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# PARTNERSHIPS FOR PROGRESS

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THE BIENNIAL REPORT TO CONGRESS ON ADMINISTRATION OF  
THE COASTAL ZONE MANAGEMENT ACT

APRIL 1996

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TO THE CONGRESS OF THE UNITED STATES:

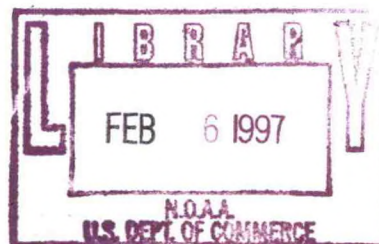
I am pleased to submit the Biennial Report of the Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration (NOAA) for fiscal years 1994 and 1995. This report is submitted as required by section 316 (f) of the Coastal Zone Management Act (CZMA) of 1972, as amended, (16 U.S.C. 1451, *et seq.*).

The report discusses progress made at the national level in administering the Coastal Zone Management and Estuarine Research Reserve Programs during these years, and spotlights the accomplishments of NOAA's State coastal management and estuarine research reserve program partners under the CZMA.

William D. Clinton

THE WHITE HOUSE,

July 9, 1996.



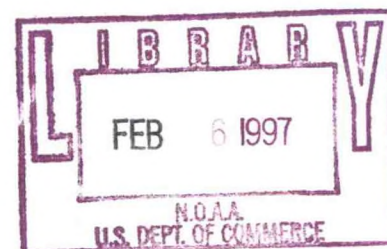




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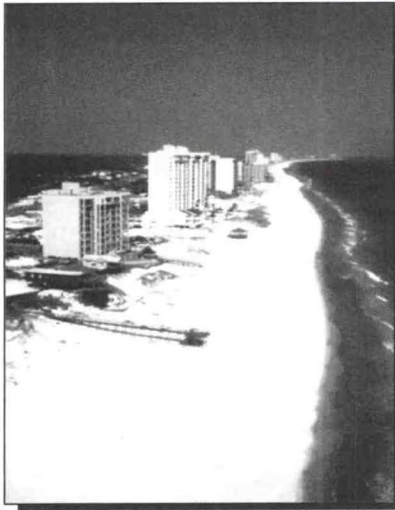
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America's coasts have always been vital to the nation's economy.

More than half the U.S. population lives in the nation's 411 coastal counties, which is only 11% of the land—on average more than 750 people per square mile. These counties also house America's largest metropolitan centers, including New York, Boston, Chicago, Seattle, San Francisco, Houston, New Orleans, and Miami.



*Some stretches of coast are highly developed, like this one in Alabama.*

As an economic base, the coast supports 28.3 million jobs — about 34% of national employment— and generates \$54 million in goods and services each year. Coastal jobs and economic contribution come primarily from tourism, fishing, trade and energy industries. The recreational fishing industry, for example, contributes \$30 billion to the U.S. economy annually. Tourism-related businesses serve 180 million Americans visiting the coast each year for recreation.

Coastal waters also produce two-thirds of the U.S. commercial and recreational fisheries harvest. The Gulf of Mexico alone produces 42% of all seafood harvested in U.S. waters. More than 95% of the fish and shellfish commercially harvested spend all or part of their lives in an estuary. Industries, communities and U.S. citizens that depend on fish for their livelihood know how important healthy coastal waters are to healthy fisheries.

Trade and energy industries also depend on healthy coasts. The coasts are home to 190 seaports which transport more than 2 billion tons of cargo every year. In 1994, more than \$1 billion in cargo was imported and exported through Great Lakes and other coastal ports. This cargo included two-thirds of all U.S. wheat and wheat flour, one-third of soybeans and rice, and almost two-fifths of all U.S. cotton. It also included crude oil, automobiles and auto parts—the top three commodities according to cargo value.

The coasts are crucial, too, for supplying the nation with energy. Each year millions of barrels of crude oil are produced in coastal waters. In 1994, these coastal activities represented about 20 percent of the total domestic crude oil production.

Also, crude oil and petroleum imports pass through U.S. ports at a rate of 630 million gallons per day. Americans depend on oil to heat homes and offices and to fuel automobiles. American households and commercial businesses use some 16.8 million gallons of petroleum each day for heat and 222.6 million gallons per day for automobiles.

With so many people, jobs, and economic activities depending the coast, managing limited, fragile coastal resources presents one of the nation's most demanding economic and environmental challenges.

For almost 25 years, the Coastal Zone Management Act of 1972 (CZMA) has provided an umbrella for voluntary federal/state partnerships to help keep the U.S. coasts healthy and productive. In the CZMA partnership, the federal government identifies national issues and sets nationwide goals. Each coastal state designs and implements its own program, tailored to its unique resources and needs and using its own state authorities, yet incorporating these national goals. The CZMA also created a system of "living laboratories"—the National Estuarine Research Reserve System (NERRS)—to give coastal managers the scientific information needed to make educated decisions about coastal resources.

Federal and state governments share the cost for administering both the coastal management and research reserves under the CZMA. Federal dollars act as a catalyst for bringing state and private resources to the CZMA's programs.

Today, 29 coastal states and U.S. island territories have federally-approved coastal management programs, covering 94 percent of the nation's coastline. Five other states are now developing programs. The NERRS now has 22 sites in 19 states and territories. Six other sites have been proposed and are in various stages of the site nomination process.

States have made great strides in reducing coastal storm damage, conserving and restoring coastal habitats, expanding public access to the coast, conducting research and educating the public about coastal resources. However, use of coastal resources and management challenges have increased dramatically in that time and show little sign of abating. Rapid population growth in coastal areas, expanding types of and demand for coastal recreation, and increasing indirect stresses such as polluted runoff affect the health of coastal resources and influence how they should be managed in the future.

In the last 20 years, NOAA and its state partners have forged new coastal management approaches

and institutions, which have resulted in better balancing of coastal resource use and conservation, and better understanding of the coast. In the process it has been important to balance the views and needs of many different interests, like local government, industry, environmental groups, and the general public. The level of management responsibility and public involvement at the state and local level has been and will continue to be a major strength of the CZMA.



*Shipping is vital to trade and our nation's economy.*



# THE CZMA IN ACTION

## *The National Dimension*

The U.S. coastline does not start or stop with state boundaries; the problems facing the coast are national. Therefore, under the CZMA, state and local governments control the day-to-day management of coastal resources but NOAA provides guidance and financial assistance to states and territories to confront these national coastal challenges.



*For recreation and tourism, the nation's coasts are a treasured resource.*

NOAA scientists and land use experts aid states in resolving national coastal problems, such as nonpoint source pollution, coastal hazards and habitat restoration. NOAA experts also serve as liaisons, linking state and territory partners, research reserves, local, state and federal agencies.

NOAA plays a leadership role by:

- Making and influencing national policy affecting coastal and ocean resources;

- Advocating for coastal and ocean resource management with other federal agencies;
- Acting as a spokesperson for the coast through education and outreach to the public and coastal decision-makers;
- Providing information and expertise to its state coastal and estuarine partners;
- Promoting applied research and monitoring in NERRS to answer management questions;
- Leveraging resources by creating partnerships within NOAA, with other federal, state and local government agencies, and with non-governmental organizations; and
- Providing technical assistance and information on coastal management and marine protected areas to other countries.

This report highlights many of NOAA's efforts to create interagency partnerships that support CZMA programs—from its participation on numerous national policy working groups to its cooperative efforts to provide technical services to state and territorial partners. The report also discusses NOAA's national guidance and assistance on programs administered at the state and local levels such as the Coastal Enhancements Program, Coastal Nonpoint Pollution Control Program, and research and education programs of the National Estuarine Research Reserve System.

Although national guidance is important to resolving the national problems facing the coast, day-to-day state management is essential to the success of coastal programs and estuarine research reserves. State officials have the expertise necessary for best management of a state's unique coastal resources and estuaries. Moreover, these experts know the political and social systems that influence their coast.

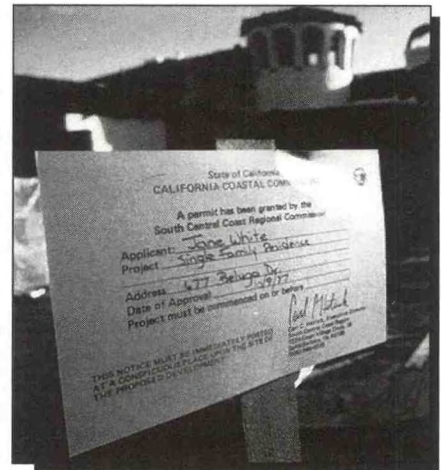
State management translates into coastal programs with significant structural differences. Some states centralize their programs while others link existing natural resource programs together to frame coastal management. No matter the structure, the authorities are designed to streamline state government and provide comprehensive, predictable, and enforceable policies to guide coastal planning and public investment.

Each coastal program also considers national issues of population growth, coastal hazards such as storms and flooding, erosion, declining water quality, wetlands loss, shortage of public access, waterfront revitalization and energy facility siting. Among these national challenges, nonpoint source pollution presents the greatest threat to the health of coast waters. In the past two years, states have worked hard to improve the coast by tackling coastal nonpoint pollution.

This report highlights accomplishments of each coastal program over the past two years, as well as progress made by the five states currently developing coastal programs.

To minimize the nonpoint pollution suffocating U.S. coasts, and to respond to other coastal issues, coastal managers rely on the data generated by National Estuarine Research Reserves. Through the reserve system, state governors set aside estuaries that reflect the variety of resources representative of the nation's coastal waters. Scientists use estuarine reserves to study long-term trends in coastal resource quality, test management practices, and translate the information to public decision makers. These sites also provide living classrooms for their communities, educating almost half a million residents each year.

This report describes the progress of each estuarine research reserve over the past two years. Each reserve began participating, for example, in a long-term National Water Quality Monitoring Program, as well as system-wide education programs. The sites also developed or improved their facilities to bolster research and education programs for their communities and the country. This report also discusses the efforts of six states pursuing new estuarine reserve sites.



*Permit for coastal construction in California.*



## TECHNICAL ASSISTANCE

### *Customer Service for State Partners*

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***The demand for technical expertise is greater than ever. NOAA has created a plan to fill the needs of its partners.***

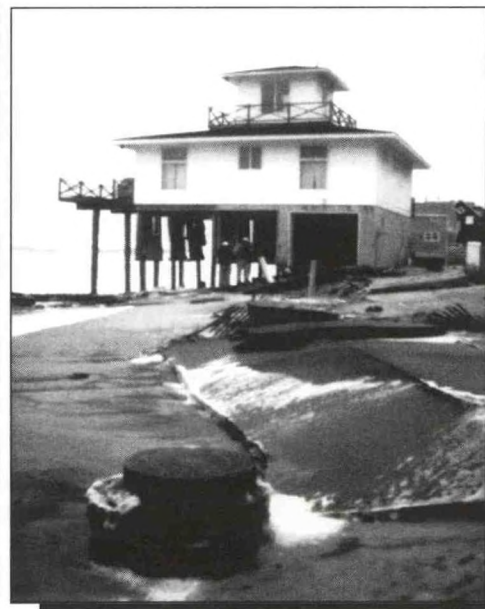
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Technical assistance is a key ingredient in the CZMA's federal/state partnership. Since its passage in 1972, the CZMA has mandated that NOAA provide technical assistance to coastal states and territories on issues related to program development and implementation. With the advent of new initiatives under the 1990 CZMA reauthorization and the leaps in technology over the past five years, the opportunities to provide technical assistance are greater than ever.

State and territorial coastal programs have requested NOAA's help in recent years on a number of projects—from measuring shoreline change through aerial photography to testing management measures for nonpoint source pollution.

Responding to the need for technical support, NOAA developed a *Technical Assistance Initiative* with the following goals:

- to identify national technical assistance priorities;
- to create and maintain an information system that supports coastal resource management and facilitates the transfer of information and technology;
- to link National Ocean Service products and services with the needs of states and territories and ensure their delivery; and
- to foster coordination of interstate activities.



*Shoreline development at risk.*

#### *Program Priorities:*

Though the plan will be refined to reflect emerging needs and issues, NOAA has targeted some priority areas. These include:

- cumulative and secondary impacts of coastal development,
- coastal nonpoint source pollution,
- coastal hazards,
- coastal management program development,
- coastal program assessment,
- federal consistency,
- land use planning,
- information management, and
- sustainable development.

To accomplish these goals, the technical assistance plan brings together teams and resources from numerous offices within NOAA, and among other federal and state agencies.

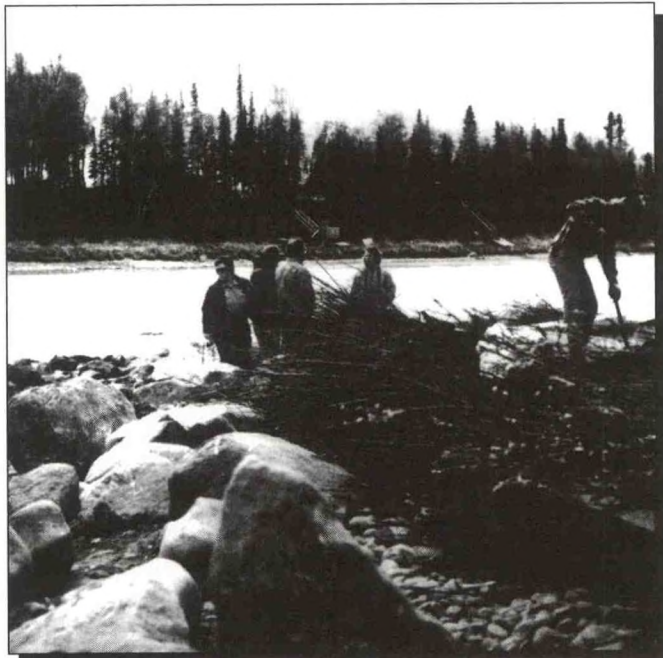
For example, by bridging a gap in expertise between coastal managers and cartographers, the Massachusetts and California coastal programs were able to obtain shoreline data (using already-scheduled flight surveys) that met the states' critical need for up-to-date documentation of shoreline change.

With guidance from a steering committee and working group of coastal management, research reserve and marine sanctuary managers, NOAA revised the plan to focus initial efforts in the following areas:

- information management,
- nonpoint source pollution,
- coastal hazards,
- cumulative and secondary impacts, and
- coastal planning and development.

In fiscal years 1994 and 1995, revenues from the Coastal Zone Management Fund (CZM Fund), under section 308, supported a number of technical assistance projects across the nation. With this source of funding, NOAA sponsored regional workshops on Federal Consistency; the first of several regional coastal hazards workshops designed to bring together state coastal management programs with federal emergency planning program officials; a workshop on marina development; and a workshop on issues related to dockside casino development. The

CZM Fund enabled NOAA to convene a focus group to examine public attitudes toward nonpoint source pollution control. It also enabled NOAA to design an information management system geared toward sharing projects and successes of the section 309 Enhancement Grant Program.



*The bank along Alaska's Kenai River is being stabilized to reduce the cumulative impacts of erosion to salmon habitat.*

*NOAA has used funds available under CZMA section 308 and its mandate for technical assistance to assist state with new programs and technologies.*



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***The CZMA requires that federal agencies evaluate their actions for consistency with a state's coastal management program.***

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Section 307 of the CZMA provides an important tool for coastal states to influence federal actions that are likely to affect any of the state's coastal resources or uses. Once coastal states have a federally approved coastal management program, the state reviews such actions to ensure that they are consistent with the goals and policies of the state coastal management program. This tool, known as federal consistency, also helps to avoid conflicts between state and federal agencies by fostering early cooperation and coordination.

Under section 307, federal actions include direct federal activities (any development or action on behalf of a federal agency), indirect federal activities (activities requiring a federal license, permit or other form of federal approval), and federal financial assistance to state or local governments.

States have continued to rely on the federal consistency provision to address a wide array of federal actions, including:

- disposal of federal land by the General Services Administration;
- the closure and re-use of military bases;
- dredge material disposal by the U.S. Army Corps of Engineers and the Navy;
- commercial spaceflights;
- underwater sound experiments;
- outer continental shelf oil and gas

activities;

- timber harvest activities;
- re-licensing of hydro-electric dams;
- waterfront development; etc.

States' concerns with these federal actions included: providing public access to coastal areas; preserving historic structures; conserving coastal wetlands, beaches, water quality, and fisheries; and protecting coastal development. Given the many federal actions subject to the consistency requirement, the states' interest in these actions, and negotiations between states, federal agencies, and applicants for federal approvals and funding, it is important to note that states concur over 95% of the time (based on preliminary analysis of state data).



*Coastal states review many Navy activities in the coastal zone, including recently, California and Hawaii.*

## *Aligning Federal Activities with State Coastal Programs*

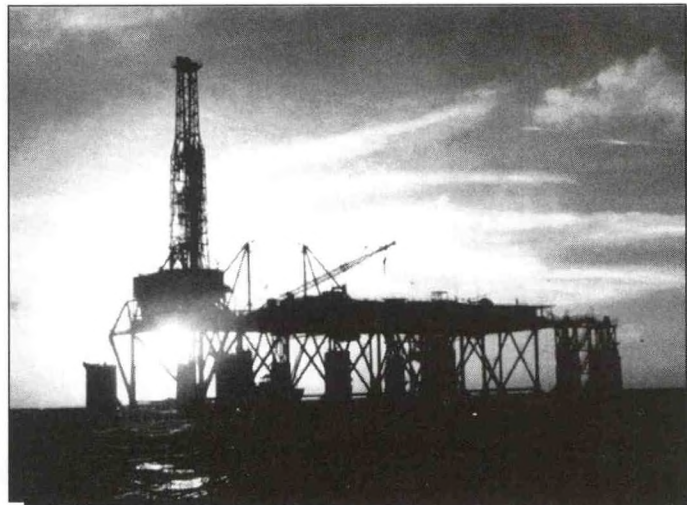
### NATIONAL EFFORTS

Since 1993, OCRM has placed greater emphasis on outreach to states and federal agencies to promote the benefits of federal consistency and to assist states and federal agencies in fulfilling their consistency responsibilities. NOAA has dedicated a full time Federal Consistency Coordinator to work with the states and federal agencies on the use of consistency (in general and on specific issues) and to facilitate negotiations between state and federal agencies.

In 1994 and 1995, NOAA focused its outreach efforts by conducting regional workshops on federal consistency and developing a Federal Consistency Workbook. Between September 1994 and September 1995, NOAA conducted six regional workshops around the country to educate state program staff about the benefits of federal consistency, explain the procedural requirements, and improve communication between state staff and federal agencies. Over 275 state, local and federal agency representatives participated in the workshops, which took place in the Virgin Is-

lands, Gulf & Caribbean region, Great Lakes region, the Pacific Islands, and Alaska. As resources allow, NOAA hopes to offer workshops for the Northeast, Northwest and mid-Atlantic states.

The workbook serves both as a training manual and reference document on federal consistency requirements and issues. The workbook is geared toward improving understanding of federal consistency and coordination between the states and



*Through federal consistency, a coastal state can ensure that offshore oil and gas development activities are consistent with its coastal program.*

*The Secretary of Commerce rendered six consistency appeals decisions between 1994 and 1995.*

*See Appendix C for a summary of the cases.*

federal agencies. It has been distributed to over 420 state, local, federal, academic, and private individuals and has received wide acclaim from the coastal management community.



# INTERAGENCY PARTNERSHIPS

## *Helping to Shape National Policy*

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***NOAA has created numerous partnerships to solve tough coastal issues and generate consistent national policy.***

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**M**ost, if not all, coastal issues cut across multiple jurisdictions, whether physical or political. NOAA's ability to solve tough issues rests in its ability to form partnerships and open dialogue among the many interests.

To this end, NOAA's Office of Ocean and Coastal Resource Management, participates in dozens of inter-agency projects and working groups, both domestic and international. It has also negotiated Memoranda of Agreement to facilitate consistent national policy on a number of issues.



*Dredging in California's Tijuana River to maintain navigation.*

These partnerships take place at every level: between NOAA and state agencies, such as universities; among NOAA's offices; with other federal agencies; with private organizations; and with other countries.

Domestically, NOAA participates on national policy groups for dredging and port issues, emergency management, coral reef and ecosystem planning, and water quality, among others. On the international front, NOAA

plays a key role for international coral reef issues and coastal and marine protected areas, and provides training for many countries on coastal management.

Some examples of these partnerships follow:

### FEDERAL AGENCIES:

#### *National Dredging Team:*

In 1993, the Department of Transportation convened an Interagency Working Group on the Dredging Process for two purposes: to improve predictability in the review of dredging projects and to set the stage for long-term management strategies for dredging and dredge disposal. In its final report, the group made recommendations to improve planning and to reduce the need for dredging, among others.

As a follow-on, a National Dredging Team was created to implement the report's recommendations, improve coordination, and resolve national dredging issues. NOAA is one of the key agencies on this team.

#### *Emergency Management:*

Coastal development is among the most vulnerable to storms and other natural processes, particularly when located in highly hazardous areas. Therefore, a goal of coastal management is to reduce the risk of loss of life and property from these hazards.

At the national level, NOAA coordinates with the Federal Emergency Management Agency (FEMA) on its mitigation planning efforts, designed to reduce the impacts to coastal property of future coastal storms. NOAA has also sponsored the first in a series of regional workshops to bring national, regional and state representatives of coastal management and emergency management agencies together to open dialogue and coordinate efforts.

NOAA also participates with the FEMA at the national level on the Community Rating System Task Force. Its purpose is to create incentives that discourage building in highly vulnerable areas.

### *Coordination with Wildlife Refuges:*

NOAA's Office of Ocean and Coastal Resource Management (OCRM) and the Department of Interior's Fish and Wildlife Service (FWS) entered into a Memorandum of Agreement. Through the agreement, the two agencies will coordinate activities of the Coastal Zone Management Program and NERRS with National Wildlife Refuge System. NOAA and FWS conducted several joint workshops to train staff on the use of education as a management tool. The agencies have also reviewed the grant applications of each other to identify areas for coordination.

### *Domestic Coral Reef Initiative:*

NOAA serves as a co-chair for the

domestic component of the U. S. Coral Reef Initiative. This initiative creates partnerships between U.S. state and territorial agencies in the Pacific, Caribbean and Gulf of Mexico that have authority for managing coral reefs. These partnerships provide a forum to exchange information, set priorities and develop a consensus on strategy for national, regional and local implementation.

NOAA also collaborates with a number of these agencies to provide support and training for coral reef monitoring. Through a cooperative agreement, NOAA and EPA will conduct applied research for nonpoint source pollution and other management issues at four National Estuarine Research Reserves and will work together to develop technology for detecting stress in coral reef habitats.

In the Pacific islands, NOAA scientists are working with the U.S. Department of Defense (DOD), coral reef scientists from the University of Hawaii, and coastal resource managers from Hawaii and the Commonwealth of the Northern Mariana Islands (CNMI) to provide training on low-cost, low-technology methods to monitor the health of coral habitats. The OCRM and DOD are also collaborating with each other to help the CNMI coastal program evaluate the potential impact of amphibious exercises on coral habitats and to identify ways to minimize the effect of these exercises on sensitive resources.



# INTERAGENCY PARTNERSHIPS

## *Helping to Shape National Policy*

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***Many countries are looking to the United States as a model for comprehensive coastal management.***

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### *Ecosystem Management:*

NOAA participates on the Interagency Ecosystem Management Coordination Group, which fosters coordination on ecosystem issues of that extend beyond political boundaries. The group's objective is to share data and ecosystem mapping standards that will be useful to federal, state and private land managers and to foster interagency demonstration projects/partnerships to achieve commonly identified goals. The effort will help identify trends in ecosystems within the U.S. and gaps in existing information.

### *Coastal Change Analysis Program:*

Within NOAA, OCRM and the Coastal Change Analysis Program (C-CAP) are working together to monitor the effectiveness of alternative management measures in coastal areas. Changes are being observed using satellite imagery and aerial photography of land use patterns and specific habitats, along with land-based watershed monitoring. Together, OCRM and C-CAP are funding eight projects, all of which involve state coastal management programs. Five of these are also occurring within NERRS sites (including one proposed reserve).

## INTERNATIONAL PARTNERSHIPS

With more than 20 years of experience in developing and implementing Integrated Coastal Zone Management (ICZM) Programs and Estuarine

and Marine Protected Areas representing most biogeographic environments found in the world, NOAA has played a key role in fostering other nations to undertake similar programs. Integrated coastal management has been promoted through the Intergovernmental Panel on Climate Change as well as the International Coral Reef Initiative as the appropriate planning and management tool for helping nations conduct vulnerability assessments and adaptation responses to global climate change and accelerated sea level rise. The importance of ICZM in achieving sustainable development was confirmed at the U.N. Conference on Environment and Development in Chapter 17 of Agenda 21. Consequently, many nations are in the process of undertaking CZM and Protected Area Management and often look to the U.S. for assistance based on our experience.



*For atolls and small islands, planning for climate change is particularly crucial.*

#### *Interagency Support:*

In 1994, NOAA and the U.S. Agency for International Development (USAID) successfully developed and implemented the first Resources Support Services Agreement (RSSA) for Integrated Ocean and Coastal Zone Management activities. This agreement was designed to assist USAID to respond to the vital and strategic interests the U.S. has in promoting sustainable development of coastal areas. Using funding provided under the agreement—\$350,000 in FY 1994 and \$600,000 for a consolidated NOAA-wide RSSA to include marine fisheries assistance in FY 1995—NOAA was able to help USAID provide technical assistance on coastal issues to a number of countries, primarily in the Pacific and Middle East.

Under this agreement, in September 1995, NOAA completed a "Technical Guidance Manual for Integrated Coastal Zone Management." The manual was produced for USAID personnel stationed around the world who get requests from developing country representatives for assistance in marine and coastal issues.

#### *Red Sea Marine Peace Park:*

NOAA was instrumental in designating and developing the Red Sea Marine Peace Park in the Gulf of Aqaba. NOAA provided full support to the White House and State Department/U.S. Agency for International Development in the Middle East

Peace Negotiation Process between Israel and Jordan for the Jordan Rift Valley Economic Development Plan relating to the designation of a Bi-national Red Sea Marine Peace Park. Among other efforts, NOAA developed an initial concept paper adopted by Jordan; provided a poster for the park to be distributed at the Amman



*NOAA experts train Jordanian divers to install mooring and marker buoys, which will reduce damage to coral reefs.*

Economic Summit; and provided a draft designation document and draft marine park regulations. Using funds obtained from the State Department's Special Fund for the International Coral Reef Initiative, NOAA purchased state-of-the-art mooring and marker buoy equipment and completed a program using NOAA dive experts to train Jordanian divers to install the buoys.

#### *International Coral Reef Initiative:*

Also with the support of the RSSA, NOAA personnel served as the Secretariat for the International Coral Reef Initiative (ICRI). In that capacity,



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**NOAA  
provides  
domestic and  
international  
leadership for  
managing  
coral reefs.**

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NOAA staff wrote an International Call to Action, which was adopted by representatives of 44 nations, U.N. organizations, NGO's and others, and wrote two reports for ICRI entitled "State of the Reefs Report" and "Partnership Building and Framework Development - Final Report of the International Coral Reef Initiative Workshop", both of which have been widely distributed to key governmental officials, scientists, resource managers, and NGO's around the world. NOAA also supported the production of an award winning film by the U.S. Information Agency shown around the world and translated into many languages entitled: "The Fragile Ring of Life" which shows coral reef degradation concerns in the Florida Keys, Jamaica Bay, Red Sea, Sri Lanka and Palau.

*Climate Change Studies:*

NOAA also provided assistance to the U.S. Global Climate Change Country Studies Program for five Pacific Island nations participating in the program (Marshall Islands, Federated States of Micronesia, Kiribati, Western Samoa and Fiji). By participating in the Country Studies Program, these countries, as well as 35 of the other 60 countries receiving some form of assistance, are conducting vulnerability assessments based on future climate change scenarios of their coastal environments' vulnerability to sea level rise, salt water intrusion, etc. NOAA staff were instrumental in supporting two

vulnerability and adaptation workshops which were held in Hawaii for the Pacific and Southeast Asian countries to improve their understanding of how ICZM planning and management tools can help with future natural hazards issues.

*International Exchange:*

In February 1995, in response to the U.S./People's Republic of China Science and Technology Protocol, a team of five U.S. experts in coastal management visited the Peoples Republic of China. The team of experts saw firsthand the problems of rapid development in coastal China and shared U.S. experience with similar problems. The team brought expertise in the areas of natural hazards planning, minimizing the impacts of water pollution to coastal ecosystems, tools and technology useful for decision making, CZM administration among different levels of government, and establishing estuarine and marine sanctuaries. A similar exchange program is planned for Chinese delegates to visit the U.S.

NOAA has also met with representatives of Ireland's marine resource management agency to discuss possible joint ventures and exchanges in applied research, assessments and monitoring; technical expertise, and training.

## COASTAL ENHANCEMENTS PROGRAM

### *Encouraging Improvements and Innovation*

The Coastal Enhancements Program, created in 1990 under section 309 of the CZMA, encourages coastal states and territories to identify the most pressing issues affecting their coastal resources and to develop creative and effective programs to tackle the problems. Many of these state issues are national issues as well. Specifically, the program recognizes that dramatic population growth along U.S. coastlines brings new challenges to coastal management programs—challenges in protecting life and property from natural hazards; in settling conflicts between such competing needs as dredged material disposal, commercial development, recreational uses, national defense needs, and port development; and in conserving coastal wetlands and habitats while accommodating needed economic growth.

All 29 states and territories with approved coastal management programs are participating in this voluntary program. The states are developing enforceable improvements to their coastal management programs to address issues in one or more of eight priority enhancement areas: wetland protection and restoration, public access to the coast, control of the cumulative and secondary impacts of development, protection from coastal hazards, special area management planning, management of ocean resources, reduction of marine debris, and siting of federal and energy facilities.

Under the enhancement program, NOAA's Office of Ocean and Coastal Resource Management allocates federal funds to states based on the quality of their multi-year enhancement Strategies, through weighted formula and special merit projects. It is a competitive grants program. Funding decisions are based on how completely and creatively each state program addresses national concerns on coastal resource management.



*Several states put a priority on improving the way they manage cumulative impacts of development.*

In 1991 and 1992, the states focused on assessing the status of their coastal resources, determining the possibilities for improving management of those resources, and developing a multi-year strategy outlining projects and program changes that the state would seek to achieve in each of the enhancement areas. NOAA allocated funding using two methods: (1) a weighted formula based on an evaluation of each state's strategy, which provides a predictable level of funding, and (2) individual projects



# COASTAL ENHANCEMENTS PROGRAM

*Encouraging Improvements and Innovation*



*Wetlands are essential for keeping coastal waters clean and fishery habitats productive.*

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***In the past two years, coastal states have been carrying out projects to improve their management programs.***

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of special merit, which encourages innovation.

With the assessments and strategies complete, the states focused on carrying out their projects. So far, the states have achieved a variety of program changes and benefits to their coastal zone programs. Numerous projects are underway (see Appendix B). Here are some examples of what the Enhancement Program has accomplished to date:

#### *Cumulative Impacts:*

Coastal development often brings cumulative and secondary impacts that, over time, can significantly degrade the quality of coastal resources. Many states lacked sufficient information on which to base their assessment of cumulative and secondary impacts and to identify those areas where such impacts occur. Twenty-seven states identified this issue as a priority for improvement.

Alaska designed a multi-year project to address the cumulative impacts of activity along the banks of the Kenai River. The Kenai River is one of the world's most productive salmon rivers. To date, Alaska's coastal program has streamlined its review of routine projects, while also exercising stipulations that safeguard fishery habitat. Information generated by the project has also led to voluntary efforts by private landowners to undertake innovative projects that reduce erosion along stream banks and enhance salmon habitat.

#### *Wetlands:*

Twenty-six states and territories identified wetlands as a priority enhancement area. The majority of these states have focused on mitigation of impacts to wetlands and/or assessment of wetlands. Some states have undertaken restoration projects as part of their approach to wetlands enhancement, while other states proposed pub-

# COASTAL ENHANCEMENTS PROGRAM

## *Encouraging Improvements and Innovation*

lic education campaigns, boundary changes, watershed management, and increased enforcement.

Connecticut, for example, successfully established a Long Island Sound license plate program to finance coastal management activities. The program is funding the restoration of Connecticut's tidal wetlands, acquisition of new public access to Long Island Sound, and education efforts to increase public understanding of natural resources such as wetlands. As of January 1, 1995 this program produced over \$900,000 in support of 73 education, public access, habitat restoration and research projects.

### *Coastal Hazards:*

The Enhancement Program encourages states to develop or improve strategies for reducing the risk to life and property from coastal hazards. States have expressed needs: for better data on erosion and bluff recession rates, for identifying hazardous areas, and for establishing incentives to channel development away from highly hazardous areas. Twenty-four states and territories identified coastal hazards as a priority area.

Pennsylvania compiled years of legal interpretations and field policies for implementing the Bluff Recession and Setback Act into a comprehensive guidance document. The document will enable municipal code enforce-

ment officers in Erie County township to work more effectively with the shoreline landowners to reduce bluff erosion and protect homes adjacent to the bluffs. Also, the state developed new techniques to measure, calculate and monitor rates of bluff erosion along the Lake Erie Shoreline.



*A public access site in Hawaii.*

### *Public Access:*

Fifteen states and territories identified improving public access as a priority. The Enhancement Program encourages states to use innovative techniques to add, improve and maintain access sites for the public.

South Carolina, for example, adopted a Beach Access Development Fund, revenues from which will be used to improve existing access sites and as matching funds for new access sites. The fund is expected to generate about \$90,000 in revenues per year.

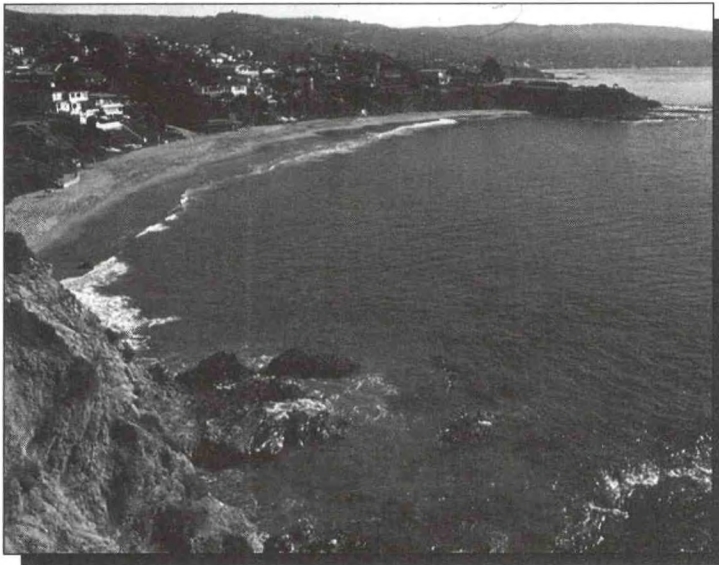


# COASTAL ENHANCEMENTS PROGRAM

## *Encouraging Improvements and Innovation*

### *Special Area Management Planning:*

Special area management planning provides an intensive, collaborative approach to resolving complex issues in a particular coastal area. Under the enhancement program, a state must identify the area to be included, the issues to be addressed, the planning process that will be used, and the role of each federal, state and local agency involved in the process. Ten states identified this as a priority area.



*Bay along California's coast.*

As discussed later in this report, Virginia developed a Special Area Management Plan (SAMP) to maintain the coastal water quality in habitats that support birds, finfish and shellfish while also developing sustainable industries in the county. The "Northampton County Development

Action Strategy," developed under this effort, won a National Association of Counties Presidential Leadership Award.

### *Ocean Resources:*

Growing use of coastal and ocean waters for commerce and recreation will create increasing conflicts. The Enhancement Program encourages states and territories to identify critical ocean resources, evaluate present and future uses, and plan for long-term management of those resources. Three states identified this as a priority area.

Under this program, Oregon adopted a Territorial Sea Plan which provides a framework for decisions by all relevant agencies affecting ocean resources in Oregon's waters. It also designates specific management objectives for the state's rocky shores. The plan, the first state ocean plan to have been formally approved as part of a state's coastal management program, was developed in close cooperation with federal agencies, local governments, coastal Indian tribes, ocean users and interest groups.

In passing the Coastal Zone Act Reauthorization Amendments of 1990, Congress recognized the role played by nonpoint source pollution in the decline of coastal water quality. The new section 6217 presented a major challenge to NOAA, EPA and NOAA's coastal partners.

Nonpoint source pollution is one of the most important water quality issues we face in the United States today. The Clean Water Act of 1972 has made great strides in reducing water pollution, primarily through the control of *point* sources of pollution. *Nonpoint* sources of pollution are often the dominant form of pollution affecting coastal waters. Runoff from agriculture and storm sewers are two of the main contributors nationwide to impaired coastal water quality.

NOAA and the coastal states recognize that clean water translates into sustained economic vibrancy. Coastal based recreation and tourism generate between \$8 and \$12 billion annually. The commercial fishing industry contributes approximately \$25 billion to the nation's economy. The loss of a closed oyster bed or a day at the beach translates into direct economic impacts on the nation's workers, vacationers, and retirees.

The 1990 amendments created section 6217 as a partnership between coastal management and water quality agencies at both the federal and

state levels. NOAA provided funding under section 6217 for program development. States will draw upon a number of sources to implement their programs, including funding under section 319 of the Clean Water Act and section 306 of the CZMA, and program support and technical assistance from a variety of other federal programs, e.g. those of the U.S. Department of Agriculture.



*Runoff from agriculture is one of the main contributors nationwide to impaired coastal water quality.*

Throughout the five-year history of the 6217 program, NOAA and EPA have assisted the states in developing coastal nonpoint programs by providing technical information, facilitating workshops to exchange ideas, and communicating early feedback on the states' progress through the process of threshold reviews.

### *Threshold reviews:*

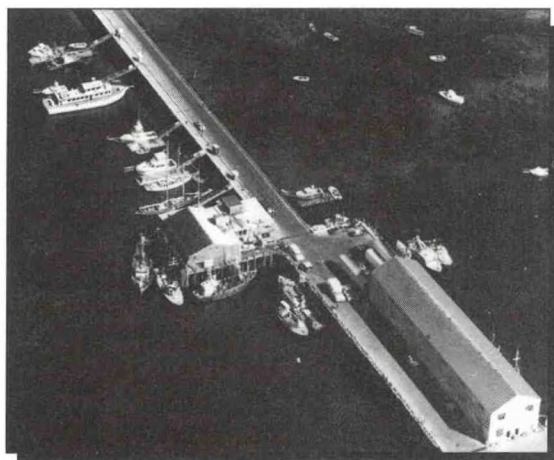
To provide feedback to states as they developed nonpoint programs, NOAA and EPA gave states the op-



# COASTAL NONPOINT SOURCE POLLUTION

## *Working Toward a Solution*

portunity to have a threshold review of their proposed program. For each threshold review, NOAA and EPA staff reviewed materials submitted by the state or territory, conducted a site visit, and produced a report detailing how the various elements of the proposed program met the approval criteria for section 6217. The report also identified



*Adding pumpout stations to marinas may help reduce nonpoint source pollution.*

other information or actions needed to complete program development. Between October 1993 and June 1995, NOAA conducted threshold reviews for 23 states and territories.

