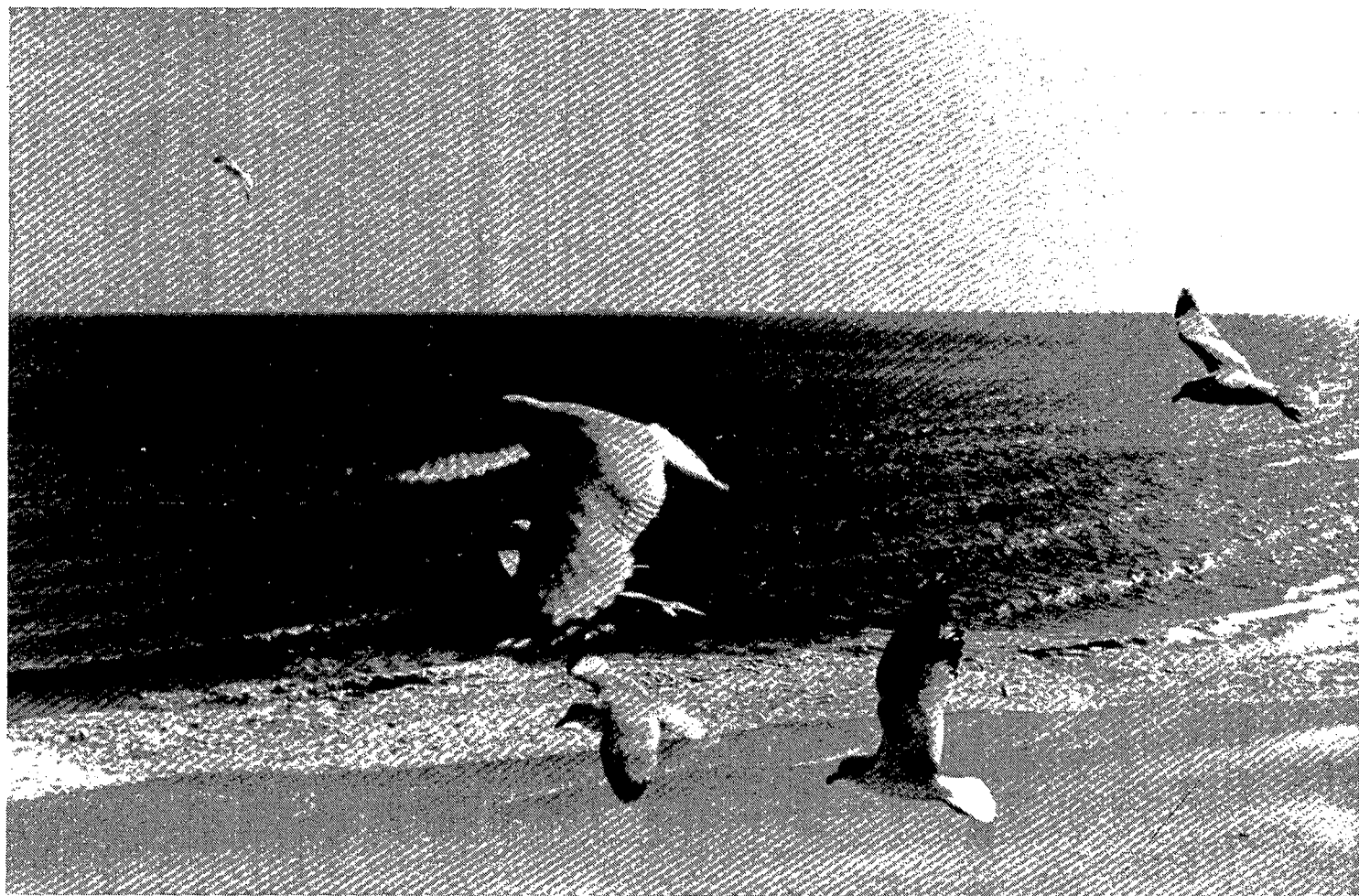




Marine and Estuarine Protection

Programs and Activities

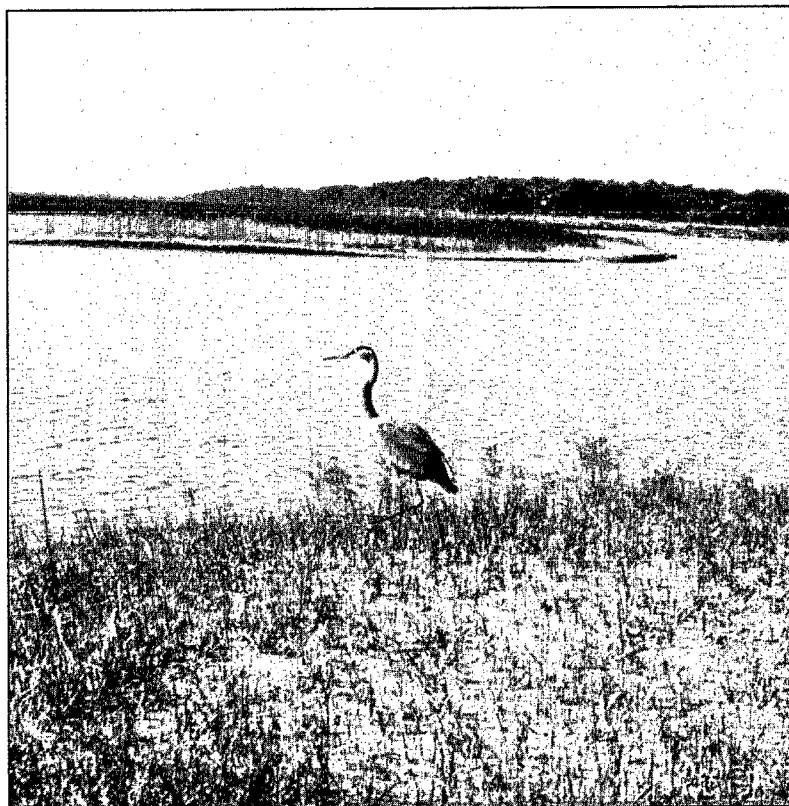


THE NATION'S COASTAL AND MARINE WATERS ARE UNIQUE, IRREPLACEABLE RESOURCES THAT MUST BE PROTECTED.

The U.S. Environmental Protection Agency (EPA) is committed

To protect, restore, and maintain the nation's coastal and marine waters to protect human health and sustain living resources.

To take actions to further reduce pollution of these waters and aggressively limit the effects of increasing coastal populations.



INTRODUCTION

EPA supports these goals:

Recovery of full recreational use of shores, beaches, and water by reducing sources of bacterial and other contamination, and plastics, floatable material, and other debris.

Restoration of the nation's shellfisheries and salt-water fisheries and protection of marine mammals and living resources by controlling pollution and causes of habitat degradation and loss.

Reduction in the use of coastal and marine waters for waste disposal by strictly limiting ocean dumping, tightening controls on land-based sources, and establishing aggressive programs to reduce the amount of waste generated by our society.

Greater understanding of the effects of pollution on complex coastal and marine ecosystems by expanding scientific research and monitoring programs and developing new technology.

Leadership by the United States in protection of the world's oceans by aggressively promoting international efforts to stop pollution and safeguard critical marine habitats and living resources.

COASTAL AND MARINE WATERS - A UNIQUE RESOURCE

Seen from space, Earth is indeed "the Water Planet" — unparalleled in our solar system because 71 percent of the planet's surface is water. Although vast, the oceans include vulnerable and complex environments and support many unique and important species.

Throughout human history, man has used this resource and its shores in many ways, including food production, transportation, scientific study, recreation, and waste disposal. In fact, the ocean is the ultimate repository for almost all waste disposed of on land and the atmosphere over a time scale ranging from days to geologic time.

But more than history attaches us to the oceans, and makes us mindful of our continued dependency on their proper functioning. For many, today, the oceans are the primary source of protein, as well as livelihood, commerce, and recreation. Closer to shore, in coastal waters, are perhaps the nation's most unique ecosystems—our bays, sounds and estuaries. This coastal water environment provides the critical habitat for a wide range of commercial and endangered species of fish, shellfish, birds, and aquatic and terrestrial wildlife.

A great diversity of plant and animal species are nurtured by coastal estuaries. In the Chesapeake Bay, more than 2,000 plants and animals have been identified, including 41 endangered or threatened species. Puget Sound contains more than 200 varieties of fish and 14 species of marine mammals. The Gulf of Mexico provides a critical habitat for 75 percent of the migratory waterfowl traveling across the United States.

Nationally, approximately 87% of the dollar value and 82% of the weight of U.S. finfish harvests are species whose life cycles depend entirely or in part on near coastal waters habitats.

Economically, coastal waters are worth billions of dollars. Most of the Nation's commercially valuable fish and shellfish depend upon tidal wetlands for sustenance. Each acre of the Atlantic coast wetland-estuary system can produce up to 125 pounds of commercial fish, and 80 percent of the total West Coast hardshell clam population is grown and harvested in muddy coastal wetlands. In total, commercial and recreational fishermen generate more than \$10 billion in direct revenue.

COASTAL AND MARINE WATERS - A UNIQUE RESOURCE

Several States have recognized the value of their fisheries through investments in projects such as warehouses, centralized ports, processing plants, and marketing and distribution operations. Maine is spending \$25 million in bond issues on port improvements and \$12 million on fishing piers in seven coastal towns. North Carolina has invested \$7.6 million in Federal and State funds in a new wharf and seafood industrial park.

Yet the economic value of a high-quality coastal environment extends far beyond fisheries. Coastal property values are skyrocketing along many shorelines, as public demand for living or vacationing by the water increases. Each year, millions of people enjoy the coastal environment for swimming, boating, hiking, and bird watching, and as parks, refuges, and open space.

In Florida over 13 million adults used the state's beaches in 1984, with total related sales estimated in excess of \$4.5 billion. Water-related tourism in the Great Lakes basin generates between \$8 and \$12 billion annually for local communities along the nation's northern border.

Although used by man, the oceans, like the air, are not owned by man, but are an international "commons." Both individual citizens and governments share roles of stewardship and partnership with other Nations to manage our ocean resources. Within the United States, efforts to protect and conserve the resources of the oceans must balance diverse interests.

CURRENT PROBLEMS AND THREATS

The very richness of the coastal environment has led to increased migration of the Nation's population to the coast. Already 70 percent of the U.S. population lives within 50 miles of a coastline, and that number is growing. From 1950 to 1984, the population in coastal counties grew by more than 80 percent. Florida's coast is now being settled at the rate of 3,000 to 4,000 people a week.

Residential, as well as seasonal, population growth has contributed to a boom in development in coastal communities around the country. Houses and condominiums, hotels and motels, marinas and restaurants, shops and other services, and manufacturing are taking over many shorelines. This new construction and development means that coastal waters receive more sediments and contaminants from runoff of stormwater, more sewage from overloaded treatment plants and septic tanks, and more wastes discharged from boats.

In addition, contaminants from other land and water uses in the coastal drainage basin continue to add to the problems of the coastal environment. These problems include runoff from agricultural lands, leachate from hazardous waste storage sites and landfills, deposition of pollutants from the air, disposal of the materials from dredging of channels and marinas, and draining and filling of wetlands.

The cumulative impacts of these activities have destroyed critical habitats and resulted in declines in important resources, toxic contamination of fish and sediments, risks to public health, and mounting threats to the entire coastal region and economy.

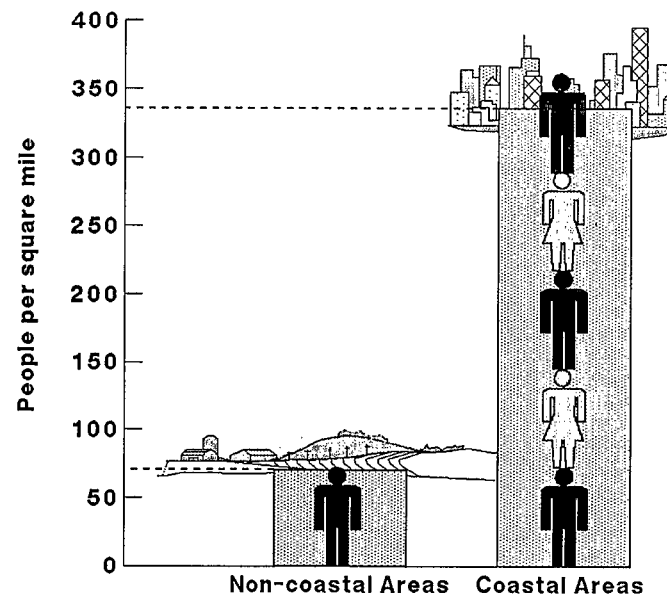


Figure 1.

The average population density in coastal counties is almost 5 times as great as in noncoastal counties.

CURRENT PROBLEMS AND THREATS

EPA has identified six major coastal environmental problems.

