

Wetlands Protection Workbook

REVISED

*Prepared for the U.S. Environmental Protection Agency
Office of Wetlands Protection
by the Environmental Law Institute
Washington, DC*



Printed on Recycled Paper

March 13, 1991

ACKNOWLEDGMENTS

This workbook was prepared by the Environmental Law Institute for the U.S. Environmental Protection Agency under Cooperative Agreement # X-815224-01. ELI staff contributing to the workbook include Sara Nicholas, Dan Berger, Todd Edelman, Megan Lewis, Jim McElfish, Erik Meyers, Ethan Shenkman, and Nicole Veilleux.

EPA's Office of Wetlands Protection contributed to and reviewed the contents of the manual. EPA staff participating in the development of the workbook include Glenn Eugster, Mike Fritz, and Judy Johnson. The EPA Project Manager was Judy Johnson.

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Introduction

What is a wetland?

Wetlands are areas covered with water for periods long enough to support plants that thrive in "wet" soils. Technically known as vegetated aquatic ecosystems, wetlands include such areas as bogs, marshes, swamps, and prairie potholes. However, wetlands, in the ecological sense, do not always conform to the common image of having standing water, lush aquatic vegetation and lots of waterfowl. Many important wetlands may be seasonally dry or lack noticeable vegetation during certain seasons. Many never have surface water or provide habitat for waterfowl.

Wetlands are now recognized as some of the most unique and important natural areas on earth for they have many important values. Wetlands provide food and shelter to countless animals including many fishes, birds, reptiles, and mammals. A large proportion of federally listed threat-

ened or endangered animals (45%) and plants (26%) depend directly or indirectly on wetlands to complete their life cycle successfully. Wetlands also provide other valuable benefits to people. They help reduce flooding, sustain stream flows, cleanse polluted waters, and support wildlife-associated recreation such as bird watching, fishing, and hunting. Wetlands also provide critical habitat for a vast majority of the commercial fish and shellfish consumed in our nation. Widely recognized wetlands throughout the country include the Okefenokee Swamp in Georgia, the Pocomoke River Swamp in Delaware and Maryland, Merrymeeting Bay in Maine, the Gulf Coast areas near Galveston, Texas, the vegetated Everglades in Florida, the Yakima River corridor in Washington and the Horicon Marsh in Wisconsin.

Wetland Losses

Despite their many values, wetlands have long been misunderstood and have suffered great destruction and abuse. When the Europeans first settled in America, there were over 200 million acres of wetlands. For many years these natural areas were perceived as "useless swamps" and were frequently filled, drained, polluted, or used for dumping grounds. Over time, more than 100 million acres, one-half of our nation's wetlands, have been destroyed by filling, drainage, pollution, channeling for insect control, grazing, clearing, and other modifications resulting from human activities.

During the last 30 years, researchers have discovered the significant, irreplaceable ecological values and roles that wetlands provide to communities, states and the nation. This new understanding has helped to increase awareness for the need to re-evaluate the effects of wetlands loss.

Unfortunately, progress on improving protection for wetlands has not occurred as quickly as needed, and wetland losses have continued at an unacceptable rate. In order to reduce wetlands loss, the public must become more aware of wetland values and functions and the ways in which all of us can help to protect these important areas.

Recent Protection Efforts

Several years ago, in response to wetlands losses, a group of public and private leaders convened to address major policy concerns about how the nation should protect and manage wetland resources. Known as the National Wetlands Policy Forum, this group made recommendations for reframing national wetlands policies and programs to ensure protection of wetlands. Central to the Forum recommendations were two goals:

To achieve no overall net loss of the nation's remaining wetlands (in the near term); and

To increase the quality and quantity of the nation's wetlands resource base (in the longer term).

President Bush, in January 1989, recognized these goals and the need for timely action by stating that our national goal for wetlands protection would be, "no overall net loss of wetlands."

In response to the public's questions and requests for information about the values and functions of wetlands and options for their protection, the Environmental Protection Agency (EPA) has established a Wetlands Hotline. The Hotline provides a wide range of oral and written information on wetlands protection through an 800 telephone number which public and private interests can call.

Comprehensive in nature and national in scope, the Wetlands Hotline is a central point of contact for people interested in information about wetlands protection efforts involving EPA and other public and private programs. The Hotline, intended to complement existing programs, includes information such as:

- General answers and expert referrals to questions about EPA's wetlands protection laws including Section 404 of the Clean Water Act;
- Referrals to questions about other federal wetlands protection laws such as the Farm Bill Conservation Title, the Farmland Protection Policy Act, the Coastal Zone Management Act, the Coastal Barriers Resources Act, the Wetlands Executive Order 11990, the Floodplains Executive Order 11988, and the Fish and Wildlife Coordination Act;
- Information about available federal technical and financial assistance for states and local governments and private groups to protect wetlands;
- Assistance available to private landowners to protect, enhance and restore wetlands areas; and
- Referrals for further information about state and private non-profit wetlands protection efforts.

The Hotline involves cooperation with other interested federal agencies as well as EPA's regional and Washington offices. Central to this information service, which has been developed by the Office of Wetlands Protection, the Environmental Law Institute and Geo-Resources Inc., is the development—and eventual publication—of a Wetlands Protection Workbook that describes EPA and related federal wetlands protection services, programs, regulations, offices and experts.

The *Wetlands Protection Workbook* is the primary guidebook for Hotline telephone information specialists. It is also a reference manual for EPA wetlands program staff in headquarters and in regional and field offices. It presents information collected from a variety of sources in an indexed reference manual. The workbook is not intended to be a substitute for communication with key government officials, but rather a point of contact to locate basic information on EPA wetlands protection programs and contacts for information on other government and private sector wetlands protection activities.

In the following chapters the hotline information specialist or reader will find specific information on wetlands laws, guidelines, programs and activities. Section one provides commonly asked questions about wetlands and answers. Section two provides fact sheets that describe federal agency regulations, roles, programs, proposed legislation, and definitions. This section also includes a description of wetlands values and functions.

In the appendices there are three additional sections. The first part of the appendix identifies a number of wetlands contacts. The second portion of the appendix is a bibliography of selected wetlands publications, many of which are available through the Hotline service. The third section contains a glossary of terms. It is the Office of Wetlands Protection and the Environmental Law Institute's hope that this *Wetlands Protection Workbook* will not only provide Hotline information specialists with basic information to provide to interested callers, but also assist other government and private-sector interests to accomplish their wetlands protection goals.

Q: What is a wetland?

A: Wetlands are areas that are covered with water enough of the year to support plants that thrive in "wet" soils. While most people picture wetlands as marshy areas with lush aquatic plants and lots of waterfowl, there are actually a wide range of types of wetlands. In fact, many wetlands may be dry or lack signs of plant life in certain seasons. The formal definition of a wetland used by the Army Corps of Engineers and EPA is: "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Although historically wetlands have been damaged and destroyed, they are now being recognized as rich and important natural areas. Wetlands provide food and shelter to countless animals including fish, birds, reptiles and mammals. A large proportion of endangered species of plants and animals depend on wetlands as part of their habitat. Further, wetlands provide other valuable benefits such as reducing flooding, sustaining stream flows, cleaning polluted waters, and supporting recreation through bird watching and fishing. Wetlands are also vital habitats for most of the commercial fish and seafood eaten in this country.

Notes:

Contacts:

- 1) EPA Regional Wetlands Contact, see Appendix A.
- 2) For a nongovernmental perspective on wetland protection, contact the Izaak Walton League, Appendix J.

- 3) For a more scientific perspective, contact your local Society of Wetlands Scientists/National Wetlands Technical Council representative, Appendix J.

Related Topics:

- 1) Overview of Federal and State Wetlands Definitions, p. 86.
- 2) Wetlands Values and Functions, overview, p. 101.

- 3) What is the Federal Government Doing to Protect Wetlands?, p. 4.

Publications:

- 1) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. Document No. OPA-87-016. (Available through the hotline)
- 2) Kusler, Jon. *Our National Wetland Heritage: A Protection Handbook*. Washington, DC: Environmental Law Institute, 1988.

- 3) For more information on how a wetland is defined by EPA, see the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. Federal Interagency Committee for Wetland Delineation, 1989.

Q: What are some values and functions of wetlands?

A: Wetlands is the collective term for marshes, swamps, bogs, and similar areas that often develop between open water and dry land. Wetlands are defined formally by their water flow patterns, type of plant life and soil type. These areas can be found all across the country.

In the past, wetlands were often regarded as wastelands — sources of mosquitoes, flies, and unpleasant odors. Many people felt that wetlands were places to be avoided or even eliminated. Largely because of this negative view, more than half of America's original wetlands have been destroyed. They have been drained and converted to farmland, filled for housing development and industrial facilities, or simply used as dump sites for household and

hazardous waste.

More recently, with our increased understanding of ecology, attitudes towards wetlands have changed. Scientists have discovered that wetlands are valuable natural resources. Among other things, wetlands help improve water quality, reduce flood and storm damages, improve erosion control, provide important fish and wildlife habitat, and support commercial and recreational fishing activities. In addition, many people take advantage of the natural beauty and serenity of wetlands for such activities as bird watching and general relaxation. (See below for descriptions of individual values and functions of wetlands.)

Notes:

Contacts:

- 1) Glenn Eugster, EPA Headquarters OWP Outreach Contact, (202) 382-5045.
- 2) For a scientific perspective, call your local Society

of Wetlands Scientists/National Wetlands Technical Council representative, Appendix J.

Related Topics:

- | | |
|--|---|
| 1) Fish and Wildlife Habitat — p. 103 | 5) Flood Control — p.104 |
| 2) Water Quality Improvement — p. 110. | 6) Water Supply Improvement — p. 112 |
| 3) Sediment Control — p.108. | 7) Treating Acid Mine Drainage — p. 109 |
| 4) Shoreline Erosion Control — p. 102 | 8) Wastewater Treatment — p. 111 |

Publications:

- 1) American Water Resources Association. *Wetlands: Concerns and Successes*. Bethesda, MD, 1989.
- 2) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. Prepared by the Office of Wetland

Protection. Report No. OPA-87-016, 1988. (available from the hotline)

Q: What laws protect wetlands?

A: The most widely-known wetlands protection law is the federal **Clean Water Act**. Section 404 of the Act establishes a permit program regulating the discharge of dredged and fill material into waters of the United States, including most of the nation's wetlands. The **Swampbuster** provisions of the 1990 Farm Bill are completely separate from the 404 program, and restrict agricultural subsidies and loan guarantees for areas where wetlands have been converted for crop production. Other federal laws that protect wetlands include the **Endangered Species Act**, which protects rare plants and animals, many of which are wetland-dependent; the **Rivers and Harbors**

Act of 1899, which regulate activities in wetlands adjacent navigable waters; and the **Wild and Scenic Rivers Act**, which protects wetlands adjacent to rivers designated as protected under the Act. In addition, many states have their own wetlands protection laws, either specifically for wetlands or else a combination of regulations that work to protect wetlands. **Local governments** may use planning and zoning powers and other means to protect wetlands. For more information on wetlands laws in your state or region, contact your state natural resource agency or local government.

Notes:

Contacts:

- 1) EPA Regional wetlands coordinator, see Appendix A.
- 2) EPA Office of Wetlands Protection, Mike Fritz, (202) 245-3913.
- 3) Jon Kusler, Association of State Wetlands Managers, (518) 872-1804.
- 4) State natural resource agency (Appendix F)

Related Topics:

- 1) Clean Water Act overview, p. 26
- 2) Rivers and Harbors Act of 1899 overview, see p.45
- 3) Endangered Species Act, see 46
- 4) Wild and Scenic Rivers Act overview, 56

Publications:

- 1) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. Report No. OPA-87-016. (available from the hotline)
- 2) Conservation Foundation. 1988. *Protecting America's Wetlands: An Action Agenda*. Harper Graphics, Waldorf, MD.
- 3) Kusler, Jon. *Our National Wetland Heritage: A Protection Handbook*. Environmental Law Institute, Washington, DC.
- 4) Want, William. *Law of Wetlands Regulation*, 1990.
- 5) *Protecting Nontidal Wetlands*, American Planning Association, 1989.

Q: What is the federal government doing to protect wetlands?

A: At the federal level, wetlands protection can be divided into four general areas:

Direct regulation of activities conducted in wetlands is authorized under the Clean Water Act §404, which covers discharges of dredged or fill material to waters of the United States, including many of the nation's wetlands. The Clean Water Act also includes water quality standards for wetlands. In addition, the Endangered Species Act can play an important role where wetlands serve as critical habitat for threatened or endangered species.

Economic disincentives are used to limit destructive activities. For example, "Swampbuster" provisions of the 1985 and 1990 Food Security Acts (also known as the Farm Bills) remove agricultural subsidies and loan guarantees when wetlands are converted for crop production.

Planning can be an effective tool of wetlands protection. In the West, the federal government owns huge tracts of

land and is required to develop management plans to protect wetlands on those lands. Also, federal agencies involved in highway construction, land management, and water planning are required to develop policies for conserving wetlands under their control. In addition, the federal government is encouraging states to protect wetlands by providing technical and financial assistance, such as EPA grants to states for State Wetland Conservation Plans. Finally, planning efforts are enhanced by extensive federal efforts to map and monitor wetlands, and to conduct research into the physical and biological properties of wetlands.

Land acquisition is another tool for wetlands protection. Two notable federal examples are the network of National Wildlife Refuges (which include significant wetlands acreage) and land acquisition under the Land and Water Conservation Fund.

Notes:

Contacts:

- 1) EPA Regional wetlands coordinator, see Appendix A.
- 2) Jeanne Melanson, Federal Activities Coordinator, EPA Headquarters OWP (202) 382-7073.
- 3) Jon Kusler, Association of State Wetlands

Managers, (518) 872-1804.

4) Scott Feierabend, National Wildlife Federation, (202) 797-6800.

Related Topics:

- 1) Clean Water Act Overview, p26
- 2) Swampbuster, p.59.
- 3) Endangered Species Act, p. 46

- 4) Fish and Wildlife Service - Overview, p. 72
- 5) EPA - Overview, p.65.

Publications:

- 1) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. Report No. OPA-87-016. (Available from the hotline)
- 2) Conservation Foundation. 1988. *Protecting America's Wetlands: An Action Agenda*. Harper Graphics, Waldorf, MD.
- 3) Kusler, Jon. *Our National Wetland Heritage: A Protection Handbook*. Environmental Law Institute, Washington, DC.
- 4) National Wildlife Federation. *A Citizen's Guide to Wetlands Protection*. 1989.
- 5) *Protecting Nontidal Wetlands*, American Planning

Association, 1989.

- 6) *National Guidance: Water Quality Standards for Wetlands*, EPA.
- 7) *Wetlands Action Plan: Meeting the President's Challenge*. Fish and Wildlife Service, 1990.
- 8) *Wetlands: Accomplishments and Opportunities*. EPA, 1990. (Available from the hotline)
- 9) *Wetlands and 401 Certification: Opportunities and Guidelines for States and Eligible Indian Tribes*. EPA Office of Water. April, 1989.

Q: What new wetlands bills have been introduced to Congress

A: Each year Congress introduces a number of bills related to wetlands regulation and preservation. This year many bills are likely to be introduced because the Clean Water Act, which regulates certain activities in wetlands under §404, is scheduled for reauthorization in 1992. Several bills related to wetlands have already been introduced during the 1991 session of Congress.

1991 Bills introduced:

In the House of Representatives, the Wetlands No Net Loss Act of 1991, H.R. 251 sponsored by Charles Bennett (D-FL), promotes the conservation and enhancement of wetlands and prevents wetland losses by establishing several new programs at the federal level. The Wetlands Protection and Regulatory Reform Act of 1991, H.R. 404 sponsored by John Hammerschmidt (R-ARK), seeks to amend §404 of the Clean Water Act by, among other things, providing differing levels of protection for categories of

wetlands, and by providing a new definition of wetlands. The Wetlands Conservation and Management Act of 1991, co-sponsored by Jimmy Hughes (D-LA) and Tom Ridge (R-PA), seeks to amend §404 of the Clean Water Act by creating a tiered classification scheme for wetlands that would offer differing levels of protection to wetlands based upon their values and functions, and would give the Army Corps of Engineers exclusive federal jurisdiction over §404.

In the Senate, Senator Steven Symms' (R-ID) Private Property Act of 1991, Senate Bill 50, would require all federal agency actions to be certified by the U.S. Attorney General for compliance with Executive Order 12630, which requires an assessment of the potential for any federal action to violate the Fifth Amendment by taking private property without compensation.

Notes:

Contacts:

- 1) House Document Room, H-226, U.S. Capitol, Washington, DC 20215 (appendix E)
- 2) Senate Document Room, B-04-Hart Senate Office Building, Washington, DC (appendix E)

- 3) National Wildlife Federation, Steve Moyer; Legislative Liaison for wetlands; (202) 797-6800.

Related Topics:

- 1) National Wetlands Policy Forum, p.84 1989, p.120.
- 2) State and Local Multiobjective River Corridor Act of

Publications:

- 1) H.R. 251. Bennet (D-FL). Wetlands No Net Loss Act of 1991. 1991. Hughes (D-LA).
- 2) H.R. 404. Hammerschmidt (R-ARK). Wetlands Protection and Regulatory Reform Act of 1991. 3) S. 50. Symms (R-ID). Private Property Rights Act of 1991.
- 3) Wetlands Conservation and Management Act of

Q: What is the Environmental Protection Agency's role in wetland protection?

A: The Environmental Protection Agency, in partnership with federal, state and local governments, is responsible for restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Because of the value of wetlands as an integral part of those waters, EPA is also charged with protecting wetland resources. A major federal regulatory tool for this is Section 404 of the Clean Water Act, which is jointly administered by the U.S. Army Corps of Engineers and EPA. Section 404 establishes a permit program to regulate the discharge of dredged or fill material into waters of the United States, including most of the nation's wetlands. EPA's key responsibilities in the Section 404 program include: development of the program's environmental standards (the Section 404(b)(1) Guidelines), determining the scope

of geographic jurisdiction (that is, areas which are subject to Section 404), state program assumption, enforcement, and review of individual permit applications.

EPA Cooperation in Wetlands Protection

EPA actively cooperates with other federal agencies, states, local governments; developers; environmental groups; the scientific community; and others to protect wetlands through regulatory and nonregulatory means. To provide leadership in building such a broad-based national effort, EPA established an Office of Wetlands Protection in 1986. EPA also conducts an active research program on wetlands through its Corvallis, Oregon, and Duluth, Minnesota, laboratories.

Notes:

Contacts:

- 1) Glenn Eugster, EPA Office of Wetlands Protection, (202) 382-5045.
- 2) EPA Regional Wetlands Coordinator (see Appendix

- A)
- 3) Dianne Fish, Office of Wetland Protection, EPA (202) 382-7071.

Related Topics:

- 1) Clean Water Act Section 404 Overview, p.27
- 2) EPA Office of Wetland Protection, p. 66

- 3) EPA Wetland Research, p67
- 4) Federal Incentive Programs, p. 16.

Publications:

- 1) EPA. *Wetlands Protection*. Fact Sheets prepared by the Office of Wetland Protection. (available from the hotline)
- 2) EPA. *Highlights of Section 404*. Prepared by the Office of Wetland Protection. (available from the

- hotline)
- 3) EPA Office of Water. *Wetlands: Accomplishments and Opportunities*. November 2, 1990. (available from the hotline)

Q: What is the role of the Army Corps of Engineers in wetlands protection?

A: The Army Corps of Engineers has been regulating activities in the nation's waters since 1890. Until the 1960s, the primary purpose of the regulatory program was to protect navigation. Since then, the Corps efforts have broadened to include wetlands protection under the Rivers and Harbors Act of 1899 and the Clean Water Act.

Scope of the Corps Regulatory Program

The Corps receives about 15,000 permit applications per year. In the course of its activities, the Corps last year had about 6,000 enforcement actions.

Notes:

Contacts:

- 1) For site-specific questions, contact the Corps of Engineers District Office, see Appendix B.
- 2) For general policy-related questions, contact Zell

Stever, Corps of Engineers Headquarters (202) 272-1780.

Related Topics:

- 1) Clean Water Act Section 404 overview, p27
- 2) Rivers and Harbors Act, p.45
- 3) For information on the Corps research program, see

p. 69.

Publications:

- 1) *US Army Corps of Engineers Regulatory Program*. Document No. EP 1145-2-1, May 1985.(available from the Hotline)
- 2) Kusler, Jon. *Our Wetland Heritage*. Washington,

DC: Environmental Law Institute, 1989.

3) Schmitz, William. *The Corps' Great LEAP*. National Wetlands Newsletter Vol.12, No. 5 14.

Q: What are the roles of the federal resource management agencies in wetlands protection?

A: The activities of federal agencies vary widely, including providing technical assistance, acquiring wetlands areas, and managing federal lands with wetlands. Major federal landowners include the Bureau of Land Management, the Forest Service, the Fish and Wildlife Service, the National Park Service, the Army Corps of Engineers, the Bureau of Reclamation, the Department of Defense.

Bureau of Land Management

The Bureau of Land Management administers more than 250 million acres of federal lands, about 10 percent of which are wetlands. The Bureau is developing plans for monitoring and managing these vast wetland areas.

Fish and Wildlife Service

The Service manages over 450 National Wildlife Refuges, is actively mapping wetlands across the United

States, and works to protect endangered species and migratory birds, many of which are wetland-dependent.

National Park Service and Forest Service

These federal agencies own and administer huge tracts of land across the country, and have just recently begun active wetlands programs to inventory wetlands on their lands and to improve protection and restoration of wetlands, particularly along rivers and streams. The National Park Service is also developing cooperative strategies with state and local governments and private landowners on lands related to Park Service lands.

National Oceanic and Atmospheric Administration

Under the authority of the Coastal Zone Management Act to provide comprehensive management and protection of coastal wetland resources.

Notes:

Contacts:

- | | |
|---|---|
| 1) BLM Headquarters Public Relations Office (202) 653-9210. | 5) Pam Matthes, National Park Service, (202) 208-4639 |
| 2) Jeanne Melanson, EPA Office of Wetland Protection, (202) 382-7073. | 6) Suzanne Bolton, National Oceanic and Atmospheric Administration, (202) 673-3959. |
| 3) David Heffernan, Fish and Wildlife Service, (202) 385-2043. | 7) Larry Schmidt, U.S. Forest Service, (202) 453-9475 |
| 4) Peter Boice, Department of Defense, (202) 325-2215. | 8) Jim Wolcott, Army Corps of Engineers, (202) 277-1787. |

Related Topics:

- | | |
|--|--|
| 1) Fish and Wildlife Service overview, p. 72 | 4) Army Corps of Engineers overview, p. 68 |
| 2) Forest Service programs, p. 79 | 5) National Park Service overview, p. 78 |
| 3) Bureau of Land Management programs, p. 80 | |

Publications:

- 1) Kusler, Jon. *Our Wetland Heritage*. Washington, DC: Environmental Law Institute, 1989.

Q: What federal regulatory programs protect wetlands?

Section 404 of the Clean Water Act

The most widely-known federal wetlands protection program is authorized by §404 Clean Water Act. Section 404 establishes a permit program regulating the discharge of dredged and fill material into waters of the U.S., including most of the nation's wetlands.

In addition to §404, there are a number of other federal regulatory programs that have an important role in the national effort to protect and conserve wetlands. Here is an overview of some of these programs:

Section 402 of the Clean Water Act

Section 402 of the Act establishes the National Pollutant Discharge Elimination System (NPDES) permit program, administered by EPA, or by states approved by EPA. The NPDES program regulates the discharge of pollutants other than dredged and fill material into the waters of the U.S., including wetlands.

Section 401 of the Clean Water Act

Section 401 of the Act gives broad statutory authority to the states to grant, condition, or deny certification of federally permitted or licensed activities which result in a discharge to waters of the U.S. including wetlands.

Section 303 of the Clean Water Act

Section 303 provides for the adoption of state water quality standards to protect the physical, chemical and biological integrity of their waters.

The Rivers and Harbors Act of 1899

This Act establishes a permit program for activities that take place in navigable waters. The Act is administered by the Army Corps of Engineers.

The Endangered Species Act

The Endangered Species Act protects rare species of plants and animals, many of which are wetland-dependent. The Act is administered by the Fish and Wildlife Service, and must be considered in all federal decisions regarding wetlands.

Other Laws and Programs

Some of the other laws and programs that directly or indirectly protect wetlands through regulation are the "Swampbuster" program in the Food Security Act, the Coastal Zone Management Act, the Wild and Scenic Rivers Act, and the National Environmental Policy Act.

Contacts:

- 1) EPA Regional wetlands coordinator, see Appendix A
- 2) EPA Headquarters, Office of Wetlands Protection, Dianne Fish (202) 382-7071 (for general policy or program questions)
- 3) EPA Headquarters, Office of Wetlands Protection,

- Greg Peck (202) 475-8794 (for specific regulatory questions)
- 4) Jon Kusler, Association of State Wetlands Managers, (518) 872-1804.

Related Topics:

- 1) CWA §404 Overview, p.26
- 2) CWA §402 NPDES Overview, p.42
- 3) Rivers and Harbors Act of 1899 Overview, p.45
- 4) Endangered Species Act, p.46
- 5) "Swampbuster" Overview, p.59
- 6) Coastal Zone Management Act (CZMA), p. 54

- 7) Wild and Scenic Rivers Act, p.56
- 8) National Environmental Policy Act Overview, p.47
- 9) Q: What Are Some Incentive and Disincentive Programs That Protect Wetlands?, p.16.

Publications:

- 1) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. Report No. OPA-87-016.
- 2) Conservation Foundation. 1988. *Protecting America's Wetlands: An Action Agenda*. Harper Graphics, Waldorf, MD.
- 3) Kusler, Jon. *Our National Wetland Heritage: A Protection Handbook*. Environmental Law Institute,

Washington, DC.

- 4) *Wetlands and 401 Certification: Opportunities and Guideline for States and Eligible Indian Tribes*. EPA Office of Water, April 1989.
- 5) *Water Quality Standards for Wetlands*, EPA Office of Water, July 1990.

Q: What is the federal manual?

A: The Federal Manual for Identifying and Delineating Jurisdictional Wetlands (also known as the Federal Manual) is an attempt to bring together the different definitions of wetlands of the various federal agencies. The manual was issued in January 1989 through a cooperative effort of four federal agencies with jurisdiction over wetlands: EPA, the Army Corps of Engineers, the Fish and Wildlife Service, and the Soil Conservation Service. It describes the three criteria that are used in determining whether an area is a wetland: hydrophytic plants, hydric soils, and wetland hydrology. All three of these characteristics must be found in an area before it can be

formally called a wetland. The manual also describes ways to gather information in the field for these three criteria, and methods for identifying and delineating jurisdictional wetlands. An Intergovernmental Committee made up of representatives of each of the four agencies is currently revising the Manual to make technical changes.

How can I get a copy of the Manual?

The current version of the Manual is available from the Government Printing Office and is document number 024-010-00603-8.

Notes:

Contacts:

- 1) Government Printing Office, (202) 783-3238.
- 2) For general information about the federal definition of wetlands, contact Mike Fritz, EPA Office of Wetland

- Protection, (202) 245-3913.
- 3) For a site-specific case, contact your local Army Corps of Engineers District Office, Appendix B.

Related Topics:

- 1) Overview of Federal and State Wetlands Definitions, p. 86
- 2) Wetlands Values and Functions, overview, p. 101
- 3) Wetland Hydrology, p.92
- 4) Hydrophytic Vegetation, p.93
- 5) Hydric Soils, p. 94

Publications:

- 1) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. Document No. OPA-87-016.
- 2) Kusler, Jon. *Our National Wetland Heritage: A Protection Handbook*. Washington, DC: Environmental Law Institute, 1988.
- 3) *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. Federal Interagency Committee for Wetland Delineation, 1989.

Q: What wetland regulations apply to farming activities?

