

Appendix A

Additional Laws and Programs

Rivers and Harbors Act of 1899

The Rivers and Harbors Act is administered by the U.S. Army Corps of Engineers (USACE). It prohibits the building of causeways, dams, or dikes in or over navigable waters without USACE approval. Section 10 of the law requires permits for structures or work in or affecting navigable U.S. waters, such as boat docks or bulkheads. When a permit under section 404 of the Clean Water Act (CWA) is required, a section 10 permit is required as well.

Section 13 of the Rivers and Harbors Act prohibits throwing, discharging, or depositing any refuse matter, other than that flowing from streets and sewers and passing into a liquid state, into navigable waters or their tributaries. This prohibition does not extend to operations designed to improve navigation or the construction of public works.

Prior to passage of the 1972 Federal Water Pollution Control Act Amendments, the 1899 Rivers and Harbors Act provided the primary federal basis for managing and regulating dredge and fill activities in wetlands. The 1972 Federal Water Pollution Control Act supersedes this law in that respect.

Submerged Lands Act

The Submerged Lands Act of 1953 recognizes state authority over submerged lands extending out to three geographical miles into the Atlantic and Pacific Oceans and three marine leagues into the Gulf of Mexico from the coastline. The lands beneath navigable waters are defined as (1) lands within state boundaries that were navigable when the state became a member of the Union, (2) lands periodically or permanently covered by tidal waters, or

(3) lands that were filled in or reclaimed lands that were formerly beneath navigable waters.

The federal government retains certain rights to use the submerged lands for commerce, navigation, defense, and international affairs, but not the rights of ownership or management that were specifically granted in the act.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act of 1934 authorizes the secretaries of commerce and agriculture “to provide assistance to and cooperate with federal and state agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife.”

Amendments passed in 1958 provide for the Fish and Wildlife Service (FWS) to review proposed federal actions that may affect a stream, wetland, or other body of water, and recommend ways to conserve fish and wildlife. FWS reviews development and regulatory actions. It also authorizes the secretary of the interior to provide public fishing areas and accept donations of lands and funds.

The act further requires the FWS to investigate the effects of water pollution on fish and wildlife, including

- ❑ Determining standards for water quality for maintaining fish and wildlife
- ❑ Studying methods of abating and preventing pollution and recovering useful products
- ❑ Collecting and distributing data on the results of the investigations

Land and Water Conservation Fund Act

The Land and Water Conservation Fund Act of 1965 seeks to ensure that present and future generations will have adequate outdoor recreational resources. The act mandates that governments and private interests conserve, develop, and use such resources for public benefit and enjoyment.

The act authorizes the Land and Water Conservation Fund to be collected from surplus property sales, motorboat fuel taxes, certain revenues authorized from the Outer Continental Shelf Lands Act, and user fees at designated National Park System “units.” It authorizes the Interior Department to acquire lands or allocate funds to states to carry out the act.

Outer Continental Shelf Lands Act

The outer continental shelf (OCS) is an undersea land lying seaward and generally beyond the three-mile seaward boundaries of the states. This area sometimes contains oil and gas reserves. The federal government, which administers control through the Department of the Interior’s Minerals Management Service (MMS), has exclusive jurisdiction of this subsoil and seabed, which it leases to private companies for exploration, drilling, and production.

The OCS encompasses about 1.4 billion acres, and as of 30 September 1997, approximately 35 million acres were under lease for natural gas and oil development, exploration, and production. Rents, royalties, and other revenues from these lease activities are the source of billions of dollars to the U.S. Treasury and various funds—approximately \$3.75 billion in fiscal year 1996.

The Outer Continental Shelf Lands Act requires the Interior Department to develop and maintain estimates of reserves and undiscovered resources in the OCS. The department must assess

the likely effects of gas and oil activities on marine, coastal, and human environments. It administers competitive lease sales of offshore tracts and regulates OCS activities to ensure safety and environmental protection. In the case of OCS sand, gravel, and shell resources, the department is authorized to negotiate agreements with any person to use these resources for either shore protection or beach/wetland restoration or for a construction project funded at least in part by the federal government.

Activities that threaten to harm life or the environment may be suspended by the secretary of the interior, although no such action has yet been taken on the basis of potential environmental damage. In accordance with the National Environmental Policy Act, areas being considered for mineral leases must be studied for the potential environmental effects of exploration and production activities on the human, marine, and coastal environments of the OCS. Holders of leases and permits must operate in compliance with environmental protection regulations.

The Coast Guard inspects OCS facilities and investigates major oil spills, fires, deaths, or serious injuries. The law provides for penalties and remedies for violations.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 establishes the federal program regulating solid and hazardous waste management. Just as Superfund is designed to clean up existing and abandoned hazardous waste sites, RCRA is intended to prevent the creation of new comparable risks to human health resulting from improper hazardous waste disposal. The law establishes a “cradle-to-grave” system to track hazardous wastes from generation to final disposal.

New hazardous waste landfills must obtain a permit from the U.S. Environmental Protection Agency (EPA) or an authorized

state, and existing landfills must meet minimum technology requirements. Amendments passed in 1984 and other policies include the following provisions:

- ❑ Controls on leaking underground storage tanks
- ❑ Incentives for using alternative waste disposal methods such as waste reduction, recycling, and resource recovery
- ❑ New technology requirements for disposal methods such as incineration and resource recovery, as well as landfills
- ❑ Identification of hazardous wastes so they can be disposed of separately from nonhazardous materials
- ❑ New public participation rights for citizen involvement in RCRA permits and the right to sue EPA for adequate enforcement of RCRA requirements

Major sections of RCRA are described in the following paragraphs.

Underground Storage Tank Provisions

RCRA was amended in 1984 to address underground storage tanks. Subtitle I of RCRA, administered primarily by states, is intended to prevent groundwater contamination from leaking underground storage tanks. Under the law, underground storage tanks are required to have spill and overfill prevention devices, as well as leak detection devices. Owners and operators are required to clean up contamination from leaking tanks. Some states, such as California and Florida, have more stringent regulations requiring secondary containment of tanks and piping.

Medical Waste Provision

RCRA Subtitle J, the Medical Waste Tracking Act, became law in 1988. The act passed, in part, in response to media attention to medical wastes along the New Jersey shoreline and the resulting temporary beach closings along the East Coast in the summer of

1988. The act established a two-year demonstration tracking program as a first step in controlling irresponsible disposal of medical wastes. The demonstration program addressed institutional and commercial medical waste, but not household or individual medical waste.

Federal Facility Compliance Act

RCRA was amended in 1992 by the Federal Facility Compliance Act of 1992. This amendment waives the government's sovereign immunity from prosecution under RCRA. As a result, the Department of Justice can issue and enforce injunctions, administrative orders, or penalties for noncompliance with RCRA against facilities, departments, and agencies.

Land Disposal Program Flexibility Act

In 1996, RCRA was amended by the Land Disposal Program Flexibility Act (P.L. 104-119). This act exempts hazardous waste from RCRA regulation if it is treated to a point where it no longer exhibits the characteristic that made it hazardous. The waste must also be disposed of in a facility regulated under the CWA or in a Class I deep injection well regulated under the Safe Drinking Water Act.

Outer Continental Shelf Lands Act Amendments of 1978

Responding to the "energy crisis" and resulting lines for gasoline in the mid-1970s, Congress amended the Outer Continental Shelf Lands Act in 1978. The amendments expedite OCS exploration and development while increasing state participation in OCS decisionmaking.

The act seeks to minimize conflicts between oil and gas activities and fishing interests and establishes a fisherman's contingency fund to pay for damaged vessels and gear resulting from

OCS activities. The amendments, later superseded by the Oil Pollution Act of 1990 (P.L. 101-380), also established the Off-shore Oil Pollution Compensation Fund. This fund receives fees collected from OCS oil production to finance cleanup of oil spills and pay for damages to natural resources and property. Offshore facility operators who cause oil pollution are liable for removal costs and damages.

Coastal Barriers Resources Act/Improvement Act

The Coastal Barriers Resources Act of 1982 addresses coastal barrier islands of the Atlantic and Gulf coasts. It seeks to minimize the loss of human life and reduce damage to fish and wildlife habitats of the coastal barrier islands by restricting federal expenditures and financial assistance that encourage development on those islands. The Coastal Barriers Improvement Act of 1990 expands the definition of a coastal barrier and adds areas in Puerto Rico, the U.S. Virgin Islands, the Great Lakes, and additional areas along the Atlantic and Gulf coasts

The law forbids the use of major types of federal funds such as loans, grants, and insurance for promoting development and economic growth within certain areas of the fragile, unstable, and vulnerable barrier islands coastal system. Flood insurance, USACE development projects, and Department of Veterans Affairs and Federal Housing Administration loans, as well as federal assistance for the construction of sewer systems, highways, water supply systems, airports, bridges, and jetties, are no longer allowed in these areas.

The act also requires federal agencies to consult with the FWS prior to obligating funding or performing any activities within units of the system.