### *Providing Flexibility:*

Based on information gathered by NOAA and EPA in threshold reviews, as well as concerns expressed by organizations representing state coastal management programs and state water quality agencies, NOAA and EPA determined that some changes to the program were needed. The changes were designed to provide flexibility in completing development of effective coastal nonpoint programs.

These changes: allowed for conditional approval for up to five years in order for states to make changes necessary to receive final approval; ex-

tended the time for implementing management measures for existing sources of pollution from three to five years; provided more flexibility in the use of enforceable policies as a backup to existing voluntary and incentive-based programs; and, generally deferred to a state's designated geographic boundary for the nonpoint program unless NOAA and EPA determine that the proposed boundary excludes land and water uses that can be reasonably expected to impact or threaten coastal waters.

### *Submitting Programs:*

Between July and September 1995, 25 states and territories submitted coastal nonpoint programs to NOAA and EPA for approval. The remaining four states submitted programs shortly thereafter. NOAA and EPA set up review teams, with EPA reviewing the technical aspects of the program and NOAA reviewing the enforceable policies and mechanisms that ensure that management measures will be implemented and other aspects of the program.

Following this review, NOAA and EPA will issue findings for each program submission which identify which approval criteria have been met, and what further conditions, if any, must be met to receive final program approval. In compliance with the National Environmental Policy Act, NOAA will also develop an Environmental Assessment for each program.

The CZMA created the National Estuarine Research Reserve System (NERRS) to study the natural and human processes that affect estuaries so that stresses on these highly productive areas can be minimized. Recognizing that sound coastal management decisions must be based on good science, the NERRS program, also a voluntary federal-state partnership, establishes and manages a national system of estuarine research reserves throughout the country. Reserve sites reflect the rich variety of estuarine resources found throughout the United States and are used to study long-term trends in coastal resource quality, test management practices and translate information to the public and decision-makers.

The reserve system now has 22 sites encompassing nearly 440,000 acres of estuarine waters, wetlands and uplands. Six states— California, New Jersey, New York, Florida, Mississippi and Alaska— are currently working on sites to become part of the NERRS.

Over its 21-year history, the NERRS has made a great deal of progress in furthering its program goals of integrated estuarine research, education and resource stewardship dedicated to improving coastal management. Over 200 research projects have been conducted at the reserves, involving over 50 academic institutions, three federal agencies, and 10

state agencies. The reserve system has developed official partnerships with 30 federal entities, 26 private environmental organizations, 90 educational organizations and more than 100 state agencies. The reserves attract hundreds of thousands of visitors each year to participate in interpretive guided tours, educational classes, and training in estuarine ecology.

In addition to the numerous accomplishments of individual reserves over the past two years, which are presented later in this report, NOAA and the states have focused on system-wide efforts— from strategic planning to system-wide monitoring and education projects.

### PROGRAM MANAGEMENT

#### *Strategic Planning:*

NOAA and its state partners completed a Strategic Plan for the reserve system, which sets long-range goals for the system and guidance for meeting those goals. The five goals in the plan support the NERRS mission:

- GOAL 1: establish, manage, and maintain a national network of representative protected areas;
- GOAL 2: establish federal, state, and local partnerships;
- GOAL 3: provide informed management and stewardship;
- GOAL 4: achieve scientific understanding through research; and
- GOAL 5: design and implement a

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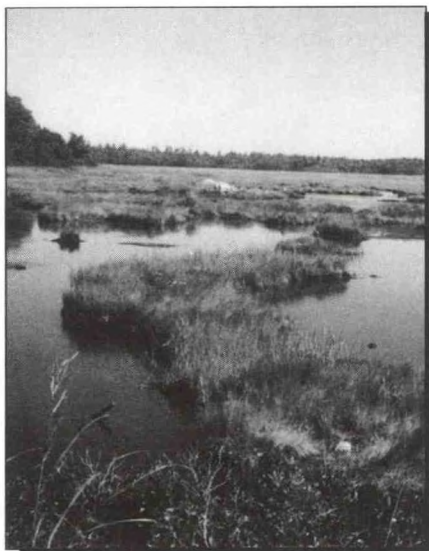
***NOAA and the research reserves have focused on system-wide efforts, from planning to research and education.***

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comprehensive education and interpretation program based on solid scientific principles.

As a result of the NERRS strategic planning efforts, NERRS educators have published an education plan that will guide the reserves in building effective education programs. Also, all reserves are developing site profiles, which will provide researchers, students, managers, and the public with detailed summaries of site resources and discussions of issues of concern. The Tijuana River (CA) and Great Bay (NH) NERRs profiles are already complete.



### *Updating Management Plans:*

National Estuarine Research Reserves are required by regulation to update their management plans every five years. Until recently, there was no standard format for the management plans.

NOAA staff, in coordination with reserve managers, undertook a project to simplify the process of updating management plans. Three components of the project are complete: a layman's guide to regulatory requirements for NERRS management plans; a recommended management plan format; and boilerplate language for sections describing the national program. A de-

tailed description of the process for revising management plans is nearing completion.

### *Standard Operating Procedures:*

NOAA staff completed the first set of Standard Operating Procedures (SOPs) for the NERRS. The manual compiles regulatory requirements, program policies and procedures into one document to streamline NERRS procedures. SOPs have been developed for the NERR designation process, delineation of boundaries, recommendations for core on-site staff, and development of annual plans and reserve facilities, among others.

## RESEARCH AND MONITORING

The CZMA declares that it is the national policy... "to encourage coordination and cooperation with and among the appropriate Federal, State and local agencies, and international organizations... in collection, analysis, synthesis, and dissemination of coastal management information, research results, and technical assistance, to support State and Federal regulation of land use practices affecting the coastal and ocean resources of the United States." (CZMA Section 303(5)) To that end, NOAA and its partner states in the NERRS pursued a number of efforts in 1994 and 1995, both domestically and internationally.

### *National Monitoring Program:*

The National Water Quality Monitoring Program was designed in 1994

for two reasons:

- to support state-specific coastal nonpoint source pollution control programs by establishing local networks of continuous water quality monitoring stations in representative estuarine ecosystems; and
- to develop a nationwide database on baseline environmental conditions in the NERR System, from which to measure trends.

Within each of the reserves, two monitoring locations will be set—one as control site, and another that is affected by nonpoint source pollution. Electronic devices known as “data loggers” record water quality information such as water temperature, salinity, dissolved oxygen, acidity (pH), and depth every 30 minutes.

After interpreting the data, each site transfers the data to a Centralized Data Management Office (CDMO) where it is archived into a permanent database. The CDMO is responsible for developing the infrastructure to disseminate the information. To date, the CDMO has developed an on-line information server on the Internet, and published an operations manual detailing how to interact with the on-line information server. Also, in cooperation with the Estuary-Net Program described below, the CDMO surveyed each site’s technology and data management capabilities, as well as the applications for which data is used.

Funding for the National Water Quality Monitoring Program was made available from the Coastal Zone Management Fund, under section 308 of the CZMA.

### *U.S./Mexico Watershed Project:*

International cooperation is also necessary to provide land-use planners and resource managers with information on trans-border coastal management issues. The United States and Mexico, with participation by NOAA and the Tijuana NERR, have worked in partnership to develop a bi-national Geographic Information System (GIS) to address the most critical management issues of the highly urbanized watershed of the Tijuana River, which forms the border between the two countries and whose mouth is in the Tijuana NERR. In 1994 and 1995, the area was surveyed using aerial photographs, a bi-national management team was formed, and an agreement was signed to share data and cooperatively develop the GIS. The wealth of information being created by this project is spawning numerous proposals for practical management solutions.

### EDUCATION AND OUTREACH

The NERRS is actively involved in a wide variety of education activities that provide information to coastal decision-makers and the public about estuaries and their associated coastal habitats. A primary goal of the education program is to facilitate the link

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***With grants from the CZM Fund, the reserve system began a water quality monitoring program that will enable researchers to compare data around the country.***

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between research results and the people who will make decisions concerning coastal resources—including planners, managers, resource professionals, resource users and the general public. Many of the education programs stem from site research projects.

One such effort entails a pilot curriculum that allows students to compare and contrast water quality data collected at the sites. By comparing this data, which is available over the Internet, students can see the variation in wetlands around the country. Other education programs include field trip programs, classes and workshops for professionals, and a wide variety of printed materials. Most reserves have established volunteer programs to help carry out projects.

NERRS educators have also achieved numerous accomplishments through partnerships at the federal and state levels. The NERRS has partnered with coastal management programs to offer coastal management workshops, has joined with the U.S. Fish and Wildlife Service to offer national education and outreach training, has initiated partnerships with EPA's National Estuary Program, and has provided training to educators throughout the NERRS on how to identify target audiences for education programs and to evaluate how well the reserves' education programs have met their goals.

### COMPLETION OF THE SYSTEM

A long-term goal of the NERR System is to represent the ecological diversity of the nation's estuaries. To ensure that this network of reserves represents this diversity, NOAA developed a biogeographic classification scheme in the early 1980s. The coastlines of the U.S. and its territories have been divided into 11 regions and 29 subregions, each with unique characteristics. The 22 designated reserves now represent 15 subregions. The 14 subregions not yet represented are located primarily in Alaska, the Pacific, the central and western Gulf of Mexico and the Great Lakes.

OCRM is committed to completing the system of reserves so that each biogeographic region is represented, but has placed top priority on supporting operation of existing sites and sites currently involved in the designation process. Base funding for the System has remained relatively flat since the first reserve was designated in 1974. While a number of states have expressed interest in participating in the reserve program, NOAA has been concerned that adding sites would diminish the funds available to operate sites already designated. OCRM will consider new sites for designation only when sufficient funds and staff are available to adequately support designation and are projected to be available for continuing operations after designation. First priority will be given to states proposing sites in regions and subregions not yet represented by the NERR System.

With the authority to issue program development grants under CZMA section 305 reauthorized in 1990, five states chose to develop coastal management programs. Since then, the five— Georgia, Indiana, Minnesota, Ohio and Texas— have made significant progress in their efforts. By the end of 1995, Texas and Ohio were in the final stages of completing state programs to submit to NOAA for approval.

The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) limited each state's eligibility for program development grants under section 305 of the CZMA to two years, with the assumption that states could essentially "dust off" programs begun in the 1970s and 1980s. This has not been the case; considerably more consultation has been necessary. These states are also required to develop a coastal nonpoint pollution control program under section 6217 along with their core coastal management program. This requirement did not exist for states approved in the 1970s and 1980s.

By 1994, each of the states except Indiana had received the two grants authorized under section 305. Since the CZARA only authorized grants for fiscal years 1991 through 1993, no grants for program development were issued in fiscal year 1994. States continued to develop CZM programs although their efforts were scaled back due to limited resources. Fiscal

year 1995 appropriations language provided much needed assistance to states to continue their efforts.

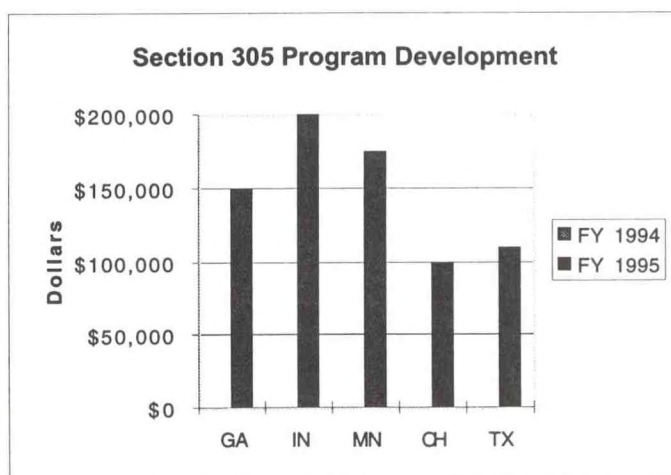
The Administration developed a proposal for the 1995 CZMA reauthorization that would authorize up to two additional grants for states developing coastal programs, allowing states to receive the same number of grants as states that developed coastal programs in the 1970s and early 1980s.

The Administration proposal would also defer the requirement for these states to submit a coastal nonpoint pollution control program until after their core coastal management programs have been approved, recognizing that the requirement to develop a nonpoint program may seriously jeopardize the efforts of states to enter the CZM program. The Administration is intent on helping these states complete development of their basic CZM programs on terms equal to those on which current participating states entered the program.

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***Five coastal states are now developing coastal management programs under the CZMA.***

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#### PROGRAM DEVELOPMENT STATE BY STATE

##### *Georgia*

Georgia has made considerable progress in program development during fiscal years 1994 and 1995, from gaining public input to the publication of a public review draft of the state coastal program document.



*Development along Georgia's shoreline.*

In early 1994, more than 300 citizens of coastal Georgia volunteered to serve on public task forces to assist in developing Georgia's coastal management program. Focusing on coastal issues such as residential and commercial development, marine related facilities, and recreation and tourism, the task forces made over 350 policy recommendations to Georgia coastal program staff.

The program staff incorporated these recommendations, along with those of the Coastal Zone Advisory Committee, into the draft Georgia program document, which was released

for public comment in September 1995. After public review is complete and revisions made, the program document will be submitted to the Office of Ocean and Coastal Resource Management for review.

##### *Indiana*

Indiana received its second grant for program development in fiscal year 1995. After a year of public meetings, Indiana assembled public workgroups to define issues important to coastal residents and make recommendations to the lead agency, the Department of Natural Resources (DNR), on what issues the program should address. The DNR is now comparing these recommendations with Indiana's existing authorities and programs to determine where improvements are needed.

Indiana plans to use existing state authorities as much as possible for its coastal program, linking the programs and authorities of various agencies into a network. Coordination will be an important aspect of Indiana's program. The Indiana Natural Resources Commission recently passed a resolution to improve communication and coordination in the use of Indiana's Lake Michigan coast. The proposed program will streamline existing permitting programs, enhance public access to the coast, and provide technical assistance to residents, industries, and local units of government on coastal issues such as erosion control, shore-

line redevelopment and natural resource management.

### **Minnesota**

The Minnesota Department of Natural Resources has been developing a CZM program since late 1993 to address coastal issues along the northern shoreline of Lake Superior, including tourism, development pressures, natural resource protection, and public access to the coast. Minnesota's DNR focused its early efforts on building public support for the program through numerous meetings with the public and state, regional, and local governments, and by creating a newsletter to communicate coastal resource issues of the North Shore. In January 1994, the DNR helped organize a workshop entitled, "Minnesota's Lake Superior Region in the 21st Century: Effective Management of Our Coastal Resource." The workshop was filled to capacity with over 200 participants.

The Minnesota DNR has proactively evaluated the state's nonpoint source pollution programs and authorities as they apply to the requirements of §6217. In June, 1995, this review process culminated in a formal consultation in Duluth, Minnesota, enabling NOAA and EPA to provide a preliminary response to Minnesota's coastal nonpoint program review. In September, 1995, the DNR helped to organize a workshop entitled, "Upper Great Lakes Watersheds; Future Water Quality: Science, Management, and Political Reality," to

help lay the foundation for an Upper Great Lakes dialogue about nonpoint source control among industries and municipalities, environmental groups, citizens, government agencies, and others.

In September 1995, the DNR hired a full-time program coordinator to spearhead program development efforts. The Minnesota DNR will be creating workgroups to continue to define what Minnesota's coastal program should address, how it should be structured, and to write the program document. Minnesota expects to finalize a draft coastal program document for public review in December 1996.

### **Ohio**

During 1994 and 1995, Ohio continued its effort to complete development of a federally approved coastal management program. In 1992, Ohio released a draft program document for public review. Since then, the state has continued to strengthen one core element of the program for final approval — the coastal erosion area management component. In May 1994, Ohio's legislature amended the state's Coastal Management Law to change the manner in which coastal erosion areas are identified. Since then, working groups composed of local community officials and their representatives, shoreline residents, engineers, geologists and a states legislator met to provide input to the lead agency, the Ohio Department of Natu-

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***Two states,  
Texas and Ohio  
are nearing  
completion of  
their coastal  
programs, to be  
submitted for  
federal  
approval.***

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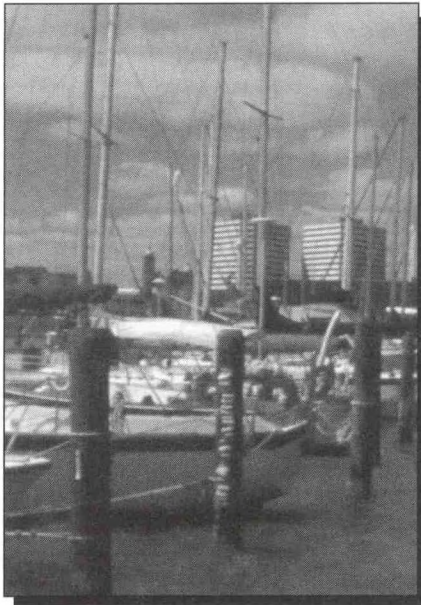


### *Strengthening the Partnership*

ral Resources, regarding revisions to the rules. Significantly revised rules were filed in July 1995 and are expected to be adopted in early 1996. NOAA expects to publish the Draft Environmental Impact Statement in Spring 1996 and approve the program in the Fall of 1996.

#### *Texas*

In 1994 and 1995, Texas continued its efforts to develop a coastal management program for federal approval,



*Marina in Texas.*

while receiving CZMA funding only in fiscal year 1995. During this time, the Coastal Coordination Council—the group charged with developing the program, composed of Texas resource and management agencies and other representatives of business and local government—completed the following milestones. The Council adopted a coastal zone boundary; identified and designated 14 types of

coastal resources as special management areas as areas requiring special management and protection; developed rules to establish uniform coastal policies for protecting dunes and public access to Gulf beaches, conserving critical areas and submerged lands, and to ensure that certain state agencies and subdivisions act in accordance with the policies of the Texas coastal program; and amended water quality certification rules to enhance protection of coastal wetlands in Texas.

The Coastal Coordination Council published a Public Hearing Draft of the coastal program document and proposed Council rules in March 1994. As a result of public comments the state put out revised program rules for public comment in July 1994 and adopted the program document and rules in September 1994. Governor Ann Richards submitted the Texas Coastal Management Program to NOAA for federal approval in December of 1994.

In March 1995, Governor George W. Bush withdrew the program from the federal approval process pending review of the Coastal Management Program and the Coastal Coordination Act by the Texas Legislature. The Texas Legislature amended the Coastal Coordination Act and other statutes relating to the coastal management program. The changes prohibit site-specific Special Management Areas, narrow the boundary defining the coastal zone, add two more gubernatorial appointments and three state agency officials to the Coastal Coordination Council, changed the consistency review process of the Council, and defined coastal natural resource areas. On October 5, 1995, the Council adopted the rule changes reflecting amendments to the statutes and public comments received on the proposed rule changes. On October 20, 1995 Governor Bush resubmitted the Texas program for federal approval.

Six states are currently working on sites to become part of the National Estuarine Research Reserve System: San Francisco Bay (CA), Mullica River-Great Bay (NJ), St. Lawrence River (NY), East Coast Florida, Mississippi, and Alaska.

### ***The Road to Designation— Site Selection***

Three sites—Mississippi, Alaska and East Coast Florida—are in the earliest stages of program development: evaluating sites to nominate as a reserve. To receive funds for site selection, a state must describe the process that will be used to select the proposed site and how the site fits into the biogeographic scheme of the NERRS. Once the state has selected a proposed site, it submits a formal nomination package to NOAA. Once the nomination is approved, the state becomes eligible for funds to develop an Environmental Impact Statement and management plan for the reserve.

### ***Mississippi***

In consultation with NOAA, the State of Mississippi began the process to nominate a research reserve. The state wants to identify a site which represents the major estuarine characteristics of the Mississippi delta coastal ecosystem. Currently, no site within the reserve system represents the Mississippi Delta subarea of the Louisianian Biogeographic Region.

After considering several sites along the Mississippi Gulf coast, the Site Selection and Advisory Committee are prepared to nominate the Grand Bay area of southeast Mississippi as a potential research reserve. The proposed site encompasses approximately 15,000 acres of estuarine tidal marsh, shallow-water open bay, wet pine savanna, and coastal swamp habitats. The Mississippi Department of Marine Resources and Mississippi State University conducted a public meeting in November 1995 to provide details and solicit comments on this proposed site. In keeping with OCRM policy, additional program funds are required before NOAA will designate a site in Mississippi.

### ***Alaska***

The State of Alaska is looking at potential sites in Aleutian Islands biogeographic region. In May 1995, Governor Tony Knowles reconfirmed the state's interest in establishing a reserve and requested financial assistance to start the site selection process. NOAA and other federal trustees of the criminal settlement fund from the Exxon Valdez Oil Spill (EVOS) provided \$360,000 to select a site in an area which approximates the spill-affected area and to prepare an environmental impact statement for the site. The area affected by the spill (Prince William Sound to the lower Alaska Peninsula) represents a subset of Aleutian Island biogeographic region. The Exxon Valdez oil spill affected

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***Six states are  
working on sites  
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of the National  
Estuarine  
Research  
Reserve System.***

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### *Strengthening the Partnership*

many productive estuaries that need additional research and educational programs, making them good candidate sites for a research reserve as part of the National Estuarine Research Reserve System.

NOAA will manage the funds, and will participate in the site selection process and in the preparation of the envi-

cess to select a site representing the East Florida sub-area of the Carolinian Biogeographic Region.

The site selection committee identified two areas near the City of St. Augustine to comprise the proposed Guana/Tolomato/Matanzas Reserve. The first portion, approved by the Governor and his Cabinet in 1993, includes the majority of the southern expanse of the Tolomato River and the adjacent state-owned uplands, which are immediately south of St. Augustine. The state has submitted the nomination package for this site.

The second portion includes all the state-owned sovereign submerged lands and uplands within the boundaries of the Guana River Marsh Aquatic Preserve, located north of St. Augustine. This site was approved for nomination by the Governor and his Cabinet in November 1994. Submission of the nomination package by the Florida Department of Environmental Protection is pending. The state has convened an Advisory Council to assist with development of a management plan for the reserve.

#### ***Proposed sites that have been formally nominated—***

Three states have received funds from NOAA to develop a management plan and prepare a proposed Environmental Impact Statement—San Francisco Bay (CA), Mullica



*Ice fishing provides subsistence for native Alaskan tribes.*

ronmental impact statement and management plan. Alaska's Department of Fish and Game, the lead state agency for the proposed reserve, will coordinate closely with the Governor's Office, Division of Governmental Coordination, to maintain a linkage with coastal management priorities.

#### ***East Coast Florida***

During fiscal years 1994 and 1995, the State of Florida continued its pro-

River-Great Bay (NJ), and St. Lawrence River (NY). The management plan will set forth the reserve's goals and objectives, management issues, an administrative framework, and plans for research and monitoring, education/interpretation, public access, construction, acquisition and restoration, if applicable.

#### ***San Francisco Bay***

In December 1993, NOAA completed its review of the nomination package submitted by California Governor Pete Wilson and approved a list of sites to be included in the proposed San Francisco Bay National Estuarine Research Reserve.

Based on its review of the information submitted, site visits and discussions with officials responsible for site management, NOAA determined that the following sites fulfill the requirements for approval as the San Francisco Bay NERR: South Bay (Bair Island Ecological Reserve), Central Bay (Corte Madera Ecological Reserve), San Pablo Bay (China Camp State Park), Petaluma River (Petaluma Wildlife Area) and Suisun Bay (Rush Ranch Open Space Preserve, Hill Slough Wildlife Area, Peytonia Slough Ecological Reserve) and Delta (Browns Island). These sites contain open water, intertidal and tidal mudflats, and salt and brackish tidal wetlands. Some sites also contain adjacent natural uplands, riparian systems, and both man-made and natu-

ral ponds. All of the sites host diverse communities of wildlife and endangered species and provide excellent settings for research and comparative ecological studies.

NOAA provided assistance to prepare a draft management plan and environmental impact statement on the proposed reserve. The San Francisco State University, which is the state lead on site designation, has sub-



*A view across San Francisco Bay .*

mitted the first draft of a management plan for comment to NOAA and the site advisory committee. Comments are being incorporated and the Draft Environmental Impact Statement is nearly ready for review. A Draft Environmental Impact Statement/Management Plan is expected to be released to the public for comment by early summer 1996.

#### ***Mullica River***

During 1994 and 1995, New Jersey continued the site selection pro-



### *Strengthening the Partnership*

cess for Mullica River and is now preparing a Draft Environmental Impact Statement and management plan for the site.

New Jersey documented that the site meets the basic requirements of the NERR System. With this information,



*Tidal marsh in New York.*

NOAA approved the nomination of Mullica River as a proposed reserve site. This approval paved the way for New Jersey to apply for and receive funding to begin preparing the Draft Environmental Impact Statement/Draft Management Plan (DEIS/DMP) for the site.

The state and Rutgers Institute of Marine and Coastal Sciences then produced a Preliminary DEIS/Preliminary DMP, which NOAA reviewed. NOAA's comments addressed the state's need to provide more specific information for operating and managing the reserve—including plans for public access, facility development, and acquisition of

property and boundaries—as well as other issues. The state is responding to these comments as it prepares the DEIS/DMP. New Jersey expects to complete the draft document in early 1996.

#### *St. Lawrence River*

In August 1994, the State of New York received approval from NOAA of its site nomination proposal for a estuarine research reserve along the St. Lawrence River. Having gained that approval, the St. Lawrence River-Eastern Ontario Commission received \$50,000 of pre-acquisition funding to develop the management plan and environmental impact statement. In June 1995, when the Commission was abolished, New York's Department of State became the designated lead agency for developing the reserve.

The proposed St. Lawrence River National Estuarine Research Reserve will encompass approximately 5,728 contiguous acres of land associated with the Coles Creek-Brandy Brook-Wilson Hill areas, and 156 acres down river at the Robinson Bay site. The proposed reserve includes habitat used by bald eagles and osprey. The St. Lawrence River also provides a favorable habitat for muskellunge, lake sturgeon and walleye—all important species with regard to recreation and ecology.

The CZMA calls for balancing the use and conservation of the nation's coasts. To accomplish this mission, OCRM conducts education and outreach activities that instill a sense of stewardship, appreciation and understanding of coastal resources across the country. In 1994 and 1995, activities at the national level included a national outreach campaign, called the National Coastal Guardian Campaign; Coastweeks; an international coastal conference known as CZ95, and a national awards program, called the Walter B. Jones and NOAA Awards for Excellence in Coastal and Ocean Management.

#### EDUCATING THE PUBLIC

##### *National Outreach Campaign:*

The National Coastal Guardian Campaign urges citizens and industry alike to adopt the coast as their own. In doing so, coastal guardians make a personal commitment to care for the coast and to balance the needs of this vital environment with the business it



supports. Fundamental messages are: 1) the coast is under tremendous stress; 2) the coast is vital to the economy; 3) all of us need to care for the coast.

The ongoing, year-round campaign is a nationwide education effort, conducted under the Coastal Zone Management Act, to raise the nation's awareness and understanding of five specific coastal issues: runoff (or nonpoint source) pollution, sustainable communities, public access to the coast, coastal hazards, and coastal habitats, such as for fisheries. These issues were identified by state coastal programs as the most important.

The program relied on corporate America — industry, small business,

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***Corporate  
"Coastal  
Guardians"  
urged citizens  
and industry to  
adopt the coast.***

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#### NATIONAL COASTAL GUARDIANS:

- Association of State Floodplain Managers, Madison, WI
- JT&A's E2B2 online service, Washington, D.C.
- MacVicar Design and Communications, Arlington, VA
- Market Facts' TELENATION, Chicago, IL
- Marina Operators Association of America, Chicago, IL
- Marine Retailers Association of America, Chicago, IL
- National Association of Counties, Washington, D.C.
- SmithKline Beecham, Philadelphia, PA





*In 1994, California's coastal cleanup set a new world record for the number of participants in a beach cleanup.*

and associations — to deliver the campaign's message to the public. These partners, called National Coastal Guardians, voluntarily provided services, such as opening space in their publications for issue discussions, printing material on the issues, and distributing public service announcements.

All of these services highlight a toll-free number that people across the country called to obtain education and outreach material that describe how people can conserve the coast whether at the beach or at home.

#### *Coastweeks 1995:*

In 1994 and 1995, NOAA co-sponsored Coastweeks, a national three-week celebration of the coast. Millions of Americans arrived at beaches across the country during late September and early October to show their concern and support for the health of our nation's coast.

Through Coastweeks, federal, state and private organizations reach citizens by hosting thousands of events from the third Saturday of September through Columbus Day. Events range from field trips and lectures to boat races, charity boardwalks and fishing contests. As a national co-sponsor, NOAA spurred national media attention, published a nationwide Coastweeks calendar, and designed a Coastweeks Guide for activity coordinators. NOAA also provided partial funding for local events through state coastal programs and National Estuarine Research Reserves.

#### REWARDING EXCELLENCE:

In 1994, NOAA presented the second Walter B. Jones Memorial Awards and NOAA Awards for Excellence in Coastal and Ocean Management.

Through the awards program, inspired by the late Congressman Walter B. Jones, former chairman of the House Committee on Merchant Marine and Fisheries, NOAA recognizes individuals, state officials, local governments, volunteers, graduate students and businesses that have made outstanding contributions in the fields of ocean and coastal management. Awards were presented in 10 categories.

NOAA also presented a special award to Senator Ernest F. Hollings,

former Chairman of the Senate Commerce, Science and Transportation Committee, for his dedication and leadership in support of national coastal management efforts.

The awards program honors people and organizations who dedicate countless hours and energy to balancing resource use and conservation. The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) established the Walter B. Jones excellence in coastal zone management awards, which calls for recognizing a coastal steward of the year, and recognizing excellence in local government and coastal/marine graduate study. NOAA expanded the awards program to recognize other areas of excellence in coastal and marine management.

### FACILITATING DIALOGUE

NOAA also continued its strong involvement in organizing the Coastal Zone conference series, an international forum on ocean and coastal issues. NOAA served as co-chair for Coastal Zone 95, which brought together more than 800 coastal experts from around the world to debate issues of economic growth and environmental stewardship of coastal areas.

NOAA staff developed the plenary program and technical sessions,

presented papers, moderated sessions, exhibited new technologies and research developments, and hosted a workshop to strengthen the role of education in resource management.

Recognizing the value of information exchange, NOAA will continue to co-sponsor the conference and promote integrated, interdisciplinary solutions to coastal issues.

### 1994 EXCELLENCE AWARDS WINNERS

#### *Coastal Steward of the Year*

- Beth Milleman, Coast Alliance

#### *Excellence in Local Government*

- South Walton County Conservation and Development Trust, Inc., Santa Rosa Beach, FL,
- City of Kenosha, Wisconsin
- Delaware County Conservation District, Pennsylvania

#### *Excellence in Coastal and Marine Graduate Study*

- Kelie Cochran, University of Rhode Island, and
- Miguel Jorge, University of Delaware

#### *Volunteer of the Year*

- Alison Fahrer

#### *Excellence in Promoting Cultural and Ethnic Diversity*

- Michael Klubock

#### *Non-Governmental Organization of the Year*

- Center for Marine Conservation, Pollution Prevention Program

#### *Excellence in Coastal Zone Management*

- Arthur Rocque, State of Connecticut

#### *Excellence in Estuarine Research Reserve Management*

- Eugene Wright, Old Woman Creek NERR

#### *Excellence in Marine Sanctuary Management*

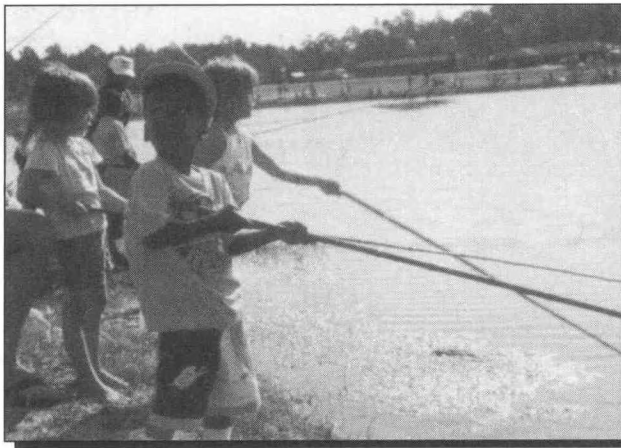
- Stephen Gittings, Flower Garden Banks National Marine Sanctuary.

#### *Excellence in Business Leadership*

- Mr. Charles Swain, Edwards Boatyard



Despite a great deal of progress, the job of coastal management is far from finished. NOAA is preparing for the emerging issues facing our nation's coastal resources. The agency is looking to the future in a number of ways — through strategic planning at the program level and agency-wide; by exploring how ele-



*NOAA's goal is to ensure the health of our coasts for all generations.*

ments of the CZMA have been working, identifying emerging issues, suggesting refinements; and by studying the effectiveness of the coastal management goals of the CZMA in the course of its history.

### *Strategic planning:*

To guide the agency over the next ten years, NOAA leadership developed a strategic plan that sets a vision for healthy coasts by the year 2005 — for more productive and diverse habitats for fish and wildlife, and cleaner coastal waters for recreation and seafood production. To achieve this vision, NOAA has made commitments

to protect, conserve, and restore coastal habitats and their biodiversity; promote clean coastal waters; and foster well-planned and revitalized coastal communities. NOAA has identified the coastal management program and NERRS as two of its primary building blocks for the comprehensive management of coastal and ocean resources. The NOAA Strategic Plan also outlines how other programs within NOAA will combine efforts to achieve healthy coasts over the next decade. To measure progress in achieving this vision, the Plan identifies annual milestones and performance measures in a Five-Year Implementation Plan.

### *CZMA reauthorization:*

Key to this success is ensuring that support for the CZMA itself continues. The Act came due for reauthorization at the end of fiscal year 1995.

In 1993, NOAA began looking ahead to the next reauthorization of the CZMA. NOAA's Office of Ocean and Coastal Resource Management conducted an exhaustive review of the CZMA to determine what changes were needed to make the program work more efficiently and effectively at both the federal and state levels. In these discussions, OCRM involved its program partners, other program offices within NOAA, constituents, and any other parties interested in the future of the CZMA and provided numerous opportunities for feedback.

After exploring policy issues ranging from new initiatives to streamlining programs, NOAA developed a draft Administration bill for reauthorization that would continue progress made since the 1990 reauthorization. OCRM found that, as a whole, the CZMA works well. The Administration's bill is a straightforward reauthorization proposal, with a few technical changes to improve administration at the federal and state levels.

The Administration bill would:

- extend the opportunity for the remaining six coastal states to develop coastal programs;
- allow use of Enhancement Grant (section 309) funds for implementing those projects for up to two years;
- make other minor technical changes.

The bill would also amend technical elements of section 6217 dealing with coastal nonpoint source pollution. However, the Administration recognizes that these issues are being considered under the Clean Water Act reauthorization.

The Administration bill was submitted to Congress in May 1995. Reauthorization bills are now being considered in the House of Representatives (H.R. 1965) and in the Senate (S. 1142, as part of the NOAA authorization bill). In September 1995, NOAA

leaders testified at a hearing before the House Resources Committee's Subcommittee on Fisheries, Wildlife and Oceans on H.R. 1965 in support of CZMA reauthorization.

Administratively, NOAA plans to continue improving its working relationships with other federal agencies on floodplain and coastal hazard management efforts, as well as dredging and port issues. NOAA will also continue to encourage interaction between coastal zone management and national estuarine research reserve programs.

### *National Effectiveness Study:*

Over the next year, NOAA will conduct a National Assessment to determine, for the first time, how well the coastal management program nationwide has addressed core objectives of the CZMA. The study concentrates particularly on protection of natural resources, public access to the coast, assistance to ports and other water-dependent coastal activities and the simplification of regulatory requirements. The study will use tangible results to measure accomplishments of the state programs. At its conclusion, the study will recommend improvements to federal and state CZM programs that will enhance their effectiveness in addressing the objectives of the CZMA.