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

A: Section 404 of the Clean Water Act regulates discharges of dredged and fill materials into wetlands. However, section 404(f) provides general exemptions from regulation for normal farming, ranching, and forestry activities such as plowing, cultivating, minor drainage; harvesting for the production of food, fiber and forest products; or upland soil and water conservation practices. This exemption pertains to normal farming and harvesting activities at established, ongoing farming or forestry operations. Activities which convert a wetland that has not been used for farming or forestry into such uses are *not* exempt. In addition, any activity which converts a wetland to upland is not exempt and requires a permit. Only the Army Corps of Engineers' district offices and EPA regional offices can make a determination as to what activities constitute normal farming activities. Section 404(f)(2) also includes a recapture provision that establishes a two-part test to determine whether an activity described in §404(f) might not be exempt from permitting requirements. If an activity involving a discharge of dredged or fill material represents a new use of the wetland, and the activity would result in a reduction in reach or impairment of flow or circulation of regulated U.S. waters, then the activity is not

exempted.

Other programs

In addition, the Swampbuster provisions of the 1985 and 1990 Farm Bills deny farm operators federal crop subsidies and guaranteed loans for converting wetlands to cropland by draining or filling. Many states have their own regulations governing wetlands and farming practices. For more information on state wetland regulations and farming, contact your state or local Soil Conservation Service office or regional EPA office.

Prior Converted Croplands

In late 1990, the Army Corps of Engineers issued a Regulatory Guidance Letter removing from federal jurisdiction under the Clean Water Act §404 program all wetlands designated as "prior converted croplands" under the 1985 Farm Bill. This exemption applies to all farmlands, except playa lakes and prairie potholes, that were converted to agricultural use prior to December 23, 1985, but exhibit ponding for less than 15 days or saturation for more than 7 days during the average growing season.

Contacts:

- | | |
|---|--|
| 1) EPA Regional wetlands coordinator (see Appendix A) | B) |
| 2) Mike Fritz, EPA Office of Wetlands Protection, Regulatory Activities Division; (202) 245-3913. | 4) State Soil Conservation Service office (Appendix D) |
| 3) Army Corps of Engineers district office (see Appendix | 5) State Resource Agency for wetlands (see Appendix F) |

Related Topics:

- | | |
|-------------------------------------|--------------------------------|
| 1) 404 Overview, p. 27 | 4) Swampbuster and §404, p. 12 |
| 2) 404(f) farming exemptions, p. 35 | |
| 3) Swampbuster provisions, p. 59 | |

Publications:

- | | |
|--|---|
| 1) Clean Water Act §404(f) Final Rule. 40 CFR Parts 232 and 233. <i>Clean Water Act Section 404 Program Definitions and Permit Exemptions; Section 404 State Program Regulations</i> . F.R.N. Vol. 52, No. 108, pp. 20764-20787. | 2) EPA/Army Corps of Engineers Memorandum For the Field (5/1990); <i>Clean Water Act Section 404 Regulatory Program and Agricultural Activities</i> . |
|--|---|

Q: How is swampbuster related to §404 of the Clean Water Act?

A: The two programs are different in many ways and generally do not overlap. A few exceptions apply to wetland definitions. Swampbuster is a disincentive program applicable only to farmland and farming operations and carried out by the Soil Conservation Service within the Department of Agriculture. The Clean Water Act §404 provisions, on the other hand, are generally regulatory requirements, apply to all wetlands that are waters of the United States, and are carried out jointly by the Environmental Protection Agency and the Army Corps of Engineers, with some input from the Fish and Wildlife Service, the National Marine Fisheries Service, and state fish and game agencies. Section §404 requires permits for discharges of dredged or fill material into a wetland, but exempts certain activities from regulation. Swampbuster requires no permits and uses economic sanctions to limit wetland conversions.

Definition Overlaps

The two programs may intersect when it comes to defi-

nitions of agricultural wetlands. For instance, a 1990 Corps directive (Regulatory Guidance Letter 90-08) removed prior converted croplands from regulation under §404 of the Clean Water Act, using a category of wetlands that are defined under the swampbuster program. "Prior converted wetlands" are defined in the *Food Security Act Manual* as agricultural wetlands converted prior to December 23, 1985 and which experience ponding for less than 15 days or saturation for more than 7 days during the average growing season. The two programs use different methods for making wetlands determinations; although the SCS is a signatory to the 1989 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*—the guide used by the Corps and EPA—the SCS continues to delineate wetlands using the Food Security Act Manual for the purposes of implementing the swampbuster program. However, it is never safe for a producer to assume that because his or her activities are exempt under one program that they are exempt under the other.

Notes:

Contacts:

- 1) Mike Fritz, EPA Office of Wetlands Protection, Regulatory Activities Division; 401 M St. SW, A-104-F, Washington, DC 20460; (202) 245-3913.
- 2) Army Corps of Engineers District Regulatory Branch

Chief [see Appendix B]
3) Soil Conservation Service, Lloyd Wright; (202) 382-1853, for policy questions on Swampbuster.

Related Topics:

- 1) Swampbuster, p.59
- 2) Clean Water Act §404 Overview, p.27

3) Clean Water Act §404(f); exemptions for normal farming activities, p.35

Publications:

- 1) S. 2830. *Food, Agriculture, Conservation, and Trade Act of 1990*. Public Law 101-624.
- 2) Clean Water Act, Section 404(a) Final Rule. 40 CFR...
- 3) Clean Water Act, Section 404(f). Final Rule. 40 CFR

Parts 232 and 233.
4) National Governors Association. *A Guide to Agricultural Wetlands Protection*. 1991. NGA, Washington, DC.

Q: What Types of Discharges Require CWA §402 (NPDES) permits?

A: Direct discharges of all pollutants, *other than* dredged and fill material, into the waters of the United States (including surface waters and wetlands) require permits under §402 of the Clean Water Act. The §402 permit program is known as the National Pollutant Discharge Elimination System (NPDES). Congress established the NPDES program to regulate the point source discharges of chemicals, heavy metals, and biological wastes — primarily in wastewater from industrial processes and publicly owned sewage

treatment works — to U.S. waters. NPDES permits are issued by EPA or by the state in which the discharge occurs, if the state has a federally approved program.

Only discharges of *dredged and fill material* into U.S. waters, including wetlands, require permits under §404 of the Act. Section 404 permits are issued by the Army Corps of Engineers.

Discharges regulated by §404 generally do not also require a §402 permit.

Notes:

Contacts:

- 1) EPA Regional Water Office (see Appendix A)
- 2) State Water Office, if NPDES program is administered by the state (see Appendix F)
- 3) EPA Headquarters, Office of Wetlands Protection, Sherri Fields (202) 245-3932 (for questions

concerning wastewater and stormwater treatment and wetlands)
4) EPA Headquarters, Office of Wetlands Protection, Greg Peck (202) 475-8794 (for regulatory questions)

Related Topics:

- | | |
|---|--------------------------------------|
| 1) NPDES Overview, p.42 | §402?, p. 43 |
| 2) Regulating Discharge of Solid Waste: §404 or | 3) Clean Water Act, overview, p. 26. |

Publications

- | | |
|--|---|
| 1) Clean Water Act Section 402, 33 U.S.C. 1342 | 3) Environmental Law Institute, Clean Water Deskbook, 1988. |
| 2) EPA Administered Permit Programs — The National Pollutant Discharge Elimination System, 40 C.F.R. Part 122. | |

Q: Does the National Environmental Policy Act (NEPA) Apply to §404 Permits?

A: NEPA requirements apply to most federal agency regulatory activities, including the Army Corps of Engineers §404 permitting program. The Corps prepares an environmental assessment for most §404 permit

applications. If the Corps determines that the proposed activity is likely to have a significant impact on the environment, an in-depth analysis, known as an **environmental impact statement**, will be prepared.

Notes:

Contacts:

1) Corps District Regulatory Branch Chief (See Appendix B)

2) EPA Regional Wetlands Coordinator (see Appendix A)

Related Topics:

1) NEPA Overview, p47
2) The NEPA Process, p48

3) NEPA: Applicability to Wetlands, p.49

References/Publications

1) U.S. EPA, *Facts About The National Environmental Policy Act*, September, 1989. (Available from the EPA Office of Federal Activities 202-382-5053.)
2) CEQ, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act*, 46 FR 18026 (1981)
3) CEQ, *Regulations For Implementing the*

Procedural Provisions of the National Environmental Policy Act, Reprint of 40 C.F.R. Parts 1500-1508
4) Army Corps of Engineers NEPA Regulations, 33 C.F.R. Part 230, 53 Fed. Reg. 3127 (Feb. 3, 1988)
5) Environmental Law Institute, *NEPA Deskbook*, 1989

Q: Does the EPA/Army MOA on Mitigation establish a policy of "No Net Loss of Wetlands?"

A: The EPA/Army Memorandum of Agreement on Mitigation Sequencing is not, in itself, a no net loss policy. EPA and the Corps will strive to achieve President Bush's goal of no net loss; however, the MOA clearly recognizes that mitigation which is not "appropriate" or "practicable" will not be required, nor will each permit be required to achieve no net loss of wetlands. The

purpose of the MOA is to provide general guidance to Corps and EPA field offices on the §404(b)(1) Guidelines mitigation requirements for standard permit applications in all waters of the U.S., including wetlands. As such, it reflects agency policy and procedures, but does not, itself, establish new policy.

Notes:

Contacts:

1) EPA Office of Wetlands Protection Regulatory Activities Division, Cliff Rader, (202)382-5087.

2) Army Corps Headquarters, Zell Steever, (202) 797-1780

Related Topics:

1) EPA/Army Corps Memorandum of Agreements, pp. 62, 63.

2) Section 404(b)(1) Review, p.31.

Publications

1) *MOA Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the CWA §404(b)(1) Guidelines (signed 2/6/90)*

2) *The Environmental Protection Agency and the Department of the Army, Section 404(b)(1) Guidelines Mitigation MOA: "Questions and Answers."*

Q: What are some incentive or disincentive programs that protect wetlands?

A: Incentive and disincentive programs are an important and necessary complement to state and federal regulatory programs that protect wetlands. While direct regulation of wetlands destruction or degradation is available through the Clean Water Act, the Ocean Dumping Act, and the Rivers and Harbors Act, a number of federal programs provide disincentives to wetlands conversion and incentives to landowners, states, and local governments to limit wetlands losses and restore or create wetland habitat.

Federal Disincentive Programs

Important examples of disincentive programs include the "swampbuster" provisions of the 1985 and 1990 farm bills—which deny agricultural subsidies and loans to landowners who convert wetlands for cropland use—and the Coastal Barrier Resources Act—which denies federal flood insurance and other federal support programs to those who develop designated barrier islands and coastal areas.

Incentive Programs

EPA, the Army Corps, the Soil Conservation Service, and many other federal agencies offer a variety of programs designed to encourage public and private preservation and restoration of wetlands. Among these include the Conservation Reserve Program and the new Wetlands Reserve Program established in the 1990 Farm Bill. The Land and Water Conservation Fund, Migratory Bird Fund, and federal Water Bank programs all provide funds for wetland preservation and restoration. The Federal Emergency Man-

agement Agency's community ratings system provides reductions on insurance premiums to local governments that guide development away from floodplains or take other actions to reduce flood losses and protect wetland habitat.

Other Federal Programs

Many federal agencies have nonregulatory programs to protect wetlands on federal lands and to aid citizens, local governments, and states in protecting wetland resources. These range from public outreach and education programs to grants, technical assistance, cost-sharing programs, land-use and conservation programs on federal lands, acquisition of wetlands, and stewardship programs. The Fish and Wildlife Service's National Wetlands Inventory program is nearing completion of a nationwide wetlands mapping effort that will establish a baseline of wetland acreage and record the present rate of wetland losses.

State, Local, and Private Efforts

Many states and local governments have their own programs designed to enhance wetland conservation and restoration, from education and training programs to cost-sharing, acquisition, easements, tax incentives, and many others. For state and local programs in your area, call your state resource agency or local government. In addition, there are numerous local, state-level and national organizations dedicated to wetland protection and enhancement, many with citizen activist programs, education programs, and fund-raising programs to acquire and protect wetlands.

Contacts:

- 1) Glenn Eugster, EPA Office of Wetlands Protection, (202) 382-5045
- 2) Federal Emergency Management Agency; Frank Thomas; (202) 646-2717
- 3) Fish and Wildlife Service, National Wetlands

Inventory, Thomas Dahl; (813) 893-3620.

- 4) Izaak Walton League of America (see Appendix H)
- 5) Jon Kusler, Association of State Wetland Managers, (518) 872-1804.

Related Topics:

- 1) EPA programs overview, p.65
- 2) Corps programs overview, p.68
- 3) FWS administration, programs, p.72
- 4) Swampbuster overview, p.59

- 5) Coastal Barriers Resource Act, p115.

Publications:

- 1) EPA Office of Wetlands Protection circular (9/25/1989). "Non-regulatory Wetlands Activities."
- 2) EPA Office of Wetlands Protection factsheet (5/9/1989) "Programs for Protecting Wetlands." (available through the Hotline)

- 3) U.S. Fish and Wildlife Service (1990). *1990 Wetlands Action Plan*. (available through FWS; (202) 358-2161).

Q: What kinds of wetlands research is being conducted at the federal level?

A: Both the EPA and the U.S. Army Corps of Engineers are very involved in wetlands-related research. The EPA research program, which is based at its Corvallis (Oregon) Laboratory, aims to improve the scientific basis for wetland decisions. Specifically, EPA's wetlands research program focuses on reducing uncertainties of wetlands creation and restoration, improving the understanding of the water quality benefits provided by wetlands, and assessing cumulative impacts. The Corps' work focuses on improvement of existing wetlands, reduction in wetlands loss and impacts, and provision of better environmental

accountability in water resource projects. Most of the Corps' research is conducted at the Waterways Experiment Station in Vicksburg, Mississippi.

Extensive wetlands research is also being performed at academic institutions, at non-profit organizations and research centers throughout the country, and at many state resource agencies. Programs at state land-grant colleges are increasingly including wetlands studies in their agriculture-related research.

Notes:

Contacts:

- 1) EPA Office of Wetlands Protection. Bill Sipple; (202) 382-5066, for research policy questions.
- 2) EPA Corvallis Lab Wetlands Matrix Manager Eric Preston; (503) 757-4666, for ongoing EPA wetlands research.
- 3) EPA Duluth Lab Water Quality Research Contact William Sanville; (218) 720-5500, for ongoing EPA wetlands research.

- 4) U.S. Army Corps of Engineers Wetlands Research Program Manager Russel F. Theriot; (601) 634-2733, for Corps wetlands research.
- 5) U.S. Fish and Wildlife Service, David Heffernan; (703) 358-2043, for FWS wetlands research.
- 6) National Wetlands Technical Council, and Society of Wetlands Scientists (See Appendix J) for private and academic wetlands research.

Related Topics

- 1) EPA Wetlands Research, p. 67
- 2) Army Corps of Engineers Wetlands Research, p. 69

69.

Publications:

- 1) EPA (3/89). *Wetlands and Water Quality: EPA's Research and Monitoring Implementation Plan for the Years 1989-1994*.
- 2) "Paxutent Wildlife Research Center," *Fish and Wildlife News*, February/March 1989.
- 3) EPA Office of Wetlands Protection (9/25/89).

Non-Regulatory Wetlands Activities.

- 4) U.S. Army Corps of Engineers (3/30/90). U.S. Army Corps of Engineers Wetlands Research Program Fact Sheet.

Q: How does the EPA help other countries protect wetlands?

A: Wetland loss is a problem all over the world, for many of the same reasons as in the U.S. EPA's Office of Wetlands Protection provides information and technical assistance to organizations in other countries that may not be as advanced in the development of wetland protection techniques and programs. A small amount of grant money is available each year for the development and continuation of wetland education programs, research, and training in wetland identification and management.

The Office of Wetlands Protection exchanges information with other governments about what wetland protection programs have been successful in various ecological settings. Currently an informal process, international wet-

lands information exchange will become a formal program in 1992 when wetlands experts from several countries will meet to find solutions to common problems.

International Wetlands Organizations

The Office of Wetlands Protection participates in several international wetland protection organizations. The most notable of these is the Convention on Wetlands of International Importance Especially as Waterfowl Habitat, also known as the Ramsar Convention after the city in Iran where the convention was adopted in 1971. The Ramsar Convention provides the framework for international cooperation for the conservation of wetland habitats.

Notes:

Contacts:

- 1) Cory Giacobbe, EPA Office of Wetlands Protection, (202)382-5907.
- 2) Lawrence Mason, Fish and Wildlife Service, Office

of International Affairs, 703-358-1754.

- 3) John Waugh, World Conservation Union (IUCN), 202-797-5454.

Related Topics:

- 1) North American Waterfowl Management Plan, p.83
- 2) North American Wetlands Conservation Act, p.114.

Publications:

- 1) *Ramsar Newsletter*. Published by the Ramsar Convention Bureau, World Conservation Centre, Avenue Du Mont-Blanc, 1196 Gland, Switzerland.
- 2) *Wetland Conservation: A Review of Current Issues and Required Action*. Edited by Patrick J. Dugan, World Conservation Union, 1990. Available from: IUCN Publications Unit, Avenue Du Mont-Blanc, 1196 Gland, Switzerland.
- 3) *Marine and Coastal Protected Areas: A Guide for Planners and Managers*, by Rodney V. Salm and John

R. Clark, 1989. Available from IUCN Publications Unit, Avenue Du Mont-Blanc, 1196 Gland, Switzerland.

- 4) *Asian Wetland News*. Published by the Asian Wetland Bureau, Institute of Advanced Studies (IPT), University of Malaya, Lembah Pantai, 59100 Kuala Lumpur, Malaysia.

- 5) *IWRB News*. Published by the International Waterfowl and Wetlands Research Bureau, Slimbridge, Gloucester, GL2 7BX, United Kingdom.

Q: What are State Wetland Conservation Plans?

A: One of the major recommendations of the National Wetlands Policy Forum was that states should prepare State Wetlands Conservation Plans that demonstrate how the state will achieve the goal of no net loss of wetlands. The idea evolved out of a recognition that wetlands protection is best accomplished through a wide variety of regulatory and nonregulatory programs. Different state agencies are responsible for these disparate programs which are important in protecting the resource and achieving no net loss.

The concept includes developing a comprehensive strategy that coordinates the many programs affecting wetlands in the state. The plans are intended to produce balanced and

cohesive programs by providing a basis for coordinating the various elements of a state's wetlands program such as mapping and inventory, functional evaluation, regulation, fiscal incentives and disincentives, public education, acquisition, and landowner assistance. The Conservation Foundation/World Wildlife Fund is developing a guidebook for states interested in preparing a state wetlands conservation plan. This guidebook will provide information on the elements that should be included in a state wetlands conservation plan.

States may apply to EPA for a State Wetlands Development Grant for assistance in developing such a plan.

Notes:

Contacts:

- | | |
|--|--|
| 1) Dianne Fish, EPA Office of Wetlands Protection, | (202) 382-5084. |
| (202) 382-7071. | 3) Heidi Sherk, Conservation Foundation/World Wildlife |
| 2) Lori Williams, EPA Office of Wetlands Protection, | Fund, (202) 778-9751 |

Related Topics:

- 1)

Publications:

- | | |
|---|---|
| 1) Conservation Foundation/World Wildlife Fund, <i>Protecting America's Wetlands: An Action Agenda</i> . 1988. (Report of the National Wetlands Policy Forum) | <i>Programs</i> . October 1989. |
| 2) Conservation Foundation/World Wildlife Fund, <i>Recommendations for Comprehensive State Wetlands</i> | 3) Conservation Foundation/World Wildlife Fund, <i>Guidebook on State Wetland Conservation Plans</i> (to be released in June 1991). |

Q. What funding is available to help states develop wetlands protection programs?

A: Starting in Fiscal Year 1990, Congress appropriated money specifically for the development of state wetlands protection programs. EPA's Office of Wetlands Protection administers this grant program under §104(b)(3) of the Clean Water Act. This money is available to any state agency involved in or having programs related to wetlands protection. Federally recognized Indian tribes are also eligible for funding.

Purposes

This money is available for the development of new state wetlands protection programs or the refinement or enhancement of existing state wetlands protection programs. Grant guidance is issued each year by the Office of Wetlands Protection explaining what is eligible for funding and

the procedures states must use to apply for funding. The criteria that are used to evaluate proposals are innovation, potential environmental results, and action orientation.

Projects

Suggested projects that are eligible for funding include, but are not limited to, State Wetlands Conservation Plans, integration of wetlands into traditional water/natural resource programs, multi-objective river-corridor management, water quality standards, incorporation of wetlands into Clean Water Act §401 programs, expanding activities covered and/or geographic jurisdiction of existing regulatory programs, wetlands planning initiatives, and monitoring activities.

Notes:

Contacts:

- 1) Lori Williams, EPA's Office of Wetlands Protection, 202-382-5084.
- 2) EPA regional wetlands contacts (see appendix A)

Related Topics:

- 1) See EPA Office of Wetland Protection, overview, p.66.

Publications:

- 1) *Catalog of State Wetlands Protection Grants (Draft)*, Feb 1991.
- 2) *State Grant Guidance*. EPA Office of Wetlands Protection Memorandum. (January 2, 1991)
- 3) *Federal Register*, December 15, 1989. pp. 51470-71.
- 4) *Catalog of Federal Domestic Assistance*, 66.461; *Wetlands Protection—State Development Grants*.

Q: What is state assumption of the §404 permit program?

A: The Clean Water Act, under §404(g), allows states to take over some of the permit responsibility from the Army Corps of Engineers if EPA determines that the state's program meets the standards for an approvable program. States cannot take over the permit program in "traditionally" navigable waters, coastal waters and adjacent wetlands. However, a state may administer an approved §404 program over the remaining waters within its borders.

Once a state assumes the permit program, the Corps of Engineers no longer issues permits in that state's assumed waters. EPA becomes the central point of federal contact and comment for the federal agencies, including the Corps, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service. EPA conducts oversight of the state's administration of the permit program and, in extreme cases, can initiate action to withdraw the state's program.

Notes:

Contacts:

- 1) Lori Williams, EPA Office of Wetlands Protection, 202-382-5084.
- 2) EPA Regional wetlands contacts (see Appendix A)

Related Topics:

- 1) Clean Water Act overview, p .26
- 2) Section 404 Overview, p.27
- 3) Guidelines for State Assumption, p.22

Publications:

- 1) 40 CFR Parts 232 and 233 ,*Federal Register*, June 6, 1988, p. 20764

Q: What will EPA consider in deciding whether to approve a state's program to assume Clean Water Act §404?

A: EPA will look at the statutory and regulatory requirements for an approvable state program. These include:

- 1) The extent of the state's jurisdiction;
- 2) The scope of activities regulated by the state;
- 3) The state's compliance with the §404(b)(1) Guidelines;
- 4) The extent of public participation in the state's program;
- 5) Permit processing procedures;
- 6) The state's compliance and enforcement program; and
- 7) Adequate staffing and funding for the state's program.

Notes:

Contacts:

- 1) Lori Williams, EPA Office of Wetlands Protection, 202-382-5084.
- 2) EPA regional wetland contacts (see Appendix A)

Related Topics:

- 1) How can states assume the 404 program? p.21

Publications:

- 1) 40 CFR 232-233, Federal Register, June 6, 1988, p. 20764.

Q: How can local governments protect wetlands?

Overview and regulatory protections

A: Local governments have broad responsibilities and many authorities that can be used to protect wetlands. Over 74 percent of the wetlands in the contiguous 48 states are on lands controlled by private landowners, both individual and corporate. New land-use decisions on these lands are usually made with some degree of involvement by local elected officials and governments. Often communities express strong desires to retain land-use decisionmaking powers and are sensitive about local tax bases, private property rights, and the involvement of state and federal governments. Local governments are also concerned and interested in balancing economic development with the protection of natural resources, maintaining the community's quality of life and character, and providing close-to-home open space and recreation opportunities to residents.

Many local governments, individually or cooperatively with other government entities, are taking voluntary actions to protect wetlands and/or discourage their inappropriate use. These include:

Local Wetlands Regulations

Land-use regulation is the most commonly used wetland protection technique among local governments throughout the country. Wetlands regulations have been adopted in at least 2,000 communities since 1988. Local governments can tailor a regulatory program to fit their needs. Regulations can be narrowly designed to protect discrete parts of a wetland from specific uses on related lands, or even throughout the community. Local entities can enact new regulations or amend their existing land-use control laws to include wetlands protection goals.

Notes:

Contacts:

- 1) Cory Giacobbe, EPA Office of Wetlands Protection, 202-382-5907
- 2) Sam Stokes, National Park Service Rivers and Trails Program, (202) 208-6843 (NPS information).
- 3) Soil Conservation Service, (see Appendix D)
- 4) Coastal Zone Management Agency, NOAA, (future appendix ?X)

Related Topics:

- 1) Nonregulatory local wetlands protection, p.24.

Publications:

- 1) *Protecting Nontidal Wetlands*. American Planning Association. December, 1988.
- 2) *Riverwork Book*. National Park Service. 1988.
- 3) *Steps in State and Local Greenway Planning*. Environmental Protection Agency, Office of Wetlands Protection. 1988. (available through hotline).
- 4) *A Local Government Handbook for Wetlands Protection*. Environmental Protection Agency, Office of Wetlands Protection. May 1991.

Q: How can local governments protect wetlands in ways other than through regulation?

A: Local governments can provide protection for wetlands and other important natural resources through assistance programs and incentive programs.

Assistance Programs

Many state-, federal-government, and private-organization technical and financial assistance programs are available for local governments to use to protect wetlands. Local governments can secure technical assistance from these programs to develop wetlands protection plans and strategies; receive funds from public or private organizations to acquire wetlands for public purposes; or receive advice and

information on educational and interpretive resources such as workshops, guide books, films, slide shows, and other audio-visual materials.

Incentive Programs

Local officials can also work with private interests in their community to secure tax credits or deductions for donations of land or for the restoration of wetlands through the Wetlands Reserve Program recently enacted in the 1990 Farm Bill. They can also pursue the formal recognition of wetlands with special qualities through public or private designation or registration.

Notes:

Contacts:

- | | |
|--|---|
| 1) Cory Giacobbe, EPA Office of Wetlands Protection, 202-382-5907. | 3) Soil Conservation Service, (see Appendix D) |
| 2) Sam Stokes, National Park Service Rivers and Trails Program, (202) 208-6843. (NPS information). | 4) Coastal Zone Management Agency, NOAA, (future appendix ?X) |

Related Topics:

- 1) Local wetlands protection, overview and regulations, p.23

Publications:

- | | |
|--|---|
| 1) <i>Protecting Nontidal Wetlands</i> . American Planning Association. December, 1988. | Protection. 1988. (available through hotline). |
| 2) <i>Riverwork Book</i> . National Park Service. 1988. | 4) <i>A Local Government Handbook for Wetlands Protection</i> . Environmental Protection Agency, Office of Wetlands Protection. May 1991. |
| 3) <i>Steps in State and Local Greenway Planning</i> . Environmental Protection Agency, Office of Wetlands | |

Q: How can a landowner protect wetlands?

A: Wetlands protection and creation requires the employment of a variety of approaches in a coordinated, thoughtful and effective manner. Over 74 percent of wetlands in the contiguous 48 states are on lands controlled by private landowners, both individual and corporate. In many areas of the country, private landowners are taking voluntary actions to protect, create, and enhance wetlands. A variety of public and private technical and financial assistance is available to help landowners. This assistance allows landowners to protect or create important wetlands while ensuring that traditional land uses are maintained and their rights are protected.

Riparian Lands

A variety of alternatives exist for riparian landowners to protect, create, and enhance wetlands. In many areas of the country there is an obvious history of landowner steward-

ship in wetland areas and many individuals and corporations have strong feelings about private protection efforts. The high quality of many of our existing wetlands is evidence that many riparian landowners are sensitive to the values and functions of these areas.

Local decisions

As our landscape changes over time, wetlands will continue to be considered for a variety of uses. Some of the new uses will be compatible with wetlands protection while others may be inappropriate, and could possibly destroy their character and value. Although state and federal agencies will have a great deal to say about certain new wetlands uses, in many instances development proposals will be decided by local governments and private landowners.

Notes:

Contacts:

- 1) Glenn Eugster, EPA Office of Wetlands Protection, (202) 382-5045.
- 2) Trust for Public Land, (415) 495-4014.
- 3) Michael Clarke, Natural Lands Trust, (215) 353-5587.

Related Topics:

- 1) Swampbuster, p.59.
- 2) Private Property Act of 1991, Pending Wetlands Legislation, p. 119.