The act establishes the Coastal Barrier Resources System, a network of undeveloped coastal barrier units, located along the coast from Maine to Texas, that are targeted for protection. Initially

the system included approximately 452,000 acres of natural barriers. As of 1998, it included nearly 1.3 million acres. Massachusetts, Florida, and Texas have large protected areas.

The act is not designed to penalize existing communities, and it applies only to a specified group of largely undeveloped barrier islands. The act continues to allow federal assistance for certain purposes including energy exploration, extraction, or transportation; military activities essential to national security; and Coast Guard facilities.

Safe Drinking Water Act of 1974

The Safe Drinking Water Act of 1974 (P.L. 93-523) requires EPA to establish national standards for drinking water. The law is administered by states that have demonstrated that their programs meet federal requirements. EPA administers the law in states that do not have programs that meet federal requirements.

Drinking water systems, like sewage treatment plants, are generally managed by local governments. The law requires that community drinking water systems (1) conduct routine monitoring for numerous pollutants and (2) demonstrate compliance with minimum standards. As of late 1997 EPA has set standards for 83 pollutants, including several toxic chemicals.

The Safe Drinking Water Act requires public notification if standards are violated or monitoring requirements are not met. It authorizes citizens' suits to force compliance.

The Safe Drinking Water Act amendments of 1996 (P.L. 104-182) establish a new emphasis on preventing contamination problems through drinking water source protection and enhanced water system management. The amendments also establish a citizens' "right-to-know" program and authorize a state revolving loan fund program to help public water systems finance projects to meet the Safe Drinking Water Act's requirements.

Federal Agriculture Improvement and Reform Act

The Federal Agriculture Improvement and Reform Act (FAIRA) of 1996 (also known as the “Farm Bill”) consolidated and simplified some of the existing conservation programs established under the Food, Agriculture, Conservation, and Trade Act of 1990. Implemented primarily by the U.S. Department of Agriculture (USDA), both acts encourage reducing soil erosion, retaining wetlands, and protecting other environmentally sensitive cropland. Important sections are covered in the following paragraphs:

Sections 301 through 317

The conservation compliance provision discourages production of crops on highly erodible cropland unless the land is protected from erosion under an approved conservation system.

Sections 321 through 326

The wetlands conservation, or “Swampbuster,” provision, is the principal wetlands protection program for agricultural lands. It expands the definition of agricultural lands to include pasturelands, rangelands, and tree farms, but not commercial forest operations.

Amendments under FAIRA change many Swampbuster provisions to give farmers more flexibility in complying with wetlands conservation requirements. Farm operators must agree to abide by Conservation Compliance and Swampbuster provisions to qualify for farm subsidies. If wetlands are drained, dredged, filled, leveled, or otherwise altered to produce an agricultural commodity after 28 November 1990, or if an agricultural commodity is planted on a wetland that was converted after 23 December 1985, USDA program benefits generally will not be available.

The USDA’s Natural Resource Conservation Service (NRCS) certifies wetland determinations subject to the Swampbuster provision. Such determinations remain in effect as long as the land is used for agricultural purposes. NRCS maintains the criteria for soils and plants that define wetlands.

Section 332 and 341

The Conservation Reserve Program offers long-term rental payments and cost-share assistance to farm owners or operators to establish permanent vegetative cover for land that is highly erodible or contributes to a serious water quality problem. This program is financed by the Commodity Credit Corporation. Maximum enrollment at any time is 36.4 million acres.

Sections 333 and 341

These sections refer to the Wetlands Reserve Program, whose purpose is to restore and protect wetlands. Enrollment in the program is limited to 975,000 acres, and eligibility has been expanded to include land that maximizes wildlife benefits and wetland values and functions.

Section 334

The Environmental Quality Incentives Program (EQIP) provides incentives for farmers and ranchers to adopt practices that reduce environmental and natural resource problems. The program consolidates many of the conservation programs that existed prior to the 1996 Farm Bill. EQIP provides technical, financial, and educational assistance; half is targeted to livestock-related natural resource problems, and the other half is targeted to more general conservation priorities. Eligibility is limited to farmers or ranchers who produce livestock or crops on cropland, rangeland, pasture, forest land, and other farm or ranch lands in identified priority areas.

EQIP can provide technical assistance, cost-share payments, incentive payments, and education to crop farms and moderate-scale livestock farms to improve compliance with federal, state, and tribal environmental laws. EQIP contracts cover five to ten years, limited to \$10,000 per farm or ranch per year or \$50,000 total for multiyear contracts. Cost sharing may pay up to 75 percent of the costs of certain conservation practices, such as developing filter strips, manure management facilities, and grassed

waterways; capping abandoned wells; and initiating other practices important to improving and maintaining the health of natural resources. Incentive payments may be made to encourage a farmer or rancher to perform land management practices such as nutrient management, manure management, integrated pest management, irrigation water management, and wildlife habitat management. Incentive payments may be provided for up to three years to encourage producers to carry out management practices they may not otherwise use without the program incentive.

EQIP works in cooperation with local workgroups, state technical committees, and state and federal agencies to establish priority areas where there are serious and critical environmental needs and concerns. Priority areas are defined as watersheds, regions, or areas of special environmental sensitivity or areas that have significant soil, water, or related natural resource concerns. These concerns could include soil erosion, water quality and quantity, wildlife habitat, wetlands, and forest and grazing lands. The local workgroups generate needs assessments, recommend potential priority areas, and identify farmer interest in participation in the program. The workgroups forward this information to the state technical committee, which makes recommendations to the NRCS. For funding considerations, higher priority is given to areas where state or local governments offer financial or technical assistance. All funded EQIP activities must be carried out according to a conservation plan that addresses the primary natural resource concerns.

Funding for EQIP comes from USDA's Commodity Credit Corporation, which funds several other USDA conservation programs. EQIP's budget for fiscal years 1997 through 2002 is \$200 million per year. Individual states, under the guidance of USDA's NRCS state technical committees, have considerable latitude in deciding how EQIP funds will be spent. States are required to designate priority areas, outlining both high-priority geographic areas and more general statewide natural resource concerns. Funding in each state is currently split between priority

area projects (65 percent) and statewide natural resource concerns (35 percent) for projects outside of a geographic priority area.

Intermodal Surface Transportation Efficiency Act

In 1991, Congress passed the Intermodal Surface Transportation Efficiency Act (P.L. 102-240), legislation that has historically been known simply as “the highway bill.” The law—often referred to as ISTEA, pronounced “ice tea”—funds highway and bridge construction and maintenance and mass transit systems for a six-year period.

The National Highway System consists of the major roads in the United States, including all the interstate routes and a large percentage of urban and rural roads. This law establishes the eligibility of highway funds for wetlands banking, mitigation of damage to wildlife habitat, historic sites, activities that contribute to meeting air quality standards, a wide range of bicycle and pedestrian projects, and highway beautification.

From an environmental perspective, an important component of the 1991 ISTEA legislation is the Congestion Mitigation/Air Quality program, aimed at reducing air quality problems and traffic congestion by diverting some traditional highway construction funds to these efforts. ISTEA is pending reauthorization and may undergo provisional changes.

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)

The London Convention (LC), formerly known as the London Dumping Convention, grew out of proposals made by the 1972 United Nations Conference on the Human Environment in Stockholm, Sweden, a predecessor of the 1992 “Earth Summit”

held in Rio de Janeiro, Brazil. The LC regulates ocean dumping to prevent (1) pollution of the marine environment, (2) harm to living marine resources, (3) hazards to human health, and (4) damage to amenities. Dumping involves any deliberate disposal at sea from vessels, aircraft, platforms, or other structures, but excludes waste disposal from the normal operation of vessels. The United States implements the LC through title I of the Marine Protection, Research, and Sanctuaries Act. With few exceptions, the LC prohibits ocean dumping without a permit. Three annexes contain technical criteria to be used in evaluating permit applications.

Annex I lists prohibited materials such as organohalogenes (e.g., PCBs), mercury, petroleum products, plastics, cadmium, crude oil, fuel oil, heavy diesel oil, lubricating oils, hydraulic fluids, and high-level radioactive wastes in other than trace amounts. Annex II identifies materials for which a special permit is required, including “wastes containing significant amounts” of arsenic, zinc, copper, lead, beryllium, chromium, nickel, vanadium, and pesticides. Annex III contains general criteria to be used in evaluating permit applications and selecting disposal sites.

The LC requires that records be kept on permitted dumping activities and that conditions of their adjacent seas be monitored and reported.

Brownfields

In 1993 EPA launched its Brownfields Initiative, which included a grants program for states, municipalities, counties, and Native American tribes to undertake brownfields pilots. Since then, EPA has awarded more than 113 of these grants of up to \$200,000 over a two-year period. The grants help to test redevelopment models; remove regulatory barriers while maintaining environmental and human health integrity; and coordinate creative assessment, cleanup, and redevelopment efforts at federal, state, and local levels.

