Coastal Management:

Solutions to Our Nation's Coastal Problems

December 1988

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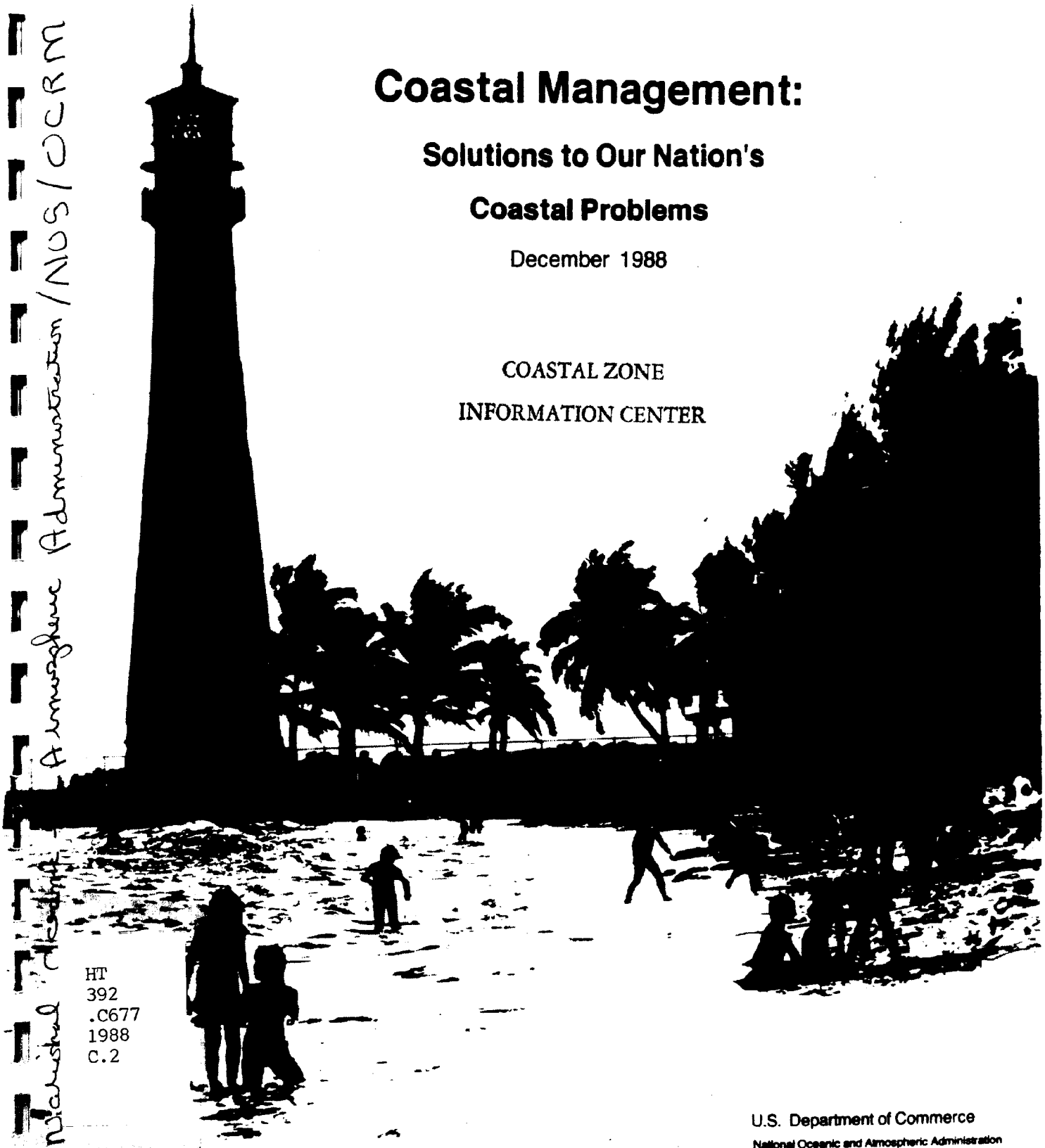

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Technical Assistance Bulletin No. 101

PREFACE

This technical assistance document has been produced to provide examples of innovative, successful projects undertaken by State coastal management programs to address coastal issues. It is hoped that these projects will be of interest and help to other states which are faced with similar problems, as well as to individuals interested in the welfare of our nation's coasts.

The document is organized into three parts. The first part provides a brief overview and summary of state activities in seven areas important to coastal management. The second part provides a description of innovative successful projects undertaken by coastal states in these areas. This part documents only selected projects conducted by state coastal agencies under Section 306 of the Coastal Zone Management Act. Other sections, such as Section 308, 309, and 315 are not included in this report. The third part of this document provides a summary of the Federal coastal management program. This section is primarily intended as background for those individuals unfamiliar with the Federal Coastal Management Program.

The Coastal Programs Division sincerely thanks the many state program managers for contributing the factual information contained in this document.

For further information on activities highlighted in this report, either directly contact the state program manager listed at the end of this document or contact the Office of Ocean and Coastal Resource Management, Coastal Programs Division, 1825 Connecticut Ave., NW, Washington, D.C. 20235, Tel. (202) 673-5158.

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I. OVERVIEW AND SUMMARY

This Technical Assistance Bulletin documents successful projects carried out by the twenty-nine federally approved state coastal management programs. Results were achieved using many different techniques, including: planning, regulation, Federal consistency reviews, land acquisition, and public information and education. Some results required the expenditure of Federal, state, and/or local funds, while others were achieved with small public expenditures through regulatory negotiations. These projects represent only a sampling of accomplishments under the coastal management programs. The results of these projects are very impressive and will hopefully provide incentives for similar actions in other states. A brief summary of the results follows:

HAZARDS:

Coastal management programs have been uniquely involved with the protection of lives and property along the coast. Mechanisms such as building setbacks, construction standards, evacuation planning and development of early warning systems have all contributed to improved coastal protection from natural hazards.

In the projects reported in this section, $600,000 of CZM expenditures resulted in the following benefits:

* the largest peace time evacuation in the United States, over 1.25 million people were successfully evacuated in west Florida in 1985 thereby avoiding significant casualties from hurricanes Elena and Kate;

* over $18 billion of property received increased protection from erosion in South Carolina, Maryland, New Jersey, and Pennsylvania;

* one million people are protected by an early warning system for flash flooding in Puerto Rico;

* thirteen states established building setback requirements from the ocean; and,

* thirteen states also established sand dune protection laws.

NATURAL RESOURCE PROTECTION:

Coastal management programs have been actively involved in protecting wildlife and fisheries habitats, and regulating land use impacts on water quality. In addition, coastal programs have taken the leadership in nationwide beach clean-ups.

In the projects reported here, coastal programs have spent approximately $3,210,000 to provide the following benefits:

* the most important spring habitat for over one million birds along the Atlantic Flyway has been protected by the New Jersey Coastal Program;

* over 2,070 acres of wetlands in San Francisco Bay and over 1,000 acres in Puget Sound were acquired;

* 35 square miles of marshes are protected in South Carolina and development along the State's 2,876 mile shoreline is now subject to pollution and storm water guidelines;

* a 1,000-foot strip of land adjacent to the Chesapeake Bay in Maryland is now subject to critical areas review protecting an annual $56.5 million dockside value of fisheries;

* the last sand dunes in New Hampshire are protected from development;

* 24 coastal states were involved in the 1988 Beach Clean-Up covering 320 miles of beaches, involving 47,000 volunteers collecting 900 tons of trash;

* 40,000 school children in Delaware have received instruction in the value of coastal resources; and

* water quality problems were addressed in Rhode Island where a protection plan was developed for the Salt Ponds; in Northern Marinas where a sewer line was built to protect Saipan Lagoon; in American Somoa where a Pago Harbor clean-up was initiated; and in Washington where a small pilot shellfish protection strategy led to a major State effort to resolve pollution problems in Puget Sound.

NATURAL RESOURCE DEVELOPMENT:

Oil and gas, sand, fin and shell fish are all natural resources in the coastal zone. Coastal management programs have encouraged their development in an environmentally sensitive manner:

* in Maine and Massachusetts initial CZM studies led to $29.8 million in State bonds to rebuild coastal fishing piers and facilities;

* in Louisiana, permit simplification has saved the oil industry over one million dollars a year while reducing disturbance to the environment by 55 percent; and,

* in California, the permit for a marina was conditioned to provide at least 80 percent of berthing for commercial fishing vessels, thus assuring them a permanent base.

PUBLIC ACCESS:

With more than 50 percent of the population living within short driving distance of the coast, increasing leisure time, and rapidly appreciating coastal properties, coastal management programs have focused on providing more public access to the shore. Access has been primarily obtained through purchase, donations, and negotiations during the permit process. In the sample projects below, expenditure of $786,000 in Federal CZM funds resulted in the following benefits:

* coastal land valued at over $354 million was acquired for public access in the ten states and territories cited;

* 71,703 acres of land were obtained for recreation in California, Massachusetts and Guam;

* 180 miles of access ways along the waterfront are open to the public in Michigan, California, Connecticut, Rhode Island, and New York;

* 238 access ways to the water have been designated in Rhode Island and California; and,

* over 25,467,000 visitor days per year are spent in CZM obtained recreation sites in California, Guam and Pennsylvania.

URBAN WATERFRONT REDEVELOPMENT:

Many urban waterfronts became deteriorated and abandoned in the mid-20th Century. CZM grants to local governments to prepare waterfront land use plans have been catalysts for revitalizing waterfronts throughout the country.

In the eight examples described here, $761,000 of CZM planning grants was used to leverage $2.6 billion investment in urban waterfronts. The vast majority of these funds were private investments, such as:

* the Philadelphia Waterfront Comprehensive Plan has led to 18 miles of revitalized waterfront with $310 million in private investment completed and $1.7 billion more pledged for future investments;

* the Jersey City Waterfront Redevelopment Plan has led to the recently opened $4.3 million Waterfront Park and Pier that has been the focal point of $2 billion in completed private redevelopment and projected $25 billion investment by the year 2004;

* in Norwalk, Connecticut, the Waterfront Plan was the impetus for $26 million in public and private investment in the revitalized waterfront, including the $22 million Maritime Center;

* in Kewaunee, Wisconsin, a city of 2,000 people, the waterfront plan led to $2.5 million in private investments and $1.5 million in public improvements;

* in Biloxi, Mississippi, Wilmington, North Carolina, and Erie, Pennsylvania, waterfront plans led to investments of $8 million, $8 million, and $42 million respectively; and,

* in New York, the State legislature has established a $200 million fund to implement capital improvements called for in local waterfront plans around Buffalo and eight nearby towns.