Publications:

- 1) Natural Lands Trust, Inc. *A Handbook for the Landowner*. October 1982.
- 2) *Dealing with Change in the Connecticut River Valley: A design Manual for Conservation and Development*. Center for Rural Massachusetts, Amherst, MA. 1988.
- 3) Hoose, Phillip M. *Building an Ark: Tools for the Preservation of Natural Diversity Through Land Protection*. Covelo, CA. Island Press 19_.
- 4) *Landowners Guide to Managing Streams in the Eastern United States*. Virginia Tech and Virginia State, Publication No. 420-141. 1985.
- 5) Kusler, Jon. *Wetlands Creation and Restoration*.
- 6) Small, J. Stephen. *Preserving Family Lands*. Land Trust Alliance. 1988.

Clean Water Act

Overview

In 1972, Congress passed the federal Clean Water Act to prohibit the discharge of pollutants from a point source into waters of the United States—including wetlands—without a permit. Congress created two permit systems, under sections 402 and 404 of the Act, to regulate the point-source discharge of pollutants.

Section 404: 33 U.S.C. 1344

The §404 permit program regulates the discharge of dredged or fill material into waters of the United States, a term which includes most of the nation's wetlands. This program is jointly implemented by EPA and the Army Corps of Engineers, with advice from the Fish and Wildlife Service and the National Marine Fisheries Service. The Corps of Engineers handles the day-to-day administration of the program, including reviewing permit applications and deciding whether to issue or deny the permit. EPA's key responsibilities include development of the program's environmental standards, prohibiting discharges that will have unacceptable adverse effects, enforcement, state program assumption, and determining the scope of jurisdiction (that is, areas subject to §404) and the applicability of permit exemptions under §404(f). EPA also aids in the development of state permitting programs through grants and technical assistance.

Section 402: 33 U.S.C. 1342

Section 402 of the Clean Water Act regulates the point source discharge of pollutants, including chemicals, heavy

metals, and biological wastes into waters of the United States, including surface waters. The §402 program is administered by the EPA or by the state in which the discharge occurs.

Section 401: 33 U.S.C. 1341

Under authority of §401, states may grant or deny "certification" for a federally permitted or licensed activity that may result in a discharge to the waters of the U.S., if it is the state where the discharges will originate. Although this certification is required before the Corps or any federal agency can issue a permit for activities involving a discharge to waters of the United States, a state may waive its water quality certification.

Other Relevant Sections

Section 309 of the Clean Water Act grants EPA a number of important enforcement powers under the Act, including the power to refer civil and criminal violations to the Department of Justice for enforcement action; to issue administrative orders; and to assess administrative penalties up to \$125,000.

Waters of the United States

Waters of the United States protected by the Clean Water Act in general include rivers, streams, estuaries, the territorial seas, and most ponds, lakes, and wetlands. Waters do *not* have to be navigable to be waters of the United States.

Contacts:

- 1) EPA Regional wetlands contact [see appendix A] appendix B]
- 2) Army Corps District Regulatory Branch Chief [see

Related Topics:

- 1) Section 404 and Swampbuster, p.12
- 2) Rivers and Harbors Act, p.45
- 3) NPDES program overview, p.42

Publications:

- 1) Environmental Protection Agency. *Highlights of Section 404*. October 1989. (Available through the Hotline)
- 2) Army Corps of Engineers. *Regulatory Programs of the Corps of Engineers; Final Rule*. 33 CFR Parts 320 through 330. November, 1986.
- 3) William Want. *Law of Wetlands Regulation*. Clark Boardman Company, Ltd. 1990.
- 4) Environmental Protection Agency. *Wetlands and 401 Certification: Opportunities and Guidelines for States and Eligible Indian Tribes*. April 1989. (Available through the hotline).
- 5) Clean Water Act. 33 U.S.C. 1251 *et seq.*

Clean Water Act §404

Overview

Congress enacted the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 regulates the discharge of dredged or fill material into waters of the United States, and establishes a permit program to ensure that such discharges comply with environmental requirements of the Act. No one may discharge dredged or fill material to the waters of the United States without a permit unless exempt from permit requirements. All permits must comply with the program's environmental standards—the §404(b)(1) Guidelines.

§404 Administration

Section 404 is administered jointly by the Environmental Protection Agency and the Army Corps of Engineers. The Fish and Wildlife Service and the National Marine Fisheries Service have advisory roles in the program. The Corps has primary day-to-day responsibility for the permit program. States can assume a portion of the permitting program if they qualify under §404(g). To date only Michigan has assumed the §404 program.

EPA Role

EPA's role in administering §404 includes development of the environmental standards (§404(b)(1) Guidelines) by which permit applications must be evaluated; review of proposed permits; prohibition of discharges with unacceptable adverse impacts; approval and oversight of state as-

sumption of the program; establishment of the jurisdictional scope of waters of the United States; and interpretation of §404(f) exemptions. EPA shares enforcement authority for the program with the Corps.

Corps Role

The Army Corps of Engineers has responsibility for administering the §404 permit program. Before conducting any activity that involves a discharge of dredged or fill material into U.S. waters, an individual must apply to the Corps Division of Civil Works for a permit. The Corps determines whether the activity requires a permit, and can issue, deny, or condition a permit. Discharges can be authorized by either individual or general permits. All permit applications must comply with the §404(b)(1) Guidelines in order for the permit to be issued. General permits, issued on a state, regional, or nationwide basis, are authorized for specific activities which are similar in natural and will cause minimal adverse environmental effects individually or cumulatively. The Corps has issued a number of general permits affecting certain activities in wetlands for some areas of the country and nationwide.

Waters of the United States

Waters of the United States protected by the Clean Water Act in general include rivers, streams, estuaries, the territorial seas, and most ponds, lakes, and wetlands. They do not have to be navigable to be waters of the U.S.

Contacts:

- 1) EPA Regional wetlands contact (see Appendix A)
- 2) Army Corps District Regulatory Branch Chief (see Appendix B) for questions on permits.

Related Topics:

- 1) Section 404 and Swampbuster, p. 12
- 2) Rivers and Harbors Act, p. 45
- 3) Nationwide Permits, p. 39.
- 4) §404 Regulated Activities, p. 28.
- 5) §404 permit application process, p. 29.

Publications:

- 1) Environmental Protection Agency. Highlights of Section 404. October, 1989. (Available through the Hotline)
- 2) Army Corps of Engineers. Regulatory Programs of the Corps of Engineers; Final Rule, 33 CFR Parts 320 through 330. November, 1986.

Clean Water Act §404

Regulated Activities

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

Section 404 of the Clean Water Act requires permits for the discharge of dredged or fill material in waters of the United States. Discharges of dredged and fill material are commonly associated with activities such as port development, channel construction and maintenance, fills to create development sites, road building and other transportation projects, and water resource projects such as dams, jetties, and levees. Other kinds of activities, such as land clearing for agriculture, may be regulated under §404 if they involve discharges of dredged or fill material—for example, soil—into waters of the U.S.

Unregulated activities

Some activities that can adversely affect and even destroy wetlands, such as drainage and groundwater pump-

ing, are not regulated under §404 if they do not involve a discharge of dredged or fill material. However, the Corps should always be contacted before any such activities are begun in case they require a permit under §404 or under §402, which regulates discharge of point-source pollutants. Section 404 also contains exemptions for certain activities that involve discharges of dredged and fill material, including normal farming, silviculture, and ranching practices; maintenance of irrigation ditches, drainage ditches, and farm and stock ponds; and temporary road and sedimentation basin construction associated with construction.

Section 404(r) also provides a limited exemption for projects specifically authorized by Congress, with an environmental impact statement required under the National Environmental Policy Act for some projects.

Notes:

Contacts:

- 1) EPA Regional wetlands contact [see appendix A]
- 2) Army Corps District Regulatory Branch Chief [see appendix B] for questions on permits.

Related Topics:

- | | |
|-----------------------------------|--------------------------------|
| 1) Section 404 overview, p.27 | 3) NPDES (§402) overview, p.42 |
| 2) Clean Water Act overview, p.26 | 4) NEPA overview, p. 47 |

Publications:

- 1) Environmental Protection Agency. *Highlights of Section 404*. October 1989.
- 2) Army Corps of Engineers. *Regulatory Programs of the Corps of Engineers; Final Rule*. 33 CFR Parts 320 through 330. November, 1986.

Clean Water Act §404

Permit Application Process: An Overview

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

Discharges can be authorized by either individual or general permits. Once the Corps receives a completed application for a proposed activity involving a discharge of dredged or fill materials in a U.S. waters, it makes a determination whether an individual or a general permit is required. The Corps' evaluation of a §404 permit application is a two-part analysis which involves determining whether the project complies with the §404(b)(1) Guidelines and a public interest review. A permit must be denied if the project fails to comply with the Guidelines or is found to be contrary to the public interest.

Individual permits: §404(a)

If an individual permit is required, an application form describing the proposed activity must be sent to the Corps or to a state agency that has assumed the §404 program. (So far only the state of Michigan has assumed the §404 program). Once a completed application is received, the Corps or state issues a public notice containing such information as the project location, scope, and likely impacts and applicable laws and regulations. Notice is sent to all interested people including adjacent landowners, appropriate state, local, and federal agencies, and anyone who requests notice. Any person may request that a public hearing be held to consider the application. Commentors have 30 days, or 60 days with a Corps approved extension, to send in comments on the application. The permit must be denied if the project fails to comply with the §404(b)(1) Guidelines—the program's environmental standards.

General or Nationwide Permits: §404(e)

Where the Corps determines that an activity will cause minimal adverse environmental effects individually or cumulatively, it can authorize the activity by a general permit under Section 404(e). General permits may be issued on a state, regional, or nationwide basis. There are currently 26 nationwide permits, and numerous state and regional general permits. In most cases, activities authorized by general permits do not require the same public notice or public hearing as would be required for an individual permit. The general permits are designed to speed the permitting process as long as authorized activities do not cause serious environmental harm. However, anyone undertaking work in U.S. waters should always notify the Corps of a proposed project—even if it appears to fit all of the requirements of a nationwide permit—to avoid problems later on. For example, general permits may be modified or revoked if the permitted activities are found to have an adverse environmental impact. On a case-by-case basis, the permitting agency may invoke discretionary authority and require a discharger who would otherwise be covered by a general permit to apply for an individual permit. Of course, there are substantial penalties for failing to obtain a permit when one is required.

It is also important to remember that states may have their own permits that are required for activities in wetlands in addition to a §404 permit.

Contacts:

- 1) EPA Regional wetlands contact [see appendix A]
- 2) Army Corps District Regulatory Branch Chief [see appendix B]

Related Topics:

- | | |
|-----------------------------------|---------------------------------|
| 1) Section 404 overview, p.27 | 3) Nationwide permits, p. 39 |
| 2) Clean Water Act overview, p.26 | 4) §404(b)(1) Guidelines, p. 31 |

Publications:

- | | |
|--|---|
| 1) Environmental Protection Agency. <i>Highlights of Section 404</i> . October 1989. | 3) William Want. <i>Law of Wetlands Regulation</i> . Clark Boardman Company, Ltd. 1990. |
| 2) Army Corps of Engineers. <i>Regulatory Programs of the Corps of Engineers; Final Rule</i> . 33 CFR Parts 320 through 330. November, 1986. | 4) Clean Water Act Section 404. 33 U.S.C. 1344. |

Clean Water Act: §404(a)

Permit Review Process: Public Interest Review

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

The Corps' evaluation of a §404 permit is a two-part test which involves determining whether the project complies with the §404(b)(1) Guidelines and a public interest review. A permit must be denied if the project fails to comply with the Guidelines or is found to be contrary to the public interest.

Public Interest Review

The Corps' public interest review is a balancing test in which the public and private benefits of a project are weighed against its adverse impacts on the environment. It includes such considerations as navigation, aesthetics, recreation, historical values, economics, water supply, water

quality, energy needs, and flood damage prevention. The Corps also considers all comments received in the permit process, whether in response to a public notice or a public hearing, when making a final permit decision. As part of its evaluation, the Corps may conduct an environmental assessment under the National Environmental Policy Act to determine whether the project has significant environmental impacts. If the project is determined to have significant impacts to the human environment, the Corps can require preparation of an Environmental Impact Statement under NEPA. This additional requirement can extend the review process by a year or more.

Notes:

Contacts:

- 1) EPA Regional wetlands contact [see appendix A]
- 2) Army Corps District Regulatory Branch Chief [see appendix B]

Related Topics:

- 1) Section 404 overview, p.27
- 2) Clean Water Act overview, p.26
- 3) 404(b)(1) Guidelines, p.31

Publications:

- 1) Environmental Protection Agency. *Highlights of Section 404*. October 1989.
- 2) Army Corps of Engineers. *Regulatory Programs of the Corps of Engineers; Final Rule*. 33 CFR Parts 320 through 330. November, 1986.
- 3) Army Corps of Engineers. *Regulatory Program: Applicant Information*. EP 1145-2-1, 1985.

Clean Water Act: §404(b)(1)

Permit Review Process: Applying EPA's §404(b)(1) Guidelines

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

The Army Corps of Engineers' evaluation of a §404 permit is a two-part test which involves determining whether the project complies with the Section 404(b)(1) guidelines and a public interest review.

§404(b)(1) Guidelines: Overview

The §404(b)(1) guidelines (40 CFR Part 230) were developed by EPA in conjunction with the Corps of Engineers. The Guidelines contain the substantive environmental criteria used in evaluating discharges of dredged or fill material. All permit applicants must comply with the Guidelines in order for the permit to be issued. The Guidelines establish that dredged or fill material should not be discharged in to U.S. waters unless it can be demonstrated that the discharge will not have an unacceptable adverse impact, either individually or cumulatively, on the aquatic ecosystem.

Guideline Requirements

The Guidelines require Corps consideration of four key factors:

1) No discharge can be permitted if there is a practicable alternative with less adverse impact on the aquatic environment, unless the alternative poses other significant environmental problems. Where an activity is not water-dependent, the practicable alternatives test is applied more rigorously. The §404(b)(1) Guidelines presume that practicable alternatives for non-water dependent activities that

do not involve discharges in special aquatic sites are available, and that all practicable alternatives for discharges which do not involve discharges in a special aquatic site have less adverse impacts on the aquatic ecosystem, unless clearly demonstrated otherwise.

2) No discharge can be permitted if it would violate other applicable laws, such as state water quality standards, toxic effluent standards, or the Endangered Species Act.

3) No discharge can be permitted that would cause or contribute to significant degradation of waters of the United States.

4) Discharges can be permitted only when all appropriate and practicable steps are taken to minimize (i.e., mitigate) the adverse impacts, including making compensation for unavoidable impacts.

Additional Requirements

During the Corps' evaluation under the Guidelines and public interest review, two additional requirements must be met before the Corps may issue a §404 permit: states must certify that the activity complies with its state water quality standards (Clean Water Act §401 certification) or else waive their right to certify; and coastal states must concur that the activity is consistent with the Coastal Zone Management Plan of the state, or else waive their right to concur. States may also put conditions on their certifications.

Contacts:

- | | |
|---|---|
| 1) EPA Regional wetlands contact [see appendix A] | 3) State resource agency (for §401 authority) see Appendix F. |
| 2) Army Corps District Regulatory Branch Chief [see appendix B] | |

Related Topics:

- | | |
|-------------------------------------|--|
| 1) Section 404 overview, p.27 | 4) §401 Review, p. 44 |
| 2) Clean Water Act overview, p.26 | 5) Coastal Zone Management Act, p.53, 54 |
| 3) 404 Public Interest Review, p.30 | 6) Mitigation, p.32 |

Publications:

- | | |
|--|---|
| 1) EPA/Corps Memorandum of Agreement on Mitigation. | through 330. November, 1986. |
| 2) Army Corps of Engineers. <i>Regulatory Programs of the Corps of Engineers; Final Rule.</i> 33 CFR Parts 320 | 3) EPA Section 404(b)(1) Guidelines. 40 CFR Part 230. |

Mitigation

Overview

Mitigation is a term that means an effort to compensate for, or off-set, wetlands loss. The Clean Water Act's Section 404 (b)(1) says that discharge to a wetland can be permitted only when all practical steps are taken to mitigate damage to the wetland. Mitigation includes activities such as repairing the affected wetlands, or compensating for the impact by restoration or creation of an artificial wetland area. Exactly what types of activities constitute mitigation is determined by the regulatory agency involved. It is important to note that generally all mitigation must be carried out before the permitted activity begins. EPA has issued guidance on mitigation known as the 404(b)(1) Guidelines, and also signed a Memorandum of Agreement with the Army on mitigation sequencing. The Fish and Wildlife Service has also developed formal guidelines for mitigation of wetlands.

Mitigation Banking

One way to add more flexibility to the mitigation require-

ment is through mitigation banking. Under a banking system, a regulatory agency sets up a tally sheet (called a bank) of wetlands gains and losses. Through the bank, people involved in developing wetlands have the opportunity to buy and trade credits and debits. For example, a developer can offset damage to a wetland by paying a farmer to create a new artificial wetland. Also, the developer can overcompensate by restoring or creating substantial wetlands acreage in order to have credit against wetland losses in the future. Another possibility is that a developer could incur a debit in the bank by promising to restore a wetland in the future while building on a natural wetland now. The difficulty with a mitigation banking scheme lies in determining the relative values of wetlands gained and lost. Several states have mitigation banking systems and each is substantially different. EPA and the Army Corps of Engineers are currently working to develop national guidance on mitigation banking.

Contacts:

- 1) EPA Regional Wetlands Contact, see Appendix A.
- 2) Army Corps of Engineers District Office, see Appendix B.
- 3) For information on states with wetlands mitigation banks, call Jon Kusler, Association of State Wetlands Managers, (518) 872-1804.

Related Topics:

- 1) Clean Water Act Section 404(b)(1), p. 31
- 2) Valuation and Assessment of Wetlands, see p. 113.
- 3) Memoranda of Agreement, see pp. 62, 63.

Publications:

- 1) *US Fish and Wildlife Service Mitigation Policy; Notice of Final Policy. Federal Register* Vol. 46, No. 15 (Friday, January 23, 1981): 7644-7663.
- 2) *US Army Corps of Engineers. Implementation of Fish and Wildlife Mitigation in the Corps of Engineers Regulatory Program. Regulatory Guidance Letter* No. 85-8 (November 8, 1985).
- 3) *Herson, Albert I. Project Mitigation Revisited: Most Courts Approve Findings of No Significant Impact Justified by Mitigation in Ecology Law Quarterly* Vol. 13, No. 51 (1986): 51-72.
- 4) *Frank, Kathy. Can Mitigation Help Protect Wetlands? in Wetlands Watch* (September/October, 1989): 3.
- 5) *National Wetlands Newsletter* special issue on mitigation, Vol. 8, No. 5 (1986).
- 6) *EPA/ Army Corps of Engineers Memorandum of Agreement on Mitigation Sequencing* (1989).

Clean Water Act §404

Advance Identification

Section 230.80 of the Section 404(b)(1) Guidelines provides for a planning process to identify areas generally suitable or unsuitable for discharges into waters of the United States in advance of permit applications. The advance identification process is carried out jointly by EPA and the Army Corps of Engineers and includes consultation with the state in which the identification is being done. Often advance identification studies are conducted in areas that have important wetlands resources.

ADID Process

The advance identification process usually involves an assessment of wetlands functions and values associated with the ADID area using a variety of informational resources. This information is evaluated by the agencies to determine which wetlands in the study area are of ecologi-

cally high value and should be protected from future fill activities, and in some cases, which wetlands are of low value and could serve as potential future disposal sites. Areas can be designated as generally suitable or unsuitable for use as a discharge site. Often advance identification studies aid local and statewide zoning and planning efforts and preservation of wetland resources. Immediate results of the ADID study are informational and advisory, not regulatory. The identification of an area as a possible future disposal site does not constitute a permit. However, the results of an ADID study may be used to support a range of regulatory actions. For example, the Corps may issue general permits for certain activities in areas designated as suitable for disposal.

Notes:

Contacts:

- 1) EPA Regional wetlands contact [see appendix A]
- 2) Army Corps District Regulatory Branch Chief [see appendix B]

Related Topics:

- 1) Section 404 overview, p27
- 2) Section 404 Permit Process overview, p29
- 3) 404(b)(1) Guidelines, p31

Publications:

- 1) Environmental Protection Agency. *Highlights of Section 404*. October 1989. (Available through the Hotline).
- 2) Army Corps of Engineers. *Regulatory Programs of the Corps of Engineers; Final Rule*. 33 CFR Parts 320

through 330. November, 1986.

- 3) Environmental Protection Agency. 404(b)(1) Guidelines. 40 CFR Part 230.

Clean Water Act §404

Section 404(c): EPA Veto

Under Section 404(c), EPA may prohibit, withdraw, or restrict the use of a discharge site when the discharge would have unacceptable adverse impacts on municipal water supplies, shell fish beds and fishing areas (including spawning and breeding areas), wildlife, or recreational areas. EPA can exercise its authority under §404(c) before, during, or after Corps action on a permit application, or in the absence of a specified permit application or Corps regulatory action. For example, EPA may conduct a §404(c) action in conjunction with an Advance Identification action or a

Special Area Management Plan.

Veto Used Sparingly

In general, §404(c) actions are taken by EPA only when it is clear that the project will have unacceptable adverse impacts on valuable environmental resources. As of January 1991, EPA has completed only 11 §404(c) actions. This represents an extremely small percentage of the permits issued since §404 was enacted in 1972.

Notes:

Contacts:

- 1) EPA Regional wetlands contact [see appendix A] for site-specific questions.
- 2) Army Corps District Regulatory Branch Chief [see appendix B] for site-specific questions.
- 3) Will Garvey, EPA Office of Wetlands Protection (202) 245-3900, for policy questions.

Related Topics:

- 1) Section 404 overview, p. 27
- 2) Section 404 public interest review, p. 30
- 3) 404 Permit Application Process, p.29

Publications:

- 1) Environmental Protection Agency. *Highlights of Section 404*. October 1989.
- 2) Army Corps of Engineers. *Regulatory Programs of the Corps of Engineers; Final Rule*. 33 CFR Parts 320 through 330. November, 1986.
- 3) EPA. Clean Water Act §404(c) 33 U.S.C. 1344.

Clean Water Act §404(f)

Overview: General Exemptions

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

The Clean Water Act, under section 404(f), generally exempts discharges of dredged or fill material associated with normal farming, ranching, and forestry activities such as plowing, cultivating, minor drainage, and harvesting for the production of food, fiber and forest products or upland soil and water conservation practices. This exemption pertains to normal farming and harvesting activities that are part of an established, ongoing farming or forestry operation. Activities which convert a wetland that has not been used for farming or forestry into such uses are not considered part of an established operation, and are not exempt. In addition, any discharge associated with an activity that converts a wetland to upland is not exempt and requires a §404 permit.

Some Examples

For example, introduction of a new cultivation technique such as disking between crop rows for weed control may be a new farming activity, but because the farm operation is ongoing, the activity is exempt from permit requirements under §404. Planting different crops as part of an established rotation, such as soybeans to rice, is exempt. Rotating rice and crawfish production is exempt, but construction of fish ponds for crawfish production is not exempt, since it introduces a new type of farming operation and involves a discharge of dredged and fill materials. The Army and EPA signed a Memorandum for the Field in May 1990 that provides an explanation of new and ongoing farming activities for the purposes of implementing Section 404(f).

Contacts:

- | | |
|--|--|
| 1) EPA Regional wetlands contact [see appendix A] | 3) Mike Fritz, EPA Office of Wetlands Protection (202) |
| 2) Army Corps District Regulatory Branch Chief [see appendix B] for site-specific questions. | 245-3913, for policy questions. |

Related Topics:

- | | |
|---|--|
| 1) Section 404(f) (2) Recapture Provisions, p.36 | 4) Memorandum of Agreement, pp. 62, 63 |
| 2) Section 404(f) Major versus minor drainage, p.37 | |
| 3) 404 Permit Application Process, p. 29 | |

Publications:

- | | |
|---|--|
| 1) EPA. Clean Water Act §404(f) Final rule. 40 CFR Parts 232 and 233. <i>Clean Water Act Section 404 Program Definitions and Permit Exemptions; Section 404 State Program Regulations</i> . F.R.N. Vol. 53, No. 108, pp. 20764-20787. | <i>of the Army and the Environmental Protection Agency Concerning the Determination of the Geographic Jurisdiction of the Section 404 Program and the Application of the Exemptions Under Section 404(f) of the Clean Water Act.</i> |
| 2) EPA/Army Corps of Engineers Memorandum For the Field (5/1990); <i>Clean Water Act Section 404 Regulatory Program and Agricultural Activities</i> . | 4) Army Corps. Regulatory Guidance Letter. Prior Converted Croplands. 90-09. |
| 3) EPA/Army Corps of Engineers. (1/1989) <i>Memorandum of Agreement Between the Department</i> | 5) William Want. "Courts Ruling Limits §404 Silviculture Exemptions." <i>National Wetlands Newsletter</i> , Vol. 12, No. 3. |

Clean Water Act §404(f)

CWA §404(f)(2): "Recapture" Provisions

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

The Clean Water Act, under section 404(f)(2), includes a "recapture" provision that establishes a two-part test to determine whether an activity described in §404(f) might not be exempt from permitting requirements under the Clean Water Act. If an activity involving a discharge of dredged or fill material represents a *new use* of the wetland, and the activity would result in a *reduction in reach or*

impairment of flow or circulation of regulated U.S. waters, the activity is not exempted. Both conditions must be met in order for the activity to be considered nonexempt. However, discharges that are not exempt are *not* necessarily prohibited. Non-exempted discharges may be authorized either through a general or individual §404 permit.

Notes:

Contacts:

- 1) EPA Regional wetlands contact [see appendix A]
- 2) Army Corps District Regulatory Branch Chief [see appendix B] for site-specific questions.

- 3) Mike Fritz, EPA Office of Wetlands Protection; (202) 245-3913, for policy questions.

Related Topics:

- 1) Section 404(f) Overview, p.35
- 2) Section 404(f) Major versus minor drainage, p.37

Publications:

- 1) EPA. Clean Water Act §404(f) Final rule. 40 CFR Parts 232 and 233. *Clean Water Act Section 404 Program Definitions and Permit Exemptions; Section 404 State Program Regulations*. F.R.N. Vol. 53, No. 108, pp. 20764-20787.
- 2) EPA/Army Corps of Engineers Memorandum For the Field (5/1990); *Clean Water Act Section 404 Regulatory Program and Agricultural Activities*.

- 3) EPA/Army Corps of Engineers. (1/1989) *Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency Concerning the Determination of the Geographic Jurisdiction of the Section 404 Program and the Application of the Exemptions Under Section 404(f) of the Clean Water Act*.

Clean Water Act: Section 404(f)

Minor versus Major Drainage

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

The Clean Water Act, under section 404(f), exempts minor drainage activities, such as building rice levees, to continue an established, ongoing wetland crop-production effort, or emergency minor drainage, such as removing blocks from an existing drainageway used as part of an

established crop production. Construction of new drainage ditches is not exempt if such construction drains or significantly modifies any wetlands or aquatic areas considered as waters of the U.S.

Notes:

Contacts:

- 1) EPA Regional wetlands contact [see appendix A]
- 2) Army Corps District Regulatory Branch Chief [see appendix B] for site-specific questions.
- 3) Mike Fritz, EPA Office of Wetlands Protection, (202) 245-3913, for policy questions.

Related Topics:

- 1) Section 404(f) Overview, p.35
- 2) Section 404(f)(2) Recapture provisions, p.36

Publications:

- 1) EPA. Clean Water Act §404(f) Final rule. 40 CFR Parts 232 and 233. *Clean Water Act Section 404 Program Definitions and Permit Exemptions; Section 404 State Program Regulations*. F.R.N. Vol. 53, No. 108, pp. 20764-20787.
- 2) EPA/Army Corps of Engineers Memorandum For the Field (5/1990); *Clean Water Act Section 404 Regulatory Program and Agricultural Activities*.
- 3) EPA/Army Corps of Engineers. (1/1989) *Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency Concerning the Determination of the Geographic Jurisdiction of the Section 404 Program and the Application of the Exemptions Under Section 404(f) of the Clean Water Act*.