A brownfield is a site or part of a site that has a potential for redevelopment, but has actual or perceived contamination. EPA’s Brownfields Initiative is designed to empower states, communities, and other stakeholders to work together in a timely manner to assess, safely clean up, and sustainably reuse brownfields sites.

Several of the pilot sites have involved coast redevelopment. By reusing selected brownfields sites and creating a “green” corridor along the Rio Grande River on the Mexican border of the United States, Laredo, Texas, expects to spur economic development on the riverfront, increase interest in environmental cleanup, and improve the river’s water quality. The community of Cape Charles/Northampton County, Virginia, is using brownfields funds to plan and develop an “eco-industrial park,” restore lost wetlands, build a tertiary sewage treatment plant, and establish a nature trail and environmental education facility. New Bedford, Massachusetts, is using its grant to convert brownfields into productive aquaculture sites. The pilot underway in Tacoma, Washington, is an effort by the Puyallup Tribe to redevelop the industrial waterfront area. Part of this project entails researching the potential for a marine terminal and developing a drainage and wetlands mitigation plan for some of the property. These are just a few examples of EPA’s Brownfields Initiative activities in coastal areas.

Fish and Wildlife Service’s Coastal Ecosystem Program

The goal of the FWS’s Coastal Ecosystem Program is to conserve fish and wildlife and their habitats and to support healthy coastal ecosystems. The program’s approach is to work in partnership with federal, state, international, native American, and local agencies; nongovernmental

Coastal Ecosystem Program Sites
Albemarle/Pamlico Sound
Chesapeake Bay
Delaware Bay
Everglades/South Florida
Gulf of Maine
Puget Sound
San Francisco Bay
South California Coast/ San Diego Bay
South Carolina Coast
South New England/ New York Bight
Texas Coast

organizations; and the private sector to develop and implement ecosystem-based policies and programs that protect and enhance coastal living resources.

The emphasis of the Coastal Ecosystem Program is to have natural laboratories for long-term research and monitoring projects, as well as public education, so that comparative work can be accomplished through these sites. The guiding principles of the program are as follows:

- ❑ Maintain natural coastal ecosystem diversity, function, and productivity.
- ❑ Promote natural, self-sustaining populations of native species within their historic ranges.
- ❑ Provide for ecologically sound levels of public use, economic benefit, and enjoyment of natural resources.

As of July 1997, the program had restored 22,828 acres of coastal wetlands; protected more than 7 miles of shoreline habitat; reopened 267 miles of coastal streams for anadromous fish passage; and protected 56,209 acres of habitat through conservation easements.

Great Lakes Water Quality Agreements

The Great Lakes Water Quality Agreements between the United States and Canada in 1972 and 1978 establish common water quality objectives and processes to control pollution; perform research on Great Lakes problems; and survey, monitor, and disseminate information.

Canada and the United States agreed to develop a systematic and comprehensive approach to control pollution, abate contamination, and restore beneficial uses of the waters. The IJC, originally established under the Boundary Waters Treaty of 1909, advises both governments on issues affecting the Great Lakes and

recommends action. The parties evaluate progress. Some critics contend that the IJC has no real enforcement authority and that the Great Lakes Water Quality Agreements need to be modified into a formal treaty with the force of law.

The 1978 agreement expanded the scope and approach to cover the whole ecosystem, including atmospheric deposition and reintroduced residuals from past pollution, rather than focusing only on the water. In calling for target loadings for phosphorus, the 1978 agreement acknowledged the concept of mass balance in Great Lakes management. A target loading is the level judged not to cause undesirable effects, including overproduction of algae and anoxic conditions on lake bottoms. Mass balances are used to calculate the amount of pollutant that remains active after all sources and losses are considered.

The 1978 agreement also calls for elimination of most discharges of persistent toxic chemicals.

Great Lakes Protection Fund

The Great Lakes Protection Fund was created in 1989 to promote regional ecosystem stewardship. It is the nation's first multistate environmental endowment and serves as a not-for-profit, grant-making corporation. The fund was developed after two decades of cooperative efforts to address the lakes' ecological problems.

The Great Lakes Protection Fund finances collaborative efforts to enhance the health of the Great Lakes ecosystem. The fund projects address the interdependence of natural ecosystems and human economic systems. These projects help to ensure that the natural and human systems are resilient, productive, diverse, and sustainable. By 1997, the fund has made 139 grants, which represent an investment of over \$19.8 million in the health of the Great Lakes ecosystem. Additionally, the fund has provided more than \$10 million to its seven member states to support local efforts that address the priorities of these individual states.

International Convention for the Prevention of Pollution from Ships

The 1973 and 1978 International Convention for the Prevention of Pollution from Ships, known as MARPOL (for marine pollution), did not go into effect until 1983, after several modifications. Its intent is to end “the deliberate, negligent, or accidental release of ... harmful substances from ships” and to “achieve the complete elimination of international pollution of the marine environment ... by harmful substances.” It addresses wastes generated during the normal operations of vessels.

The convention is under the auspices of the International Maritime Organization, a specialized agency of the United Nations established in 1959 and headquartered in London. Domestically, the U.S. Coast Guard was given authority to implement MARPOL through the Act to Prevent Pollution from Ships and the Ports and Waterways Safety Act.

MARPOL is organized into five annexes:

- ❑ Annex I regulates oil discharges from ships, including restrictions on light refined oil. It disallows discharges of all oil within 50 miles of land and disallows discharges into the Mediterranean, Red, Black, and Baltic Seas and the Persian Gulf.
- ❑ Annex II aims to prevent pollution from dry noxious or liquid substances carried in bulk. Ships are required to keep a cargo record book and have an International Pollution Prevention Certificate aboard. These certificates are issued by the country of registry.
- ❑ Annex III addresses hazardous freight.
- ❑ Annex IV governs disposal of both treated and untreated shipboard sewage, setting limits on how far from shore each may be discharged.

- ❑ Annex V addresses ship-generated garbage and includes a prohibition on disposal of plastics into the sea. The Gulf of Mexico is designated as an area that prohibits ships from dumping garbage and plastics. As of May 1996, 79 countries, including the United States, had ratified Annex V.

State Wetlands Grants Program

The State Wetlands Grants Program, enacted as title III of the Coastal Wetlands Planning, Protection, and Restoration Act, was intended to help states and tribes increase their knowledge about and develop wetlands protection programs. It was initiated in 1990 with a \$1 million appropriation, and the program has since expanded. In the last seven years, EPA has provided nearly \$70 million to support the development of state and tribal wetlands protection programs. In 1995, \$15 million was appropriated to support the grant program.

The grants fund local efforts to collect basic information on wetlands resources, identify threats to the resources, examine techniques for protecting the resources, create comprehensive wetlands protection plans, and conduct public education campaigns to promote wetlands protection.

The National Sea Grant College Program

The National Sea Grant College Program is a partnership between the nation's universities and NOAA, chartered in 1966 by the National Sea Grant College Program Act. The program encourages the wise stewardship of marine resources through research, education, outreach, and technology transfer. The NOAA Office of Sea Grant administers the program. The office provides financial support to colleges, universities, and other research institutions through a matching fund program.

The core of the Sea Grant partnership is made up of 29 Sea Grant College programs located in coastal and Great Lakes states and Puerto Rico. The network, however, stretches to some 300 participating institutions whose more than 3,000 scientists, engineers, educators, students, and outreach specialists focus on solving marine and Great Lakes resource management, development, and conservation issues.

The Sea Grant produces and makes available a wealth of information on marine topics, from public school curriculum materials to the most advanced scientific research. The National Sea Grant Depository at the University of Rhode Island's Pell Library stores nearly 55,000 scientific, technical, advisory, educational, and public information reports developed by the Sea Grant-supported network.

Legacy Resource Management Program

The Legacy Resource Management Program was established as part of the 1991 Department of Defense appropriation. Its purpose is to preserve, protect, list, and manage the sensitive and significant biological, geophysical, cultural, and historical resources on 25 million acres of Department of Defense land and to do so in a manner consistent with military requirements.

In its first year, the program undertook 90 projects in 37 states totaling \$10 million. In 1992 the program expanded to \$25 million, and in each year from 1993 through 1995, funding remained a steady \$50 million. In 1996 and 1997, the appropriation decreased to \$10 million and \$12.5 million, respectively. In 1996 the focus of the program and its funding changed from installation projects to regional initiatives in support of military land-use requirements.

National Oceanic Partnership Program

The National Oceanic Partnership Program (NOPP) was created in 1997 under the National Defense Authorization Act (P.L. 104-201). The budget for the program is \$13 million for applied research in oceanographic and atmospheric technologies and \$7.5 million for NOPP survey ship operations. The program is designed to coordinate and leverage all U.S. oceanographic efforts in the Navy, industry, and academia and to encourage the sharing of resources, intellectual talent, and facilities in ocean science and education. The secretary of the Navy is the chair of the program.

