines for mitigating wetlands damage. These guidelines have proven useful to the development community by explaining what is allowable and how developers can become active

participants in wetlands protection programs. Wetlands management and mitigation plans similarly assist the states in laying out priorities for preservation and restoration. In the past two years, Alabama, Delaware and Mississippi created new wetlands mitigation manuals. State CZM programs launched education and technical assistance programs to increase public and local government awareness of the value of wetlands protection. Washington State, for example, focused on providing improved technical assistance, public information workshops and educational materials to local governments.

States deemed some wetland areas so valuable that the CZM programs established wetlands preserves and created special area management plans. Since 1990, New York designated preserves on Long Island, along the Hudson River and adjacent to the Great Lakes. Wisconsin conducted a special wetlands inventory of lower Green Bay and plans to prepare a special area management plan for the area.

**A**lthough coastal pollution was not a major focus of concern in the early stages of CZM program implementation, some states made significant contributions to water quality improvements through their CZM programs. Existing water quality programs focused on point sources, yet in many instances, the sources of pollution are not as easily identified. Since state CZM programs have been directly involved in managing land use and development activity since program inception, they provide a unique ability to address the more diffuse nonpoint pollution, which accounts for half of the pollution in coastal and estuarine waters.

Congress recognized this strength by creating the Coastal Nonpoint Pollution Control Program, a joint NOAA and Environmental Protection Agency initiative, as part of the 1990 Amendments to the CZMA. States will develop these programs through 1994 (see the following section, "The New Agenda," and Volume II of the CZMA Biennial Report, for more information on the coastal nonpoint program).



Many coastal states have already begun to address issues related to water quality. Methods used by the states range from developing stronger linkages between CZM and water quality agencies to creating extensive citizen water quality monitoring programs; for example, in the past two years, several states, including New York, Rhode Island and South Carolina, made stormwater runoff an integral part of the state development review processes.

## *Coastal Water Quality*

Recognizing the widespread nature of the water quality problem and the lack of state capabilities to deal with all facets of the problem, some states developed programs to involve citizens and local government in the CZM programs. Alabama and Virginia initiated citizens' water quality management programs for Perdido Bay and Chesapeake Bay, respectively.

Coastal nonpoint source pollution is not easily controlled using existing jurisdictional boundaries, whether state or local government. To address this problem, state CZM programs engaged in the following activities:

- Maine developed an estuary-wide water quality education and management program that involves several local governments.
- Wisconsin and Washington developed management programs based on watershed boundaries, rather than local government boundaries. Wisconsin identified priority watersheds to focus attention on realistic projects. The State of Washington directed new attention at sharing watershed management information with local governments.
- Delaware developed an Inland Bays Recovery Initiative focused on controlling nonpoint source pollution.

Coastal states also targeted problems created by specific land uses; for example, Michigan and South Carolina adopted siting criteria and operational requirements for marinas, and New Jersey mapped critical water quality areas that might be affected by marina development.

## *Public Access*

**A**s the demand for public access to the Nation's shoreline increases, so do the pressures for development on the coast, leaving fewer public access opportunities. State CZM programs, while lacking the financial resources to acquire large tracts of land, nevertheless have improved both the quality and quantity of public access. Under the CZMA, states acquired parcels of land for access and funded low-cost construction projects, such as boardwalks, piers, bike paths, and dune walkovers. Federal CZMA funds have often been used to develop public access plans and guidebooks. During the past two years, several activities have been undertaken, including:

- The Maryland CZM program developed a comprehensive plan for establishing a Greenway network for the Patapsco River watershed. The goal was to improve water quality, expand and enhance wildlife habitat, and develop and improve non-impact recreation areas.
- The New York CZM program is currently working with nine regional advisory committees to develop a draft plan for conserving critical open space. Special priority is being given to conserving open space in coastal areas.

- The New Jersey CZM program completed a manual on *Waterfront Public Access: Design Guidelines*. The publication details planning and design considerations for public access. The state also published a beach access booklet, a marina siting and design handbook, and a survey of beaches accessible to the disabled, all of which are publications designed to increase accessibility to the waterfront.