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***NOAA is  
preparing for the  
future by looking  
at ways to  
continue and  
improve the  
CZMA's success.***

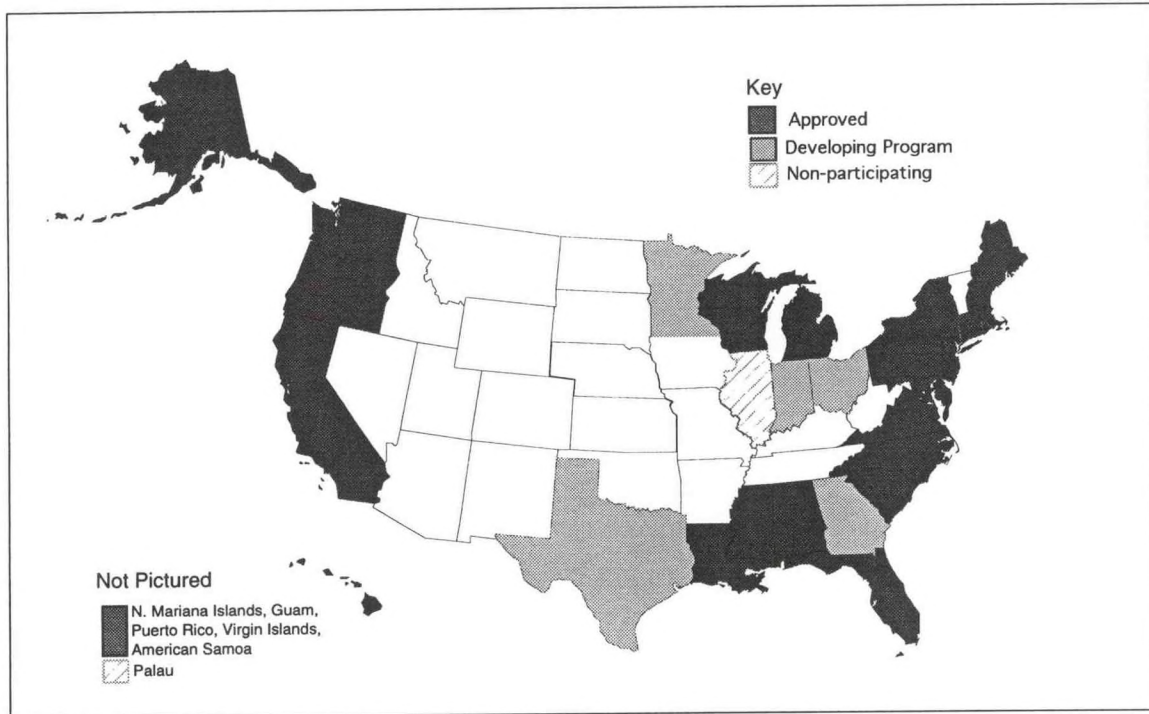
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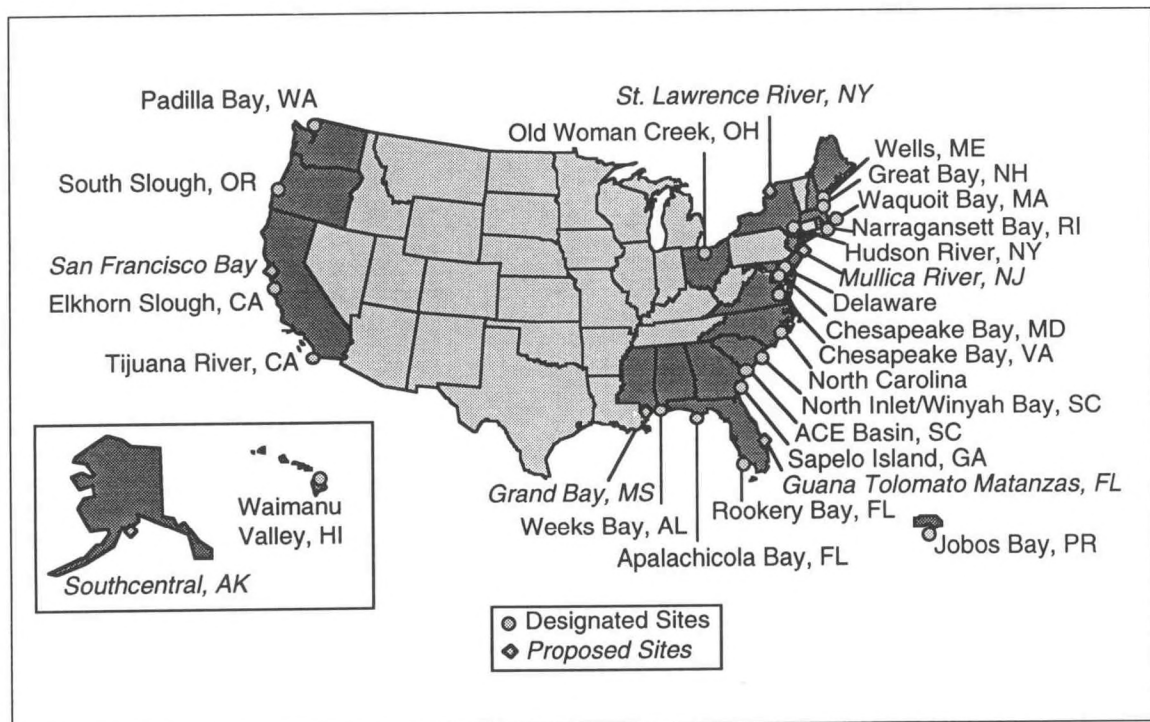
# CZMA PROGRAMS

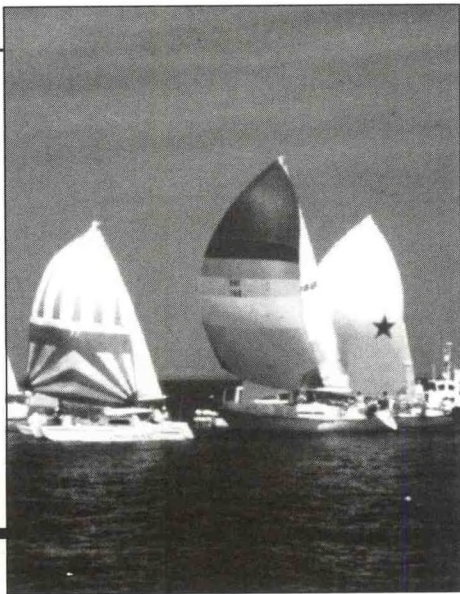
## State-by-State

### COASTAL ZONE MANAGEMENT PROGRAM



### NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM





# ALABAMA COASTAL AREA MANAGEMENT PROGRAM

**Program Approved— 1979**

**Lead Agency**  
Department of Economic and Community Affairs

## PROGRAM ACCOMPLISHMENTS

### *Nonpoint Source Pollution:*

The Alabama and Mississippi coastal programs are working together to address management of nonpoint source pollution in the East Mississippi Sound region. Together, the programs have been evaluating potential sources and impacts of nonpoint source pollution in the Sound, developing strategies for interstate coordination and management, and working to establish an interstate council to carry out the proposed management strategies.

### *Exchanging Research Results:*

Alabama's coastal program, along with the Gulf of Mexico Program, sponsored a symposium to present the latest information on research and management of resources in Mobile Bay. The *Mobile Bay Symposium* brought together the scientific community and public to discuss problems facing Alabama's near coastal waters and solutions for improving management and community stewardship of Mobile Bay.

### *Public Access:*

The Alabama Coastal Program has funded low-cost construction projects under the CZMA to develop a property into a public beach and nature walk area in Baldwin County and to develop a property within a previously inaccessible portion of a public park for recreational use including canoeing, fishing, swimming, camping, and hiking.

### *Local planning:*

The Alabama CZM program, with assistance from the South Ala-

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***The coastal program funded projects to develop a public beach and open an inaccessible area to fishing, swimming and camping.***

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*Recreational fishing.*



bama Regional Planning and Development Commission, continues to work with local governments to promote plans, policies, ordinances and regulations that provide for the protection of coastal resources. Efforts include work with the Gulf Shores Strategic Plan, the Orange Beach special area management plan, and the Baldwin County Zoning Districts.

#### *Wetlands:*

Alabama has undertaken a number of activities to conserve wetlands. The state began the Alabama Wetlands Conservation & Management Initiative to develop a state wetlands conservation plan, is managing pile supported structures in coastal wet-

lands, and wrote a report on the status of wetlands protection through enforcement of permits.

#### *Education and Outreach:*

Alabama's coastal program puts out a variety of publications to increase knowledge of coastal issues—including *Research Roundup*; a report on research in the coastal area, the *Mobile Bay Barometer*, a quarterly information sheet featuring Mobile Bay, and *Alabama's Coastal Connection*, a newsletter coordinated with the Alabama Coastal Foundation. The coastal program also publicized and promoted Year of the Gulf of Mexico activities.

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***Alabama received  
\$755,000 in FY 1994 and  
\$887,000 in FY 1995 to operate  
its coastal program.***

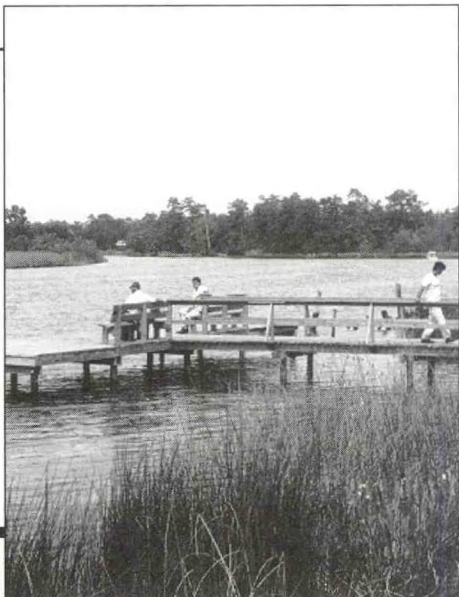
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*Fishing vessel at work.*

#### SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued May 31, 1994, cited accomplishments in technical assistance to local governments, monitoring long-term trends, formation of the Alabama Coastal Foundation, outreach, and coordination of state and regional programs. The findings also identified some necessary actions, including the need to reinstate Alabama's clearinghouse function to provide notice of federal actions.



## WEEKS BAY

### NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1986

**Lead Agency**

Alabama Department of Economic and Community Affairs

#### PROGRAM ACCOMPLISHMENTS

*Facilities:*

The reserve staff collaborated with over 200 members of the Weeks Bay Foundation to raise \$100,000 in private and corporate donations, and receive \$36,000 in grants, to build an interpretive center at the site.

In April 1994, Weeks Bay held a ceremony to dedicate and open the new interpretive center and interpretive boardwalk nature trail. The 2,000 foot boardwalk passes through low forested wetland areas and ends with an overlook of the salt marshes of Weeks Bay.

#### RESEARCH AND MONITORING

The reserve, in cooperation with the Alabama Department of Environmental Management, initiated the Weeks Bay Watershed Project in March, 1993, to increase monitoring and coordinate research activities in the watershed. A volunteer monitoring program began in April 1994.

Currently 24 sites are monitored for water quality bimonthly by citizen volunteers. Another 25 sites are monitored by other federal, state and local agencies involved in watershed research and monitoring. Through the Watershed Project, agencies can collaborate, share resources, and avoid duplication of efforts.

In addition, Weeks Bay installed its two electronic monitoring devices as part of the National Monitoring Program to track short and long-term

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***Private corporations donated \$100,000 to build the reserve's interpretive center.***

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*Student groups constructed a trail through the reserve's Pitcher Plant Bog, enabling them to see how the coastal tree rejuvenates.*



changes in certain environmental conditions at the sites. The "data loggers" record water quality data every 30 minutes.

### EDUCATION AND OUTREACH

Weeks Bay offered two workshops for teachers on water quality issues. In particular, the workshops focused on techniques for making



*The view from Gulf Shores.*

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***Alabama received  
\$260,000 in FY 1994 and  
\$130,000 in FY 1995 to operate  
the Weeks Bay NERR.***

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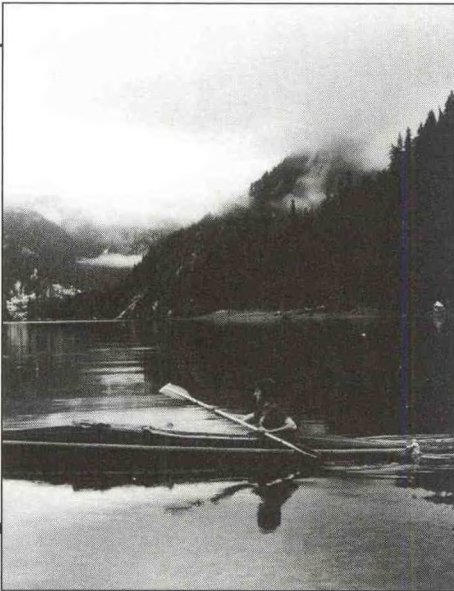
chemical and biological observations relating to land use and nonpoint source pollution.

An estimated 15,000 visitors and 5,000 school children visit the reserve each year. The reserve offers tours for environmental clubs, elderhostel groups and community workshops such as classes on estuarine ecology.

Weeks Bay is now doing a pilot run of the Estuary Net curriculum— a national effort of the reserve system to teach water quality via telecommunications. This national project is in its second year of development, and its first year at Weeks Bay.

### SUMMARY OF EVALUATION FINDINGS

No evaluation of the Weeks Bay reserve was conducted during the reporting period. The next evaluation is scheduled for February 1996.



# ALASKA

## COASTAL MANAGEMENT PROGRAM

**Program Approved— 1979**

### **Lead Agencies**

Department of Commerce and  
Department of Economic Development

### PROGRAM ACCOMPLISHMENTS

#### *Measuring Impacts to Fish Habitat:*

Alaska's coastal program undertook a three year project to assess cumulative impacts of various activities to the Kenai River fishery habitats, which in 1994 contributed over \$80 million to the state economy from recreational and commercial fisheries. The program, working through Alaska's Department of Fish and Game, in cooperation with Kenai Peninsula Borough, developed a methodology for assessing the cumulative impacts of past, present, and future activities, developed standard conditions on routine projects to maintain and enhance fish habitat, and identified policies and other actions to address cumulative impacts. The methodology used for the Kenai River Cumulative Impact Study, funded through the CZMA's Enhancement Program, may be applied in similar situations in other river systems in Alaska as well as other states.

#### *Improved Coordination:*

Beginning in 1994, Alaska's coastal program developed an improved, co-

ordinated process for handling the review of large, complex projects in the state's coastal zone.

Prompted by the need to review the Alaska-Juneau (A-J) Gold Mine Project — a large mine project in Alaska's coastal zone—for consistency with the state's coastal program, the state made a number of improvements in the review process that could serve as a model for the review of other large projects under Alaska's coastal program. Among the improvements, the Governor requested that one agency, the Division of Governmental Coordination (DGC), handle nearly all aspects of the project — providing a single forum for discussion of all mine-related issues. The DGC became a clearinghouse of information, so that all interested parties received the same information. The state agencies involved began meeting on a weekly basis. Also, the state agreed to co-chair an Oversight Committee for the project, comprised of two local governments, five federal agencies and five state agencies to provide a forum for on-going communication. The im-

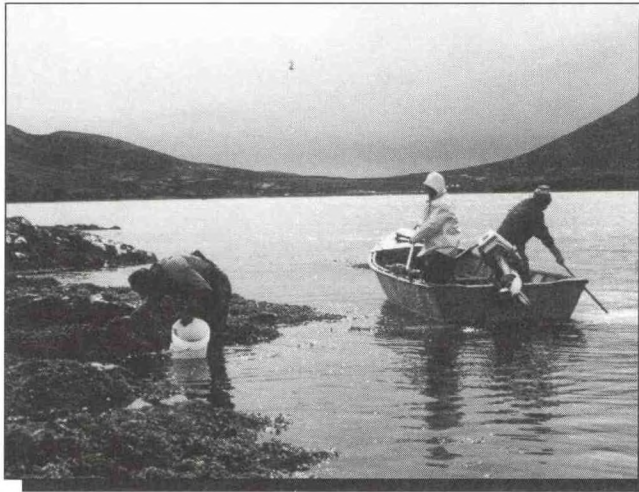
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*Alaska's coastal program developed a new, coordinated process for reviewing large development proposals.*

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*Alaska's coastal  
program received  
\$2,726,000 in FY 1994 and  
\$2,820,000 in FY 1995  
in federal funding.*



*Above: Kelpers.*

*Right: Salmon  
cannery.*



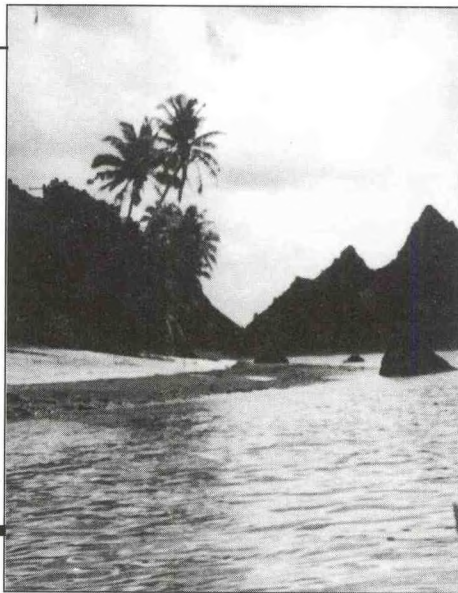
provements appear to have satisfied most previous concerns about inter-agency coordination, public involvement and lack of consistent information on the project.

#### *Streamlining Reviews for Oil and Gas Leases:*

After the 1990 change to the CZMA which allowed states to review federal Outer Continental Shelf (OCS) oil and gas lease sales for consistency with state coastal management programs, Alaska experienced procedural difficulties in reviewing proposed OCS lease sales under its consistency review process. With funding from the CZMA's Enhancement Program, the state undertook a study which resulted in development of recommendations to improve oil and gas lease sale reviews. Proposed by a state-federal-industry working group created for the study, the recommendations encouraged earlier cooperation between the U.S. Minerals Management Service and the state in the review process. The working group was later used to finalize a Memorandum of Understanding (MOU) between the two, which clarifies the roles of each in the review process.

#### SUMMARY OF EVALUATION FINDINGS

An evaluation was conducted in June 1995. Final evaluation findings are pending.



## AMERICAN SAMOA COASTAL MANAGEMENT PROGRAM

**Program Approved— 1980**

**Lead Agency**

Office of Economic Development and Planning

### PROGRAM ACCOMPLISHMENTS

*Administrative Rules Adopted:*

Administrative rules to implement the enabling legislation for American Samoa's coastal program, the Coastal Management Act of 1990, were adopted in October 1994 and are now being implemented. When the coastal program was first approved in 1980, its legal authority was an executive order promulgated by the Governor.

*Coastal Hazards:*

American Samoa faces acute risks from hazards— including hurricanes, landslides, shoreline erosion, tsunamis, and earthquakes. Through its Coastal Hazard Assessment and Mitigation Project, the coastal program has developed new territorial regulations and procedures for hazard mitigation. The program also conducted an extensive outreach and participatory planning process at the local level to educate village leaders and residents about the risks of coastal hazards and strategies for protection. Several villages have decided to adopt hazard preparedness

plans and to discourage building in hazardous areas. Next, the coastal program will develop culturally appropriate, hazard resistant housing designs and provide these to the public, along with technical assistance in housing construction.

*Wetlands:*

American Samoa's coastal program developed an innovative program to enlist the support of village councils and other traditional village institutions in development and enforcement of wetlands regulations. Several villages have adopted ordinances to keep important wetlands intact, and the wetlands boundaries in those villages have been surveyed and mapped. Villages are also working with the program to monitor their wetlands and enforce the local ordinances.

*Solid Waste and Marine Debris:*

To address the Territory's pressing marine debris problem, the coastal program and the American Samoa Environmental Protection Agency are

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***The coastal program is teaching village leaders and residents how to reduce their risk from hurricanes, tsunamis and other hazards.***

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working with villages to develop village-based solid waste management strategies and enforcement. The coastal program is also using CZMA low-cost construction funds to build solid waste collection facilities in designated special management areas where resources are at risk from illegal dumping. These facilities will provide an alternative to illegal dumping for villages in mountainous areas with narrow roads that are not navigable by collection vehicles. These efforts are combined with a vigorous public education campaign about reducing marine debris.



*Snorkeling in American Samoa.*

*Village Nonpoint Source Pollution Control Demonstration Projects:*

As part of its effort to develop a territorial coastal nonpoint source pollution control program, the coastal program and territory's Environmental Protection Agency, have developed demonstration projects in several island villages. These projects demonstrate appropriate methods of collecting waste oil, handling piggery waste, controlling soil erosion and coastal erosion, and handling stormwater drainage, among others.

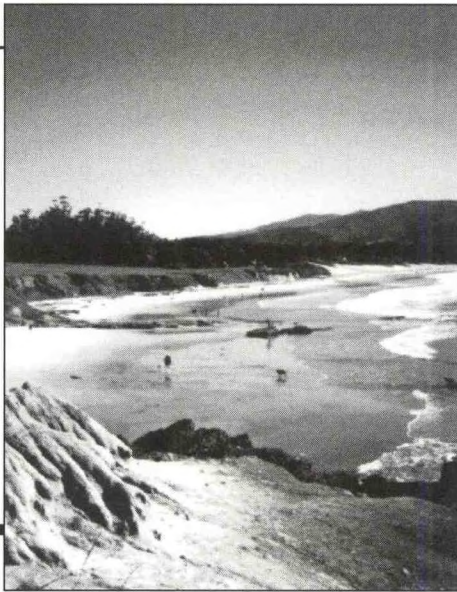
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*American Samoa received \$728,000 in FY 1994 and \$882,000 in FY 1995 to operate its coastal program.*

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SUMMARY OF  
EVALUATION FINDINGS

Final findings, issued in December 1994, cited effective use of the Enhancement Program, progress in public education programs, refinements in the Project Notification and Review System and significant progress on the administrative rules. The evaluation contained recommendations and necessary actions, including, the need to develop effective monitoring and enforcement programs, produce federal consistency guidelines, improve coordination for land use planning in the Territory, and submit the American Samoa Coastal Management Act as a program change.



## CALIFORNIA COASTAL MANAGEMENT PROGRAM

**Program Approved—** 1977, in two segments

### **Lead Agencies**

California Coastal Commission (CCC),  
San Francisco Bay Conservation and Development  
Commission (BCDC), and  
State Coastal Conservancy (SCC)

### PROGRAM ACCOMPLISHMENTS

#### *Coastal Cleanup:*

California's Coastal Cleanup was recognized by the 1994 Guinness Book of Records as the world's largest beach cleanup. In 1994, more than 40,000 volunteers cleared over 550,000 pounds of trash off the state's beaches.

#### *Public Access:*

In the spring of 1994, after decades of debate and litigation, the California Coastal Commission and property owners at Seadrift Beach reached a settlement about conflicting claims of ownership over a two mile stretch of sandy beach. The settlement clarified the public's right of access to one of the primary recreational beaches in the northern San Francisco Bay region, more than doubling the size of the public beach area available to more than million and a half beachgoers annually.

#### *Ecosystem Planning:*

In 1994, the California Coastal Commission facilitated and streamlined interagency review of a major de-

velopment project while finding a creative design to avoid disturbing sensitive vegetation and wildlife habitat. The project involved the subdivision of 165 acres for residential development on the northern shore of Batiquitos Lagoon in San Diego County, which contained significant Diegan coastal sage scrub vegetation. Coastal sage scrub is habitat for the California gnatcatcher, a "threatened" species under the federal Endangered Species Act (ESA).

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*California received  
\$2,664,000 in FY 1994 and  
\$2,974,000 in FY 1995 to  
operate its coastal program.*

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Using a new approach based on the state's Natural Communities Conservation Planning Program, in which state agencies may work in collaboration with landowners, local governments, federal agencies, conservationists, and others on broad natural community or ecosystem planning efforts, the Coastal Commission negotiated with developers early in the planning

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*The 1994  
Guinness Book of  
Records listed  
California's  
Coastal Cleanup  
as the world's  
largest beach  
cleanup.*

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stages to achieve important resource protection goals while helping to reduce time and cost for the applicant.

### *License Plates:*

California recently succeeded in securing the legislature's backing for a Coastal Protection License Plate to raise funds to support the state's coastal program. The California Coastal Commission is launching a marketing effort to sell 5,000 license plates, the minimum needed before the state Department of Motor Vehicles will commit to administering the license plate on a permanent basis. The Coastal Commission expects to meet its December 31, 1996 deadline.

Half of the proceeds will go to the California Coastal Commission and State Coastal Conservancy. The other half will go to the Environmental License Plate Fund for environmental education projects throughout the state. The Coastal Commission will use its share of the money for the Adopt-A-Beach Program and Coastal Cleanup while the Conservancy will continue ongoing public access and habitat restoration projects with its portion.

### *Wetlands:*

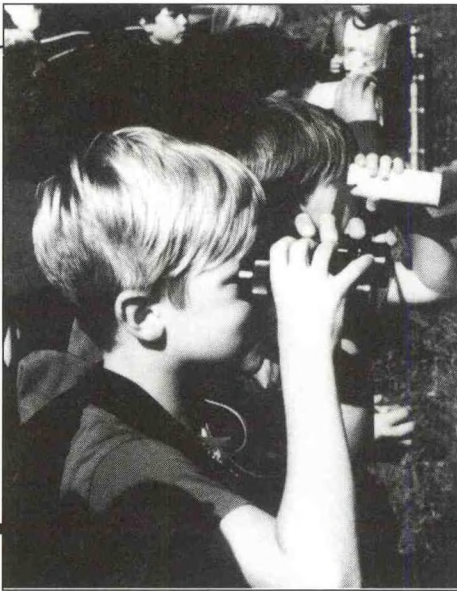
Under leadership of the San Francisco Bay Conservation and Development Commission, in 1994, the state of California acquired 10,000 acres which will become the largest

coastal wetland restoration project in California's history.

## SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued in January 1994, found that the California coastal program's three lead agencies—the CCC, BCDC and SCC—were adhering to the coastal program. It also found that the coastal program had pursued innovative, new relationships with other state and federal agencies and the private sector in an effort to bridge the widening gap between the resources provided by the state and NOAA for program implementation and the agencies' statutory mandate.

The findings, however, noted that continued erosion of adequate funding and staff resources for program implementation threatens several core components of the program, including permitting, monitoring and enforcement, Federal consistency review, local coastal programs, public access, public participation, and planning and policy development on several coastal issues of statewide significance. The evaluation recommended that the CCC prepare a staffing analysis for submission to OCRM and to the California Governor and Legislature, through the State Resources Agency.



## ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1979

**Lead Agency**

California Department of Fish and Game

### PROGRAM ACCOMPLISHMENTS

*Habitat Restoration:*

Reserve staff and volunteers are making a concerted effort to restore the site to a more native condition. As part of this effort, non-native eucalyptus trees are being replaced with native live oaks. Exotic vegetation is being controlled to allow native vegetation to thrive.

Also, a landscape plan has been completed for the visitor center complex of the reserve. All landscaping will be accomplished using native plants of the Elkhorn Slough watershed. The bulk of the plant materials will be propagated on site at the existing plant nursery.

*Facilities:*

A new administrative building, funded by NOAA and the state of California, was completed January 1994. The 2,700 square foot building, located next to the visitor center, includes offices for staff, a computer work station, storage, work areas, and

a meeting room. Staff have moved from the visitor center, freeing space that will be dedicated to interpretive activities and exhibits.

*Management Plan:*

A new management plan is being drafted for the Elkhorn Slough reserve. The plan is expected to be completed in 1996.

*Volunteer Support:*

Over 120 volunteers have contributed many thousands of hours of time to the reserve. They have been instrumental in leading tours for the public, staffing the visitor center, as well as assisting with maintenance and habitat restoration projects on the reserve. They have also assisted in planning, developing and staffing information tables at off-site events and at the reserve's special events.

### RESEARCH AND MONITORING

Research projects at the reserve over the past two years have addressed: the effect of land-use practices

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***A boardwalk  
constructed by  
the reserve  
creates a  
natural field  
classroom for  
students.***

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# ELKHORN SLOUGH

## National Estuarine Research Reserve

on nutrient levels in marsh sediments, nesting and foraging behavior of Caspian Terns; analysis of shark feeding, age and growth; and rates of erosion and loss of salt marsh.

As part of its monitoring efforts, reserve staff and volunteers continued monthly water monitoring at 24 sites around Elkhorn Slough, deployed two electronic data-logging



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*California received  
\$260,000 in FY 1994 and  
\$310,000 in FY 1995 to operate  
the Elkhorn Slough NERR.*

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devices that will measure water quality continuously, monitored physical changes of the Slough through aerial photography, and observed nesting Great Egrets and Great Blue Herons.

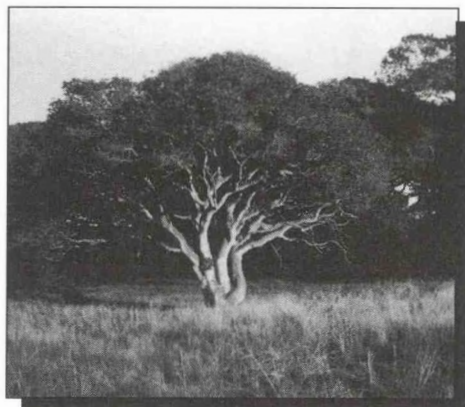
### EDUCATION AND OUTREACH

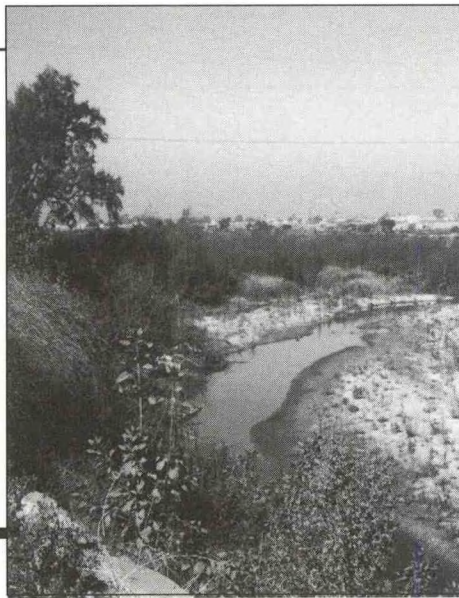
A boardwalk allowing students access to a mudflat on the reserve has been constructed. School children will be able to easily take mud samples for investigations in the laboratory and study this "lifeblood" of an estuarine ecosystem.

Outreach efforts include the annual celebration of Estuaries Day, Mother's Day for all species, and use of a portable display at fairs and demonstrations.

### SUMMARY OF EVALUATION FINDINGS

No evaluation of the reserve was conducted during the reporting period.





# T IJUANA RIVER

## NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1982

### **Lead Agency**

California Department of Parks and Recreation

### PROGRAM ACCOMPLISHMENTS

#### *Linking Research and Education:*

During fiscal years 1994 and 1995, the Tijuana River reserve focused its efforts on expanding research and education programs. The Tijuana Estuary Visitor Center went into full operation— open and staffed five days a week— with museum-quality interactive exhibits. Education programs gained a new focus on water quality within the watershed, and included work with both younger children and upper grades.

#### *International Ecotourism:*

The Tijuana River reserve has become a popular stop on the circuit for international dignitaries visiting the San Diego area. Dignitaries from Tibet, Taiwan and Spain visited during the Fall of 1995, interested in ecological

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***California received  
\$235,000 in FY 1994 and  
\$415,000 in FY 1995 to operate  
the Tijuana River NERR.***

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tourism, environmental impact analysis, and border environmental issues.

### RESEARCH AND MONITORING

The Pacific Estuarine Research Laboratory, managed by San Diego State University serves as a center for research and college-level education programs. Research compares the value of artificially-constructed marshes versus natural marshes, looks at the methods of invasion and the impacts of non-native species, and seeks ways to improve restoration methods and protect natural marshes.



*California's lightfooted clapper is one of many birds inhabiting the reserve.*

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***Researchers from  
California and  
Mexico are  
mapping the  
entire Tijuana  
River watershed  
using GIS  
technology.***

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# TIJUANA RIVER

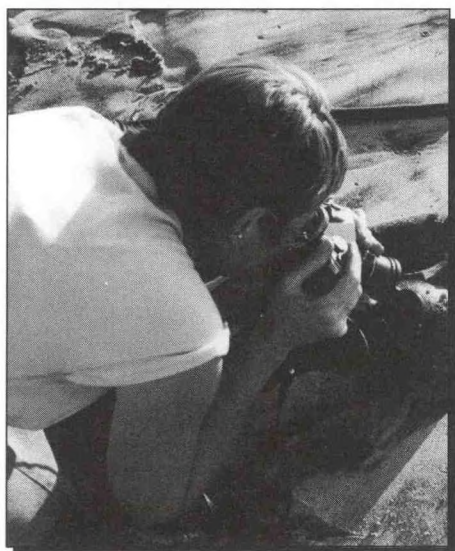
## National Estuarine Research Reserve

Research conducted with the U.S. Fish and Wildlife Service is also focusing on the problems associated with global climate change on a regional scale. The reserve is using Geographic Information Systems (GIS) to identify the effects of sea level rise on wetland plant communities using Tijuana River as a model.



Above: The Tijuana River NERR is flanked by urbanization, in this case the City of Imperial Beach, CA.

Right: Researchers explore estuarine resources up close in their natural habitat.



### *International Collaboration:*

Researchers from San Diego State University and colleges in northern Baja California, Mexico, are cooperatively mapping the entire Tijuana River watershed, two-thirds of which is in Mexico, using GIS technology. The effort has brought together experts from both countries and will produce valuable tools for planning, resource management, research and education throughout the watershed.

### EDUCATION AND OUTREACH

The reserve conducts an intensive three-week estuary class for fifth grade school students. Students spend three days a week in the classroom and two days at the estuary, studying estuarine plants, birds, insects and wetlands ecology. In 1995, the program included special education students for the first time. Reserve staff also conduct field trips, classroom presentations, after-school programs, and produce educational materials, in both English and Spanish.

### SUMMARY OF EVALUATION FINDINGS

No evaluation of the Tijuana River reserve was conducted during the reporting period.



## CONNECTICUT COASTAL MANAGEMENT PROGRAM

**Program Approved— 1980**

**Lead Agency**  
Department of Environmental Protection

### PROGRAM ACCOMPLISHMENTS

#### *Long Island Sound Study (LISS):*

On September 26th, 1994, the Governors of Connecticut and New York and the U.S. EPA officially adopted a comprehensive plan for the Sound, setting key management activities into action. The LISS has been a nine-year effort under the National Estuary Program to develop solutions to key environmental problems of the Sound, Connecticut's most valuable natural resource. Connecticut's coastal program has been intimately involved in development of the plan, which specifically addresses the primary problems of hypoxia, toxic contamination, pathogens, floatable debris, living resource habitat, and land use.

#### *Long Island Sound License Plate Program:*

The Long Island Sound License Plate program has continued to raise funds from the sale of vanity license plates for projects that benefit Long Island Sound. Established under the initiative of Connecticut's coastal program, to date the license plate program

has sold over 50,000 license plates raising approximately \$1.8 million. Over the last two years, the state has focused on carrying out special projects benefiting public access, public education and outreach, habitat restoration, and estuarine research. To date, approximately \$1.4 million of this has been spent on 100 projects. For example, eight observation platforms were constructed at coastal sites from Greenwich to Branford with accompanying signs to educate the public about the habitat and wildlife of the Sound and to increase public access.

#### *Permit Streamlining:*

Connecticut passed legislation in May 1995 that broadens the categories of activities eligible for review under the state's abbreviated Certificate of Permission process. The amendments allow certain tidal wetland and pre-1980 activities to be reviewed under this process as long as the activities have no significant impact on coastal resources, riparian or littoral rights, or navigation.

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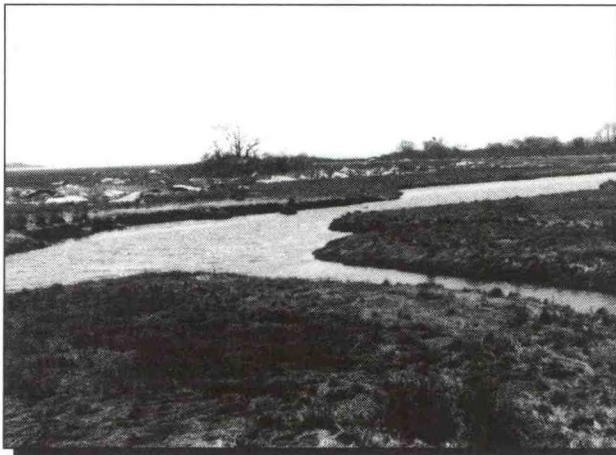
***The coastal  
program  
restored more  
than 1,000 acres  
of tidal wetlands,  
vital to fisheries  
and runoff  
pollution  
control.***

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*Lower Connecticut River Wetlands Of International Importance:*

Through the efforts of Connecticut's coastal program, the tidal wetlands and tidal waters of the lower Connecticut River were officially designated as a Wetlands Complex of International Importance by Interior Secretary Bruce Babbitt in a



*Saltwater marsh in Connecticut*

ceremony held on October 14th, 1994. This designation recognizes that the tidal marshes and lower tidal portions of the Connecticut River support a unique ecosystem with remarkable ecological diversity. The designated area contains primary state-owned wetlands as well as those held by private land preservation and conservation groups. Since its original designation, 3 more partners and 28 acres have been added to designated area.

*Tidal Wetland Restoration:*

Since 1980, the Office of Long Island Sound Programs has restored or assisted in restoring of over 1,000

acres of tidal wetlands. The coastal program helped the state's mosquito control program switch from maintenance grid ditching to the more environmentally sound open marsh water management. The state also established a Wetland Restoration Unit—one of the first in the country with staff and equipment dedicated specifically to wetland restoration. Connecticut was also the first state to use Department of Transportation funds, made available through the Intermodal Surface Transportation Efficiency Act (ISTEA), for restoration of degraded tidal wetlands.

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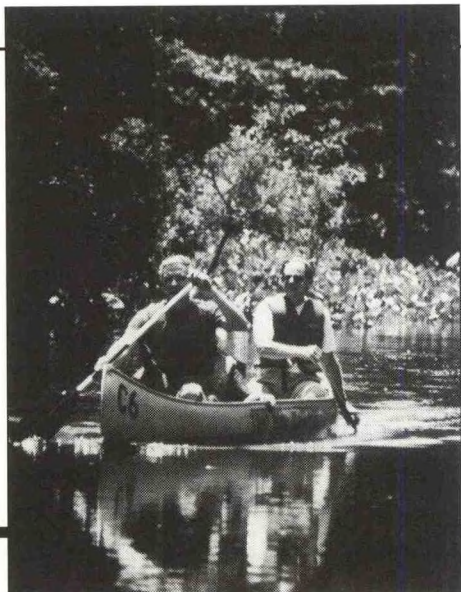
*Connecticut received \$1,056,000 in 1994 and \$1,156,000 in 1995 for program administration.*

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## SUMMARY OF EVALUATION FINDINGS

Final evaluation findings were issued on May 23, 1994 for the period August 1990 - November 1993. Accomplishments were noted in the areas of: program administration; internal and external coordination/cooperation; proactive funding mechanisms; and habitat research, preservation and restoration projects. Findings and recommendations were made in the areas of: permitting, monitoring and enforcement activities; program changes; federal consistency; grants management; public access; and creation of restoration handbook.





## DELAWARE COASTAL MANAGEMENT PROGRAM

**Program Approved— 1979**

**Lead Agency**

Department of Natural Resources and  
Environmental Control

### PROGRAM ACCOMPLISHMENTS

*Northern Delaware Wetlands Restoration:*

The State has developed a regional strategy for managing degraded wetlands in the Christina/Delaware Rivers Urban Wetlands Corridor. This approach provides a framework for rehabilitating an urban corridor wetland system. The state has established an advisory committee to guide its activities, established a detailed non-point source pollution reduction plan, inventoried selected wetland drainage areas, conducted modeling, and undertaken enhancement and rehabilitation projects for the Thousand Acre and Old Wilmington Marshes.