Agricultural Outleasing Funds

Under 10 U.S.C. 2667(d), rental fees received from a lease for agricultural or grazing purposes of land under control of the secretary of a military department may be retained and spent on the installation to cover administrative expenses of leasing and natural resources programs. Total income from agricultural and grazing outleases on naval installation varies from year to year, but is typically about \$3 million annually.

Proceeds are used to administer the agricultural and grazing outleasing program. Priority is given to ensuring that proper conservation measures are implemented on the leases. Funds available over and above lease conservation work are used for natural resources conservation projects such as endangered species protection, nonpoint source pollution abatement, fish and wildlife habitat management, and wetlands enhancement. Coastal America projects are implemented on military installations.

Additional Federal Activities

Databases

Public agencies rely on the power of the computer to collect and process the volumes of data they collect in the course of

creating, monitoring, and enforcing their pollution control programs. The result is a variety of databases that can generate, in various forms, information about such things as the number of regulated pipeline dischargers and exactly what, how much, and where they discharge.

The databases, like all computer technology, evolve and change and usually improve over time. Many of these databases can be accessed on the World Wide Web.

Both EPA and NOAA have World Wide Web sites with reports, legislative highlights, and other information about coastal issues. For more information, see EPA's site at <http://www.epa.gov> and NOAA's site at <http://www.noaa.gov>.

Index of Watershed Indicators (IWI). EPA developed the IWI database in 1997 to characterize and consolidate indicators of the health of national water resources. The index includes 15 indicators, such as fish and wildlife consumption advisories, ambient water quality data, and urban runoff potential. The index is based on "Indicators of Water Quality in the United States," developed by EPA in partnership with states, tribes, private organizations, and other federal agencies. The index evaluates more than 2,000 watersheds in the contiguous United States (Alaska, Hawaii, and the territories will be added in the future). For more information, see <http://www.epa.gov/owow/surf/iwi>.

Permit Compliance System (PCS). This management system contains data on facilities that have discharge permits under the National Pollutant Discharge Elimination System. There are more than 65,000 active permits.

Information recorded in this database includes the identity and location of permitted facilities, discharge limits for the facilities, actual amounts of pollutants measured in facilities' wastewater, and compliance schedules and violations. For more information, see http://www.epa.gov/enviro/html/pcs/pcs_overview.html.

Storage and Retrieval of U.S. Waterways Parametric Data (STORET). STORET now includes data on ambient water

quality, biological monitoring, and analytical tools for a range of EPA water quality and ecosystem health assessment activities. STORET will include the physical location at which monitoring occurs, the names of organizations that conduct monitoring activities, descriptions of projects or surveys that are being carried out, and descriptions of the water quality sampling and measurement activities that take place. It will also record the results of sample analyses and field measurement. For more information on STORET and how to access the database, see <http://www.epa.gov/owow/STORET>.

Emergency Response Notification System (ERNS). This database contains information on oil and hazardous substance spills or releases. Online access is available only to EPA and relevant federal officials, but diskettes, hard copy, or tapes are available through Freedom of Information Act requests. EPA's Emergency Response Division of the Office of Emergency and Remedial Response is the sponsoring office.

Fish and Wildlife Information Exchange (FWIE). This exchange is a technical assistance center and clearinghouse for fish and wildlife information systems. It is housed at Virginia Polytechnic Institute and State University as part of the Multi-State Fish and Wildlife Information Systems Project.

The FWIE works with agencies that have fish and wildlife management responsibilities to build systems, acquire data, and plan fish and wildlife information management activities to better use existing data resources. The FWIE maintains copies of important national and regional fish and wildlife datasets. The FWIE also publishes a quarterly newsletter and holds annual meetings. The FWIE is available on the Web at <http://www.fw.vt.edu/fishex>.

Monitoring

More than \$130 million is spent annually on monitoring programs in the United States. Monitoring is mandated by various statutes, including the CWA; the Marine Protection, Research, and Sanctuaries Act; the Outer Continental Shelf Lands Act; and the

National Ocean Pollution Research, Development, and Monitoring Planning Act.

Monitoring is defined in many ways and conducted for various purposes. It is generally intended to produce information about three broad categories of problems: (1) compliance, to ensure that activities are carried out in accordance with regulations and permit requirements; (2) model verification, to check the validity of assumptions and predictions used as the basis for sampling design or permitting and evaluation of management alternatives; and (3) trend monitoring, to identify and quantify longer-term environmental changes anticipated (hypothesized) as possible consequences of human activities. Most agencies conduct or require monitoring to ensure compliance with permit conditions.

Marine environmental monitoring is conducted by federal, state, and local agencies; waste dischargers; and researchers. Five federal agencies conduct marine environmental monitoring activities in the coastal ocean: NOAA, EPA, the USACE, the Coast Guard, and the Minerals Management Service of the Department of the Interior.

The main purposes of EPA's monitoring and analysis program is to help states monitor their waters and provide technical guidance to states to monitor and plan for cleanup of those waters. The program also helps develop monitoring approaches and helps states adopt those approaches more and more on a watershed basis. Among the monitored targets are estuaries, surface waters, sediment, and fish tissue (for signs of bioaccumulation of toxics). State monitoring programs help states determine what controls are needed on point and nonpoint sources to reduce discharges.

Environmental Monitoring and Assessment Program (EMAP). EMAP is a research program to develop the tools necessary to monitor and assess the status and trends of national ecological resources. Funded by EPA, EMAP's goal is to develop the scientific understanding for translating environmental monitoring data into forecasts of future risks to natural resources.

For more information, contact Dr. Kevin Summers, One Sabine Island Drive, Gulf Breeze, FL 32561, (850) 934-9200. EMAP is also available on the Web at <http://www.epa.gov/emap>.

Coastal America

Coastal America is an interagency partnership of 12 federal agencies working together to protect, preserve, and restore coastal ecosystems. Established in 1992, the partnership includes not only federal agencies, but state, local, and tribal governments and nongovernmental organizations. The partnership includes the Departments of Agriculture, the Air Force, the Army, Commerce, Defense, Energy, Housing and Urban Development, the Interior, the Navy, and Transportation; EPA; and the Executive Office of the President.

The purpose of Coastal America, which provided funding to support research and writing of this publication, is to—

- Protect, preserve, and restore the nation's coastal ecosystems through existing federal capabilities and authorities
- Collaborate and cooperate in the stewardship of coastal living resources by working in partnership with other federal programs and by integrating federal actions with state, local, and tribal governmental and nongovernmental efforts
- Provide a framework for action that serves as a model for effective management of coastal living resources

The Coastal America partnership process and organizational structure enables early identification of policy issues and conflicts at the local, regional, and national level. It also encourages timely resolution of these issues by policy makers. The collaborative planning process is guided by the concepts of ecosystem management and sustainable development and seeks to incorporate

environmental objectives into major development plans. The Coastal America collaborative interagency structure enables national policy issues to be identified and resolved, regional plans and strategies to be developed, and local projects to be implemented. In addition to projects, the partnership is establishing a network of Coastal Ecosystem Learning Centers to improve public understanding of coastal issues.

Through 1997, the partnership had completed or undertaken more than 200 projects in 26 states, 2 territories, and the District of Columbia. With more than 300 nonfederal partners involved, more than \$100 million has been committed to these projects.

Appendix B

Key National and Regional Contacts

Private Organizations

Alliance for the Chesapeake Bay
6600 York Road
Baltimore, MD 21212
Tel: (410) 377-6270
Fax: (410) 377-7144
<http://www.gmu.edu/bios/bay/acb>

Alliance for the Chesapeake Bay
P.O. Box 1981
Richmond, VA 23218
Tel: (804) 775-0951
Fax: (804) 775-0954
<http://www.gmu.edu/bios/bay/acb>

Alliance for the Chesapeake Bay
225 Pine Street
Harrisburg, PA 17101
Tel: (717) 236-8825
Fax: (717) 236-9019
<http://www.gmu.edu/bios/bay/acb>

American Clean Water Project
107 Spyglass Lane
Fayetteville, NY 13066
Tel: (315) 637-4718

American Littoral Society
Sandy Hook
Highlands, NJ 07732
Tel: (732) 291-0055

American Oceans Campaign
725 Arizona Avenue, Suite 102
Santa Monica, CA 90401
Tel: (310) 576-6162
Fax: (310) 576-6170
<http://www.americanoseas.org>

American Rivers
1025 Vermont Avenue, NW, Suite 720
Washington, DC 20005
Tel: (202) 547-6900
Fax: (202) 347-9240
<http://www.amrivers.org/>

Assembly of First Nations
Effects on Aborigines from Great Lakes
Environment (EAGLE) Project
One Nicholas Street, Suite 1002
Ottawa, Ontario K1N 7B7, CANADA
Tel: (613) 241-6789
Fax: (613) 241-5808
<http://www.afn.ca>

Association of State and Interstate Water
Pollution Control Administrators
750 First Street, NW, Suite 910
Washington, DC 20002
Tel: (202) 898-0905
Fax: (202) 898-0929
<http://www.asiwpc.org>