PORTS AND MARINAS:

Coastal programs have assisted port authorities in evaluating expansion locations, obtaining funding, analyzing land-use options and obtaining dredge material disposal sites in an environmentally acceptable manner. Coastal programs have been active in encouraging the location of marinas in the coastal zone.

In the five examples in this report, $385,000 in CZM funds resulted in $75 million in public and private investment; 1,500 new jobs; and $124 million in increased tourism and other economic inputs. These benefits were:

* a $27 million bond bill for cargo expansion in Maine;

* a $20 million improvement to the Pascagoula port and protection of 3,250 acres of wetlands;

* an $8 million marina constructed in Racine, Wisconsin;

* a 75 percent increase in mooring spaces in a small harbor in New Hampshire; and,

* a $1.7 million state grant to rehabilitate the port in Superior, Wisconsin.

IMPROVED GOVERNMENT OPERATIONS

Coastal management programs have resolved complex interagency conflicts and established a variety of techniques to reduce the number of required permits and to jointly process permits with other agencies to minimize review times:

* in Connecticut, the coastal program resolved a conflict between recreational and commercial boating needs and the Navy's need for a secure submarine base;

* in North Carolina, a state permit serves as the U.S. Army Corps of Engineers permit for 95 percent of all cases where a Corps permit would normally be required;

* the Alaska coordinated permit processing has expedited permit review;

* in Oregon, developments compatible with coastal projects gain quicker review. In the example cited the developer estimates over $6 million was saved in interest payments and staffing cost; and,

* in Louisiana, joint public notices of permits has resulted in annual savings of $5.3 million to oil and gas companies.

FUTURE ISSUES FOR COASTAL MANAGEMENT

Despite these successes, much remains to be done along America's coast. Sea level rise, increased wetlands protection, near shore water pollution and increased energy needs all are important items on the coastal agenda for the 1990's.

II. SELECTED COASTAL PROJECTS

HAZARDS PROTECTION

THE PROBLEM: The second largest liability for the Federal Government (after Social Security) is Federal Flood Insurance. Coastal programs have a responsibility to encourage the siting of coastal development so as to avoid the hazards of storm surge, hurricanes, tsunami, and erosion. Minimum setback of coastal development from the ocean reduces damage from ocean waves. Thirteen states currently have minimum setback requirements, most developed with CZM funds. When development is already located in hazard prone areas, coastal programs can assist in evacuation preparation or the relocation of structures. Sand dunes often provide protection to properties behind them, but have been destroyed in order to provide better views of the ocean or by simply walking over them to get to the water. The following examples represent successful hazards protection projects:

FLORIDA:
Hurricane Evacuation Plans

In 1984, the Florida Coastal Program awarded a $100,000 CZM grant to 10 coastal counties to speed up the preparation of hurricane evacuation plans for Apalachicola and West Florida. These plans were completed just prior to two major hurricanes, Elena and Kate. During Elena, all 10 counties were successfully evacuated; during Kate, five of the counties were evacuated.

Benefits:

Over 1.25 million people were successfully evacuated during Elena using these plans. This was the largest peacetime evacuation in America. Without CZM involvement, plans would not have been completed for years after both of these devastating storms. Lives were undoubtedly saved by having these plans in place.

SOUTH CAROLINA:
Shorefront Management

The South Carolina Coastal Council spent $350,000 in 1985-87 to assist towns in developing shorefront management plans along 65 percent of the State's developed shoreline. The management plans resulted in setback controls for development on 30 miles of highly developed shoreline, and beach renourishment and other erosion control projects. As a result of the plans, State and local sources provided over $5 million to

implement the plans beginning in 1985. As a direct result of these plans, State and local sources have committed more than $16 million for beach renourishment in 1989. The U.S. Army Corps of Engineers has also used these plans to prepare their own "Storm Damage Reduction Reports."

Benefits: Increased public awareness of erosion hazards, stricter control over development, State funding to implement plans, and Corps of Engineers beach renourishment plans have protected at least 1,400 structures worth nearly $15 billion.

NEW JERSEY:
Lavallette
Dune Protection

In 1984, the New Jersey Coastal Program provided the Town of Lavallette $60,000 to restore the dunes in front of their new $600,000 boardwalk. In return the town committed to protect the dunes. When Hurricane Gloria struck the coast in 1985, the restored dunes were successful in protecting the walkway. In Point Pleasant Beach, only 12 miles to the north, where dunes had not been built, a new boardwalk was destroyed completely during Hurricane Gloria.

Benefits: A $600,000 public investment was protected by a $60,000 CZM dune restoration grant. Other towns are now building dunes after noting the success in Lavallette.

PENNSYLVANIA:
Shore Protection

In Pennsylvania, the Coastal Program provides technical assistance concerning methods of shore protection and bluff stabilization to lakeshore property owners in the Lake Erie Coastal Zone. This service includes a site visit by coastal staff, usually accompanied by other permitting agency personnel, and includes recommendations as to what the owner should consider and implement to reduce the rate of bluff recession. The recommendations are given orally at the site. Sometimes, due to the complexity of the site problem, additional recommendations are given in the form of

a detailed report. Approximately $56,000 of CZM funding has been spent on this activity.

Benefits: More than 300 property owners have received the service and over 180 detailed reports have been written. In the seven years of this service, approximately 3/4 of the surveyed property owners followed recommendations to help stabilize site conditions, resulting in an estimated property damage savings and property value enhancement of $5,250,000.

PUERTO RICO: Flood Hazard Mitigation

In 1979, Puerto Rico was hit by Hurricane David, followed within the same week by Tropical Storm Frederick. The heavy rains and flooding qualified almost the entire island for a Presidential Disaster Declaration. A Coastal Hazards Task of the Coastal Management Program developed the Puerto Rico Flood Hazard Mitigation Plan which provided guidance for the development of several area-specific flood hazard mitigation plans. The Interagency Flood Hazard Task Force assigned the top priority to the over spill area of the Rio Grande de Loiza. The Plan recommended the total relocation of almost 1,400 families, restoration of protective dikes that shielded approximately 40,000 persons from flooding, construction of new dikes to pro- tect urban settlements in three municipalities, and the clearance and broadening of the overspill floodway. Total staff time spent on this project, and the following one, was approximately $100,000.

Benefits: In September 1983, the Legislative Assembly voted $36 million for implementation of the mitigation plans. The project is now close to completion. The Puerto Rico Department of Housing has acquired and demolished 1,327 structures and has purchased and developed housing for the 1,280 families that qualified for such assistance, at a total cost of

$34 million. The Department of Natural Resources has cleared the floodway, restored or built new protective dikes, eliminated flood obstacles, and improved flood drainage in three subdivisions adjacent to the river, at a cost of $13 million. All funds were provided by legislative appropriations. In all, over 45,000 people were protected by these actions.

PUERTO RICO:
Flood Hazards

Flash flooding is an ever present problem in Puerto Rico due to the brief, intense showers and the steep slopes and short river valleys. An island-wide flash flood warning system was recommended in the Puerto Rico Flood Hazard Mitigation Plan prepared under a CZM task.

Benefits:

The warning system serves approximately one million people, or one-third of the Puerto Rico population. Forty-two automatic reporting rain gauges, three repeater stations, and a computer system with three terminals have been installed by the Department of Natural Resources (DNR) with technical assisttance from the National Weather Service (NWS). This system will serve the 22 river basins most severely affected by flash floods. Equipment was purchased and installed by DNR using $454,000 in Commonwealth funds. Terminals were installed at the DNR, NWS, and the Civil Defense Agency, and training was provided to agency staff.

GULF COAST STATES:
Building Code

Recognizing the population demand to locate along the coastline, there is a distinct need for single family homes and other small buildings to be constructed to withstand coastal storms. In 1985, the NOAA Coastal Hazards Program provided $35,000 in "seed money" to the Southern Building Code Congress International, Inc., to develop a Hurricane Resistant Construction Manual" and implement a training program for build-

ing contractors, inspectors and others associated with the building industry.

Benefits: After conducting 10 training courses for 400 building industry officials and inspectors in South Carolina, Florida, and Texas, the upgrading of construction standards is resulting in better constructed buildings and inspections. Nearly $2 billion worth of new homes built since 1986 are better protected from the damaging surge and wind forces of hurricanes with winds up to 120 mph. Florida used the manual during deliberations on the upgrading of their coastal construction standards in 1986. The manual has served as the basis of a new "deemed to comply" manual which will be released in 1989. This will be a state-of-art manual covering all types of non-engineered facilities including "T" and "H" shaped homes, with new products included from the wood, steel, concrete, and gypsum industries. It will be widely used up and down the coastline and by the insurance industry as well.

MARYLAND:
Ocean City
Beach Restoration

From 1979-1984, the Maryland Coastal Program funded studies and State staff to look at alternative methods of controlling rapid erosion of Ocean City beaches. These studies included overflight maps of Ocean City and analysis of potential sandbar sites offshore and in the back bay area. The Program also worked with the Federal Emergency Management Agency on a study evaluating options for reducing the flooding potential in Ocean City. This report strongly recommended beach renourishment. These reports and studies, costing $60,000, led to the present Federal, State and local commitment to renourish Ocean City's beach.

Benefits: The $60,000 investment of CZM funds played a key role in the eventual decision to spend $12 million of State and local funds to renourish the most economically important beach in the

State. The total value of the property protected by the project is $2 billion. In fiscal year 1988, tourist spending in Ocean City totalled approximately $720 million. Each year this tourism contributes $70-$85 million directly into the State's treasury.

NATURAL RESOURCE PROTECTION

THE PROBLEM: Wetlands, beaches and dunes are complex natural systems which are an integral part of the value of the coastal zone. Wetlands function as spawning, nursery and feeding areas for sixty percent of the nation's $30 billion commercial and recreational fisheries as well as natural filtering systems which protect water quality. Wetlands, beaches and dunes also serve as critical habitat for threatened and endangered species, and as protection for upland areas from coastal storms and erosion. The beauty of these areas is a major attraction for people's enjoyment of the coast.

Unfortunately these areas have been destroyed or their valuable functions impaired by other coastal activities, either directly (e.g. construction) or indirectly (e.g. water quality deterioration by runoff from land disturbing activities). A major goal of coastal management is to preserve these areas through acquisition or dedication, or to protect them by minimizing the adverse impacts from other coastal activities. The following examples represent successful natural resource protection projects:

NEW JERSEY:
Atlantic Flyway

New Jersey's Coastal Management Program, through a wetland mitigation agreement with one of the State's utilities, obtained a $1 million fund from the utility company to acquire a critical habitat on Delaware Bay which is used as a stopover for shore birds during their migration along the Atlantic Flyway from South America to the breeding grounds in the Arctic. Eggs laid here by horseshoe crabs from mid-April to late June provide an essential food source for the migrating birds. Scientists have identified this site as the most important spring habitat for those birds along the entire Atlantic Flyway. CZM funding to negotiate this agreement was approximately $5,000.