*Pea Patch Island Heronry Special Area Management Plan:*

The state has undertaken special efforts to restore the Pea Patch Island Heronry, balancing its needs with commerce along Delaware River. The island supports a relatively stable population of a variety of wildlife species which have experienced decline in other coastal areas along the eastern seaboard. Pea Patch Island is located in the upper reaches of the Delaware Bay, which hosts the second largest concentration of petrochemical industries in the United States. The Delaware River's main channel is used to transport 70% of the east coast's petroleum. This routes much

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***Delaware is  
balancing the  
needs of wildlife  
with commerce  
along the  
Delaware River,  
which transports  
70% of east coast  
petroleum.***

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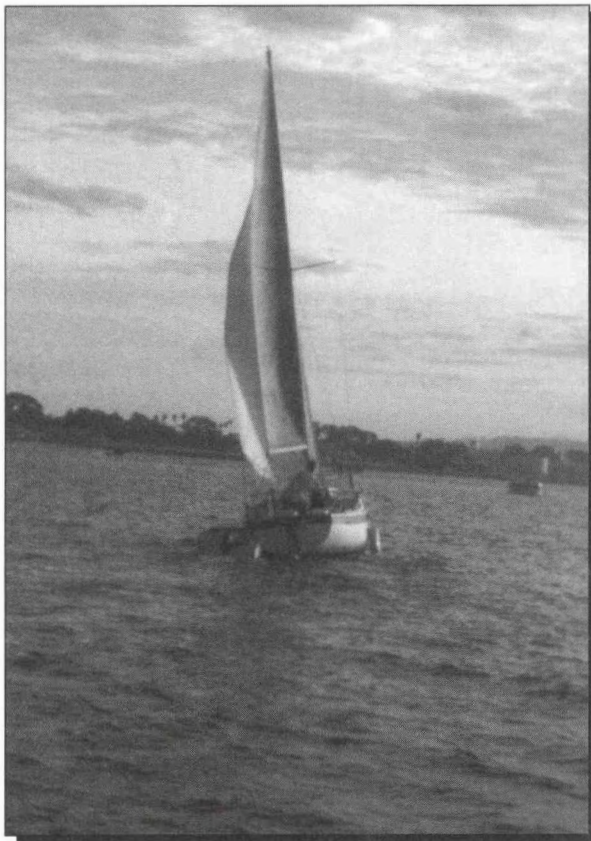


of the nation's petroleum products directly past the heronry. The Special Area Management Plan for the heronry ensures that the health of the habitat is secured with undue disruption of the commercial aspects of the Bay and River.

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*Delaware received \$856,000 in 1994 and \$874,000 in 1995 to operate its coastal program.*

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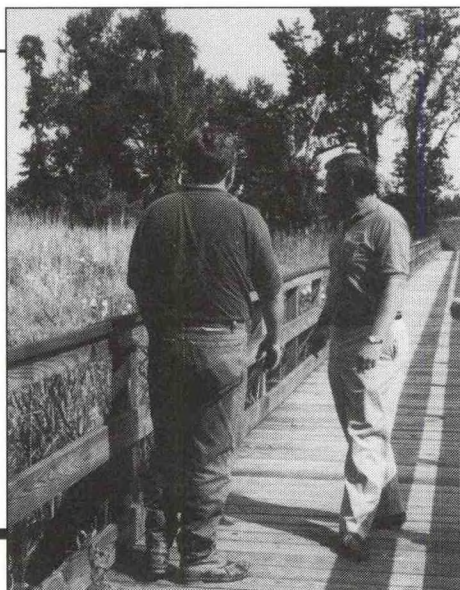


### *Dover/Silver Lake /St. Jones Watershed Project:*

The State developed a strategy to restore degraded areas of the Dover/Silverlake/St. Jones Watershed through improvements in stormwater management practices. The improvements, recommended under the Stormwater Utility Protection Strategy, were implemented by creating a predictive computer model, a comprehensive sediment and stormwater watershed management plan, a stormwater utility which will levy fees, and new operating agreements between agencies with authority over land use. This is the first of a series of management efforts based on the state's whole watershed concept.

### SUMMARY OF EVALUATION FINDINGS

Final findings were issued in June 1995, citing accomplishments in addressing previous evaluation findings, staffing and grants administration. The findings recommended: issuing regulations to implement the Delaware Coastal Management Act of 1971, revising an executive order, improving program visibility, and continuing to reassess funding strategies, among others.



## DELAWARE NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1993

### **Lead Agency**

Department of Natural Resources and  
Environmental Control

### PROGRAM ACCOMPLISHMENTS

#### *Reorganization:*

In February 1995, the Secretary of the Department of Natural Resources and Environmental Control moved responsibility for managing the Reserve to the Division of Soil and Water Conservation. The reserve and Delaware Coastal Management Program are now administered out of the same office. This change will strengthen the communication necessary to carry out one of the reserve's most important functions—education and research for important coastal management issues.

#### *Management Plan:*

The last stage in developing the reserve's program was finalized during the biennium—the management plan. A formal dedication ceremony for the reserve took place on June 4, 1994.

#### *Facilities:*

NOAA and the State of Delaware contributed a combined total of \$714,286 to construct a roadway for public access to the reserve site. The one mile road, completed in the fall of

1995, enables vehicles to access the site selected for the reserve's education and research building. The road joins the state-funded boardwalk and trail system already in place. Delaware now has a cooperative agreement with NOAA for funds to construct the first phase of the building. Also, the state is proceeding with efforts to acquire additional core lands for the reserve, in conjunction with the approved Management Plan.

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*The Delaware NERR  
received \$610,000 in 1994  
and \$660,000 in 1995  
in federal funding.*

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*Using high-tech  
monitoring  
equipment, the  
reserve is  
researching  
ways to combat  
runoff  
pollution.*

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### RESEARCH AND MONITORING

The Delaware Reserve is working on two regional nonpoint pollution demonstration projects through NOAA's National Ocean Service. The projects are intended to increase understanding of the sources and use of various management measures through state-of-the-art monitoring and desktop information manage-



ment. One project creates a partnership with Delaware's coastal program and the U.S. Fish and Wildlife Service. The other involved the state coastal programs from Delaware, North Carolina and South Carolina.

The Delaware reserve has completed the first and second years of studies to fully inventory and characterize the reserve site, and is now working on its third year of studies. Reserve



*NOAA's Deputy Administrator Douglas K. Hall presents a construction grant to the Delaware NERR.*

staff have mapped wetlands, identified plant species in both wetlands and upland habitats, and counted aquatic species and waterbirds at the reserve.

### EDUCATION AND OUTREACH

Staff at the Delaware reserve have put a great deal of effort into educating the public and decision makers about the importance of our estuarine system—both the environmental and cul-

tural elements. The reserve's full-time educator has developed the educational programs outlined in the reserve's management plan, which are being targeted for a variety of audiences.

The reserve completed a trail brochure that guides the reader/hiker along the reserve's trails and boardwalks. The brochure provides information about the historic use of lands within the reserve and about the reserve's importance today.

The reserve offers programs to school groups, coordinates with institutions of higher learning, and provides in-service programs for teachers so that they can bring lessons-learned back to the classroom. The education program also coordinates with the research program to provide volunteers when help is needed for field research and monitoring efforts.

### SUMMARY OF EVALUATION FINDINGS

NOAA has not yet conducted an evaluation of the Delaware NERR. The reserve's first evaluation is scheduled for May 1996.



## FLORIDA COASTAL MANAGEMENT PROGRAM

**Program Approved— 1981**

**Lead Agency**  
Department of Community Affairs

### PROGRAM ACCOMPLISHMENTS

#### *Setting Priorities:*

The Florida Coastal Management Program developed a Coastal Action Plan to guide the use of federal grant funds. The plan helps identify goals and priority activities in the areas of comprehensive management, coastal and ocean resource management and coastal hazard mitigation.

#### *Creating a Sustainable South Florida:*

Florida's coastal program helps support the Governor's Commission for a Sustainable South Florida. The Commission is intended to: improve coordination of activities impacting the Everglades ecosystem, suggest actions for restoring and protecting resources, and recommend sustainable economic strategies to ensure that the south Florida economy is based on activities that can coexist with a healthy Everglades ecosystem.

#### *Monitoring Physical and Economic Trends:*

Florida's coastal program contracted with the Florida Center for Public Management to develop a system of

indicators that collectively measure the current status and future trends of the environmental, economic and social values of Florida's 35 coastal counties. The indicators will measure coastal threats and hazards; degradation and restoration of coastal ecosystems; water dependent uses; and public awareness, among others. This system, which can be updated each year, will be used to generate *Florida State of the Coast* reports.

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***Florida received \$2,604,000 in 1994 and \$2,674,000 in 1995 to operate its coastal program.***

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#### *Educating the Public:*

The coastal management program produced two documents as guides for Florida's residents and businesses. *Sand in My Shoes*, a guide to living with Florida's coasts helps local government decision-makers, coastal residents and businesses understand why they should manage coastal resources wisely. The *Hurricane Survival Guide for Small Businesses* is designed to help small businesses prepare for and recover from hurricanes.

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***Florida's coastal program published a guide to help small businesses prepare for and recover from hurricanes.***

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### *Outreach and Training:*

In 1994 and 1995, Florida's coastal program conducted workshops around the state to educate the public, especially environmental professionals, on issues ranging from: conservation practices, boating practices and coastal nonpoint pollution control, to coastal hazards issues such as sea level rise. The program also conducted a successful state-wide Conference in 1994, "Weathering the



*Volunteers prepare site in Melbourne Beach for planting.*

Storm." In July 1995, the program hosted "Coastal Zone 1995," the 9th international symposium on ocean and coastal resources.

The program continues to publish *Coastal Currents*, a quarterly newsletter that takes an in-depth look at coastal issues facing the state. The program began publishing a monthly newsletter designed to build a network for intergovernmental information exchange by examining policies,

legislation and laws which affect the Florida Coastal Management Program. Florida's coastal program developed an electronic Coastal Information Exchange Bulletin Board System which lists grant announcements, programs, publications, model ordinances, special events and conferences.

### *Citizens Advisory Committee:*

The Citizens Advisory Committee (CAC) meets six times a year and acts as a voice for the public on priority coastal management issues. The coastal program provided media training to the CAC on the most effective techniques to handle all aspects of media communication. Based on the notion that the CAC membership can serve more effectively in an advisory and advocacy role if it is well informed, the program also developed four issues papers at the CAC's request, on public access, the state of Florida's estuaries, a statewide analysis of water use and Florida watershed management. To further inform the CAC, the program conducted two workshops on ecotourism to examine the economic viability of combining tourism and the environment.

## SUMMARY OF EVALUATION FINDINGS

An evaluation of Florida's coastal program was conducted in September 1995. Final evaluation findings are pending.



## APALACHICOLA NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1979

**Lead Agency**

Florida Department of Natural Resources

### PROGRAM ACCOMPLISHMENTS

*Management Plan:*

During the biennium, the reserve's updated management plan was approved—the first comprehensive update of the plan since the reserve's designation in 1979.

*Habitat Creation:*

The reserve's research staff worked with the U.S. Army Corps of Engineers to design and construct a five-acre island in the Bay to entice least terns and black skimmers (both listed species of Florida birds) from the St. George Island Causeway nesting site. The former site was too small and the high volume of vehicle traffic posed a hazard to the birds. The new island, located just south of the Apalachicola River Bridge, was constructed of sand dredged by the Corps during maintenance operations on the Gulf Intra-Coastal Waterway.

### EDUCATION AND OUTREACH

The reserve added two new educators to the education staff— one full-

time and one half-time— to assist with their active education programs.

More than 2,500 people participated in presentations or lectures through the reserve, and more than 6,200 people took part in field trips at the reserve during 1994 and 1995. The reserve's education staff also hosted school field trips for 2,913 students, funded by the Northwest Florida Water Management District.

The Apalachicola Reserve began hosting quarterly Coastal Management Workshops, in cooperation with the Florida Coastal Management Program, targeted at environmental professionals. The workshops are designed to provide practical information to those involved in coastal management decision-making.

### RESEARCH AND MONITORING

The reserve updated and edited its research library, which now has over 3,300 entries catalogued in a computerized bibliographic reference system.

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*Researchers are showing waterfront homeowners low-impact ways to keep their shoreline from eroding.*

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# APALACHICOLA BAY

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## National Estuarine Research Reserve

Five research stations continuously monitor salinity, temperature, levels of dissolved oxygen, pH, and tidal height as part of the NERRS national monitoring effort.

After investigating 400 turtle crawls in the Franklin County area, over 250 nests were found, mainly on the barrier islands. For the first time in many years, four leatherback nests were also documented.



*The reserve trains teachers in the field so that they can bring lessons into the classroom.*

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*Florida received  
\$490,000 in 1994  
and \$269,300 in 1995 for the  
Apalachicola Bay NERR.*

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Reseachers are continuing work on a demonstration project to show waterfront homeowners a more environmentally friendly way to protect their shoreline from erosion. The "Shoreline Stabilization Demonstration Project, funded by a three-year grant from the U.S. Environmental Protection Agency, involved construction of an experimental breakwater and marsh.

### SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued in June 1995 found accomplishments in land acquisition efforts, facilities enhancement, education programs, research and monitoring programs, innovative cooperative ventures, state of the art audio-visual activities and cited completion of the revised management plan. The evaluation recommended improvements in facilities, annual reporting, development of educational opportunities for students, the role and structure of research and education advisory committees, and coordination between Reserve, state agency heads and other aquatic programs. It also recommended completion of the reserve's boundary expansion and site profile.



# ROOKERY BAY

## NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1978

**Lead Agency**  
Florida Department of Natural Resources

### PROGRAM ACCOMPLISHMENTS

#### *Land acquisition:*

The State of Florida acquired 488 acres of land for addition to the Rookery Bay Reserve, including Johnson, Sam Williams and Little Marco Islands. The state also acquired 115 acres on the south end of Key Island, the largest barrier island in Florida that remains unconnected by bridge to the mainland. The four areas will be used to provide important opportunities for public recreational use, estuarine research and education.

#### *Facilities:*

With funding from NOAA, the reserve began developing a facilities master plan, targeting a new headquarters, laboratory and visitor center to meet the growing needs of the program and the community. Construction of the new headquarters is scheduled to begin in 1996.

### RESEARCH AND MONITORING

With funding support from the Florida Coastal Management Program,

reserve staff developed a Watershed Restoration and Management Plan for Rookery Bay. The plan identifies historic surface water inflows to the reserve, current flows, and provides specific recommendations for restoring surface water flow in the area. The plan is designed to be used by local, state and federal agencies.

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***The Rookery Bay NERR  
received \$360,000 in FY 1994  
and \$222,000 in FY 1995  
to operate its programs.***

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The reserve is making a concerted effort to re-establish native species and more natural water flow at the site. Over the years, invasive species of exotic plants have changed the site's landscape, which in turn affects the productivity of the area. The reserve has designed a burn management program to eliminate certain exotic species from the site. Rookery Bay staff are also restoring surface water sheetflow to the reserve by installing culverts and removing abandoned roads.

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***Rookery Bay's  
education  
programs reach  
more than  
20,000 people  
a year.***

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Research continues on impacts of mosquito control pesticides on non-target estuarine species, recovery of mangroves from the impacts of Hurricane Andrew, and restoration of mangrove ecosystems.

### EDUCATION AND OUTREACH

The reserve's education program is now reaching over 20,000 people a year. In the past year, the reserve has

been providing training for environmental professionals, building partnerships with ecotour operators, teaching college level marine biology classes at the reserve and providing technical information to the environmental community.

The Friends of Rookery Bay, Inc., the reserve's volunteer citizen's support group is now sponsoring a catch and release fishing tournament and educational "fishing college" (a seminar which promotes conservation practices for fishing) each year.

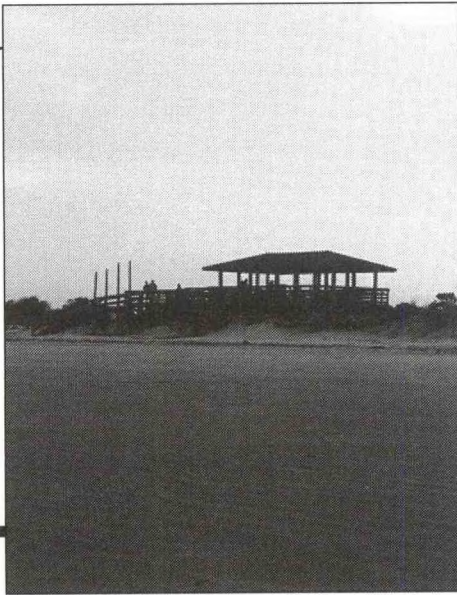
### SUMMARY OF EVALUATION FINDINGS

NOAA issued final evaluation findings in February, 1994, which found the reserve to be operating successfully. The evaluation found accomplishments in the areas of staffing, revision of the management plan, development of research program, the quality of the education program, expansion of the reserve's boundary and facilities on-site.

Findings recommended improvements in reserve administration and interagency coordination, expansion of the volunteer program, activation of the Research Advisory Committee, increased resource interpretation and education, and a comprehensive plan for additional facilities.



*Egret.*



## SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1976

**Lead Agency**  
Georgia Department of Natural Resources

### PROGRAM ACCOMPLISHMENTS

#### *Interpretive Trail:*

In 1995, the Sapelo Island reserve completed its Nature Trail which is almost two miles long and winds through six barrier island ecosystems. The trail is part of a larger interpretive tour program at the reserve, with boardwalks, observation towers and interpretive signs to make the reserve a more valuable learning experience for the public.

#### *Facilities:*

In addition to an interpretive trail, the reserve completed a new 3,000-square foot Visitors Center for Sapelo Island and the reserve. The facility, located on the mainland at the ferry dock, will feature exhibits interpreting the ecology and cultural history of the barrier island region.

#### *Site Characterization:*

Sapelo Island has almost completed its effort to identify the full range of ecology at the reserve site. When it is complete, Sapelo Island will

be the third reserve to complete this comprehensive study. The site profile will be a benchmark for the Georgia coast, will serve as a model for other islands and areas of the coast, and will facilitate more effective decision-making on coastal management issues by local, state and federal officials.

### RESEARCH AND MONITORING

The Sapelo Island reserve expanded its continuous monitoring program, from two monitoring stations in 1994 to four in 1995. The reserve logs data twice a week from the stations and analyzes the information. Sapelo Island staff prepare quarterly monitoring reports and provide this information to the national network of reserve research coordinators as well as to Georgia's Department of Natural Resources.

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***Georgia received  
\$110,000 in FY 1994 and  
\$122,000 in FY 1995 to operate  
the Sapelo Island NERR.***

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***The number of  
reserve visitors  
nearly doubled  
from 1993 to  
1994, thanks to  
on-site  
improvements.***

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### EDUCATION AND OUTREACH

The Sapelo Island reserve offers monthly educational programs that focus on particular aspects of Sapelo Island and the Duplin River estuary. These programs range from the dynamics of salt marshes to African-American culture on Sapelo.



*Marshes filter out pollutants carried from upstream and provide important breeding grounds for fish and shellfish.*

During the biennium, reserve staff continued developing and expanding the educational programs offered by the reserve. Development of a formal educational curriculum is now complete, and will be distributed statewide to middle-school-level educators. Reserve staff also expanded public outreach programs to the mainland to build awareness about the reserve and about coastal issues in general.

To expand the public's access to reserve tours, the Sapelo Island reserve acquired a new air-conditioned 40-passenger tour bus. With this expansion of the public tour program, the number of visitors increased to 6,000 visitors a year in 1994 and 1995—the maximum capacity for the reserve's transportation capabilities. Visitation is up from about 3,500 visitors in 1993.

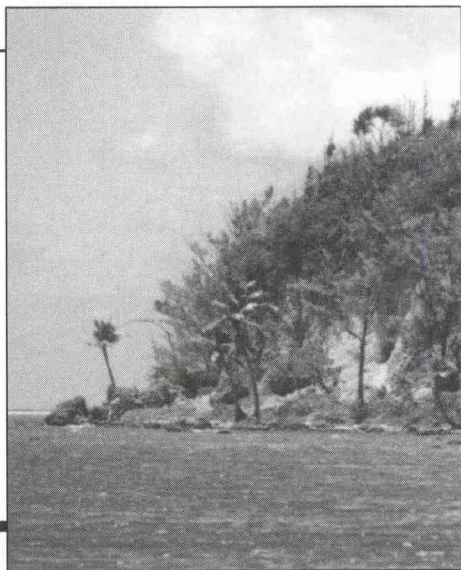
Sapelo Island staff created a new newsletter, "Sapelo Soundings" that features information on the reserve's management and goals, research findings and events at the reserve.

### SUMMARY OF EVALUATION FINDINGS

No evaluation was conducted during this period. The next evaluation is scheduled for September, 1996.



*Visitors line up for a tour of the reserve in its new bus, which has expanded the public tour program.*



## GUAM COASTAL MANAGEMENT PROGRAM

**Program Approved— 1979**

**Lead Agency**  
Bureau of Planning

**Program Funding—** Guam received \$637,00 in FY 1994 and \$681,000 in FY 1995 for program administration.

### PROGRAM ACCOMPLISHMENTS

#### *Public Access:*

In a report entitled "Public Access to Public Resources", Guam's Coastal Management Program identified areas of the coast of natural and historic importance that are not readily accessible to the public but warrant development of public access facilities. Developing such public access sites increases public appreciation for the need to protect such sites for future generations.

#### *Mapping:*

The coastal program's mapping efforts were instrumental in developing arguments for the Government of Guam in support of closure of the Naval Air Station on Guam and are being used by the joint planning team that will determine the final use plan for the base. The coastal program developed detailed maps showing locations of each structure and their relationship in regard to surrounding transportation routes, and the Guam International Air Terminal.

#### *Wetlands Management:*

Guam's coastal program is developing an in-depth inventory and analysis of wetlands within the Uguu Water-

shed. The information from this effort, called the Wetlands Analysis and Prioritization project, will be used to prioritize which wetlands need the most immediate protection.

#### *Comprehensive Land Use Planning:*

Guam's coastal program continues to take a major role in developing a comprehensive Master Plan for the island. The program has produced a Geographic Information System mapping and data system for the effort which includes lot lines, topography, and boundaries of limestone forests and the seashore reserve.

#### *Restoration:*

Through a grant from the CZMA's Coastal Zone Management Fund, Guam is conducting a demonstration project to revegetate an area of Southern Guam that is currently contributing a significant amount of siltation to Guam's coral reefs through erosion.

### SUMMARY OF EVALUATION FINDINGS

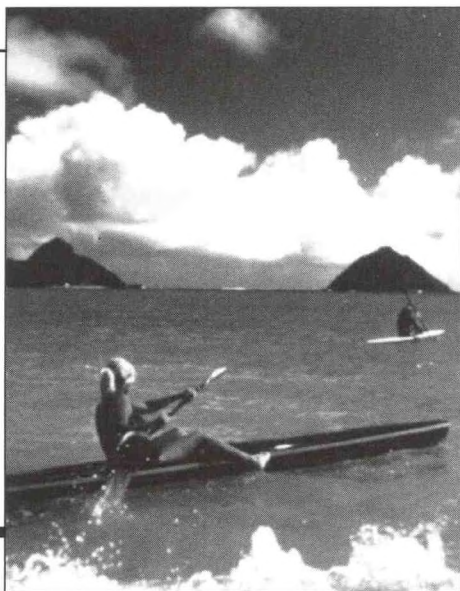
No evaluation was conducted during the biennium.

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***Base closure  
planning teams  
will use coastal  
program maps to  
decide the fate  
of Guam's Naval  
Air Station.***

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# HAWAII

## COASTAL ZONE MANAGEMENT PROGRAM

**Program Approved— 1978**

**Lead Agency**  
Office of State Planning

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***Hawaii's planning work for coral reef management helped the U.S. with its lead role for the International Coral Reef Initiative.***

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### PROGRAM ACCOMPLISHMENTS

#### *Public Education:*

Hawaii's coastal program completed a host of outreach materials, including a video on coastal hazards, to be used by the Red Cross in Maui; public service announcements on hazards, erosion and sea level rise; and an interactive multimedia educational CD-ROM program "SeaSearch: Exploring Tropical Marine Life" to teach about Hawaii's coastal and nearshore environment.

#### *Resource Management:*

The North Kauai Regional Resource Management Planning Project was initiated by the Office of State Planning as a direct response to a recommendation in the Hawaii Ocean Resources Management Plan. Phase One focused entirely on information gathering, such as identifying coastal and ocean resources in the study area, current and potential uses of those resources along with associated problems, and current management regimes. From this effort, the Office of State Planning developed

a summary of findings and recommendations.

#### *Watershed Delineation:*

As part of its effort to develop a coastal nonpoint pollution control program, Hawaii's coastal program funded a study to define the boundaries of its watersheds. Geographic information system maps of watersheds and sub-watersheds will also be produced.

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***Hawaii received \$911,000 in 1994 and \$1,009,000 in 1995 to operate its coastal program.***

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#### *Regional Planning:*

A regional planning tool, based on the state geographic information system (GIS), was prepared for the Office of State Planning to be used for environmental, land and coastal planning needs in any part of the state covered by GIS data. As a test case using existing GIS data, the state evaluated areas in West Hawaii to determine their suitability for three types of coastal projects— small craft

harbors, sewage treatment plants and resorts, including golf courses.

#### *Coastal Hazards:*

Hawaii places a high priority on reducing the risks to life and property from such natural processes as tsunamis, hurricanes, storm waves, erosion, volcanic eruptions and flooding. To help develop effective policy for addressing coastal hazards, the state produced an atlas showing the history and relative intensity of coastal storms affecting Hawaii in the last century. The maps and text provide an effective database for safer, more appropriate development in coastal areas.

As part of its coastal hazards planning project, Hawaii is focusing on the insurance and finance industries. The state is trying to generate industry interest in reducing the threat of coastal hazards. These industries have the most to lose if a major disaster strikes Hawaii. The coastal program has produced a number of technical reports, one of which analyzes the potential losses from future hurricanes and tropical storms.

Other reports discuss steps building owners can take to reduce the risk of future damage to existing buildings, management options available to the states, and the potential costs of various options. The reports were produced in cooperation with the building industry, architects, insurance companies, scientists, resource

managers and others interested in developing practical, economical solutions to coastal hazards.

#### *Coral reefs:*

Hawaii's planning work for managing coral reefs has been instrumental in defining the U.S. agenda, both domestic and international, on coral reefs. The U.S. has the lead role for the International Coral Reef Initiative.

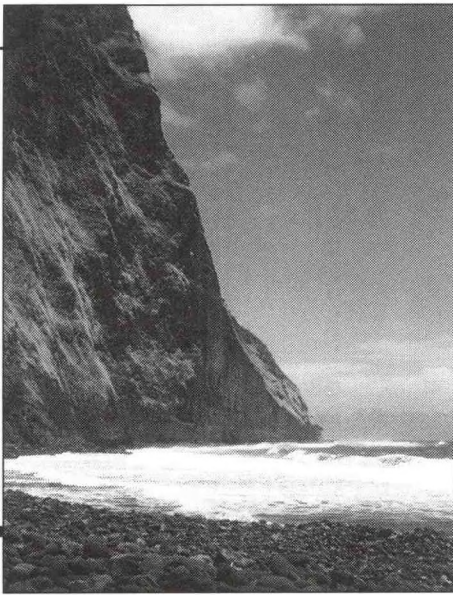


*Hawaii's beautiful shoreline draws tourists by the millions.*

## SUMMARY OF EVALUATION FINDINGS

Final evaluation findings issued in February 1995 noted accomplishments in the areas of: public access, proactive response to Hurricane Iniki, traditional fish pond study and restoration, beach management planning, and the coastal hazard mitigation study. Evaluation findings recommended that the state seek additional staff and resources, improve monitoring and enforcement activities, beach management planning, grants management and public participation.





# WAIMANU VALLEY NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1976

**Lead Agency**  
Hawaii Division of Forestry and Wildlife

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*The State of Hawaii has requested to withdraw the designation of the Waimanu Valley NERR.*

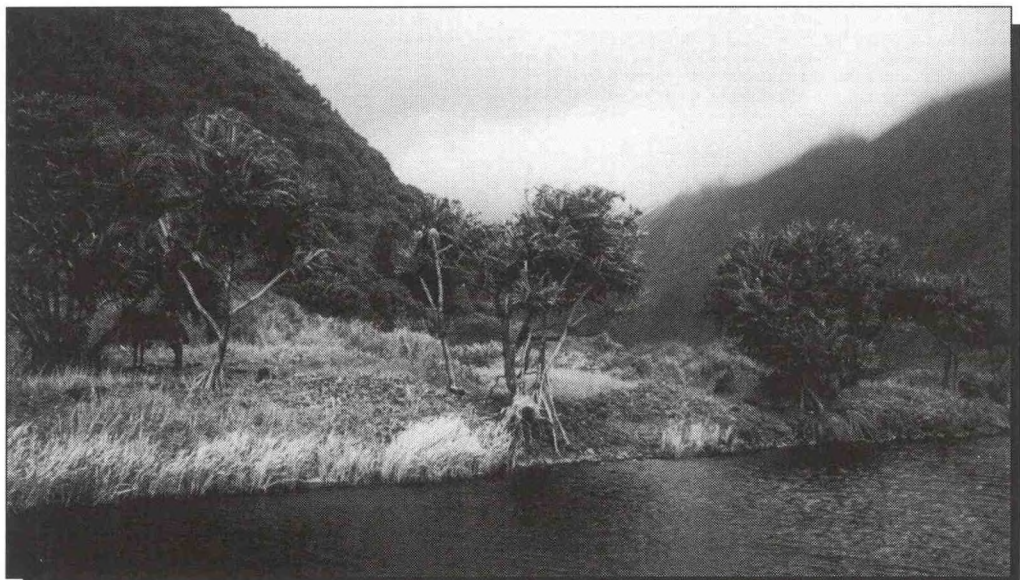
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The Waimanu National Estuarine Research Reserve (NERR), designated in 1976, has never been fully operational. Major obstacles, such as geographic isolation from major institutions and proximity to traditional taro farms, resulted in major management problems and difficulties in conducting long-term baseline studies.

The State of Hawaii has requested to withdraw the reserve's federal designation. The State and NOAA have agreed that de-designation of the

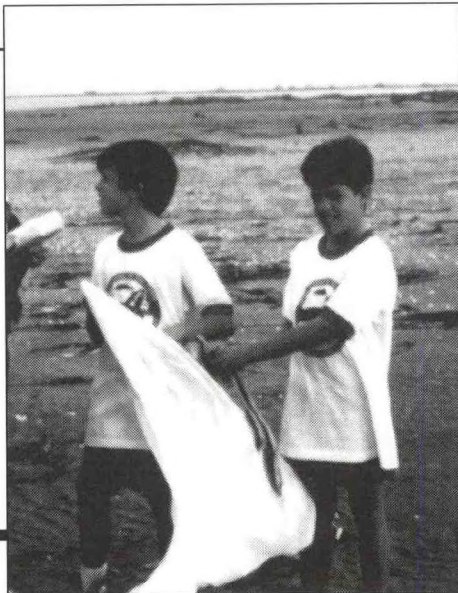
Waimanu NERR is the most prudent action. This will be the first NERR site de-designated for any reason.

The state has indicated that another site may more appropriately meet the needs of Hawaii's coastal zone management, research, and education agendas. However, any discussions of a new reserve site in Hawaii will depend on the availability of resources in the future and would be handled apart from the de-designation process for the Waimanu Valley NERR.



*With its steep valley walls, Waimanu Valley is only accessible via a rigorous 7.5 mile trail.*





## LOUISIANA COASTAL RESOURCES PROGRAM

**Program Approved—** 1980

**Lead Agency**  
Department of Natural Resources

**Program Funding—** Louisiana received \$2,482,000 in 1994 and \$2,476,000 in 1995 in federal funding.

### PROGRAM ACCOMPLISHMENTS

#### *Permit streamlining:*

As part of its commitment to reforming the regulatory process, Louisiana's Coastal Management program joined with the Environmental Protection Agency to make the regulatory process more "user friendly". The Department of Natural Resources' Coastal Management Division identified a demand for local permit information centers where citizens could obtain information about the regulatory process for activities conducted along the coast. In a new pilot project, one information center will be set up in a local coastal community. There, staff members from the coastal program and the local government could meet with permit applicants, explain permit processes, and help applicants with the forms. A computer program will also be developed to compare elements of the project with permit requirements and put applicants in touch with staff at appropriate agencies.

#### *Wetlands Mitigation:*

The Louisiana Department of Natural Resources has formally

adopted Mitigation Regulations for the coastal zone, as required under Act 1040 of the 1990 Louisiana Legislature. The rules address the loss of wetlands from activities which receive coastal permits. Act 1040 was designed to help avoid and minimize the adverse impacts from development that are identified during the permit review process, to determine the amount of unavoidable wetland loss for which mitigation must be provided, to restore sites when appropriate, to establish mitigation banks, and to process requests for exemptions from the requirement to mitigate wetlands loss. NOAA approved this change to the coastal program.

### SUMMARY OF EVALUATION FINDINGS

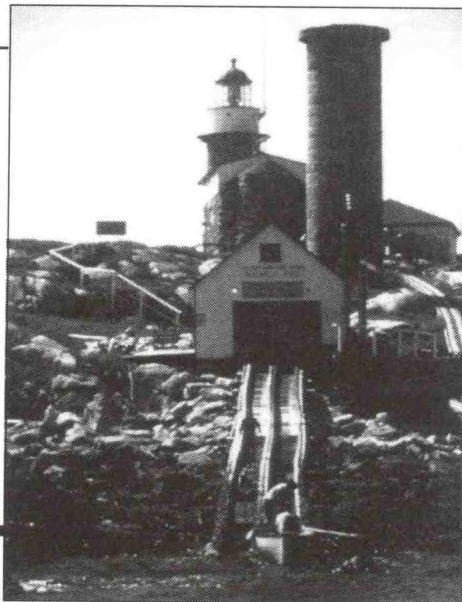
Issued in December 1994, final findings cited accomplishments in the use of general permits, better enforcement, and expanded use of joint public notices. The findings made recommendations to improve staff coordination, monitoring and enforcement, public outreach, and state agency coordination.

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***Louisiana's coastal program is setting up local permit centers to make the permit process more user-friendly.***

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## MAINE COASTAL MANAGEMENT PROGRAM

**Program Approved— 1978**

**Lead Agency**  
State Planning Office

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*The coastal program assembled leaders from coastal towns to tackle water quality issues.*

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### PROGRAM ACCOMPLISHMENTS

#### *Ecosystem Management:*

With help from NOAA, the State of Maine developed an innovative approach for managing estuarine ecosystems. Culminating a three-year demonstration effort, the Damariscotta River Estuary Project, a new group comprised of planning board representatives from seven estuary towns, has formed to implement the recently-completed estuary management plan.

The plan outlines more than 50 actions related to water quality, protection of "special places," fisheries and other sustainable economic ventures, and public involvement and education. The primary goal of the estuary project, supported by the Maine Coastal Program with CZMA Enhancement Grant funds, was to break new ground in helping a group of towns develop a mechanism for addressing the cumulative impacts of development on resources within the watershed. Among the successes of the estuary project are: creation of a

Geographic Information System database and maps of the regions for use by the towns and others; completion of a variety of studies, including an assessment of the economic value of the River's resources; assistance and support from the U.S. Fish and Wildlife Service for projects aimed at removing nonpoint sources of pollution; and sponsorship of a variety of public education events, including extremely popular river trips and clean-ups.

#### *Managing Nearshore Resources:*

Maine completed a Coastal Islands Development and Conservation Strategy, which revised the subsurface wastewater disposal rules of the state plumbing code. Maine also completed a coastal islands policy project focusing on sustainable development and overall management of island resources, including the incorporation of carrying capacity concepts into local planning and decision making. These projects resulted in several tools that will help municipalities revise their local comprehensive plans and land use ordinances to address unique island issues and constraints. Among

the tools developed is a publication entitled, *Exploring Limits: Making Decisions About the Use & Development of Maine's Islands*. This document examines six of the natural factors that limit island development and shows how an understanding of the limits can be used to effectively plan for an island's future. The new publication offers solutions to island land use problems and provides a framework by which municipal and state officials can make sensible management decisions concerning island resources.

*Coastal Hazard Erosion Mapping:*

Maine has been a pioneer in shoreline erosion mapping to assess erosion hazards along the coast. Maine's coastal geologists have developed a new technique that uses historical records to accurately map coastal erosion rates. This technically-advanced work has provided a basis for measuring erosion rates and developing management guidelines along many of the State's sandy beaches with chronic erosion problems. Minimizing coastal hazards and cumulative impacts of coastal erosion requires that regulators, landowners, developers, potential purchasers, lending and insurance agencies have access to objective information on coastal hazards on which they can base their land use decisions. Hazard areas, which include all sand and barrier beaches along the coast, need to be identified

to establish predictability and consistency in permitting development appropriate to hazard areas.

*Municipal Code Enforcement Officer Certification and Training:*

Maine's Code Enforcement Certification and Training Program has raised the effectiveness of its programs to manage natural resources. The program has accomplished this by heavily emphasizing training and technical assistance of local code enforcement officers, coupled with certification and continuing education requirements. The program has also raised the level of professionalism among local code enforcement officials for the benefit of the citizens of the State of Maine. As of September 1995, 433 individuals were certified in one or more areas of shoreland zoning, land use or building standards. More than eighty-three percent of Maine's municipalities employ certified code officers, in compliance with state requirements, and the number of municipalities in compliance is expected to grow.

SUMMARY OF  
EVALUATION FINDINGS

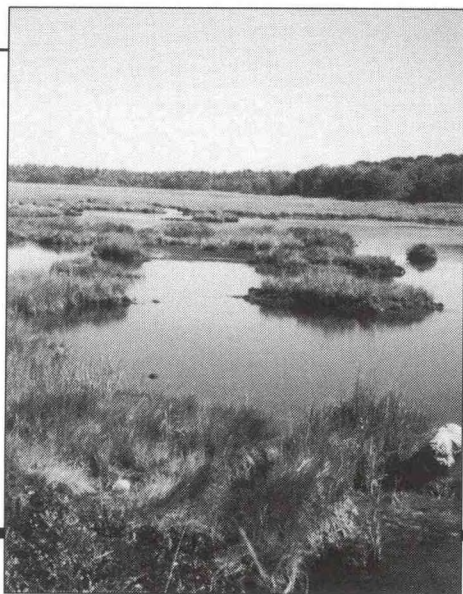
No evaluation was conducted during the reporting period. The next evaluation of Maine's coastal program is scheduled for September, 1996.

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*Maine received  
\$1,886,000 in 1994  
and  
\$2,340,000 in 1995  
in federal funding.*

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# WELLS

## NATIONAL ESTUARINE RESEARCH RESERVE

**Designated— 1986**

**Lead Agency**  
Reserve Management Authority

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***Wells reserve is working with public and private groups to find solutions to the Gulf of Maine fisheries crisis.***

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### PROGRAM ACCOMPLISHMENTS

#### *Resource Management:*

Piping plovers, federally listed as endangered, and least terns, listed by the state as endangered, returned for the fourth year in a row to nest on Laudholm Beach in Wells Reserve. Reserve staff helped U.S. Fish and Wildlife Service and Maine Audubon Society personnel to erect enclosures to protect the nests, to post signs and to patrol the area.