- Through the acquisition of properties and several small-scale public access projects, the Oregon CZM program maintained a strong commitment to increase public access. The state produced a field guide, which presented a photograph, map, and description for each public access project. In a cooperative effort with the Parks and Recreation Department, the Oregon CZM program also developed a detailed inventory of over 1,000 public access sites along Oregon's coast.

- The Rhode Island CZM program supported development of a state-wide Coastal Access Guide, which not only identified all access points to the shore, but also detailed the condition of each site and the associated facilities, such as parking and sanitary facilities.

- The Washington CZM program contributed to public access, public education, and shoreland acquisition by funding projects for floats, docks, boat ramps, footbridges, boardwalk, stairways to beaches, waterfront pathways, and shoreline acquisitions.

**I**n the mid-20th century, many urban waterfronts became deteriorated and abandoned due to polluted water and changing port and cargo needs. CZM grants assist local governments in preparing waterfront land use plans that serve as catalysts for revitalizing waterfronts throughout the country. These plans have led to billions of private investment dollars for urban waterfronts in cities as Philadelphia, Jersey City, Norwalk CT, Biloxi MS, Wilmington NC, and New York.

State CZM programs focus on directing and managing growth and development in areas where unwise development would have negative environmental consequences. As the various state programs evolved, new methods of encouraging redevelopment of waterfront areas have been implemented.

- In Connecticut, the concept of harbor management planning is a valuable tool. The Connecticut CZM program adopted the Harbor Management Act as a part of its approved program. Several communities are involved in preparing plans each year. The Rhode Island CZM program also initiated a harbor management planning program.

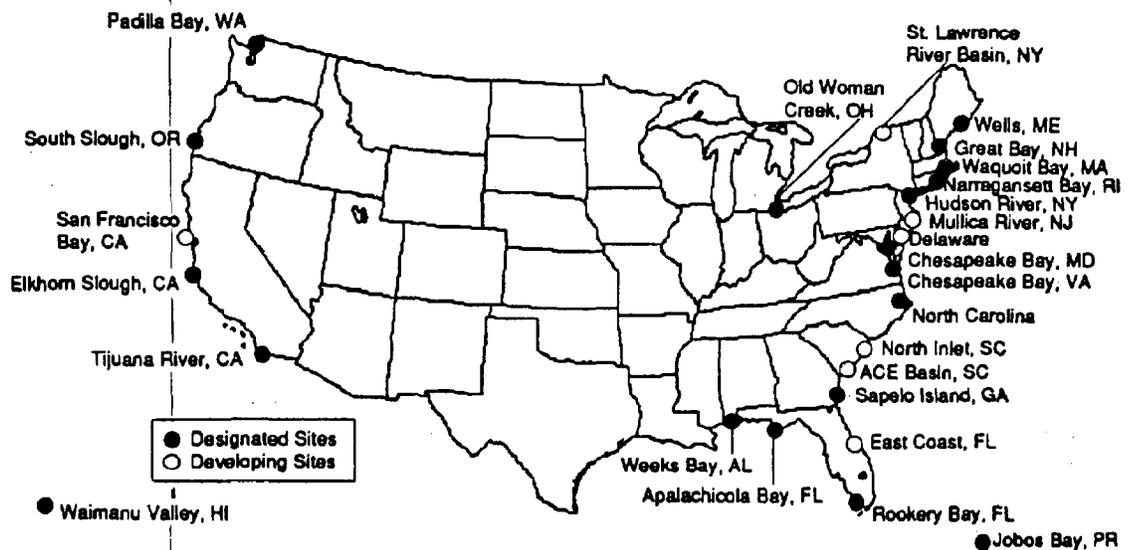
- In 1990, Massachusetts adopted final regulations to implement the Public Waterfront Act. These regulations address public access, priority for water dependent uses and setbacks.

## *Waterfront Redevelopment*

## National Estuarine Research Reserve System

- Oregon developed a waterfront development guidebook to assist small cities and towns with redevelopment and revitalization of their waterfront areas.
- South Carolina launched a multi-year special area management planning process for Charleston Harbor.