1. Toxic Contamination:

Throughout the United States, many fish, like striped bass, can no longer be eaten because of contamination by metals, pesticides, and other chemicals. Washington State fisheries report finding tumors in the livers of English sole, which dwell on sediment where contaminants can accumulate. Sport fishing advisories exist for all Great Lakes waters. State officials in New York have warned women of childbearing age and children under 15 against consuming more than half a pound of bluefish a week.

2. Pathogen Contamination:

Fish are also subject to contamination by pathogens such as disease-causing bacteria and viruses. Incidences of illness—including gastroenteritis, hepatitis A and cholera—from eating contaminated fish are rising around the United States. In addition, fully one third of the U.S. shellfish beds are closed because of pollution, resulting in millions of dollars in lost revenues. Over 4,500 cases of shellfish-associated gastroenteritis, believed caused by viruses, have been documented in the United States since 1980.



3. Eutrophication:

Patches of water that have been almost totally depleted of oxygen are proliferating. Eutrophication, the buildup of excessive organic matter in the water, is a probable cause of these "dead zones." Marine animals cannot survive without oxygen. As many as one million fluke and flounder were killed in the summer of 1988 when they became trapped in oxygen-depleted water in New Jersey's Raritan Bay. Another huge dead zone, 300 miles long and 10 miles wide, is adrift in the Gulf of Mexico.

4. Habitat Loss and Alteration:

Nearly 50 percent of coastal wetlands have been destroyed in the continental United States since the 1700s. Losses have averaged 20,000 acres per year over the past 25 years. Louisiana, which has 25 percent of the nation's coastal wetlands, has lost 40 percent of its wetlands from activities such as the channelization, draining, and leveeing of the Mississippi River. Loss or alteration of wetlands destroys the areas where many species live or breed.

5. Changes in Living Resources:

All too often coastal fisheries, wildlife, and waterfowl populations are reduced or changed as a result of pollution and habitat destruction. For example, harvest of fish stocks in Chesapeake Bay has been shifting from freshwater spawners such as striped bass to ocean spawners such as menhaden. This is due in part to degraded water quality in spawning and nursery areas. In addition, striped bass commercial harvest on the East Coast dropped from 14.7 million pounds in 1973 to 1.7 million pounds just 10 years later.

6. Persistent Marine Debris:

U.S. shores are also being inundated with plastic debris that can kill or maim marine life. As many as 2 million seabirds and 100,000 marine mammals die every year after eating or becoming entangled in such debris.

Many of us have now experienced the results of these problems firsthand. During the summers of 1987 and 1988, the public was confronted with fish kills, blooms of microscopic marine life (red and green tides), beach closings caused by garbage and medical wastes, and contaminated waters throughout the country. Frequent media attention, which chronicles these events, has reinforced the public's concern.

Historically, the ocean has been one of several options for the disposal of society's wastes. Most people assumed ocean waters had an inexhaustible capacity to assimilate wastes without harming ocean living resources. There has been a growing public perception that assimilative capacity is not infinite and Congress has now acted to end the ocean dumping of sewage sludge and industrial wastes by 1991.

THE CREATION OF OMEP

EPA created the Office of Marine and Estuarine Protection (OMEP) in 1984. This action reflects EPA's continuing and heightened commitment to protect the nation's ocean and coastal waters. By centralizing the major EPA programs dealing with this resource, the Agency now provides a focused responsibility for addressing the growing coastal and ocean problems and a concentrated emphasis on coastal protection. OMEP's approximately 40 environmental scientists, policy specialists, planners, and other professionals carry out the following activities:

Establish and oversee regulatory and monitoring policies for ocean disposal activities.

Support the development and implementation of comprehensive management plans for estuaries of national importance.

Support the Great Lakes and Chesapeake Bay Programs.

Coordinate marine research activities.

Provide an environmental ethic and coordination point for interagency and international ocean and coastal actions and issues.

In each of these activities OMEP staff strive to focus and integrate Agency regulatory tools and management attention on current and future coastal problems, for a unique geographic approach within EPA.

OMEP's activities to protect ocean and coastal waters include implementation of programs under two major laws—the Marine Protection, Research, and Sanctuaries Act and the Clean Water Act—as well as a number of provisions under other laws, such as the Marine Plastic Pollution Research and Control Act.

Simply speaking, within EPA, OMEP provides the primary protection focus for an important environmental resource: the Nation's estuaries, coastal waters, and oceans.

OMEP'S OVERALL OBJECTIVE IN RUNNING THE OCEAN DUMPING PROGRAM IS TO MINIMIZE ANY IMPACTS OF OCEAN DISPOSAL THROUGH PERMITTING, SITE DESIGNATION, MONITORING, AND ENFORCEMENT PROGRAMS AND ACTIONS.

The Marine Protection, Research, and Sanctuaries Act

The Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA), better known as the Ocean Dumping Act, regulates the ocean dumping of all types of materials that may adversely affect human health, the marine environment, or the economic potential of the ocean. Titles I and II make EPA and the U.S. Army Corps of Engineers responsible for administering the Act, the National Oceanic and Atmospheric Administration (NOAA) responsible for monitoring the effects of ocean dumping, and the Coast Guard responsible for enforcing the Act. Title III gives the Secretary of Commerce the authority to establish marine sanctuaries.

In addition, the MPRSA is the domestic legislation for implementing the provisions of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Dumping Convention), the only global agreement concerned solely with the dumping of wastes into the marine environment.

The MPRSA applies to the open ocean and coastal waters, but not to estuarine waters. MPRSA defines "material" as all wastes except those discharged through a pipeline or from a stationary drilling platform. The Clean Water Act governs these excepted materials and all dumping in estuaries.

In 1988, Congress passed the Ocean Dumping Ban Act to amend the MPRSA. The primary purpose of this legislation is to end the dumping of sewage sludge and industrial waste in the oceans by December 1991. In addition, this Act regulates the operation of garbage barges and makes it illegal to dispose of medical waste in coastal or navigable waters of the United States.

The MPRSA also governs the ocean dumping of dredged material. EPA is given authority to choose sites for dredged material dumping, but the U.S. Army Corps of Engineers is responsible for issuing permits to dump at those sites.

OCEAN DUMPING PROGRAM

Industrial Waste and Sewage Sludge Disposal

Between 1973 and 1986 the amount of industrial waste dumped in the ocean declined steadily (Figure 2). The number of industrial waste dumpers dropped from over 100 to 1. The remaining dumper uses a site off the New Jersey coast for disposing of hydrochloric acid.

The ocean dumping of sewage sludge has occurred under court order since 1981. The amount of sewage sludge increased from 4.8 million wet tons in 1973 to 7.9 million wet tons in 1986. As of January 1989, only 9 ocean dumpers remain active and all are located in the metropolitan New Jersey/New York area.

The Ocean Dumping Ban Act of 1988 sets a December 1991 deadline to end the dumping of these types of waste. The Act directs EPA to require the development of a compliance or enforcement agreement between the dumper, the Governor of the appropriate State, and EPA. This agreement must include a plan that will phase out the dumping no later than the deadline, and a schedule for implementing environmentally sound disposal alternatives. Through the agreement, dumpers are required to establish trust funds that will target money to aid the development of alternative systems. The legislation imposes two disposal fees on permitted dumpers: an administrative fee to cover the costs of carrying out the Act and a punitive fee to be paid by dumpers who cannot end ocean dumping by 1991.

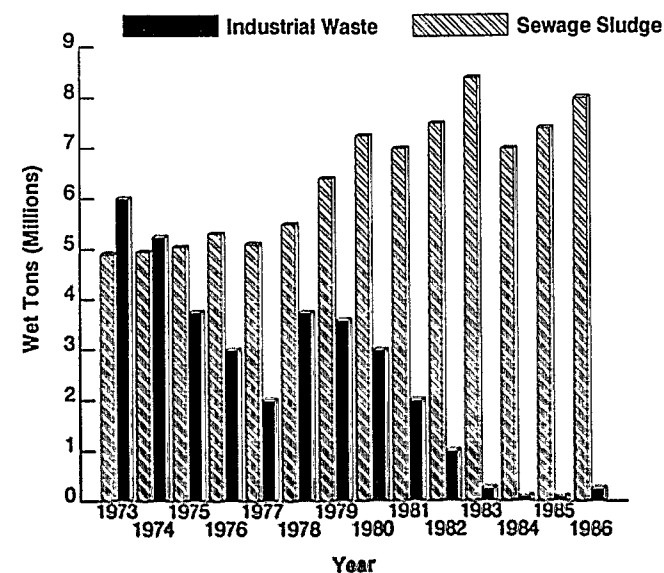


Figure 2.
The total amount of industrial waste and sewage sludge that was dumped in the ocean, under EPA permits, from 1973 to 1986.

Dredged Material Disposal

At present, over 90 percent of the total volume of material dumped in the ocean consists of sediment dredged from U.S. harbors and channels. The U.S. Army Corps of Engineers issues permits for disposal of dredged material using human health and marine impact criteria developed by EPA. Environmental aspects are taken into account when sites are selected, during the permitting process, and through EPA's management and monitoring programs.

Ocean Dumping Sites

A large number of ocean dumping sites existed in 1972 when the MPRSA was passed. Based on their historical use, EPA designated a few of these sites for disposal of nondredged material (for sewage sludge, woodburning, fish waste, and acid waste), and a larger number for disposal of dredged material. Designations were made on an interim basis until environmental evaluations could be completed. In 1977, a program was initiated for permanently designating the sites pending completion of environmental impact statements or site designation studies.

The site designation process takes about 2.5 years and is designed to minimize adverse environmental effects and to ensure that dumping interferes as little as possible with other activities in the marine environment. OMEP has now completed final designation for 60 sites (Figure 4).

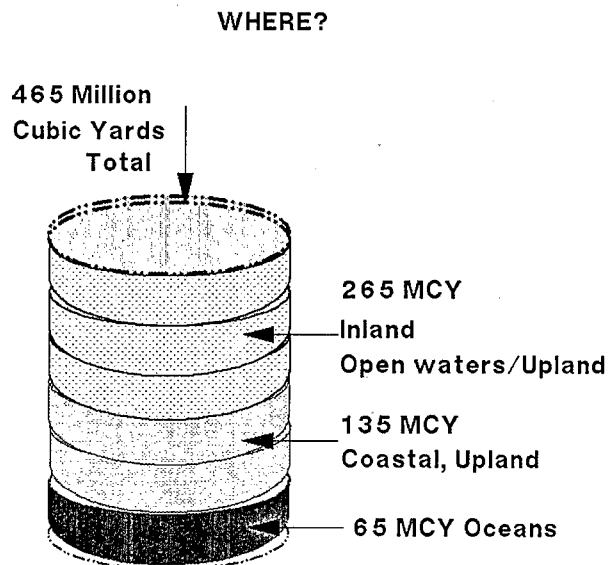


Figure 3.
Of the approximately 465 million cubic yards of sediment dredged in the United States each year, about 65 million cubic yards are disposed in ocean waters.

OCEAN DUMPING PROGRAM

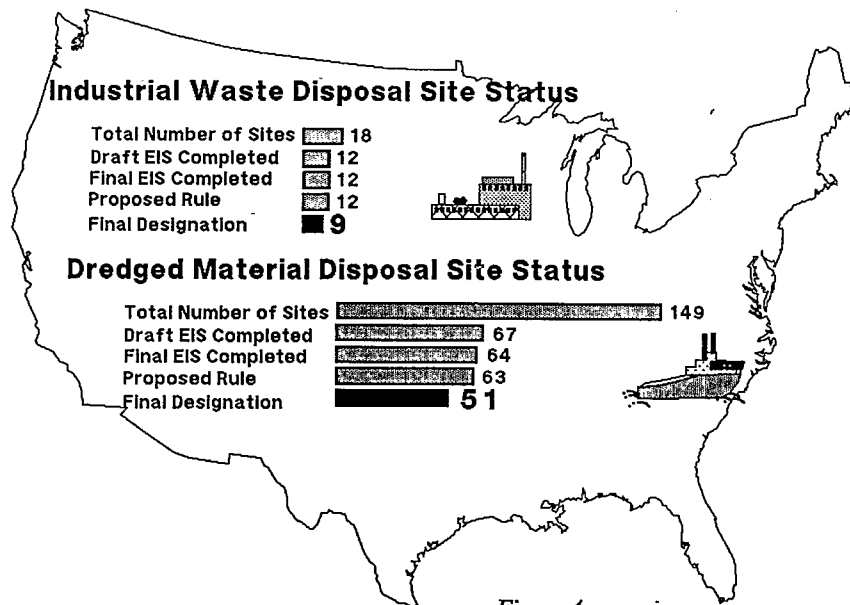


Figure 4.
Completion status of industrial waste and dredged material disposal site designations.

In 1986, OMEP delegated responsibility to the seven coastal EPA Regional Offices for the designation of ocean dumping sites for dredged material. Regional delegation will enhance local coordination and expedite decisions about site designation. To speed up the process still more, in 1987 OMEP negotiated a national umbrella Agreement with the Corps of Engineers. This Agreement makes 1991 the deadline for final action on all existing ocean disposal sites and establishes priorities for designating sites at the regional level.