Clean Water Act §404

Citizen's Role in §404

Individuals can participate in the §404 program in a variety of ways. The public notice and public hearing opportunity provided during Corps review of individual permit applications is an important avenue for public input into the decision on whether such a permit should be issued or denied. Individuals can be placed on a Corps District mailing list to receive public notices of permit applications for certain waters. Interested individuals should contact their Corps District Office. In addition, any member of the public can comment on any proposed agency rulemaking. The *Federal Register* contains all notices and proposed rulemakings.

Monitoring and Reporting

Citizens are also encouraged to report suspected violations of the Clean Water Act to their local Corps district office or the appropriate EPA regional office. In addition, §505 of the Act authorizes citizens to bring enforcement actions against any person who discharges dredged or fill material into a wetland or other water of the U.S. without a permit or in violation of the terms of a permit. A number of private environmental organizations monitor wetland protection programs at national, state, and local levels. Others provide general education programs and materials.

Notes:

Contacts:

- 1) EPA Regional wetlands contact [see appendix A] hearings.
- 2) Army Corps District Regulatory Branch Chief [see appendix B] for information on public notice and

Related Topics:

- 1) Section 404 overview, p.27
- 2) Section 404 public interest review, p. 30

Publications:

- 1) Environmental Protection Agency. *Highlights of Section 404*. October 1989. (Available through the Hotline)
- 2) Army Corps of Engineers. *Regulatory Programs of the Corps of Engineers; Final Rule*. 33 CFR Parts 320 through 330. November, 1986.
- 3) Lake Michigan Federation. *Wetlands and Water Quality: A Citizen's Handbook for Protecting Wetlands*. 1991.
- 4) National Wildlife Federation. *A Citizen's Guide to Protecting Wetlands*.

Nationwide Permits

Overview

Under §404(e) of the Clean Water Act, the Army Corps of Engineers may issue general permits authorizing specific activities which are similar in nature and will cause minimal adverse environmental effects individually or cumulatively. A general permit can be issued for a state, region, or for the entire country. Currently there are 26 nationwide permits, and many state and regional general permits. In most cases, activities authorized by nationwide permits do not require the same public notice or public hearing as would be required for an individual permit. The nationwide permits are designed to speed the permitting process, as long as the authorized activities do not cause serious environmental harm. Examples of some of the activities authorized under certain conditions through nationwide permits include installing navigation aids and markers; water quality testing equipment; structures for oil and gas exploration on the outer continental shelf and for surface coal mining; placement of crab traps and lobster

pots, and discharges of dredged or fill materials associated with bridge building, repairs of existing structures, and other projects. Nationwide permits are reissued every five years following notice in the *Federal Register* and a public comment period. In addition, states can deny water quality certification for projects that require a general permit.

Nationwide Permit 26

Nationwide permit 26 authorizes activities involving discharges of dredged or fill material into 10 acres or less of isolated waters or headwaters streams (nontidal streams where the average annual flow is 5 cubic feet per second or less). This nationwide permit is applicable only when such discharges will result in minimal adverse effects to the aquatic environment. For activities which affect between 1 and 10 acres of such waters, the applicant is required to notify the Corps of Engineers prior to proceeding with any discharge.

Notes:

Contacts:

- 1) Army Corps of Engineers District Contact, see Appendix B.
- 2) EPA Regional wetlands contact, see Appendix A.

Related Topics:

- 1) Section 404 overview, p. 27
- 2) Clean Water Act overview, 26.
- 3) Clean Water Act Section 404: Permit Application Process, p. 29

Publications:

- 1) Environmental Protection Agency. *Highlights of Section 404*. October 1989. (Available through the hotline)
 - 2) 33 CFR Parts 320 through 330. Department of Defense. *Regulatory Programs of the Corps of Engineers; Final Rule*. Nov. 13, 1986.
 - 3) For the text of the 26 nationwide permits, see Army Corps of Engineers. *Regulatory Programs of the Corps of Engineers: Final Rule*. 33 CFR Parts 320-330. November, 1986.
- Jan Goldman-Carter, Nationwide Permit 26: The Wetlands Giveaway, *National Wetlands Newsletter*,

Clean Water Act §404

Section 404(q)

EPA works with the Corps of Engineers during the permit process whenever possible to ensure unacceptable adverse impacts are avoided. EPA reviews the public notice for individual permit applications and provides comments to the Corps regarding the environmental impacts of the proposed activities. Most concerns are resolved through this interagency consultation.

EPA/Army Memorandum of Agreement

In addition, pursuant to §404(q), the Corps and EPA have developed a process through a Memorandum of Agreement (MOA) to resolve any differences over permit decisions within a clear timeframe to minimize delays in the permit process. Under the §404(q) MOA, EPA may formally elevate interagency disputes for higher review. Disputes not resolved in the field may ultimately be elevated to Headquarters.

Notes:

Contacts:

- | | |
|---|--|
| 1) EPA Regional wetlands contact [see appendix A] | 3) Will Garvey, EPA Office of Wetlands Protection, |
| 2) Army Corps District Regulatory Branch Chief [see appendix B] | (202) 245-3900. |

Related Topics:

- | | |
|--|---------------------------------|
| 1) §404(q) Memorandum of Agreement, p. 62. | 2) 404(b)(1) guidelines, p.31 |
| | 4) 404 program overview, p. 27. |

Publications:

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|--|--|
| 1) Environmental Protection Agency. <i>Highlights of Section 404</i> . October 1989. | 3) EPA/Army Corps of Engineers. <i>Wetlands Enforcement Initiative</i> . RGL 90-09. December 17, 1990. |
| 2) Army Corps of Engineers. <i>Regulatory Programs of the Corps of Engineers; Final Rule</i> . 33 CFR Parts 320 through 330. November, 1986. | 4) Section 404(q) Memorandum of Agreement . (11/12/1985) Environmental Protection Agency. |

Clean Water Act §404

Section 404(r)

Section 404(r) of the Clean Water Act provides that the discharge of fill material as part of a federal project specifically authorized by Congress is exempt from the permitting requirements of Section 404. For these projects, information on the effects of the discharge, including consideration of the Section 404(b)(1) guidelines, must be

included in an environmental impact statement pursuant to the National Environmental Policy Act. This environmental impact statement must be submitted to Congress before proceeding with any discharge associated with project construction, and before authorization of a project or appropriation of funds for the project.

Notes:

Contacts:

- | | |
|---|--|
| 1) EPA Regional wetlands contact [see appendix A] | 3) Will Garvey, EPA Office of Wetlands Protection, |
| 2) Army Corps District Regulatory Branch Chief [see appendix B] | (202) 245-3900. |

Related Topics:

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|--|---------------------------------|
| 1) §404(q) Memorandum of Agreement, p. 62. | 2) 404(b)(1) guidelines, p.31 |
| | 4) 404 program overview, p. 27. |

Publications:

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|--|--|
| 1) Environmental Protection Agency. <i>Highlights of Section 404</i> . October 1989. | 3) EPA/Army Corps of Engineers. <i>Wetlands Enforcement Initiative</i> . RGL 90-09. December 17, 1990. |
| 2) Army Corps of Engineers. <i>Regulatory Programs of the Corps of Engineers; Final Rule</i> . 33 CFR Parts 320 through 330. November, 1986. | 4) Section 404(q) Memorandum of Agreement . (11/12/1985) Environmental Protection Agency. |

CWA §402: The National Pollutant Discharge Elimination System (NPDES)

Overview

Warning: Do not attempt to answer any site-specific questions. Refer caller to the contacts listed below.

Section 301 of the federal Clean Water Act prohibits the discharge of "pollutants" from a "point source" into the waters of the United States, including wetlands, without a permit. The Congress created two permit systems, under sections 402 and 404 of the Act, to regulate the point source discharge of pollutants. Typically, any discharge of a pollutant to any U.S. waters requires a permit.

The National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) was established by Congress pursuant to §402 of the Act to regulate point source discharges of chemicals, heavy metals, and biological wastes — primarily in wastewater from industrial processes and publicly owned sewage treatment works — to the waters of the United States. The NPDES permit program is administered by EPA or by the state in which the discharge occurs, if the state has a federally approved program. As of 1990, 37 states operate

federally approved programs. EPA retains significant oversight over state §402 programs and often reviews state-issued NPDES permits.

NPDES Permit Requirements

40 C.F.R. Part 122 sets out the terms and conditions that must be contained in all NPDES permits, whether issued by EPA or the state. The central permit requirements are the "effluent limitations" — the amount and concentrations of pollutants allowed to be discharged from each point source. NPDES Permits also contain requirements for self-monitoring, reporting, record-keeping, and commonly include compliance schedules and other terms relating to enforcement.

NPDES Permit Application Process

40 C.F.R. §122.21 sets out the NPDES permit application requirements. For more information, contact your regional EPA office or your state water office.

Contacts:

- 1) EPA Regional Water Office (see Appendix A)
- 2) State Water Office, if NPDES program is

administered by the state (see Appendix F)

Related Topics:

- 1) What Federal Regulatory Programs Protect Wetlands?, p.9
- 2) Clean Water Act Overview, p.26
- 3) What Types of Discharges Require CWA §402

- (NPDES) Permits?, p.13
- 4) Regulatory Discharge of Solid Waste: §404 or §402? p. 43

References/Publications:

- 1) Clean Water Act Sections 301 and 402, 33 U.S.C. 1311 and 1342
- 2) *EPA Administered Permit Programs — The National Pollutant Discharge Elimination System*, 40

- C.F.R. Part 122.
- 3) Environmental Law Institute, *Clean Water Deskbook*, 1988.

Regulating the Discharge of Solid Waste: §404 or §402?

Warning: Do not attempt to answer any site-specific questions. Refer caller to the contacts listed below.

Memorandum of Agreement on Solid Waste (signed 4/23/86)

The Memorandum of Agreement on Solid Waste between EPA and the Corps establishes criteria for determining whether section 402 or 404 of the Act applies to an ongoing or proposed discharge of solid waste.

Solid Waste MOA Provisions

A discharge will more than likely be considered as fill material regulated under §404 when the material is a "mixed bag" of wastes, and the principal effects are physical in nature. More specifically, the MOA provides that the discharge will normally meet the definition of fill material based on the following factors:

- its primary purpose is to replace an aquatic area with dry land or to change the bottom elevation of the water body;
- it results from activities such as road construction or

other construction type-activities;

- a principal effect of the discharge is physical loss or modification of waters of the U.S., including smothering of aquatic life or habitat;
- the discharge is heterogenous in nature and of the type associated with sanitary landfill discharges.

Section 402 is likely to be applicable when the material to be discharged:

- is in liquid, semi-liquid, or suspended form; or
- is homogenous in consistency (that is, not a "mixed bag" waste) and normally associated with single industry wastes and discharged from a fixed conveyance (e.g. "end of the pipe" discharges) or from a single site and set of known processes.

Materials which are considered subject to §402 include placer mining wastes, phosphate mining wastes, titanium mining wastes, fly ash, and drilling muds.

Contacts:

- 1) EPA Headquarters, Office of Wetlands, Greg Peck (202) 475-8794 (for policy questions)
- 2) EPA Regional Water Office (see Appendix A) (for site-specific questions)
- 3) State Water Office, if program is administered by

- the state (see Appendix F) (for site-specific questions)
- 4) Army Corps of Engineers District Office (see Appendix B) (for site-specific questions)

Related Topics:

- 1) NPDES Overview, p.42
- 2) What Types of Discharges Require CWA §402 (NPDES) Permits?, p.13

- 3) What Federal Regulatory Programs Protect Wetlands?, p.9
- 4) Clean Water Act Overview, p.26

Publications

- 1) Memorandum of Agreement on Solid Waste, Department of Defense and Environmental Protection Agency, 51 Fed. Reg. 8871 (March 14, 1986).

- 2) Environmental Law Institute, *Clean Water Deskbook*, 1988

Clean Water Act §401

State Water Quality Certification

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

States have authority under §401 to grant, condition, or deny certification for any federally permitted or licensed activity that may result in a discharge to the waters of the United States. The state which has certifying authority is the state where the discharge originates. States base their decisions to grant or deny certification—using data submitted by an applicant and any other available information—on whether the proposed activity will comply with state- and EPA-enacted Clean Water Act §401(a)(1) requirements, including: effluent limitations for conventional and nonconventional pollutants, water quality standards, new source performance standards, and toxic pollutants (sections 301, 302, 303, 306, and 308). Requirements also include any state laws or regulations more stringent than sections 301, 302, 303, 306, and 308, or their federal implementing regulations.

States adopt water quality standards pursuant to Section 303 of the Clean Water Act and have broad authority to

develop standards to protect waters' use and value for public water supplies, fish and wildlife habitat, recreational purposes, and other uses. Federal agencies are required to incorporate §401 conditions into a federal permit or license [§401(d)]. If states deny certification under §401, federal permitting agencies are prohibited from issuing a permit for the activity. If states fail to act on certification within a "reasonable time frame," interpreted by the Corps as 60 days and by the Federal Energy Regulatory Commission as one year, they waive their right to certification. State water quality certification approval or denial is generally included in a state's comments to the Corps during the permit review process under §404(a).

Other federal regulatory permit and license programs that may involve a discharge into waters of the U.S. and thus require §401 certification include Federal Energy Regulatory Commission hydropower licenses, Nuclear Regulatory Commission licenses, and others.

Notes:

Contacts:

- 1) EPA Regional wetlands contact [see appendix A]
- 2) Army Corps District Regulatory Branch Chief [see appendix B]
- 3) State Resource agency [see appendix F]

Related Topics:

- 1) 404(b)(1) guidelines, p.31
- 2) 404 program overview, p.27.

Publications:

- 1) Environmental Protection Agency. *Highlights of Section 404*. October 1989. (Available through the Hotline)
- 2) Army Corps of Engineers. *Regulatory Programs of the Corps of Engineers; Final Rule*. 33 CFR Parts 320 through 330. November, 1986.
- 3) Environmental Protection Agency. *Wetlands and Section 401 Certification*. 1989. (Available through the Hotline)
- 4) EPA. *Water Quality Guidelines for States to Protect Wetlands*.

Rivers and Harbors Act of 1899

**Warning: Do not attempt to answer any site-specific questions.
Refer caller to the contacts listed below.**

History

The Rivers and Harbors Act of 1899 was the first broad-based federal program regulating the nation's waterways. Initially it served a straightforward purpose: to protect and maintain the navigable capacity of the nation's waters. Today, the Rivers and Harbors Act, administered by the Army Corps of Engineers, and is one of the major wetlands protection laws.

Section 10 of the Rivers and Harbors Act

The most frequently used section of the Act is Section 10 (33 U.S.C. 403) which covers construction, excavation, or deposition of materials in navigable waters, or any work which would affect the course, location, condition, or capacity of those waters. Regulations (33 CFR Part 329) have defined navigable waters generally as waters that are tidal and/or are used for interstate commerce.

Regulated Activities

All structures or activities in navigable waters require a Section 10 permit from the Corps. Activities requiring a Section 10 permit include building structures (such as piers, bulkheads, and transmission lines), and dredging or disposal of dredged material, or other modifications to the navigable waters of the United States. Under the Fish and Wildlife Coordination Act, the Corps is required to seek advice from federal resource agencies, including the Fish and Wildlife Service, in the process of considering a permit application.

Overlap between Section 10 and the Clean Water Act's Section 404

Section 10 and Section 404 of the Clean Water Act do overlap in some activities involving wetlands. Permits for activities regulated under both Section 404 and Section 10 are processed simultaneously by the Corps.

Notes:

Contacts:

- 1) Corps of Engineers District Office, see Appendix B.

Related Topics:

- 1) Army Corps of Engineers Overview, p. 68
- 2) Clean Water Act Section 404 Overview, p. 27.

Publications:

- 1) *US Army Corps of Engineers Regulatory Program*. Document No. EP 1145-2-1, May 1985. (Available from the Hotline)
- 2) Want, William. *Law of Wetlands Protection*. New York: Clark Boardman, 1990.
- 3) *Rivers and Harbors Act of 1899, 33 USC 401 et seq.*
- 4) *Army Corps of Engineers Regulatory Program Final Rule, 33 CFR Parts 320 through 330.*

Endangered Species Act

Overview

The Endangered Species Act requires federal agencies to conserve endangered and threatened species, and strictly prohibits any person from harassing or harming any federally-listed rare species. The Fish and Wildlife Service administers the program in cooperation with other federal agencies. Currently there are almost 600 species listed by the Service as endangered or threatened, and about 40 new species are added to the list each year. In placing a species on the list, the Service must carry out a detailed biological study and develop a plan for recovery of the species.

Endangered Species in Wetland Areas

Although wetlands cover less than 5 percent of the country's lands, they provide habitat for about 45 percent of the nation's federally-listed endangered animal and plant species. A few examples of wetland dependent endangered species are the American crocodile, the Everglade kite, the American wood stork, and the whooping crane. The tremendous natural diversity in wetland areas

provide unique habitats for many of the country's rarest species of plants and animals.

Wetlands Protection and the Endangered Species Act

Section 7 of the Endangered Species Act requires all federal agencies to insure that their actions are not likely to jeopardize the continued existence of any endangered or threatened species, or cause harm to their habitat. Thus, any proposed activities involving wetlands that are carried out, funded, or regulated by a federal agency are subject to the provisions of the Endangered Species Act. The Army Corps of Engineers has a Regulatory Guidance Letter instructing Corps districts to stop processing a permit application if the proposed activity violates the Endangered Species Act. (RGL 88-12, "Regulatory Thresholds," September 9, 1988)

Contacts:

- | | |
|---|---|
| 1) Tom Muir, Fish and Wildlife Service, (202) 208-5543. | 4) Army Corps of Engineers District, see Appendix B. |
| 2) Rob Fischman, Environmental Law Institute, (202) 939-3811. | 6) Bill Niering, Connecticut College, ((203) 447-1911. |
| 3) Michael Bean, Environmental Defense Fund, (202) 387-3500. | 7) Whooping Crane Conservation Association, see Appendix H. |

Related Topics:

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| Fish and Wildlife Habitat, p.103 | Values and Functions of Wetlands, overview, p. 101. |
| Fish and Wildlife Service, overview, p. 72 | |

Publications:

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|--|---|
| 1) Endangered Species Act, 16 USC Sections 1531-1544. | <i>Protection Under the Endangered Species Act, in Conservation Biology</i> Vol. 2, No. 1 (March 1988): 116-118. |
| 2) Endangered Species Act Regulations, 50 CFR Part 402. | 5) Rohlf, D. <i>The Endangered Species Act: A Guide to Its Protections and Implementation</i> . Stanford Environmental Law Society, 1989. |
| 3) Army Corps of Engineers. <i>Regulatory Thresholds</i> , a Regulatory Guidance Letter No. 88-12 (September 9, 1988). | |
| 4) Sidle, John G., and David B. Bowman. <i>Habitat</i> | |

The National Environmental Policy Act (NEPA)

NEPA Overview

Background of the Act

The National Environmental Policy Act (NEPA) was signed into law on January 1, 1970. The Act establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within the federal agencies. The Act also established the Council on Environmental Quality (CEQ), which oversees NEPA.

NEPA Requirements

The declaration of environmental policy, in Title I of NEPA, requires the federal government to use all practicable means to create and maintain conditions under which people and nature can exist in productive harmony. Section 102 of the Act requires federal agencies to incorporate into agency decision-making appropriate and careful consideration of the environmental effects of proposed actions

and analyses of the potential environmental effects and alternatives of the proposed actions.

Specifically, all federal agencies are to prepare detailed statements assessing the environmental impact of and alternatives to "major federal actions significantly affecting the environment." These statements are referred to as environmental impact statements (EISs). Major federal actions include a direct federal action, a federal grant, and at times, the issuance of a federal permit.

Implementation

CEQ has promulgated regulations [40 C.F.R. Parts 1500-1508] implementing NEPA which are binding on all federal agencies. Most federal agencies, including EPA and the Army Corps of Engineers, have promulgated their own NEPA regulations which are tailored for the specific mission and activities of the agency.

Notes:

Contacts:

- 1) EPA Office of Federal Activities, Shannon Cunniff 272-1780
(202) 382-7072
- 2) Army Corps Headquarters, Zell Steever, (202)

Related Topics:

- 1) NEPA Process, p.48
- 2) NEPA: Applicability to Wetlands, p.49
- 3) EPA's "309" Review Process, p.50

Publications

- 1) U.S. EPA, *Facts About The National Environmental Policy Act*, September, 1989. (Available from the EPA Office of Federal Activities).
- 2) CEQ, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act*, 46 FR 18026 (1981).
- 3) CEQ, *Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act*, Reprint of 40 C.F.R. Parts 1500-1508.
- 4) Environmental Law Institute, *NEPA Deskbook*, 1987.

The National Environmental Policy Act (NEPA)

The NEPA Process

NEPA requires federal agencies to evaluate the environmental effects of agency actions, including alternatives to those actions. NEPA requirements apply to most federal regulatory activities, including permitting under section 404 of the Clean Water Act.

Except for projects that are categorically excluded, federal agencies must prepare an **environmental assessment (EA)** and/or an **environmental impact statement (EIS)**. Federal agencies are required to prepare environmental impact statements on major federal activities that may significantly affect the environment. Federal agencies prepare environmental assessments to determine if a full EIS is necessary, and are generally prepared for projects with minimal impacts. In both the EA and the EIS reviews, the agency must consider both the direct and the indirect environmental effects of the agency action. Some federal activities, however, may fall under a **categorical exclusion** from NEPA requirements.

Categorical Exclusions

A federal agency activity may be categorically excluded from a detailed environmental analysis if it meets certain criteria for having no "significant" environmental impact. A number of agencies have developed lists of actions which are normally excluded from environmental analysis under NEPA.

Environmental Assessment/Finding of No Significant Impact

Federal agencies prepare environmental assessments to determine whether or not a federal activity would significantly affect the environment. The EA process is described in section 1508.9 of CEQ's NEPA regulations.

Generally, an environmental assessment includes brief discussions of the following:

- The need for the proposed activity;

- Alternatives to the proposed activity (when there is an unresolved conflict concerning alternative uses of available resources);

- The environmental impacts of the proposed action and alternatives; and

- A listing of agencies and persons consulted.

Once the EA is complete, the agency may issue a finding of no significant impact (FONSI). The FONSI may address measures which an agency will take to reduce potentially significant impacts.

If the EA determines that the environmental consequences of the proposed activity may be significant, the agency will prepare an environmental impact statement (EIS).

Environmental Impact Statement (EIS)

An EIS is a much more detailed evaluation of the proposed activity and its alternatives. The public, other federal agencies, and outside parties may provide input into the preparation of an EIS and then comment on the draft.

An EIS, which is described in section 1502 of CEQ's NEPA regulations, should include discussions of:

- The purpose and need for the action;
- Alternatives;
- The affected environment;
- The environmental consequences of the proposed action; and
- Lists of preparers, agencies, and organizations and persons to whom the statement is sent.

After a final EIS is prepared, the federal agency must prepare a public record of its decision addressing how the EIS, including consideration of the alternatives, were incorporated into the decision-making process.

Contacts:

- | | |
|--|----------|
| 1) EPA Office of Federal Activities, Shannon Cunniff
(202) 382-7072 | 272-1780 |
| 2) Army Corps Headquarters, Zell Steever (202) | |

Related Topics:

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|--|-----------------------------------|
| 1) NEPA Overview, p.47 | 3) EPA's 309 Review Process, p.50 |
| 2) NEPA: Applicability to Wetlands, p.49 | |

Publications

- | | |
|---|--|
| 1) U.S. EPA, <i>Facts About The National Environmental Policy Act</i> , September, 1989. (Available from the EPA Office of Federal Activities.) | 18026 (1981). |
| 2) CEQ, <i>Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act</i> , 46 FR | 3) CEQ, <i>Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act</i> , Reprint of 40 C.F.R. Parts 1500-1508. |

The National Environmental Policy Act (NEPA)

NEPA: Applicability to Wetlands

Warning: Do not attempt to answer any site-specific questions. Refer caller to the contacts listed below.

When issuing permits under §404 of the Clean Water Act, the Army Corps of Engineers must incorporate NEPA requirements in the permitting procedure. The Corps has its own set of regulations that incorporate NEPA procedures for Corps programs.

When Does a §404 Permit Require an environmental assessment?

An environmental assessment is prepared by the Corps for most §404 permit applications. The Corps District Commander is then responsible for deciding whether an environmental impact statement (EIS) is necessary. If an EIS is not necessary, the Corps will prepare a finding of no significant impact (FONSI).

When Does a §404 Permit Require an environmental impact statement?

A §404 permit application will require an environmental

impact statement (EIS) if the Corps determines that the proposed activity is likely to have a significant environmental impact, as defined by NEPA. In practice, the Corps requires an EIS for a small percentage of §404 permit applications. If an EIS is required, the Corps may have the applicant pay for the EIS studies. A notice of intent to prepare an EIS is always published in the *Federal Register*.

Applicability to Nationwide Permits

The Army Corps of Engineers prepares environmental assessments for most permit applications under §404 of the Clean Water Act. However, individual environmental assessments are not prepared on a site-specific basis for activities in wetlands that are authorized by a nationwide general permit. Instead, the Corps prepares one, overall environmental assessment at the time the nationwide permits are issued in the *Federal Register*.

Contacts:

- 1) EPA Office of Federal Activities, Shannon Cunniff, (202) 382-7072
- 2) Army Corps District Office (see appendix B)
- 3) EPA Regional Wetlands Contact (see appendix A)

Related Topics:

- 1) NEPA Overview, p.47
- 2) The NEPA Process, p.48
- 3) EPA's 309 Review Process, p.50
- 4) CWA §404: Nationwide Permits, p.39

Publications

- 1) U.S. EPA, *Facts About The National Environmental Policy Act*, September, 1989. (Available from the EPA Office of Federal Activities.)
- 2) CEQ, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act*, 46 FR 18026 (1981).
- 3) CEQ, *Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act*, Reprint of 40 C.F.R. Parts 1500-1508.
- 4) Army Corps of Engineers NEPA Regulations, 33 C.F.R. Part 230, 53 Fed. Reg. 3127 (Feb. 3, 1988).
- 5) Army Corps of Engineers, Regulatory Guidance Letter, No. 87-5, "Environmental Impact Statement (EIS) Costs that Can Be Paid by the Applicant" (May 28, 1987).
- 6) William L. Want, *Law of Wetlands Regulation*, Clark Boardman Company, 1990, \$5.03[5].

The National Environmental Policy Act (NEPA)

EPA's Role: "309" Review

Section 309 of the Clean Air Act requires EPA to review, comment on, and make those comments available to the public on all federal draft and final environmental regulations and other proposed major actions EPA considers to have significant environmental effects. EPA's "309" re-

view procedures are contained in the manual, *Policies and Procedures for the Review of Federal Activities Impacting the Environment* (1984). The EPA Office of Federal Activities has been designated the official recipient of all EISs prepared by federal agencies.

Notes:

Contacts:

- 1) EPA Office of Federal Activities, Shannon Cunniff
(202) 382-7072

Related Topics:

- 1) NEPA Overview, p.47
- 2) The NEPA Process, p.48
- 3) NEPA: Applicability to Wetlands, p.49

References/Publications

- 1) U.S. EPA, *Facts About The National Environmental Policy Act*, September, 1989. (Available from the EPA Office of Federal Activities.)
- 2) CEQ, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act*, 46 FR 18026 (1981).
- 3) EPA, *Policies and Procedures for the Review of Federal Activities Impacting the Environment*, 1984.

The Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act [16 U.S.C. §662] requires the Army Corps of Engineers to consult with and give strong consideration to the views of the U.S. Fish and Wildlife Service (FWS), the National Marine Fisheries Service (NMFS), and state wildlife agencies regarding the fish and wildlife impacts of projects in aquatic areas.

Pursuant to the Act, the Corps have entered into a

memorandum of understanding with the FWS and the NMFS that enables the agencies to collaborate during the §404 permit review process. During the Corps' CWA §404 permit review process, the FWS or NMFS may recommend denial of an application, the incorporation of additional permit conditions to minimize adverse effects, or mitigation actions.