The need to preserve estuarine areas from pollution and the pressures of development and to study natural and human processes within these coastal ecosystems was recognized by Congress in the passage of the CZMA. The National Estuarine Research Reserve System (System) is a Federal-state partnership, administered by NOAA. The System protects representative areas of the estuarine environment for long-term monitoring and research and provides opportunities to enhance public awareness through education and interpretation of the values of these resources. Known as National Estuarine Research Reserves (NERRs), these field laboratories provide opportunities to study the natural and human processes that affect estuaries so that stresses on these highly productive areas can be minimized.



Since 1974, the national System has grown from one 4,400 acre site in Oregon, an arm of the Coos Bay estuary called South Slough, to a 19-site System managing almost 300,000 acres of estuarine lands and water in 17 states. The newest reserve is the Chesapeake Bay NERR in Virginia which comprises four sites along the York River tributary of the bay. This reserve, which encompasses nearly 3,000 acres of wetland and upland habitat including the Goodwin Islands, Catlett Islands, Taskinas Creek and Sweethall Marsh, was established through the use of land acquisition, use of existing

park resources and management agreements with private landowners. NOAA expects to double the acreage in the System by 1995, with two new reserves in the State of South Carolina and new reserves in the States of New York, Delaware, California and Florida.

A reserve site must be nominated by the Governor of a state. To be designated as a national reserve, the proposed site must meet criteria established by OCRM. The reserves are owned and managed by the individual states with OCRM providing guidelines, financial assistance, technical assistance and national program definition and support for research, monitoring

and education activities. States receive Federal financial assistance on a 50-50 (Federal-state) matching basis for acquiring reserve lands, and a 70-30 (Federal-state) matching basis for managing a reserve and constructing facilities, conducting educational or interpretive activities and research, and monitoring. Private researchers are frequently used to conduct research and monitoring at reserve sites.

Reserve areas are chosen to reflect regional differences and a variety of ecosystem types. They are primarily used for long-term scientific and educational programs that provide information essential to coastal management decisionmakers. Each site offers opportunities for monitoring changes within the estuarine system and the effects of human activity on these resources, while protecting the integrity of the site for long-term research projects. The reserves also provide opportunities for the general public to learn about coastal and estuarine ecology in an outdoor setting.

When complete, the System will represent all 13 of the Nation's biogeographical coastal regions. A biogeographical classification scheme ensures that the System includes at least one site from each region. There are 29 subregions, 11 of which are not yet represented in the System. NOAA intends to complete the major biogeographic components of the national System by the year 2000.

Since inception, the program has emphasized research and education projects in order to produce information that is useful for coastal resource management decisionmaking. To meet this goal, NOAA established national guidelines in 1989 and provided funding for baseline characterizations and long-term monitoring programs at reserves. The research program supports about \$600,000 for competitive grants annually, and an additional \$380,000 for baseline characterization and monitoring. Among the priorities for research are sediment management, water management, chemical and other inputs, coupling of primary and secondary productivity, and fisheries habitat requirements.



NOAA also instituted an education grants program for the reserves. NOAA's guidelines set uniform standards of excellence and establish system identity. The reserve sites are developing education materials and programs to promote an awareness of estuarine resources and to provide opportunities for public understanding of the need to preserve, protect and utilize these significant natural resources.

For the first time, education grants funded completely by NOAA were awarded in 1991 to projects and programs that benefit the entire NERRS. A national education grant was awarded to allow 40 elementary schools from around the country to participate in the National Geographic Society (NGS) Kids Network. The schools test local water supplies and share the findings via telecommunications with over 250 schools from around the world. Each class



tests tap water for nitrate levels and shares the results with "research teammates" around the world. A unit scientist collates data from all the teams and transmits a summary of the results to all participants. Throughout the unit, students are encouraged to think about solutions to pollution problems.