Ocean Monitoring

An underlying assumption of the ocean dumping program is that the ocean environment will be protected if those who receive permits for dumping obey the conditions written into the permit and the requirements for managing the dumpsite. Monitoring programs are conducted to determine (1) whether dumpers are complying with their permits, and (2) whether the waste disposal is causing any unexpected adverse effects.

The Ocean Dumping Ban Act of 1988 requires EPA, in cooperation with NOAA, to design and conduct programs for monitoring environmental conditions at dump sites for sewage sludge and industrial waste. OMEP operates an Ocean Survey Vessel, the Peter W. Anderson (Figure 5), for ocean monitoring and site designation field studies.

Enforcement

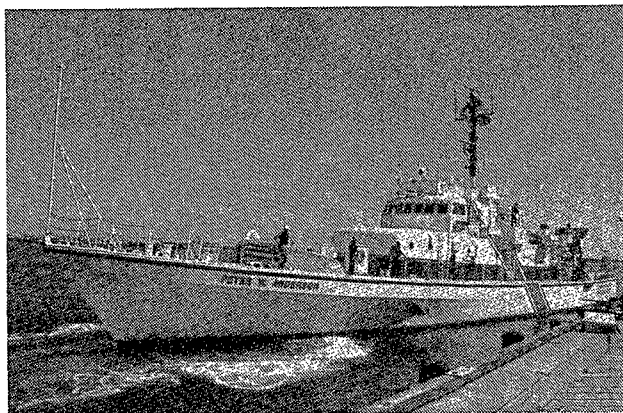
The U.S. Coast Guard has overall responsibility under the MPRSA for surveillance to prevent unlawful ocean dumping and to ensure that authorized dumping complies with permit conditions. The Coast Guard uses several surveillance methods including vessel and aircraft patrols, shipriders on dumping vessels, in-port boardings and inspections, and radar. Permittees must notify authorities in advance of dumping operations.

The Ocean Dumping Ban Act of 1988 requires each dumper of sewage sludge or industrial waste to enter into a compliance and enforcement agreement to phase out ocean dumping by 1991 and to establish an administrative and punitive fee structure.

Approximately 117 civil enforcement actions have been brought under the MPRSA since 1973. The violations have ranged from failure to meet permit reporting requirements to dumping without a permit. One criminal enforcement action filed in 1987 is awaiting trial.

Civil and criminal penalties will continue to be imposed for dumping without a permit. Beginning in 1992, civil penalties will be imposed on all ocean dumpers of sewage sludge and industrial wastes, whether or not they have received a permit. This fee will increase yearly. Illegal dumpers are also subject to criminal penalties.

Figure 5.
The OSV Peter W. Anderson is equipped to sample the water column, sediments on the seafloor, and emissions from incinerator vessels. She can collect samples of dredged material, industrial waste, or sewage sludge.



PLASTICS PROGRAM

OMEP SUPPORTS THE OVERALL EPA OBJECTIVE TO ENSURE THAT PLASTIC DEBRIS DOES NOT ENTER THE MARINE ENVIRONMENT.

The Marine Plastic Pollution Research and Control Act of 1987 requires that the effects of plastic pollution on the marine environment be identified and reduced. Under this law, EPA is studying ways to abate plastic pollution. OMEP is responsible for the marine aspects of this study, which includes several elements:

A listing of improper disposal practices and specific plastic materials that may injure fish and wildlife, degrade or cause economic loss to coastal waterfront areas, or cause other impacts

A description of EPA's authority and ongoing reduction measures to reduce plastics in the marine environment

An evaluation of substitutes for some plastic materials, recycling incentives, and use of degradable materials.

In 1988, Congress passed another law dealing with plastic pollution. Commonly called the Degradable Plastic Ring Carrier Act, this legislation directs EPA to require by regulation that plastic ring carriers be made of naturally degradable material that, when discarded, will decompose within a reasonable time.

The Marine Plastic Pollution Research and Control Act implements Annex V of the Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships (MARPOL). MARPOL prohibits discharge into the sea of all plastics including, but not limited to, synthetic ropes, synthetic fishing nets, and plastic garbage bags. It also prohibits discharge of food wastes and other floating materials within specified distances from land.

In conducting these studies and analyses, OMEP will work with other EPA programs, particularly those dealing with waste minimization policies, and with other Federal agencies that have related responsibilities under the law. The Department of Commerce is charged with conducting an analysis on the effects of plastic materials on the marine environment and recommending appropriate legislation. NOAA, the Department of Transportation (DOT) and EPA are charged with running a three-year program to educate the public about plastic pollution.

POINT SOURCE CONTROL ACTIVITIES

IT IS OMEP'S OBJECTIVE TO ENSURE PROTECTION OF THE MARINE ECOSYSTEM THROUGH STRINGENT CONTROLS ON POINT SOURCE DISCHARGES.

The Clean Water Act

The Clean Water Act is the single most important law dealing with the environmental quality of all United States surface waters, both marine and fresh. This Act sets a national goal to restore and maintain the physical, chemical, and biological integrity of the Nation's waters. For many years, EPA and the States have engaged in an array of activities under the Clean Water Act, including development of standards for municipal and industrial point sources of pollution, grants for the construction of sewage treatment facilities, and compliance monitoring and enforcement.

A point source of pollution is one that can be pinpointed specifically, for example, the discharge coming from a sewage treatment facility or a manufacturing plant.

A central feature of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES). This provision establishes a procedure by which point sources discharging pollutants to

navigable waters receive permits authorizing the discharge. Without permits issued either by EPA or States delegated responsibility for the permit program, dumping or other discharge of any non-dredged materials is illegal within 3 miles of the coast and inland, and point source discharges are illegal beyond 3 miles.

OMEP is directly responsible, under two provisions of the Clean Water Act, for protection of the marine ecosystem.

Section 301(h) of the Act allows qualified publicly owned treatment works (POTWs) that discharge into coastal or ocean waters to provide less than secondary treatment if certain conditions are met. Secondary treatment removes 90 percent of all solid waste from sewage effluent.

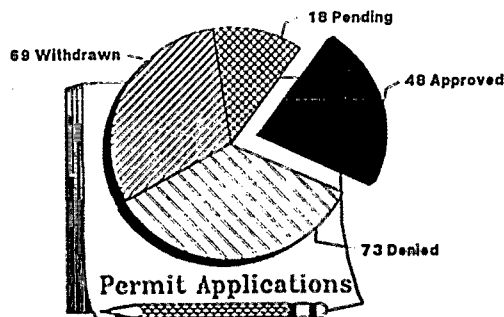
Section 403(c) requires that all NPDES-permitted discharges from point sources into the territorial seas, the contiguous zone, and the oceans must not "unreasonably degrade the marine environment." This requirement can only be met

POINT SOURCE CONTROL ACTIVITIES

after considering the effects of pollutant disposal on human health and welfare, marine life, and aesthetic, recreational, and commercial values; the persistence and permanence of these effects; and the effects of varying disposal rates.

Section 404 of the Clean Water Act controls the discharge of dredged materials. This provision is regulated by the Army Corps of Engineers, using evaluation criteria developed jointly with EPA.

These provisions are intended to cover all pollutants of concern to the marine and estuarine environment. OMEP policy requires that, at a minimum, decisions about granting permits under the Clean Water Act be made on the basis of water quality. This approach includes a site-specific assessment to ensure that public water supplies and recreational activities are protected and a balanced fish population is maintained. Section 403(c) goes still further, requiring a more thorough assessment based on overall environmental effects such as ecosystem diversity and productivity and considering effects on sediment as well as in the water column.



An Agency strategy for implementation of Section 403(c) of the Clean Water Act is under development. The strategy will be discussed in a report to be submitted to Congress in May 1989 as required by the Ocean Dumping Ban Act of 1988. The Act requires that the report include a schedule for implementing 403(c), an estimate of the resources needed for implementation, and recommendations, if any, for statutory changes.

Discharger Status

Very few U.S. municipal dischargers to coastal or ocean waters qualify for a 301(h) permit. A total of 208 dischargers applied for these permits by the Clean Water Act's 1982 deadline. No new applications are allowed.

As of December 1988, EPA had made 190 final decisions, approving 48 permits and denying 73, the remaining applications having been withdrawn. Denied permit applicants are required to meet secondary treatment requirements (Figure 6).

The Water Quality Act of 1987 modified the 301(h) program by, among other changes, requiring a minimum of primary treatment and compliance with all pretreatment requirements. A number of permittees will probably not be able to achieve the new standards and will need to install additional treatment.

Figure 6.
The current status of 301(h) Permit Applications

IT IS OMEP'S OBJECTIVE TO PREVENT FURTHER DEGRADATION OF ESTUARIES AND OTHER NEAR COASTAL WATERS, AND TO PROTECT AND RESTORE THE ENVIRONMENTAL QUALITY OF THESE WATERS THROUGH THE DEVELOPMENT AND IMPLEMENTATION OF A NATIONAL PLANNING AND DEMONSTRATION PROGRAM.

In addition to managing programs to protect the coastal and ocean environment from any impacts of direct discharges, OMEP also provides the primary focus within EPA for comprehensive planning to restore and protect coastal resources. It is this combination of activities that will, over the long term, enable EPA to meet its goals.

The Water Quality Act

In 1987, Congress amended the Clean Water Act with the Water Quality Act. This new law offers opportunities for regulatory agencies, the regulated community, and the public to expand ongoing programs with new initiatives, including programs to control toxic materials in surface water and pollution from nonpoint sources, and to protect and restore lakes and estuaries.

The Water Quality Act places a new emphasis on going beyond national pollution control standards to address site-specific problems and maximize environmental results. Three of its provisions focus attention on protecting and restoring important coastal resources: the National Estuary Program, the Great Lakes Program, and the Chesapeake Bay Program. OMEP is directly responsible for carrying out the National Estuary Program, and for overseeing and supporting the Chesapeake Bay and Great Lakes Programs.

A nonpoint source of pollution is one that cannot be precisely pinpointed; it is diffuse, like runoff of nutrients from agricultural land or deposition of contaminants from the air.

NEAR COASTAL WATERS ACTIVITIES

A Resource Focus

EPA programs are typically based on the uniform application of controls nationwide. But coastal problems and solutions tend to be specific to a given site. The resource is a complex ecological system with subtle interdependencies among many species and habitats. Agricultural runoff and other nonpoint sources contribute pesticides and excess phosphorus and nitrogen to bays hundreds of miles away; the wind carries toxic materials to contaminate bottom sediments in otherwise pristine waters. Conventional, "end of pipe" pollution controls are not typically enough.

As a result of these factors, OMEP has developed programs and approaches that are in many ways unique. Its programs zero in on a specific coastal area. The OMEP approach is a fresh, creative way of solving environmental problems, one that recognizes an integrated ecosystem, not clusters of isolated problems. As problems are identified within an area, all legal authorities and the regulatory and management tools of other EPA, Federal, State, and local agencies must be put to work for maximum results. Furthermore, those results, and the success of the program, are measured in terms of the environmental health and living resources of the ecosystem, rather than by surrogate measures such as compliance statistics.

Over its four-year life, OMEP has initiated or supported such programs in 18 coastal areas (Figure 7). Although the approach could be considered an experiment, it is clearly an opportunity for innovation. EPA's experiences in the Great Lakes and Chesapeake Bay offer a successful environmental model to emulate and build on.