At-Sea Processors Association
4039 21st Avenue West, Suite 400
Seattle, WA 98199
Tel: (206) 285-5139
Fax: (206) 285-1841
<http://www.atsea.org>

Atlantic States Legal Foundation, Inc.
658 West Onondaga Street
Syracuse, NY 13204
Tel: (315) 475-1170
Fax: (315) 475-6719

The Audubon Institute
P.O. Box 4327
New Orleans, LA 70178
Tel: (504) 861-2537
Fax: (504) 865-7332
<http://www.auduboninstitute.org>

California Seafood Council
P.O. Box 91540
Santa Barbara, CA 93190-1540
Tel: (805) 569-8050
Fax: (805) 569-8052
<http://www.ca-seafood.org>

Canadian Environmental Law
Association
517 College Street, Suite 401
Toronto, Ontario M6G 4A2, CANADA
Tel: (416) 960-2284
Fax: (416) 960-9392
<http://www.web.net/cela>

Center for Marine Conservation
1725 DeSales Street, NW, Suite 600
Washington, DC 20036
Tel: (202) 429-5609
Fax: (202) 872-0619
<http://www.cmc-ocean.org>

Center for Marine Conservation
(Pacific Coast)
580 Market Street
San Francisco, CA 94104
Tel: (415) 391-6204
Fax: (415) 956-7441
<http://www.cmc-ocean.org>

Center for Marine Conservation
1432 North Great Neck Road, Suite 103
Virginia Beach, VA 23454
Tel: (757) 496-0920
Fax: (757) 496-3207
<http://www.cmc-ocean.org>

Center for Marine Conservation (FL)
One Beach Drive, SE, Suite 304
St. Petersburg, FL 33701
Tel: (813) 895-2188
Fax: (813) 895-3248
<http://www.cmc-ocean.org>

Chesapeake Bay Foundation
162 Prince George Street
Annapolis, MD 21401
Tel: (410) 268-8816 (Annapolis)
(410) 269-0481 (Baltimore)
(301) 261-2350 (Washington, DC)
Fax: (410) 268-6687

Clean Water Action Project
4455 Connecticut Avenue, NW
Suite A300
Washington, DC 20008
Tel: (202) 547-1196
Fax: (202) 895-0438
<http://www.essential.org/cwa>

Clean Water Fund
2229 North Charles Street
Baltimore, MD 21218
Tel: (410) 889-4055
Fax: (410) 235-8816
<http://www.essential.org/cwa>

Clean Water Fund
326 Hennepin Avenue, East
Minneapolis, MN 55414
Tel: (612) 623-1855
Fax: (612) 623-3354
<http://www.essential.org/cwa>

Clean Water Fund
76 Summer Street, 3rd Floor
Boston, MA 02110
Tel: (617) 338-6673
Fax: (617) 423-4870
<http://www.essential.org/cwa>

Coastal Alliance
215 Pennsylvania Avenue, SE
Washington, DC 20003
Tel: (202) 546-9554
Fax: (202) 546-9609

Coastal Conservation Association
4801 Woodway, Suite 220W
Houston, TX 77056
Tel: (713) 626-4222
Fax: (713) 626-5852
<http://www.ccatexas.org>

Coastal Society
P.O. Box 25408
Alexandria, VA 22313-5408
Tel: (703) 768-1599
Fax: (703) 768-1598

Coastal States Organization
444 North Capitol Street, NW
Washington, DC 20001
Tel: (202) 508-3860
Fax: (202) 508-3843

Consortium for Ocean Research
and Education
1755 Massachusetts Avenue, NW
Suite 800
Washington, DC 20036
Tel: (202) 232-3900
Fax: (202) 332-9751
<http://core.cast.msstate.edu>

Council of Great Lakes Governors
35 East Wacker Drive, Suite 1850
Chicago, IL 60601
Tel: (312) 407-0177
Fax: (312) 407-0038
<http://www.cglg.org>

Cousteau Society
870 Greenbriar Circle, Suite 402
Chesapeake, VA 23320
Tel: (757) 523-9335
Fax: (757) 523-2747
<http://www.cousteau.org>

Earth Island Institute
300 Broadway, Suite 28
San Francisco, CA 94133-3312
Tel: (415) 788-3666
Fax: (415) 788-7324
<http://www.earthisland.org/ei>

Environmental Defense Fund
257 Park Avenue South
New York, NY 10010
Tel: (212) 505-2100
Fax: (212) 505-2375
<http://www.edf.org>

Environmental Law Institute
1616 P Street, NW, Suite 200
Washington, DC 20036
Tel: (202) 328-5150
Fax: (202) 939-3868
<http://www.eli.org>

Fishermen's Marketing Association
320 2nd Street, Suite 2B
Eureka, CA 95501
Tel: (707) 442-3789
Fax: (707) 442-9166
<http://www.trawl.org>

Great Lakes Advisory Council
Faculty of Environmental Studies
SUNY College of Environmental
Science and Forestry
1 Forestry Drive
Syracuse, NY 13210
Tel: (315) 470-6636
Fax: (315) 470-6915

Great Lakes Protection Fund
35 East Wacker Drive, Suite 1880
Chicago, IL 60601
Tel: (312) 201-0660
Fax: (312) 201-0683
<http://www.great-lakes.net/glpf/>

Great Lakes Research Consortium
1 Forestry Drive, 24 Bray Hall
Syracuse, NY 13210
Tel: (315) 470-6816
Fax: (315) 470-6970
<http://www.esf.edu/glrc>

Great Lakes United
State University at Buffalo
1300 Elmwood Avenue
Buffalo, NY 14222
Tel: (716) 886-0142
Fax: (716) 886-0303

Greenpeace USA
1436 U Street, NW
Washington, DC 20009
Tel: (202) 462-1177
Fax: (202) 462-4507
<http://www.greenpeace.org>

Heal the Bay
2701 Ocean Park Boulevard, Suite 150
Santa Monica, CA 90405
Tel: (310) 581-4188
Fax: (310) 581-4195
<http://www.healthebay.org/healthebay>

International Oceanographic
Foundation
4600 Rickenbacker Causeway
Virginia Key
Miami, FL 33149-1098
Tel: (305) 361-4888
Fax: (305) 361-4711
<http://www.rsmas.miami.edu/iof>

Lake Michigan Federation
220 South State Street, Suite 2108
Chicago, IL 60604
Tel: (312) 939-0838
Fax: (312) 939-2708
<http://www.lakemichigan.org>

Michigan United Conservation
Clubs
P.O. Box 30325
Lansing, MI 48909
Tel: (517) 371-1041
Fax: (517) 371-1505
<http://www.mucc.org>

National Audubon Society
700 Broadway
New York, NY 10003
Tel: (212) 979-3000
Fax: (212) 979-3016
<http://www.audubon.org>

National Audubon Society
(Governmental Affairs)
1901 Pennsylvania Avenue, NW
Suite 1100
Washington, DC 20006
Tel: (202) 547-9009
Fax: (202) 861-4290
<http://www.audubon.org>

National Audubon Society
Great Lakes Office
692 North High, Suite 208
Columbus, OH 43215
Tel: (614) 224-3303
Fax: (614) 224-3305
<http://www.audubon.org>

National Fisheries Institute
1901 N. Fort Myer Drive, Suite 700
Arlington, VA 22209
Tel: (703) 524-8880
Fax: (703) 524-4619
<http://www.nfi.org>

National Marine Manufacturers
Association
1819 L Street, NW, Suite 700
Washington, DC 20036
Tel: (202) 861-1180
Fax: (202) 861-1181

National Ocean Industries Association
1120 G Street, NW, Suite 900
Washington, DC 20005
Tel: (202) 347-6900
Fax: (202) 347-8650

National Wildlife Federation
1400 16th Street, NW
Washington, DC 20036
Tel: (202) 797-6800
Fax: (202) 797-6646
<http://www.nwf.org>

Natural Resource Center (Great Lakes)
506 East Liberty, 2nd Floor
Ann Arbor, MI 48104
Tel: (313) 769-3351
Fax: (313) 769-1449
<http://www.greatlakes.nwf.org>

Natural Resources Defense Council
40 West 20th Street
New York, NY 10011
Tel: (212) 727-2700
Fax: (212) 727-1773
<http://www.nrdc.org>

The Nature Conservancy
1815 North Lynn Street
Arlington, VA 22209
Tel: (703) 841-5300
Fax: (703) 841-1283
<http://www.tnc.org>

New Jersey Seafood Harvesters
Association
3840 Terwood Drive
Doylestown, PA 18901
Tel: (215) 345-4790
Fax: (215) 345-4869
<http://www.fishingnj.org>

Oregon Trawl Commission
P.O. Box 569
Astoria, OR 97103
Tel: (503) 325-3384
Fax: (503) 325-4416
<http://www.ORTrawl.org>

Pacific States Marine Fisheries
Commission
45 SE 82nd Drive
Gladstone, OR 97027-2522
Tel: (503) 650-5400
Fax: (503) 650-5426
<http://www.psmfc.org>