Benefits:

Four miles of this habitat have been acquired, and negotiations are underway to add another six miles. Every spring over 1,000,000 shorebirds use these marshes and beaches which have now become the first addition to the Hemisphere Shorebird Reserve Network, linking similarly crucial habitats for

these birds in six countries and 30 states. New Jersey and Delaware now conduct a cooperative bay-wide survey to document and study this phenomenon. Educational materials have been produced to foster an awareness of this annual migration and the unique dependence of these shorebirds on the Delaware Bay.

CALIFORNIA:
San Francisco Bay

Wetlands are in limited supply in the San Francisco Bay area. Eighty to eighty-five percent of the historic wetlands in San Francisco Bay have been lost or destroyed. In Solano County, one of the fastest growing counties in the area, residential development is rapidly reducing open space and encroaching on valuable wildlife habitat. The State used $277,500 in CZM funds and contributed an additional $1,230,000 in State funds to purchase the Rush Ranch in Suisun Marsh.

Benefits:

This acquisition will protect 2,070 acres of open tidal marsh and associated upland which provides important habitat for waterfowl and at least 17 candidate and endangered species. A private foundation will also provide funds to develop public access on the upland area for non-consumptive recreational uses such as picnicking and hiking.

SOUTH CAROLINA:
Savannah Harbor

The South Carolina Coastal Council used the Federal consistency requirements of the CZMA to reach an agreement with the Savannah District of the U.S. Army Corps of Engineers to modify its dredged spoil disposal operations. The Corps agreed to change their practice of open water disposal and to dike all spoil areas in South Carolina needed for the Savannah Harbor maintenance project. CZM funding used to negotiate this agreement was approximately $25,000.

Benefits: Over 35 square miles of wetlands and waterways are now protected by preventing uncontrolled runoff into adjacent marshes.

SOUTH CAROLINA:
Water Quality

Storm water has been shown to have significant detrimental effects on sensitive coastal waters and, in particular, on shellfish beds. The South Carolina Coastal Council developed a detailed set of guidelines for controlling non-point source pollution and storm water runoff. These guidelines, the only storm water controls in the State, were implemented in 1985 as a part of the Coastal Program's consistency and direct permitting program. CZM funding devoted to developing the guidelines was approximately $85,000.

Benefits: The storm water guidelines protect water quality along South Carolina's 2,876 miles of shoreline. They are a major consideration in the processing of approximately 1,400 Federal consistency reviews and direct permits annually. Storm water management plans are produced for each project.

MARYLAND:
Chesapeake Bay

The Maryland Chesapeake Bay Critical Areas Protection Act is recognized nationwide as one of the more progressive state initiatives enacted to deal with growth management in environmentally sensitive coastal areas. The initial concept for the program came out of the CZM sponsored Coastal Resources Advisory Committee, Coastal Program staff discussions and in-house studies. In the early 1980's, approximately $340,000 a year was used to support local efforts to address issues later identified in the Critical Areas legislation. This legislation created the Critical Areas Commission and established a state/local partnership to address growth management, resource protection and non-point source pollution in the 1,000-foot strip of land adjacent to the Bay.

NATURAL RESOURCE PROTECTION

Benefits: The Maryland Critical Areas program is important to the protection of the Bay fisheries which had a dockside value of $56.5 million in 1986. Sixty county and city plans and ordinances are being developed to protect Bay resources. The Maryland General Assembly provides over $2 million in State funds annually to support this major new initiative.

NEW HAMPSHIRE:
Seabrook

The Town of Seabrook contains a unique sand dune, the last of its type in New Hampshire. Recognizing its importance, the Coastal Program used $100,000 to document its value and to investigate the possibility of acquiring it for protection.

Benefits: The Coastal Program's work was endorsed and supported by the Seabrook Conservation Commission. This resulted in the town appropriating $350,000 for the purchase of the dune. A management plan was developed for public access and passive recreational use of the area. The State wetlands law was amended to incorporate dunes into the jurisdiction of the State Wetlands Board to protect the dune. A slide show has been developed to enhance public awareness of this unique natural area.

NORTHERN MARIANAS:
Saipan

In 1985, when Japan Airlines proposed to build a 320 room, 12 story hotel on an undeveloped portion of the island of Saipan, there were concerns that the proposed sewage treatment method would pollute the nearby Saipan Lagoon. Although the Commonwealth has no zoning or building codes, the Coastal Program was able to use the coastal permit process to negotiate with the developer for the construction of a sewer line to the closest wastewater treatment plant. The line was oversized to allow the small villages along the line to hook up to it.

Benefits: Private funds of $2 million were used to construct a three mile sewer line serving the hotel and several small villages. This infrastructure will help maintain the water quality of Saipan Lagoon.

AMERICAN SAMOA:
Pago Pago

The Coastal Program was instrumental in leading an interagency effort to clean up and patrol Pago Harbor, recognized as one of the finest natural harbors in the South Pacific. Refuse from tuna cannery operations and boats combined with stream runoff had severely deteriorated the harbor's water quality. A $60,000 CZM award was used to contract with a local boat owner for the clean-up effort. The boat crew was deputized and given the power to issue citations and fines to polluters. The crew also received training in oil spill cleanup.

Benefits: The CZM funds were matched with $120,000 by the Environmental Quality Commission. The average annual refuse and debris collected from the harbor included over 480 tons of solid waste, 2,400 gallons of spilled oil and 3,000 pounds of animal carcasses. The clean-up crew has collected thousands of dollars in fines from polluters. This project has had the added benefit of increasing public awareness and support for the harbor, resulting in new efforts to control non-point source pollution.

MANY COASTAL STATES:
Beach Clean-ups

Under the leadership of many of the state coastal management programs, coastal states have participated in "Coastweeks" since this annual event was conceived in 1981. The goal of "Coastweeks" is to focus attention on the value and importance of the nation's coastlines. This effort involves hundreds of organizations, including all levels of government; civic, outdoor and environmental groups; academic institutions; and, private corporations. Beach clean-ups are a major event of "Coastweeks" wherein volunteers walk the

beaches to collect trash and other debris. Most states have issued either gubernatorial executive orders or legislative proclamations for annual "Coastweeks." In 1988, 24 coastal states participated in this event and in each of these, the CZM programs were either the lead agency or provided financial or staff assistance. Total CZM funding is estimated at $48,000.

Benefits: Over 320 miles of beach were cleaned up during the 1988 "Coastweeks" activities. This effort involved more than 47,000 volunteers who collected more than 900 tons of trash from the nation's shores. This astounding amount of effort results in a cost savings of millions of dollars to the state and local governments.

ALABAMA:
Coastal Clean-up

Alabama's participation in National Coastal Clean-up serves as a specific example of state actions in 1988. Their effort was initiated and supported by the State Coastal Management Program, and the success of the effort has proven to be a significant catalyst in enhancing public awareness of Alabama's coastal resources. This project was supported with only $6,000 in Federal funds which was used for staff time to plan and coordinate the clean-up, and for promotional material, trash bags and related supplies. Other supporters included State and local governments, environmental groups, and several oil and gas companies. The clean-up was formally recognized by Governor Hunt.

Benefits: On September 24, 1988, approximately 1,000 volunteers combed the Alabama Gulf Coast beaches filling over 2,000 trash bags with approximately five tons of trash. Elected officials joined with fishermen, scientists, teachers, school children, environmental organizations, local groups and families in this effort. In addition to the removal of unsightly litter and debris, the clean-

up program was designed to provide an inventory of collected trash for a national beach monitoring study which will be used to aid enforcement agencies in tracking beach pollution to its source.

RHODE ISLAND:
Salt Pond Plan

In the late 1970's residents near the nine salt ponds in this 36 square mile area noticed increasing pollution and siltation and decreasing fish and shell fish. They asked the Coastal Management Program to help conduct scientific studies of the cause of the problems. For four years the Coastal Program developed a plan to guide development that would protect this fragile area, including regulating the cumulative impacts of development. CZM funds of approximately $250,000 supported this effort.

Benefits:

The plan, adopted in 1984, extends the coastal zone inland four miles to cover the entire salt pond area. It requires development to be set back 200 feet from the ponds, reduces housing density, limits the number of boat docks, requires inspection of septic tanks, and establishes a coordinated permit review by Federal, State, and local agencies. The plan has been considered so successful that Oxford University Press will be publishing a book about the experience.

WASHINGTON:
Shellfish Protection

In 1983, the Washington Coastal Program used $60,000 to fund the development of a Shellfish Protection Strategy and pilot water quality investigations in Burley Lagoon and Minter Bay.

Benefits:

The approach used in these initial grants became the model for later work under the Puget Sound Water Quality Management Plan, which was adopted in 1987. This larger effort was supported by $1,850,000 in Federal, State and local funds. It is directed toward the protection of productive commercial

shellfish beds that produce up to 80,000 pounds of high quality food per acre annually. This harvest was worth $95 million in 1987 and directly supported 1,100 jobs. These efforts have also been extended to recreational shellfish resources that in 1987 produced 11 million pounds of clams and $250,000 in oyster harvest.

WASHINGTON
Puget Sound Wetland

The Washington Coastal Program awarded $20,000 for the investigation of ecologically significant wetlands along the margins of greater Puget Sound. The study identified 19 sites which supported native vegetation and provided important fisheries and wildlife habitat.

Benefits:

The Coastal Program's study served as a catalyst for major efforts to protect these valuable wetlands. Nine of the sites are now owned by a State agency, one by a non-profit group, and four are under negotiation for protected status. These sites total over 1,000 acres of protected wetlands.

DELAWARE
Information and Education Program

Using $40,000 in CZM funds annually, the Delaware Coastal Program has developed a a comprehensive program to inform the public, particularly young people, of the value of coastal resources.

Benefits:

Approximately 40,000 elementary and secondary students have been involved in school activities developed under Project WILD which provides activities focusing on natural resources. Under the Kids At the Beach Program, held in the spring of 1988, 250 elementary students took part in pilot marine education program at Cape Henlopen State Park; the students showed considerable gain in knowledge of coastal resources following the program. Finally, the State uses CZM funds to provide copies of the Delaware Conservation, the Department of Natural Resources and

Environmental Control's quarterly natural resource magazine to each of the state's 9,000 seventh graders, thereby increasing the natural resources background of each of the State's future citizens.