NEAR COASTAL WATERS ACTIVITIES

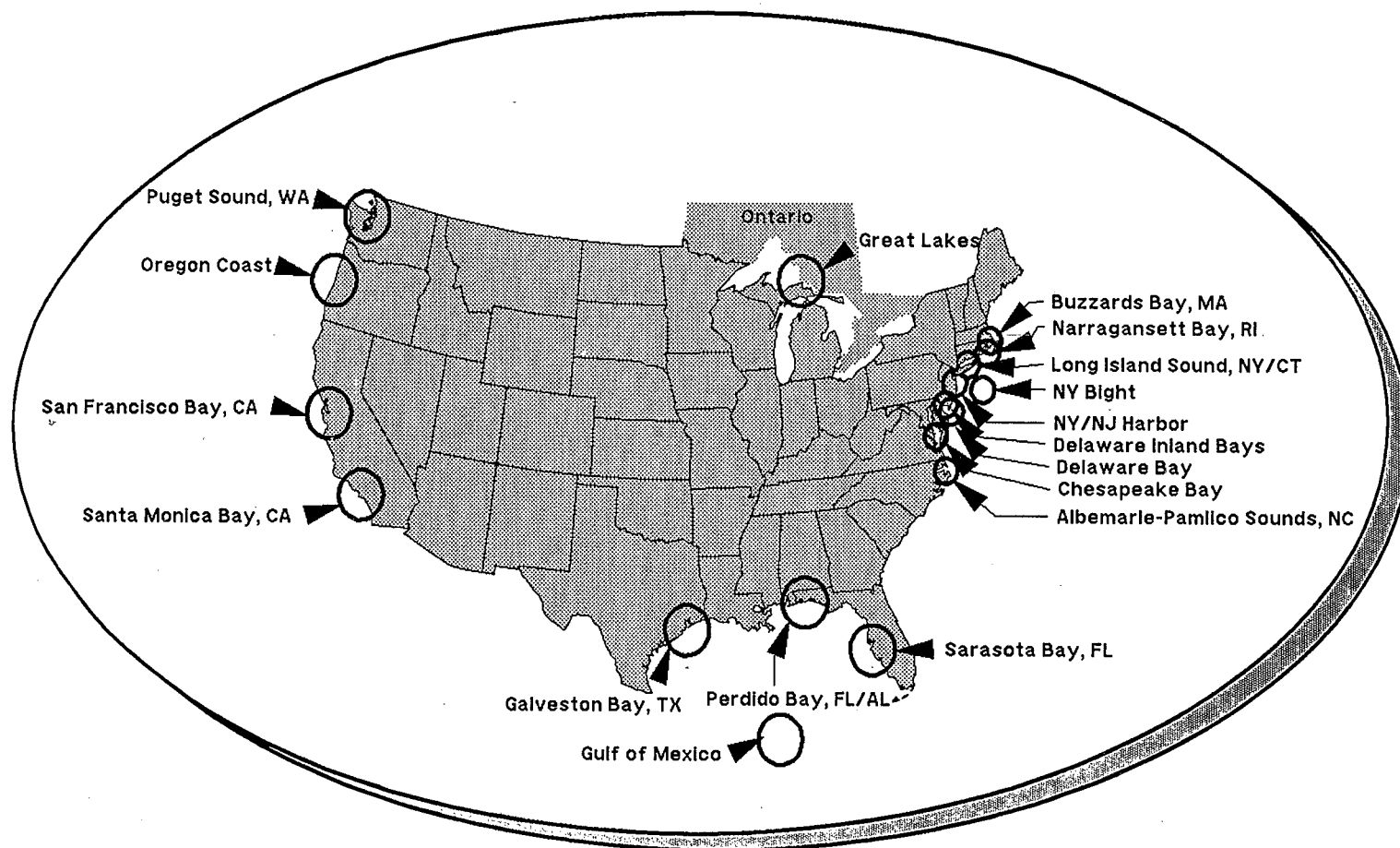
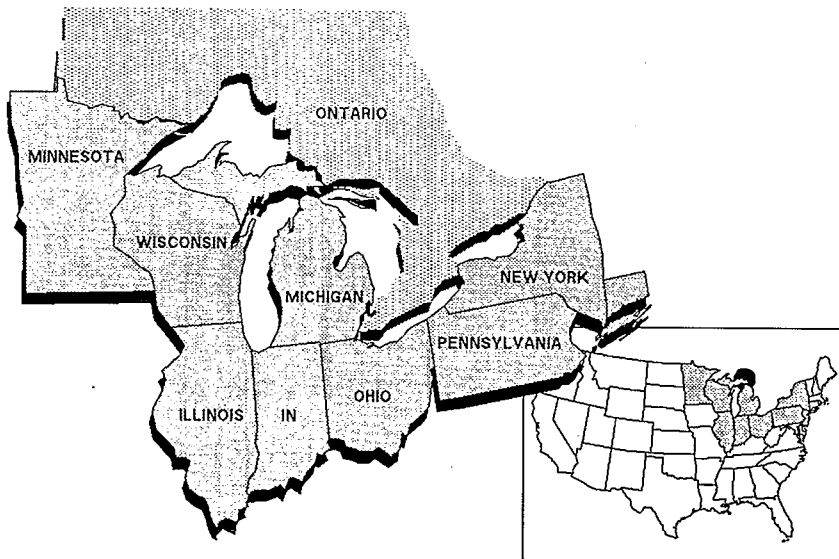


Figure 7.
1988 : Waters covered under Agency initiatives

NEAR COASTAL WATERS ACTIVITIES

The Great Lakes Program



The Great Lakes system is the largest reservoir of fresh surface water in North America and contains about 18 percent of the world's supply. The Great Lakes are a fishery resource, a transportation system, a water supply, a recreation resource, a modifier of climate, and a means of waste disposal. In both Canada and the United States, all of these uses have contributed to the development of one of the world's largest inland concentrations of population and industry.

One third of the 300,000-square-mile drainage basin is covered by water. The numerous tributaries receive drainage from many land uses and types of soil, resulting in a variety of pollution problems. Despite their size, the Lakes are especially sensitive to pollution. Less than 1 percent of the total volume of water in the system flows out the St. Lawrence each year, thus toxic pollutants are left to accumulate in bottom sediments and fish. The relatively closed nature of the system makes the Great Lakes vulnerable to pollution over the long term and their huge volume of water makes reversal of change due to pollution very difficult.

Launched in 1970, the Great Lakes Program is the oldest geographically focused environmental program in the United States. A cooperative effort between the United States and Canada, the program fulfills the Great Lakes Water Quality Agreement between the two countries.

The goal of the Great Lakes Water Quality Agreement is "to restore and maintain the physical, chemical, and biological integrity of the Great Lakes Basin ecosystem." This emphasis on a comprehensive ecosystem approach is the cornerstone of both GLNPO operations and OMEP's overall approach to coastal environmental management.

NEAR COASTAL WATERS ACTIVITIES

The Great Lakes National Program Office (GLNPO) was created in 1978 to oversee the United States' fulfillment of its obligations under the Agreement with Canada. GLNPO is located in Chicago and provides national management for the Great Lakes program. OMEP's role is one of support and oversight.

Concerns about water quality in the Great Lakes have evolved over time from disease-causing organisms to oxygen depletion and eutrophication and, recently, to toxic substances as the leading threat to human and ecosystem health.

The program initially tackled control of pollution from individual, identifiable—or point—sources. Major municipal treatment plants were required to reduce phosphorus in effluents, and phosphate detergent was banned in many of the Great Lakes States. These efforts successfully reduced nutrients, resulting in elevated oxygen levels and restoration of fish in Lake Erie and elsewhere.

The program then turned to nonpoint sources of pollution. The principal nonpoint source of excess nutrients was the runoff of surface water from agricultural land. This water carries topsoil laden with nutrients (including fertilizers) to the Lakes. GLNPO, working with the Department of Agriculture's Soil Conservation Service, funded projects with individual farmers to illustrate how voluntary best management practices could reduce phosphorus loadings from agricultural sources. Today the States have their own phosphorus control programs as part of the implementation agreement with Canada.

The first Water Quality Agreement was signed by the United States and Canada in 1972 and has been amended three times. During negotiations for the most recent amendments, in 1987, the principal concern was the control of persistent toxic substances. These substances have accumulated in sediments in many urban and industrial centers, known as "Areas of Concern," in both countries.

The Clean Water Act amendments of 1987 direct GLNPO to coordinate actions within and external to EPA that are aimed at improving water quality in the Great Lakes to ensure U.S. compliance with the Great Lakes Water Quality Agreement. The Act further requires GLNPO to manage Great Lakes surveillance, research, and demonstration projects.

NEAR COASTAL WATERS ACTIVITIES

A new five-year strategy for GLNPO has the following goals:

Support *the completion of Lakewide Management Plans for Lakes Michigan, Ontario, and Erie to determine the steps needed to make fish safe to eat.*

Support *the completion and implementation of Remedial Action Plans to restore beneficial uses in all Areas of Concern.*

Obtain *enough information about sources, fates, and effects of pollutants to support a mass balance approach in remedial programs.*

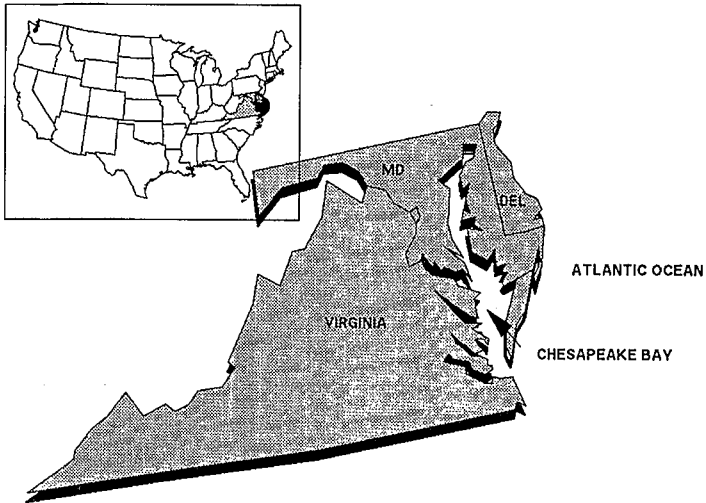
Conduct *a demonstration program to assess and address contaminated bottom sediments.*

Evaluate *results of point source and non-point source remedial programs to determine whether additional controls are needed to restore oxygen levels in Lake Erie.*

Strengthen *partnerships with the Great Lakes States, other EPA programs, and other Federal agencies in carrying out all responsibilities.*

Protect *the Lakes from human abuse by improving public understanding of the Great Lakes system and related issues.*

The Chesapeake Bay Program



The Chesapeake Bay is the largest estuary in the United States; biologically, it is one of the most productive systems in the world. It is part of an interconnected system that includes a portion of the Atlantic Ocean and rivers draining parts of New York, Pennsylvania, West Virginia, Maryland, Delaware, and Virginia. The Bay proper is approximately 200 miles long and ranges in width from about 4 miles to 30 miles. The water surface of the Bay proper covers more than 2,500 square miles. However, the Bay is relatively shallow, averaging 28 feet in depth, making it very sensitive to temperature and wind. The water and related land resources of Chesapeake Bay serve over 12 million people.

The Chesapeake Bay program is managed by EPA's Region in Philadelphia (Region III), and day-to-day operations are handled by the Chesapeake Bay Liaison Office in Annapolis, Maryland. OMEP's role is one of support and oversight.

The Chesapeake Bay Program began in 1977 as a Federal-State partnership. In 1983 the Governors of Maryland, Virginia, and Pennsylvania, the mayor of the District of Columbia, the Chesapeake Bay Commission, and EPA signed the Chesapeake Bay Agreement. This agreement committed the States and the District of Columbia to prepare plans to improve and protect the Bay's water quality and living resources. **The following actions were implemented:**

Institution of land-use controls at or near the bay shoreline

Development of nonpoint source control programs for agricultural and urban sources

Acceleration of tighter controls on point sources, particularly municipal treatment plants

Strengthening of wetlands protection laws and programs

NEAR COASTAL WATERS ACTIVITIES

When the Chesapeake Bay Program began, many studies had documented the negative effects of pollution. However, scientific data were lacking for two serious problems that were disturbing leaders and citizens throughout the Bay region. The Bay's grasses were disappearing in many areas and landings of certain fish species were declining.

Three critical areas were chosen for intensive investigation—nutrient enrichment, toxic substances, and the decline of submerged aquatic vegetation (SAV). Results of these investigations have greatly increased the understanding of sources of pollutants, their transport and fate within the estuary, and their impacts on a major ecosystem component, SAV.

These research findings contributed to the second phase of the program, the characterization effort, which concentrated on determining trends in the Bay's water quality and the health of its resources. The goal of characterization was to provide an information base for evaluating human impacts on the ecosystem and a framework for guiding management options. The product of this phase is *Chesapeake Bay: A Profile of Environmental Change*. This report presents the current state of the Bay and trends in its water quality and resources. It also suggests possible causes of some of the changes observed and thereby provides a useful management tool.

The technical studies and Bay-wide characterization laid a foundation for determining appropriate management strategies. The major product from the third phase is *Chesapeake Bay: A Framework for Action*. This report presents a framework for the actions that users must take to restore and maintain the ecological integrity of Chesapeake Bay. Additional products of the phase include predictive models and a comprehensive data management system. This phase also encouraged a regional management approach to guide the future of the Bay.