Pollution Probe
12 Madison Avenue
Toronto, Ontario, M5R 2S1, CANADA
Tel: (416) 926-1907
Fax: (416) 926-1601
<http://www.pollutionprobe.org>

Restore America's Estuaries
1200 New York Avenue, Suite 400
Washington, DC 20005
Tel: (202) 289-2379
Fax: (202) 842-4932
<http://www.estuaries.org>

Save the Bay
434 Smith Street
Providence, RI 02908-3770
Tel: (401) 272-3540
Fax: (401) 273-7153
<http://www.savethebay.org>

Save the River
P.O. Box 322
Clayton, NY 13624
Tel: (315) 686-2010
<http://www.gisco.net/str>

Sea Grant Consortium
287 Meeting Street
Charleston, SC 29401
Tel: (803) 727-2078
Fax: (803) 727-2080
<http://www.csc.noaa.govSCSeaGrant>

Sea Grant Program
Virginia Graduate Marine Science
Consortium
University of Virginia
170 Rugby Road, Madison House
Charlottesville, VA 22903
Tel: (804) 924-5965
Fax: (804) 982-3694

SeaWeb
1731 Connecticut Avenue, NW
4th Floor
Washington, DC 20009
Tel: (202) 483-9570
Fax: (202) 483-9354
<http://www.seaweb.org>

Sierra Club
408 C Street, NE
Washington, DC 20002
Tel: (202) 547-1142
Fax: (202) 547-6009
<http://www.sierraclub.org>

Southeastern Fisheries Association
1118-B Thomasville Road
Mt. Vernon Square
Tallahassee, FL 32303
Tel: (850) 224-0612
Fax: (850) 222-3663
<http://www.southeasternfish.org>

Trout Unlimited
1500 Wilson Boulevard, Suite 310
Arlington, VA 22209-2404
Tel: (703) 522-0200
Fax: (703) 284-9400
<http://www.tu.org>

West Coast Seafood Processors
Association
2130 SW 5th Avenue, Suite 240
Portland, OR 97201
Tel: (503) 227-5076
Fax: (503) 227-0237
<http://www.wcspa.com>

Worldwatch Institute
1776 Massachusetts Avenue, NW
Washington, DC 20036
Tel: (202) 452-1999
Fax: (202) 296-7365
<http://www.worldwatch.org>

World Wildlife Fund
1250 24th Street, NW
Washington, DC 20037
Tel: (202) 293-4800
Fax: (202) 293-9211
<http://www.wwf.org>

Government Agencies

U.S. Department of Agriculture

Natural Resources Conservation
Service

P.O. Box 2890

14th and Independence Ave., SW
Washington, DC 20250

Tel: (202) 720-1845

Fax: (202) 720-4265

<http://www.nrcs.usda.gov>

U.S. Department of the Air Force

Air Force Regional Environmental
Office

Eastern Region

60 Forsyth Street, SW, Suite 8M80

Atlanta Federal Center

Atlanta, GA 30303-3416

Tel: (404) 562-4205

Fax: (404) 562-4221

[http://www.afcee.brooks.af.mil/at/
atform.htm](http://www.afcee.brooks.af.mil/at/atform.htm)

Air Force Regional Environmental
Office

Western Region

333 Market Street, Suite 625

San Francisco, CA 94105-2196

Tel: (415) 977-8888

Fax: (415) 977-8900

[http://www.afcee.brooks.af.mil/sf/
sfform.htm](http://www.afcee.brooks.af.mil/sf/sfform.htm)

U.S. Department of the Army

U.S. Army Corps of Engineers

Office of the Chief of Engineers

Pulaski Building

Washington, DC 20314-1000

Tel: (202) 761-0660

Fax: (202) 761-1373

<http://www.usace.army.mil>

U.S. Department of Commerce

National Marine Fisheries Service

1315 East West Highway

Silver Spring, MD 20910

Tel: (301) 713-2370

<http://kingfish.ssp.nmfs.gov>

National Oceanic and Atmospheric
Administration

Public Affairs

14th Street & Constitution Avenue, NW
Washington, DC 20230

Tel: (202) 482-6090

Fax: (202) 482-3154

<http://www.noaa.gov>

National Ocean Service

1305 East West Highway

Silver Spring, MD 20910

Tel: (301) 713-3066

Fax: (301) 713-4263

<http://www.nos.noaa.gov>

Smithsonian Institution

1000 Jefferson Drive, SW

Washington, DC 20560

Tel: (202) 357-1300

<http://www.si.edu>

U.S. Department of Health and Human Services

Food and Drug Administration

5600 Fisher Lane

Rockville, MD 20857

Tel: (301) 443-1544

Fax: (301) 443-3819

<http://www.fda.gov>

U.S. Department of Housing and Urban Development

U.S. Department of Housing and Urban Development

415 7th Street, SW
Washington, DC 20410-7000

Tel: (202) 708-1422

Fax: (202) 619-8365

<http://www.hud.gov>

U.S. Department of the Interior

Fish and Wildlife Service

1849 C Street, NW
Washington, DC 20240

Tel: (202) 208-5634

Fax: (202) 219-2428

<http://www.fws.gov>

Geological Survey

12201 Sunrise Valley Dr.
Reston, VA 22091

Tel: (703) 648-4460

Fax: (703) 648-4466

<http://www.usgs.gov>

Minerals Management Service

Public Affairs Office
1849 C Street, NW, LMS-4230
Washington, DC 20240

Tel: (202) 208-3985

Fax: (202) 208-3968

<http://www.mms.gov>

National Park Service

Water Resource Division
1849 C Street, NW, Room 3223
Washington, DC 20240

Tel: (202) 208-4639

Fax: (202) 208-4620

<http://www.nps.gov>

U.S. Department of the Navy

U.S. Department of the Navy
Office of the Assistant Secretary
Installations and Environment

1000 Navy Pentagon
Washington, DC 20350-1000

<http://enviro.navy.mil>

U.S. Department of Transportation

Coast Guard

2100 2nd Street, SW
Washington, DC 20593

Tel: (202) 267-2229

Fax: (202) 267-4307

[http://www.dot.gov/dotinfo/ucg/
welcome.html](http://www.dot.gov/dotinfo/ucg/welcome.html)

Federal Highway Administration
Environmental Operations Division

400 7th Street, SW
Washington, DC 20590

Tel: (202) 366-0660

Fax: (202) 366-7239

<http://www.fhwa.dot.gov>

Federal Railroad Administration
Nassif Building

400 7th Street, SW
Washington, DC 20590

Tel: (202) 632-3393

Fax: (202) 632-3700

<http://www.fra.dot.gov>

Maritime Administration

400 7th Street, SW
Washington, DC 20530

Tel: (202) 366-5812

Fax: (202) 366-3889

<http://marad.dot.gov>

U.S. Environmental Protection Agency

U.S. Environmental Protection Agency (4101)
Assistant Administrator for Water
401 M Street, SW
Washington, DC 20460
Tel: (202) 260-5700
Fax: (202) 260-5711
<http://www.epa.gov/watrhome>

U.S. Environmental Protection Agency
Chesapeake Bay Program Office
401 Severn Avenue, Suite 109
Annapolis, MD 21401
Tel: (800) 968-7229
Fax: (410) 267-5777
<http://www.chesapeakebay.net/bayprogram>

U.S. Environmental Protection Agency
Great Lakes National Program Office
77 West Jackson Boulevard
Chicago, IL 60604
Tel: (312) 353-2117
Fax: (312) 353-2018

U.S. Environmental Protection Agency
Gulf of Mexico Program Office
Building 1103, Room 202
Stennis Space Center, MS 39529-6000
Tel: (228) 688-3726
Fax: (228) 688-2709
<http://pelican.gmpo.gov>

U.S. Environmental Protection Agency
Water Resource Center (RC4100)
401 M Street, SW
Washington, DC 20460
Tel: (202) 260-7786
Fax: (202) 260-0386

Executive Office of the President

Council on Environmental Quality
722 Jackson Place, NW
Washington, DC 20503
Tel: (202) 395-5750
Fax: (202) 456-6546
<http://www.ceq.eh.doe.gov>

Coastal America
Reporters Building
300 7th Street, SW, Suite 680
Washington, DC 20250-0599
Tel: (202) 401-9928
Fax: (202) 401-9821
<http://www.csc.noaa.gov/coastalamerica>

United Nations

United Nations Environment Programme
New York Liaison Office
(Headquarters)
First Avenue and East 42nd Street
New York, NY 10017
Tel: (212) 963-1234
Fax: (212) 963-4879
<http://www.un.org>

International Joint Commission

International Joint Commission
United States Section
1250 23rd Street, NW, Suite 100
Washington, DC 20440
Tel: (202) 736-9000
Fax: (202) 736-9015
<http://www.ijc.org>

International Joint Commission
Great Lakes Regional Office
100 Ouellette Avenue, 8th Floor
Windsor, Ontario, N9A 6T3 CANADA
Tel: (519) 257-6700
Fax: (519) 257-6740
<http://www.ijc.org>