Notes:

Contacts:

- 1) Army Corps Headquarters, Zell Stever, (202) 272-1780
- 2) National Marine Fisheries Service, Jon Hall (301) 427-2325 or Jim Chambers (301) 427-2319

- 3) U.S. Fish and Wildlife Service, Tom Muir, (703) 358-2161

Related Topics:

- 1) CWA §404 Permit Application Process, p. 29.
- 2) National Marine Fisheries Service, p.70

- 3) U.S. Fish and Wildlife Service, p. 72

Publications

- 1) Environmental Protection Agency, *Highlights of Section 404*, October 1989.
- 2) Army Corps of Engineers, *Regulatory Programs of the Corps of Engineers; Final Rule*. 33 CFR Parts

320-330. November 1986.

- 3) William Wart, *Law of Wetlands Regulation*, Clark Boardman Company, Ltd., 1990.

Executive Order 11990: Protection of Wetlands

Purpose

Signed on May 24, 1977, by President Jimmy Carter, Executive Order 11990 establishes wetlands protection as the official policy of all federal agencies. The purpose of the Order is "...to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative...."

Applicability to Federal Agencies

Each federal agency is ordered to provide leadership and take action to protect wetlands in carrying out the agency's responsibilities for 1) acquiring, managing and disposing of federal lands and facilities; 2) providing federally supported construction and improvements; and 3) conducting land and water resources planning, regulating, and licensing activities.

The Order does *not* apply to federal agency-issued permits or licenses for activities involving wetlands on *non-federal* property.

Requirements

Federal agencies must avoid undertaking or supporting new construction located in wetlands unless the head of the agency finds:

- 1) that there is no practicable alternative, *and*
- 2) that the proposed action includes all practicable measures to minimize harm to wetlands.

In addition, federal agencies must provide opportunities for early public review of any plans or proposals for new construction in wetlands, including those projects not significant enough to require an environmental impact statement under Section 102(2) of the National Environmental Policy Act.

Notes:

Contacts:

- 1) EPA Headquarters, Office of Wetlands Protection, Dianne Fish (202) 382-7071

Related Topics:

- 1) Executive Order 11988, *Floodplain Management*, p.53.
- 2) CWA §404(b)(1) On Practicable Alternatives, p.31.

Publications

- 1) Executive Order 11990, *Protection of Wetlands*, 3 C.F.R. 121 (1978); as amended by Exec. Order 12608, 52 Fed. Reg. 34617 (Sept. 14, 1987)
- 2) Jon A. Kusler, *Our National Wetland Heritage: A Protection Guidebook*, 1983, p.55

Executive Order 11988: Floodplain Management

Purpose

On May 24, 1977, President Jimmy Carter signed Executive Order 11988, *Floodplain Management*, which requires all federal agencies to avoid impacts on floodplains and to refrain from direct or indirect support of floodplain development whenever there is a practicable alternative. The Order also calls for increased federal protection of wetlands, because wetlands are an integral part of the nation's floodplain system.

Requirements

Each federal agency must provide leadership and take action to reduce the risk of flood loss; to minimize the impact of floods on human safety, health and welfare; and to restore and preserve the natural and beneficial values served by floodplains through agency activities such as planning, regulating, and licensing.

Floodplain Considerations in the CWA §404 Permitting Process

In its permitting regulations, the Army Corps of Engineers recognizes that "Floodplains possess significant natural values and carry out numerous functions important to the public interest." In accordance with Executive Order 11988, district engineers must consider floodplain impacts as part of their public interest review of §404 permit applications. Specifically, in their review process, district engineers must try to:

1) Avoid long and short term significant adverse impacts associated with projects that occupy and/or modify floodplains; and

2) Avoid authorizing floodplain developments whenever practicable alternatives exist outside the floodplain.

Notes:

Contacts:

- 1) EPA Headquarters, Office of Wetlands Protection,
Dianne Fish (202) 382-7071
- 2) Association of State Floodplain Managers,

Rebecca Hughes (301) 974-3825

Related Topics:

- 1) Values and Functions: Flood Control, p.104
- 2) CWA §404: Public Interest Review, p.30

3) Executive Order 11990: Wetlands Protection, p.52

Publications

- 1) Executive Order 11988: *Flood Plain Management*, 3 C.F.R. 117 (1978); as amended by Executive Order 12148, 3 C.F.R. 412 (1980).
- 2) Army Corps of Engineers, *Regulatory Programs of the Corps of Engineers; Final Rule*, 51 Fed. Reg. 219 (Nov. 13, 1986), codified at 33 C.F.R. Parts 320 through 330.

- 3) Butler, David (ed.), *Floodplain Harmony*, Association of State Floodplain Managers, 1989.
- 4) Association of State Floodplain Managers, *Partnerships: Effective Flood Hazard Management*, Proceedings of the Thirteenth Workshop, 1989.

The Coastal Zone Management Act (CZMA)

Program Background

The federal Coastal Zone Management Act [16 U.S.C. §1451 *et seq.*] seeks to promote natural resources management in our nation's coastal areas. The purpose of the Act is to preserve, protect, develop, and restore the natural resources of the coastal zone, including wetlands. The Act is administered by the Office of Ocean and Coastal Resources Management in the Department of Commerce, which provides grants and technical assistance to any coastal state for the development of a coastal management program (CMP) for the state. As of 1988, 29 state and territorial coastal programs had been approved by the Secretary of Commerce.

Protection of Wetlands in the CMP

A major goal of coastal management is to preserve important estuarine and wetland areas by acquiring or dedicating land, or to protect them by minimizing adverse impacts from other coastal activities.

The CZMA directs that coastal wetlands protection be part of the state's CMP. The Act states that coastal zone

"programs should at least provide for (A) the protection of natural resources, including wetlands, floodplains, estuaries...within the coastal zone, and (B) the management of coastal development to minimize...the destruction of natural protective features such as beaches, dunes, wetlands and barrier islands." [16 U.S.C. §1452(2)(A),(B)]

§404 Permits Must Be Consistent with State CMP

Where a state has an approved coastal zone management program, the CZMA requires federal permit applicants to conduct activities in the state's coastal zone to furnish a certification that the proposed activity will be consistent. The Army Corps of Engineers regulations provide that the district engineer shall not issue a permit if the state fails to issue the certification. The only exceptions are if the Secretary of Commerce determines that the proposed activity is consistent with the purpose of the CZMA or is necessary for national security. The state has six months to act on a certification request. Failure to act during that time will be deemed as approval of the permit issuance.

Notes:

Contacts:

- 1) National Marine Fisheries Service, Department of Commerce, Jon Hall (301) 427-2325 or Jim Chambers (301) 427-2319
- 2) Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration (NOAA), Department of Commerce,

Ann Burger (202) 673-5134 or Suzanne Bolton (202) 673-3959.

3) Association of State Wetland Managers, Jon Kusler (518) 872-1804

4) Coastal States Organization, Kerry Kehoe or Gary Magnuson (202) 628-9636

Related Topics:

1) CWA §404(b)(1) Guidelines, p.31

2) CZMA 1990 Reauthorization, p.55.

Publications

- 1) NOAA, Office of Coastal Resource Management, Coastal Zone Information Center, *CZM Information Exchange*, January, 1991 Edition (contains summaries of recent legislation concerning coastal resources, summaries of state programs, and state lead agency contacts.)
- 2) NOAA, Office of Coastal Resource Management, *Coastal Management: Solution's to Our Nation's*

Coastal Problems, 1988. 61pp.

3) NOAA, *NOAA Estuarine and Coastal Ocean Activities: 1988 Annual report to the Under Secretary*, August 1989. 96pp.

4) EPA, Office of Water, *Coastal Water Programs Handbook*, date?

5) "Can Our Coasts Survive More Growth?" *EPA Journal*, Vol. 15(5).

The Coastal Zone Management Act (CZMA)

1990 Reauthorization Act

The Coastal Zone Management Act of 1972 was reauthorized as part of the Omnibus Budget Reconciliation Act of 1990. The 1990 Act reauthorizes the CZMA through 1995, and continues the CZMA grants program to help coastal states guide shoreline development and protect coastal natural resources. The Act makes available \$200,000 grants to encourage the six states and territories without coastal zone management programs to develop them.

Importantly, the Act makes offshore oil and gas leasing and other federal agency activities in the coastal zone subject to the CZMA provisions and consistency require-

ments, overturning the U.S. Supreme Court's 1984 decision in *Secretary of the Interior v. California*.

The Act also requires each state with a coastal zone management program to develop a coastal water quality protection program to address nonpoint source pollution of coastal waters, and encourages each coastal state to improve coastal wetlands protection, natural hazards management, public beach access, reduction of marine debris, assessments of coastal growth and development, and environmentally sound siting of coastal energy facilities.

Notes:

Contacts:

- 1) National Marine Fisheries Service, Department of Commerce, Jon Hall (301) 427-2325 or Jim Chambers (301) 427-2319
- 2) Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration (NOAA), Department of Commerce,

- Ann Burger (202) 673-5134 or Suzanne Bolton, (202) 673-3959.
3) Association of State Wetland Managers, Jon Kusler (518) 872-1804
4) Coastal States Organization, Kerry Kehoe or Gary Magnuson (202) 628-9636

Related Topics:

- 1) CWA §404(b)(1) Guidelines, p.31
- 2) CZMA overview, p.54

References/Publications

- 1) NOAA, Office of Coastal Resource Management, Coastal Zone Information Center, *CZM Information Exchange*, January, 1991 Edition (contains summaries of recent legislation concerning coastal resources, summaries of state programs, and state lead agency contacts.)
- 2) NOAA, Office of Coastal Resource Management, *Coastal Management: Solution's to Our Nation's Coastal Problems*, 1988. 61pp.

- 3) NOAA, *NOAA Estuarine and Coastal Ocean Activities: 1988 Annual report to the Under Secretary*, August 1989. 96pp.
- 4) EPA, Office of Water, *Coastal Water Programs Handbook*, date?
- 4) "Can Our Coasts Survive More Growth?" *EPA Journal*, Vol. 15(5).
- 5) Sarah Chasis, "A Second Chance for the CZM Act," *National Wetlands Newsletter*, Vol.12(4).

The Wild and Scenic Rivers Act

Overview

Congress passed the Wild and Scenic Rivers Act in 1968 to help protect free-flowing undeveloped rivers with outstandingly remarkable values from adverse impacts, especially from the impacts of water resource projects. The National Wild and Scenic Rivers System provides federal protection for certain free-flowing rivers and river segments. To be eligible for inclusion in the national system, the river or river segment must possess one or more of the following "outstandingly remarkable values": scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.

Status of the Wild and Scenic System

As of January 1990, 120 rivers or river segments have been included in the National Wild and Scenic River System. The system covers a total of 9,280 miles of rivers and river segments.

Wetlands Protection

Many important wetlands are located along and within U.S. rivers and stream corridors. Wetlands, within the corridors of designated National Wild and Scenic Rivers, receive special federal protection under §7 of the National Wild and Scenic Rivers Act.

Other areas on the §5(d) list of rivers under study for designation or on the Nationwide Rivers Inventory also receive protection from federally funded, licensed or initiated projects through administrative guidelines and Presidential Executive Orders.

The Federal Agency Role

National Wild and Scenic rivers designated by an act of Congress are administered by one of the following agencies:

- U.S. Forest Service (U.S. Department of Agriculture)
- National Park Service (U.S. Department of the Interior)
- Bureau of Land Management (U.S. Department of the Interior)
- U.S. Fish and Wildlife Service (U.S. Department of the Interior)

It is the responsibility of these federal agencies to assure that the values for which the river was designated are protected and made available for the public to enjoy. Some examples of this federal role are to:

- develop a river management plan, in consultation with State and local agencies and private interests;
- manage the federally owned lands in the river corridor;
- control recreational use on the river if necessary to maintain river qualities; and
- participate in legal proceedings or Congressional actions which pertain to activities and uses of the river corridor.

Contacts:

- 1) National Park Service Headquarters, John Haubert, (202) 343-3884 (for questions on Congressionally designated rivers and study rivers)
- 2) National Park Service Headquarters (for questions on the Nationwide Rivers Inventory), Bern Collins

(202) 343-3884.

- 3) American Rivers, Inc. (private organization), Suzi Wilkins or Kevin Coyle (202) 547-6900

Related Topics:

- 1) Designating Wild and Scenic Rivers, p.57
- 2) State and local river conservation assistance, p. 58

Publications

- 1) *Questions and Answers on the Wild and Scenic Rivers Program*, Prepared by the U.S. Forest Service and National Park Service, May 1989.
- 2) *River Mileage Classifications for Components of the National Wild and Scenic Rivers System*, Prepared by the National Park Service, Division of Park Planning and Protection, January 1990. (Contains list of rivers and river segments in the national system.)
- 3) Department of the Interior and Department of Agriculture, *National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification*

and Management of River Areas, 47 Fed. Reg. 39454 (Sept. 7, 1982).

- 4) *Wild and Scenic Rivers Act of 1968* (Pub. L. 90-542; as amended; 16 U.S.C. 1271, *et seq.*)

- 5) Department of the Interior and National Association for State River Conservation Programs, *1990 River Conservation Directory*. [Contains listings of federal agencies, regional offices, as well state offices, associations, and private organizations].

- 6) Conservation Foundation, *A Citizen's Guide to River Conservation*.

The Wild and Scenic Rivers Act

Designating Wild and Scenic Rivers

Both the federal and state governments can initiate action to add rivers and river corridors to the Wild and Scenic Rivers System.

Federally-Initiated Action

Congress can amend §5(a) of the Wild and Scenic Rivers Act to authorize the Secretary of the Interior and/or the Secretary of Agriculture to study a river as a potential addition to the system. When the study is completed, the appropriate Secretary reports to the President on the suitability or non-suitability of that river for addition to the System and recommends management strategies. The President then reports to Congress on his recommendations and proposals. If the recommendations are affirmative and the proposals acceptable to Congress, then the Act is amended to officially add the river to the System.

State-Initiated Action

Section 2(a)(ii) of the Act allows a river to be designated as Wild and Scenic through a state initiative, with the approval of the Secretary of the Interior. The river must be designated as wild, scenic or recreational pursuant to an act of the state legislature. The state would then adopt a management plan to permanently protect the scenic and recreational qualities of the river and adjoining lands, including wetlands, and provide for public use and enjoyment. The Governor of the state may submit the manage-

ment plan to the Secretary of the Interior with a request to add the river to the national system. After evaluating the management plan, coordinating with federal agencies and assessing the environmental impact of the proposed addition, the Secretary can add the river to the National System by publishing notice in the *Federal Register*.

Classification Scheme

The Act establishes three classifications for rivers or river segments for inclusion in the system. A designated river may contain one or all of these classifications:

1. **Wild.** Rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent the vestiges of primitive America. Most of these wild and scenic rivers are located on public lands.

2. **Scenic.** Rivers that are free of impoundments, with shorelines or watersheds still largely undeveloped but accessible in places by roads.

3. **Recreational.** Rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Contacts:

- 1) National Park Service Headquarters, John Haubert, (202) 343-3884 (for questions on Congressionally designated rivers and study rivers)
- 2) National Park Service Headquarters, Bern Collins

- (202) 343-3884 (for questions on the Nationwide Rivers Inventory)
- 3) American Rivers, Inc. (private organization), Suzi Wilkins or Kevin Coyle (202) 547-6900

Related Topics:

- 1) Wild and Scenic Rivers Act: Overview, p.56
- 2) State and local river conservation assistance, p. 58
- 3) Wetlands Values and Functions: Aesthetic and Recreational, p.107

- 4) Wetlands Values and Functions: Water Quality Improvements, p110.

Publications

- 1) *Questions and Answers on the Wild and Scenic Rivers Program*, Prepared by the Forest Service and National Park Service, May 1989.
- 2) *River Mileage Classifications for Components of the National Wild and Scenic Rivers System*, Prepared by the National Park Service, Division of Park Planning and Protection, January 1990. (Contains list of rivers and river segments in the national system.)
- 3) Department of the Interior and Department of Agriculture, *National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification*

- and Management of River Areas*, 47 Fed. Reg. 39454 (Sept. 7, 1982).
- 4) *Wild and Scenic Rivers Act of 1968* (Pub. L. 90-542; as amended; 16 U.S.C. 1271, et seq.
 - 5) Department of the Interior and National Association for State River Conservation Programs, *1990 River Conservation Directory*. (Contains listings of federal agencies, regional offices, as well state offices, associations, and private organizations.)
 - 6) Conservation Foundation, *A Citizen's Guide to River Conservation*.

The Wild and Scenic Rivers Act

State and Local Conservation Assistance Program

The National Park Service has developed a State and Local Conservation Assistance Program, authorized under §11 of the National Wild and Scenic Rivers Act. The program is designed to:

- Assist state and local governments, federal agencies, private groups and landowners in the development of river conservation and management plans;
- Encourage river conservation through local actions while maintaining private ownership of riparian lands; and
- Foster beneficial uses of rivers and their adjacent

lands by promoting comprehensive decision-making.

River conservation projects are undertaken at the request of a government agency, a private non-profit organization, or a member of Congress. Projects range in scale from statewide river assessments to plans for a single stream or urban waterfront. Additional activities include a variety of river conservation workshops, consultations, Wild and Scenic River designations, Congressional river studies, and Nationwide Rivers Inventory amendments and environmental reviews.

Notes:

Contacts:

- 1) National Park Service Headquarters, Chris Brown (202) 343-3780
- 2) National Park Service Regional Offices (see

Appendix __; to be added)

Related Topics:

- 1) Wild and Scenic Rivers Act: Overview, p.56
- 2) Designating Wild and Scenic Rivers, p.57
- 3) Wetlands Values and Functions: Aesthetic and Recreational, p.107

4) Wetlands Values and Functions: Water Quality Improvements, p.110.

Publications

- 1) National Park Service, *State and Local River Conservation Assistance Program*, date? (brochure)
- 2) *River Protection Through the National Wild and Scenic Rivers Act*, date? (paper prepared by the National Park Service)
- 3) *Small Town and Rural Planning Newsletter*, American Planning Association, Vol. 6, 1986 (This special issue on "River Conservation" provides several case studies of local river conservation

- projects; available from the APA, see appendix H).
- 5) Department of the Interior and National Association for State River Conservation Programs, *1990 River Conservation Directory*. (Contains listings of federal agencies, regional offices, as well state offices, associations, and private organizations.)
 - 6) Conservation Foundation, *A Citizen's Guide to River Conservation*.

Swampbuster

Program Overview

The swampbuster provisions of the 1985 and 1990 Farm Bills deny crop subsidy payments and other agricultural benefits to farm operators who convert wetlands to cropland after December 23, 1985—the date that the 1985 Farm Bill was signed into law. The Soil Conservation Service is the agency responsible for determining compliance with swampbuster provisions, and for determining the status of wetlands on agricultural lands. The SCS classifies agricultural wetlands according to the *Food Security Act Manual*.

Changes in the 1990 Farm Bill

When the 1990 reauthorization and amendment of the 1985 *Food Security Act* was signed into law on November 28, 1990, as the *Food, Agriculture, Conservation, and Trade Act of 1990*, significant changes to the swampbuster provisions in the 1985 bill were adopted. Under the new Act, violations of swampbuster will be triggered by the act of conversion, as opposed to the act of planting a commodity crop in a converted area. A refined penalty structure in the new Act provides for fines ranging from \$750 to \$10,000, rather than total forfeiture of benefits. The new

bill provides for good faith exemptions where swampbuster violators can demonstrate that they acted in good faith, had not violated Swampbuster more than once in the past 10 years, and have restored the converted wetland in accordance with a federally approved restoration plan. In addition, farmers who inadvertently drain a wetland once during a five-year period could avoid any penalty for a single minor violation, while second-time violators during this time period could be subject to fines ranging from \$500 to \$5,000. Producers are also exempt from loss of program benefits due to converting a wetland if such conversion has a minimal effect on wetland value, or if it is a farmed wetland and its conversion is mitigated through restoration of another previously converted wetland.

Regulations

The U.S. Department of Agriculture began drafting regulations to implement the provisions of the 1990 Farm Bill in January, 1991. The final regulations will be published in the *Federal Register* and are projected to be completed by the end of 1991.

Notes:

Contacts:

- 1) Soil Conservation Service district or state office [see appendix D] for site-specific questions.
- 2) Lloyd Wright, SCS headquarters; (202) 382-1853, for policy questions.
- 3) House Document Room. [see appendix E]. for a copy of the 1990 Farm Bill.
- 4) Sandy Nelson, Agriculture Stabilization and Conservation Service (ASCS); (202) 447-7873.

Related Topics:

- 1) Clean Water Act §404(f), p. 35
- 2) Wetland Reserve, p. 77
- 3) Conservation Reserve Program, p. 76

Publications:

- 1) S. 2830. *Food, Agriculture, Conservation, and Trade Act of 1990*. Public Law No. 101-624.
- 2) Soil and Water Conservation Society. *Implementing the Conservation Title of the Food Security Act*. Ankeny, IA: SWCS, 1990.
- 3) Steve Meyer. "Redressing Swampbuster," *National Wetlands Newsletter*, Vol. 13, No.1.
- 4) Steve Moyer. "A Narrow Escape," *National Wetlands Newsletter*, Vol. 13, No. 1. p.5.
- 5) Jim McElfish and Ken Adler. "Swampbuster Implementation: Missed Opportunities for Wetlands Protection." *Journal of Soil and Water Conservation*, Vol.45, no.3. (1990).
- 6) Soil Conservation Service. *Food Security Act Manual*. 1988.

Army Corps of Engineers

Regulatory Guidance Letters :1989 RGLs

Regulatory Guidance Letters, issued by the Office of the Chief of Engineers, provide guidance to the Corps District and Division Offices on important policy issues relating to permitting programs, including Section 404 of the CWA. RGLs are not regulations; they are used only as a means of interpreting or clarifying current regulations or policy.

RGLs are numbered sequentially and effective until December 31 of the second year after they are issued. Unless superseded by subsequently issued regulations, Corps offices generally continue to follow RGLs after they officially expire. RGLs serve to fill gaps between infrequent revisions of Corps regulations; the guidance contained in RGLs is often put into Corps regulations when revised. Beginning in 1991, all RGLs will be published in the Notice Section of the *Federal Register*.

The following list contains all of the RGLs issued in 1989 and 1990. To obtain a copy of a RGL, and for assistance in interpreting the guidance, contact the Corps offices listed below.

RGL 89-01: General Permit Notifications

Establishes time limit for Corps review of activities to determine if they qualify for a general permit or require an individual permit.

RGL 89-02 (Extends RGL 85-07): Superfund Projects

Concerns the applicability of Corps permits to response actions taken by EPA under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

RGL 89-03: Activities Within Superfund Sites

Concerns applications for permits to undertake activities at Superfund sites designated under CERCLA.

RGL 89-04: Consideration of Public Comments: Mandatory Public Notice Language

Provides language for public notices issued by the Corps for all individual permit applications.

Notes:

Contacts:

- 1) Army Corps Headquarters, Zell Steever, (202) 272-1780 (for policy questions)
- 3) Corps District Offices (See Appendix B) (for site-specific questions)

Related Topics:

- 1) CWA §404 Nationwide Permits, p.39
- 2) Permit Application Process, p.29
- 3) CWA §401 Water Quality Certification, p.44
- 4) CWA §404 Regulated Activities, p.28
- 5) Federal and State Wetlands Definitions, p.86
- 6) EPA/Corps Definitions of Wetlands, p.87
- 7) 1990 RGLS, p. 61
- 8) EPA/Corps Memorandum of Agreements, p.62

Publications

- 1) Army Corps of Engineers, *Regulatory Guidance Letters Issued by the Corps of Engineers; Notice*, 56 Fed. Reg. 2408 (Jan. 22, 1991)
- 2) Army Corps of Engineers, *Regulatory Program of the Corps of Engineers; Final Rule*, 51 Fed. Reg. 41206 (Nov. 13, 1986); codified at 33 C.F.R. Parts 320-330.

Army Corps of Engineers

Regulatory Guidance Letters: 1990 RGLs

RGL 90-01: Nationwide Permit Verification

Provides standard language to be used in letters of verification on nationwide permits until they are reissued, modified, revoked, or expire.

RGL 90-02: Permits for Structures or Fills Which Affect Territorial Seas

RGL 90-03 (Extension of RGL 87-8): Testing Requirements for Dredged Material Evaluation

RGL 90-04: Water Quality Considerations

Clarifies "other water quality aspects" (33 C.F.R. 320.4(d)) that must be considered by the District Engineer; establishes procedures for when EPA disagrees with state water quality certification.

RGL 90-05: Landclearing Activities Subject to §404 Jurisdiction

In light of *Avoyelles Sportsmen's League, Inc. v. Marsh*, the RGL states that "landclearing activities using mechanized equipment such as backhoes or bulldozers with shear blades, rakes, or discs constitute point source discharges and are subject to §404 jurisdiction when they take place in wetlands which are waters of the United States."

90-06: Expiration Dates for Wetlands with Jurisdictional Delineations

Provides guidance for establishing time limits on official determinations of wetlands jurisdiction.

90-07: Clarification of the Phrase "Normal Circumstances" as it Pertains to Cropped Wetlands

Clarifies concept of "normal circumstances" as currently used in the Corps definition of wetlands (33 C.F.R. 328.3(b)), with respect to cropped wetlands. Excludes "prior converted cropland" from §404 jurisdiction.

RGL 90-08: Applicability of §404 to Pilings

Clarifies that placement of pilings in waters of the U.S. will require authorization under §404 when such placement is used in manner essentially equivalent to a discharge of fill material in physical effect, or functional use and effect (gives examples).

RGL 90-09: Wetlands Enforcement Initiative

Introduces EPA/Corps memorandum on establishing a wetlands enforcement initiative (the memorandum provides guidance on judicial civil and criminal enforcement priorities).

Notes:

Contacts:

- 1) Army Corps Headquarters, Zell Steever, (202) 272-1780 (for policy questions)
- 2) Corps District Offices (See Appendix B) (for site-specific questions)

Related Topics:

- 1) CWA §404 Nationwide Permits, p.39
- 2) Permit Application Process, p.29
- 3) CWA §401 Water Quality Certification, p.44
- 4) CWA §404 Regulated Activities, p.28
- 5) Federal and State Wetlands Definitions, p.86
- 6) EPA/Corps Definitions of Wetlands, p.87
- 7) 1989 RGLS, p. 87
- 8) EPA/Corps Memorandum of Agreements, p.62.

Publications

- 1) Army Corps of Engineers, *Regulatory Guidance Letters Issued by the Corps of Engineers; Notice*, 56 Fed. Reg. 2408 (Jan. 22, 1991)
- 2) Army Corps of Engineers, *Regulatory Program of the Corps of Engineers; Final Rule*, 51 Fed. Reg. 41206 (Nov. 13, 1986); codified at 33 C.F.R. Parts 320-330.

Environmental Protection Agency/ Army Corps

Memorandum of Agreements (Highlights, 1985-1989)

The Army Corps, EPA and other federal agencies have signed several important memorandum of agreements (MOAs) which formalize procedures and policies on the agencies' roles in implementing the Clean Water Act §404 program. The following is a list of some of the more important MOAs signed by the EPA and the Corps.

MOA on §404(q) of the Clean Water Act (signed 11/12/85)

Under this MOA, the Corps and EPA have developed a process, pursuant to §404(q), to resolve any interagency differences over permit decisions within a clear time-frame to minimize delays in the permit process. Under the §404(q) MOA, EPA may formally elevate interagency disputes for higher level review. Disputes not resolved in the field may ultimately be elevated to EPA Headquarters. MOAs concerning §404(q) were also signed between the Corps and the Department of the Interior, and between the Corps and the Department of Commerce.

MOA on Discharge of Solid Waste Material (signed January, 1986)

This MOA establishes criteria for determining whether

§402 or §404 of the CWA applies to solid waste discharges into U.S. waters. (see p. 43 for more detailed description).

MOA on Determination of Geographic Jurisdiction of the §404 Program and the Application of Exemptions under §404(f) (signed 1/19/89)

This MOA allocates responsibilities between EPA and the Corps for determining the geographic jurisdiction of the §404 program and the applicability of exemptions under §404(f). Under the terms of the MOA, the Corps has responsibility for performing the majority of the site-specific determinations, and will adhere to the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands" and any EPA guidance on jurisdiction and §404(f). EPA will have the ability to designate special cases for areas where EPA feels it necessary for EPA to make the determination on jurisdiction and the applicability of §404(f) exemptions.