NATURAL RESOURCE DEVELOPMENT

THE PROBLEM: The natural resources of the coastal zone generate significant economic benefits to the nation. These include non-renewable resources such as oil and gas, sand, and other hard minerals, and renewable resources such as fin and shell fish.

The development of these resources presents a myriad of problems. Large scale mineral mining, for example, may require a large number of local, state and Federal authorizations and permits. Without proper coordination and time limits, the approvals may result in long time delays which can exponentially increase costs, particularly in northern climates with limited construction seasons. Maintenance and expansion of commercial fisheries, on the other hand, are often hindered by deteriorating waterfront facilities, loss of mooring and waterfront space to competing uses, and lack of capitalization among small fishing corporations.

Many coastal programs have taken steps to enhance traditional coastal resource-based industries and ease the regulatory burden facing major new resource development projects. These include the funding of local planning studies and industry needs assessments; the development of unified procedures for reviewing large projects; and, the simplification of permit review procedures for recurring resource development activities. Some of these successful project are described below:

MAINE:
Fish Piers

The Maine Coastal Program used $300,000 for analyses of fish piers and other facilities that support the State's coastal commercial fishery. These studies identified inadequacies in existing piers, moorage, waste collection, cold storage, and service industries that were inhibiting the economic development of fishery resources.

Benefits:

These efforts resulted in voters approving a bond issue for $11 million, $9 million of which was for fish pier development. State funding was augmented by $2.8 million in local monies and $6.3 million from the U.S. Economic Development Administration. Between 1979 and 1988, the Coastal Program assisted the State Department of Transportation in the rehabilitation and expansion of existing piers in

Kennebunkport, Saco and Rockland; construction of a fish processing plant and related pier improvements in Vinalhaven; and, construction of new fish piers in Stonington, Eastport and Portland. The work in Portland included a new Fishing Boat Service Pier and a new Fish Auction Pier. These public expenditures, which were augmented with significant private investment, have enhanced the commercial fishing industry while conserving a traditional way of life for the State's residents.

LOUISIANA:
General Permit

The Louisiana Coastal Management Program has developed two general permits to expedite oil and gas drilling while minimizing the loss of coastal wetlands. The first general permit allows the dredging of small oil and gas access slips while limiting the total amount of area altered under each permit to 2.4 acres. The second general permit allows the filling for land drilling operations. The applicant must prove in each case that there are no less damaging alternative sites, e.g., directional drilling, or alternate means of access to the site.

Benefits:

The general permit process saves each applicant approximately two months of permit processing time and encourages minimal alteration of coastal wetlands. Because of time saving, applicants often prefer to obtain a general permit and directionally drill rather than going through the longer regular permit process. The amount of acres disturbed by the average oil and gas canal have decreased since the general permits were established, from 5.5 acres in 1983, to 2.5 in 1988. Each time the oil and gas industry saves two months on permit time, they save about $40,000. The implementation of the general permit also reduces the cost of permitting by reducing staff review and administrative paper, e.g., public notice. Since there have been 29 general permits

issued during the last year, the industry has saved over $1 million and the disturbance to the environment has been reduced by 55 percent.

MASSACHUSETTS:
Coastal Facilities Improvements

The Massachusetts Coastal Program, with an expenditure of $200,000 for staff cost over 5 years, has played a key role in the development and implementation of a major State program to revitalize coastal facilities which support commercial fisheries and recreational use of the State's coastal area. Working with the legislature and coastal communities, the Coastal Program was able to obtain legislative approval for an $18 million bond issue to support the Coastal Facilities Improvement Program (CFIP).

Benefits:

The CFIP has provided support for 49 public projects: 10 piers, 7 bulkheads, 4 marinas, 9 boat ramps, 8 waterfront parks and 11 multiple-use facilities. Approximately $7 million of these funds were spent on piers and other projects which are used by the commercial fishing industry and water-related business. These facilities have greatly enhanced the economic viability of the State's commercial fishery, which ranks sixth in the nation in terms of pounds landed and fourth in terms of the value of landings (over $240,000,000).

ALASKA:
Consistency Reviews

One of the cornerstones of the Alaska Coastal Management Program is its unified coastal consistency review process. This process coordinates and streamlines all State permits and lease determinations as well as the State's review of Federal actions which affect the coastal zone. The process includes specific time deadlines, opportunities for local government, public, and applicant participation in the process, and expeditious conflict resolution.

NATURAL RESOURCE DEVELOPMENT

Benefits:

During the period from July 1, 1987, to June 30, 1988, 592 projects were reviewed with an average review time of 36 days. The review of a platinum mine in the Yukon-Kuskokwim Coastal Resource Service Area is a good example of how the State process balances local and State resource development and conservation concerns. The State's consistency certification assured that mining could occur, that access would be provided to a subsistence berry-picking site, and that significant work was completed on a reclamation plan for an on-site anadromous fish stream.

CALIFORNIA:
Spud Point Marina

In the late 1970's, Sonoma County received CZM and State funds to prepare a Local Coastal Plan which called for a new marina to provide badly needed facilities for the commercial fishing fleet.

Benefits:

Spud Point Marina is a 245 berth facility located in Bodega Harbor. The marina provides full-service facilities for the commercial fishing industry including berthing, breakwater, service dock, mobile lift for boat haul-outs, icing facilities, and restrooms with showers and laundry. The marina also provides public fishing access along the breakwater. Under the terms of the California Coastal Commission permit for the marina, at least 80 percent of the berths must be reserved for commercial fishing vessels. The $8.2 million marina was constructed using funds from several sources, including Federal funds and loans and grants from the California State Coastal Conservancy. The facility opened in 1984 and has already become a major base for the commercial fishing industry on the northern California coast.

PUBLIC ACCESS

THE PROBLEM: Over half of U.S. citizens live in a coastal county. Increased leisure time has led to higher demand for public beaches for recreation. However, rapid development and competing uses have reduced the amount of shoreline that is open to the public.

Improvement of public access to the shoreline is a major goal of the coastal management programs. Coastal properties are appreciating considerably faster than non-waterfront properties, thus making acquisition more expensive. Therefore, coastal programs must look at new and innovative mechanisms for assuring access, including the examples provided below:

MICHIGAN:
Detroit Linked Riverfront Parks

In the 1970's, Detroit's waterfront was lined with abandoned and deteriorating industrial and port facilities and empty lots used for car parking. In 1978, the Michigan Coastal Program awarded Detroit $82,000 to prepare a Linked Riverfront Parks Master Plan. This plan called for a riverfront park of linear narrow parks connecting to major parks which would extend 10 miles along the Detroit River. The linkage system is an active linear park and recreation system where paving, lighting, landscaping, and signs give it a distinct identity to the public. This identifiable element became the reference point through which diverse existing development was connected. The project also provided a catalyst for new public and private development in the riverfront area.

Benefits:

The $82,000 invested in the waterfront plan has resulted in $37 million of additional Federal, State and local government funds used for the park and for related recreational projects. Even more significantly, the linked park has stimulated $210 million of private housing, office, and commercial retail and recreational developments as well as 1,200 new jobs in the area. Discussions with the private sector indicate that if projects continue as expected, private investment in the area will add up to $530 million within the next few years.

PUBLIC ACCESS

MASSACHUSETTS:
Tidelands Permit

In 1983, the Massachusetts Coastal Program worked with a legislative committee to draft amendments to the tidelands law which would assure that non-water dependent uses of Commonwealth tidelands would: (1) meet a standard of "proper public purpose"; (2) have benefits greater than detriments, and; (3) be consistent with Coastal Program policies. Since the passage of these amendments, nine major projects have been licensed, which have produced a significant amount of private investment in public access facilities. The staff time spent to develop the legislation and to review projects has been valued at approximately $250,000.

Benefits:

As a result of reviewing nine projects, Massachusetts has gained public access benefits estimated at $2,900,000. This is based on: (1) 27,000 sq.ft. of public piers, docks, and floats ($574,000); (2) 821,000 sq.ft. of public waterfront access ($1,600,000); (3) 14,500 sq.ft. of public accommodation facilities i.e., buildings ($530,000); (4) 29 boat slips; (5) two sailing schools ($50,000); and (6) 345 public parking spaces ($100,000). These numbers are based on the State's knowledge of certain construction costs.

SAN FRANCISCO
CONNECTICUT
RHODE ISLAND
NEW YORK
CALIFORNIA:
Access Easements

Acquiring access ways along the waterfront during permit reviews is a key element in several coastal management programs. Often the developer is willing to donate access easements during negotiations in return for higher density or permission to use state tidelands.

San Francisco's Bay Conservation and Development Commission (BCDC), which issues permits for all development 100 feet inland from the bay, was the nation's first coastal management agency. Only four miles of the 1,000 miles of shoreline around San Francisco Bay were open for public access when the Commission began operations.

The Connecticut Coastal Program requires local governments to examine access opportunities when reviewing local site plan permits. Only 25 percent of the Connecticut coast was accessible to the public when the Coastal Program was initiated.

The Rhode Island Coastal Program, which issues permits for all development 200 feet from the coastline, also reviews proposals for public access opportunities. In addition, the Coastal Program designates public rights-of-ways.

The New York City Waterfront Revitalization Program established the City policy that public access is required of all new projects along the waterfront. The Waterfront Office, funded by the State Coastal Program, reviews all zoning changes for consistency with the City's access policies.

The California Coastal Program (not including San Francisco Bay) reviews all development projects within the coastal zone for access opportunities.

Benefits:

Since the San Francisco Bay Conservation and Development Commission's inception, over 96 miles of shoreline have been opened for public access through a combination of permit conditions and public acquisition.

In Connecticut, the review of over 100 major waterfront permits has provided a

total of nearly 7 miles of new public access through constructed walkways, waterfront parks, easements or other agreements. Often these access ways are on rocky shorefronts and urban waterfronts not otherwise easily suitable for recreational access. As shorefront land sells for up to $3 million an acre in some parts of the State, a conservative estimate of the value of these public access ways is $20-25 million. The State estimates that the cost of State and local staff time devoted to negotiating these donations was $500,000 over the last 7 years.

In Rhode Island, in 1988 alone, a three-quarter mile easement was acquired at Kettlepoint, valued at $750,000, and the Coastal Council estimates another one-half mile of smaller easements were acquired. Since the inception of the right-of-way identification system, over 159 rights-of-way have been designated.

In New York City, a total of 33 miles of previously inaccessible waterfront has been opened to the public. Over 1,200 development projects have been reviewed along the waterfront since the program was adopted. The City staff time spent in negotiating these easements has cost approximately $320,000.