International Joint Commission
Great Lakes Commission
The Argus II Building
400 South 4th Street
Ann Arbor, MI 48103-4816
Tel: (313) 665-9135
Fax: (313) 665-4370
<http://www.glc.org>

International Joint Commission
Great Lakes Fisheries Commission
2100 Commonwealth Boulevard,
Suite 209
Ann Arbor, MI 48105-2945
Tel: (313) 662-3209
Fax: (313) 741-2010
<http://www.glfc.org>

International Joint Commission
Great Lakes Environmental Research
Laboratory
2205 Commonwealth Boulevard
Ann Arbor, MI 48105-2945
Tel: (313) 741-2235
Fax: (313) 741-2055
<http://www.glerl.noaa.gov>

**Hotlines, Clearinghouses,
and Databases**

(Also see appendix A)

Department of Fisheries and Wildlife
Virginia Polytechnical Institute and
State University
Blacksburg, VA 24061-0321
Tel: (540) 231-5573
Fax: (540) 231-7580
<http://www.fw.vt.edu/fisheries>

To report sightings of fish kills and
fish lesions (*Pfiesteria*)
In Maryland (888) 584-3110
In Virginia (804) 698-4000
In North Carolina (919) 733-5083

Fish and Wildlife Information
Exchange
Virginia Polytechnical Institute and
State University
203 West Roanoke Street
Blacksburg, VA 24061
Tel: (540) 231-7348
Fax: (540) 231-7019
<http://www.fw.vt.edu/fishex/>
wwwmain.html

National Small Flows Clearinghouse
P.O. Box 6064
Morgantown, WV 26506
Tel: (304) 293-4191
Fax: (304) 293-3161
<http://www.estd.wvu.edu>

U.S. EPA, Office of Water Assessment
and Watershed Protection Division
Nonpoint Source Information
Exchange
401 M Street, SW (4503F)
Washington, DC 20460
Tel: (202) 260-7085
Fax: (202) 260-7024

Watershed Information Resources
System
Terrene Institute
4 Herbert Street
Alexandria, VA 22305
Tel: (703) 548-5473
Fax: (703) 548-6299
<http://www.terrene.org>

U.S. Environmental Protection
Agency, Office of Water (4203)
Permit Division
401 M Street, SW
Washington, DC 20460
Tel: (202) 260-9545
Fax: (202) 260-1460

U.S. EPA Wetlands Information
Hotline
1355 Beverly Road, Suite 250
McLean, VA 22101
Tel: (800) 832-7828
Fax: (703) 748-1308
<http://www.epa.gov/owow>

U.S. Environmental Protection
Agency (4604)
Safe Drinking Water Hotline
401 M Street, SW
Washington, DC 20460
Tel: (800) 426-4791
Fax: (703) 285-1105

U.S. Environmental Protection
Agency, Office of Water (4503F)
Storage and Retrieval of U.S.
Waterways Parametric Data
(STORET)
401 M Street, SW
Washington, DC 20460
Tel: (800) 424-9067
Fax: (202) 260-1977
<http://www.epa.gov/owow>

Appendix C

Glossary

Acid deposition: A complex chemical and atmospheric phenomenon that occurs when sulfur and nitrogen compounds and other substances are transformed by chemical processes in the atmosphere. This transformation often occurs far from the original sources. The chemicals are then deposited on Earth in either a wet or dry form. The wet forms, popularly called “acid rain,” can fall as rain, snow, or fog. The dry forms are acidic gases or particulates.

Acid precipitation: Rain or snow that contains significant amounts of sulfuric acid or nitric acid.

Anadromous fish: Fish, such as salmon, that live in the sea but spawn in freshwater.

Aquaculture: The cultivation of marine or freshwater food fish or shellfish under controlled conditions for commercial purposes.

Aquifer: A geologic formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs.

Archipelagic waters: Waters that border the coasts of large groups of islands, such as Japan or the Aleutian Islands.

Barrier island: A sandy, elongated island situated just off the coast that protects lagoons and wetlands from marine elements. In the United States, these islands are primarily found along the Gulf of Mexico, the East Coast, and Alaska. Barrier islands form and change position and shape in response to coastal processes and human actions.

Barrier reef: A long, narrow ridge of coral or rock parallel to and relatively near a coastline, separated from the coastline by a lagoon too deep for coral growth.

Bayou: A marshy or sluggish body of water that is a tributary to another body of water.

Benthic: Occurring at the bottom of a body of water, usually in the depths of the ocean.

Bioaccumulation: The process by which some persistent contaminants concentrate and accumulate as they travel via digestive processes to higher levels of the food chain and become biologically magnified.

Biodiversity: The variety and variability of life forms, including genetic and ecosystem diversity, in a defined area at and over time.

Bog: A type of wetland that accumulates appreciable peat deposits. Bogs depend primarily on precipitation for their water source and are usually acidic and rich in plant residue with a conspicuous mat of living, green moss.

Brackish: A combination of saltwater and freshwater, common to coastal wetlands and estuaries.

Brown tide: See “red tide.”

Bycatch: Fish and other marine life caught incidentally while fishing for a different type of fish or marine life.

Chlorofluorocarbons (CFCs): A family of inert, nontoxic, and easily liquefied chemicals used in refrigeration, air conditioning, packaging, and insulation or as solvents and aerosol propellants. Because CFCs are not destroyed in the lower atmosphere, they drift into the upper atmosphere, where their chlorine components destroy ozone.

Coastal zone: Land and water adjacent to the coast that exert an influence on the uses of the sea and its ecology or whose uses and ecology are affected by the sea.

Confined disposal facility: An upland or in-water structure constructed solely for the disposal of contaminated dredged material.

Contiguous zone: The area between 12 and 24 miles from the coast in which a host country has rights to control immigration, customs, sanitary, and pollution regulations.

Continental shelf: A shallow, submerged shelf of land extending from the border of a continent, usually ending in a steep slope to deep oceanic waters. According to UNCLOS, the continental shelf extends 200 nautical miles from the coastal baseline (350 nautical miles in special circumstances). The host coastal country has exclusive jurisdiction over mineral resources within this zone and is obligated to protect marine life within this zone from negative effects of resource development.

Cypress swamps: Swamplands in the Atlantic and Gulf Coast regions dominated by cypress trees.

Detritus: Loose material (such as organic matter or rock fragments) that results from disintegration.

Direct discharge: Also known as point source emissions, direct discharge refers to any intentional release of wastes through direct dumping or pipeline discharge.

Effluent: Wastewater—treated or untreated—that flows out of a treatment plant, sewer, or industrial outfall.

Erosion: The wearing away and removal of materials of the Earth's crust by natural means, including running water, waves, moving ice, wind currents, and chemical solution.

Estuary: A region of interaction between rivers and nearshore ocean waters where tidal action and river flow create a mixing of freshwater and saltwater. These areas may include bays, mouths of rivers, salt marshes, and lagoons.

Eutrophication: The enrichment of waters by nutrients either through human-induced or natural means. This enrichment decreases oxygen content and favors plant life over animal life.

Exclusive economic zone (EEZ): An area extending up to 200 nautical miles from the coast of a country. Within this zone, the host country controls resources, such as fisheries and minerals; has jurisdiction over scientific research; and is responsible for protecting environmental health.

Fish catch: The quantity of a fishery item taken at sea. The entire catch is not usually brought to land and sold.

Fish landing: Quantities of fish, shellfish, and other aquatic plants and animals brought ashore and sold. Landings of fish may be in terms of round (live) weight or dressed weight.

Food chain: A sequence of organisms, each of which uses the next, lower member of the sequence as a food source.

Food web: The totality of interacting food chains in an ecological community.

General cargo: Materials carried on ships that are countable and transported in containers. General cargo does not refer to bulk items, such as grain or rice.

Global climate change: Worldwide changes in the Earth's climate systems thought to result from the emission of greenhouse gases including carbon dioxide, methane, nitrous oxide, and CFCs.

Ground fish: A bottom fish, caught on or near the sea floor, especially one of commercial importance (e.g., cod, hake, pollack, haddock).

Groundwater: The supply of freshwater found beneath the Earth's surface, usually in aquifers, which is often used to supply wells and springs.

Habitat: The environment in which an animal or plant can normally be found or normally grows.

Halophyte: A group of salt-tolerant plants, ranging from cacti to sea grass, that can absorb salt and heavy metals such as cadmium and arsenic from waste water.

High seas: Open waters of an ocean or sea beyond the limits of national territorial jurisdiction.

Hydrate: A solid compound containing water molecules.

Hydric soil: A soil that is saturated, flooded, or ponded long enough to support the growth of wetlands vegetation.

Hydromodification: Changing the flow, and thereby habitats, of natural water systems. This process includes the construction of dams, stream channels, and canals.

Hydrophyte: A group of plants that grows in water or soil too waterlogged for most plants to survive.