Notes:

Contacts:

1) EPA Office of Wetlands Protection, Regulatory Activities Division, Greg Peck, (202) 475-8794.

2) Army Corps Headquarters, Zell Steever, (202) 272-1780

Related Topics:

- 1) CWA §404(q), p.40
- 2) Permit Application Process, p.29
- 3) Regulating Discharges of Solid Waste, p.43
- 4) Federal Delineation Manual, p.90
- 5) CWA §404(f) General Exemptions, p.35

- 6) Section 404(b)(1) Review, p.31
- 7) EPA and Army Corps roles, programs, pp. 65, 68.
- 8) Army Corps Regulatory Guidance Letters, pp. 60, 61.
- 9) MOAs, 1989-1990, p. 63.

Publications

- 1) *Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency Concerning §404(q) of the Clean*

Water Act.

- 2) *Army and EPA, Water Pollution Control; Memorandum of Agreement on Solid Waste*, 51 Fed.

Environmental Protection Agency/Army Corps

Memorandum of Agreements and Other Guidance (Highlights, 1989-1990)

MOA on Enforcement (with Guidance on Previously Issued Corps Permits) (signed 1/19/89)

This MOA allocates appropriate responsibilities between the Corps and EPA for enforcement of the §404 program. The MOA establishes procedures and responsibilities for investigating violations, taking immediate enforcement actions, choosing enforcement responses, selecting the lead enforcement agency, and dealing with after-the-fact permits, among other enforcement issues. The Corps and EPA also issued a guidance to accompany the MOA on "procedures regarding the applicability of previously-issued Corps permits."

MOA on Mitigation (signed 2/6/90)

This MOA clarifies policies and procedures used in determining the type and level of mitigation necessary to comply with the §404(b)(1) Guidelines. One of the more

important provisions of the MOA is that mitigation should occur in a clear sequence of first, avoidance of impacts to wetlands, second, minimization of impacts to wetlands, and last, compensation of unavoidable impacts to the extent appropriate and practicable.

Memorandum for the Field on Agricultural Activities (dated 5/3/90)

This memorandum from EPA and the Corps only provides guidance to field personnel and is not a formal MOA. The memorandum was prepared in response to numerous questions that had been raised concerning the applicability of the §404 regulatory program to agriculture. It clarifies the exemption for "normal farming activities" under §404(f) and provides specific information on the requirements for activities such as rotational rice farming and fish pond construction.

Notes:

Contacts:

- 1) EPA Office of Wetlands Protection, Regulatory Activities Division, Greg Peck, (202) 475-8794. 272-1780
- 2) Army Corps Headquarters, Zell Steever, (202)

Related Topics:

- 1) CWA §404(q), p. 40
- 2) Permit Application Process, p.29
- 3) Regulating Discharges of Solid Waste, p.43
- 4) Federal Delineation Manual, p.90
- 5) CWA §404(f) General Exemptions, p.35
- 6) Section 404(b)(1) Review, p.31
- 7) EPA and Corps roles, programs, pp. 65, 68.)
- 8) Army Corps Regulatory Guidance Letters, pp. 60,61
- 9) MOAs, 1985-1989, p. 62.

Publications

- 1) *MOA Between the Department of the Army and the Environmental Protection Agency Concerning Federal Enforcement For the §404 Program of the Clean Water Act.*
- 2) *MOA Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the CWA §404(b)(1) Guidelines.*
- 3) *The Environmental Protection Agency and the Department of the Army, §404(b)(1) Guidelines Mitigation MOA: "Questions and Answers."*
- 4) *The Environmental Protection Agency and the Department of the Army, Memorandum for the Field, Subject: CWA §404 Regulatory Program and Agricultural Activities.*

Federal Agencies

Overview of Federal Efforts to Protect Wetlands

At the federal level, wetlands protection can be divided into four general areas:

Direct regulation of activities conducted in wetlands is authorized under the Clean Water Act §404, which covers discharges of dredged or fill material to waters of the United States, including many of the nation's wetlands. The Clean Water Act also includes water quality standards for wetlands. In addition, the Endangered Species Act can play an important role where wetlands serve as critical habitat for threatened or endangered species.

Economic disincentives are used to limit destructive activities. For example, "Swampbuster" provisions of the 1985 and 1990 Food Security Acts (also known as the Farm Bills) remove agricultural subsidies and loan guarantees when wetlands are converted for crop production. Also, the Coastal Barrier Resources Act removes federal supports when certain barrier islands are developed.

Planning can be an effective tool of wetlands protection,

particularly in the West where the federal government owns and manages huge tracts of land. Also, guided by Executive Orders #11990 and #11998, and the National Environmental Policy Act, agencies involved in highway construction, land management, and water planning are required to develop policies for conserving wetlands under their control. In addition, the federal government is encouraging states to protect wetlands by providing technical and financial assistance, such as EPA grants to states for State Wetland Conservation Plans. Finally, planning efforts are enhanced by extensive federal efforts to map and monitor wetlands, and to conduct research into the physical and biological properties of wetlands.

Land acquisition is another tool for wetlands protection. Two notable federal examples are the network of National Wildlife Refuges which include significant wetlands acreage, and land acquisition under the Land and Water Conservation Fund.

Notes:

Contacts:

- | | |
|--|--|
| 1) EPA Regional wetlands coordinator, see Appendix A. | 3) Jon Kusler, Association of State Wetlands Managers, (518) 872-1804. |
| 2) Jeanne Melanson, Federal Activities Coordinator, EPA Headquarters OWP (202) 382-7071. | 4) Scott Feierabend, National Wildlife Federation, (202) 797-6800. |

Related Topics:

- | | |
|------------------------------------|--------------------------|
| 1) Clean Water Act Overview, p. 26 | 4) EPA - Overview, p. 65 |
| 2) Swampbuster, p. 59 | |
| 3) Endangered Species Act, p. 46 | |

Publications:

- | | |
|--|---|
| 1) EPA. <i>America's Wetlands: Our Vital Link Between Land and Water</i> . Report No. OPA-87-016. (Available from the Hotline) | 6) <i>Protecting Nontidal Wetlands</i> , American Planning Association, 1989. |
| 2) Conservation Foundation. 1988. <i>Protecting America's Wetlands: An Action Agenda</i> . Harper Graphics, Waldorf, MD. | 7) <i>National Guidance: Water Quality Standards for Wetlands</i> , EPA. |
| 3) Kusler, Jon. <i>Our National Wetland Heritage: A Protection Handbook</i> . Environmental Law Institute, Washington, DC. | 8) <i>Wetlands: Accomplishments and Opportunities</i> . EPA, 1990. (Available from the Hotline) |
| 4) National Wildlife Federation. <i>A Citizen's Guide to Wetlands Protection</i> . 1989. | 9) <i>Wetlands and 401 Certification: Opportunities and Guidelines for States and Eligible Indian Tribes</i> . EPA Office of Water. April, 1989. (Available from the hotline) |

Federal Agencies

Environmental Protection Agency

The Environmental Protection Agency, in partnership with federal, state and local governments, is responsible for restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Because of the value of wetlands as an integral part of those waters, EPA is also charged with protecting wetland resources. A major federal regulatory tool for this is Section 404 of the Clean Water Act, which is jointly administered by the U.S. Army Corps of Engineers and EPA. Section 404 establishes a permit program to regulate the discharge of dredged or fill material into waters of the United States, including most of the nation's wetlands. EPA's key responsibilities in the Section 404 program include: development of the program's environmental standards (the section 404(b)(1)

Guidelines), determining the scope of geographic jurisdiction (that is, the areas which are subject to Section 404), state program assumption, enforcement, and review of individual permit applications.

EPA Cooperation in Wetland Protection

EPA recognizes that an effective program to protect our nation's wetlands must contain approaches other than Section 404 and requires the cooperation of federal, state, and local agencies; developers; environmental groups; the scientific community; and others. To provide leadership in building such a broad-based national effort, EPA established an Office of Wetlands Protection in 1986. EPA also conducts an active research program on wetlands through its Corvallis, Oregon, and Duluth, Minnesota, laboratories.

Notes:

Contacts:

- 1) Glenn Eugster, EPA Headquarters OWP Outreach Contact, (202) 382-5045.
- 2) Dianne Fish, Leader, Strategies and Initiatives Team, EPA Office Of Wetlands Protection, (202)

382-7071.

- 3) EPA Regional Wetlands Coordinator (see Appendix A).

Related Topics:

- 1) Clean Water Act Section 404 Overview, p. 27.
- 2) EPA Office of Wetland Protection, p. 66

- 3) EPA Wetland Research, p. 67.
- 4) Federal Incentive Programs, p. 16.

Publications:

- 1) EPA. *Wetlands Protection*. Fact Sheets prepared by the Office of Wetland Protection. (Available from the Hotline)
- 2) EPA. *Highlights of Section 404*. Prepared by the Office of Wetland Protection. (Available from the Hotline)

- 3) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. (available from the hotline)
- 4) EPA. *Wetlands: Accomplishments and Opportunities*. Office of Water, November 2, 1990. (available from the hotline)

Federal Agencies

EPA Office of Wetland Protection

Background

The Office of Wetland Protection was established in 1986 in order to coordinate EPA's wetland protection effort with other federal agencies, state and local governments, developers, environmental groups, farmers, and the scientific community. OWP is a part of EPA's Office of Water, and its wetland protection work can be divided into two general areas:

Regulatory Activities Division

The Regulatory Activities Division is responsible for regulatory activities under Section 404 of the Clean Water Act. The Regulatory Activities Division coordinates its work with the Army Corps of Engineers, which administers the Section 404 program jointly with EPA, and other federal and state agencies.

Wetlands Strategies and State Programs Division

The Wetlands Strategies and State Programs Division is

responsible for state program activities and other wetlands protection efforts not covered under the Section 404 program. These activities include working with state, tribal and local governments and other Federal agencies; providing information on wetlands to the public; and sponsoring educational activities. Within this division is the Wetlands Strategies and Initiatives Team, which is responsible for the supporting initiatives in a variety of areas including comprehensive regional planning and water quality management. The division also works with the scientific community to develop technical information on wetlands.

Activity at the Regional Level

The Office of Wetland Protection in Washington, DC, works closely with the wetlands coordinators in each of EPA's 10 Regional offices to coordinate field activity across the country.

Notes:

Contacts:

- 1) Greg Peck, EPA Headquarters OWP Regulatory Activities Division, (202) 475-8794
- 2) Judy Johnson, EPA Headquarters OWP

Nonregulatory Programs Contact (202) 245-3907.
3) EPA Regional Contacts, see Appendix A.

Related Topics:

- 1) Environmental Protection Agency, overview, p. 64.
- 2) EPA Research Programs, p. 67.
- 3) Clean Water Act Section 404 Overview, p. 27.

Publications:

- 1) EPA. *Wetlands Action Plan*. Prepared by the Office of Wetlands Protection, 1989. (Available from the Hotline)

Federal Agencies

EPA Wetlands Research

Overview

Since 1985, EPA has intensified its wetlands-related research. Through its wetlands research programs, EPA hopes to improve the scientific basis for wetland decisions and to promote the development of national policies and approaches that are scientifically sound. The wetlands research program is under the direction of the Office of Research and Development in EPA Headquarters in Washington, D.C. However, the wetlands research program manager is in the Corvallis (Oregon) Laboratory, and the research is conducted primarily at the Corvallis and Duluth (Minnesota) Labs.

Research Topics

Although completed and ongoing research has covered a wide variety of topics related to wetlands, three research topics have received special attention: wetlands mitigation (i.e., creation, restoration, and enhancement of wetland areas), cumulative impact assessment, and water quality functions of wetlands. Current projects include research to evaluate different methods for the mitigation of wetland losses, to establish the technical foundation for water quality standards necessary to protect wetland function, and to develop and test methods for assessing the cumulative effects of wetland loss and degradation.

Notes:

Contacts:

- 1) EPA Headquarters Office of Wetlands Protection, Bill Sipple; 202-382-5066
- 2) Corvallis Lab Wetlands Program Matrix Manager, Eric Preston; (503) 757-4666

- 3) Duluth Lab Water Quality Research, William Sanville; (218) 720-5500

Related Topics:

- 1) Army Corps of Engineers Wetlands Research, p. 69.
- 2) Wetlands Values and Functions: Overview, p.101

- 3) Water Quality Improvement, p. 110.

Publications:

- 1) EPA (3/89). *Wetlands and Water Quality: EPA's Research and Monitoring Implementation Plan for the Years 1989-1994.*

- 2) "Patuxent Wildlife Research Center," *Fish and Wildlife News*, Feb.-March 1989.

Federal Agencies

Army Corps of Engineers

The US Army Corps of Engineers has been regulating activities in the nation's waters since 1890. Until the 1960s, the primary purpose of the regulatory program was to protect navigation. Since then, as a result of laws and court decisions, the program has been broadened to include protection and utilization of the nation's waters. Many wetlands are part of the Corps' jurisdiction under the following three acts:

Rivers and Harbors Act of 1899

Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable waters of the United States without a permit from the Corps of Engineers.

Clean Water Act Section 404

Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into waters of the United States without a permit from the Corps of Engineers, unless exempted from permitting requirements.

Marine Protection, Research, and Sanctuaries Act of 1972

Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (also known as the Ocean Dumping Act), authorizes the Corps to issue permits for the transportation of dredged material for the purpose of dumping into the ocean within territorial limits.

Scope of the Corps' Regulatory Program

The Corps receives about 15,000 individual (standard) permit applications per year. In addition, last year the Corps authorized an estimated 40,000 projects by either a nationwide, state, or regional permit. In the course of its activities in regulating activities in the nation's waters, the Corps last year had about 6,000 enforcement actions. During the 1980s, the Corps experienced growth in the number and complexity of permit requests and regulatory actions.

Structure of the Corps Regulatory Effort

The Corps regulatory program is decentralized, with about 930 people in 38 District Offices around the country, 15 people in 11 Division Offices, and 14 people at Headquarters in Washington, DC. During the 1980s, the regulatory program had an annual budget of \$40-55 million with significant increases in funding levels occurring during the last two years. The program is budgeted for an increase to \$75 million in fiscal year 1991.

Great LEAP Partnership on the Great Lakes

During the past year, the North Central Division of the Corps has been working to establish a partnership with federal and state agencies to improve the Great Lakes environment. This program is called the Great Lakes Environmental Action Program (Great LEAP) and has led to development of over 100 project proposals by state and federal agencies.

Contacts:

- 1) Corps of Engineers District Office, see Appendix B.
- 2) Zell Stever, Corps of Engineers Headquarters (202) 272-1780.
- 3) For information on the Great LEAP program,

contact William Schmitz, North Central Division, Army Corps of Engineers (312) 353-7762.

Related Topics:

- 1) Clean Water Act Section 404 overview, p. 27.
- 2) Rivers and Harbors Act Section 10 Overview, see p. 45.

- 3) Corps research program, see p. 69.

Publications:

- 1) *US Army Corps of Engineers Regulatory Program*. Document No. EP 1145-2-1, May 1985. (Available from the Hotline)
- 2) Kusler, Jon. *Our National Wetland Heritage*.

Washington, DC: Environmental Law Institute, 1989.
3) Schmitz, William. *The Corps' Great LEAP*. *National Wetlands Newsletter* Vol. 12, No. 5 (Sept - Oct, 1990): 14.

Federal Agencies

Army Corps of Engineers: Wetlands Research

The U.S. Army Corps of Engineers is actively involved in wetlands research through its Waterways Experiment Station in Vicksburg, Mississippi. The Corps has \$22 million for a three-year wetlands research program at Waterways. The research program aims to improve existing wetlands, reduce wetlands loss and impacts, and provide better environmental accountability in water resource projects.

The Corps' Research Mandate

The U.S. Army Corps of Engineers is required to evaluate and minimize the environmental impacts of water resource projects associated with its various activities. Wetland restoration and development to replace lost or im-

pacted wetlands are therefore often a part of the Corps' work. The Corps must consider all functions and values of wetlands, negative impacts in wetlands, and cumulative or regional effects from wetlands modification.

Areas of Research

The Corps focuses on a number of research areas, including wetland delineation and evaluation, wetland restoration and enhancement, cumulative impacts analysis, stewardship and management plans, and trends analysis, as well as on critical processes. The research program devotes significant efforts toward useful and widely-disseminated technology transfer on wetlands creation and restoration techniques.

Notes:

Contacts:

1) U.S. Army Corps of Engineers Wetlands Research Program Manager Russell F. Theriot; (601) 634-2733

2) U.S. Army Corps of Engineers Headquarters contact: Zell Steever; (202) 272-1780.

Related Topics

- 1) EPA Wetlands Research, p.67
- 2) Wetlands Values and Functions: Overview, p. 101
- 3) Water Quality Improvement, p. 110

- 4) Water Resources Development Act, p. 116.
- 5) Mitigation, p. 32

Publications:

U.S. Army Corps of Engineers (3/30/90). *U.S. Army*

Corps of Engineers Wetlands Research Program Fact Sheet.

Federal Agencies

National Marine Fisheries Service

The National Marine Fisheries Service consists of a headquarters in Washington, DC, 5 regional offices and 4 regional fisheries centers. The Service performs research relating to conservation, management, and development of marine fisheries.

Wetlands Protection Efforts

The National Marine Fisheries Service manages the nation's marine fisheries as part of the Department of Commerce's National Oceanic and Atmospheric Administration. The Service has a strong interest in estuarine wetlands because about two-thirds of the nation's commercially and recreationally important fisheries are estuarine-dependent. Under Regional Action Plans, habitat conservation activities are carried out through regional offices

and fisheries centers. These activities include providing recommendations to reduce degradation or loss of valuable estuarine habitats caused by development and other factors. The Service also plays an important consulting role in permitting programs under the Clean Water Act Section 404 and the Rivers and Harbors Act Section 10. This consulting role is established through the Fish and Wildlife Coordination Act.

National Coastal Wetlands Data Base

The Beaufort Laboratory of the National Marine Fisheries Service and the Strategic Assessment Branch of the National Oceanic and Atmospheric Administration are developing a national coastal wetlands data base for incorporation into the National Estuarine Inventory.

Notes:

Contacts:

- | | |
|---|--|
| 1) John Hall, Jim Chambers, National Marine Fisheries Service. (202) | 3) American Fisheries Society (see Appendix H) |
| 2) Suzanne Bolton, National Oceanic and Atmospheric Administration, (202) 377-2727. | 4) Stan Moberly, F.I.S.H. (206) 283-4844. |
| | 5) American Littoral Society (see Appendix H) |

Related Topics:

- | | |
|---|---|
| 1) Wetlands Values: Fish and Wildlife Habitat, p. 103 | 2) Clean Water Act Section 404 overview, p.27 |
| | 3) Wetlands Values: Fisheries, p. 106. |

Publications:

- | | |
|---|--|
| 1) US Department of Commerce. <i>NOAA Estuarine and Coastal Ocean Activities</i> . NOAA Estuarine Program Office, 1988. | <i>Environmental Quality in the United States, 1990. A Special NOAA 20th Anniversary Report, 1990.</i> |
| 2) US Department of Commerce. <i>Coastal</i> | 3) Moberly, Stan. F.I.S.H. <i>National Wetlands Newsletter</i> , Vol. 11, No. 5, p.10. |

Federal Agencies

Soil Conservation Service

Background

The U.S. Department of Agriculture's Soil Conservation Service administers the Swampbuster program and other wetlands provisions of the 1990 Farm Bill, and provides technical assistance to private landowners and federal, state, and local agencies. The Service's soil scientists, biologists, and engineers also provide technical assistance to landowners to foster conservation efforts, including the restoration, creation, and enhancement of wetlands. Service technical and financial assistance programs include:

(1) the **Rural Clean Water Program**, which provides funds for landowners to implement Best Management Practices;

(2) the **Small Watershed Management program**, which provides technical and cost sharing assistance to States and localities for agricultural water management projects;

(3) the **Rural Development program**, which authorizes the Service to inventory, monitor and classify wetlands;

(4) **Watershed Protection and Flood Prevention Loans** (administered by the Farmers Home Administration), which provide grants to local governments, soil and water conservation districts, and nonprofit watershed associations for projects including flood prevention, water

quality management, sedimentation control, and fish and wildlife development;

(5) the **Soil and Conservation Program**, which aids landowners through technical assistance in planning and applying soil and water conservation practices; and

(6) the **Resource Conservation and Development Program**, which provides grants and advisory services to states, local governments, and nonprofit groups in rural areas to carry out resource conservation projects, such as stream-bank stabilization and erosion control.

While not all of these Soil Conservation Service programs are expressly designed for wetlands enhancement or restoration, wetlands protection can be an integral part of many soil and water conservation projects by improving soil stabilization, flood control, aquifer recharge, erosion control, and other benefits.

Delineation of wetlands

The Soil Conservation Service is one of four agencies that cooperated in producing the Federal Delineation Manual to establish a single federal approach to delineating wetlands. The Service also uses the Food Security Act Manual for wetland delineations.

Contacts:

1) SCS Contact list, Appendix D.

2) SCS Deputy Chief for Programs (202) 447-4527.

3) National Association of Conservation Districts (202) 547-6223.

Related Topics:

1) U.S. Department of Agriculture overview, p. 75.

2) Swampbuster overview, p. 59.

Publications:

1) 1990 Farm Bill, P.L. 101-624, (S.2830) — Food, Agriculture, Conservation and Trade Act of 1990.

2) "Going Wild with Soil and Water Conservation," Soil Conservation Service, PA-1363.

3) "Conservation Planning - You and Your Land," Soil Conservation Service, PA-1376.

4) Federal Interagency Committee for Wetland Delineation. 1989. *Federal Manual for Identifying*

and Delineating Jurisdictional Wetlands.

5) Food Security Act Manual of 1990, USDA Soil Conservation Service.

6) *Tuesday Letter*. National Association of Conservation Districts.

7) *Journal of Soil and Water Conservation*.

8) *Community Benefits from Watershed Projects*. Agricultural Information Bulletin 337. USDA.

Federal Agencies

Fish and Wildlife Service

The Fish and Wildlife Service's mission is to conserve, protect, and enhance fish, wildlife and their habitats, particularly migratory birds, endangered species, freshwater fisheries, and certain marine mammals. The Service has 8 regional offices, a headquarters in Washington, DC, and a large number of field units across the country. The Service manages more than 450 national wildlife refuges to provide habitat for migratory birds, endangered species, and public recreation. It also sets migratory bird hunting regulations, and protects endangered and threatened animals and plants. The agency's research program provides scientific data needed to conserve and manage fish and wildlife resources.

Wetlands Programs

The Service manages over 90 million acres comprising the National Wildlife Refuge System. Nearly all reserve within the system contain managed wetlands. An active land acquisition program targets high-priority wetlands for protection, restoration and enhancement.

National Wetlands Inventory

The Service has mapped the wetlands for over 60 percent of the United States through its National Wetlands Inven-

tory program, and the project is scheduled for completion by 1998 in the lower 48 states. Nearly one-fifth of Alaskan wetlands have also been mapped. The Service has the lead role in carrying out the mapping, trends analysis, and other provisions of the 1986 Emergency Wetlands Resources Act.

Review Role

Service personnel also review the activities of other agencies that may affect wetlands, review permit applications and offer technical assistance on wetland matters. The Service has an important advisory role in the Clean Water Act's Section 404 program and in Swampbuster.

Partnerships

Partnerships are being developed with other federal, state, and local agencies to conserve wetlands under the North American Waterfowl Management Plan which covers the US, Canada and Mexico. A Memorandum of Agreement between the Service and Ducks Unlimited was signed several years ago which began a partnership of preserving and protecting wetland habitat, primarily in duck breeding sites in the mid-West.

Notes:

Contacts:

- | | |
|--|---|
| 1) Tom Muir, U.S. Fish and Wildlife Service, (202) 208-5543. | 3) For information on the Service's Status and Trends Reports, contact Craig Johnson, Fish and Wildlife Service Headquarters, (703) 358-2201. |
| 2) For information on the National Wetlands Inventory, contact Tom Dahl, Fish and Wildlife Service (813) 893-3620. | 4) Dave Heffernan, Fish and Wildlife Service (703) 358-2043. |

Related Topics:

- | | |
|--|--|
| 1) Endangered Species Act, see p.46 | 4) Fish and Wildlife Habitat in Wetlands, p.103. |
| 2) Swampbuster overview, see p. 59 | |
| 3) Fish and Wildlife Service Action Plan, see p. 73. | |

Publications:

- | | |
|---|---|
| 1) U.S. Fish and Wildlife Service. <i>Wetlands Action Plan: Meeting the President's Challenge</i> . Washington, DC, 1990. | <i>Losses 1780's - 1980's</i> . U.S. Fish and Wildlife Service, 1990. |
| 2) U.S. Fish and Wildlife Service. <i>Status and Trends Report 1950's - 1970's</i> . Washington, DC, 1990. | 4) Dahl, Thomas. <i>Wetlands Losses Since the Revolution</i> , in <u>National Wetlands Newsletter</u> Vol 12, No. 6, p. 16. |
| 3) Dahl, Thomas. <i>Status and Trends Report: Wetlands</i> | |

Federal Agencies

Fish and Wildlife Service's Wetlands Action Plan

In 1990, the Fish and Wildlife Service prepared a Wetlands Action Plan which sets out the Service's strategies for wetlands conservation. These strategies include enhanced technical support to all federal agencies, especially the Army Corps of Engineers and the EPA in the Clean Water Act §404 permitting process. The Action Plan also includes incentive programs, increased public education and outreach, and partnerships with private organizations. The following are some of the major wetlands programs of the Fish and Wildlife Service:

National Wetlands Inventory — In cooperation with state and federal agencies, the Service is mapping wetlands in the U.S. About 60% of wetlands in the lower 48 states, 16% of Alaska and all of Hawaii have been mapped.

Land Acquisition/National Wildlife Refuge System — The Service has an active program of land acquisition for the 90-million-acre National Wildlife Refuge system. The system is managed by the Service and is designed primarily to protect migratory birds and endangered and threatened species. The system is funded through the Migratory Bird

Hunting and Conservation Stamp Act (also called the Duck Stamp Act), the Wetlands Loan Act, and the Land and Water Conservation Fund Act. Over 1/3 of the system is wetlands, and the Service adds about 45,000 acres of wetlands each year.

Permit and License Reviews — The Service is one of the primary advisors to the Army Corps of Engineers and EPA on regulatory permit matters relating to Section 404 of the Clean Water Act. The permit program regulates the discharge of fill material into wetlands and other waters of the US. The Service reviews approximately 10,000 individual public notices each year to evaluate their impact on wetlands ecosystems. Also, the Service provides recommendations to the Corps to mitigate wetlands-related impacts.

Farm Bill Activities — The Service provides technical assistance to the Soil Conservation Service, the Agricultural Stabilization and conservation Service and state agencies as part of the wetlands conservation provisions of the 1985 and 1990 Farm Bills.

Notes:

Contacts:

- 1) Tom Muir, US Fish and Wildlife Service, (202) 208-5543.
- 2) For information on the National Wetlands Inventory, contact Tom Dahl, Fish and Wildlife Service (813) 893-3620.

- 3) For information on the Service's Status and Trends Reports, contact Craig Johnson, Fish and Wildlife Service Headquarters, (703) 358-2201.
- 4) Dave Heffernan, Fish and Wildlife Service Headquarters, (703) 358-2043.

Related Topics:

- 1) Endangered Species Act, see p. 46
- 2) Swampbuster overview, see p. 59

- 3) Fish and Wildlife Service overview, see p. 72
- 4) Fish and Wildlife Habitat in Wetlands, p.103.

Publications:

- 1) US Fish and Wildlife Service. *Wetlands Action Plan: Meeting the President's Challenge*. Washington, DC, 1990.
- 2) US Fish and Wildlife Service. *Status and Trends Report 1950's - 1970's*. Washington, DC, 1990.
- 3) Dahl, Thomas. *Status and Trends Report: Wetlands*

- Losses 1780's - 1980's*. US Fish and Wildlife Service, 1990.
- 4) Dahl, Thomas. *Wetlands Losses Since the Revolution*, in *National Wetlands Newsletter* Vol 12, No. 6, p. 16.