#### *Dune Stabilization:*

The reserve rebuilt the frontal dune at its public access point to Laudholm Beach after an experimental approach to stabilize the dune the previous year failed. The reserve used sandbags and a covering of sand to reconstruct the dune, which protected an adjacent threatened seawall for an additional winter.

#### *Fisheries Conference:*

The Wells Reserve co-hosted a fisheries conference with University of New England to find solutions to fisheries crisis in Gulf of Maine. Five dis-

cussion groups— each a mix of general public, students, fishermen, scientists, and agency representatives— outlined possible solutions to the crisis. Conference organizers then sent the ideas to key decision-makers in the legislature and the Department of Marine Resources.

### RESEARCH AND MONITORING

The reserve completed a 12-month study of nutrient and suspended solid inputs from the watershed into the Webhannet River estuary, including those from Hurricane Bob. These data establish a baseline for monitoring the response of the watershed and estuary to future changes in land use changes due to growth and development.

Reserve staff completed a year-long survey of anadromous and marine fish using the Little River estuary. Researchers observed over 20 species, including alewives, brown and brook trout, Atlantic salmon, striped bass and rainbow smelt. A habitat survey of the watershed revealed suitable

spawning habitat for several important species. The reserve is working with local groups to restore fish passage to these habitats.

The reserve also completed a major study on how salt marsh has responded to sea level rise over the past 5,000 years. Using historical evidence from fossils, the reserve then generated a sea level rise curve for the same period—the most precise curve available for the Gulf of Maine.

As part of the National Monitoring Program, the Wells Reserve has begun long-term continuous monitoring of nonpoint source pollution in the Webhannet River. The goal is to document trends in water quality that may be related to changes in land use or climate.

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***The Wells reserve  
received \$230,000 in FY 1994  
and \$395,000 in FY 1995  
in federal funding.***

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## EDUCATION AND OUTREACH

The Wells Reserve runs a broad range of educational programs, directed at resource managers and planning professionals, the public and students of all levels. The reserve ran workshops for practitioners on best management practices for controlling nonpoint sources of pollution, and on conducting shoreline surveys.

In 1994 and 1995, volunteer docents, trained by reserve staff, conducted tours for nearly 6,000 visitors on topics related to the reserve site.

The Wells Reserve completed the final pilot year of its outreach curriculum, "DEPTHs," and expanded the curriculum to seventh and eighth grades. The program teaches science basics, focusing on the ecological importance of estuaries. Schools in nine districts use this curriculum in their teaching syllabuses for grades K-8.

Staff and volunteers conducted on-site programs for over 1,200 fourth grade students, taught over fifty 9-13-year-old children as Junior Researchers, worked with eleven instructors who conducted on-site programs for another 600 students, and trained teachers on the reserve's math and science teaching techniques.

Reserve education staff also served on over six education committees in Maine and co-directed the Southern Maine Science and Mathematics Academy, funded by the National Science Foundation to enhance science and math instruction in Maine.

## SUMMARY OF EVALUATION FINDINGS

An evaluation site visit was conducted in September, 1995. Final findings are pending.





## MARYLAND COASTAL ZONE MANAGEMENT PROGRAM

**Program Approved— 1978**

**Lead Agency**  
Department of Natural Resources

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***Somerset and Calvert counties became the 1st local governments to develop watershed plans for nontidal wetlands.***

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### PROGRAM ACCOMPLISHMENTS

#### *Watershed Management Planning:*

Maryland's Nontidal Wetlands Protection Act allows local governments to prepare Wetlands Watershed Management Plans which, upon certification by the state Department of Environment, become the basis for all nontidal wetland permitting decisions within the planning area. During the biennium, Maryland's coastal program has assisted in the development of three such plans, in Somerset and Calvert Counties. The plans assess the function of all nontidal wetlands in the watershed to measure their role in flood management, water quality protection, and other factors. The wetlands are mapped to target development away from sensitive areas. Once a plan is certified, state and local permitting processes are combined, reducing the time needed to secure approval for a project.

#### *Economic Growth, Resource Protection, and Planning Act:*

Maryland's coastal program has

provided substantial technical and financial assistance to several coastal counties and towns to comply with Maryland's Economic Growth, Resource Protection, and Planning Act, passed in 1992. The Act requires all Maryland localities to revise their comprehensive plans, zoning ordinances, and subdivision regulations for "sensitive areas." Sensitive areas include streams and their buffers, steep slopes, 100-year floodplains, and endangered and threatened species habitat.

#### *Chesapeake Bay Tributary Strategies:*

In 1992, the interstate Chesapeake Bay Agreement was amended to require Maryland, Virginia, and Pennsylvania to develop strategies for reducing nutrient loadings of nitrogen and phosphorus into each of the Bay's major tributaries— with a goal of 40 percent reduction by the year 2000. Draft Strategies were completed in 1995 through a collective two-year effort among all levels of government, with extensive input by various interest groups and citizens. Maryland identified ten watersheds and hosted

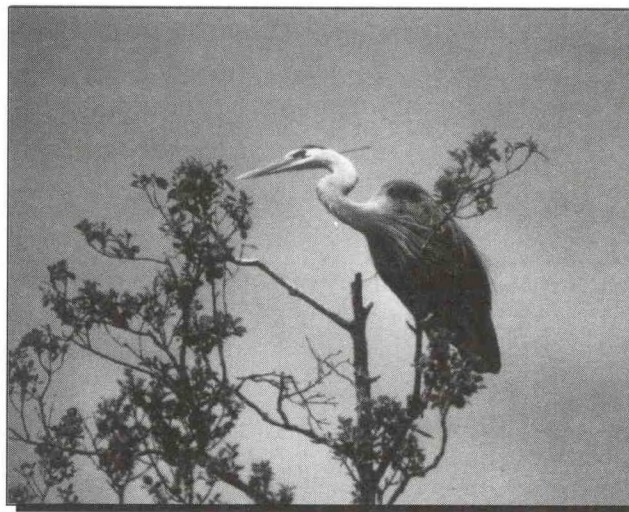
three public meetings in each to get government officials working with local citizens to develop nutrient reduction strategies tailored to the specific issues of the area. Some of the actions that can be taken include: boosting the number of nutrient management plans on agricultural lands, upgrading sewage treatment plants, and fully implementing local stormwater management, erosion and sediment control plans. Locally based "Tributary Implementation Teams" will facilitate open participation throughout the process. A "Blue Ribbon Panel" was also formed to study options for financing the implementation of the Strategies; its report was issued in 1995.

#### SUMMARY OF EVALUATION FINDINGS

Evaluation findings were issued in September 1994 for the period from June 1991 through May 1994. The evaluation cited the Maryland Coastal Zone Management Program's success in revitalizing the Coastal and Watershed Resources Advisory Committee, a group of local government officials and private citizens that provides extensive public outreach for the program. Also noted was the Program's strong role in statewide growth management planning, local nontidal wetlands management plans, and the Chesapeake Bay Tributary Strategies.

Other successes include the state's geographic information system capabilities and continued administration of the Chesapeake Bay Critical Areas Protection Program.

The findings recommended that the Maryland Coastal Zone Management Program focus resources on the state's Atlantic coastal Back Bays, improve the Program's visibility within the state, and improve other administrative functions.



*A great heron perches majestically along Maryland's shore.*

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*Maryland's program received  
\$2,342,000 in 1994 and  
\$2,710,000 in 1995  
in federal funding.*

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## CHESAPEAKE BAY, MARYLAND NATIONAL ESTUARINE RESEARCH RESERVE

**Designated**— 1985: Monie Bay  
1990: Jug Bay, Otter Creek Point

**Lead Agency**  
Maryland Department of Natural Resources  
Tidewater Administration

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*A new  
education plan  
will guide  
activities for  
professionals,  
scientists,  
teachers and  
the public.*

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### PROGRAM ACCOMPLISHMENTS

#### *Facilities:*

Construction has begun in the Otter Point Creek Component on the Anita C. Leight Estuary Center. In 1995, the reserve and partners broke ground for the facility, which is expected to be dedicated in the Spring of 1996.

### RESEARCH AND MONITORING

In 1995, the reserve sponsored a Reserve Research Conference at the Jug Bay Component. Fifteen Chesapeake Bay area scientists and naturalists presented the results of research and monitoring conducted at all three components of the reserve. Approximately sixty scientists, resource and land-use managers, and naturalists from local, state, and federal government agencies attended the conference.

As part of the National Water Quality Monitoring Study being conducted at all National Estuarine Research Reserves, the reserve installed and deployed two data loggers which auto-

matically measure certain water quality factors. Reserve staff download and process the electronic data regularly.

### EDUCATION AND OUTREACH

In 1995, the Research Reserve developed, with the help of its partners, a Five-Year Education Plan. The Plan outlines the types of activities that will be conducted within the Reserve and what audiences (i.e. professional, scientific, general, children, etc.) those programs will target.

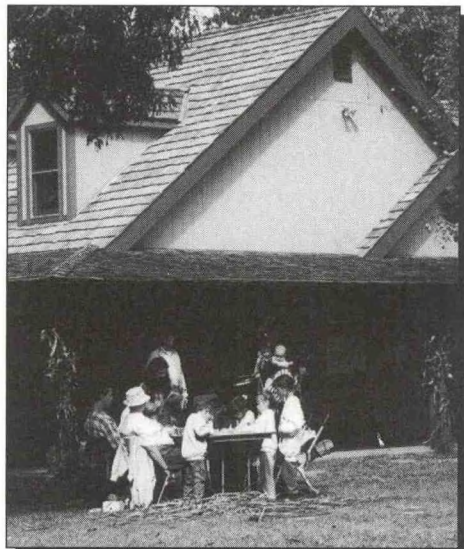
In 1994, the reserve and Maryland's Wildlife Division, partners in the Monie Bay Component, inaugurated a program called "Wetlands and Wildlife Field Day" for 180 fourth graders in Somerset County. Reserve staff called upon knowledgeable experts from within the Department of Natural Resources to provide presentations about marsh birds, plants, fish, and water and land animals. In 1995, 140 fourth-graders participated.

Reserve personnel presented three

teacher training workshops in 1995, which translate research findings into practical classroom applications for student learning. Reserve staff have continued work to develop a teachers' curriculum guide. The guide will contain materials and activities for estuarine science in the classroom and on the reserve.

#### SUMMARY OF EVALUATION FINDINGS

Findings issued in February 1994 for the Chesapeake Bay NERR in Maryland cited as accomplishments: the expansion of the existing visitor's center at the reserve's Jug Bay Component; teacher workshops at all three components and a resulting draft resource guide for elementary and middle school teachers; attendance of component managers at the National System workshops;



Children participate in education programs at the Pine Jug Interpretive Center.

substantial progress toward the completion of engineering plans for a visitor's center at the Otter Point Creek Component in Harford County; education activities; production of *A Volunteer's Guide to Jug Bay*; and, completion of Reserve and boundary



Marshes filter out pollutants that can degrade water quality.

signage at all components. Findings and recommendations were made regarding: staffing needs and clarification of roles; focus and direction for the reserve; implementation plan for education program; development of a comprehensive research and monitoring plan; implementation of advisory committees; and, revising the reserve's management plan.

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***Maryland received  
\$710,000 in FY 1994 and  
\$185,000 in FY 1995 for the  
Chesapeake Bay NERR.***

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# MASSACHUSETTS COASTAL ZONE MANAGEMENT PROGRAM

**Program Approved— 1978**

**Lead Agency**

Executive Office of Environmental Affairs

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*Massachusetts  
developed  
the first  
comprehensive  
guide for  
balancing  
uses of barrier  
beaches.*

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## PROGRAM ACCOMPLISHMENTS

### *Planning for Ports and Harbors:*

Massachusetts' coastal program played a leading role in the development of Governor Weld's Port Commission report, which provides a blueprint for port and harbor improvements. The program is continuing to lead the way in this area by working with state agencies to implement the Port Commission's recommendations, which address the needs of both the Commonwealth's major ports and its smaller harbors.

### *Balancing barrier beach use:*

The coastal program developed the nation's first comprehensive, multi-disciplinary, state-of-the-art reference guide on how to balance competing uses on barrier beaches. This publication has been nationally recognized for its thorough, workable recommendations. For example, implementation of the policy guidelines for rare and endangered species habitat has resulted in a substantial increase in the endangered piping plover population in Massachusetts.

### *Opening shellfish beds:*

Massachusetts' coastal program participates in the Commonwealth's Shellfish Restoration Program, which supported local initiatives to open over 400 acres of shellfish beds its first year. The coastal program will continue to support efforts to open shellfish beds through its programs that reduce point and nonpoint sources of coastal water pollution.

### *Promoting aquaculture:*

Massachusetts' coastal program has taken the lead in developing a strategy to enhance aquaculture (fish farming) in the Commonwealth's coastal waters. Through this effort, the program produced the Aquaculture Strategic Plan, a coordinated five-year action plan that forms a framework to encourage the growth of the aquaculture industry during a critical stage of development. The plan includes 68 specific recommendations for the Commonwealth to implement to overcome existing constraints and take advantage of opportunities in the aquaculture industry.

*Identifying erosion-prone areas:*

Massachusetts' coastal program, in cooperation with NOAA, is mapping high hazard areas along the entire 1,500 miles of Massachusetts coastline. These maps will allow government agencies, as well as potential buyers, to identify coastline that is prone to storm damage and significant erosion and to predict erosion potential.

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***Massachusetts received  
\$2,058,000 in FY 1994 and  
\$2,300,000 in FY 1995  
in federal funding.***

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*Informing the public about shoreline access:*

The coastal program produced *The Massachusetts Coast Guide: Access to Public Open Spaces Along the Shoreline, Volume 1* with the help of several other state agencies. The Coast Guide includes 25 full-color maps covering the area from Salisbury to Hull, which contain nearly 400 coastal access sites. The Coast Guide is the coastal program's biggest hit ever, and the program's Information Line was flooded with thousands of calls from people requesting copies.

*Federal Consistency:*

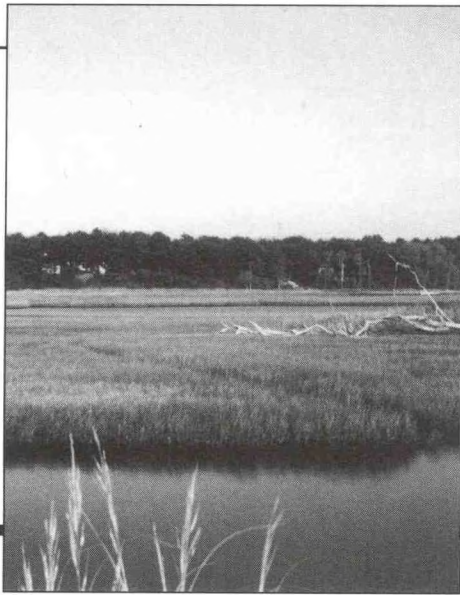
While the CZMA always gave states the authority to review projects that directly affect the coastal zone, the 1990 CZMA reauthorization allows state programs to review

projects that affect any land or water use or natural resource in the coastal zone. Under this authority, Massachusetts' coastal program has worked with the town of Seabrook, New Hampshire, to relocate a discharge from a wastewater treatment plant that would have caused shellfish bed closures in Massachusetts. Similarly, the program worked with the U.S. Environmental Protection Agency (EPA) to designate an offshore dredged material disposal site to ensure that only clean sediments were deposited in a highly productive marine habitat.

SUMMARY OF  
EVALUATION FINDINGS

Final evaluation findings issued in August 1995 cited accomplishments in: technical assistance efforts; state and Federal consistency; establishment of a programmatic general permit; elimination of permit appeals backlog; storm response coordination; continuing administration of two National Estuary Programs; and coordination with NOAA on the designation of the Stellwagen Bank National Marine Sanctuary. The evaluation contained recommendations for clarifying program priorities and improving monitoring and enforcement, technical assistance to conservation commissions and local boards of health, use of advisory board, and distribution of education/outreach materials.





## WAQUOIT BAY NATIONAL ESTUARINE RESEARCH RESERVE

**Designated— 1988**

**Lead Agency**  
Massachusetts Department of Environmental  
Management

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***Waquoit Bay  
is testing  
wastewater  
treatment  
systems to find  
out which are  
best at reducing  
nitrogen runoff.***

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### PROGRAM ACCOMPLISHMENTS

#### *Watershed Protection:*

In 1994 and 1995, the reserve worked closely with a number of partners, including towns, state agencies, the Wampanoag Tribe and nonprofit organizations to create the Mashpee National Wildlife Refuge, which wraps around the reserve. By preserving land within the Waquoit Bay watershed, the refuge helps reduce the level of nitrogen flowing into the bay and, therefore, helps protect resources of the bay.

#### *Resource Conservation:*

Waquoit Bay NERR is the site of a recovery effort for the endangered Sandplain Gerardia (*Agalinis acuta*)—a small plant that used to be plentiful in fields in the Northeast. The U.S. Fish and Wildlife Service funded the Massachusetts Division of Fisheries and Wildlife to develop techniques for

propagating the federally listed plant. So far scientists have successfully propagated several hundred plants.

#### *Facilities:*

Over the past two years, renovation was completed on most of the reserve's buildings to create classroom space, laboratories, meeting areas, exhibit space, and to upgrade space in the Gate House for use as a dormitory. The Massachusetts Department of Environmental Management also completed construction of a 200 car parking area and dune walk-overs at the South Cape Beach State Park, within the reserve.

### RESEARCH AND MONITORING

Waquoit Bay's research efforts focus on both national and local issues. As part of its national focus on researching nonpoint source pollution, the reserve, with funding from the U.S. Environmental Protection Agency's Small Flows Clearinghouse, will install, monitor and evaluate up to six on-site denitrification wastewater treatment systems to determine whether they signifi-

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***Waquoit Bay received  
\$410,000 in FY 1994 and  
\$356,000 in FY 1995.***

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cantly reduce the amount of nitrogen flowing into the Bay.

For several years, the reserve has been the site of intensive research by a Land Margin Ecosystem Research project that examines the effects of land use on nitrogen-loading to coastal ecosystems. The reserve staff have made major efforts to translate the results of the studies to policy makers and the public to improved coastal zone decision-making.

The Waquoit Bay reserve also received funding through EPA's Environmental Technology Initiative to explore ways to help towns take advantage of advanced on-site wastewater treatment systems by establishing management districts for on-site systems.

#### EDUCATION AND OUTREACH

The reserve is continuing its involvement in a program to help middle school teachers develop a curriculum that teaches students to monitor the water quality of the school's pond, and uses the pond as an example of the broader context of how land uses affect water quality within a watershed. Along with seven other reserve sites as part of an Estuary Net, Waquoit Bay also makes water quality monitoring data available to students and decision-makers through the internet.

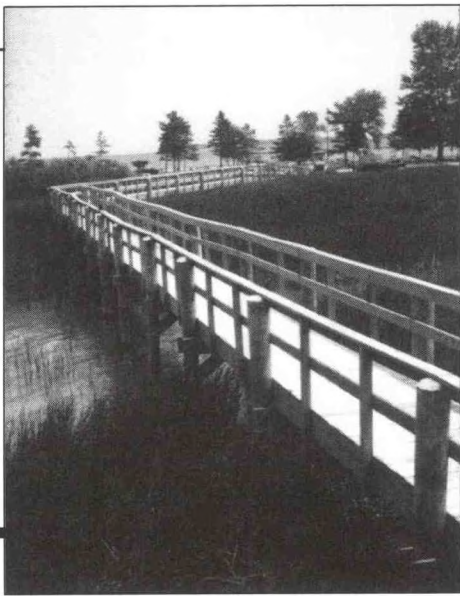
During 1994 and 1995, over 142,000 people visited the reserve. The educational and interpretive activities reached out to over 5,500 people during that time. Waquoit Bay maintains a strong cast of volunteers, over 125 strong, who help with beach clean-ups, open houses, special events, trail maintenance, and monitoring water quality and endangered species.



#### SUMMARY OF EVALUATION FINDINGS

Evaluation findings issued April 3, 1995, found accomplishments in research, education, interaction with federal agencies, the reserve's volunteer program, and special projects in alternative wastewater treatment. Findings recommended improvements in coordination, staffing, and on-site management.





# MICHIGAN COASTAL ZONE MANAGEMENT PROGRAM

**Program Approved— 1978**

**Lead Agency**  
Department of Natural Resources

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***A small seed grant from the coastal program helped revitalize an abandoned waterfront.***

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## PROGRAM ACCOMPLISHMENTS

### *Purchase of Development Rights:*

The Michigan Coastal Management Program provided seed money for a demonstration project to protect agricultural land and coastal views in the high-growth Grand Traverse Bay area. In 1994, citizens of the Peninsula Township voted to impose a 1.25 mill (\$.00125), 15-year tax on themselves to purchase the development rights to approximately 2,000 acres of farmland. As a result, farmers, who still own the land, believe that they have an economically viable future and are reinvesting in their farmland. CZM funds paid for the legal and economic analysis, GIS mapping, development rights appraisals and a public education and outreach campaign.

### *Waterfront Revitalization:*

Using \$30,000 in CZMA funds, the City of Wyandotte developed a plan that helped transform some 84 acres of abandoned industrial property along its waterfront into a public golf course and public park, both of which

opened in 1995. A high level of coordination and cooperation between state divisions, city officials, consultants and local citizens created the backbone for this accomplishment. As a result, waterfront areas were renovated and downtown shops remodeled.

### *Assessing Cumulative Impacts:*

Michigan is developing methods for consistently assessing cumulative impacts to wetlands during permit review in Department of Environmental Quality district offices. In 1994, the Tip of the Mitt Watershed Council was hired to review and critique existing techniques for assessing cumulative impacts and to make recommendations for incorporating these techniques into the wetlands review process.

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***Michigan received  
\$2,713,000 in 1994 and  
\$2,833,000 in 1995  
to operate its coastal program.***

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*Using Innovative Growth Management:*

Michigan developed a brochure and video to educate local officials, legislators and the public about innovative techniques for managing growth. These materials explain how communities can accommodate growth without compromising natural resources and quality of life. The Michigan Legislature is now considering local enabling legislation which would give local governments a variety of tools for managing growth, including many of the techniques found in the brochure and video.

*Aquatic Nuisance Species Workshop:*

The Michigan Coastal Management Program provided funding, from the CZMA's Coastal Zone Management Fund, to the Great Lakes Commission to conduct a workshop on nonindigenous aquatic nuisance species. The workshop, held in May 1995, brought together state coastal managers and experts on aquatic nuisance species to discuss prevention

and control efforts. In conjunction with the workshop, a model comprehensive management plan was developed to assist states with preparing management plans as mandated under the Nonindigenous Aquatic Nuisance Protection and Control Act of 1990.



*The City of Wyandotte revitalized its downtown waterfront, creating public access to the shore.*

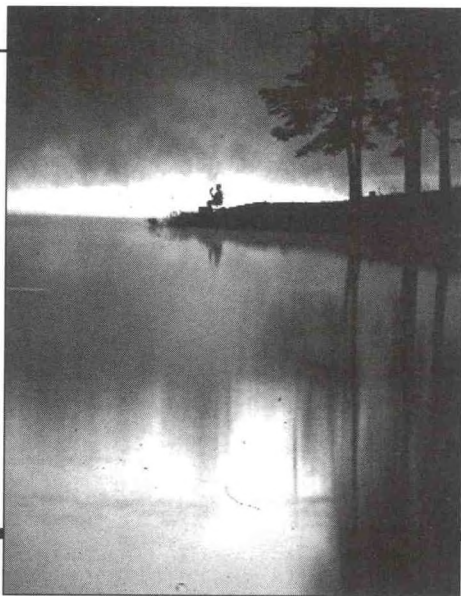
## SUMMARY OF EVALUATION FINDINGS

Findings issued on January 19, 1995, found accomplishments in the following areas: support for permitting and enforcement, improved shorelands administrative rules; growth management activities, including purchase of development rights; local support soil erosion and sedimentation control; the geographic information system, and wetlands handbooks. Recommendations included improving monitoring and enforcement of core laws, use of federal consistency, and public outreach.



*Farms on Michigan's Upper Peninsula are feeling the pressure of coastal population growth.*





## MISSISSIPPI COASTAL PROGRAM

**Program Approved— 1980**

**Lead Agency**  
Department of Marine Resources

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*Revenues from  
dockside casino  
leases will be  
used to enhance  
and conserve  
coastal wetlands.*

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### PROGRAM ACCOMPLISHMENTS

#### *Reorganization:*

On July 1, 1994, the Mississippi Department of Wildlife, Fisheries and Parks, Bureau of Marine Resources reorganized into the Mississippi Department of Marine Resources (DMR), creating a separate state agency. The new department, which administers coastal programs, coastal wetlands, and fisheries programs, is governed by a seven-member coastal commission. Commissioners from the three coastal counties represent seafood processors, commercial fishermen, recreational fishermen, charter boat captains, environmentalists, the state's wildlife agency, and business people from outside the seafood industry.

Creation of the new, consolidated agency provides an opportunity for the state to evaluate its coastal program and consider realigning its efforts in key programmatic areas such as: federal consistency, monitoring and enforcement, public outreach, and casino development policy. This will be

accomplished by developing a comprehensive strategic plan that will guide the goals and policies of the coastal zone management program.

#### *Coordination with National Estuarine Research Reserve System:*

Mississippi began initial development of a coastal preserve program that will include a candidate site for a National Estuarine Research Reserve.

#### *Casino revenues:*

Mississippi developed a 15-year plan for allocating revenue collected from leasing tidelands to dockside casinos. State law directs revenues to the DMR. The revenues will be used for enhancing coastal wetlands, acquiring wetlands, providing public access to the coast, or for research.

### SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued in February 1994, found the Mississippi Coastal Program to be not fully

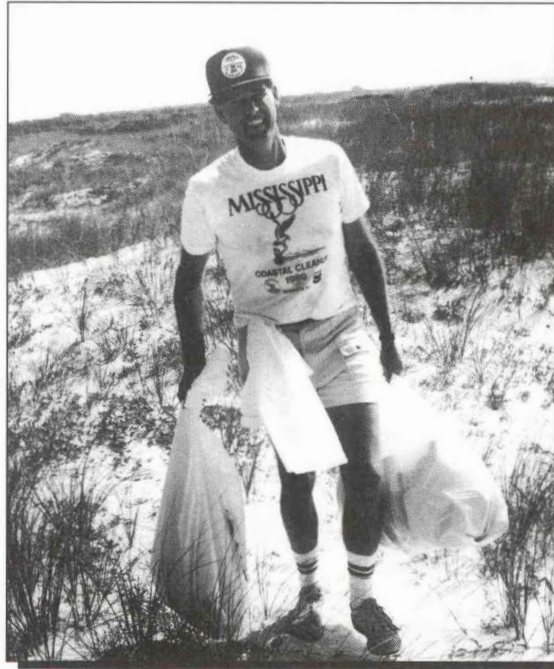
adhering to its approved management program. The review found accomplishments in the state's implementation of its Marine Litter Act, development of guidelines for large scale commercial net-pen aquaculture, its low-cost construction projects, mapping of abandoned piers, pilings and other hazards to navigation, and improvements in permitting.

The evaluation cited some necessary actions for the coastal program to improve: staffing and organization; coordination with other agencies within the coastal program network as well as with federal and other state agencies that have interests in the coastal zone; monitoring and enforcement of program authorities; public outreach and constituency building; and federal consistency review procedures.

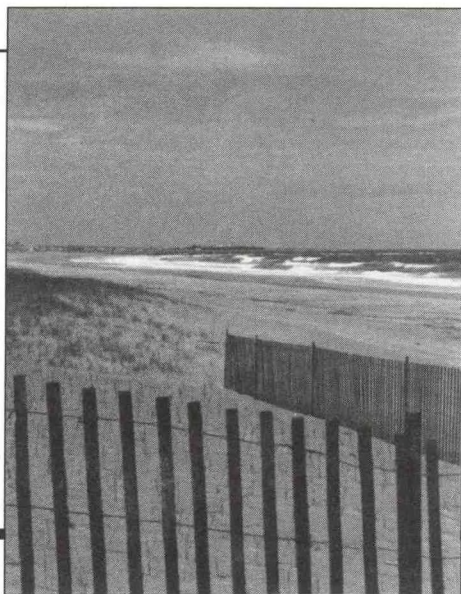
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*Mississippi received  
\$708,000 in 1994 and  
\$766,000 in 1995  
in federal funding.*

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## NEW HAMPSHIRE COASTAL PROGRAM

### Program Approved—

1982: Ocean and harbor segment

1988: Great Bay segment

### Lead Agency

New Hampshire Office of State Planning

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*The coastal program is working to restore water quality so that clam flats can be reopened.*

---

### PROGRAM ACCOMPLISHMENTS

#### *Waterfront Revitalization:*

New Hampshire's coastal program provided funding to catalyze redevelopment of Dover's Cocheco Waterfront. The project, which improved and expanded Henry Law Park along the Cocheco River, is part of the City's overall plan to revitalize its central business district. CZMA funding also enabled the City of Durham to refurbish its historic boat landing and adjacent waterfront park along the Oyster River, and the City of Exeter to construct a waterfront park, boat launch, and boardwalk in its downtown which is located along the Squamscott River.

#### *Hampton-Seabrook Shellfish Beds:*

Reopening clam flats in the Hampton-Seabrook Estuary is a high priority for New Hampshire. The coastal program is supporting several efforts to restore water quality in the estuary, including a study on the potential of boat waste discharges to contaminate the clamflats and another study to evaluate the impact of septic systems

on tidal water quality. If warranted, the information from these studies will be used in establishing a program to ensure that septic systems on shorefront properties are up to code before the property can be sold.

#### *Coastweeks 1995:*

New Hampshire's yearly Coastweeks celebration was a big success in 1995. Roughly 500 individuals, including 100 girl scouts, gathered at 23 sites along New Hampshire's coast to collect several tons of trash and marine debris. Students from the Manchester and Salem High Schools will tabulate the raw data from this year's event. Coastweeks also included a handful of educational seminars, nature walks, an open house at the Sandy Point Center, celebrations such as Duckers' Day and the annual Seafood Festival at Hampton Beach.

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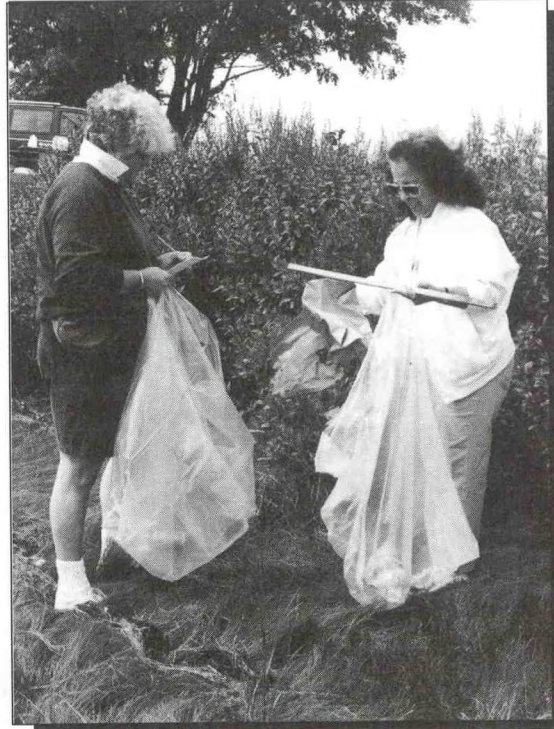
*New Hampshire received  
\$780,000 in 1994 and  
\$871,000 in 1995  
for program operations.*

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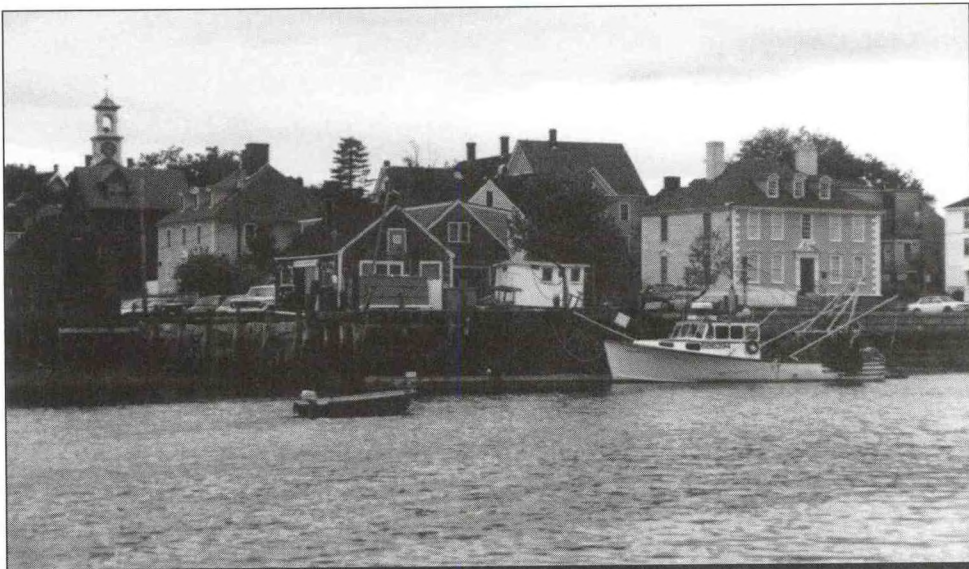
## SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued in May 1994, noted accomplishments in program visibility and public outreach; technical assistance to local communities; coordination with other agencies; support of the Great Bay National Estuarine Research Reserve; and innovative habitat preservation/restoration projects.

The findings recommended: improvement in the leadership role of the CMP; further increased technical assistance and funding to local governments; and increased outreach. The findings also made recommendations in the areas of: program changes; permitting, monitoring and enforcement activities; federal consistency; and grants management.

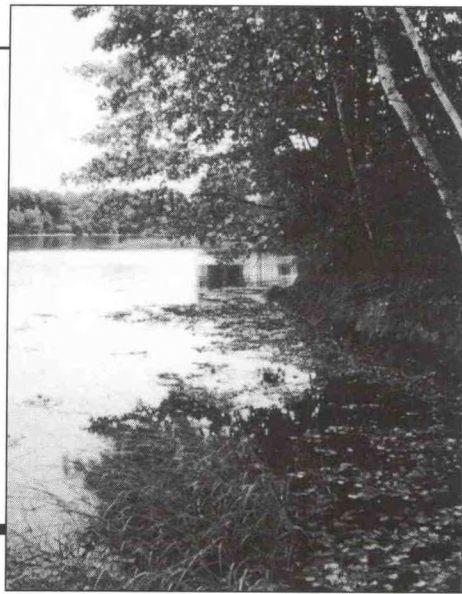


*Coastal Cleanup volunteers record the type of trash collected along the shoreline.*



*Portsmouth Harbor*





# GREAT BAY NATIONAL ESTUARINE RESEARCH RESERVE

**Designated— 1979**

## **Lead Agency**

Fish and Game Department (management)  
Office of State Planning (acquisition and development)

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*The reserve  
built nesting  
sites for  
bald eagles  
wintering at  
Great Bay.*

---

## PROGRAM ACCOMPLISHMENTS

### *Facilities:*

The recently opened Sandy Point Discovery Center has enabled the reserve to dramatically increase the number of on-site programs. Almost 1,200 children and adults attended formal programs during the past summer while public visitation averaged 60 people per day. Over 3,000 feet of shoreline along the bay fronts this 50 acre site. The Center features indoor exhibits and a resource room for teachers. Various trails, including a 1,700 foot boardwalk, draw visitors out to the salt marsh. A friends group has also recently been formed to support the Center.

### *Management Planning:*

The reserve is actively involved with the Great Bay National Wildlife Refuge and the U.S. Fish and Wildlife Service in conserving and managing

habitat for wintering bald eagles. The eagles' primary roosting and perching sites fall within the refuge and reserve.

The newest initiative with the refuge and U.S. Fish and Wildlife Service is intended to conserve waterfowl habitat. Through the North American Wetlands Conservation Act, over \$500,000 has been appropriated for the acquisition of wetlands and buffer areas within the Great Bay estuary.

## RESEARCH AND MONITORING PROGRAMS

The reserve is successfully implementing its year-round water quality monitoring program through the University of New Hampshire's Jackson Lab. The Lab has cataloged all existing water quality data back to 1970 and maintains five permanent baseline monitoring stations.

The reserve is also working with the University of New Hampshire's Sea Grant Program, which sponsors

---

***Great Bay received  
\$345,000 in FY 1994 and  
\$200,000 in FY 1995.***

---

the Great Bay Watch, a citizens-based water quality monitoring program, to coordinate the Watch's activities with Jackson Lab's monitoring program.

One of the reserve's most successful efforts is a mid-winter volunteer waterfowl monitoring program that provides valuable census data on all species found in the bay. The reserve also has released a technical report on wintering waterfowl.

#### EDUCATION AND OUTREACH PROGRAMS

Over the past two years, the reserve continued to expand its educational efforts by providing new programs on the human and natural history of the bay and by leading educational workshops for teachers. The reserve has added the Atlantic Salmon and Black Duck to its Marine Resources of Great Bay series and curriculum, "It's All Connected," for grades 1 to 6 to be released in January 1996. The reserve also has opened a new interpretive trail at Adams Point.

The reserve holds an annual Duckers' Day in September, which celebrates the history of waterfowling on Great Bay and its future through conservation efforts. Over 600 people attended the fifth Duckers' Day in 1995, which promotes understanding between hunt-

ers and the general public, and teaches people about the bay's resources.

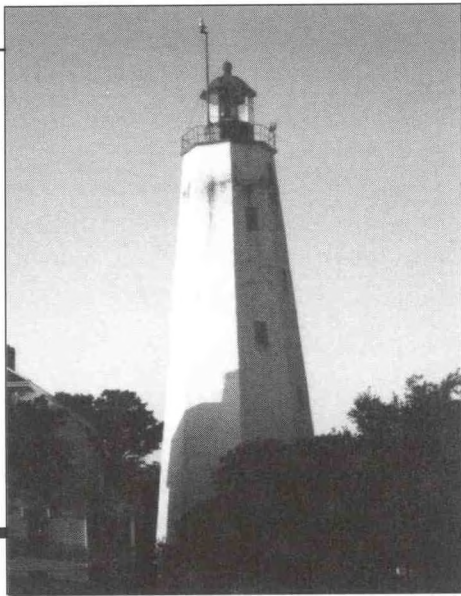
#### SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued in August 1994, noted as accomplishments: complete characterization of the site, acquisition and construction activities, and public education and outreach efforts. The findings made recommendations to improve leadership and organization, land acquisition, research coordination and management with the Great Bay National Wildlife Refuge.