Hydrothermal vents: Areas located along deep seabeds where hot water, rich in sulfur, is released from geothermally heated rock.

Hypoxia: The terms “hypoxia” and “hypoxic waters” refer to waters with concentrations of less than two parts per million of dissolved oxygen, which is generally accepted as the minimum level required to support most animal life and reproduction.

Jetty: A structure extending into a sea, lake, or river to influence the current or tide in an effort to protect harbors, shores, and banks from sediment loss.

Industrial fish: Items processed from fish, shellfish, or other aquatic plants and animals that are not consumed directly by humans. These items contain products from seaweeds, fish meal, fish oils, aquatic animal skins, as well as shells.

International seabed: The area that extends beyond the continental shelf, generally thought of as open seas, that is under the jurisdiction of the United Nations International Seabed Authority.

Lagoon: A shallow sound or body of water, usually landward of a barrier island, connected to a larger body of water.

Leachate: A solution obtained from leaching or the action of percolating liquid to separate the soluble contents. Chemicals such as fertilizer are leached from soil when rainwater travels through the soil.

Manganese nodules: An irregular, potato-shaped mass of manganese-rich material that occurs on the ocean floor. Where concentrated, these nodules have potential value because of their content of manganese, cobalt, copper, and nickel.

Mangrove: Tropical evergreen trees and shrubs of the genus *Rhizophora* that have stilt-like roots and stems and form dense thickets along tidal shores.

Mariculture: Cultivation of marine and brackish water organisms in their natural environment for use as a food resource.

Marsh: A type of wetland that does not accumulate appreciable peat deposits and is dominated by herbaceous vegetation. Marshes may be either freshwater or saltwater and tidal or nontidal.

Mass balance: A scientific method for evaluating the sources, transport, and fate of contaminants entering a water system, and the effects of those contaminants on water quality.

Nautical mile: The accepted U.S. value as of 1 July 1959 is 1,852 meters (6,076.115 feet), approximately 1.15 times as long as the U.S. statute mile of 5,280 feet.

Nonpoint source: Sources of pollution discharged over a wide land area, not from one specific location. These sources include urban/suburban runoff, agricultural runoff, erosion, construction, and mining.

Nuisance species: Nonnative populations of fish and shellfish that dramatically increase, displacing native species, reducing biodiversity, and limiting water-use activities.

Nutrients: Forms of nitrogen and phosphorus that, in excessive amounts, can be harmful to aquatic life.

Overfishing: Fishing pressure that exceeds the sustainable level for that species, reducing abundance so much that production is much lower than the potential.

Pathogen: An agent, such as a bacterium or virus, that can cause disease.

Permeability: The rate at which liquids pass through soil or other materials in a specified direction.

Phosphorus: An essential chemical food element that can contribute to the eutrophication of lakes and other water bodies. Increased phosphorus levels result from the discharge of phosphorus-containing materials into surface waters.

Phytoplankton: That portion of the plankton community consisting of tiny plants (e.g., algae, diatoms).

Pipeline discharges: A type of direct discharge from a conduit or pipe, especially one used to convey water, gas, or petroleum products.

Point source: A stationary location or fixed facility from which pollutants are discharged or emitted (e.g., pipe, ditch, ship, ore pit, smoke stack).

Primary treatment: The first major stage in wastewater treatment. Screens and a sedimentation tank are used to remove most materials that float or will settle. Primary treatment removes about 30 percent of carbonaceous biochemical oxygen demand from domestic sewage.

Red tide: A visible red, brown, green, or yellow coloration of water, caused by excessive amounts of nutrients that lead to the growth of microscopic algae. These algae decrease water clarity and, upon decay, deplete the oxygen dissolved in the water. Decreased water clarity can lead to a loss of seagrasses, and oxygen depletion may kill or restrict fish, shellfish, and other marine organisms.

Riparian habitat: Areas adjacent to rivers or streams that have a high density, diversity, and productivity of plant and animal species relative to nearby uplands.

River delta systems: Habitats located at the point a river empties into a larger body of water (a lake or ocean). These areas are usually rich in nutrients.

Sea grass shallow: A shallow coastal area, usually found on the Atlantic and Gulf of Mexico coasts, on which certain grasses that have adapted to the changing tides grow.

Secondary treatment: The second stage in most publicly owned wastewater treatment systems in which bacteria consume the organic parts of the waste. This step is accomplished by bringing together waste, bacteria, and oxygen in trickling filters or in the activated sludge process. This treatment removes floating and settleable solids and about 90 percent of the oxygen-demanding substances and suspended solids. Disinfection is the final stage of secondary treatment.

Silviculture: The management of forest land for timber. This process sometimes contributes to water pollution, as in clearcutting.

Spoil: Dirt or rock that has been removed from its original location, destroying the composition of the soil in the process, as with stripmining or harbor dredging.

Submerged aquatic vegetation (SAV): Plants that grow for the most part under water.

Superfund program: The program operated under the legislative authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This statute, originally enacted in 1980 and substantially modified in 1986, provides the authority to fund and carry out the U.S. Environmental Protection Agency's (EPA) hazardous waste emergency and long-term cleanup activities. These long-term activities include establishing the National Priorities List, investigating sites for inclusion on the list, determining priority level on the list, and conducting and supervising the ultimate cleanup actions. The National Priorities List is EPA's list of the most serious uncontrolled or abandoned hazardous waste sites. The Superfund program does not address oil spills or other petroleum contamination.

Surface water: All water naturally open to the atmosphere (e.g., rivers, lakes, reservoirs, streams, impoundments, seas, estuaries) and all springs and wells that are directly influenced by surface water.

Territorial sea: A zone extending 12 nautical miles into the sea measured from a baseline on the coast of a country. This area is considered part of a country's sovereign territory.

Tertiary treatment: The advanced cleaning of wastewater that goes beyond the secondary or biological stage. This step removes nutrients such as phosphorus and nitrogen and most biological oxygen demand and suspended solids.

Thermal pollution: The discharge of water sufficiently warm to lower dissolved oxygen levels, cause eutrophication, affect the life processes of aquatic organisms, or damage the quality of water for drinking or recreational use.

Tidal flat: An extensive flat tract of land alternatively covered and uncovered by the tide and mostly consisting of unconsolidated mud and sand.

Turbidity: A haziness in air caused by the presence of particles and pollutants or a similar cloudy condition in water resulting from suspended silt or organic matter.

United Nations Conference on the Law of the Sea (UNCLOS): An international agreement that defines basic sea rights and responsibilities.

Upstream waters: Rivers, creeks, and tributaries that empty into an estuary or other body of water. Also, any water located in the opposite direction of the current of a river, creek, or other tributary.

Upwelling: Appearance of water from the nutrient-rich lower marine water to the surface, particularly near the shore. An upwelling is usually caused by the offshore drift of coastal surface water.

Watershed: A geographic area in which water, sediments, and dissolved materials drain to a common outlet—to a point on a larger stream, lake, underlying aquifer, estuary, or ocean.

Water table: The upper limit of the portion of the ground wholly saturated with water.

Wetland: An area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Appendix D

List of Acronyms

CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	President's Council on Environmental Quality
CFC	chlorofluorocarbon
CMC	Center for Marine Conservation
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DDT	dichlorodiphenyl trichloroethane
EEZ	exclusive economic zone
EQIP	Environmental Quality Incentives Program
EIS	environmental impact statement
EHC	Environmental Health Center
EMAP	Environmental Monitoring and Assessment Program
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ERNS	Environmental Response Notification System
FAIRA	Federal Agriculture Improvement Reform Act
FAO	United Nations Food and Agriculture Organization
FWIE	Fish and Wildlife Information and Exchange
FWS	Fish and Wildlife Service
GAO	General Accounting Office (Congressional)
GIFA	Governing International Fishery Agreements
IJC	International Joint Commission
ISTEA	Intermodal Surface Transportation Efficiency Act
IWI	Index of Watershed Indicators
LC	London Convention
MARAD	U.S. Maritime Administration
MARPOL	International Convention for the Prevention of Pollution from Ships

MMC	Marine Mammal Commission
MMPA	Marine Mammal Protection Act
MMS	Minerals Management Service
MPRSA	Marine Protection, Research, and Sanctuaries Act of 1972
NCP	National Contingency Plan
NCRIP	National Coastal Recreation Inventory Project
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NMMA	National Marine Manufacturers Association
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
OCS	outer continental shelf
OPA	Oil Pollution Act of 1990
PCBs	polychlorinated biphenyls
PCS	Permit Compliance System
P.L.	Public Law
POTW	publicly owned treatment works
ppm	parts per million
PRP	potentially responsible party
RCRA	Resources Conservation and Recovery Act
SAV	submerged aquatic vegetation
STORET	Storage and Retrieval of U.S. Waterways Parametric Data
TRI	Toxics Release Inventory
UNCLOS	United Nations Conference on the Law of the Sea
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
U.S.C.	U.S. Code
WRDA	Water Resources Development Act

Appendix E

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