In California, outside San Francisco Bay, over 2,156 permits have been issued with access requirements. A total of 32.48 miles of access along the water and 79 access ways to the water have been obtained. In addition, numerous access ways have been included as part of development proposals in response to the Coastal Program's emphasis on public access.

PENNSYLVANIA:
City of Chester

In an economically depressed area in the City of Chester, there was no public fishing/boating facility. CZM grants totalling $217,000 were used to design and construct such a facility on 4

acres of leased land at the base of the Commodore Barry Bridge where it crosses the Delaware River. Another $418,785 in non-CZM funding went into developing the project, which includes a pair of boat ramps separated by a permanent pier, and a floating dock. The site is served by 76 parking spaces.

Benefits: The facility is now supporting 30,000 visitor days per year from boaters and shore fishermen. Existing parking lots at the site are full on weekends. Three new boat ramps and a floating pier will be installed with CZM, State and local funds. As a result of these investments, several small bait shops have been opened in the area and local businesses are reporting a modest increase in sales to individuals using the access site. In addition to Pennsylvania boaters, New Jersey and Delaware boaters are also using this access site, further boosting the economy of the area.

MASSACHUSETTS:
Early Acquisition

In 1980 and 1981, the Massachusetts Coastal Program hired one staff person to develop an acquisition plan for recreation in the coastal areas and to implement the plan by working with private donors, the State appropriations process and Federal agencies. Less than $50,000 of CZM funds were spent on this project.

Benefits: More than 55 parcels have been acquired totalling over 1,636 acres. This represents a total public investment of $33,437,477. Massachusetts estimates that with rapidly appreciating land values in the Commonwealth, these acquisitions would cost approximately $67,000,000 in 1988 dollars.

FLORIDA:
Hutchinson Island

In 1982, the Florida Coastal Management Program awarded $27,000 to Martin County to develop a management plan for Hutchinson Island, a barrier island subject to rapid development. A land

acquisition committee was established which made recommendations on parcels for future purchase.

Benefits: A $5 million local bond referendum was passed for land acquisition. The local investment leveraged $36 million in State funds to acquire three additional parcels. Currently, nearly one-third of the county's beachfront property is open for public access.

HAWAII:
Public Access Plans

From 1984 to 1986, the Hawaii Coastal Program spent $115,000 to prepare public access plans and guides for Maui and Kauai. These guides included an inventory of existing access sites, recommendations for purchasing additional sites and innovative techniques to obtain access.

Benefits: Due to this Coastal Program initiative, the Hawaii Legislature recently appropriated $644,000 for further work and acquisition on the public access program.

GUAM:
Cocos Island

The Government of Guam negotiated with the Federal government in 1985 to obtain access to a 22 acre parcel on Cocos Island for a public park. Federal funds totalling $80,000, matched by $45,000 in Territory funds, where used to construct improvements including a public dock, showers, and restrooms. Without the development of the public park facilities, it would be very difficult and expensive for the public to enjoy Cocos Island.

Benefits: Twenty-two acres in the park are now open to the public. The use of Cocos Island and the public park has increased from zero visitors (prior to the construction of the public dock) to 200 people/day on weekends and 100 people/day on weekdays or 47,000 visitor days per year.

MICHIGAN: Houghton	In 1982, CZM funded a waterfront development plan ($15,000) for Houghton which, (1) identified unused land west of the lift bridge for a public park, docks, and a new access road, and (2) inventoried historic structures. Since then the Coastal Program has awarded the town $172,000 for pier restoration, landscaping, and fishing facilities.
Benefits:	The area is now available for use by the aged and handicapped who use the docks on a regular basis. The project has resulted in over $2.5 million in private and public investment in the renovation of the downtown area of Houghton and its sister city, Hancock, on the opposite shore of Portage Lake. The Shoreline Hotel has been expanded, restaurants developed, and historic renovation of the Waterfront Building has occurred.
SAN FRANCISCO BAY: Golden Gate National Recreational Area	In the 1970's, much of the Federal land around San Francisco Bay was under-utilized or abandoned military bases. The Bay Conservation and Development Commission (BCDC) helped to stimulate citizen interest in the need for public access around the Bay and provided the impetus and framework for establishing the Golden Gate National Recreation Area.
Benefits:	Twenty-five million visitors a year now enjoy this national park, containing a civil war-era fort, World War II coastal gun emplacements, hiking trails, a wildlife refuge, and hostels. The recreation area contains 70,000 acres or 114 square miles.
CALIFORNIA: White Point Park	Through the Federal consistency provisions of the CZMA, the California Coastal Commission (CCC) was able to negotiate a settlement between the CCC, the City of Los Angeles, and the Air Force concerning disposition of 145 acres at White Point, located on the San Pedro bluff overlooking the Pacific Ocean and Catalina Island. The Air

Force planned to use the land to build military housing; however, the City of Los Angeles and the State Department of Parks and Recreation wanted the land for a state park.

Benefits: Through the consistency review process, the CCC engineered an equitable solution to this controversial issue. The Air Force agreed to the permanent preservation of 135 acres of White Point, an important coastal urban open space, in exchange for 22 acres of city land for the military housing. Currently over 10 million people live within easy access (25 mile radius) of the park. The Department of Parks and Recreation estimates that at full development, the park will attract over 400,000 visitors per year, generating almost $600,000 in revenues.

NORTH CAROLINA:
Beach Access

In 1979, North Carolina proposed a plan to acquire unbuildable oceanfront lots for public access points. The Division of Coastal Management (DCM) informally approached the State General Assembly with this proposal and provided the background information needed by the legislature. The DCM was also instrumental in creating the compromise bill which resulted in a State law establishing a permanent program for acquiring and improving beach access ways.

Benefits: From 1981 to 1988, $600,000 in Federal CZM funds and approximately $1.4 million in State funds were used to provide 72 neighborhood, 42 local, and 24 regional public access sites along the 4,000 miles of North Carolina's ocean and estuarine shoreline. Approximately 1.5 full-time State staff person's time/ year has gone into administering the beach access program.

CALIFORNIA
Monterey Recreation Trail

A Southern Pacific Railroad corridor in in Monterey County was identified in the California Coastal Plan as an ideal

shoreline recreation trail. When the abandoned corridor was proposed to be broken into individual oceanfront properties, the California Coastal Commission used the Federal consistency provisions of the CZMA to enable its purchase as a recreation trail.

Benefits:

A four mile regional recreation trail runs from the City of Seaside to Lover's Point in Pacific Grove. The hiker or biker can travel completely separated from vehicular traffic through sand dune, a Monarch Butterfly forest, along Monterey's waterfront harbor, Fishermen's Wharf, Monterey's Custom House Historical Park, the Presidio shoreline, Steinbeck's Cannery Row, the world famous Monterey Bay Aquarium, and onto Lover's Point in Pacific Grove. Hours and even days of recreational enjoyment branch off from the trail corridor via vertical access links to sea otter observation points, scuba diving spots, the Monterey Bay Aquarium, and much more. Over $1.5 million has been spent to complete the first four phases of the trail acquisition and development. Two more phases remain to be completed.

URBAN WATERFRONT REDEVELOPMENT

THE PROBLEM: Although many American cities first developed along their waterfronts, these historic areas became abandoned or deteriorated in the-mid 20th century due to polluted water and changing port/cargo needs. CZM has played an important role in providing funds to cities to study these underutilized areas and prepare plans for their redevelopment.

In some urban areas the waterfront has become such a desirable place to develop that adequate space may no longer be available for those land uses which must be located at the water (e.g. ports, marinas, commercial fish landings, and boat repair yards). These land uses may not be able to pay as much for waterfront land as condominiums and restaurants, but have no alternative in an inland location. This problem has been characterized as "quiche vs. cargo" or "keep the port in Portland" (or Portsmouth or Newport, etc.). Coastal management programs have often assumed leadership to address this problem, as described in the examples provided below:

PENNSYLVANIA:
Philadelphia

The Philadelphia waterfront in the 1970's was a desolate and largely abandoned area of rotting piers and pilings. The Pennsylvania Coastal Management Program funded several waterfront redevelopment studies totalling $331,000. These studies culminated in the 1982 Philadelphia Waterfront Comprehensive Plan. The Philadelphia City Planning Department endorsed the Plan and relied heavily upon it for land use planning.

Benefits:

The redevelopment of approximately 18 miles along the Central Waterfront District in Philadelphia is nearly identical to the Philadelphia Waterfront Comprehensive Plan. Over $310 million in private investments have been made in restaurants, condominiums, office complexes, hotels, a shopping center, and riverfront open space. Seven private developers have pledged funds that will raise this total an additional $2 billion. One estimate is that by 1991, the waterfront will attract 20 million visitors a year, resulting in at least

$50 million more in direct tax benefits to the City and $25 million in new tax benefits to the Commonwealth.

NEW JERSEY:
Exchange Place

Until recently the Jersey City waterfront was lined with abandoned industrial sites despite its proximity to the Manhattan financial center and its commanding views of the Manhattan skyline across the Hudson River. The origin of the revitalization of Jersey City's waterfront can be traced, in part, to a 1979 CZM grant for $30,000 to develop a Waterfront Redevelopment Plan for Exchange Place, a 2 acre site where the Pennsylvania Railroad ferry terminal once stood.

Benefits:

Recognizing that the Waterfront Park and pier would be the focal point of its revitalization, the City obtained $4.3 million of State and Federal funds for implementation. The Waterfront Park and pier were recently completed at Exchange Place. Surrounding the park are $2 billion of new construction in a financial center, condominiums and retail shops. If the estimated $25 billion in projects proceed that are proposed for Jersey City, the City Director of Housing and Economic Development estimates there will be 27.7 million square feet of office and retail space, 26,000 residential units and more than 3,000 hotel rooms by the year 2004.

MISSISSIPPI:
Biloxi

In 1984, $120,000 of CZM funds were used to develop a Biloxi Waterfront Master Plan for 45 acres of underutilized waterfront. This area included abandoned fish pier facilities and several vacant land-locked parcels. The plan, which ties redevelopment of the waterfront area to an existing State park and marine education center, was completed in 1985 after extensive citizen involvement.

Benefits:

Public and private investment in the Point Cadet area of the Biloxi

waterfront has resulted in the modernization of a seafood industry museum, the acquisition of 17 acres of land using a $2.1 million loan, $500,000 in public improvements, and a $5.4 million dollar 300 slip marina and fuel dock. The improvements resulted in the berthing of a 167' cruise ship which booked over 50,000 passengers in 1988, and a visit by the tall ship "Elissa." Numerous festivals have attracted visitors back to the waterfront.