*This 1,700 foot boardwalk enables visitors explore the salt marsh up close.*





## NEW JERSEY COASTAL MANAGEMENT PROGRAM

### **Program Approved—**

1978: Bay and Ocean Shore segment  
1980: Conservation Program

### **Lead Agency**

Department of Environmental Protection

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*New Jersey has developed general permits for certain routine types of coastal development activities.*

---

### PROGRAM ACCOMPLISHMENTS

#### *Award for Waterfront Development:*

The State of New Jersey and Wallace Roberts and Todd (WRT), a planning and design firm, recently received international recognition as leaders in environmentally sensitive waterfront planning and development. New Jersey's Department of Environmental Protection and WRT, as co-entrants, won two awards from the Washington, D.C.-based Waterfront Center: a Top Honor award for the 18-mile Hudson River Waterfront Walkway along the Hudson River across from Manhattan, and an Honor Award for Liberty State Park's Liberty Walk and Seawall, a completed 2-mile segment of the walkway. The state used federal coastal zone management funds for planning and design of the walkway.

#### *Management Planning:*

Since New Jersey adopted the State Development and Redevelopment Plan (SDRP), a statewide master plan for development, in 1994, the coastal program has made considerable progress in incorporating its provisions into the

coastal program rules. The plan, which channels development to conserve important natural resources and minimize the adverse impacts of development, in its original form excluded the coastal area from state planning activities. Changes to the state's Coastal Area Facilities Review Act (CAFRA) removed this exclusion, giving the coastal program and State Planning Commissioner authority to work with coastal jurisdictions to adopt new planning and land use policies that are closely coordinated with the provisions of the SDRP.

After two years of discussion with counties, local governments and citizens, New Jersey's coastal program is proposing changes to the Coastal Rules—to adopt the two land area descriptions and mapping conventions, five planning areas and six types of "centers" identified in the statewide plan for future development. The coastal program's close work with local governments has significantly increased the acceptance of the proposed revisions.

*CAFRA Amendments:*

In July 1993, New Jersey amended the state's Coastal Area Facilities Review Act (CAFRA) to close a major loophole that had allowed about 50 percent of coastal development to take place without review by the state or coastal program. The CAFRA had required a state development permit of facilities with 25 or more housing units and commercial developments with 300 or more parking spaces. Now, any development on a beach or dune or any residential development having three or more dwelling units within the CAFRA boundary must obtain a permit. Because these are such extensive revisions, the state took steps to reduce the burden of new regulations on property owners in the CAFRA area by creating general permits and permits-by-rule that cover routine activities and activities that have little impact on the environment. Less extensive activities, such as routine maintenance and repair and construction of patios, decks and porches, will not need a permit.

*Coastal Hazards:*

In 1994, the New Jersey legislature passed "Blue Acres" legislation. The Blue Acres program provides money for purchasing storm-damaged ocean-front property and environmentally sensitive lands for the purpose of restoring the property to its natural state and using the land as a buffer between the ocean and developed land. The program is voluntary; no one who currently has the right to build or re-

build a structure after a storm will lose these rights, and no one can be forced to sell their property. In 1995, the legislature appropriated \$15 million for the coastal portion of the Blue Acres program.

*Dredging:*

In June 1994, the Governor of New Jersey establish a Dredged Materials Management Team task force in response to concerns about dredged materials contaminated with dioxin, PCB's and heavy metals dredged from the Port of New York and New Jersey being dumped six miles off of Sandy Hook. The task force's mission was to develop short term (0-3 years) management options for disposing of contaminated dredged materials from the New Jersey side of the port. The final report, issued in January 1995, identifies short-term solutions that should be used and technologies that appear promising for the long term. As next steps, the state will implement the report's recommendations, prioritize permitting for the proposed facilities, and identify funding for the projects.

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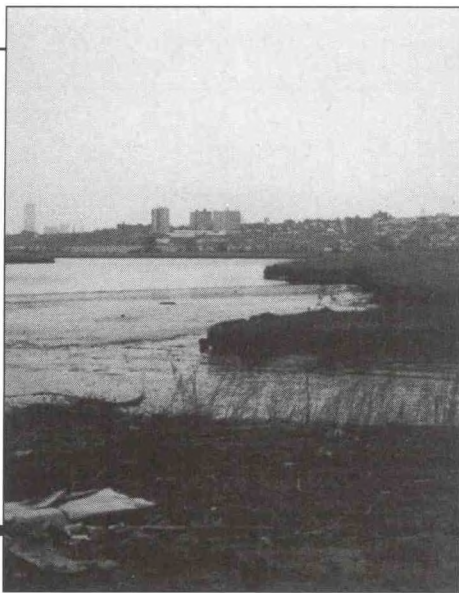
*New Jersey  
received  
\$2,547,000  
in FY 1994 and  
\$2,628,000  
in FY 1995.*

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SUMMARY OF  
EVALUATION FINDINGS

Findings issued in June 1995 cited accomplishments in waterfront development, management planning and dredging. The evaluation made recommendations on reorganization, coordination of the permitting and enforcement programs, federal consistency and completion of grant tasks.





## NEW YORK COASTAL MANAGEMENT PROGRAM

**Program Approved— 1982**

**Lead Agency**  
Department of State

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*The state opened new export fish markets, enabling one fisherman to turn his business into a multi-million dollar operation.*

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### PROGRAM ACCOMPLISHMENTS

#### *Regionalizing the Coastal Program:*

In response to a 1991 report entitled "Now and for the Future: A vision for New York's Coast," New York began developing regional coastal programs to reflect regional differences in demographic, environmental and economic trends, and local priorities for conservation and development. The state completed the regional coastal program for Long Island Sound and is implementing its policies by advancing redevelopment in areas identified for economic growth and further enhancing outstanding natural coastal areas. During 1994 and 1995, the state also began developing regional coastal programs for the South Shore of Long Island, and continued work on revising the New York City Local Waterfront Revitalization Program to reflect the regional coastal policies.

#### *Harbor Management Planning:*

New York state amended its Waterfront Revitalization and Coastal Resources Act, giving local governments explicit authority to manage activities

in harbors and nearshore areas on a comprehensive basis by developing harbor management plans and laws to implement those plans. These plans will allow local governments to address conflicting uses in their harbors between recreational boating and other recreational uses, between recreational and commercial activities, and between all uses and protection of natural and cultural resources. Local governments will also be able to more effectively improve public access, ensure preservation of their working waterfronts and marine industry, and address dredging and dredged material disposal needs on a comprehensive basis. To date, three draft harbor management plans have been completed— for Catskill, Oswego and Marmaroneck— with several more being developed using money from the state Environmental Protection Fund.

#### *Coastal Hazards:*

New York has made considerable progress in addressing coastal hazards. In September 1994, the Coastal Erosion Task Force issued the final re-

port on emergency response and long-term strategy for addressing coastal storms. As a result, the Department of State created a Critical Erosion Response Team to address post-storm, emergency shoreline erosion problems. The Department is also initiating a program to monitor erosion systematically and institute a sand bypassing program at all major inlets and other locations where structures interrupt the movement of sediments along the shoreline. The state is also working to amend the state building code to improve coastal construction standards in high hazard areas, to amend state law to require disclosure on property in coastal hazard areas.

*Support for Maritime Industries:*

Over the past two years, the New York Department of State (NYDOS) demonstrated leadership in ensuring continued economic vitality of its coastal waterfront and maritime industries. The NYDOS developed an export market for the state's underutilized fish species. By tapping into grant programs through the United State Department of Agriculture, the state enabled interested fishing cooperatives to travel overseas, meet with buyers, and establish markets for their fish in Europe and Asia. One fisherman interviewed during a recent program evaluation was able to turn his business into a multi-million dollar operation, which he attributed to the support and guidance he received from the NYDOS.

The coastal program also supported maritime industry by ensuring a change to state law to limit liability for "good Samaritan" ships—vessels that assist other ships in danger. The program also conducted a maritime support services study for New York City that identifies maritime industry areas that should be preserved, and ensured that this information was used in New York City's Comprehensive Waterfront Plan and City zoning.

*Dredging in New York Harbor:*

New York's coastal program has been very proactive in addressing dredging issues in the New York/New Jersey harbor. The state is a key participant in the New York Harbor Dredge Material Management Forum, which was established to address the environmental and economic issues related to dredging in New York harbor.

SUMMARY OF  
EVALUATION FINDINGS

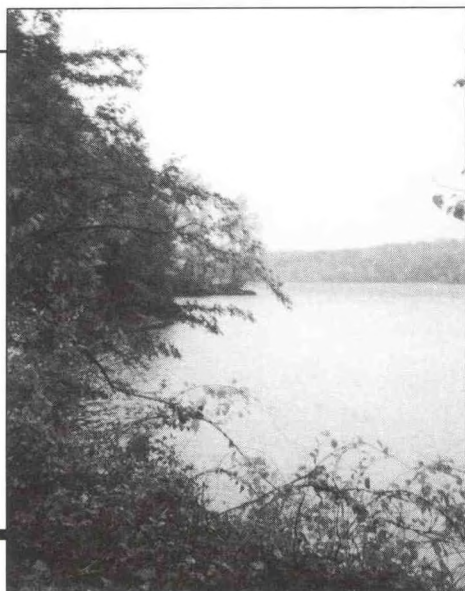
Findings issued in July 1995 noted accomplishments in local waterfront revitalization program implementation, regional planning, designation of significant fish and wildlife habitat, erosion monitoring, addressing harbor issues and supporting maritime industry. The evaluation made recommendations for improving consistency the Long Island Sound Program, enforcement and monitoring and encouraged continued support of local waterfront revitalization programs after approval.

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***New York  
received  
\$2,774,000  
in FY 1994 and  
\$2,799,000  
in FY 1995.***

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# HUDSON RIVER NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1982

**Lead Agency**  
Department of Environmental Conservation

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*The reserve is observing the first pair of bald eagles to nest on the tidal Hudson in over 100 years.*

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## PROGRAM ACCOMPLISHMENTS

### *Management Plans:*

During the biennium, reserve staff drafted two of the four individual site management plans required by the Hudson River Reserve Final Management Plan. These plans, for Piermont Marsh and Stockport Flats, provide more detail about site-specific public access and resource management initiatives than does the general reserve plan.

### *Facilities:*

The reserve began planning a regional exhibit hall in the newly renovated historic Watts DePeyster firehouse in the Village of Tivoli. The exhibits, which will focus on the natural and cultural history of the Tivoli Bays, have strong support from the Village of Tivoli. In fact, the village had made exhibit space available at no charge to the reserve.

### *Historic Preservation:*

Reserve staff led efforts to preserve the historic ice powerhouse at Nutten Hook. Scenic Hudson, a nonprofit or-

ganization, as well as the Town of Stuyvesant, state agencies and volunteers in the community contributed significantly to the project. This team succeeded in fundraising, installing riprap for erosion prevention, clearing invasive vegetation, and exploring ways to stabilize the structure.

### *Public Access:*

The reserve completed access improvements at the Tivoli Bays reserve component. These low-cost construction projects included:

- a 150-foot wheelchair accessible walkway and a barrier-free viewing platform providing spectacular views of Tivoli North Bay and the Catskill Mountains;
- a dock extension at its Stony Creek canoe launch;
- a network of foot trails throughout the uplands above the bays; and
- informational signs and kiosks.

## RESEARCH AND MONITORING

The reserve began a monitoring program at Stockport Flats to observe the first pair of bald eagles to nest on

the tidal Hudson in more than 100 years. The reserve also initiated a restoration project to return diamond-back terrapins as breeding species at Piermont Marsh. The reserve staff continued water quality monitoring studies, particularly to track nonpoint source pollution, and expanded research to include mapping submerged aquatic vegetation which will help identify causes of future fin-fish trends.

The reserve continued developing a geographic information system (GIS) of the 11.1 square mile Sparkill Creek watershed, which drains into Piermont Marsh. The GIS will identify sampling sites to test the effects of different land uses on water quality. When the project is complete, the reserve will conduct a workshop with local officials and town planners to demonstrate how the GIS can help them develop and improve the water quality of the Sparkill Creek. GIS databases were completed for two tributary streams feeding into the Tivoli Bays.

#### EDUCATION AND OUTREACH

The reserve worked with New York Sea Grant and Cornell Cooperative Extension Service to host a series of workshops for local government officials and agency representatives on how to identify and prioritize water quality and watershed management issues.

Hudson River and Old Woman Creek (Ohio) NERRs developed case studies using innovative educational applications of remote sensing, with help from the Cornell Laboratory for Environmental Applications of Remote Sensing. The case studies linked land use and water quality.

The reserve conducted dozens of estuarine ecology and tidal wetland programs for the general public, elementary, secondary and high school and college students at the four reserve sites. Hudson River staff also presented demonstrations and activities, career days, seminars and lectures illustrating estuarine processes affecting the Hudson River. The reserve also began a new series of wheelchair accessible field programs at the reserve's new barrier-free viewing platform at Tivoli North Bay.

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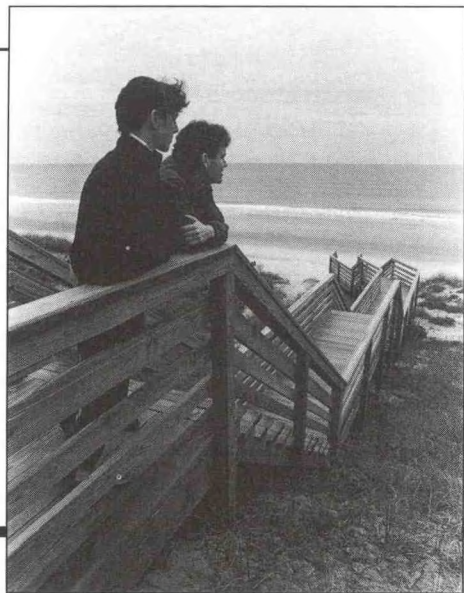
***The Hudson River NERR  
received \$210,000 in FY 1994  
and \$194,000 in FY 1995.***

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#### SUMMARY OF EVALUATION FINDINGS

No evaluation was conducted during the biennium. An evaluation site visit was conducted in November, 1995; findings are pending.





## NORTH CAROLINA COASTAL MANAGEMENT PROGRAM

**Program Approved— 1978**

### **Lead Agency**

Department of Environmental Health and  
Natural Resources (DEHNR)

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***North Carolina  
affirmed its 10-  
year policy  
against erosion  
control  
structures.***

---

### PROGRAM ACCOMPLISHMENTS

#### *Beach and Dune Protection:*

North Carolina's Coastal Resource Commission affirmed the state's 10-year policy against using erosion control structures such as seawalls, revetments, and groins by strengthening its rules on the use of sandbags along the oceanfront to protect threatened structures. The Commission ruled that the use of sandbags be limited to two or five years, depending on the size of the structure and whether the structure is within a community that is pursuing beach renourishment. Permits to use sandbags will only be issued once per property, even if the property changes ownership.

#### *Technical Assistance to Local Governments:*

Despite threats in the state's legislature to appeal the Coastal Area Management Act, legislators approved a budget increase for the Division of Coastal Management—the first in ten years. Much of the funding will go directly to local governments as technical assistance for land use planning. The Division also received dedicated

funding for its waterfront access program as part of a Parks and Recreation Trust Fund.

#### *Wetlands Identification:*

The coastal program is expanding its pilot wetlands identification program to seven coastal counties in the 20-county coastal zone. The project is designed to collect information on the natural values of wetlands in a particular geographic area. Using a Geographical Information System, the Division can provide assistance to local governments, developers, and land-



*North Carolina is working to conserve dunes as the first line of defense against erosion.*

owners by showing the location of wetlands and the ranking of wetlands based on their ecological significance. The GIS tool will also allow the state to identify which wetland areas should be conserved and which could serve as potential sites for future development.

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***North Carolina  
received \$1,804,000 in FY 1994  
and \$2,231,000 in FY 1995 to  
operate its coastal program.***

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*Maritime Forests:*

The Division of Coastal Management acquired a tract of maritime forest at Bald Head Island in Brunswick County as part of its continuing progress in conserving maritime forest. The state now owns 173 acres of maritime forest and associated wetlands on the island. The site is the northernmost home for some flora and fauna and has some features unique to North Carolina forests. The state will soon close on another site in Kitty Hawk Woods forming an 800-acre Kitty Hawk Woods Coastal Reserve. These acquisitions will add to the state's 3,500 acres of maritime forest already set aside.

SUMMARY OF  
EVALUATION FINDINGS

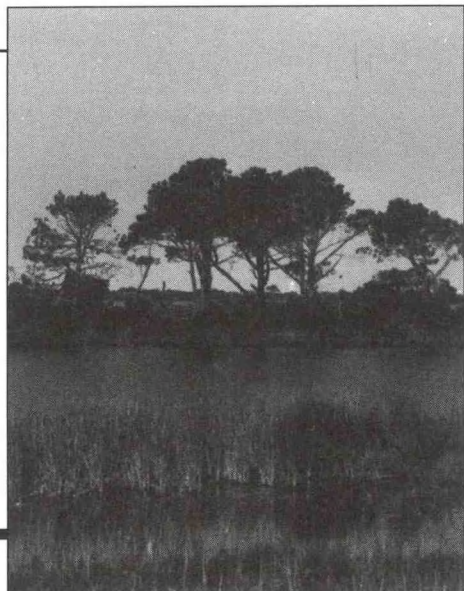
Final evaluation findings, issued in February 1995, noted accomplishments in the areas of public partici-

pation, maritime forest/coastal preserve program development, public access, marine pumpout initiative, computerized geographic information system initiative, "Year of the Coast" and other cooperative efforts, and ocean resources planning. Findings and recommendations were made in the areas of staffing, land use planning, permitting, monitoring, and enforcement activities, program change updates, grants management, and update of public access guide.



*For kids, getting their hands dirty can be the best way to learn.*





# NORTH CAROLINA NATIONAL ESTUARINE RESEARCH RESERVE

## **Designated—**

1985: Currituck Banks, Rachel Carson, and Zeke's Island  
1991: Masonboro Island

## **Lead Agency**

North Carolina Division of Coastal Management, DEHNR

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*In 1994 and 1995,  
the reserve  
trained 320  
teachers on how  
to educate their  
students about  
estuaries.*

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## PROGRAM ACCOMPLISHMENTS

### *Staffing:*

In 1995, the North Carolina state legislature approved the creation of a new state-funded position to staff the reserve. As a result, the Currituck Banks component will have a site manager to oversee stewardship, education and monitoring in this northern portion of the reserve. With this addition, each of the four components of the North Carolina reserve will be adequately staffed. Seasonal interns and part-time employees also assist with educational and monitoring programs at the reserve.

### *Land acquisition:*

The North Carolina reserve successfully purchased another 26.5 acres of Masonboro Island, bringing the state's total holdings to over 90% of the island. Approximately 45 acres remain to be acquired. A local non-profit organization, the Society for Masonboro Island, has helped the state in contacting and negotiating with local landowners.

### *NERRS Workshop:*

The North Carolina reserve hosted the annual NERRS Workshop in Wilmington during October 15-21, 1994. Over 100 participants attended meetings concerning national reserve issues such as administration, research, education and stewardship. Reserve staff also hosted visits to three of the reserve's four components and associated facilities.

### *Wildlife Management:*

North Carolina's Department of Environment, Health and Natural Resources funded a pilot project for managing the feral horses at Rachel Carson over the long-term. The reserve will work with state veterinarians to initiate birth control, by using dart-injected hormones. This effort will keep the population of feral horses to a safe level and protect the site from overgrazing.

## EDUCATION AND OUTREACH

Over 10,000 people participated in field trips, workshops and other activities.

ties at the reserve during fiscal years 1994 and 1995. Requests for programs continued to increase, so the reserve hired a year-round educational assistant. In all, the reserve hosted 32 workshops to train 320 teachers on how to use the reserve's two curriculum guides—one for elementary and one for middle school.

In 1994 and 1995, the reserve put a great deal of effort into planning and producing educational materials. Reserve staff updated and reprinted the elementary ecology curriculum (*Project Estuary*), designed and printed a poster for the reserve, and reprinted five elementary level posters. The reserve also completed a draft for a student activity booklet and script for an estuarine video, with production scheduled for 1996.

#### RESEARCH AND MONITORING

The reserve continued monitoring at Masonboro and Zeke's Islands, and began monitoring at Rachel Carson. A total of six water quality meters have been placed within these three areas to sample dissolved oxygen, water temperature, depth and salinity at 30-minute intervals. Data from four of these are being used for the system-wide non-point source monitoring effort throughout the reserves. Weather stations were also set up at the reserve's research and education offices.

Researchers from the University of North Carolina at Wilmington finished the second and third years of a study on how visitors impact Masonboro Island. The multi-year, computer-based study is being performed to determine what, if any, impacts camping and other traditional uses are having on the island's ecosystems.

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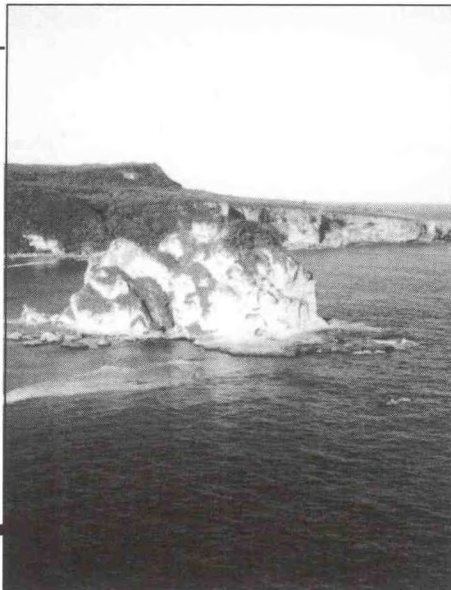
***The North Carolina NERR  
received \$660,000 in FY 1994  
and \$130,000 in FY 1995  
to operate its programs.***

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#### SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued in November, 1993, noted accomplishments in the areas of staffing, land acquisition, designation of the Masonboro Island component, revision of the reserve's management plan, facilities improvements, education programs, research and monitoring programs, and public support for the program. Findings and recommendations were made in the areas of staffing, development of volunteer program, management of feral horses, grants management, education and interpretation programs, completion of the reserve's site profile, increased support for the Currituck Banks component, and continuation of acquisition for Masonboro Island.





# NORTHERN MARIANA ISLANDS COASTAL RESOURCES MANAGEMENT PROGRAM

**Program Approved— 1980**

**Lead Agency**  
Coastal Resources Management Office

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*In the Northern Mariana Islands, sustainable tourism will help reduce impacts to coral reefs.*

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## PROGRAM ACCOMPLISHMENTS

### *Coral Reefs and Sustainable Tourism:*

The Commonwealth's coastal program brought together coastal managers, scientists, private sector representatives from hotel, travel and recreational industries, as well as other Federal agencies, including the Coast Guard, from around the Pacific Basin in a conference to discuss sustainable tourism. The conference also discussed the coastal resources on which tourism is based, developments under the international and U.S. domestic coral reef initiatives, as well as user impacts within the Saipan Lagoon and measures being undertaken to reduce the impacts on the coral reef system from dredging the Port of Saipan.

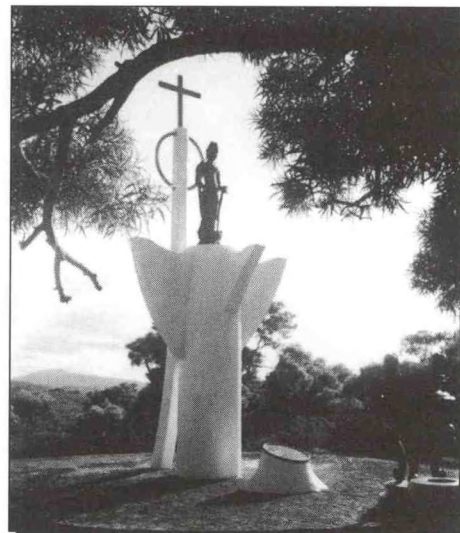
### *Magpo Wetlands:*

Under a grant project funded by the U.S. Environmental Protection Agency, and in cooperation with the Commonwealth's water quality agency, the coastal program completed the Tinian Comprehensive Magpo Watershed/Wetland Protection Plan. The

plan develops ways to keep the groundwater and wetlands of the Magpo watershed free of possible contamination from nearby development and farming in adjacent areas.

### *Water Quality Monitoring:*

The coastal program hired two marine biologists to develop and implement a marine monitoring program for the Commonwealth's marine waters, under a grant from the U.S. Environmental Protection Agency. The monitoring program fo-



*An historic park on Saipan.*

cused on documenting impacts to marine life from nonpoint sources of pollution and evaluating the effectiveness of best management practices that have been implemented. The monitoring was done in cooperation with the Commonwealth's water quality agency.

*Interagency Watershed Planning Group:*

What started as an informal initiative to coordinate the Commonwealth agencies so that existing funding sources would most effectively address pollution concerns, evolved into an ongoing working group which is addressing coastal land and water issues. The planning effort has encouraged brainstorming on innovative solutions to both point source and nonpoint source pollution and resolving potential conflicts between government agency representatives, the development community and private citizens over resource use issues. The coastal management office plans and schedules meetings of the group, acts as a liaison between participants, produces meeting reports, and conducts outreach to the community.

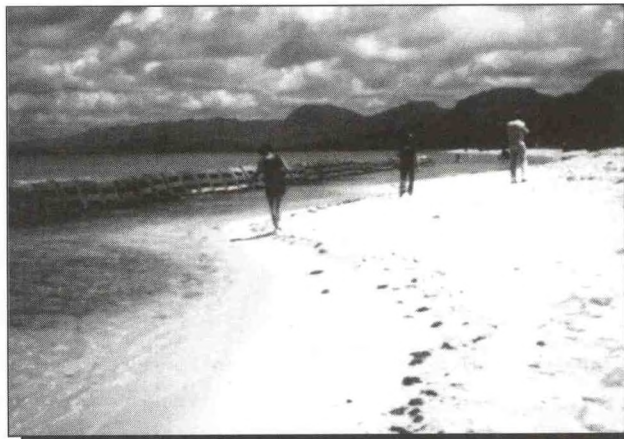
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***The Commonwealth received  
\$646,000 in FY 1994 and  
\$811,000 in FY 1995 to operate  
its coastal program.***

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**SUMMARY OF  
EVALUATION FINDINGS**

Final evaluation findings, issued on October 5, 1995, cited accomplishments in program direction, fiscal management, wetlands planning, watershed management, outreach and monitoring and enforcement. The findings also recommended actions to improve programmatic coordination.



*The Commonwealth is promoting sustainable tourism in the islands by conserving the health of its coral reefs.*





## OLD WOMAN CREEK NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1980

**Lead Agency**

Ohio Department of Natural Resources,  
Division of Natural Areas and Preserves

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*The reserve is training educators and managers from across the country to use remote sensing techniques.*

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### PROGRAM ACCOMPLISHMENTS

Over the past two years, the reserve staff have worked toward enhancing their watershed/ecosystem-wide approach to administering the reserve's resources management, estuarine research, monitoring, education and public outreach programs.

The Old Woman Creek reserve received the "1994 NOAA Award for Excellence in Estuarine Research Reserve Management." The reserve was recognized for its leadership in developing innovative approaches to management, research, and education and outreach partnership programs that further the goals of cooperative coastal resource management.

The reserve co-sponsored and hosted a wetlands workshop with the U.S. Environmental Protection Agency, focusing on tools that local governments can use to manage and protect coastal and Great Lakes waters. Seventy people from local and state agencies, environmental interest groups and

members of the general public participated.

### RESEARCH AND MONITORING

During the last biennium, 11 research and 3 monitoring projects have been undertaken at the reserve. Among the topics investigated were: the movement of pesticides in estuarine wetlands; community dynamics of estuarine aquatic plants; the feeding habits of two fish species in the estuary; and the distribution of micro-invertebrates in estuarine waters.

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***Old Woman Creek NERR  
received \$335,000 in FY 1994  
and \$233,000 in FY 1995.***

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Two data loggers, made available by the NERR system-wide National Monitoring Program, were installed in the Old Woman Creek estuary in 1995. The water quality information gathered from this computerized equipment is being used to identify and track short-term variability and

long-term changes in the integrity and biodiversity of the Old Woman Creek estuarine ecosystem and coastal watershed.

## EDUCATION AND OUTREACH

In early 1995, Old Woman Creek and Hudson River reserves, in conjunction with Cornell University, completed a NERR system-wide education grant. This inter-agency cooperative project provided all of the NERRS educators and several state coastal program managers with site-specific training on how to apply remote sensing techniques to public programs.

Reserve staff commenced a watershed outreach program in 1994, which continued through 1995, to develop a stewardship program for the residents and agricultural producers in the Old Woman Creek watershed. This project was initially funded by a NERRS education grant. Thus far, the reserve held two "Meet the Researchers" open house events, distributed a "Great Lakes Gardening" packet and two newsletters, and produced "Up The Creek: A Citizen's Guide to Protecting the Old Woman Creek Watershed."

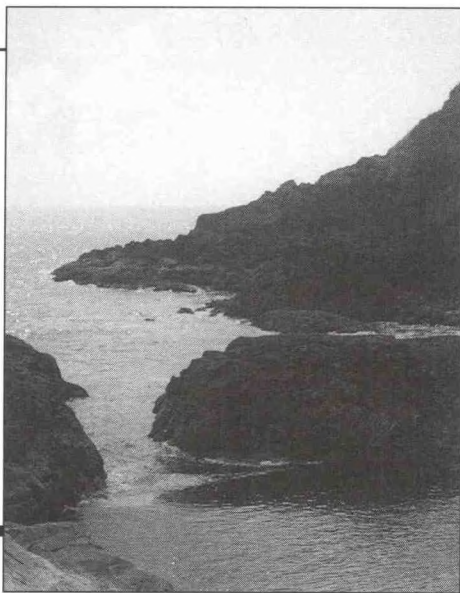
Old Woman Creek received a grant from the NOAA Center for Coastal Ecosystem Health in late

1995. On behalf of five Great Lakes states, the reserve is coordinating four regional demonstration projects, which will collectively facilitate the exchange of emerging information and technology on non-point source pollution management, wetland mitigation and habitat restoration in the region. Old Woman Creek's portion of this project uses "precision farming" techniques to keep surface and ground water from being polluted by excess application of agricultural chemicals and loss of soil through erosion. The reserve's partners include state and local agencies, fertilizer and seed companies, farm implement dealers, a local high school and watershed farmers.

## SUMMARY OF EVALUATION FINDINGS

Final evaluation findings issued in September 1995 found accomplishments in administration and support for the reserve, completion of an oil spill response plan for the watershed, research activities, education activities, and development of partnerships with diverse regional organizations for better understanding of the reserve and overall coastal issues. Recommendations addressed the need for additional staff, revision of the Reserve Management Plan, facilities expansion, data analysis and completion of a site profile.





## OREGON COASTAL MANAGEMENT PROGRAM

*Program Approved—1977*

*Lead Agency*

Department of Land Conservation and Development

*Program Funding—* Oregon received \$1,142,000 of federal funding in FY 1994 and \$1,286,000 in FY 1995.

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***Oregon is submitting the first plan to manage ocean resources as part of its coastal program.***

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### PROGRAM ACCOMPLISHMENTS

*Territorial Sea Plan:*

Marking a first of its kind, Oregon's Department of Land Conservation and Development submitted a comprehensive plan to manage the state's ocean resources for incorporation into the state's coastal program. The Territorial Sea Plan establishes procedures and standards for making resource use decisions in state waters. It also establishes a management strategy for state and federal agencies and local governments to protect rocky shores along Oregon's coast.

The state has embarked on several projects to put this Plan into action and improve resource protection. One is a blueprint based on the Plan's recommendations to promote public awareness of rocky-shores and guide on-site interpretive and education programs among local, state, and federal agencies. As part of this, the state is organizing, training, and helping equip local volunteer programs to work on-site with the public and school groups to increase understanding of and reduce

damage to rocky-shore areas. The state is also studying nearshore rocky reef areas as a basis for programs to reduce potential conflicts among the sea-urchin fishery, kelp harvesters, newly-developing commercial fisheries, recreational uses, and the health of living marine resources. Studies use a variety of techniques including SONAR remote-sensing to map the ocean floor in reef areas, SCUBA divers to document different reef habitats, and aerial photo surveys and radio-satellite-tag studies of reef usage by threatened Steller sea lions.

*Ocean Governance:*

Oregon's coastal program convened a Pacific Coast Ocean Governance Conference (co-sponsored by NOAA) to discuss the need for a regional approach to ocean management on the Pacific Coast. Marine resource and policy experts from the Pacific Coast states, federal agencies, the Province of British Columbia, Pacific Coast Indian tribes, and various interest groups and organizations attended. While acknowledging that economic and environmental problems related

to ocean resources on the Pacific coast are not at the same level of crisis and collapse as they are in the North Atlantic, participants agreed that Pacific coast marine resources are at risk from such factors as over-harvest, pollution, and poor understanding of ecosystems. A regional management initiative based on ecosystem characteristics could be crucial in ensuring sustainable use of marine resources and avoiding crisis-driven, single-species management. The state is now preparing a conference report and issue papers on Pacific coast regional ocean management to support possible steps toward establishing a regional ocean management body.

#### *Coastal Hazards:*

After a two-year review of the effectiveness of Oregon's natural hazards policy, in 1994 a task group recommended changes, some of which are already being implemented. Among the changes, Oregon has improved criteria used for preparing and reviewing technical reports on the impacts of coastal erosion. This change will benefit local governments that have such reports prepared for proposed developments within their jurisdiction. The state has improved its identification and mapping of hazardous areas, has tested computer models to predict shoreline change, developed a database of shore protection structures, and completely revised the permit application form. The state is

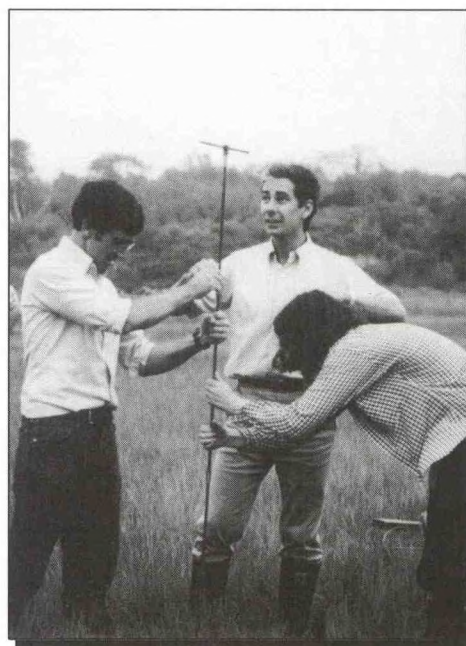
also developing a coastal development handbook for beaches, dunes, and bluffs of the Oregon coast.

Oregon's coastal program hosted a regional conference entitled *Coastal Earthquakes and Tsunamis: Reducing the Risks* to share scientific information on earthquake hazards, particularly along the cascadia subduction zone, and to exchange results of efforts in coastal states and provinces to reduce coastal hazards. The conference provided a forum to discuss long-term options for reducing the risks to coastal communities from a major earthquake and tsunamis through land use and infrastructure development decisions.

To increase readiness for natural hazards, the coastal program also created signs and instructions in the event of earthquakes or tsunamis and published an inventory of critical facilities along Oregon's coast that are vulnerable to earthquakes or tsunamis.

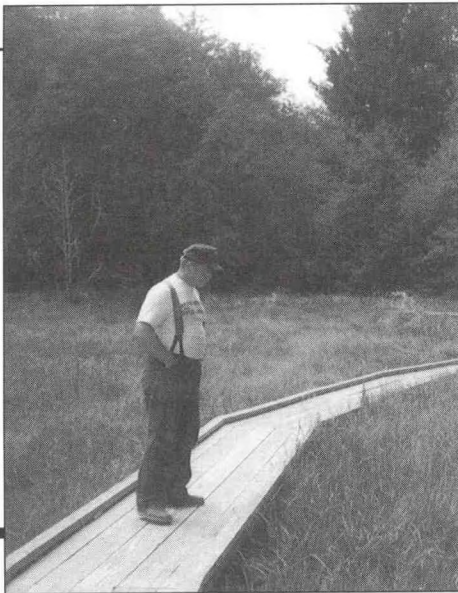
#### SUMMARY OF EVALUATION FINDINGS

No evaluation was conducted during the period. The next evaluation is scheduled for June 1996.



*Researchers take core samples at South Slough.*





# SOUTH SLOUGH

## NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1974

**Lead Agency**

Oregon Division of State Lands

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*In partnership  
with NOAA, the  
reserve is using  
geo-spatial  
referencing to  
track changes  
in tidelands.*

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### PROGRAM ACCOMPLISHMENTS

*Habitat Restoration:*

During the biennium, South Slough reserve won two grants from state organizations for restoration projects. These projects restored degraded portions of the Cox Canyon watershed by removing a dike and road at the mouth of the canyon and replanting 15 acres of diverse coastal forest (with seven different species of trees) within the watershed that were clear-cut in the 1970s. The goal of the project is to demonstrate that regional biodiversity is important for sustaining the productivity of watershed habitats.

The reserve also won the 1995 Frank Roberts Award given by the state for the most outstanding youth conservation corps project. The reserve hosted and directed a 6-person crew sponsored by the Oregon Youth Conservation Corps. The crew participated in four upland restoration support projects.

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***The South Slough NERR  
received \$260,000 in FY 1994  
and \$110,000 in FY 1995.***

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### RESEARCH AND MONITORING

Reserve research may affect oyster bed leases in South Slough. The reserve tested the impact of oyster cultivation on eelgrass in the estuary and discovered that the two cannot harmoniously co-exist. Cultivating oysters is important to the state's commercial fishing industry but kills the eelgrass which filters pollution and keeps the estuary healthy. The reserve is now looking at the effects on eelgrass of cultivating oysters on the ground. The state will examine the study's findings, when complete, to decide what action, if any, to pursue.

South Slough staff used the NOAA research vessel MCARTHUR to conduct biological and water column studies within the Coos Bay and South Slough estuaries and to take samples that look at the transport of Dungeness Crab larvae into Coos Bay from nearshore and offshore waters. This study will have important implications for the commercial Crab fishery in Coos Bay and recreational fishery in the nearshore waters off Coos Bay.