"What's in our Water?" is one of the several units of study on the NGS Kids Network — an international telecommunications-based science and geography curriculum for fourth to sixth graders. This innovative use of technology allows students to experience firsthand the scientific process while they broaden their knowledge of the world beyond the classroom. The reserves participating in this project are the Apalachicola NERR in Florida, Chesapeake Bay NERRs in Maryland and Virginia, Great Bay NERR in New Hampshire, Hudson River NERR in New York, Padilla Bay NERR in Washington State, South Slough NERR in Oregon, Wells NERR in Maine and Elkhorn Slough NERR and Tijuana River NERR in California. NOAA hopes to continue and expand the program this year to include more sites in the NERR System and to incorporate water testing at the estuarine reserves.

The 1990 Amendments to the CZMA made minor modifications to the NERRS. Among other things, the Amendments changed the name of the program from the National Estuarine Reserve Research System to the National Estuarine Research Reserve System. In addition, the Amendments revised procedures for selecting, designating and operating estuarine reserves:

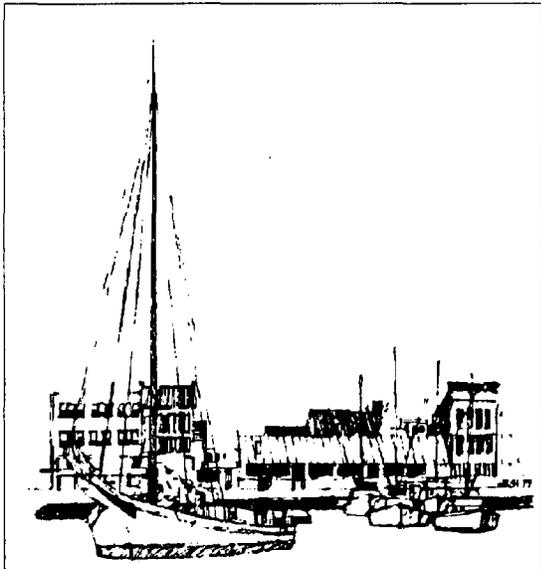
- reduced match requirements from 50 percent to 30 percent for the following types of financial assistance awards: operations, research, monitoring, facility construction and education/interpretation;

- increased the maximum amount of Federal financial assistance that can be awarded for the acquisition of land and waters for any one reserve from \$4 million to \$5 million;
- eliminated the ceiling of \$1.5 million per site for development associated with facility construction; and
- established the authority and process for instituting sanctions including partial or full withdrawal of financial assistance if a reserve's performance is inadequate.

NOAA is currently drafting regulations to implement the 1990 Amendments to the NERRS program.

For 19 years, the CZMA has given NOAA an opportunity to participate in a valuable management program — the only national program charged with comprehensively addressing all coastal issues. In this decade of international environmental awareness and cooperation, the United States is seen as a leader in the management of coastal resources. As a Nation, the United States can be proud of its recent achievements. In many countries and in America's past, vast coastal marshes and swamps were seen as wastelands. However, the United States is moving toward a deeper understanding of the value of these wetlands and other coastal resources.

Nevertheless, the Nation cannot rest on its achievements. Despite the accomplishments made by states to address the ties between the life within the sea, the lives of the people who wish to live near the sea and those who make their living from the sea, the Nation must preserve and enhance the coastal environment to assure that these resources are here and in good condition for future generations. The United States must learn more about managing human use of the coastal environment. As coastal populations increase, the demand for intensive development of the coastal zone will increase, creating conflicting and competing demands for housing, harbors and recreational facilities on these finite resources.



The states continue to develop and implement CZM programs that fit the individual needs of the states. Some programs move to strengthen regulatory powers; other states move to educate their young and old in the value of their coastal environment. Some states do both. Furthermore, NOAA continues to assure that these programs meet national objectives.

## *CZMA — The New Agenda*

*Coastal  
Water  
Quality —  
Tackling  
Nonpoint  
Source  
Pollution*

When the Coastal Zone Management Act (CZMA) was enacted in 1972, it was seen as a model that would test the abilities of Federal, state and local governments to work together. Now, much of this “radical” cooperation is seen as commonplace. Local governments, reacting to demands from their citizens, can look to state programs for guidance and can rely on Federal agencies to be consistent with local plans. The partnership doesn’t always work perfectly, but it has resulted in positive returns for the Nation’s coastal resources and continues to expand.

In 1991, Congress ambitiously renewed the CZMA for another five years to propel the Federal government and the states along new paths of coastal management. The tasks ahead are very ambitious.