CONNECTICUT:
Norwalk

In the mid-1970's, Norwalk received $16,000 in CZM grants to study the city's urban waterfront with an eye toward attracting private development and creating new employment opportunities. These studies have been a catalyst to revitalize south Norwalk.

Benefits:

The opening of the $22 million Maritime Center in the summer of 1988 is one outcome of the CZM studies. The Center includes an aquarium for marsh exhibits, marine life tanks, and an 8,000 square foot ocean tank with exhibits focusing on Long Island Sound. There is also parking and retail space with an IMAX theater, a weather station, and two public fishing piers. The Center is expected to attract a half million visitor days a year. Another major outgrowth of the CZM grants is a four-mile walkway from south Norwalk up through the city's business district and along Veteran's Park to the east Norwalk shorefront. Most recently, a historic lighthouse was protected and a dock and gazebo reconstructed, creating a convenient landing point which provides general public access to the lighthouse and grounds. Over $26 million in public and private funds have been expended to implement the Revitalization Plan.

WISCONSIN:
Kewaunee

From 1980 to 1988, the City of Kewaunee, with a population of 2,000, used $209,000 in CZM funds to plan and construct a 150 slip marina and

waterfront park on land which had been derelict open space.

Benefits: The CZM funds generated $2.5 million in private funds to build a hotel, light industry facilities, a restaurant, and condominiums, and $1.5 million in other public funds. The waterfront now has a new marina, boat ramp, a 900 foot walkway along the waterfront, and parking for cars. Over 64 jobs have been created as a result of private investments located along the waterfront. Over 100,000 people visit the site a year.

NORTH CAROLINA:
Wilmington

In 1983, Wilmington received a $5,000 CZM grant to prepare a plan to revitalize its underutilized waterfront. The purpose was to link the east and west portions of the town, analyze re-use of an old rail house building, and make the area more attractive to private investment.

Benefits: The Plan, adopted in 1984, was directly responsible for four major projects: (1) a riverfront park extension supported by $1.4 million in local government funds; (2) boat launch and parking facilities supported by $205,764 in local funds; (3) a private expenditure of $6.2 million to refurbish the old rail house buildings which will contain an inn, conference center, specialty shops and offices; and (4) private restoration of 10 buildings for approximately $225,000. The plan has also been the catalyst for a major annual waterfront festival attracting thousands of people.

PENNSYLVANIA:
Erie

In 1984, the City of Erie's waterfront was seriously deteriorating because of the decline in Great Lakes shipping. A $50,000 CZM grant was awarded to the City to develop a comprehensive plan to refocus the waterfront for recreational, residential and commercial land uses. The plan was adopted by the city in 1986.

Benefits:

Over $42 million in private and public funds have already been committed to the implementation of the plan. It is anticipated that a total of $450 million in public and private funds will be invested by 1995. Construction has begun on condominiums, marinas, offices, a boardwalk, street improvements, parking, and reconstruction of the historic Flagship Niagara which will become a floating museum. Already the waterfront renaissance has dramatically improved Erie's economy.

NEW YORK:
Buffalo and nearby communities

The New York Coastal Program provides technical assistance and funds to 115 towns and cities to develop waterfront revitalization programs. Most of the towns and cities in Erie County have completed programs covering 90 miles of waterfront.

Benefits:

In 1988, in order to help implement and set regional priorities for the substantial development projects identified in their Local Waterfront Revitalization Programs, these municipalities, working with the Erie County Government and the State, created the Horizons Waterfront Commission. The Commission, a State funded agency with bond issuing and eminent domain powers, will develop and implement a regional plan for waterfront development based on work accomplished through the comprehensive local waterfront revitalization program.

In addition to funds raised by the bonds that will be issued by the Commission, the State had committed $40 million in financial assistance toward the implementation of the regional waterfront effort. The State Coastal Program is represented on the Horizons Waterfront Commission.

PORTS AND MARINAS

THE PROBLEM: More than 90 percent of all U.S. foreign trade is transported by sea. Strategic minerals and oil are imported exclusively by sea. State coastal management programs have assisted port authorities in assuring that adequate land is available for port operations, and in identifying and maintaining dredged material disposal sites in an environmentally acceptable manner.

The demand for boat launching ramps and marinas has been increasing as Americans' leisure time has increased and as some waters have become less polluted. Coastal programs have been active in locating suitable sites for recreational boating facilities and assuring that areas desirable for marinas are not preempted by land uses that do not require a waterfront location. A few successful state ports and marinas projects are described below:

MAINE:
Cargo Ports

From 1978 to 1980, the Maine Coastal Program prepared a $150,000 analysis of Maine's cargo port needs. The report recommended that Maine make a substantial institutional and financial commitment to port development. In 1981, the Coastal Program, working with the State legislature, State agencies, and port users, succeeded in convincing Maine voters to approve a $27 million bond referendum for cargo port improvements and development.

Benefits:

The Bath Iron Works (BIW) ship repair facility was built in Portland as a result of the bond bill. The City, State and BIW each contributed $15 million for construction of the new $45 million facility, which was completed in 1984. There were 1,000 new jobs created at BIW and 10,000 in the region.

In 1984, Eastport, on the Canadian border, combined State bond funds with Federal Economic Development Administration and local funds to acquire an existing U.S. Army Corps of Engineers pier including extensive improvements and pier expansion of the entrance road breakwater and converted it into a cargo. Dry cargo tonnages in the improved port area have increased to approximately 120,000 tons annually.

Nearly 30 ships are now making ports of call in this small port. All of these activities were formerly conducted in Canadian ports.

MISSISSIPPI:
Pascagoula Port Plan

Using $175,000 in CZM funds, the Mississippi Coastal Program, working with an interagency task force, developed a Port Development Plan for the Port of Pascagoula. This plan identified suitable sites for development, dredge spoil disposal, and wetlands preservation. The task force included all relevant Federal, State and local regulatory bodies as well as the Port.

Benefits:

The plan resulted in the transfer of 3,250 acres of coastal wetlands from Port ownership to the Mississippi Department of Wildlife Conservation as mitigation for future filling and development. Since adoption in 1986, the plan has been used successfully to guide agency decisionmaking on permits and was instrumental in expediting approval of the Navy Home Port for Pascagoula. The interagency task force played a key role in approving the construction of a causeway that was necessary to develop the Singing River Island as a Navy support facility. This causeway is now being constructed using $20 million in State and local funds. It is estimated that the eventual siting of the two Aegis class cruisers and two destroyers will directly provide 2,200 new jobs while providing $100 million in economic growth in the Pascagoula area.

WISCONSIN:
Racine

In 1983, the Wisconsin Coastal Management Program provided the City of Racine with $43,500 to conduct an analysis of the harbor to determine if a large recreational marina could be created at an abandoned and deteriorated commercial harbor and urban waterfront area of the city. After the marina was

determined to be feasible, the Coastal Program provided three more awards for small construction projects.

Benefits:

A 900 slip marina was completed in 1988. The marina involved over $8 million of private investment in the construction of festival grounds, restaurants, stores, parks, waterways, landscaping, etc. More than 400 jobs were generated, and the rejuvenated area is spurring redevelopment efforts nearby. Fifty new stores are located within two blocks of the marina and about 100,000 square feet of new office space was created nearby. If this waterfront redevelopment effort had not been undertaken, Racine's waterfront would have remained a depressed and deteriorated area. The revitalization has resulted in $21 million in tourism spending according to the Racine Development Committee. Between 20,000 and 30,000 visitors come to Racine for the annual in-water boat show.

NEW HAMPSHIRE:
New Castle

The New Hampshire Coastal Program provided an $8,000 grant to the town of New Castle to determine if increased mooring could be made available through better design of the Little Harbor. A precise profile of Little Harbor was surveyed to identify and log specific sites on a master grid plan. Once identified, existing sites were realigned so that the optimum number of boats could be accommodated according to size and draft. As a result of this project, the number of moorings in Little Harbor increased from 104 to 177.

Benefits:

The additional 73 moorings will generate approximately $98,000 in revenue over the life of the project. Public recreation and access increased dramatically in this area as a result of this project.

WISCONSIN:
City of Superior

In 1984, the Wisconsin Coastal Program provided a $9,300 grant to assist the

City of Superior in successfully acquiring $1.7 million in State funds to put a recently abandoned cargo plant back into operation. According to the former City Port Director, "If this flexible emergency funding had not been available, the town would not have received State rehabilitation funds and the cargo facility would not be in operation today."

Benefits: The cargo port now handles approximately 35,000 tons valued at $2.4 million annually.

IMPROVED GOVERNMENT OPERATIONS

THE PROBLEM: Government agencies may have conflicting responsibilities that can be especially noticable in land use decision making. Coastal programs have been able to provide substantial leadership in resolving these problems through their authority under the Federal consistency provisions of the Coastal Zone Management Act (see page 56).

While requiring permits for development is one way the public protects the environment and meets other public goals, the length of time to obtain permits adds to the cost of development, particularly when there are holding costs, such as interest payments and rental of construction equipment. Coastal programs have established a variety of techniques to reduce the number of required permits and to process permits jointly with other agencies to minimize the review time.

CONNECTICUT
Submarine Base Security

Because of budget cuts during the mid-1980's and associated staff reductions, the U.S. Coast Guard was forced to reduce its security patrols around Navy facilities in Groton, Connecticut. As a result, in late 1986 the Navy proposed to handle their own security through imposition of a restricted use zone covering a significant portion of the lower Thames River. Such zones are a direct Federal activity requiring consistency certification under the Coastal Zone Management Act.

As originally proposed by the Navy, the restricted use zone would have prevented the development of water-dependent uses on the opposite side of the river from the submarine base, would have restricted the lower river for use by both the recreational and commercial shellfishermen and recreational finfishermen, and would have interfered with the heavy recreational usage of the lower river. Local opposition by the public, the press, and elected officials suggests that litigation over the zone was a certainty.

Benefits: Using the coastal management consistency certification process, the Connecticut Coastal Management Office was able to

get all parties together to determine specifically what conflicts were avoidable and which had to be settled through negotiations. The final result was that the restricted use zone was designed specifically for only the area of primary concern to the Navy, a registration and identification system was devised for recreational and commercial fishing boats frequenting the area, as well as users of new marina facilities developed opposite the submarine base, and a protocol was developed to govern the Navy's interdiction of boat traffic within the restricted use zone that would meet the Navy's need for security without significantly interrupting recreational use of the river. In this instance, the Federal consistency review process was employed to resolve, without delay or additional cost, a problem stemming from the Coast Guard's manpower shortage, the Navy's clear need for a secure submarine base, and area communities and the general public's need for and right to access on the river and its adjacent shorelines.