The reserve also put its partnership with NOAA to work by using the National Geodetic Survey to take aerial photos of the watershed. The final digital products benefit both—it will provide the Geodetic Survey with an accurate geo-spatial reference and will help South Slough interpret tideland features and analyze historical trends in tideland habitats. These wetlands are valuable for coastal development and tied into the state's mitigation banking system. The geo-spatial reference system will serve as the foundation for planning future development and conservation practices in coastal wetlands in the Coos Bay watershed.

As part of the national monitoring program within the research reserve system, South Slough set up two monitoring stations. One station, located next to a large expanse of natural salt marsh, will be used as a control site. The other, located near the marsh restoration site where the dike is being removed, will be used to measure the effect of management techniques on water quality.

#### EDUCATION AND OUTREACH

In addition to its educational curriculum, South Slough NERR participated in several programs that offer high school students pre-professional experience in research, education and stewardship through intense interaction with reserve staff. These pro-

grams include Apprenticeships in Science and Engineering (ASE), the Oregon Youth Conservation Corps, and the Summer Youth Employment Training Program.

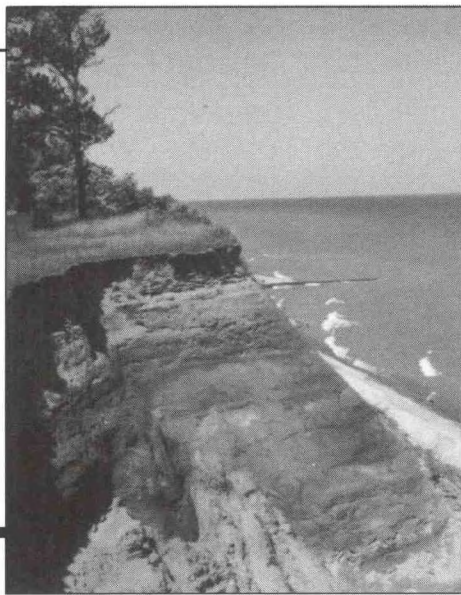
The reserve is also involved in projects outside its boundaries. The reserve has participated in Estuary Net, which links a number of NERRS programs through telecommunications. The reserve also works with Oregon's Hatfield Marine Science Center, students and teachers in 10 estuaries nationwide.

#### SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued in November 1995, noted as accomplishments: completion of a management plan that has become a model plan for the national system; hiring of a Land Steward; innovative contributions to improving management within the South Slough Watershed; integration of research and education programs; expansion of research and monitoring capabilities; facilitation of partnerships in the southern coastal region of Oregon; and pursuit of additional funding sources.

The findings made recommendations concerning staff support, development of a volunteer program, acquisition of permanent lab space, prioritization of facility needs, and completion of the site profile.





# PENNSYLVANIA COASTAL ZONE MANAGEMENT PROGRAM

**Program Approved— 1980**

**Lead Agency**  
Department of Environmental Resources

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***Pennsylvania is researching new ways to reduce erosion on bluff faces through low-impact construction.***

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## PROGRAM ACCOMPLISHMENTS

### *Boundary Change:*

Pennsylvania's coastal program is planning to expand the boundary of the state's coastal zone along the Delaware River. The state's goal in doing this is to incorporate more coastal wetlands into the coastal zone. Currently, any party wishing to fill wetlands is required to offset the impact by restoring or creating wetlands within the coastal zone. However, finding suitable sites to do this has become difficult in the narrow, urbanized coastal zone. With the expansion, more areas will be available for wetland restoration, creation or acquisition, which will help facilitate economic development in the coastal zone. The expansion would incorporate about 45 square miles more into Pennsylvania's coastal zone.

### *Reducing Coastal Hazards:*

Under the CZMA's Enhancement Program, Pennsylvania is developing new ways to protect bluff faces from erosion caused by improperly placed

structures and is researching construction designs that will be less damaging to the bluff face. For example, the state completed a study which describes existing stairways on the bluffs and recommends new stairway designs with low impact.

### *Bluff Erosion:*

After two years of developing new techniques for measuring rates of bluff recession, Pennsylvania produced a document as guidance for any state or organization interested in calculating or monitoring bluff recession. Pennsylvania's new methods incorporate the use of both Geographic Information Systems and Global Positioning System technology. These techniques will complement the coastal program's free Site Analysis and Recommendation service, which helps coastal land owners to evaluate erosion problems, offers recommendations and educates coastal land owners on the processes of shoreline erosion and bluff recession. This service, offered since 1981, has resulted in strong local support for the state coastal program.

*Public Access:*

Pennsylvania's coastal program is taking an active role in facilitating public access along the Erie and Delaware River coasts. To that end, the coastal program set up a task force to clearly articulate a policy on the responsibility to provide public access as well as on ways to leverage, manage and direct local, state, federal, and private resources to create public access. Working with the Delaware Valley Regional Planning Commission, the coastal program is laying the groundwork for a comprehensive Public Access Management Plan.

*Local Projects.*

In the last two years Pennsylvania has funded more than 32 local projects in the Lake Erie coastal zone and the Delaware River coastal zone. The coastal program funded the Philadelphia Regional Port Authority to perform a market-based planning study for reuse of Piers 38 and 40 in Philadelphia. Also, the City of Erie has completed construction of a bayfront bikeway, which will increase low-impact public access for pedestrians and bicyclists to Lake Erie's shoreline.

*Education:*

Pennsylvania funded the WHYY Nonpoint Source Pollution Radio Program which is a continuation of the Earth Talk series for middle school students, developing class-

room materials and a live radio broadcast on the subject of coastal nonpoint source pollution. This program has been very successful in raising public awareness of pollution problems among both students and radio listeners across the Philadelphia region.

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***Pennsylvania received  
\$931,000 in FY 1994 and  
\$1,044,000 in FY 1995  
for program administration .***

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## SUMMARY OF EVALUATION FINDINGS

Final evaluation findings for Pennsylvania's coastal management program, issued in May 1995, found the program to be adhering. Findings noted significant accomplishments, including rebuilding program staff during a period of fiscal restraint, technical assistance to local governments, the site analysis and review service to landowners in Lake Erie bluff recession hazard areas, and the coastal program's leadership role in EPA's Delaware Estuary Program.

Recommendations included better coordination of Chapter 105 (wetlands) and Chapter 102 (earth disturbance) permitting and enforcement, revision of Bluff Recession and Setback Act regulations to manage development on the bluff face, and better education and training for local Code Enforcement Officers.





# Puerto Rico Coastal Management Program

**Program Approved— 1978**

**Lead Agency**

Department of Natural and Environmental Resources

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***Puerto Rico created a new "Fast-Track" permit center to speed up review and approval of projects.***

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## PROGRAM ACCOMPLISHMENTS

### *Reorganization:*

At the start of 1994, the Governor reorganized the Commonwealth's Executive Branch. In the reorganization, the Department of Natural Resources (DNR) became the Department of Natural and Environmental Resources (DNER). The coastal program was also institutionalized as the Coastal Management Division within the new Natural Resources Administration— no longer in the Office of the Secretary for DNR. The former program manager, now Administrator of the Natural Resources Administration, has a special aid for coastal zone matters to maintain a close connection with coastal policy.

### *Special Planning Areas:*

The management plans for three special planning areas were completed and approved by the Planning Board in 1994 and 1995. A fourth plan is now being considered by the Planning Board. The plans provide for broad policies for development and will be carried out through land use permitting

decisions. The Commonwealth is currently revising its procedures for developing the plans to ensure that the plans are developed more efficiently and with more consensus opinion of the relevant state and local agencies.

### *Public Access:*

Puerto Rico initiated a comprehensive plan for providing public access that will combine the efforts of other agency programs in the coastal zone. The plan is based on the new State Comprehensive Outdoor Recreation Plan, which provides for: coordination with the coastal zone management program, expansion of facilities to support water-related recreation, and development of a system of trails.

### *Permit Streamlining:*

The Planning Board created a new "Fast-Track Center" to expedite review and approval of projects. At the Center, there is a representative, with decision making authority, from each agency that is involved with reviewing a particular project. This allows for a quicker complete response to a

proposed project. The Center also uses Geographic Information System technology to assess cumulative and secondary impacts of development, which will help facilitate the review process and improve agency decisions.

*Maritime Zone Regulations:*

In order to eliminate the construction of non-conforming uses in the maritime zone, the Department of Natural and Environmental Resource (DNER) and the Regulations and Permits Administration (RPA) signed an Interagency Agreement in 1993 to establish joint surveillance and enforcement of the provisions of the Maritime Zone (MTZ) regulations regarding works, structures, uses and actions in the maritime zone and adjacent coastal areas. In areas susceptible to landslides and floods in the coastal zone, the Agreement seeks to minimize the impacts of development on public safety, the environment, and natural resources. Aerial surveys of the maritime zone are now being conducted periodically pursuant to the interagency agreement.

*Nonpoint Source—Sediment and erosion control:*

The DNER signed a Memorandum of Agreement with the Environmental Quality Board that allows rangers from the DNER to ensure that erosion and sediment control plans are in place at construction sites, quarries and sand extraction sites.

SUMMARY OF  
EVALUATION FINDINGS

Final findings for the evaluation of Puerto Rico's coastal management plan were issued in August 1994. The findings cited accomplishments in: implementing agreements governing the Sedimentation and Control Program and activities in the Maritime Zone; adoption of maritime zone regulations; adoption of management plans for two special planning areas; and designation of two additional Natural Reserves.

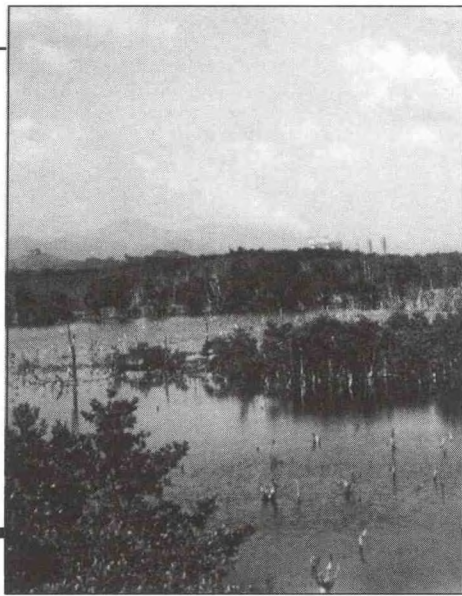
The findings also listed some necessary actions for the program, including enforcing sand extraction regulations, particularly to maintain protective dunes, implementing rules for the Sediment and Erosion Control program, surveying the nonconforming uses in the maritime zone and in Culebra, improving the permit process, and completing management plans for each Special Planning Area. The recommendations also suggest improvements in monitoring and enforcement, staffing, and issues of program coordination.

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***Puerto Rico received  
\$1,068,000 in federal funding  
in FY 1994 and  
\$1,329,000 in FY 1995.***

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## JOBOS BAY NATIONAL ESTUARINE RESEARCH RESERVE

**Designated**— 1987

**Lead Agency**

Department of Natural and Environmental Resources

**Funding**

Puerto Rico received \$360,000 in FY 1994 and \$156,000 in FY 1995 to operate the reserve.

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*The reserve is monitoring pesticides to measure trends in nonpoint source pollution from agriculture.*

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### PROGRAM ACCOMPLISHMENTS

*Management Support:*

Puerto Rico's Department of Natural and Environmental Resources recently signed a Memorandum of Understanding that affirms the long-term commitment on the part of the Commonwealth and the federal government to manage the site as a National Estuarine Research Reserve.

*Facilities:*

In 1994, the reserve completed its visitor's center and research facilities. Staff moved in, and facilities were opened to the public when the exhibits and library were set up in early 1995.

### RESEARCH AND MONITORING

Jobos Bay Reserve has begun water quality monitoring as part of the national monitoring effort. The reserve has tested the data loggers, which electronically capture water quality data, and will deploy the instruments into reserve waters once they have been upgraded. The reserve is specifically monitoring pesticides and herbicides to measure trends in nonpoint source (runoff) pol-

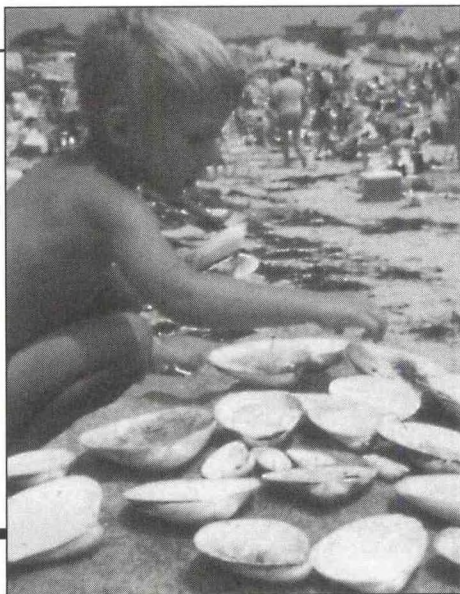
lution from agriculture. Land use maps were prepared using GIS and Remote Sensing for management purposes.

### EDUCATION AND OUTREACH

The reserve's education programs focused on teacher training workshops, conferences and guided field trips for students and visitors in fiscal years 1994 and 1995. These programs were a cooperative effort between reserve staff and the University of Puerto Rico Sea Grant College Program Humacao.

### SUMMARY OF EVALUATION FINDINGS

Final findings issued in September 1995 found accomplishments in staffing, teacher training, visitor center construction, and development of a monitoring program. Recommendations were made for: staffing and administration; the role of the reserve advisory committee; enforcement and boundary delineation; facilities enhancement; development of education and interpretation, research and monitoring and volunteer programs; completion of the site profile and management plan.



## RHODE ISLAND COASTAL MANAGEMENT PROGRAM

**Program Approved— 1978**

**Lead Agency**  
Coastal Resources Management Office

### PROGRAM ACCOMPLISHMENTS

#### *Coastal Erosion:*

Several coastal storms caused considerable erosion and property damage, prompting the coastal program to review existing programs that address erosion. The state reviewed research to better understand the dynamics of local beach accretion and/or erosion trends, and the effect of existing structural shoreline protection. The state then analyzed beach profiles and mapped shoreline protection structures. From this information, the state generated new erosion rate maps for use in coastal planning. The state also revised barrier beach and dune regulations for clarification and revised the definition for a dune setback.

#### *Public Access:*

During the report period, responsibility for placing signs at public right-of-way locations was transferred from the state's Department of Environmental Management to the Coastal Resources Management Council. The Council began marking each site with a seven feet tall post with a sign read-

ing "Shoreline Public Access." To date, the Council has designated 210 sites as a public right-of-way.

#### *Wetlands Mitigation:*

The Coastal Resources Management Council issued regulations to guide wetlands mitigation as the basis for developing formal mitigation policies for wetland alterations. The new regulations specifically detail provisions for mitigation, and provide predictability and better understanding for applicants to include restoration efforts within their application.

#### *Adaptive Reuse:*

When the old Jamestown Bridge was replaced with a new one, the state faced an interesting question of what to do with the old bridge. Rather than filling landfill space with concrete and steel, one plan would turn part of the old bridge into a series of artificial marine reefs and leave the other part as a fishing pier. By turning the Old Jamestown Bridge into artificial reefs, the state may continue to benefit economically from the bridge by fostering new fishery habitats. Demolition

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***New erosion  
rate maps will  
help Rhode  
Island deal  
with impacts  
from severe  
coastal storms.***

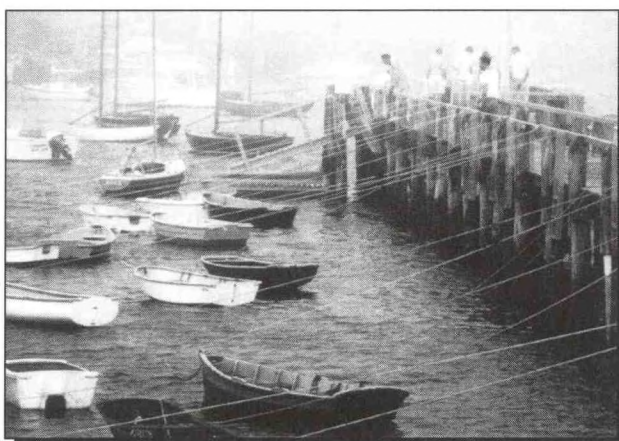
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of the old bridge is slated to begin in 1997.

*Special Area Management Planning:*

In commemorating the 10th anniversary of the Salt Pond Special Area Management Plan, the coastal program has launched a three-year effort to update this and other spe-



cial area management plans, making them consistent in both content and format. During the process of updating the plans, the coastal program will review the boundary maps in the plans and make any necessary changes. In Rhode Island, awareness of the need to manage coastal watersheds on a comprehensive basis is growing, along with a recognition that special area management planning is a valuable tool to achieve to do this.

*Dock Registration:*

The Council also developed a program to encourage registration of residential docks that were built without a permit, provided that cer-

tain conditions were met. As a result, over 1,250 docks have been registered and are now "legally recognized" structures. By attaching a registration plate to the dock, the owner can demonstrate that it has received a permit.

*Permit Simplification:*

Rhode Island streamlined the permit process for Findings of No Significant Impact (FONSI). The Council authorized all permit staff to issue on-the-spot permits to applications that meet the criteria for a FONSI. With this improvement, an applicant may now receive a permit within minutes of submitting an application.

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***Rhode Island received  
\$991,000 in FY 1994 and  
\$996,000 in FY 1995  
in federal funding.***

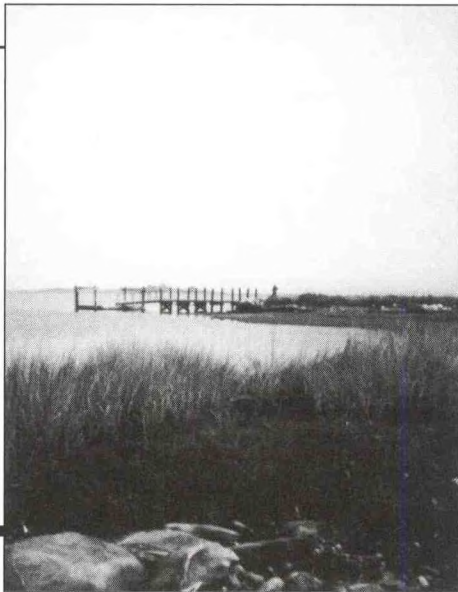
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*Federal Consistency:*

The Council developed a draft federal consistency manual, along with a revision to the state's coastal management program document, to improve and update the federal consistency review process in the state. They will be finalized and sent to NOAA for approval in early 1996.

SUMMARY OF  
EVALUATION FINDINGS

No evaluation was conducted during the reporting period. The next evaluation is scheduled for September, 1996.



# NARRAGANSETT BAY

## NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1980

**Lead Agency**

Rhode Island Department of Environmental Management

### PROGRAM ACCOMPLISHMENTS

*Reorganization:*

During the last two years, the Department of Environmental Management expanded the Division of Fish and Wildlife to include estuarine resources—prompted by a desire to increase the organization's efficiency. The division now manages and operates the Narragansett Bay Reserve.

*Facilities Acquisition:*

Narragansett Bay NERR keeps growing. The reserve recently incorporated South Prudence Island, a state-owned facility into reserve boundaries. In the process, the reserve gained overnight accommodations for researchers, operational piers and floating docks, a garage and workshop complex, a naturalist kiosk and nature trails.

*Facilities Construction:*

Construction is underway to renovate a 50'x100' wood frame building, formerly used as a carpenter shop, into a research support laboratory, education center and office space.

*Land Acquisition:*

The reserve recently added 454 acres in the center of Prudence Island that is key to linking the north and south ends of Prudence Island with a continuous greenway. The reserve acquired 288 acres from the Heritage Trust of Rhode Island, and added 166 acres owned by Prudence Conservancy, a local land trust.

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***Narragansett Bay NERR  
received \$410,000 in FY 1994  
and \$377,972 in FY 1995.***

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### RESEARCH AND MONITORING

Research at the reserve has grown in recent years. By 1994, 10 research projects were underway, two of which were completely funded by NOAA; only three were ongoing before 1992. Brown University, the University of Rhode Island, the Department of Environmental Management, and the University of Connecticut are some of the institutions conducting research at the reserve during this period.

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***New acreage  
gives the reserve  
a continuous  
greenway  
linking the  
north and  
south ends  
of Prudence  
Island.***

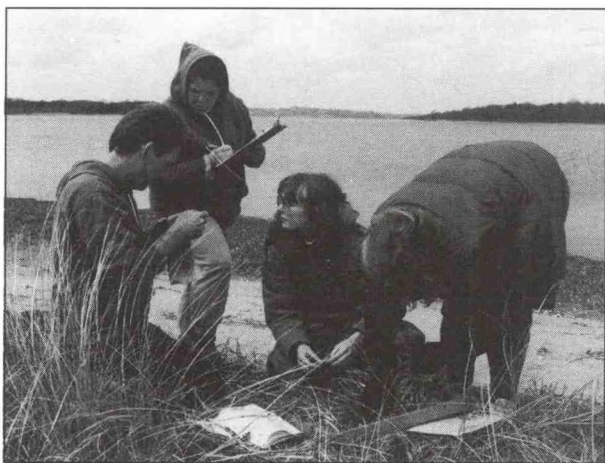
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# NARRAGANSETT BAY

## National Estuarine Research Reserve

Research included studies of fish habitat use, assessments of the Prudence Island habitat, assessments of ecological risk of the former Prudence Island landfill on the biota of Nag Creek, and a comparison of ecology of five types of marsh systems and atmospheric depositions of chemical contaminants. The Narragansett Bay reserve is also participating in the NERRS national water quality monitoring program.



*The reserve trains teachers on estuarine ecology so that they can bring these lessons into the classroom.*

Working with the Prudence Conservancy, the reserve's on-site manager developed a successful volunteer monitoring program that focuses on water quality monitoring and meteorology on Prudence Island. Results from the meteorology monitoring are being written in a format that will educate reserve visitors.

### EDUCATION AND OUTREACH

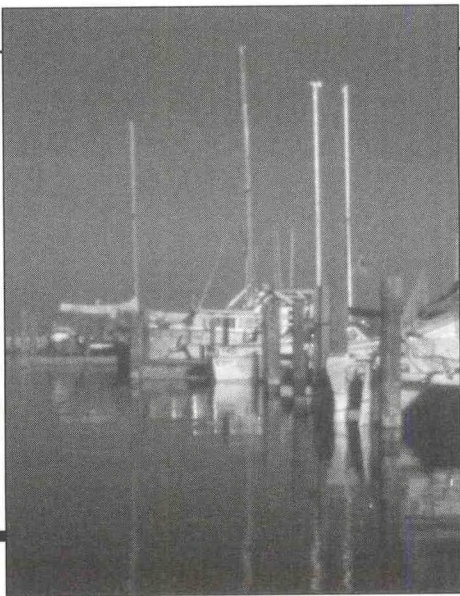
Narragansett Bay reserve's education program focuses on off-site outreach and includes partnerships with Rhode Island Sea Grant and the Narragansett Bay Project. A 1996 scenic and educational calendar has been jointly produced by the reserve, the Narragansett Bay Project, and the Rhode Island Sea Grant. Another statewide educational product includes a briefing book on Narragansett Bay issues for the Governor and Rhode Island legislators.

### SUMMARY OF EVALUATION FINDINGS

No evaluation was conducted during the reporting period. The next program evaluation is scheduled for May, 1996.



*Volunteers help monitor the health of groundwater in the Narragansett Bay NERR.*



## SOUTH CAROLINA COASTAL MANAGEMENT PROGRAM

**Program Approved— 1979**

**Lead Agency**

Department of Health and Environmental Control

### PROGRAM ACCOMPLISHMENTS

#### *Shoreline Mapping*

South Carolina's Office of Ocean and Coastal Resource Management is refining the way it maps historic positions of the shoreline. The continuing effort will allow the state to more accurately determine long term annual erosion rates and shoreline movement and better identify erosion hazard areas. It is intended to establish more accurate setback lines for determining where construction can occur along the coast, and to bolster the state's position when faced with legal challenges to the state's coastal program.

With funding under the CZMA's Enhancement Program, the state completed a project that combines the interpretation of historical black and white aerial photography with state-of-the-art computer technology. With this new technology, along with information from their ongoing beach profile monitoring program, the state will recalculate erosion rates in order to update the state's Baselines and Setback

Lines which, by law, must be updated by 1998.

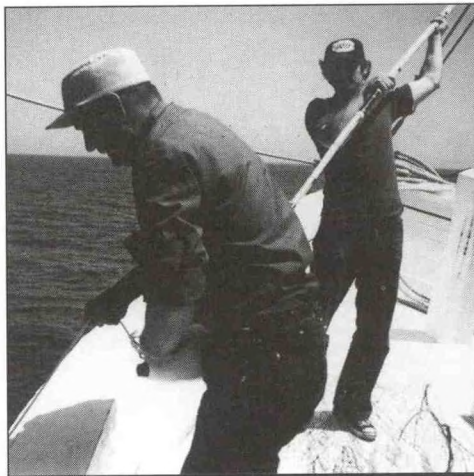
#### *Wetlands Banking:*

South Carolina is improving the way it conserves wetlands by identifying certain sites as "mitigation banks" for freshwater wetlands. Mitigation banks allow for setting aside certain wetlands in exchange for permission to develop others. The state is working with other state and federal agencies to develop a state policy for mitigation banking that will help guide future efforts by other state

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***South Carolina is using GIS technology to map shoreline erosion hazard areas and measure erosion rates.***

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*Recreational fishing.*



## SOUTH CAROLINA

### *Coastal Management Program*

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*South Carolina received \$1,595,000 in FY 1994 and \$1,854,000 in FY 1995 in federal funding to operate its coastal program.*



*Above: Erosion puts beachfront property at risk from coastal storms and other hazards.*



*Right: Shorebirds thrive in tidal estuaries.*

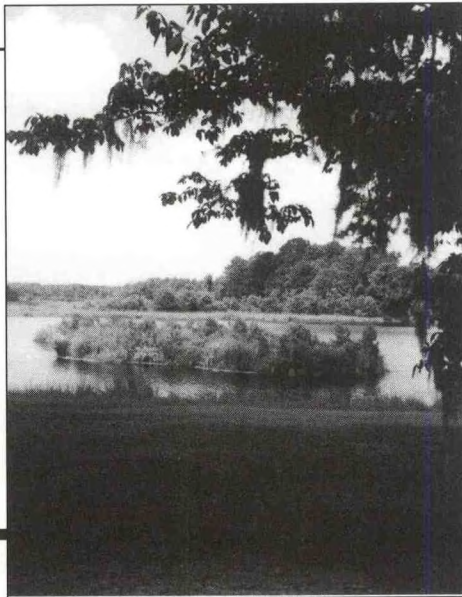
agencies or private industry. The state is also working on a Memorandum of Agreement among state and federal regulators on these policies, procedures and criteria for establishing and maintaining these wetland banks.

#### *Public Access to Beaches:*

South Carolina renewed its commitment to providing public access to its beaches and maintaining beach access sites that have already been established. The Office of Ocean and Coastal Resource Management created a new Coastal Resources Access Fund that uses permit fees, combined with matching funds from local governments, to enhance the state's public access to the coast. The state will identify priority areas to receive funding for public access using inventories of public access sites prepared by local governments as part of their local beachfront management plans.

#### SUMMARY OF EVALUATION FINDINGS

Findings issued in June 1994 cited leadership from the South Carolina Coastal Council and efforts in natural resource protection and public outreach as accomplishments. Recommendations were made for improving Federal and state consistency, the coastal nonpoint program and grants management.



# ACE BASIN

## NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1992

**Lead Agency**

South Carolina Department of Natural Resources

### PROGRAM ACCOMPLISHMENTS

*Land Acquisition:*

The reserve successfully acquired South Williman Island, identified in the reserve management plan as a high priority for acquisition. The 2,765 acre maritime island is an important link in properties of the ACE Basin landscape.

*Conservation Easements:*

Thanks to an unprecedented private land initiative in the ACE Basin, approximately 35,787 acres of privately owned land have now been conserved through easements and deed restrictions in the ACE Basin. This has been a voluntary effort by private landowners working in cooperation with the ACE Basin Task Force, Ducks Unlimited, The Nature Conservancy, and the Lowcountry Open Land Trust.

*Facilities Development:*

The reserve established a field station at Bennett's Point which can now house visiting scientists conducting research in the reserve, provides

deepwater access and docking capabilities for research vessels working in the reserve, and provides a staging area for conducting monitoring and education activities. Through a cooperative effort with the US Geological Survey, the reserve also installed a climate station at Bennett's Point. The climate station provides continuous measurement of soil and air temperatures, rainfall, wind speed/direction and other atmospheric conditions, and relays the data to USGS via satellite. These data are made available on the Internet.

*Coordination with CZM Program:*

The reserve periodically conducts workshops to address cross-cutting issues that span various disciplines and involve multiple government agencies, organizations and coastal zone management groups. Recent workshops focused on coastal issues such as chemical contamination and habitat modification, emerging issues and solutions for fishery management, and nature-based tourism.

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*Private  
landowners  
voluntarily  
conserved  
almost 36,000  
acres through  
easements  
and deed  
restrictions.*

---



### RESEARCH AND MONITORING

As part of the NERRS National Monitoring Program, the ACE Basin reserve is comparing water quality at two different sites— one relatively undisturbed, the other affected by non point source pollution. The results will contribute to effective national, regional and site-specific coastal zone management.

Scientists are surveying the various plant communities in the reserve to develop a map of land uses and land cover as part of the site characterization. Reserve staff are also iden-



*Volunteers help with monitoring at the reserve.*

tifying the distribution of development-related pollution sources in the reserve buffer zone, so that they can determine the effect of nonpoint source pollution on the reserve. The study is measuring contaminant levels in sediments, including trace metals, pesticides and pollutants associated with highways.

*Coordinating Research and Education:*  
The reserve presents an Evening

Seminar Series each month, giving researchers an opportunity to present their findings to the public. The seminars also provide for information exchange between educators, scientists and the general public.

### EDUCATION AND OUTREACH

The educational cruise program, "A Coastal Adventure", continued during the biennium with 71 cruises for 1,082 high school students and teachers. The "hands-on" experience in estuarine ecology makes this the most popular program offered in the reserve.

Outreach and speakers bureau programs were presented to 91 different groups and 4,154 people in fiscal

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***ACE Basin received  
\$290,000 in FY 1994 and  
\$1,094,435 in FY 1995.***

---

years 1994 and 1995, ranging from slide and video presentations to ground and water tours of the reserve. Special educational publications included feature articles in local newspapers, magazines and news releases.

### SUMMARY OF EVALUATION FINDINGS

No evaluation was conducted during the reporting period. The first evaluation of the ACE Basin reserve took place in late November 1995.



# NORTH INLET-WINYAH BAY

## NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1992

### **Lead Agencies**

Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina; and

Office of Ocean and Coastal Resource Management, S.C. Department of Health and Environmental Control

### PROGRAM ACCOMPLISHMENTS

With help from volunteers, the reserve constructed an 800- foot salt marsh boardwalk. The span was constructed with a plastic-wood composite, an ecologically-friendly alternative to preserved wood. Interpretative signs and research demonstration projects are being set along the new route.

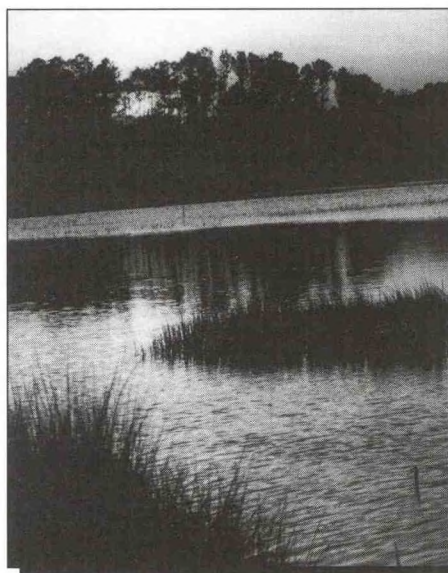
The reserve won a grant to evaluate the effectiveness of alternative golf course design and management strategies that were developed to decrease pollution associated with stormwater runoff. This and similar studies in Delaware and North Carolina are designed to aid state coastal zone management agencies in minimizing the impact of pollution on estuaries.

### RESEARCH AND MONITORING

The reserve initiated a new set of physical-chemical monitoring stations to assess potential human impacts on rivers. The stations are part of a national monitoring program.

In addition, the reserve established the Centralized Data Management Office for the system-wide monitoring program. This sophisticated computer technology allows monitoring sites to transfer, store and synthesize their water quality data and share it with scientists, educators and coastal zone managers.

The reserve also hosted 53 research projects with 84 investigators.



*Tidal marsh in North Inlet-Winyah Bay.*

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*The reserve is studying alternative golf course management strategies to reduce runoff pollution.*

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*Did you know?*

Using new GIS software, reserve staff were able to more accurately calculate the size of the North Inlet reserve. The reserve has 11,535 acres within its core area—significantly more than 9,080 acres previously believed.



*Seines (a type of net) are used to collect fish for research and education.*

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*South Carolina received  
\$120,000 in FY 1994 and  
\$110,000 in FY 1995 for the  
North Inlet-Winyah Bay NERR.*

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EDUCATION AND OUTREACH

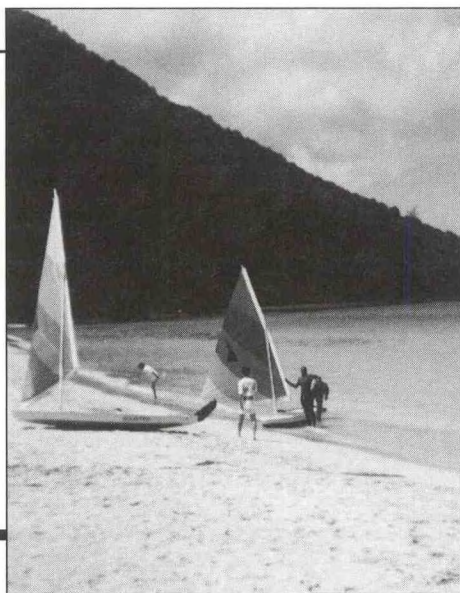
Several thousand people participated in adult short courses, seminars, open houses and outreach programs sponsored by the reserve. The reserve also offered narrated boat tours of Winyah Bay and an educational exhibit during a community festival attended by 10,000 people.

A very successful coastal management workshop on the subject of managing forests to protect water quality was attended by 50 planners, managers and foresters. A new curriculum developed by the Wells NERR that involves high school students in monitoring water quality in their watersheds is also being piloted at this reserve and eight others in the national system.

To further promote wetlands and coastal conservation, the reserve contributed to the production of a video on the Winyah Bay Focus Area, a cooperative wetlands conservation venture involving federal and state agencies, citizen's groups and private landowners.

SUMMARY OF  
EVALUATION FINDINGS

The first evaluation of the reserve takes place in 1996.



# VIRGIN ISLANDS

## COASTAL ZONE MANAGEMENT PROGRAM

**Program Approved—** 1979

### **Lead Agency**

Department of Planning and Natural Resources

**Program Funding:** The program received \$708,000 in FY 1994 and \$704,000 in FY 1995.

## PROGRAM ACCOMPLISHMENTS

### *Managing Special Areas:*

The full Senate of the Virgin Islands legislature adopted the coastal program's analytic studies for each of the 18 Areas of Particular Concern (APCs) in the Virgin Islands. The analytic studies characterize the eighteen areas, articulate the resource management issues, priorities, and recommendations that may govern activities in the APCs. Coastal program staff are using the analytic studies to develop a management plan for each area.

### *Comprehensive Planning:*

The Virgin Islands Department of Planning and Natural Resources completed final version of Comprehensive Land & Water Use Plan, and submitted it to the Governor for approval in June 1994. Final adoption of the Plan by the Virgin Islands Legislature will be a major step toward improving and protecting the coastal areas and the environment as a whole.

### *Monitoring and Enforcement:*

The Department of Planning and Natural Resources has improved en-

forcement procedures in a number of ways. It adopted rules for mooring and anchoring within territorial waters, implemented an administrative hearing procedure, and developed rules for navigation and motorboats.

## SUMMARY OF EVALUATION FINDINGS

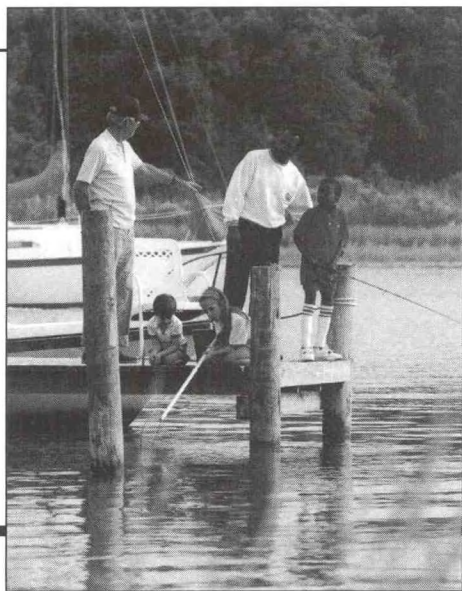
Final findings for the Virgin Islands coastal program, issued in March 1995, noted accomplishments, including preparation and adoption of several new authorities, enactment of legislation for Areas of Particular Concern, modification of the Board of Land Use Appeals, submittal of a Comprehensive Land and Water Use Plan to the Legislature for approval, enhanced public education, and responsiveness to recommendations from the previous evaluation. The findings also outlined some necessary actions for the coastal program, such as: submitting program changes, streamlining permit review, improving monitoring and enforcement, updating federal consistency procedures, and completing designation of and management plans for all 18 Areas of Particular Concern.