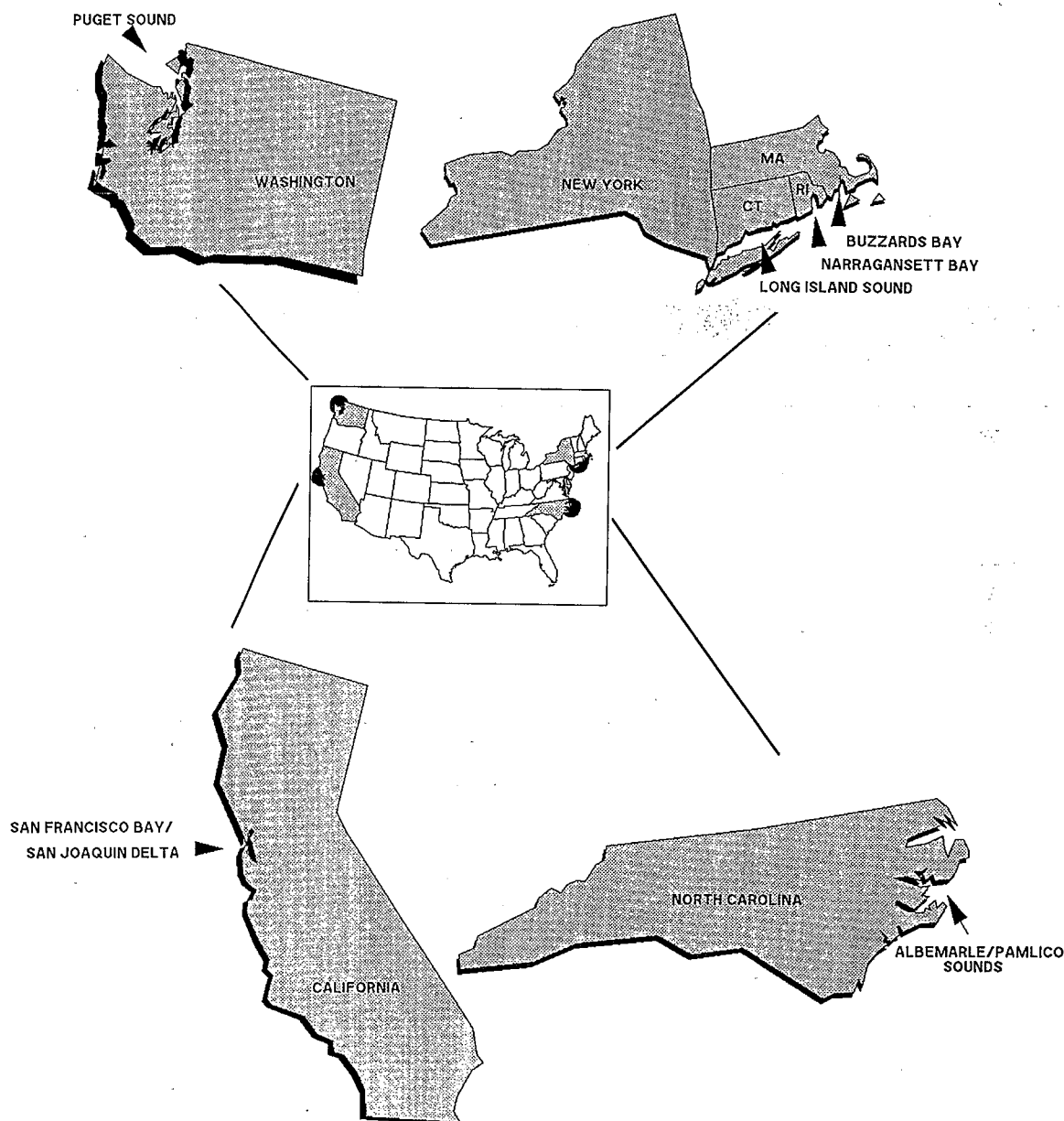
In 1987, the parties signed a new Agreement for continued cooperative efforts to restore and protect Chesapeake Bay. It contains goals and priority commitments for living resources; water quality; population growth and development; public information, education and participation; public access; and governance. A most important provision is a commitment among the Bay States to reduce the levels of nutrients in the Bay by 40 percent by the year 2000. Strategies to control toxic materials, manage fisheries, and minimize the impact of development on the Bay's drainage basin are being developed.

The Chesapeake Bay Program was also formally mandated by the 1987 Amendments to the Clean Water Act.

The National Estuary Program

The lessons learned and the precedents set by the Great Lakes and Chesapeake Bay programs helped lay the foundation for the National Estuary Program. In 1985, the Congress directed EPA to conduct programs in four estuaries: Narragansett Bay in Rhode Island, Buzzards Bay in Massachusetts, Long Island Sound in New York and Connecticut, and Puget Sound in Washington. In 1986, EPA added San Francisco Bay in California and Albemarle/Pamlico Sounds in North Carolina.

The National Estuary Program was formally established by the 1987 amendments to the Clean Water Act. The program's goals are protection and improvement of water quality, and enhancement of living resources. The types of environmental problems the national program addresses are complex. They include loss of habitat and living resources, contamination of sediments by toxic materials, elevation of nutrient levels, contamination by bacteria, and depletion of oxygen. These problems can affect human health through contact with the water and by ingestion of contaminated shellfish and finfish. More frequently, pollution problems limit the estuary's desirable uses, like recreational and commercial finfishing and shellfishing, and may even close beaches to swimming. Environmental problems may not affect other important uses, such as shipping, municipal and industrial water use, and waste disposal. Nevertheless the program assumes that these conflicting use demands can be met through collaborative planning.



NEAR COASTAL WATERS ACTIVITIES

The Clean Water Act amendments authorize EPA to convene Management Conferences to develop Comprehensive Conservation and Management Plans (CCMP) for estuaries of national significance that are threatened by pollution, development or overuse.

Management Conferences may be convened for up to five years. **The Act identifies seven major purposes of a Management Conference:**

1. **Assess trends** in water quality, natural resources and uses of the estuary.
2. **Collect, characterize, and assess data** on toxic materials, nutrients, and natural resources within the estuary to identify the causes of environmental problems.
3. **Develop the relationship** between the in-place loads and point and nonpoint loadings of pollutants to the estuary and the potential uses of the estuary.
4. **Develop a CCMP** that recommends priority corrective actions and compliance schedules addressing point and nonpoint sources of pollution to restore and maintain the chemical, physical, and biological integrity of the estuary, and assures that the designated uses of the estuary are protected.

5. **Develop plans** for the coordinated implementation of the CCMP by the States as well as Federal and local agencies participating in the conference.

6. **Monitor the effectiveness** of the actions taken.

7. **Review all Federal financial assistance programs** and Federal development projects for consistency with the plan.

The Act identifies required members of a Management Conference to ensure representation by a broad range of interests. Membership must include representatives of Federal, State, regional and local agencies, affected industries, academia, and the public.

NEAR COASTAL WATERS ACTIVITIES

Each estuary program must establish its own objectives and operating methods, which depend on the character and problems of that estuary. The interests and values of its public are also a paramount concern. Although each program is unique, each goes through the following four phases:

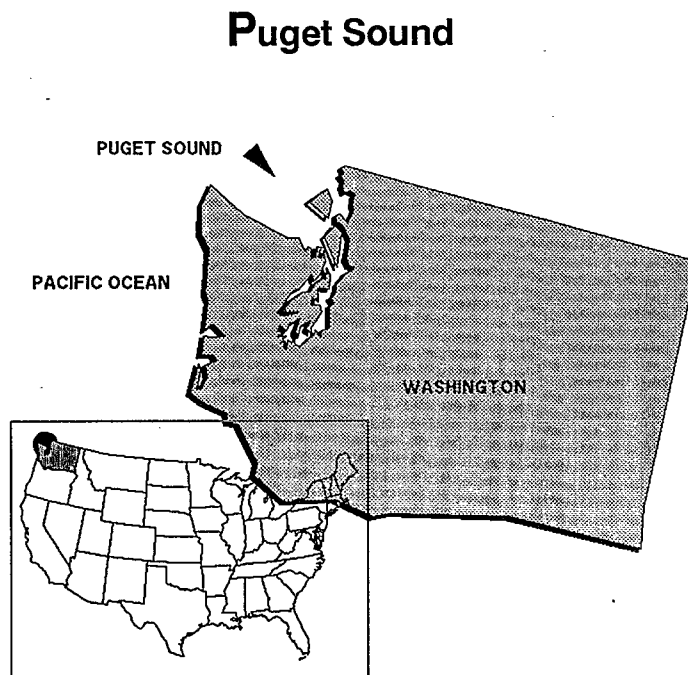
1. **The planning initiative** during which the management framework is built
2. **Characterization and problem definition**, which examines changes in water quality and natural resources, evaluates point and nonpoint pollutant loadings, and determines their relationship to pollution problems
3. **Creation of a Comprehensive Conservation and Management Plan**
4. **Implementation of the plan.**

Figure 8 shows the kinds of conflicts and probable causes faced by the 12 estuaries now in the national program. Although each estuary is unique, their programs share some common themes. Two estuaries, one on the East Coast and one on the West, will be discussed as examples of how the National Estuary Program works. All of the six original programs will complete a CCMP during the early 1990s.

PROBLEMS ↓ AREAS	TOXIC CONTAMINATION		PATHOGEN CONTAMINATION		EUTROPHICATION		HABITAT LOSS AND ALTERATION		CHANGES IN LIVING RESOURCES		OTHER	
Albemarle-Pamlico Sounds	☞ X ⊕	☞ X	☞ X	☞ X	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕			
Buzzards Bay	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕			
Delaware Bay	☞ X ⊕	☞ X	☞ X	☞			X ⊕	☞ X ⊕	☞ X ⊕			
Delaware Inland Bays	☞ ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕			X ⊕	☞ X ⊕	☞ X ⊕			
Galveston Bay	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕			
Long Island Sound	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X			⊕	☞	☞ ⊕			
Narragansett Bay	☞ X	☞ X	☞ X	☞ X ⊕			⊕	☞ X ⊕	☞ X ⊕			
NY/NJ Harbor	☞ X ⊕	☞ X ⊕	☞ X	☞ X	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕		
Puget Sound	☞ X ⊕	☞ X ⊕	☞ X	☞ X	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X	☞ X			
Sarasota Bay		☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕			⊕
San Francisco Bay	☞ X ⊕						☞ ⊕	☞ X ⊕	☞ X ⊕			
Santa Monica Bay	☞ X ⊕	☞ X ⊕	☞ X ⊕	☞ X ⊕				☞ X				
<div>☞ POINT SOURCES</div> <div>X NONPOINT SOURCES</div> <div>⊕ OTHER</div>												

Figure 8.
Typical conflicts and probable causes faced by 12 estuaries in the national program.

NEAR COASTAL WATERS ACTIVITIES



Puget Sound supports a rich and diverse commercial and sport fishery for fish and shellfish. Its 2,200 square miles of bays and inlets and over 2,000 miles of shoreline embrace industrial and commercial activity, shipping, and international commerce. Puget Sound is a major recreational attraction that contributes significantly to growing tourism in the area.

Over the past three decades, environmental programs designed to protect this area have controlled many conventional pollutants and maintained Puget Sound in relatively good health. However, continuing development of the region has imposed growing demands on the estuary. This growth is accompanied by increasing evidence of serious water and sediment quality problems, biological stresses, and limitations on beneficial water uses.

During the 1980s, significant concentrations of toxic contaminants have been found in the sediments of a number of the Sound's urban and industrial embayments. These include highly toxic and very persistent chemicals. Field surveys have identified abnormalities in bottom-dwelling communities, increased incidence of disease in fish caught in parts of the Sound where sediments contained high concentrations of chemicals, and elevated levels of polychlorinated biphenyls (PCBs) in the edible tissue of fish and shellfish.

PCBs, or polychlorinated biphenyls, are highly toxic organic chemicals. These compounds were manufactured and marketed in the United States until 1977. The same quality that made them suitable for a variety of industrial applications—their stability—also makes them a lingering problem in the environment. PCBs accumulate in sediments, where they persist for long periods, and from there can be taken up by the tissues of marine organisms.

NEAR COASTAL WATERS ACTIVITIES

Further, nonpoint source pollution from rural septic systems and farm practices appears to be a major source of bacteria. In developing urban areas, stormwater is contributing additional bacterial and toxic contamination. As a result of these combined high levels of bacteria and toxicants, many productive shellfish areas are being closed.

The Puget Sound Estuary Program (PSEP), started in 1985, has been jointly managed by EPA's Seattle Region (Region X), the Puget Sound Water Quality Authority, and the Washington State Department of Ecology. PSEP has successfully completed major steps toward identifying problems, characterizing the estuary, and planning for and developing action programs.

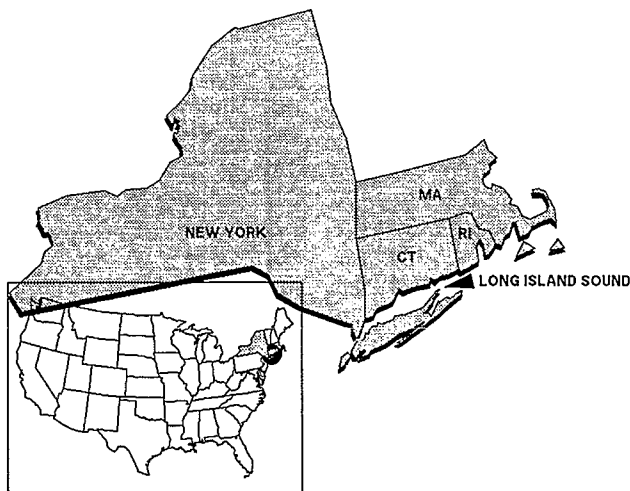
A highlight of the Puget Sound work has been the Urban Bay Toxics Action Program. Concentrating limited resources first in the areas needing them most, the Program designed and is implementing toxics action programs for the urban industrial bays. Based on existing information, these programs call for early action to prevent further chemical contamination and environmental degradation. Special action teams of enforcement and compliance investigators are assigned to each bay by the Washington Department of Ecology. These teams investigate high priority areas to identify and control sources of contamination.