NORTH CAROLINA
General Permit

The North Carolina Coastal Program has aggressively sought to reduce the time necessary to obtain coastal permits by classifying project applications based on the size and impact of the project and by implementing a joint permit process with the U.S. Army Corps of Engineers. State coastal permits are divided into three categories: major, minor, and general permits. Major permits for large development are reviewed by the State Coastal Program, minor permits by local government. General permits cover recurring routine activities, e.g., bulkheads and piers, which do not require extensive review when constructed in accordance with specific conditions.

Since 1981, the North Carolina Coastal Program has taken over the majority of Corps of Engineers wetland permit

reviews under the general permit processing system. Under this agreement, the State Coastal Program is responsible for all field inspections and development of material for review by relevant State and Federal agencies. Unless one of the Federal agencies objects to the proposal based on concerns of national interest, issuance of the State permit also means compliance with the Corps general permit. This negates the need to obtain a Corps permit under the normal review process.

Benefits:

The State coastal permit process has been successful in reducing the time for permit review. The number of general permits has risen from none in 1982 to 1,079 in 1987. These permits, which are issued on the same day that a coastal representative visits the project site, accounted for over one half of all State permits issued in 1987. Minor permits generally take only 17 days to be reviewed; major permit review periods have been reduced from 82 days in 1985 to 77 days in 1987. The implementation of the Corps general permit further reduces the total time that applicants must wait for permit approval since, in 95 percent of the cases, the applicant's receipt of the State permit obviates the need for regular Corps permit review.

ALASKA:
Coordinated Reviews

Through the Alaska Coastal Management Program, the State review of all required project permits within the State's coastal boundary has been coordinated and streamlined since 1984. This coordinated process means that all State permits for a project are reviewed at the same time, permits are issued quickly, and the project applicant and Federal agencies have a single point of contact and process in obtaining the necessary permits.

IMPROVED GOVERNMENT OPERATIONS

Benefits:

The above permit process expedited permits for the Red Dog lead and zinc mine. The State Coastal Program coordinated the review of the proposed port facility, the 54 mile road from the port to the mine, 16 material sites and access roads, a temporary construction camp, a solid waste disposal site, and tundra travel. The interagency agreement on State approvals as well as the Federal consistency review were completed in just 43 days. Thus, the State reached a consistency decision much sooner than the 180 days allowed under Federal regulations. At a 10 percent cost of funds, a 137 day time savings would translate into $1.9 million in interest savings alone. At full production in 1992, the Red Dog mine will be the largest domestic zinc producer. The road alone costs approximately $52 million. The Alaska Industrial Development Authority (AIDA) has invested over $150 million in the Red Dog project. The Red Dog Mine will also generate 300-400 jobs, making it the borough's largest employer, and provide $25 million in impact fee revenues for the Northwest Arctic Borough over the next 14 years.

OREGON:
Newport

The Oregon Coastal Program revised State rules for siting resorts to gain quick approval from local, State, and Federal agencies for projects that are compatible with State coastal policies. The new State rules cut more than a year off the approval process for the 1,000 acre, $160 million resort adjacent to the City of Newport called Wolf Tree Resort. The resort, a multi-faceted operation with a 175 room lodge, conference facility, restaurant, shops, visitor center, home sites, condominiums, pool, spa, tennis courts, and golf course, also includes a wildlife observation center, interpretive trails and a fish ladder to allow coho salmon and cutthroat trout to bypass a dam in the lake.

Benefits: The developer estimates that over $6 million was saved in interest costs and staffing because of the reduction in processing costs. The public has access to the wildlife observation center and interpretative trails.

LOUISIANA: Since 1983 the Louisiana Coastal Management Division and the U.S. Army Corps of Engineers have issued joint public notices for proposed permit activities falling within the coincident jurisdiction of the New Orleans District and the Louisiana Coastal Zone. One public notice is sent for each of the proposed projects, thereby saving money in both the State and Federal agency permit review time.

Benefits: The time saved for State notices is approximately 3 days and for the Corps notices about 7-10 days. Applicants receive their permits two weeks sooner than under the separate system of notice. This two week interval saves the normal applicant, e.g., a gas company, approximately $10,000. Typically, the State processes 1,200 applications a year; 700 of these go out as joint public notices. Three-fourths of these are oil and gas projects. This results in an annual savings of $5.3 million to oil and gas companies.

III. A SUMMARY OF COASTAL MANAGEMENT

WHAT IS THE COASTAL ZONE?

- The coastal zone is the dynamic area where the land meets the sea. It includes coastal waters and the adjacent shorelands; areas which strongly influence one another. It is composed of open waters, estuaries, bays, inlets, lagoons, marshes, swamps, mangroves, beaches, dunes, bluffs, and coastal uplands.

- The United States has over 95,000 miles of shoreline including the Great Lakes. The shoreline ranges from the rocky cliffs of Maine to the broad Louisiana wetlands to the rich Hawaiian coral reefs. The wide climatic range is seen in the frozen coastal plain of Alaska and the steamy mangrove swamps of Florida.

- The uses of the coastal zone are as diverse as its physical forms, including: housing, recreation, wildlife habitat, resource extraction, fishing, aquaculture, transportation, energy generation, commercial development, and waste disposal.

WHY IS IT IMPORTANT?

- More than half of the U.S. population resides in the coastal counties, on less than ten percent of the nation's land. The coastal counties are five times denser in population than non-coastal counties, ten times denser along the Atlantic coast. This population continues to grow dramatically.

- Commercial ports in the U.S. coastal zone number 189 and moved 1.3 billion tons of cargo in 1986 alone.

- Almost 40% of the industrial facilities in the U.S. are within the drainage basin of the Great Lakes. Over half of Canadian industry is within the Great Lakes drainage basin.

- Wetlands currently number about 11 million acres in the coastal zone. Wetlands serve as spawning, nursery, and feeding grounds for over 60 percent of the saltwater fish and shellfish harvested annually in the U.S. This harvest is valued at $3.1 billion. The commercial and recreational fishing industries annually contribute $17 billion and $13.5 billion, respectively, to the U.S. economy.

SUMMARY

- Marine aquaculture is a growing industry. In 1986, the culture of Pacific salmon, shrimp, mussels, clams and oysters totaled 52,000 tons, valued at $89 million.

- Development pressure is 3 to 4 times greater in coastal areas than in the rest of the country. Peoples' desire to be near the coast has resulted in the development of areas vulnerable to coastal storms. The Federal Flood Insurance Program, which insures structures in flood prone areas, represents the Federal government's second greatest liability, second only to Social Security. As of August 1987, there were 64,000 policies under the Flood Insurance Program in coastal high hazard areas or v-zones; coverage valued at $5.2 billion.

- Coastal recreational facilities and water dependent uses, such as energy development and ports, must be sited in limited shoreline areas. Accommodation of such competing uses is important and extremely challenging.

- Coastal areas provide habitat for millions of waterfowl and other wildlife, including 100 threatened and endangered species.

WHAT IS COASTAL MANAGEMENT?

- Coastal management attempts to reduce conflict among competing land and water uses in the coastal zone while protecting fragile resources.

- Coastal management goes beyond traditional single-focus programs, which address only one use or resource (e.g. ports or fisheries). Coastal management represents a comprehensive approach to managing the impacts of an activity on other uses and on a variety of coastal resources.

WHAT IS THE PURPOSE OF THE COASTAL ZONE MANAGEMENT ACT (CZMA)?

- The Coastal Zone Management Act, P.L. 92-583, was enacted by Congress in 1972 to improve the nation's management of coastal resources, which were being irretrievably damaged or lost due to poorly planned development. Specific concerns were the loss of living marine resources and wildlife habitat, decreasing open space for public use, and shoreline erosion. Congress also recognized the need to resolve conflicts between various uses that were competing for coastal lands and waters.

- The basic goal of the CZMA is to encourage coastal states to voluntarily develop comprehensive management programs. The CZMA establishes a State-Federal partnership in which the states take the lead in managing their coastal resources, while the Federal government provides financial and technical assistance and agrees to act in a manner consistent with the federally-approved state management programs. The law also establishes a National Estuarine Reserve Research System with specific estuarine sites designated across the nation.

- The CZMA was reauthorized in 1976, 1980, and 1986.

- The CZMA is implemented by the Office of Ocean and Coastal Resource Management (OCRM), within the National Oceanic and Atmospheric Administration's National Ocean Service.

WHO IS INVOLVED?

- Of the 35 eligible states and territories, 29 are participating in the Federal program. At the state level, a lead state agency oversees implementation of the CZM program and administers the Federal grant funds. This agency may be solely responsible for all CZM planning, regulation, and management or it may share implementation authority with other state agencies.

- Local governments are involved in the implementation of state CZM programs, either formally or informally. In some states, local governments play a central role by developing local coastal programs and by making land use decisions in accordance with state standards.

- Federal agencies are also involved in the development and implementation of state CZM programs. State/Federal agency coordination is required during the development of state programs. Once the programs are federally approved, Federal agencies must ensure that their actions are consistent with the state programs. Through coastal management, states and Federal agencies also work together on joint planning and permitting, which reduces the regulatory burden on the public.

WHAT MUST STATE CZM PROGRAMS ADDRESS?

- The requirements for state coastal programs, set forth in Federal regulations, emphasize the need for comprehensive, predictable, and enforceable policies to guide coastal regulatory, planning, and public investment

programs. The requirements identify the range of issues that states must consider in developing their programs (e.g., wetlands protection, erosion control, public access, water dependent facility siting), yet provide flexible criteria that allow states to design programs that meet their particular needs. Broad public review of the programs by state agencies, Federal agencies, and interest groups is achieved through state public hearings and National Environmental Policy Act review prior to OCRM approval of the state CZM programs.

WHAT KIND OF FUNDING DOES THE CZMA PROVIDE?

- States have an incentive to participate in the Federal program because of the availability of Federal funds. Section 305 program development funds, awarded from 1972-1979, have been phased out. Section 306 program implementation funds continue to be available and are allocated to states with approved programs based on a formula based on state coastal population and shoreline mileage. In FY 1988, 29 states and territories received Section 306 grants totalling $33.4 million. Eight states received the maximum award of $1.88 million and 5 states received a minimum award of less than $500,000. The average award was $1.15 million. States are required to match the Federal funds, dollar for dollar. Over the last decade, increases in the number of states with approved programs and inflation have drastically reduced Federal implementation funds available to states, as funding has remained essentially constant at $33 million per year.