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***The coastal program will use recently completed studies to create management plans for 18 areas of concern.***

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## VIRGINIA COASTAL RESOURCES MANAGEMENT PROGRAM

**Program Approved— 1986**

**Lead Agency**  
Department of Environmental Quality

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***Northampton  
County won a  
Presidential  
Leadership award  
for its sustainable  
development  
strategy.***

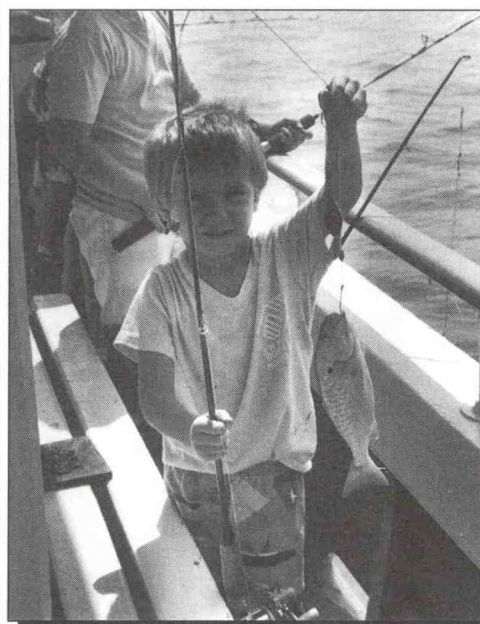
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### PROGRAM ACCOMPLISHMENTS

#### *Special Area Management Planning:*

In 1992, Virginia's coastal program, working with Northampton County and several federal and state agencies, wrote a Special Area Management Plan (SAMP) to create a framework for conserving fish and bird habitat while creating new, sustainable industries in the county. To date, new zoning and subdivision ordinances have been drafted to maintain a maximum amount of native vegetation, which serves as a migration corridor and helps keep water quality intact. The ordinances also encourage cluster development to retain farmland and open space. Through Memoranda of Agreement, native shrubs will be planted in power line rights-of-way as habitat for migratory birds. Property owners are working together to create an "Exceptional Waters" conservation easement so that no additional discharges would flow into shellfish growing waters, allowing aquaculture and seafood production to flourish.

Sustainable industries being developed under the SAMP include sustainable agriculture and aquaculture as well as "Heritage Tourism." The County received a Presidential Leadership Award from the National Association of Counties for its Sustainable Development Strategy. Since the coastal program created an annual Eastern Shore Birding Festival, birdwatching has increased tremendously. The festival weekends have



brought thousands of people and hundreds of thousands of dollars to the shore already. The SAMP also helped fund the planning and design of a Sustainable Technologies Park—a zero-emissions, solar-powered industrial park.

#### *Maintaining Water Quality:*

Since 1992, Virginia's coastal program has focused on conserving and managing wetlands east of the Great Dismal Swamp, between the Northwest and North Landing Rivers and Back Bay. Together, they created a rich environment of blackwater, bald cypress, Atlantic white cedar and rare wildlife. Through grants to Virginia's Department of Conservation and Recreation, the coastal program has conducted intensive natural heritage inventories, purchased hundreds of acres of land and water rights along both rivers, completed a study of public access along the North Landing River and constructed a canoe access site to promote nature tourism, and developed an award-winning Natural Area Management Program which serves as a national model.

#### *Purchase of Development Rights:*

In early 1995, the City Council of the City of Virginia Beach voted to establish an innovative Agriculture Reserve Program. A public opinion poll funded by the coastal program 72% of Virginia Beach citizens supported an increase in taxes to allow the pur-

chase of development rights from willing farmers in order to conserve the rural landscape.

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***Virginia received  
\$2,545,000 in FY 1994 and  
\$2,628,000 in FY 1995 to  
operate its coastal program.***

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*The livelihood of commercial fisherman on the Chesapeake Bay depends on healthy coastal waters.*

#### SUMMARY OF EVALUATION FINDINGS

No evaluation was conducted. The next evaluation is scheduled for June 1996.





## CHESAPEAKE BAY, VIRGINIA NATIONAL ESTUARINE RESEARCH RESERVE

**Program Approved— 1991**

### **Lead Agency**

Virginia Institute of Marine Science of  
the College of William and Mary

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*New  
partnerships  
with private  
groups are  
boosting  
research and  
education.*

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### PROGRAM ACCOMPLISHMENTS

#### *Partnerships:*

The reserve established active partnerships with organizations in the region to assist with research, stewardship and education. The U.S. Naval Weapons Station, Yorktown, Va., and the Peninsula Living Museum, Newport News, Va., sponsor beach and marsh cleanups and keep data on the estuarine debris that has been collected. WHRO, the Hampton Roads area public television and radio operator, supports the reserve's educational programs through telecommunications. Amoco, which operates a major oil refinery on the York River, constructed an oyster reef off Goodwin Islands now used in reserve research. The Gloucester Rotary Club and the Middle Peninsula Regional Governor's School are helping conduct educational programs for high school

and middle school students, respectively, which the reserve hopes will become annual programs.

#### *Volunteer Programs:*

The reserve's strong volunteer program supports monitoring and research in the York River component. Volunteers donated an estimated 3,500 hours between 1994 and 1995, by participating in long-term marsh plant studies, water quality monitoring, debris collection and recording, and bird studies.

#### *Capital projects:*

The reserve constructed a modular laboratory facility at the Gloucester Point headquarters site. The modular facility contains two laboratories, an archive room and office for visiting scientists. The facility also houses research and monitoring program offices.

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***Virginia received  
\$210,000 in FY 1994 and  
\$580,000 in FY 1995 to operate  
the Chesapeake Bay NERR.***

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### RESEARCH AND MONITORING

The reserve hosted more than 50 research or monitoring projects in 1994-95. Projects covered: oxygen pro-

duction in submerged aquatic vegetation; water quality monitoring; the association between oysters and submerged aquatic vegetation; studies of bird, fish, and crab populations; predator-prey relationships; reproductive ecology of sea grasses; and the use of reserves as control sites for pollution studies.

Also, the reserve won competitive research grants under the CZMA for three projects. One studies the interaction between oysters and submerged aquatic vegetation and impacts on water quality. Another studies the role of submerged aquatic vegetation in nutrient exchange, particularly in the nitrogen cycle. The third looks at levels of fecal coliform (bacteria from farm animals) as indicators of nonpoint source pollution.

## EDUCATION AND OUTREACH

The reserve initiated a series of educational brochures in cooperation with the Virginia Coastal Resources Management Program, developing six brochures in 1994-95. Topics include birding data, fiddler crab biology and the importance of oyster reefs to the Chesapeake Bay.

The reserve co-hosts Virginia's annual Estuaries Day celebration with the Virginia Department of State Parks. More than 2,000 Virginians participated in Estuaries Day '95; attendance grows each year.

In 1994-95, the reserve's education program concentrated on telecommunications systems as a means of disseminating information to Virginia school teachers and students. In 1995, the reserve trained more than 300 teachers in telecommunications and use of the Internet.



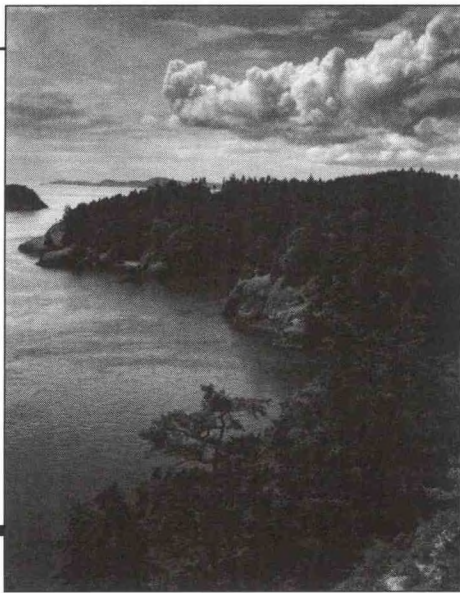
*Research sites are sometimes accessible only by canoe.*

## SUMMARY OF EVALUATION FINDINGS

Findings from the first review of the reserve, issued December 1994, found accomplishments in the volunteer program, research activities, coordination between the reserve and the coastal management program, and continued success in promoting the importance of Virginia's estuaries through "Estuaries Day" celebrations.

Findings and recommendations addressed: staffing; expanding the education program; implementing advisory committees; and a program expansion strategy.





## WASHINGTON COASTAL ZONE MANAGEMENT PROGRAM

**Program Approved— 1976**

**Lead Agency**  
Department of Ecology

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***The program's shoreline management guidebook won national praise for helping local planners and administrators.***

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### PROGRAM ACCOMPLISHMENTS

#### *Shoreline Management:*

Washington's coastal program won a joint American Planning Association/ Planning Association of Washington Merit Award for its "Shoreline Management Guidebook, Second Edition, 1994." The judges commented that the guidebook "provides solid agency guidance," and is "Clearly well liked (and used) by local planners and shoreline administrators to help answer tough shoreline issues."

#### *Monitoring and Enforcement:*

The state published a manual with ideas on how to enforce the Shoreline Management Act in ways that are cost-effective for even small communities with limited enforcement capabilities. The manual, *Enforcing the Shoreline Management Act*, is directed toward program administrators with enforcement responsibilities.

#### *Waterfront Revitalization:*

In 1994 and 1995, the City of Raymond continued to use CZMA

funds for waterfront revitalization efforts. The City amended its shoreline master plan to enhance public access and designed and began work on a downtown riverfront park which includes a pier, floating dock for boat mooring, public restrooms, and parking along the South fork of the Willapa River.

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***Washington received \$2,526,000 in FY 1994 and \$2,740,000 in FY 1995 to operate its coastal program.***

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#### *Erosion Management:*

As part of Washington's continuing effort under the CZMA's Enhancement Program, to develop model approaches for managing hazards from coastal erosion, the state completed five technical studies. The studies assessed the effect of shoreline armoring on physical coastal processes; the use of vegetation beach nourishment to control erosion; policy alternatives for coastal erosion management, including management options for unstable coastal bluffs;

## Coastal Zone Management Program

and, regional approaches for addressing coastal erosion management.

### *Public Access:*

Local governments continue to use the CZMA's low-cost construction grants to provide public access. The City of Edmonds constructed a walkway and interpretive stations along the 22.5 acre Union Oil Marsh located on the downtown waterfront. The City of Sultan placed a walk bridge, accessible to the handicapped, that allows access from Osprey Park to the river. The Grays Harbor County chapter of Trout Unlimited constructed a fishing pier, boat launch and restrooms for the unique Friends Landing recreation site designed especially for the physically and mentally challenged.

### *Spotlighting Progress:*

Ecology published "Managing Washington's Shores— Ten Years of Local Government Coastal Zone Management Projects" which summarizes a decade of activities undertaken by local governments with federal Coastal Zone Management funds.

## SUMMARY OF EVALUATION FINDINGS

Final evaluation findings, issued in June 1995, documented program accomplishments including: integration of the Shoreline Management

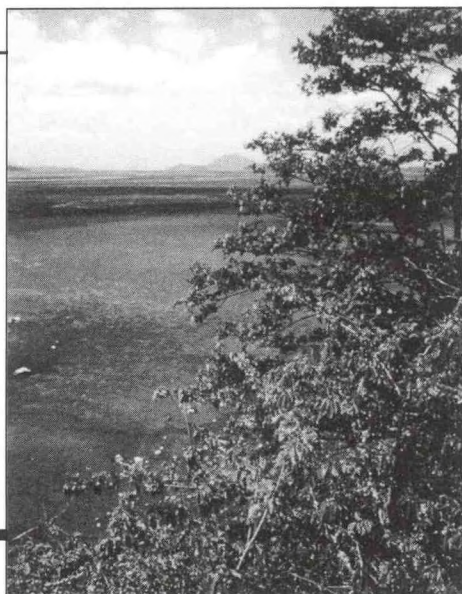
Act and Growth Management Act; permit consolidation and review processes; development of technical assistance publications on wetlands management, erosion management and the Growth Management Act; public education; the Shellfish Protection Program; the erosion management study; continued successful access and acquisition projects, and a



*Port Townsend community pier, after its restoration with CZMA low-cost construction funds.*

comprehensive revision of the original Washington program document. Recommendations addressed: reorganization, establishment of an advisory group, monitoring local implementation of shoreline management plans, development of a schedule for the submission of program changes, and development of a monitoring and enforcement plan.





## PADILLA BAY NATIONAL ESTUARINE RESEARCH RESERVE

**Designated—** 1980

**Lead Agency**  
Department of Ecology

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*The reserve is investigating ways to control a non-native, marsh grass invading Padilla Bay.*

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### PROGRAM ACCOMPLISHMENTS

#### *Land Acquisition:*

In 1994 and 1995, the reserve added several parcels of tideland and upland within the reserve boundary. One of these parcels, purchased from a charitable trust in Seattle, was a 128-acre working farm which will be leased for agricultural production. It will also be the site of research on agricultural sources of nonpoint pollution, under a cooperative arrangement with the state land grant university, agency representatives and local farmers. The reserve now owns approximately 93% of the tidelands within the original designated reserve boundary area.

#### *Comprehensive Management:*

Under the leadership of Padilla Bay NERR's Research Coordinator, a management committee of 30 citizens, business, environmental, farming, industry and government representatives completed a Comprehensive Management Plan for the entire Padilla Bay Watershed. Developed over two years through consensus-building, the Plan

was adopted under Washington State law. The committee evaluated nonpoint source pollution problems in the watershed, developed recommendations and implemented education and restoration projects.

#### *Facilities:*

To improve public access to the site, the reserve constructed a public sidewalk and rebuilt the parking lot, adding more spaces as well as surface drainage facilities.

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***Padilla Bay NERR received  
\$465,000 in FY 1994 and  
\$459,000 in FY 1995.***

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### RESEARCH AND MONITORING PROGRAMS

In 1994 and 1995, Padilla Bay researchers focused on studying water quality in the Bay. In particular, the researchers studied the effects of light and oxygen reduction on seagrasses and studied the extent to which nitrogen affects growth of phytoplankton (a key element in the food chain) dur-

ing different seasons of the year. Researchers also reviewed water quality throughout the watershed, which does not meet Washington State standards, and habitats in the Bay.

As part of the national water quality monitoring effort, the reserve set up water quality stations at two sites and is recording measurements every 30 minutes. The information will track low levels of dissolved oxygen flowing into the Bay, which can harm estuarine fauna.

The reserve has also carefully monitored the spread of *Spartina alterniflora*, a non-native salt marsh grass, in the Bay. Due to the invasive nature of this species and its potential to change Pacific Northwest estuaries, the state has encouraged studies of different ways to control the spread and remove the plant. After recording a baseline using aerial photographs, the reserve started an experiment to test chemical and other methods for removing *Spartina* that will continue into 1996.

#### EDUCATION AND OUTREACH

During the biennium, the reserve initiated The Research Display Project to share information about the reserve's research efforts with the public. A sample of the reserve's research projects, about ten in all, will be summarized in layman's terms and put on display at the Breaszeale Inter-

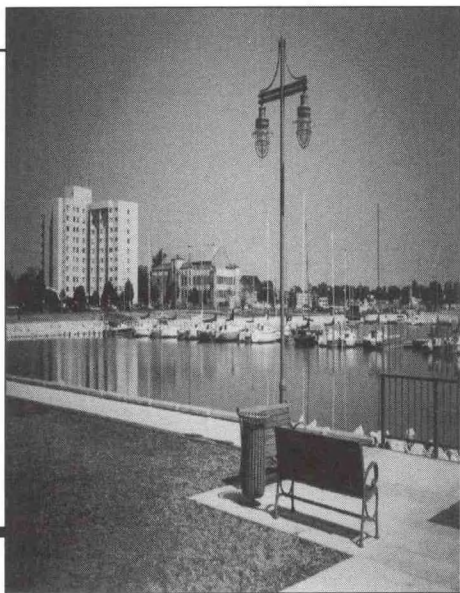
pretive Center. The project gives visitors a better understanding of the role research plays in resource management decisions.

In 1994, a 15-minute education film produced by the reserve won the Silver Screen Award in the category of Environmental Issues and Concerns during the 26th Annual U.S. International Film and Video Festival. The reserve's education coordinator helped script and produce the film. Two versions were produced—one for children and another for older audiences.

#### SUMMARY OF EVALUATION FINDINGS

In April 1995, NOAA issued evaluation findings for the Padilla Bay reserve. The evaluation cited accomplishments in the areas of program administration, land acquisition, facilities enhancement, education programs, research and monitoring program, as well as the role of the Padilla Bay Foundation and other public support. The evaluation made findings and recommendations in the areas of staffing and administration; development of a volunteer program; improvement in grants management; completion of land acquisition and boundary expansion efforts; completion of site profile; and the need to update the reserve management plan and educational exhibits in the Interpretive Center.





## WISCONSIN COASTAL MANAGEMENT PROGRAM

**Program Approved— 1978**

**Lead Agency**  
Department of Administration

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*With help from the coastal program, the state published its first guide to public access sites along its shorelines.*

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### PROGRAM ACCOMPLISHMENTS

#### *Public Access:*

Through multi-agency teamwork and partial federal funding, Wisconsin's Coastal Management Program created the state's first Public Access Guide. The 72-page booklet illustrates shoreline access and recreational spots along Lake Michigan and Lake Superior for public enjoyment. Grants from NOAA and the U.S. Fish and Wildlife Service provided the necessary funding for research, preparation and printing.

#### *Rewarding Excellence:*

In 1994, the City of Kenosha won NOAA's award for Excellence in Local Government for its waterfront revitalization effort. The City, with \$72,000 in seed money from the coastal program, created and carried out a Waterfront Master Plan for the City of Kenosha. Since 1989, CZM funds have been used for a variety of revitalization efforts along the waterfront, which have received another \$17.7 million in public and private sector funds and have en-

abled the City to attract substantial public and private funding for the projects.

#### *Wetlands Training Program:*

In 1993, Wisconsin's coastal program received CZMA funding to develop a Wetland Professional Certification Program in the state, by creating training materials and conducting training sessions. Coastal program staff produced a *Basic Guide to Wisconsin's Wetlands and Their Boundaries* as a basic science text to assist state and local officials, such as zoning administrators, in implementing shoreland-wetland zoning ordinances.

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***Wisconsin received  
\$948,000 in FY 1994 and  
\$1,250,000 in FY 1995  
to operate its coastal program.***

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As the project's second phase, the coastal program sponsored three Basic Wetland Delineation Training Workshops, in partnership with the Wisconsin Department of Natural Re-

sources, to teach the contents of the guide. Offered in July and August of 1995, these workshops were designed to provide basic training in wetland identification and delineation procedures. Leading government experts in wetland policy, plant ecology, soils and hydrology conducted the training through classroom instruction and field exercises. The two-day sessions took place in the Wisconsin communities of Oconomowoc, Sturgeon Bay and Ashland.

*Wetlands Month:*

In both 1994 and 1995, Governor Tommy Thompson declared May as Wetlands Month. The coastal program encouraged sponsorship of and participation in special activities throughout the state. Coastal program staff organized a mailing to approximately 5,500 organizations, including schools, environmental groups, zoning administrators and outdoors groups, and also developed a Wisconsin Wetlands poster in cooperation with the Department of Natural Resources.

*Nonpoint Source Pollution Control:*

In July 1995, the coastal program submitted Wisconsin's Coastal Nonpoint Source Pollution Control Program to NOAA and EPA. The submission identified Wisconsin's current nonpoint source pollution control program initiatives. It was

endorsed by the Secretaries of the Department of Natural Resources and the Department of Administration.

*Best Management Practices:*

Wisconsin developed a Best Management Practices field manual for Wisconsin's forestry community. The manual provides recommended guidelines for landowners, loggers and land managers to enhance water quality. Several thousand have been requested and distributed since the summer of 1995.



SUMMARY OF  
EVALUATION FINDINGS

An evaluation of the Wisconsin Coastal Management Program was conducted in September 1995. Final findings are pending.





**ITEMIZATION OF ALLOCATION OF FUNDS**  
*Breakdown of Areas in Which Funds Were Expended*  
*(in thousands of dollars)*

State	Section											
	306 Program Administration		309 Program Enhancement		6217 Nonpoint Program		305 Program Development		315 NERRS- Ops.,Ed., Mgt.		315 NERRS- Const., Acq.	
	1994	1995	1994	1995	1994	1995	1994	1995	1994	1995	1994	1995
Alabama	612	659	53	114	90	114			110	110	150	20
Alaska	2,130	2,150	396	420	200	250						
American Samoa	507	530	137	249	84	103						
California	2,130	2,150	514	574	20	250			220	220	275	470
Connecticut	735	809	221	221	100	126						
Delaware	593	635	173	129	90	110			110	110	500	550
Florida	2,130	2,150	274	274	200	250			220	220	630	271
Georgia							0	150	110	110	0	12
Guam	510	534	43	43	84	104						
Hawaii	731	803	80	80	100	126			0	0	0	0
Indiana							0	200				
Louisiana	2,130	2,150	152	76	200	250						
Maine	1,583	1,793	303	349		198			110	110	120	285
Maryland	2,116	2,150	226	310		250			110	110	600	75
Massachusetts	1,625	1,837	269	258	164	205			110	110	300	246
Michigan	2,119	2,150	394	433	200	250						
Minnesota							0	175				
Mississippi	562	597	60	60	86	109						
New Hampshire	529	558	165	207	86	106			110	110	235	90
New Jersey	2,119	2,150	228	228	200	250			60	15		
New York	2,130	2,150	444	399	200	250			110	110	100	84
North Carolina	1,502	1,702	302	341		188			110	110	250	20
Northern Marianas	518	542	44	164	84	105						
Ohio							0	100	110	110	225	123
Oregon	806	913	230	242	106	131			110	110	150	0
Pennsylvania	733	820	98	98	100	126						
Puerto Rico	961	1,087	107	107		135			110	110	250	46
Rhode Island	619	667	280	215	92	114			110	110	300	268
South Carolina	1,331	1,508	264	179		167			220	220	190	984
Texas							0	110				
Virginia	2,117	2,150	228	228	200	250			110	110	100	470
Virgin Islands	518	544	106	55	84	105						
Washington	1,974	2,150	354	342	198	248			110	110	355	349
Wisconsin	761	861	85	260	102	129						



## APPENDIX B

### *Projects of Special Merit Under Section 309*

Enhancement Area	State	Project	Funding/Year
WETLANDS	AS	<b>Participatory Wetlands Management Strategy</b> <ul style="list-style-type: none"> <li>• Project directly addresses the need to develop village-based wetlands protection ordinances and enforcement programs.</li> </ul>	\$71,750 - '95
	CA	<b>Wetlands and Cumulative Impacts</b> <ul style="list-style-type: none"> <li>• Developing performance standards to specify the functional value of wetlands and to provide criteria for accessing the success of wetland restoration proposals.</li> <li>• Creating wetland performance guidelines.</li> </ul>	\$87,000 - '94
	NC	<b>Wetlands Functional Assessment and Categorization</b> <ul style="list-style-type: none"> <li>• Developing methods to prioritize wetlands as a basis for creating wetlands conservation policies in the state Wetlands Conservation Plan, which categorizes wetlands by ecological significance.</li> <li>• Creating functional assessment maps for local land use maps for local land use planning and for determining priorities for wetlands restoration and creation efforts.</li> </ul>	\$70,000 - '94
CUMULATIVE AND SECONDARY IMPACTS (CSI)	AK	<b>Kenai River Cumulative Impacts Study</b> <ul style="list-style-type: none"> <li>• Second and third years of 3-year effort to address CSI on recreational and commercial fishery habitat.</li> <li>• Developing policy changes to state coastal management policies and new or revised Kenai Peninsula Borough CMP.</li> </ul>	\$114,000 - '94 \$122,500 - '95
	CA	<b>Analysis of the CSI Impacts of nonpoint source pollution and Development of Interim Program Guidance</b> <ul style="list-style-type: none"> <li>• Assessing the long-term CSI of nonpoint source pollution (NPS) in the Monterey Bay area.</li> <li>• Coordinating an array of coastal and water quality programs to address NPS needs for the Bay area.</li> <li>• Creating interim guidance for implementing section 6217 statewide.</li> </ul>	\$114,000 - '94
	CA	<b>Development of a NPS Management Plan Guidance Document</b> <ul style="list-style-type: none"> <li>• Providing technical assistance to local governments to promote development of NPS management plan components of local coastal programs.</li> <li>• Procedural changes to the Commission's coastal development permit process to incorporate nonpoint source related controls into permit recommendation and newly developed local components.</li> </ul>	\$120,000 - '95
		<b>North Bay Management Program (BCDC)</b> <ul style="list-style-type: none"> <li>• Conserving and enhancing North Bay wetlands and natural resources while expediting permits for appropriate development.</li> <li>• Developing Special Area Plan amending San Francisco Bay Plan.</li> </ul>	\$120,000 - '95
	CT	<b>Evaluation of State Coastal Boundary for Section 6217</b> <ul style="list-style-type: none"> <li>• Finalizing data and analysis and establishing new coastal NPS management area.</li> <li>• Draft proposals to expand management area to include inland area and amending coastal boundaries.</li> </ul>	\$140,000 - '94 \$25,000 - '95

*Projects of Special Merit Under Section 309*

Enhancement Area	State	Project	Funding/Year
CUMULATIVE AND SECONDARY IMPACTS (CSI) ( <i>cont.</i> )	DE	<b>A Watershed Protection Strategy for the Dover/Silver Lake St. Jones Watershed</b> <ul style="list-style-type: none"> <li>• Developing comprehensive sediment and stormwater watershed management plan.</li> <li>• Establishing a “stormwater utility.”</li> </ul>	\$200,000 - '94 \$109,356 - '95
	ME	<b>Topsham Pilot Project</b> <ul style="list-style-type: none"> <li>• Developing a comprehensive growth management plan for the community.</li> <li>• Establishing standards for development that consider CSIs.</li> <li>• Identifying local land use regulations and setting development standards to address environmental resource &amp; infrastructure needs..</li> </ul>	\$55,000 - '95
	MI	<b>Analysis of Laws and Policies Affecting Land Use in Michigan</b> <ul style="list-style-type: none"> <li>• Identifying impacts of existing land use policies on the resources.</li> <li>• Revising state zoning enabling statutes to address growth management and coastal resource conservation.</li> </ul>	\$120,000 - '95
	MS	<b>Modification of State Septic Tank Requirements</b> <ul style="list-style-type: none"> <li>• Linking the state coastal program with the state Department of Health to revise septic tank and health regulations.</li> </ul>	\$90,000 - '94
	NC	<b>Development of Resource Impact Coefficients</b> <ul style="list-style-type: none"> <li>• Developing resource impact coefficients</li> <li>• Estimating threshold values and carrying capacities for individual watersheds.</li> <li>• Creating a simulation model to predict the cumulative impacts of future coastal development.</li> </ul>	\$75,000 - '94
	NH	<b>Assessment of Bacterial &amp; Nutrient Contamination from Subsurface Disposal Systems</b> <ul style="list-style-type: none"> <li>• Developing a Tidal Waters Site Assessment Program for septic systems.</li> <li>• Developing changes in legislative authority to establish the program.</li> <li>• Assessing program for properties with septic systems on tidal waters.</li> </ul>	\$108,050 - '95
	NY	<b>Outstanding Natural Coastal Area Plan</b> <ul style="list-style-type: none"> <li>• Redesigning state CMP by developing regional CMPs.</li> <li>• Preparing a detailed management plan for the Stony Brook/ Setauket outstanding natural coastal area.</li> <li>• Planning guidelines and enforceable policy changes for the Long Island Sound CMP.</li> </ul>	\$85,000 - '95
	NC	<b>Local Implementation of Cumulative Impacts</b> <ul style="list-style-type: none"> <li>• Enhancing local government management of cumulative impacts and wetland conservation through information transfer.</li> <li>• Integrating state-level data into local planning options.</li> <li>• Integrating locally based information into state databases.</li> <li>• Developing methods for local cumulative impact analysis.</li> </ul>	\$100,000 - '95



## APPENDIX B

### *Projects of Special Merit Under Section 309*

Enhancement Area	State	Project	Funding/Year
CUMULATIVE AND SECONDARY IMPACTS (CSI) (cont.)  COASTAL HAZARDS	RI	<b>CSI Study of the Salt Ponds and Narrow River Watersheds</b> <ul style="list-style-type: none"> <li>• Study could result in boundary changes for watershed, along with land use classifications and water type boundaries.</li> <li>• New regulations governing development activities.</li> </ul>	\$199,500 - '95
	ME	<b>Strengthening Maine's Shoreline Retreat Policy</b> <ul style="list-style-type: none"> <li>• Preparing maps as the primary basis for developing a setback policy for construction in coastal hazard zones.</li> <li>• Completes shoreline erosion study examining short-term erosion and accretion at beaches adjacent to an engineered shoreline.</li> <li>• Study results will assist state in determining which dunes are most vulnerable.</li> <li>• Revising core statutes of coastal program.</li> </ul>	\$95,000 - '94 \$71,300 - '95
	NY	<b>Nor'easter Regulatory Modifications</b> <ul style="list-style-type: none"> <li>• Improving the coastal program's hazards management component.</li> <li>• Creating new standards for construction or improving structures in coastal hazard areas.</li> <li>• Limiting state agency expenditures in coastal areas under the Coastal Barrier Resources Act.</li> </ul>	\$84,080 - '94
	NY	<b>Comprehensive Local Erosion Management Programs</b> <ul style="list-style-type: none"> <li>• Developing comprehensive local erosion management programs as part of the state's Local Waterfront Revitalization Programs.</li> </ul>	\$85,000 - '95
	OR	<b>Hazards Mapping, Assessment Modeling, and Priorities</b> <ul style="list-style-type: none"> <li>• Continuing to develop consistent maps of coastal areas showing relevant hazards to coastal development, including earthquakes and other catastrophic hazards.</li> <li>• Improving mapping methodology for sandy beaches/dunes and evaluating effectiveness of hazard mitigation measures.</li> <li>• Identifying high priority areas for future all-hazards mapping.</li> <li>• Estimating the expected beach and dune erosion in response to the Oregon wave climate through numerical modeling.</li> </ul>	\$70,886 - '94 \$60,000 - '95
	RI	<b>Revised Barrier Beach Policies for Salt Pond Area</b> <ul style="list-style-type: none"> <li>• Technically analyzing barrier beach erosion problems.</li> <li>• Changing coastal policies to address deficiencies.</li> </ul>	\$65,000 - '94
	SC	Development of a Beach/Dune Critical Area \$200,000 - '94 <ul style="list-style-type: none"> <li>• Creating computer-based inventory of the jurisdictional setback line.</li> <li>• Local government adoption of the beach overlay setback zone, which will be locally enforced.</li> </ul>	
		<b>Historical Oceanfront Shorelines Mapping</b> <ul style="list-style-type: none"> <li>• Reviewing and developing accurate methodology to determine erosion setback lines.</li> <li>• Producing historical shoreline maps to re-calculate erosion rates and to re-map the landward most shorelines in inlet erosion zones.</li> </ul>	\$85,000 - '95

*Projects of Special Merit Under Section 309*

Enhancement Area	State	Project	Funding/Year
COASTAL HAZARDS (cont.)	WA	<b>Coastal Erosion Management Strategy</b> <ul style="list-style-type: none"> <li>• Second and third years of a 3-year effort to identify engineering and geotechnical alternatives for shoreline erosion control and assessing the impacts of shoreline armoring; phase three tasks aggregate the technical studies into a programmatic EIS.</li> <li>• A formal rule adoption process that establishes means for local governments to adopt amendments to shoreline master programs.</li> </ul>	\$100,000 - '94 \$133,000 - '95
PUBLIC ACCESS	MA	<b>Developing Additional State/Local Capability to Secure Public Access</b> <ul style="list-style-type: none"> <li>• Establishing formal state register of Protected Coastal Waterways.</li> <li>• Stimulating municipal programs to reclaim historic rights-of-way.</li> <li>• Developing an Executive Order governing access benefits provided in compensation for state actions resulting in capital improvements to private shoreline property.</li> </ul>	\$86,000 - '95
	NY	<b>Regulations to Implement Chapter 791 of the Laws of 1992</b> <ul style="list-style-type: none"> <li>• Developing procedures to review all leases, easements and grants for use of lands that are now or were formerly underwater.</li> <li>• Preparing regulations, guidelines, and strategies for harbor management plans by local governments.</li> </ul>	\$75,000 - '94
	VI	<b>Territorial Park System Planning</b> <ul style="list-style-type: none"> <li>• Developing a Territorial Park System Management Plan for all marine and terrestrial park to enhance public access to beaches and coastal resources.</li> <li>• Institutionalizing the plan through Territorial Park Authority.</li> </ul>	\$82,834 - '94 \$51,000 - '95
OCEAN RESOURCES	MA	<b>Developing a Framework for an Ocean Management Program</b> <ul style="list-style-type: none"> <li>• Developing a management framework for comprehensive ocean resources planning.</li> <li>• Changing coastal policies to incorporate ocean management.</li> </ul>	\$71,000 - '94
	OR	<b>Rocks and Reefs Use and Conflict Assessment</b> <ul style="list-style-type: none"> <li>• Acquiring data on habitat and behavior of steller sea lions to design site-specific management plans for rocky shores and offshore rocks and islands as part of an adapted Territorial Sea Plan.</li> </ul>	\$62,000 - '95
SPECIAL AREA MANAGEMENT PLANNING (SAMP)	CT	<b>Establishment of the Connecticut River Estuary SAMP</b> <ul style="list-style-type: none"> <li>• First of potential three-year effort to develop SAMP for Connecticut River Estuary.</li> <li>• Design comprehensive guidance for regulatory and management decisions.</li> <li>• Finalizing the nomination documents and maps for designation of the estuary as a Wetland of International Importance.</li> </ul>	\$100,000 - '95



## APPENDIX C

### *Secretarial Appeals Decisions—Federal Consistency*

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#### SECRETARIAL APPEALS DECISIONS — 1994-1995

Under CZMA § 307(c)(3), a state's consistency objection precludes a federal agency from issuing a permit for an activity at issue unless, upon appeal by the appellant, the Secretary of Commerce finds that the activity is either consistent with the objectives of the CZMA (Ground I) or necessary in the interest of national-security (Ground II). If the requirements of either Ground I or Ground II are met, the Secretary must override the state's objection. From October 1993 - September 1995, the Secretary issued the following consistency appeal decisions.

##### *FLORIDA:*

**Decision and Findings in the Consistency Appeal of Mobil Exploration & Producing U.S. Inc., (Mobil Pensacola Decision), June 20, 1995. —**

The Secretary overrode Florida's objection to Mobil's plan to drill an exploratory well on Pensacola Block 889, located about 13.5 miles from Pensacola, Florida, and 74 miles from Theodore, Alabama. Mobil's plan was submitted as a supplement to a plan of exploration to

lease blocks. Florida had not objected to Mobil's plan of exploration for the original six wells. The Secretary found that the supplemental plan of exploration was consistent with the objectives of the CZMA

##### *PUERTO RICO:*

**Decision and Findings in the Consistency Appeal of Olga Vélez Lugo, (Vélez Lugo Decision), September 9, 1994 —**

The Secretary declined to override the Commonwealth of Puerto Rico's objection to a proposal by Ms. Olga Vélez Lugo (Appellant) to construct a wood dock, restore a boat ramp and level a wetland/mudflat area by depositing fill. The dock and boat ramp would be used by the Appellant for private recreational purposes. The Secretary found that the proposed project's minimal, at best, contribution to the national interest did not outweigh the substantial, cumulative adverse effects the activity would have on the natural resources of the coastal zone.

##### *NORTH CAROLINA:*

**Decision and Findings in the Plan of Exploration Consis-**

**tency Appeal of Mobil Oil Exploration & Producing Southeast, Inc., (Mobil Manteo POE Decision), September 2, 1994,**

**and**

**Decision and Findings in the Drilling Discharge Consistency Appeal of Mobil Oil Exploration & Producing Southeast, Inc., (Mobil Manteo Drilling Discharge Decision), September 2, 1994 —**

The Secretary declined to override North Carolina's objections to Mobil's proposed discharge of drilling wastes and overall plan of exploration for Manteo Block 467, located about 39 miles offshore North Carolina. Mobil proposed to drill in an area known as "The Point," a prime fishing area for North Carolina fishermen. North Carolina's objections were based on lack of necessary information. 15 C.F.R. § 930.64(d). The Secretary found that the information in the administrative records was inadequate to determine whether the national interest benefits of Mobil's proposed activities outweigh the proposed activities' adverse coastal effects. Accordingly, Mobil failed to demonstrate that its proposed

activities were consistent with the objectives of the CZMA. Mobil also failed to demonstrate that its activities were necessary in the interest of national security. Mobil is challenging the two Mobil Manteo decisions in a federal court.

***NORTH CAROLINA/VIRGINIA: Decision and Findings in the Consistency Appeal of the Virginia Electric and Power Company (Lake Gaston Decision), May 19, 1994 —***

The Virginia Electric and Power Company (VEPCO), on behalf of the City of Virginia Beach, Virginia, (City), appealed to the Secretary of Commerce to override the State of North Carolina's objection to the City's proposal to withdraw water

from Lake Gaston for the City's water supply needs. The Secretary overrode North Carolina's objection, thereby allowing the City to obtain federal permits to build a pipeline for the withdrawal of up to 60 million gallons per day (mgd) of water from Lake Gaston. The Secretary, while overriding North Carolina's objection to the project, affirmed the application of the federal consistency requirement across state lines.

***PUERTO RICO:***

***Decision and Findings in the Consistency Appeal of Carlos A. Cruz Colón, (Cruz Colón Decision), September 27, 1993 —***

The Secretary declined to override the Commonwealth of Puerto Rico's objection to a pro-

posal by Mr. Carlos A. Cruz Colón (Appellant) to construct a wood pier that would be used by him for private recreational purposes. The Puerto Rico Planning Board (PRPB), the Commonwealth of Puerto Rico's coastal management agency, recommended as an alternative that the Appellant construct a public facility for the use of area residents. The Secretary found that the alternative identified by the PRPB in its consistency objection was both an available and reasonable alternative that would be consistent with Puerto Rico's Coastal Management Program. Accordingly, the Secretary held that the fourth element of Ground I was not satisfied.



#### CODIFICATION OF REGULATIONS TO CONFORM WITH 1990 COASTAL ZONE ACT REAUTHORIZATION AMENDMENTS.

NOAA issued a final rule, published in the Federal Register on May 31, 1994, which revised NOAA's regulations implementing the CZM program to conform to the statutory changes.

**SUMMARY:** The Coastal Zone Act Reauthorization Amendments of 1990, enacted November 5, 1990, amended the Coastal Zone Management Act (CZMA) and reauthorized NOAA's Coastal Zone Management (CZM) Program under that Act. Among the amendments were revisions to findings, policies and definitions in the CZMA; repeal of provisions on prelimi-

nary program approval grants, program segmentation, and significant improvements; and reorganization and consolidation of approval requirements for state programs.

Some of NOAA's CZM Program regulations needed to be revised to conform to the changes to the CZMA made by the Amendments. By modifying the NOAA regulations to reflect the new statutory requirements, the notice of final rule served to clarify the effect of the Amendments on coastal states, Federal agencies and other affected groups.

## APPENDIX E

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## APPENDIX F

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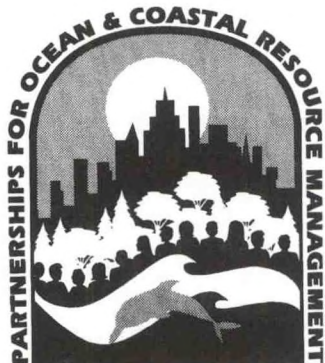
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