The Puget Sound Estuary Program has also produced the Puget Sound Environmental Atlas, a series of 500 maps with up-to-date information on pollution sources, resource distribution within the estuary, and current environmental conditions; and the Protocols Manual, developed with the Army Corps of Engineers, which recommends techniques for the sampling and analysis of variables in the Sound. Since the program began, PSEP has produced about 50 other technical reports and manuals.

The 1989 Puget Sound Water Quality Management Plan outlines action plans to protect and enhance three resources: the Sound's water and sediment quality; its fish and shellfish; and its wetlands. The final plan, or CCMP, is scheduled for release in 1991.

NEAR COASTAL WATERS ACTIVITIES

Long Island Sound



The Long Island Sound is a 110-mile-long estuary with 1,300 square miles of water and 577 miles of coastline. To many, the Sound is a favorite spot for sportfishing, sailing, and swimming. To others, it is a vital transportation route or the home of commercial fisheries. Approximately 200,000 boats are registered and operate on Long Island Sound; the commercial catch of lobsters, finfish and shellfish exceeds \$20 million annually.

Bordered on one end by New York City, the Sound is surrounded by 14.6 million people. As a result of the population, 86 sewage treatment plants discharge processed effluent and wastes into waters entering Long Island Sound, as do many industries.

Nonpoint source runoff from land surrounding the Sound also contributes to pollution, not all from local sources. Eighty percent of the fresh water entering Long Island Sound comes from rivers that drain States as far north as Massachusetts, New Hampshire, and Vermont.

This program is unique among the original six estuary programs in that two EPA regions, Region I in Boston and Region II in New York, and two States, New York and Connecticut, share leadership responsibility for the management coalition.

In 1985, based on substantial input and review by diverse interests, the program selected two priority problems for major study: low dissolved oxygen, or hypoxia, and the distribution and impacts of toxic substances. The program is also addressing the need to protect living marine resources.

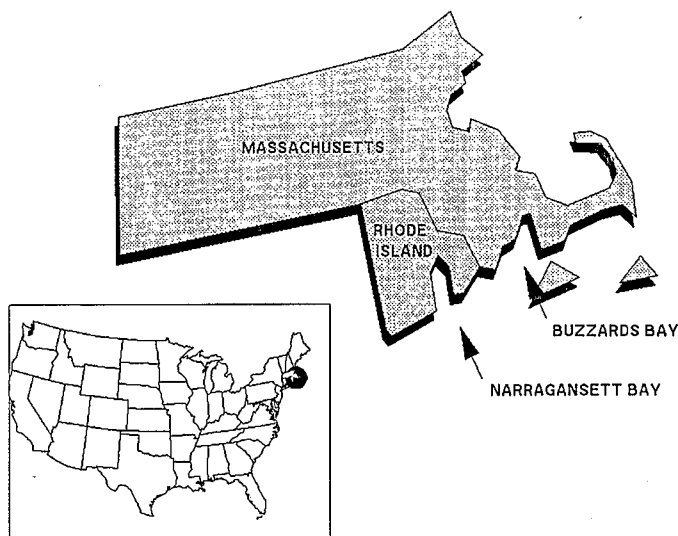
Although a variety of causes can deplete oxygen in water, scientists believe that eutrophication, discussed in the introductory sections of this report, contributes to the problem in Long Island Sound. Nutrients that produce eutrophication are added to the Sound by input from sewage treatment plants, stormwater runoff, and the atmosphere.

The Long Island Sound Study is working to determine

The scope of the Sound's problems with toxic contamination and low dissolved oxygen

The year-to-year trends of toxic pollution and nutrient input

The specific effects of these toxic contaminants on the living resources of the sound, including fish and shellfish destined for human consumption.



Other Original Estuary Programs

Buzzards Bay

The Buzzards Bay Program began in 1985 as a joint project of EPA's Boston region and the Massachusetts Executive Office of Environmental Affairs. This program is focusing on three priority problems in the Bay: (1) closure of shellfish beds, (2) contamination of fish and shellfish by toxic metals and organic compounds, and (3) high nutrient inputs and their potential pollutant effects.

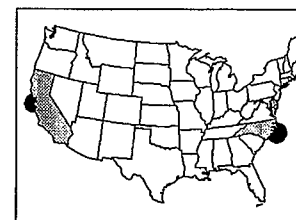
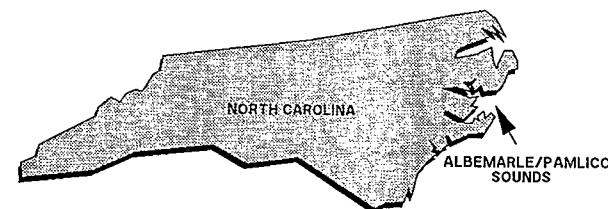
Narragansett Bay

The Narragansett Bay Project, jointly managed by EPA's Boston office and the Rhode Island Department of Environmental Management, is tackling seven priority problems: (1) management of fisheries, (2) nutrients, (3) impacts of toxic contaminants, (4) health and abundance of living marine resources, (5) health risk to consumers of contaminated seafood, (6) land use, and (7) recreational uses.

NEAR COASTAL WATERS ACTIVITIES

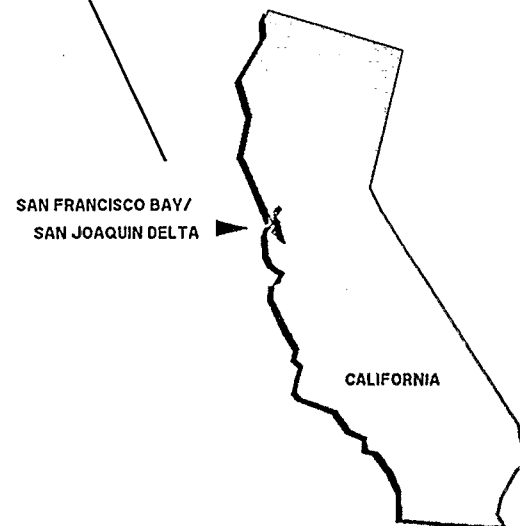
Albemarle/Pamlico Sounds

EPA's Atlanta Region (Region IV) with the cooperation of EPA Region III and the North Carolina Department of Natural Resources and Community Development manage the program in Albemarle/Pamlico Sounds. Current work centers on 10 conflicting uses of the estuary system. Six of these uses directly or indirectly affect the ecology of the system: (1) waste disposal, (2) agriculture, (3) forestry, (4) residential and commercial development, (5) mining, and (6) national defense. The four other uses are primarily affected by the health of the estuary system: (7) commercial fishing, (8) wildlife, (9) natural resources, and (10) tourism and recreation.



San Francisco Bay/San Joaquin Delta

The San Francisco Estuary Project is managed by EPA's San Francisco Region (Region IX) at the Association of Bay Area Governments in Oakland. Using a survey to identify technical and management issues, the estuary program reached consensus on five basic priority problems that affect the beneficial uses, public health, and living resources of the area: (1) decline of biological resources, (2) increased point and nonpoint source pollution, (3) reduced freshwater inflow and salinity, (4) increased waterway modification, and (5) intensified land use.

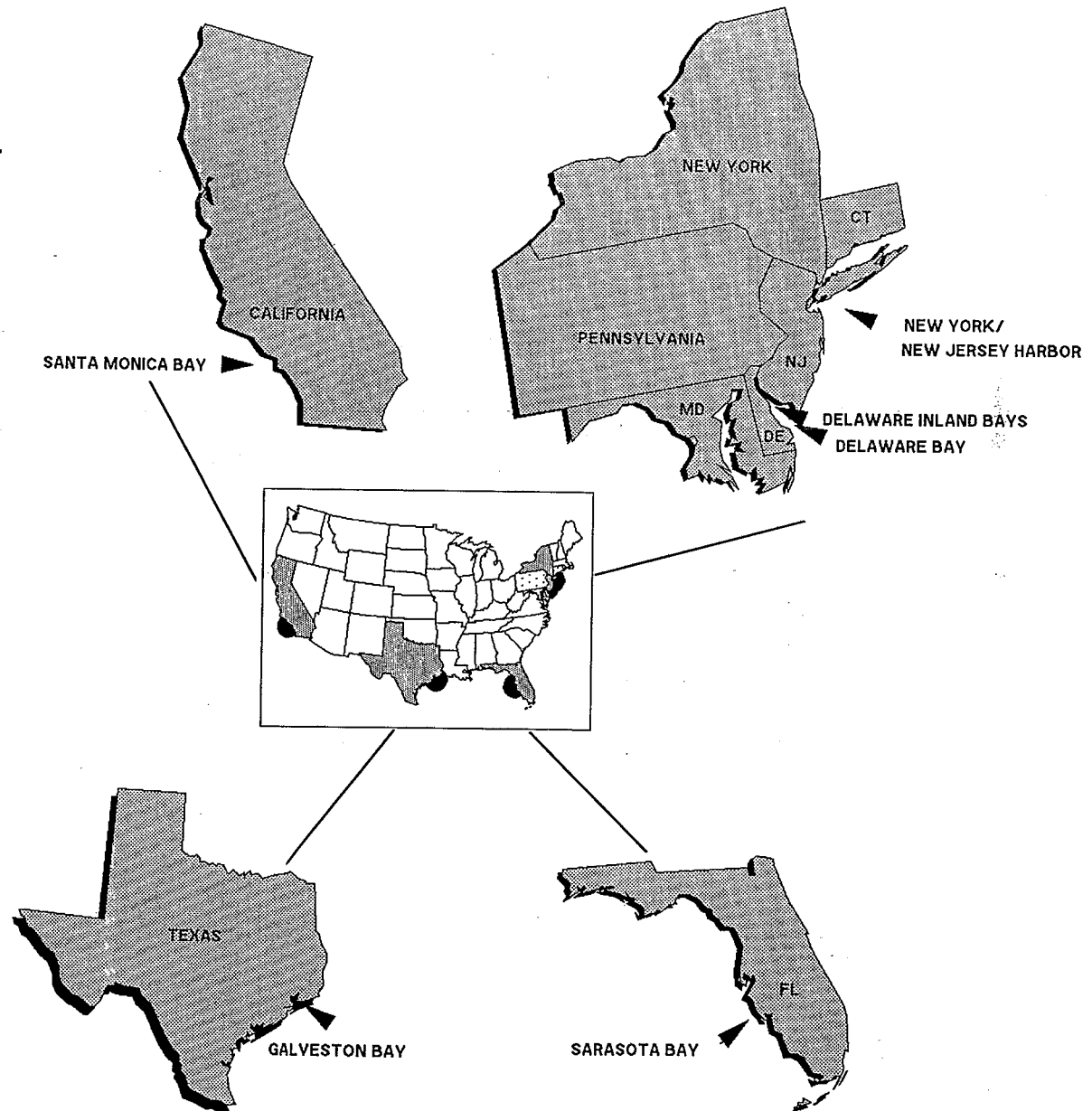


NEAR COASTAL WATERS ACTIVITIES

1988 Additions to the National Estuary Program

The 1987 amendments to the Clean Water Act and 1988 Appropriations Act directed EPA to give priority to including an additional six estuaries in the national program. These estuaries (New York-New Jersey Harbor, New York and New Jersey; Delaware Bay, Delaware and New Jersey; Delaware Inland Bays, Delaware; Sarasota Bay, Florida; Galveston Bay, Texas; and Santa Monica Bay, California) were added to the program in 1988.

The Governor's nomination package for each estuary describes the major environmental problems, probable causes of the problems, and preliminary program issues. Specific goals for these new programs will be refined by the Management Conference in each area.

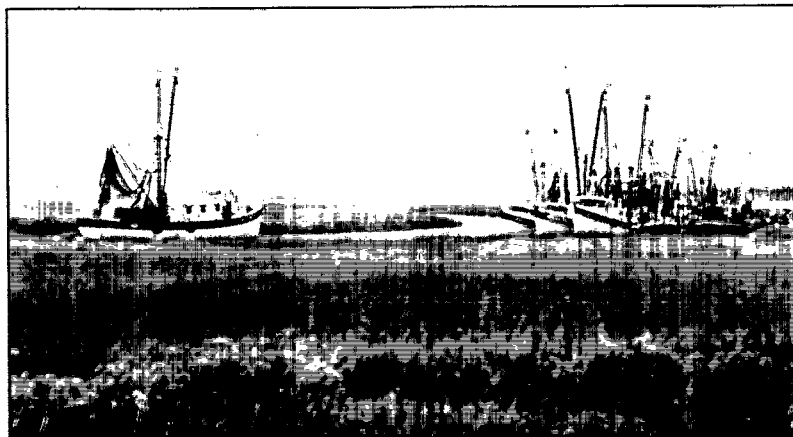


NEAR COASTAL WATERS ACTIVITIES

New York - New Jersey Harbor

The New York State Department of Environmental Conservation and the New Jersey Department of Environmental Protection proposed broad goals and objectives to maintain and enhance the water quality of New York-New Jersey Harbor. The nomination acknowledged the need to go beyond secondary treatment and deal with combined sewer overflows to ensure that a healthy diverse marine community is maintained, minimize human health risks associated with consumption of shellfish and finfish, maximize opportunities for water contact recreation, and ensure that citizens of New York and New Jersey realize to the fullest extent possible the social and economic benefits associated with the New York-New Jersey Harbor.