WHAT ARE THE OTHER IMPORTANT ASPECTS OF THE CZMA?

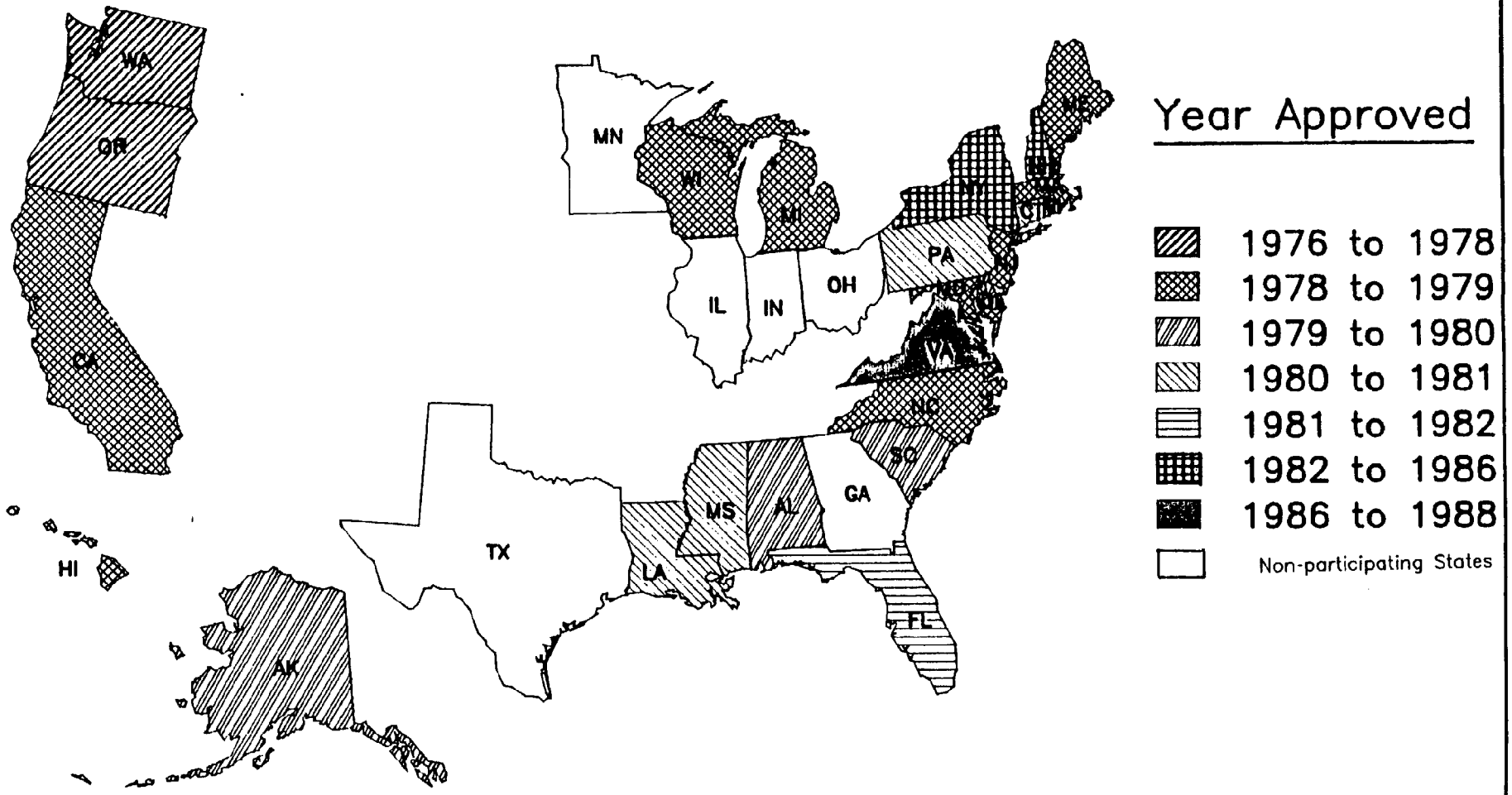
- The Federal consistency provisions under Section 307 of the CZMA provide another important incentive for state participation. Federal activities, permits, or funding, which significantly affect a state's coastal zone, must be consistent with the enforceable elements of the state's federally-approved CZM program. The intent of the Federal consistency process is to ensure that Federal agencies adhere to the state comprehensive plans and to foster consultation and coordination between Federal and state agencies in order to resolve conflicts at the earliest stages of project/program development.

WHAT IS THE FUTURE OF COASTAL MANAGEMENT?

- Coastal management programs are dynamic; changing to address emerging coastal issues such as sea level rise,

coastal pollution, marine debris, and non-point source pollution. States respond by developing new program policies or regulations, often with Federal funds. OCRM encourages states to improve their management programs through recommendations resulting from the periodic evaluation of state programs.

Participating and Non-participating Coastal States in the Federal Coastal Zone Management Program



Territories not shown:PR:78,VI/GU:79,NM/AS:80

STATE COASTAL ZONE PROGRAM MANAGERS

ALABAMA -
Luther Holt
Program Manager
P.O. Box 2939
Montgomery, AL 36105-0939
(205) 284-8774

ALASKA -
Jan Caulfield
Coastal Program Coordinator
Division of Governmental Coordination
Office of Mgmt. & Budget
Pouch AW - Suite 101
431 North Franklin
Juneau, AK 99811-0165
(907) 465-3562

AMERICAN SAMOA -
Henry Sesepasara
Program Manager
Development Planning Office
Government of American Samoa
Pago Pago, American Samoa 96799
(684) 633-5155

CALIFORNIA -
Jody Loeffler
Program Manager
California Coastal Commission
631 Howard Street, 4th Floor
San Francisco, CA 94105
(415) 543-8555

BCDC -
Alan Pendleton
Executive Director
Bay Conservation & Development Commission
30 Van Ness Avenue, Room 2011
San Francisco, CA 94102
(415) 557-3686

CONNECTICUT -
Art J. Rocque Jr., Director
Coastal Zone Management Program
Department of Environmental Protection
18-20 Trinity Street
Hartford, CT 06106
(203) 566-7404

DELAWARE -

David S. Hugg, III
Executive Assistant to
the Secretary
Dept. of Natural Resources
and Environmental Control
89 Kings Highway
Dover, DE 19903
(302) 736-3091

FLORIDA -

David Worley
Program Manager
Office of Coastal Management
Dept. of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301
(904) 488-4808

GUAM -

Mike Ham
Program Manager
Bureau of Planning
Government of Guam
P.O. Box 2950
Agana, GU 96910
(617) 472-4201

HAWAII -

Douglas Tom
Program Manager
Coastal Zone Management Branch
Office of State Planning
State Capitol, Room 410
Honolulu, HI 96813
(808) 548-3026

LOUISIANA -

Terry Howey
Director
Coastal Resources Division
Dept. of Natural Resources
P.O. Box 44487
Baton Rouge, LA 70804
(504) 421-7591

MAINE -

Dave Keeley
Program Manager
State Planning Office
State House Station #38
Augusta, ME 04330
(207) 289-3261

MARYLAND - Dr. Jacob Lima, Director
Coastal Resources Division
Dept. of Natural Resources
Tawes State Office Building
Annapolis, MD 21401
(301) 974-2784

MASSACHUSETTS -Steve Bliven
Acting Director
Executive Office of
Environmental Affairs
100 Cambridge Street
Boston, MA 02202
(617) 727-9800

MICHIGAN - Chris Shafer
Program Manager
Division of Land & Water Resources
Dept. of Natural Resources
Steven T. Mason Bldg., Box 30028
Lansing, MI 48926
(517) 373-1950

MISSISSIPPI - Jerry Mitchell, Chief
Coastal Programs Division
Bureau of Marine Resources
P.O. Box 959
Long Beach, MS 39560
(601) 864-4602

NEW HAMPSHIRE -David Hartman
Program Manager
Office of State Planning
2 1/2 Beacon Street
Concord, NH 03301
(603) 271-2155

NEW JERSEY - John Weingart, Director
Division of Coastal Resources
Department of Environmental
Protection, CN 401
Trenton, NJ 08625
(609) 292-2795

NEW YORK - George Stafford, Director
Division of Coastal Resources
and Waterfront Revitalization
Department of State
162 Washington Street
Albany, NY 12231
(518) 474-3643

NORTH CAROLINA - George T. Everett, Director
Division of Coastal Management
512 North Salisbury Street
Raleigh, NC 27611
(919) 733-2293

NORTHERN MARIANAS - Robert Rudolph, Acting Administrator
Coastal Resources Management Office
Nauru Building
Saipan, Mariana Islands 96950
(670) 234-6623

OREGON - Richard Mathews
Program Manager
Dept. of Land Conservation and Development
1175 Court Street, NE.
Salem, OR 97310
(503) 378-4928

PENNSYLVANIA - E. James Tabor, Chief
Division of Coastal Zone Management
Bureau of Water Resources Management
Dept. of Environmental Resources
P.O. Box 1467
Harrisburg, PA 17120
(717) 783-9500

PUERTO RICO - Ines Monefeldt, Director
Coastal Management Office
Dept. of Natural Resources
P.O. Box 5887
Puerto de Tierra, PR 00906
(809) 724-5516

RHODE ISLAND - Grover Fugate, Executive Director
Coastal Resources Management Council
Stedman Office Building
Tower Hill Road
Wakefield, RI 02879
(401) 277-2476

SOUTH CAROLINA -

Dr. Wayne Beam
Executive Director
South Carolina Coastal Council
AT&T Capitol Center
1201 Main Street, Suite 1520
Columbia, SC 29201
(803) 737-0880

VIRGIN ISLANDS -

Robert Pedersen
St. Thomas/St. John
Director of Permits
Dept. of Planning &
Natural Resources
P.O. Box 4340
Charlotte Amalie,
St. Thomas, VI 00802
(809) 774-3320

VIRGINIA -

Keith Buttleman
Administrator
VA Council on the Environment
Ninth St. Office Building, Rm.903
Richmond, VA 23219
(804) 786-4500

WASHINGTON -

Rod Mack, Supervisor
Shorelands Division
Department of Ecology
State of Washington (PV-11)
Olympia, WA 98504
(206) 459-6777

WISCONSIN -

William Lehman
Coastal Policy Section
Division of Energy and
Coastal Management, 6th Floor
Department of Administration
P.O. Box 7868
Madison, WI 53707
(609) 266-3687

NOAA COASTAL SERVICES CENTER LIBRARY
3 6668 00000 7890