**T**he 1990 Amendments to the CZMA place the problems of coastal water quality directly into the states’ path, recognizing that much of the problem does not come directly from a pipe and cannot be dealt with by edicts from Washington, D.C. The new Coastal Nonpoint Pollution Control Program is unique in a number of ways. For the first time, coastal states must specifically address land uses generally known to cause or contribute to coastal nonpoint pollution by prescribing management measures that are both remedial and preventative. In addition, these management measures will be made mandatory through enforceable policies and mechanisms. While affording flexibility to deal with regional differences, each state coastal nonpoint program must, at a minimum, provide for the implementation of management measures in conformity with national guidance provided by EPA. Examples of management measures include buffer zones along streams and coastal waters, density limits which can be applied to adjacent land development, improved construction practices, erosion and sedimentation controls, and farming and pesticide management practices to reduce polluted runoff.

In addition, the coastal nonpoint program combines the strengths of several programs at both the state and Federal levels. At the state level, the program will be crafted jointly by the CZM and nonpoint source agencies. This joint effort will bring together the water quality expertise of the nonpoint agency and the land use expertise of the CZM agency. The result will be to build on existing programs and capabilities, to avoid duplication of effort, and to more effectively address the problem of runoff affecting coastal waters. At the Federal level, the program is administered jointly by NOAA and the Environmental Protection Agency (EPA), thus coordinating the programs and requirements of the CZMA and the Clean Water Act.

Since November 1990, NOAA and EPA worked closely to draft guidance for states in developing the coastal nonpoint programs. Draft Management Measures Guidance, prepared by EPA in consultation with NOAA,



specifies economically achievable measures that are the best available practices, technologies, processes, siting criteria, operating methods, or other alternatives for the control of nonpoint sources of pollution from existing and new categories of nonpoint sources. In addition, NOAA, with EPA's assistance, prepared proposed Program Development and Approval Guidance, which describe how states should develop the coastal nonpoint programs and the criteria NOAA and EPA would use for approving the programs. NOAA is also reviewing the landward boundaries of each state CZM program in order to recommend changes to enable states to more effectively manage land and water uses to protect coastal waters.

**T**he 1990 Amendments also encouraged states to assess their programs and uncover their priority needs, as well as their achievements. A new Coastal Zone Enhancement Grants Program provides states with additional incentives to address important national coastal issues. This effort promises to shape the future of states' coastal management efforts.

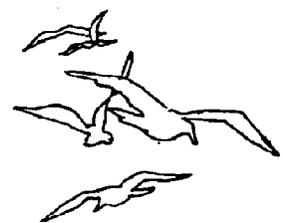
The new, voluntary program encourages each state with a federally approved CZM program to improve its program by addressing one or more of eight national interest enhancement objectives:

- (1) coastal wetlands management and protection;
- (2) natural hazards management;
- (3) public access improvements;
- (4) reduction in marine debris;
- (5) management of cumulative and secondary impacts of coastal growth;
- (6) special area management planning;
- (7) ocean resource planning; and
- (8) facilitation of coastal energy and government facility siting.

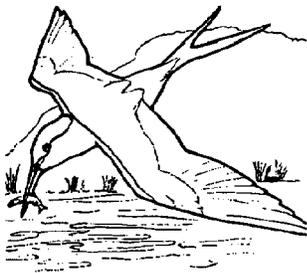
This new program encourages states to achieve these objectives by changing their CZM programs to increase protection for coastal resources.

Since the new program took effect immediately, first-year grants were issued to the states to assist in identifying their priority needs for improvement. In 1991, states put tremendous effort into identifying their priority needs. They solicited the views of the public as to the most pressing coastal issues in their state and the best ways to tackle the issues. Many states moved aggressively to seek public input in this process. The Massachusetts CZM program, for example, circulated a comprehensive survey to Massachusetts citizens on a wide variety of issues, ranging from public lateral rights of access along the shoreline to the adequacy of existing laws and enforcement for protecting coastal resources. Other methods employed by the states to involve the public included public notices, coastal commission or citizen advisory group meetings open to the public, brochures, TV interviews and information packets.