The broad problems to be addressed by the Management Conference are pathogen contamination, toxic contamination, changes in living resources, habitat loss and modification, eutrophication, and floatable debris.



Delaware Bay

The Delaware Department of Natural Resources and Environmental Control, the Pennsylvania Department of Environmental Regulation, and the New Jersey Department of Environmental Protection proposed goals for the program. These include providing for the restoration of the living resources of the Delaware Estuary, reducing and controlling point and nonpoint sources of pollution, protecting public water supplies, managing the economic growth of the Delaware Estuary, and promoting greater public understanding about the Delaware Estuary and participation in decisions and programs affecting the estuary.

Delaware Inland Bays

Problems affecting the Inland Bays include increased population growth and land development due to the relatively low cost of land and building construction, and the accessibility of the beaches to a large population, as well as nonpoint pollution problems due to the extensive agricultural interests, specifically poultry farming. With poor flushing capabilities and low freshwater input, the geologic and geographic characteristics of the Inland Bays contribute to their vulnerability.

Goals set by the State of Delaware's Department of Natural Resources and Environmental Control include strategies to develop more complete information about the Inland Bays, to build better cooperation and coordination between different

Federal, State, and local agencies, to increase public participation and education, and to build comprehensive strategies for regional planning, for wastewater and drinking water management, and for managing fertilizer, herbicide, and sediment controls.

Sarasota Bay

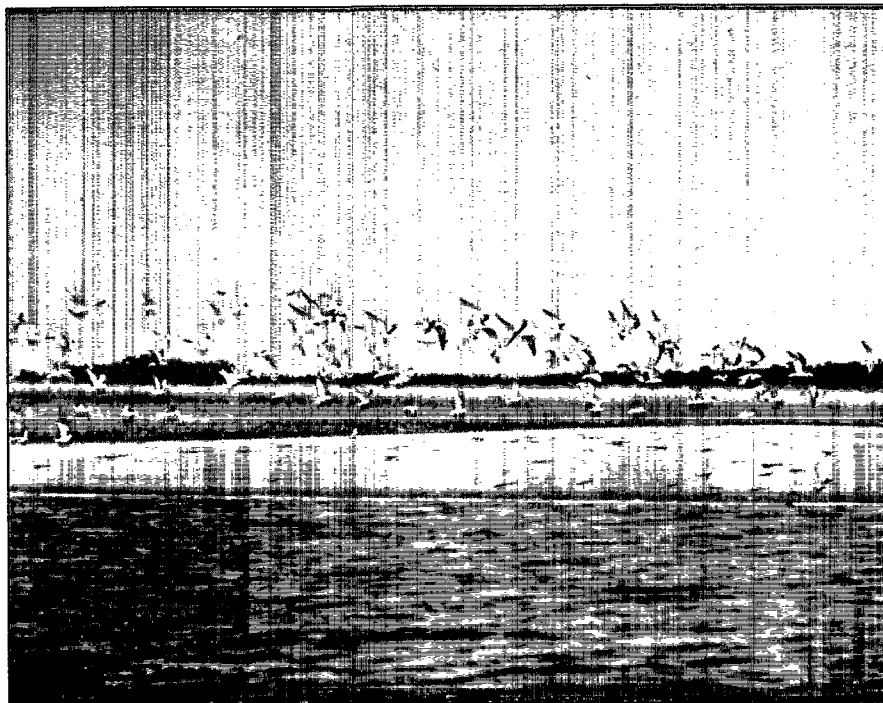
Sarasota Bay is a small, subtropical, relatively pristine bay located in one of the nation's fastest growing areas and thus is increasingly threatened by residential and commercial development and overuse. It has been designated by the State of Florida as an Outstanding Recreational Water, provides critical habitat for endangered species such as manatees and loggerhead sea turtles, and generates millions of dollars annually through recreational uses and tourism.

The State of Florida has established six goals linked to the environmental problems and causes that it has identified. These goals are to improve water transparency in the Sarasota Bay Study Area; reduce the quantity and improve the quality of stormwater runoff to Sarasota Bay; prevent further losses of seagrasses and shoreline habitats and restore lost habitats; coordinate beach/inlet/channel creation and maintenance activities to reduce dredging, eliminate conflict, and enhance the Bay; provide increased levels of managed access to Sarasota Bay and its resources; and establish a vertically integrated management system for Sarasota Bay.

Galveston Bay

Many development and water resource enhancement projects are currently in progress or proposed in the Galveston Bay area. Issues associated with these projects are potential water quality changes in the Bay and its tributaries, which transport nutrients and both treated and untreated wastewater discharges to the Bay; potential reductions in freshwater inflow in the Bay system and its associated wetlands, and potential changes in Bay salinity; possible increased turbidity, resuspension of toxic or hazardous chemicals, and potential changes in Bay circulation and salinity profiles; possible loss of contiguous wetlands due to subsidence, erosion, decreased sediment transport or shoreline development; oil and gas exploration/ production, including seismic activities in the Bay environment; and ecosystem interconnection between the riverine systems, the Bay system and the Gulf of Mexico.

NEAR COASTAL WATERS ACTIVITIES



Goals set by the Texas Water Commission include the maintenance of water quality and the enhancement of estuary productivity in the shallow bays, the prevention of water quality deterioration in the Houston Ship Channel, the examination of current wastewater treatment programs and dredge spoil disposal methods, the development and analysis of baseline toxics data, and the prevention of man-induced wetlands losses and the control of shoreline erosion in the four-county area.

Santa Monica Bay

Santa Monica Bay is one of the most heavily utilized areas in California. Approximately 8 million people live near the Bay and use it for bathing, boating, sport fishing, and other forms of recreation. Many marine species may be impacted by current practices, including at least five Federally-listed endangered species. Some of the problems facing the Bay include the following: two of the largest treated sewage discharges in the nation are within the study area; sediments around the Los Angeles County outfall contain high levels of DDT, other organic compounds, and trace metals; there have been several sewage spills to Ballona Creek, a tributary of the Bay, usually during storms and power outages; substantial pathogen contamination has temporarily closed many beaches in the Bay.

The Management Conference will refine the broad environmental goals proposed by the State, focusing on problems related to storm drain discharges, sediment quality, fish tissue body burdens, pathogen contamination, and others.

Estuaries Identified by the Ocean Dumping Ban Act of 1988

In 1988, the Ocean Dumping Ban Act identified four new areas to receive EPA's priority consideration for inclusion in the National Estuary Program. These four areas are Massachusetts Bay; Barataria-Terrebonne Bay, Louisiana; Indian River Lagoon, Florida; and Peconic Bay, New York.

Other Near Coastal Waters Initiatives

OMEP completed a strategic plan for Near Coastal Waters at the EPA Administrator's request in 1987. This long-term plan is the logical extension of experiences and success achieved through the Great Lakes, Chesapeake Bay, and National Estuary Programs. It provides a framework for management attention to complete coastal ecosystems and to the thousands of square miles of near coastal waters that have problems similar to those found in the current estuary programs. The goal for the plan is to maintain and, where possible, enhance near coastal water environmental quality. A wide range of coastal experts, including Federal, State and local managers, EPA regional and headquarters staff, scientists, environmental groups, and citizens participated in the development of the plan.

OMEP's approach for implementing the plan is to identify coastal areas requiring additional management attention, encourage Federal and State managers to use their existing regulatory tools and resources to solve problems more efficiently, and help Federal, State and local officials implement new management tactics that will achieve measurable environmental improvements in these coastal areas.



NEAR COASTAL WATERS ACTIVITIES

Four priority projects are under way:

1. **A national assessment of the environmental status and trends of all near coastal waters** *to identify those in need of management attention, using existing data from Federal, State, local agencies and academia. With this assessment, OMEP will assist the EPA Regions and States in developing specific regional coastal strategies that focus or increase management activities at the regional and State level.*
2. **The selection of pilot projects to demonstrate innovative management actions, which can then be applied to environmental problems in other coastal waters.** *Projects are currently underway in Delaware, Perdido Bay, and Oregon.*
3. **A technology transfer initiative to continue to develop management expertise in coastal regions and a national network of environmental managers in coastal States, counties, and local governments through which OMEP can informally transfer and receive key information on coastal problems and strategies.** *This technology transfer initiative will encompass all of OMEP's Near Coastal Waters programs.*
4. **The examination and expansion of existing coastal regulatory authorities through OMEP's coordination with other EPA offices and EPA Regions.**

The Gulf of Mexico Initiative

The Gulf of Mexico initiative is an example of the near coastal waters approach in practice. It was launched by the EPA Regional Administrators in Atlanta and Dallas in 1987 and is jointly managed by the two EPA regions, with a program office located at the John C. Stennis Space Center near Bay St. Louis, Mississippi. The purpose of this initiative is to develop and implement a comprehensive strategy that will balance the needs and demands of man-related activities with the preservation and enhancement of living marine resources in the Gulf. Initial emphasis of the program will be on six areas that have been widely accepted as issues of major concern: extensive loss of valuable habitats such as wetlands and submerged aquatic vegetation, nutrient over-enrichment, toxics and pesticide contamination, shellfish bed closures, human alteration of freshwater flow to Gulf estuaries, and public health.

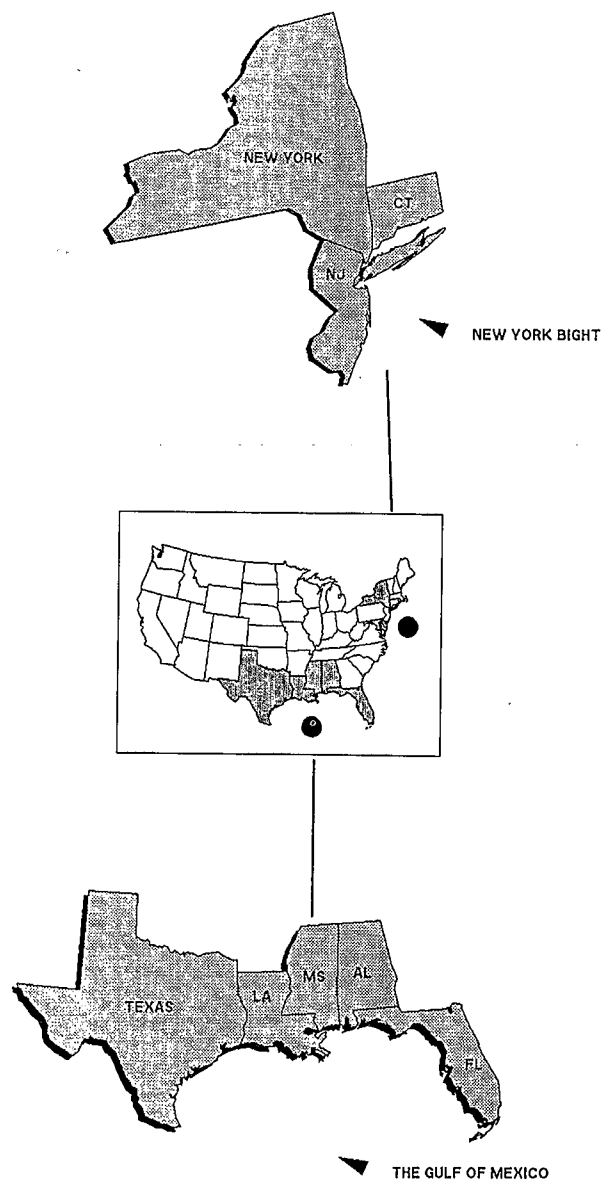
The environmental problems of the Gulf of Mexico result from many different, and sometimes conflicting, State and regional activities. Thus EPA's Gulf of Mexico program must work to improve communication among all Federal agencies, States, public and private organizations, and citizens.