Emergency Wetlands Resources Act of 1986

This statute was enacted by Congress to promote the conservation of wetlands in the United States, in order to maintain the public benefits they provide. The intent of the act was to protect, manage, and conserve wetlands by intensifying cooperative and acquisition efforts among private interests and local, state, and federal governments. The Act contains a broad variety of measures to promote wetland conservation and offset or prevent wetland losses. There are three main sections of the Act: conservation of habitat, acquisition of wetlands, and assessment of the status of wetlands in the United States.

Title II

This section provides increased funds for federal acquisition of migratory bird habitat by authorizing the Secretary of the Interior to establish entrance fees at designated national wildlife refuges. It also transfers import duties collected on arms and ammunition to the Migratory Bird Conservation Fund, and raises the price of the Migratory Bird Hunting and Conservation Stamp each year (currently it is \$15.00).

Title III

This section amends the Land and Water Conservation Fund (LWCF) Act to:

1) Eliminate the restriction on acquiring migratory waterfowl areas;

2) Require that Statewide Comprehensive Outdoor Recreation Plans (SCORPS) specifically address wetlands as important outdoor recreation resources; and

3) Qualify wetlands as suitable replacement for LWCF lands converted to other uses.

It also requires the Secretary of the Interior to establish a National Wetlands Priority Conservation Plan (NWPCP) specifying the types of, and interests in, wetlands to be given priority for federal and state acquisition. The Secretary is authorized to purchase wetlands or interests in wetlands consistent with the NWPCP.

Title IV

This section directs the Secretary of the Interior to continue the National Wetlands Inventory (NWI) Project and to update the report on "Status and Trends of Wetlands and Deepwater Habitat in the Conterminous United States, 1950s to 1970s." Also, the Secretary is directed to report to Congress on the status, condition, and trends of wetlands and the effects of federal programs on wetlands in specified problem areas of the United States.

Contacts:

- 1) Fish and Wildlife Service; Craig Johnson, U.S. Fish and Wildlife Service's National Wetlands Inventory, 703/358-2201.
- 2) National Wetlands Priority Conservation Plan,

Carlos Medoza, 202/358-2201, or Dale Pierce, 202/358-2448.

Related Topics:

- 1) Federal Wetlands Efforts, p.64
- 2) Fish and Wildlife Service Action Plan, p. 72

3) Wetlands Values and Functions - Fish and Wildlife Habitat, p. 103

Publications:

- 1) Emergency Wetlands Resources Act of 1986.
- 2) *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States, 1950s to 1970s*. Frayer et al., Colorado State University, Ft. Collins, Co, 1983.
- 3) *Status and Trends of Wetlands in the Conterminous United States, 1970s and 1980s*. Dahl, Thomas E. and

Craig E. Johnson, Fish and Wildlife Service (Draft), 1990.

4) *National Wetlands Priority Conservation Plan*. Department of the Interior, Fish and Wildlife Service, April 1989.

Federal Agencies

U.S. Department of Agriculture Programs: Overview

The U.S. Department of Agriculture (USDA) has a number of programs designed to promote wetlands protection, many of which are included as provisions in the 1990 Farm Bill. The most well-known of these are the provisions of Swampbuster, the new Wetlands Reserve program, and the Conservation Reserve Program.

Other USDA programs that offer incentives for wetlands protection include loans for conservation projects, federal cost-sharing programs for states and local governments, technical assistance and information, counseling, and county extension services. These programs, carried out by the Soil Conservation Service (SCS), the Agriculture Sta-

bilization and Conservation Service (ASCS), and the Farmers Home Administration (FmHA), include, in part:

- Watershed Protection and Flood Prevention Loans (FmHA)
- Resource Conservation and Development (SCS and FmHA)
- Soil and Water Conservation (SCS)
- Small Watershed Program (SCS)
- Water Bank Program (FmHA).

Notes:

Contacts:

- 1) SCS state office [see appendix D]
- 2) USDA Office of Public Affairs, (202) 447-8376.

Related Topics:

Soil Conservation Service overview, p. 71

Publications:

- 1) Steve Moyer, A Narrow Escape. The 1990 Farm Bill. *National Wetlands Newsletter*. Vol. 13. No. 1, p.5
- 2) Steve Meyer, Redressing Swampbuster. The 1990 Farm Bill. *National Wetlands Newsletter*. Vol. 13. No. 1. p.4.

Conservation Reserve Program

Overview

The Conservation Reserve Program was carried over from the 1985 Farm Bill and expanded in the 1990 Act to include wetlands and other types of environmentally sensitive lands. The program, operated through the Agriculture Stabilization and Conservation Service, offers landowners annual payments for 10 years in return for placing environmentally sensitive cropland into an easement and implementing a conservation plan for the easement. Program goals include reducing soil erosion, reducing sedimentation, improving water quality, providing fish and wildlife habitat, limiting surplus commodities, and support income for farmers. Operators must implement a conservation plan approved by the local conservation district that converts

sensitive lands to a less intensive use. The fiscal year 1991 budget for the program was \$2.25 billion.

Changes in the 1990 Farm Bill

The Conservation Reserve Program in the 1990 Farm Bill has a goal of enrolling not less than 40 million acres and no more than 45 million acres by the year 1995. Categories of eligible lands were expanded under the Act to include environmentally sensitive lands, windbreaks, and marginal pasture lands planted to trees. The Act continues the general limitation that not more than 25 percent of a county's cropland may be enrolled in the Conservation Reserve Program.

Notes:

Contacts:

1) Conservation and Environmental Protection Division, Agricultural Stabilization and Conservation Service, Department of Agriculture, P.O. Box 2415, Washington, DC 20013; (202) 447-6221, for questions on the program..

2) Senate Document Room [see appendix E] for a copy of the 1990 Farm Bill.

3) House and Senate Agriculture Committees [See Appendix E] for information on the 1985 and 1990 Farm Bills.

Related Topics:

- 1) Wetland Reserve, p.77
- 2) Swampbuster, p. 59

Publications:

- 1) S. 2830. *Food, Agriculture, Conservation, and Trade Act of 1990*. Public Law No. 101-624.
- 2) Soil and Water Conservation Society. *Implementing the Conservation Title of the Food Security Act*. Ankeny, IA: SWCS, 1990.
- 3) Steve Meyer. "Redressing Swampbuster," *National*

- Wetlands Newsletter*, Vol. 13, No. 1, p.4.
- 4) Steve Moyer. "A Narrow Escape," *National Wetlands Newsletter*, Vol. 13, No. 1, p.5.
 - 5) C. Young and C.T. Osborn, "Costs and Benefits of the Conservation Reserve Program." *Journal of Soil and Water Conservation*, Vol. 45, No. 3. (1990).

Wetland Reserve Program

Overview

A new program established in the 1990 Farm Bill, the Wetland Reserve is a voluntary program to enroll up to 1 million acres of restored wetlands into conservation easements in return for federal payments. Farm operators who enroll their lands must agree to a restoration plan for croplands and place the restored wetlands in the easement reserve where they cannot drain or plow them. Easements can be either for 30 years or permanent easements. Initially, only permanent easements will be eligible. In the 1990

Farm Bill, Congress required the Department of Agriculture to enroll 1 million acres in the reserve by 1995, a projected cost of \$450-500 million. The program gives priority to wetlands that enhance habitat for migratory birds and other wildlife. Under the 1990 Farm Bill, the Fish and Wildlife Service has an active role in assessing lands that are being considered for placement in the Wetland Reserve.

Notes:

Contacts:

- 1) Soil Conservation Service district or state office [see appendix D] for site-specific questions.
- 2) USDA Public Affairs Office, Washington, (202) 447-8376, for general information or policy questions.
- 3) Fish and Wildlife Service, Regional Office (see appendix D) for information on FWS's role.

Related Topics:

- 1) Swampbuster overview, p.59
- 2) Conservation Reserve Program, p.76

Publications:

- 1) S. 2830. *Food, Agriculture, Conservation, and Trade Act of 1990*. Public Law No. 101-624.
- 2) Soil and Water Conservation Society. *Implementing the Conservation Title of the Food Security Act*. Ankeny, IA: SWCS, 1990.
- 3) Steve Meyer. "Redressing Swampbuster," *National Wetlands Newsletter*, Vol. 13, No. 1, p.4
- 4) Steve Moyer. "A Narrow Escape," *National Wetlands Newsletter*, Vol. 13, No. 1, p.5

National Park Service

Agency Missions and Wetlands Program

Agency Mission

The mission of the National Park Service is to conserve, preserve, and manage resources in units of the National Park System so that they remain for the enjoyment of people today and in the future. The Park Service carries out natural, cultural, and recreational resource inventory and research program which have regional and cross-agency scope, such as the Wild and Scenic Rivers Program, National Natural Landmarks, Statewide Comprehensive Outdoor Recreational Planning, Land and Water Conservation Fund Grants-in-Aid, NPS General Management Plan Pro-

gram, Cultural Resource Programs, and Congressionally-directed study efforts.

Wetland Protection

The Park Service Regional Water Coordinators are responsible for a wide range of activities including restoration, enhancement, management, inventory, research, and outreach programs directly or indirectly involving wetlands protection. The Park Service headquarters in Washington, DC, coordinates and develops nationwide policy for the National Park System.

Notes:

Contacts:

- 1) Pam Matthes, NPS (202) 208-4639
- 2) Jeanne Melanson, Federal Agency Coordinator,

EPA Office of Wetland Protection (202) 382-7073.

Related Topics:

- 1) Forest Service programs, see p. 79.
- 2) Bureau of Land Management programs, see p. 80.

Publications:

- 1) Dalrymple, George H., William F. Loftus, and Frank S. Bernadino, Jr. (Eds.). *Wildlife in the Everglades and Latin American Wetlands: Abstracts of the Proceedings of the First Everglades National Park*

Symposium. (Miami: February 25 - March 1, 1985) Homestead, FL: National Park Service, 1988: 72 pp.

Federal Agencies

USDA Forest Service: Overview

The Forest Service is one of the largest landowners in the country with 191 million acres it owns or operates. Nine million of these acres are wetlands, and 60 percent of those wetland acres are located in Alaska. The Forest Service also operates its lands to achieve multiple objectives, including timber and mining production, enhancing water quality and quantity through watershed protection, and other goals such as habitat preservation.

Wetlands Programs

The Forest Service's wetlands protection efforts have focused on wetlands located along river corridors. Priority wetlands include rare and diverse habitat. The Service's

land-use planning now takes into account how the agency's actions will affect wetland-dependent species. The Service recently completed an inventory of its riparian lands, but has not completed an inventory of its wetland resources. It plans to complete an inventory by 1995 at an expense estimated at \$17 million. Most Forest Service programs related to wetlands are nonregulatory partnerships, including participation in the North American Waterfowl Management Plan. The Service has recently begun using excess timber receipts to restore riparian lands, including wetlands.

Notes:

Contacts:

- 1) Larry Schmidt, Forest Service., (202) 453-9475.
- 2) Association of State Foresters, Washington., DC (202) 624-5416.
- 3) Jeanne Melanson, EPA Office of Wetlands

Protection, Coalition of Federal Land Management Agencies. 401 M St. SW A-104-F, Washington, DC 20460; (202) 382-7073.

Related Topics:

- 1) North American Waterfowl Management Plan, p.83

Publications:

- 1) Federal Land Management Agencies. 1989. *Wise Use and Protection of Federally Managed Wetlands: The Federal Land Management Agency Role*. Results of workshop.
- 2) Forest Service Manual Series 2526. Definition of "Riparian."

Federal Agencies

Bureau of Land Management

The Bureau of Land Management administers about 270 million acres of land owned by the Federal government. Of these lands, almost 10 percent, or 23.7 million acres, are wetlands areas. The Bureau is charged with managing these lands in order to provide the widest variety of vegetation and habitat diversity for wildlife, fish, livestock and watershed protection.

Riparian Wetland Initiative

The Bureau has devised a blueprint for its wetlands

protection effort this year called the Riparian Wetland Initiative. Under the Initiative, the Bureau will compile information on the status of wetlands on its lands, review land management plans to incorporate wetlands protection goals, expand wetland areas through land exchanges, avoid or mitigate the impact of surface disturbance activities on wetland areas, and develop infrastructure such as fences or treelines to maintain wetlands.

Notes:

Contacts:

- 1) BLM Headquarters Public Relations Office (202) 653-9210.
- 2) Jeanne Melanson, Federal Agency Coordinator, EPA Office of Wetland Protection, (202)382-7073.

Related Topics:

- 1) Federal wetland efforts-overview, p.64.

Publications:

- 1) Bureau of Land Management. *Riparian-Wetland Initiative for the 1990's*. Washington, DC, 1990.

Federal Agencies

Office of Surface Mining

Coordinated effort with Ducks Unlimited

Ducks Unlimited and the federal Office of Surface Mining Reclamation and Enforcement have signed a Memorandum of Understanding establishing a coordinated effort to create wetlands on abandoned surface mines, and other disturbed areas. The agreement was signed in January of 1991. The two organizations have agreed to exchange

information and to look for potential wetland creation sites — particularly those that would provide good waterfowl habitat and further the objectives of the North American Waterfowl Management Plan. The Office of Surface Mining has already completed an experimental reclamation project in which it developed a 37-acre wetland habitat over a slurry pond.

Notes:

Contacts:

- 1) Howard Marks, Office of Surface Mining, (202) 208-2553. chapter)
- 2) Ducks Unlimited (See Appendix G for regional

Related Topics:

- 1) For more information on the North American Waterfowl Management Plan, see Fish and Wildlife Service overview, p.83

Publications:

- 1) *Memorandum of Understanding Between Ducks Unlimited, Inc., and the Office of Surface Mining Reclamation and Enforcement, US Department of the Interior*, January 23, 1991.

Domestic Policy Council Task Force on Wetlands

In 1989, President Bush established the Domestic Policy Council Task Force on Wetlands to revise the executive order on wetlands (executive order 11990) and to implement the president's no net loss of wetlands goal. The task force is composed of representatives from eight federal agencies, including the Environmental Protection Agency, the Army Corps of Engineers, the Fish and Wildlife Service, the Department of Commerce, the Department of Energy, Housing and Urban Development, the Council on Environmental Quality, the Department of the Interior, and

the Federal Emergency Management Agency, and is chaired by White House Domestic Policy Council staff. The Task Force held a series of six public meetings in cities across the country during the summer and fall of 1990 to hear testimony from invited panelists and the general public on no net loss issues. The Fish and Wildlife Service is currently preparing a report of the public comments received on the meetings and testimony given at the meetings for publication in the *Federal Register*.

Notes:

Contacts:

- 1) Dianne Fish, EPA Office of Wetlands Protection, DPC representative, (202) 382-7071.

Related Topics:

- 1) Present Wetlands Loss Rates, p. 97.
- 2) Executive Order 11990, p. 52.

Publications:

- 1) Federal Register Notice Vol. 55 No. 143 (7/25/1990) *Wetlands Task Force Meetings. Notice of meetings and request for comments.*
- 2) National Wildlife Federation. *Wetlands Fact Pack.* National Wildlife Federation, 1400 16th St. NW, Washington DC 20036.
- 3) "How Wetlands Played in Peoria." *National Wetlands Newsletter.* Vol. 12 No. 6, p. 15.
- 4) World Wildlife Federation/Conservation Foundation. *Report on the National Wetlands Policy Forum.* 1988.

North American Waterfowl Management Plan

Overview

The North American Waterfowl Management Plan, drafted in 1986, is an international agreement between the United States and Canada created in response to drastic declines in waterfowl and other wetland-dependent species during the past decade. The plan creates a framework for protecting, restoring, creating, and enhancing critical wetland areas in both United States and Canada that function as waterfowl habitats. This plan hopes to initiate long-term solutions to land use problems in the region by involving the coordinated action of governments, private organizations, landowners, and other citizens. Currently the plan is being revised and expanded to include Mexico and to maximize the broad benefits of wetlands conservation. The office that oversees this program is the North American Waterfowl and Wetlands Office, which is located in

Progress Report on the Plan

The Environment Canada/Canadian Wildlife Service and the U.S. Fish and Wildlife Service produced a report that provides a quick update on the progress of the North American Waterfowl Management Plan. The report provides information on current waterfowl population levels and trends in Canada and the United States; information on acres of wetlands restored, protected, or enhanced; and a policy statement on future directions. It also provides summaries of ongoing waterfowl habitat enhancement projects in the Cosumnes River Preserve (California), Ace Basin (South Carolina), Quill Lakes (Saskatchewan), and Matchedash Bay (Ontario). The progress report is available from the U.S. Fish and Wildlife Service.

Notes:

Washington DC.

Contacts:

1) Robert Streeter, c/o U.S. Fish and Wildlife Service, Arlington Square, Room 340, 1849 C Street, NW, Washington DC 20240-3000. 703/358-1784; Fax

703/358-2282.

2) Cory Giacobbe, EPA-FWS liason contact, Office of Wetlands Protection, (202) 382-5907. .

Related Topics:

Office of Surface Mining Wetlands Program, p. 81
Wetlands Values and Functions - Overview, p. 101.

Publications:

1) *North American Waterfowl Management Plan: Progress Report - A New Beginning...* Environment Canada/Canadian Wildlife Service and the U.S. Fish and Wildlife Service, 1990.

2) *National Wetlands Newsletter*, "Bridging the Basin:

U.S.-Canadian Great Lakes Agreements, "Vol. 12, No. 5.

3) *Wetlands: Meeting the President's Challenge*, U.S. Fish and Wildlife Service, Wetlands Action Plan, 1990.

Federal Activities

National Wetlands Policy Forum

Creation of the Forum

In the spring of 1987, EPA asked The Conservation Foundation*, a non-profit organization dedicated to wetlands protection, to convene a national forum on wetlands issues. With initial funding support from EPA, the Conservation Foundation established the independent National Wetlands Policy Forum. The Forum included three state governors; representatives from state and local governments; the oil, gas, agriculture, and forestry industries; academic institutions; and environmental/conservation groups; as well as the EPA and other federal agencies.

Results of the Forum

In November 1988, the Wetlands Forum issued its report containing over 100 specific actions for all levels of government and the private sector. Recommended projects range from wetlands restoration initiatives in coastal Louisiana to workshops and training seminars on river corridor management. The Forum continues to assess the implementation of these actions and to consider the need for additional actions. President George Bush, during his 1988 presidential campaign and afterwards, has called for adoption of the Forum's no net loss goal.

EPA Response to the Forum's Recommendations

EPA has adopted the goal of the National Wetlands Policy Forum to achieve no overall net loss of the nation's remaining wetland base, as defined by acreage and function; and to restore and create wetlands. EPA will review and, when necessary, revise its program to protect the chemical, physical, and biological integrity of wetlands.

EPA's goals include: the creation of wetlands planning initiatives; the development of a policy to mitigate the impacts of wetlands losses; the improvement of wetlands enforcement; new mechanisms to enhance state and local participation in wetlands protection; the development of methods for assessing the cumulative effects of wetland loss and degradation; and projects to restore wetlands and to increase public awareness of wetlands issues. Other federal agencies, including the Army Corps of Engineers and the Department of the Interior, have also adopted the no net loss goal. The White House Domestic Policy Council Task Force on Wetlands is studying how best to implement such a goal.

* The Conservation Foundation is now part of the World Wildlife Fund.

Notes:

Contacts:

1) Heidi Sherk, Conservation Foundation/World Wildlife Fund, (202) 293-4800.

2) Dianne Fish, EPA Office of Wetlands Protection, (202) 382-7071.

Related Topics:

1) White House Domestic Policy Task Force on Wetlands, p. 88

Publications:

1) EPA Office of Wetlands Protection (1/89). *Wetlands Action Plan*.

2) Conservation Foundation (1988). *Protecting America's Wetlands: An Action Agenda*

Federal Agencies

American Wetlands Month

May 1991 Overview

Recognizing the need to respond to public interest in the values and functions of wetlands, EPA, in cooperation with other public and private organizations, is working to establish a nationwide celebration in May 1991 of "American Wetlands Month." The goal of this event is to increase public awareness of the values and importance of wetland areas, encourage people to take advantage of the unique opportunities these areas have to offer, and take action to protect, enhance, or restore wetland areas in their community.

Activities Planned

EPA is working with other federal, state, and local agencies and private organizations on American Wetlands Month activities to include:

Wetlands Month Ceremony

An official American Wetlands Month Ceremony and Reception will be held featuring EPA Administrator William Reilly, cabinet secretaries, governors, members of Congress, other federal and state officials, representatives from environmental, business and recreational groups and

public personalities. President Bush will also be invited. This event will include a major policy speech by Administrator Reilly, presentations of the National Wetlands Awards, and grants for State Comprehensive Wetlands Plan demonstration projects.

Wetlands Wonderland Program

The National Safety Council's Project Echo, in cooperation with EPA, will conduct a live drama entitled, "Wetlands are Wonderlands" for kindergarten through third grade classes in the Alexandria, Virginia, schools. The play will introduce children to lovable and valuable wetlands characters who need to be protected.

Wetlands Information

EPA will distribute information packets on American Wetlands Month to interested groups and individuals. This packet will include information on wetlands values and functions, wetlands protection organizations, a sample news release, a list of possible activities, information about EPA's Wetlands Hotline, the Environmental Law Institute's National Wetlands Awards, and the Wetlands Forum.

Contacts:

- 1) Judy Johnson or Lori Williams, EPA Office of Wetlands Protection, (A-104F), 401 M Street, SW, Washington, D.C. 20460; (202) 245-3907.

Related Topics:

- 1) EPA Office of Wetlands Protection Overview, p. 66

Publications:

- 1) *American Wetlands Month: May 1991*. EPA Fact Sheet. (Available through the hotline)
- 2) *America's Wetlands: Our Vital Link Between Land and Water*. Prepared by the Office of Wetlands Protection. Report No. OPA-87-016, 1988. (Available through the hotline).
- 3) *American Wetlands Month Brochure*. EPA. Available in April, 1991.

Overview of Federal and State Wetlands Definitions

Federal Definitions of Wetlands

There are four federal agencies that are primarily involved with identification of wetlands in the United States: the Environmental Protection Agency; the Army Corps of Engineers; the Department of the Interior's Fish and Wildlife Service; and the Department of Agriculture's Soil Conservation Service and Agriculture Stabilization and Conservation Service. Each agency has its own definition of wetlands, and these wetlands definitions are similar to each other; they all include three basic elements for identifying wetlands — hydrology (is the area saturated or inundated with water during the growing season?), vegetation (what kind of plants are present?), and soils (what kind of soils are present?).

Other Federal Definitions

Some of the federal land management agencies such as

the National Park Service, Forest Service, and Bureau of Land Management either have a definition of wetlands in their own regulations or are in the process of developing one. For information on a wetlands definition of a particular federal agency, call that agency.

State Definitions

Most states also have their own wetlands definitions. These definitions may differ from the federal definition in many ways -some states, such as New York, require that vegetation be present. However, many states do follow the definition in the 1989 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. For information on an individual state definition, call the state resource agency (See Appendix F).

Notes:

Contacts:

- | | |
|--|--|
| 1) EPA Regional Wetlands Office Contact (Appendix A). | D). |
| 2) Army Corps of Engineers District Office (Appendix B). | 5) Mike Fritz, Federal Interagency Committee for Wetland Delineation, (202) 245-3913 |
| 3) Fish and Wildlife Service Regional Office (Appendix C). | 6) Jon Kusler, Association of State Wetland Managers, (518) 872-1804. |
| 4) Soil Conservation Service State Office (Appendix | 7) State resource agencies (Appendix F). |

Related Topics:

- | | |
|---|--|
| 1) U.S. EPA and Army Corps of Engineers Definition, p. 87 | <i>Jurisdictional Wetlands</i> , p. 90 |
| 2) Soil Conservation Service Definition, p. 88 | 5) Wetland Hydrology, p. 92 |
| 3) Fish and Wildlife Service Definition, p. 89 | 6) Hydrophytic Vegetation, p. 93 |
| 4) <i>Federal Manual for Identifying and Delineating</i> | 7) Hydric Soils, p. 94 |

Publications:

- | | |
|---|---|
| 1) <i>The Wetlands Resource</i> . (Fact Sheet). EPA Office of Wetlands Protection. (Available through the Hotline) | 3) <i>Wetlands Protection: A Handbook for Local Officials</i> . Environmental Planning Information Series, Report #7, Pennsylvania Department of Environmental Resources, May 1990. |
| 2) <i>Federal Manual for Identifying and Delineating Jurisdictional Wetlands</i> . Federal Interagency Committee for Wetland Delineation, 1989. | |

Federal Wetlands Definitions

U.S. EPA and Army Corps of Engineers Definition

The following definition of a wetland is the regulatory definition used by the U.S. EPA and the U.S. Army Corps of Engineers for administering the Clean Water Act's Section 404 permit program:

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to

support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marches, bogs, and similar areas." (EPA, 40 CFR 230.3 and Corp, 33 CFR 328.3).

Notes:

Contacts:

- 1) EPA Regional Office (Appendix A).
- 2) Army Corps of Engineers District Office (Appendix B).

Related Topics:

- 1) Overview of Federal and State Wetlands Definitions and Delineation, p.86
- 2) Soil Conservation Service Definition, p. 88
- 3) Fish and Wildlife Service Definition, p. 91
- 4) *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, p. 90
- 5) Fish and Wildlife Service 20-Class Scheme, p.91

Publications:

- 1) *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. Federal Interagency Committee for Wetland Delineation, 1989.

Federal Wetlands Definitions

Soil Conservation Service Definition

The following definition of a wetland, from the Food Security Act of 1985, is used by the Soil Conservation Service for identifying wetlands on agricultural land for the U.S. Department of Agriculture's "Swampbuster" program:

"Wetlands are defined as areas that have a predominance of hydric soils and that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do sup-

port, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions..."

This is the same definition used in the Emergency Wetlands Resources Act of 1986. Although the Soil Conservation Service is a signatory to the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, it still uses the *Food Security Act Manual* for delineating wetlands in farmland areas.

Notes:

Contacts:

Soil Conservation Service State Office (Appendix D).

Related Topics:

- | | |
|--|--|
| 1) Swampbuster Program, p. 59 | 4) Fish and Wildlife Service Definition, p.89 |
| 2) Overview of Federal and State Wetlands Definitions and Delineation, p. 86 | 5) <i>Federal Manual for Identifying and Delineating Jurisdictional Wetlands</i> , p. 90 |
| 3) U.S. EPA and Army Corps of Engineers Definition, p.87 | 6) Fish and Wildlife Service 20-Class Scheme, p.91 |

Publications:

- | | |
|---|--|
| 1) <i>Federal Manual for Identifying and Delineating Jurisdictional Wetlands</i> . Federal Interagency Committee for Wetland Delineation, 1989. | 3) "Case of the Missing Wetlands," Mark Shoup, <i>National Wetlands Newsletter</i> , Vol. 13, No. 2. |
| 2) <i>National Food Security Act Manual</i> , 1988. | |

Federal Wetlands Definitions

Fish and Wildlife Service Definition

The following definition of a wetland is used by the Fish and Wildlife Service:

"Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or

more of the following three attributes: 1) at least periodically, the land supports predominantly hydrophytes, 2) the substrate is predominantly undrained hydric soil, and 3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year." (Cowardin, et al., 1979).

Notes:

Contacts:

Fish and Wildlife Service Contacts (Appendix C).

Related Topics:

- 1) Overview of Federal and State Wetlands Definitions and Delineation, p. 86
- 2) U.S. EPA and Army Corps of Engineers Definition, p. 87
- 3) Soil Conservation Service Definition, p. 88

- 4) *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, p. 90.
- 5) Fish and Wildlife Service 20-Class Scheme, p.91.
- 6) Efforts to Map Wetlands, p. 100

Publications:

- 1) *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. Federal Interagency Committee for Wetland Delineation, 1989.
- 2) *Classification of Wetlands and Deepwater Habitats*

of the United States. Cowardin, L.M. et al., Fish and Wildlife Service, 1979.

Federal Manual for Identifying and Delineating Jurisdictional Wetlands

Overview

This manual was issued in January 1989 through a cooperative effort of four federal agencies with jurisdiction over wetlands: EPA, the Army Corps of Engineers, the Fish and Wildlife Service, and the Soil Conservation Service. It describes the three technical criteria that are used in determining a wetland: hydrophytic vegetation, hydric soils, and wetland hydrology. All three of these technical criteria must be met for an area to be identified as a wetland. The manual also describes ways to gather identification

information on these three criteria, and methods for identifying and delineating jurisdictional wetlands. An Intergovernmental Committee made up of representatives of each of the four agencies is currently revising the Manual to make technical changes. A new version of the manual is scheduled for publication later this year. The current version of the manual is available from the Government Printing Office, Document number 024-010-00603-8.