## *Focusing on Priority National Issues*



## *The Future Agenda*



The information collected by the states laid the foundation for the development of state Assessments, which examine how states are addressing each of the enhancement objectives, how significant issues are in the states, and what possibilities exist for improvement. The Assessments provide the

factual basis for NOAA, in consultation with the states, to determine the priority needs for improving state CZM programs. Once this process is complete, and NOAA approves a state's assessment, the state will develop a multi-year Strategy, which describes how the state will deal with its priority issues.

NOAA is now ready for full implementation of the program in FY 1992. States will submit grant applications for activities related to these national priority areas. NOAA expects to have final regulations on the enhancements program in 1992. The final regulations will establish guidelines for the implementation of the new program.

NOAA has the opportunity to use the agency's vast resource information and management network to move all levels of government along the path of better coastal management. The various offices of NOAA can join together to focus on management issues that are crucial to the success of the Nation's efforts. NOAA has several opportunities, including:

- Taking the lead in managing the sources of nonpoint pollution through the implementation of the new Coastal Nonpoint Pollution Program — With NOAA's vast information base, geographic areas will be better defined to enable coastal states to effectively address the issue. Work already has begun in NOAA on this combined office approach to problem solving and implementation. NOAA will use the knowledge of the various state CZM programs to assist states in the establishment of management programs that will produce results and yet be achievable by state and local governments that are routinely short of funds.
- Forging new and innovative approaches to dealing with national priority issues — Through the new Coastal Zone Enhancements Program, NOAA will assist states in focusing on critical national issues, such as coastal wetlands management and protection, management of cumulative and secondary impacts of growth, natural hazards management and public access improvements.
- Encouraging research directly related to coastal management issues — Through the National Estuarine Research Reserves, NOAA can focus research on problems occurring in similar coastal areas. Specifically, research conducted at National Estuarine Research Reserves can focus on nonpoint pollution to assist state CZM managers in addressing this growing problem.

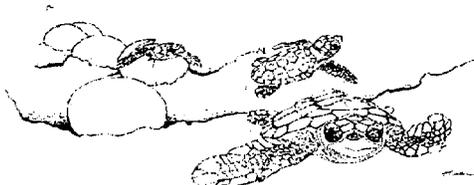
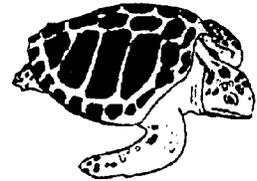
- Encouraging new methods of integrated planning — Through the development of special area management plans, NOAA can focus on small, significant areas and all aspects of the problems affecting the quality of these coastal areas.

- Providing technical assistance to state and local government as they attempt to grapple with their coastal management problems — By using technical and management experts, NOAA can provide a vast breadth of knowledge that is unavailable on a state or local level.

To assure that these actions are taken in a thoughtful, integrated manner, NOAA's Office of Ocean and Coastal Resource Management (OCRM) is developing a long-range plan for the office and its programs. The plan is scheduled to be complete in Spring 1992, and stands as the first such planning effort undertaken by the office since its creation in the 1980s. The ongoing effort includes participation by state CZM managers, state NERR managers, and National Marine Sanctuary managers. The purpose of the long-range planning effort is to:

- develop a mission statement for OCRM,
- develop a common set of goals for OCRM staff and managers,
- define issues and priorities on which OCRM will focus its resources,
- improve the ability of OCRM's programs to work cooperatively and more effectively with each other on common issues,
- integrate OCRM's programs into NOAA-wide planning efforts such as the NOAA Strategic Plan,
- improve cooperation with other NOAA programs,
- improve the ability of OCRM's programs to work with the programs of other local, state and Federal agencies and private groups on common issues, and
- provide a framework for action.

The need for comprehensive coastal management is more urgent than ever. Over the past 19 years, the Nation has realized a great return on the national investment in state CZM programs. The next decade presents a score of new opportunities to improve the quality of life in the coastal zone, despite the greatest population increase in U.S. history. The Federal-state partnership must stand ready to meet these challenges and ensure that the Nation's coastlines are healthier than ever.



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