The New York Bight

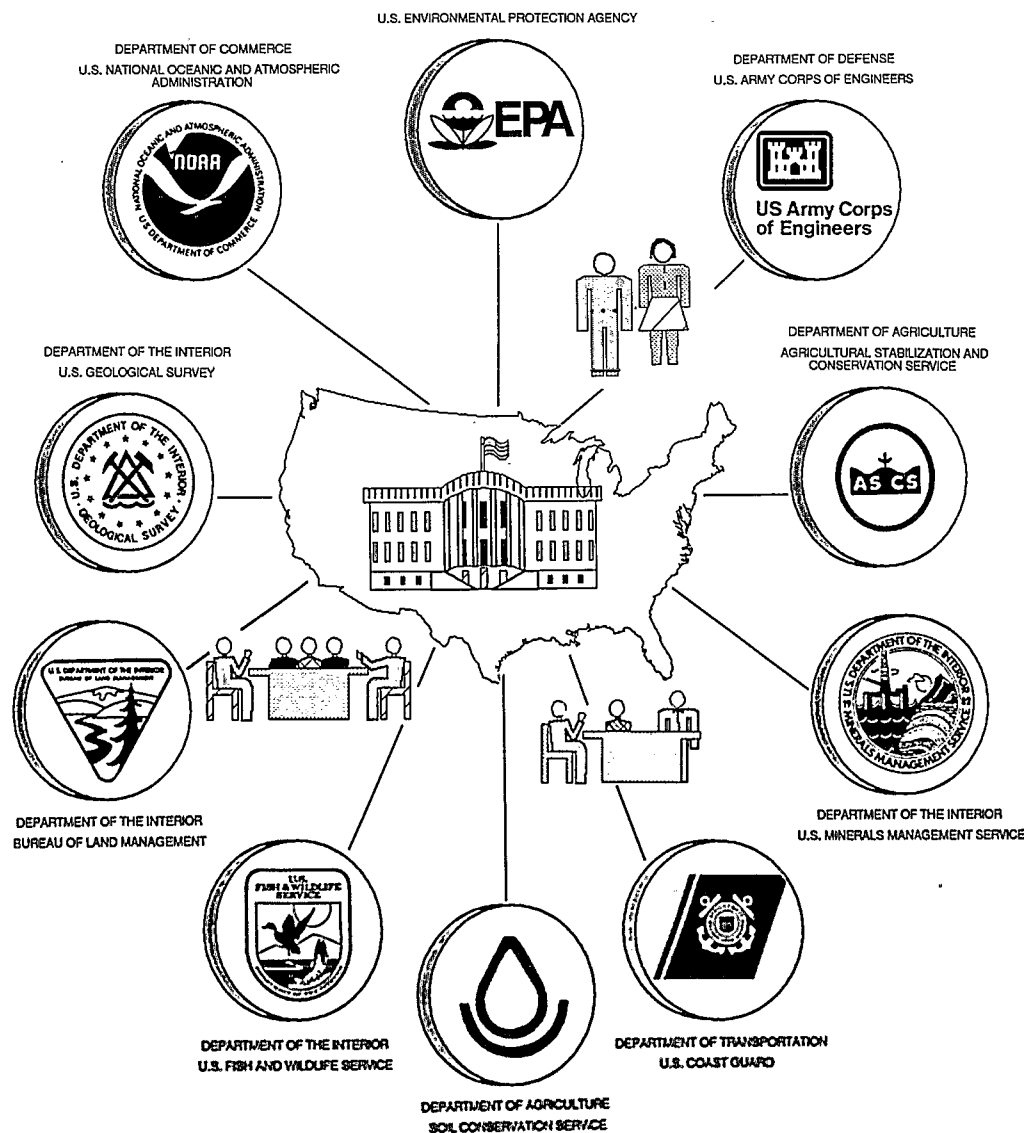
The New York Bight Restoration Plan is required by the Marine Plastic Pollution Research and Control Act of 1987. This plan is being developed by EPA's New York region, in cooperation with NOAA and other Federal and State agencies. The objective of the plan, which follows the National Estuary Program model, is to restore the Bight to its prior uses. Due in FY 1991, the plan will identify and assess the impact of pollutants to water quality and marine resources, identify technologies and practices to control pollutant inputs, identify costs of control measures and impediments to implementation, and develop recommendations for funding and for coordinating these projects.

Continuing Activities

OMEP is developing an index of susceptibility for the remaining 90 estuaries not designated by the Water Quality Act. This assessment will identify high-risk, medium-risk, or low-risk estuaries for three classes of pollution: (1) point source nutrient loadings, (2) nonpoint source nutrient and pesticide loadings, and (3) point source toxicant loadings. An assessment of the cumulative impact of all three classes of pollution will also be produced. These assessments will be used to determine future directions for the national demonstration program and support regional, State and local initiatives for estuarine management. OMEP will also support the development of near coastal waters strategies in each of EPA's seven coastal regions.



THE COASTAL PARTNERSHIP



The governments and people of this Nation share responsibility for protecting our coastal and marine waters. OMEP's success in meeting its objectives and in supporting EPA's coastal goals will depend on the many regulatory and management programs of other EPA offices and other Federal, State, and local governments, as well as on public participation in these programs.

THE COASTAL PARTNERSHIP

Within EPA's Office of Water, tools for improving water quality include construction grants, criteria and standards, NPDES permits, compliance and enforcement actions, water quality management grants, controls for combined sewer overflows, groundwater protection programs, nonpoint source control programs, water quality monitoring, and wetlands protection programs.

Other EPA offices are also responsible for control activities not based on water quality. These include Clean Water Act dredge and fill permits, Environmental Impact Statements for other Federal agencies, Superfund and Resource Conservation and Recovery Act activities, atmospheric loadings, pesticides and toxics substances controls, research and development activities, and international activities. OMEP works with these offices to ensure that their regulations and national policies consider the special concerns of the coastal and ocean environment.

A number of other Federal agencies also have statutory responsibilities related to the coastal and ocean environment. These agencies administer at least 21 programs affecting the coastal and ocean environment. Additionally, the coastal States and local governments are directly concerned with water, agriculture, fisheries, land use, and resource protection programs.

No area of environmental cooperation has received more sustained attention by the international community than the prevention and control of marine pollution. Within EPA, OMEP has a lead role in supporting the London Dumping Convention and MARPOL. OMEP must assure that U.S. positions are consistent with U.S. law and policies and coordinate with other EPA offices and Federal agencies to assure that international requirements are met on a government-wide basis.

FOR MORE INFORMATION

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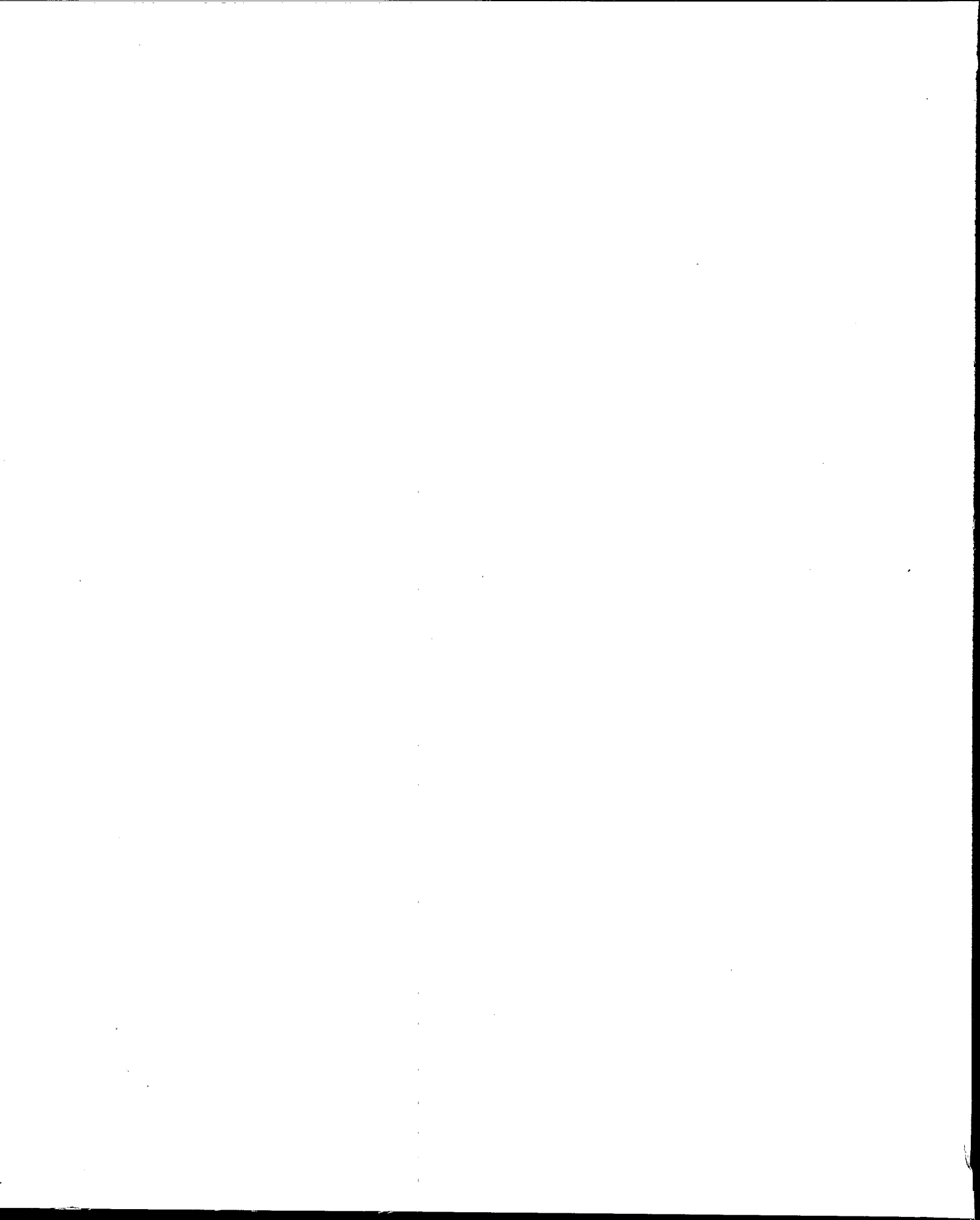
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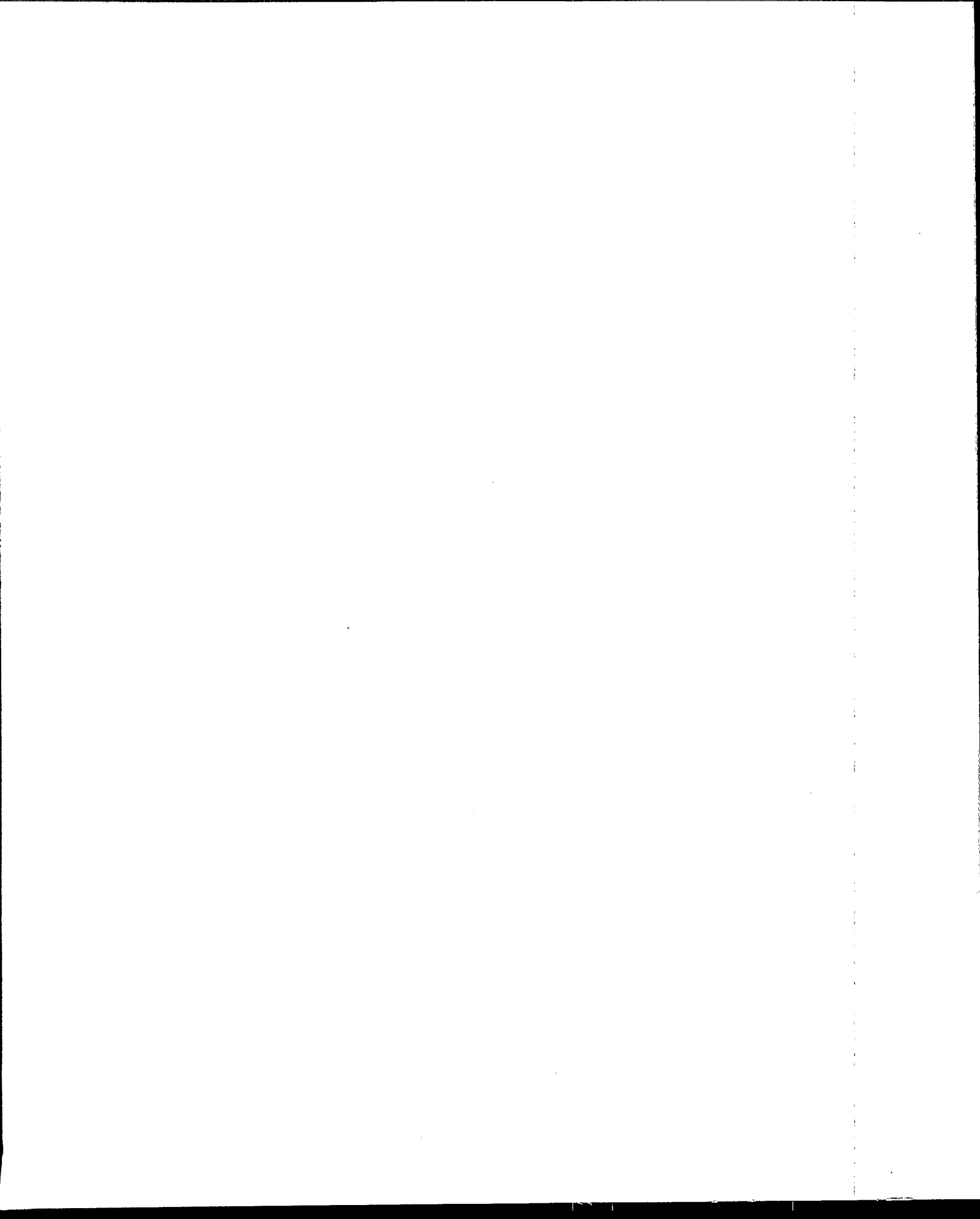
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