Notes:

Contacts:

- | | |
|---|--|
| 1) Government Printing Office, (202) 783-3238, for a copy of the manual. | 3) EPA Regional Wetlands Office Contact (Appendix A). |
| 2) Mike Fritz, Federal Interagency Committee for Wetland Delineation, (202) 245-3913. | 4) Army Corps of Engineers District Office (Appendix B). |

Related Topics:

- | | |
|--|------------------------------------|
| 1) Overview of Federal and State Wetlands Definitions and Delineation, p. 86 | 3) Hydrophytic Vegetation, p.93 |
| 2) Wetlands Hydrology, p.92 | 4) Hydric Soils, p.94 |
| | 5) Efforts to Map Wetlands, p. 100 |

Publications:

- | | |
|--|--|
| 1) <i>Federal Manual for Identifying and Delineating Jurisdictional Wetlands</i> , Federal Interagency | Committee for Wetland Delineation, 1989. |
|--|--|

Wetlands Classification

Fish and Wildlife Service 20-Class Scheme

The Fish and Wildlife Service's 20-class scheme of wetlands of the United States was developed in 1956. The twenty types are grouped under four major wetland categories:

Inland Fresh Areas (types 1 to 8);

Inland Saline Areas (types 9 to 11);

Coastal Fresh Areas (types 12 to 14); and

Coastal Saline Areas (types 15 to 20).

This manual is useful for understanding the functions and values of wetlands and for field identification of wetlands. It is also used to map wetlands for the National Wetlands Inventory. However, identification does not assign a value to the wetland or delineate it for the purposes of regulation.

Notes:

Contacts:

Fish and Wildlife Service regional office (Appendix C).

Related Topics:

1) Fish and Wildlife Service - Mission and Programs, p. 72

2) Regional Wetlands Types, p.95

3) Wetlands Values and Functions - Overview, p.101

Publications:

1) *Classification of Wetlands and Deepwater Habitats of the United States*, Cowardin et al, 1979.

2) *Wetland Identification and Delineation Manual*, EPA.

3) *Field Guide to Nontidal Wetland Identification*, Ralph W. Tiner, Jr. Maryland Department of Environmental Protection, April 1988.

Wetlands Characteristics

Wetland Hydrology

Wetland hydrology means the wetness of the wetland area. The presence of water, whether permanent or periodic, is very essentially what makes a wetland a wetland. Soils and hydrology are derived from the presence of water. The hydrology determines the types of plants that can grow and the types of soils that may develop. Numerous factors influence the wetness of an area, including precipitation, topography, soil permeability, and plant cover. All wetlands usually have at least a seasonal abundance of water. This water may come from direct precipitation, overbank flooding, surface water runoff due to precipitation or snow

melt, groundwater discharge, or tidal flooding. The length of time that soil saturation and inundation occurs and lasts can widely vary, from just a few weeks of the year to constant wetness. It may be present as standing water or simply saturate the soil during a critical part of the growing season.

Of the three technical criteria for wetland identification, wetland hydrology is the most important, however it is often the least exact and most difficult to establish in the field due to annual, seasonal, and daily fluctuations.

Notes:

Contacts:

- | | |
|---|--|
| 1) EPA Regional Wetlands Office (Appendix A). | 3) Society of Wetland Scientists (Appendix J). |
| 2) Billy Teels, USDA Soil Conservation Service, (202) 447-5991. | 4) National Wetlands Technical Council (Appendix J). |

Related Topics:

- | | |
|--|---|
| 1) <i>Federal Manual for Identifying and Delineating Jurisdictional Wetlands</i> , p. 90 | 3) <i>Hydrophytic Vegetation</i> , p. 93. |
| 2) Fish and Wildlife Service 20-Class Scheme, p. 91 | 4) <i>Hydric Soils</i> , p. 94 |

Publications:

- | | |
|---|---|
| 1) <i>Federal Manual for Identifying and Delineating Jurisdictional Wetlands</i> . Federal Interagency Committee for Wetland Delineation, 1989. | Ralph W. Tiner, Jr. Maryland Department of Natural Resources, 1988. |
| 2) <i>Field Guide to Nontidal Wetland Identification</i> . | |

Wetlands Characteristics

Hydrophytic Vegetation

The plant life that grows in a wetland is considered to be hydrophytic vegetation, because it grows in water, soil, or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. However, not all plants that grow in wetlands grow *only* in wetlands. Those plants that do - called obligate wetland species - are only 27 percent of the nearly 7,000 vascular plant species that grow in U.S. wetlands. This means that the majority

of plant species growing in wetlands also grow in non-wetlands — or in upland — areas in varying degrees. Plants that are often found in wetlands and upland areas alike are known as facultative wetland plants, and constitute the majority of plant types found in wetlands. In addition, a category of plants found less frequently in wetlands and primarily in upland areas are known as facultative-upland species.

Notes:

Contacts:

- | | |
|--|--|
| 1) Bill Sipple, EPA Office of Wetlands Protection, (202) 382-5066. | 2) Society of Wetlands Scientists, (Appendix J). |
| | 3) National Wetlands Technical Council (Appendix J). |

Related Topics:

- | | |
|--|---|
| 1) Overview of Federal and State Wetlands Definitions and Delineation, p. 86 | 3) Fish and Wildlife Service 20-Class Scheme, p. 91 |
| 2) <i>Federal Manual for Identifying and Delineating Jurisdictional Wetlands</i> , p.90. | 4) Wetlands Hydrology, p.92 |
| | 5) Hydric Soils, p. 94 |

Publications:

- | | |
|---|---|
| 1) <i>Federal Manual for Identifying and Delineating Jurisdictional Wetlands</i> . Federal Interagency Committee for Wetland Delineation, 1989. | Resources, 1988. |
| 2) <i>National List of Plant Species That Occur in Wetlands: National Summary</i> . P.B. Reed, Jr., U.S. Fish and Wildlife Service, 1988. | 4) <i>Walking the Wetlands: A Hiker's Guide to Common Plants and Animals of Marshes, Bogs, and Swamps</i> . Lyons, Janet and Sandra Jordan, 1989. |
| 3) <i>Field Guide to Nontidal Wetland Identification</i> . Ralph W. Tiner, Jr. Maryland Department of Natural | 5) <i>Field Guide to the Submerged Aquatic Vegetation of the Chesapeake Bay</i> . U.S. Fish and Wildlife Service, 1990. |

Wetlands Characteristics

Hydric Soils

The current definition of hydric soils describes them as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper layers near the surface. In general, this time period is usually one week or more when soil temperatures are above 41 degrees Fahrenheit. Usually these soils support hydrophytic vegetation, but many hydric soils have been thoroughly drained and no longer have the hydrology to support wetlands vegetation. A hydric soil by itself is

not a conclusive indicator of a wetland. The National Technical Committee for Hydric Soils has developed criteria for hydric soils and a list of the nation's hydric soils.

An alteration of this definition is under consideration by the Soil Committee. When the changes are final, they will be incorporated into the manual.

Notes:

Contacts:

1) Bill Sipple, EPA Office of Wetlands Protection, (202) 382-5066.

2) Society of Wetlands Scientists, (Appendix J).
3) National Wetlands Technical Council (Appendix J).

Related Topics:

1) Overview of Federal and State Wetlands Definitions and Delineation, p.86
2) *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, p.90

3) Fish and Wildlife Service 20-Class Scheme, p. 91
4) Wetlands Hydrology, p.92
5) Hydrophytic Vegetation, p.93

Publications:

1) *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. Federal Interagency Committee for Wetland Delineation, 1989.

2) *Hydric Soils of the United States*. USDA Soil Conservation Service, 1987.

Wetlands Classification

Regional Wetlands Types

Wetlands are known by many names that can vary from one region of the country to another.

Bogs

They have a thick layer of floating peat on the surface and are highly acidic. They have no regular inlet or outlet of water, thus they are dependent upon precipitation for water. Bogs are found in the northern United States.

Bottomland Hardwoods

These are deciduous forested wetlands, found along rivers and streams generally in the broad floodplains of the southeast and southcentral United States.

Emergent Wetlands

They are characterized by free-standing, nonwoody plants. They can be either freshwater or saltwater. Emergent wetlands are found throughout the United States, particularly in coastal areas, adjacent to major lakes, and in the West.

Fens

They have a defined outlet and are supported by mineral-rich groundwater that has seeped to the surface. Like bogs, fens have large amounts of peat. They are found in the northern United States.

Mangroves

These are coastal saltwater wetlands that are covered with water all year around. Mangroves are found along the coast of the southern United States.

Marshes

These are emergent wetlands with a regular inlet and outlet of water. They can be either salt or freshwater, inland or coastal. They are dominated primarily by nonwoody vegetation. Marshes are found throughout the United States.

Swamp

Swamps are dominated primarily by trees or shrubs, and are found throughout the United States.

Prairie Potholes

These are depressional wetlands found in the Upper Midwest, especially North Dakota, South Dakota, and Minnesota. They are major waterfowl breeding and migration resting areas.

Playa Lakes

These are periodically flooded wetland basins that are common in parts of the Southwest and Plains States.

Contacts:

- 1) Bill Sipple, EPA Office of Wetlands Protection, 202/382-5066.
- 2) Izaak Walton League of America (Appendix J).

- 3) National Audubon Society (Appendix J).
- 4) National Wildlife Federation (Appendix H).
- 5) Society of Wetlands Scientists (Appendix J).

Related Topics:

- 1) Fish and Wildlife Service 20-Class Scheme, p. 91
- 2) Wetlands Values and Functions - Overview, p. 101

Publications:

- 1) *Certified: A Citizen's Step-by-Step Guide to Protecting Vernal Pools*. Colburn, Elizabeth A., editor, Massachusetts Audubon Society, 1989.
- 2) *Classification of Wetlands and Deepwater Habitats of the United States*, Cowardin et al, 1979.
- 3) *Coastal Marshes: Ecology and Wildlife Management*. Chabreck Robert A., University of Minnesota, 1988.
- 4) *Field Guide to Nontidal Wetland Identification*, Ralph W. Tiner, Jr. Maryland Department of Environmental Protection, April 1988.
- 5) *Marsh Management in Coastal Louisiana: Effects and Issues*. Duffy, Walter G. and Darryl Clark, editors. Fish and Wildlife Service, 1989.
- 6) *Northern Prairie Wetlands*. Van der Valk, Arnold,

Editor. Iowa State University, 1989.

- 7) *Our National Wetlands Heritage: A Protection Guidebook*, Dr. Jon A. Kusler, 1983.
- 8) *Reestablishment of Bottomland Hardwood Forests on Disturbed Sites: An Annotated Bibliography*. Haynes, Ronnie J. et al. Fish and Wildlife Service, 1988.
- 9) *South Carolina River Assessment*. Beasley, Barry R. David A. Lange, and Wallace C. Brittain. South Carolina Water Resources Commission, 1988.
- 10) *Walking the Wetlands: A Hiker's Guide to Common Plants and Animals of Marshes, Bogs, and Swamps*. Lyons, Janet and Sandra Jordan, 1989.

Loss of Wetlands in the United States

Historic Rate of Loss Nationally

In 1989, through the North American Wetlands Conservation Act, Congress directed the Secretary of the Interior to assess the number of wetland acres that existed in the 1780s and in the 1980s for the United States and for each state. Congress also required an assessment of the estimated percentage of loss of wetlands in each state during this 200-year time span.

Wetlands in the U.S. in the 1780s

The Fish and Wildlife Study found that, at the time of Colonial America, the United States contained an estimated 392 million acres of wetlands. Of this total, 221 million acres were thought to be located in the lower 48

states. Other studies have come up with different totals, ranging from 211 million acres by the USDA Soil Conservation Service to 217 acres by the USDA Economic Research Service.

Wetlands in the U.S. in the 1980s

By the 1980s, the entire United States, including Alaska and Hawaii, contained only 274 million acres of wetlands, a 70 percent loss. The lower 48 states had 104 million acres of wetlands remaining. Over a period of 200 years, the lower 48 states have lost an estimated 53 percent of their original wetlands.

Notes:

Contacts:

- 1) Craig Johnson, U.S. Fish and Wildlife Service's National Wetlands Inventory, 703/358-2201.
- 2) USDA Economic Research Service; (202) 344-2264.

- 3) USDA Soil Conservation Service, State Conservationists (Appendix D).

Related Topics:

- 1) Rate of Present Losses Nationally, p. 97
- 2) State and Regional Loss Statistics, p. 98
- 3) Major Causes of Wetlands Losses, p. 99

- 4) Mapping Efforts of Wetlands, p. 100
- 5) North American Wetlands Conservation Act of 1989, p. 114.

Publications:

- 1) *Wetlands Losses in the United States, 1780s to 1980s*. U.S. Department of the Interior, Fish and Wildlife Service, 1990.
- 2) *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States, 1950s to 1970s*. Frayer et al., Colorado State University, Ft. Collins, 1983.
- 3) *Status and Trends of Wetlands in the Conterminous United States, 1970s to 1980s*. Dahl, Thomas E. and Craig E. Johnson, Fish and Wildlife Service (Draft), 1990.

- 4) *Soil Taxonomy. A Basic System of Soil Classification for Making and Interpreting Soil Surveys*. USDA Soil Conservation Service, 1975.
- 5) *Wetland Priority Analysis - the lower 48 States* (unpublished). USDA Economic Research Service, 1989.
- 6) *Farm Drainage in the United States: History, Status, and Prospects*. Pavelis, G.A., editor, USDA Economic Research Service, 1987.

Loss of Wetlands in the United States

Rate of Present Losses Nationally

1950s to 1970s

In the 1950s total acreage of wetlands in the lower 48 United States - not including Alaska and Hawaii - was 108.1 million acres. In the 1970s it was 99.0 million acres, a net loss of over nine million acres. Average annual net loss for the 20-year period was 458,000 acres. Average annual net loss of inland wetlands was 439,000 acres, and the remaining 19,000 acres was from estuarine wetlands wetlands. Much of this loss was due to wetland conversion for agriculture and occurred primarily in Midwestern and Mississippi River Valley States.

1970s and 1980s

New information on wetlands losses between the 1970s and the 1980s is forthcoming in the updated version of *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States*, due for publication in 1991. This report will generate new information based on a statistical analysis of wetland changes from the 1970s to the 1980s. The status and trends report will be updated every ten years by the Fish and Wildlife Service as required by the Emergency Wetlands Resources Act of 1986.

Notes:

Contacts:

- 1) Craig Johnson, U.S. Fish and Wildlife Service's National Wetlands Inventory, 703/358-2201.

Related Topics:

- 1) Historic Rate of Loss Nationally, p. 96
- 2) State and Regional Loss Statistics, p. 98
- 3) Major Causes of Wetlands Losses, p. 99

Publications:

- 1) *Wetlands Losses in the United States, 1780s to 1980s*. U.S. Department of the Interior, Fish and Wildlife Service, 1990.
- 2) *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States, 1950s to 1970s*. Frayer et al., Colorado State University, Ft. Collins, 1983.
- 3) *Status and Trends of Wetlands in the Conterminous United States, 1970s to 1980s*. Dahl, Thomas E. and Craig E. Johnson, Fish and Wildlife Service (Draft), 1990.

Loss of Wetlands in the United States

State and Regional Loss Statistics

Approximately 53 percent of the original wetlands in the lower 48 states have been lost in the past two hundred years. Alaska has lost a fraction of one percent while Hawaii has lost an estimated 12 percent of its original wetland areas. On average, this means that the lower 48 states have lost over 60 acres of wetlands for every hour between the 1780s and the 1980s.

Greatest Areas of Loss, 1780s to 1980s

Ten states - Arkansas, California, Connecticut, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, and Ohio - have lost 70 percent or more of their original wetland acreage. California has lost the largest percentage of original wetlands within the state (91 percent), and Florida has lost the most acreage (9.3 million acres). Twenty-two states have lost 50 percent or more of their original wetland areas. With the exception of Alaska, New Hampshire, and Hawaii, no state has lost less than 20 percent of its original wetland acreage.

Current Wetlands Status

Among the lower 48 states, Florida, Louisiana, Minnesota, and Texas are the four states with the greatest wetlands acreage. Other states with considerable wetlands include Alabama, Georgia, Maine, Michigan, Mississippi, North Carolina, South Carolina, and Wisconsin.

Difficulty in Estimations

It is difficult to make accurate estimates of wetland

acreage during colonial time. Two problems make it difficult to use original acreage surveys or land use reports: 1) quantitative information on wetlands is not available from early engineering or reconnaissance survey reports; and 2) national and state boundaries have changed dramatically since the 1780s.

Data on existing wetland acreage also must be interpreted with caution. For some states, the wetlands have been mapped for the entire state by the National Wetlands Inventory, and acreage summary reports are available detailing the extent of wetlands. However, for those states that are not completely mapped or where acreage summaries are not yet compiled, an accurate accounting of wetland acreage is not always available. In addition, the current status of wetlands in the United States is always changing. Individual states may have information available on wetlands trends in addition to information available through the Fish and Wildlife Service's National Wetlands Inventory.

Future Losses

Based on the Fish and Wildlife Service's National Wetlands Inventory estimates of past wetlands losses, the Nation will lose an additional 4,250,000 acres of wetlands by the year 2000. This represents an area larger than the states of Connecticut and Rhode Island combined.

Contacts:

- | | |
|--|--|
| 1) State resource agencies (Appendix F). | 4) Fish and Wildlife Service Regional Office (Appendix C). |
| 2) EPA Regional Office Wetlands Contact (Appendix A). | 5) Soil Conservation Service State Office (Appendix D). |
| 3) Army Corps of Engineers District Office (Appendix B). | |

Related Topics:

- | | |
|---|--|
| 1) Historic Rate of Loss Nationally, p. 96 | 3) Major Causes of Wetlands Losses, p. 99. |
| 2) Rate of Present Losses Nationally, p. 97 | |

Publications:

- | | |
|---|---|
| 1) <i>Wetlands Losses in the United States, 1780s to 1980s</i> , U.S. Department of the Interior, U.S. Fish and Wildlife Service, 1990. | <i>United States, 1970s to 1980s</i> . Dahl, Thomas E. and Craig E. Johnson, Fish and Wildlife Service (Draft), 1990. |
| 2) <i>Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States, 1950s to 1970s</i> . Frayer et al., Colorado State University, Ft. Collins, 1983. | 4) <i>Wetlands of the United States: Current Status and Recent Trends</i> , U.S. Department of the Interior, Fish and Wildlife Service, 1984. |
| 3) <i>Status and Trends of Wetlands in the Conterminous</i> | 5) <i>Wetlands: Meeting the President's Challenge</i> . Fish and Wildlife Service, Wetlands Action Plan, 1990. |

Loss of Wetlands in the United States

Major Causes of Wetlands Losses

Since the first European settlers came to the United States, several different forces have contributed to the loss and degradation of wetlands in the United States.

Human Impacts

- Drainage
- Dredging and stream channelization
- Deposition of fill material
- Diking and damming
- Tilling for crop production
- Grazing by domesticated animals
- Discharge of pollutants

- Mining
- Alteration of hydrology

Natural Threats:

- Erosion
- Subsidence
- Sea-level Rise
- Droughts
- Hurricanes and other storms
- Overgrazing by wildlife

Notes:

Contacts:

- 1) EPA Office of Wetlands Protection, Glenn Eugster, (202) 382-5045.
- 2) Thomas Dahl, U.S. Fish and Wildlife Service., St.

Petersburg, FL (813) 893-3620.
3) State and Territorial Agencies and Citizens' Groups (Appendix G).

Related Topics:

- 1) Historic Rate of Losses Nationally, p. 96
- 2) Rate of Present Losses Nationally, p. 97

3) State and Regional Loss Statistics, p.98

Publications:

- 1) *Wetlands Losses in the United States, 1780s to 1980s*. U.S. Department of the Interior, Fish and Wildlife Service, 1990.
- 2) *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States, 1950s to 1970s*. Frayer et al., Colorado State University, Ft. Collins, 1983.
- 3) *Status and Trends of Wetlands in the Conterminous*

United States, 1970s to 1980s. Dahl, Thomas E. and Craig E. Johnson, Fish and Wildlife Service (Draft), 1990.

4) *Wetlands of the United States: Current Status and Recent Trends*, U.S. Department of the Interior, Fish and Wildlife Service, 1984.

Loss of Wetlands in the United States

Efforts to Map Wetlands

There have been several efforts to map wetlands in the United States, and for many reasons, such as determining jurisdictional wetlands, acres of wetlands lost, or the current status of wetlands. Almost all federal land management agencies have either been mapping wetlands or have recently begun to map wetlands, and many states have also mapped their wetlands. These maps alone, however, should not be relied on to determine the existence of wetlands on a particular parcel or area.

Federal Land Management Agencies

- **The Fish and Wildlife Service** is the leading federal agency with responsibility for mapping the nation's wetlands through its National Wetlands Inventory program. The National Wetlands Inventory maps the status of wetlands in the United States and the percentage of each state that is wetland.

- **The Department of Agriculture's Economic Research Service (ERS)** has mapped the extent and location of land in the U.S., by state and by region, that has been drained for agricultural use. Beginning in 1900, the ERS has compiled this information for five-year time intervals. It conducted another survey in 1978 and in 1980, and for every year thereafter.

- **The Department of Defense (DOD)** has recently begun to map wetlands on their bases around the country, and on lands leased by the DOD. The Navy signed an agreement last year with the Fish and Wildlife Service to inventory and preserve wetlands on 70 naval installations.

- **The Army Corps of Engineers (Corps)** has been conducting ongoing wetlands mapping activities for purposes of Section 404.

- **The National Park Service** began a wetlands preservation, mapping, and research program this year.

- **The Forest Service** has an ongoing program to inventory wetlands and other riparian lands.

- **The Bureau of Land Management** began a program to map riparian wetlands areas on land it administers in the Western United States this year, including a five-year effort to inventory wetlands.

- **The Soil Conservation Service's** Natural Resources Inventory measures soil types in the United States, which is used in making swampbuster determinations under the 1985 and 1990 Farm Bills. County SCS offices have maps of wetlands on farmland for the purposes of the Swampbuster program.

- **The U.S. Geological Survey** has topographic maps, on the scale of 1:24,000, and land use and land cover maps, both of which may have maps of wetlands.

State Mapping Efforts

Many states have been mapping their wetlands for several years - often the information for federal mapping is derived from state-conducted mapping. For information on state-level mapping, contact your state natural resource agency for wetlands (See Appendix F).

Contacts:

- 1) Craig Johnson, U.S. Fish and Wildlife Service's National Wetlands Inventory, 703/358-2201.
- 2) Soil Conservation Service headquarters, public information office; 202/382-1861.
- 3) Department of Defense, Peter Boice, (202) 325-2215.

- 4) National Park Service, Pam Matthes, (202) 208-4639.
- 5) Forest Service, Larry Schmidt, (202) 453-9475.
- 6) U.S. Geologic Survey, Geological Research, (703) 860-6341.

Related Topics:

- 1) Historic Rate of Loss Nationally, p. 96
- 2) Rate of Present Losses Nationally, p. 97
- 3) State and Regional Loss Statistics, p. 98.

Publications:

- 1) *Farm Drainage in the United States: History, Status, and Prospects.* USDA ERS, 1987.
- 2) *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States, 1950s to 1970s.* U.S. Fish and Wildlife Service, 1983. Copies from Department of Forest and Wood Sciences, Colorado State University, Fort Collins, CO 80523, for \$5.00.
- 3) *Summary Report, 1987 National Resources Inventory.* USDA Soil Conservation Service, 1989.
- 4) *Wetlands of the United States: Current Status and Recent Trends.* U.S. Fish and Wildlife Service, 1984. Available from the Government Printing Office.
- 5) *Our National Wetlands Heritage: A Protection Guidebook.* Dr. Jon A. Kusler, 1983.

Wetlands Values and Functions

The Importance of Wetlands - Overview

Wetlands is the collective term for marshes, swamps, bogs, and similar areas that often develop between open water and dry land. These wet areas can be found in every county of every state in the United States.

In the past, wetlands were often regarded as wastelands — sources of mosquitoes, flies, and unpleasant odors. Most people felt that wetlands were places to be avoided, or better yet, eliminated. Largely because of this negative view, more than half of America's original wetlands have been destroyed. They have been drained and converted to farmland, filled for housing development and industrial

facilities, or simply used as dump sites for both household and hazardous waste.

More recently, with our increased understanding of ecology, attitudes towards wetlands have changed. Scientists have discovered that wetlands, are valuable natural resources. Among other things, wetlands help improve water quality, reduce flood and storm damages, provide important fish and wildlife habitat, and support hunting and fishing activities. (See below for descriptions of individual values and functions of wetlands.)

Notes:

Contacts:

- 1) Glenn Eugster, EPA Headquarters OWP Outreach Contact, (202) 382-5045.
- 2) For a scientific perspective, call your Society of Wetlands Scientists/National Wetlands Technical

Council, Appendix J.

- 3) EPA Regional Wetlands Coordinator, see Appendix A.

Related Topics:

- 1) Fish and Wildlife Habitat — p.103
- 2) Water Quality Improvement — p.110
- 3) Sediment Control — p. 108
- 4) Shoreline Erosion Control — p.102.
- 5) Flood Control — p. 104.

- 6) Water Supply Improvement — p. 112
- 7) Treating Acid Mine Drainage — p.109
- 8) Natural Resource Products - p.105.

Publications:

- 1) American Water Resources Association. *Wetlands: Concerns and Successes*. Bethesda, MD, 1989.
- 2) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. Prepared by the Office of Wetland Protection. Report No. OPA-87-016, 1988. (available

from the hotline)

- 3) National Wildlife Federation. *A Citizen's Guide to Protecting Wetlands*. 1989.

Wetlands Values and Functions

Erosion Control

Wetlands are an effective means of erosion control. By anchoring the soils along river banks and lake shores, wetland plants hold soils in place. The plants also reduce erosion by dissipating energy from small waves and currents, with mangroves being particularly resistant.

Erosion control and development

Erosion control is particularly important in areas where streams and rivers are threatened by development pressure.

Improper land development can encroach on shorelines, leaving little vegetation to trap sediment or control future stream bank erosion. Communities that preserve their wetlands may be able to avoid future expenditures on sediment control basins or traps, and some states are now recommending the planting of wetland vegetation to control shoreline erosion in coastal areas.

Notes:

Contacts:

1) Society of Wetlands Scientists, see Appendix J, for technical questions.

2) International Erosion Control Association, see Appendix H.

Related Topics:

- 1) Sediment Control, p.108
- 2) Flood Control, p. 104

Publications

- 1) National Research Council. *Managing Coastal Erosion*. National Academy Press, Washington, DC, 1990.

Wetlands Values and Functions

Fish and Wildlife Habitat

Wetlands support a wide variety of plants and animals, including many threatened and endangered species. Because wetlands are among the world's most productive ecosystems, there is seldom a shortage of food for fish and wildlife in areas where wetlands have not been destroyed. The abundant plant growth in wetlands provides the foundation of the food chain, as well as shelter for animals. Crabs, clams, small fish, and other animals commonly feed on "detritus" — material that results from the breakdown of wetland plants. In turn, larger animals feed on detritus-eating animals. Wetlands are ideal breeding sites for a wide variety of birds and mammals, including ducks, geese, mink, and beaver. In addition to providing year-round habitats for resident birds, wetlands are especially impor-

tant as breeding grounds, overwintering areas, and feeding grounds for migratory waterfowl and numerous other birds.

Endangered Species in Wetland Areas

Although wetlands cover less than 5 percent of the country's lands, they provide habitat for about 45 percent of the nation's federally-listed endangered animal and plant species. A few examples of wetland dependent endangered species are the American crocodile, the Everglade kite, the American wood stork, and the whooping crane. The tremendous natural diversity in wetland areas provide unique habitats for many of the country's rarest species of plants and animals.

Notes:

Contacts:

- 1) Tom Muir, US Fish and Wildlife Service (202) 208-5543.
- 2) Ducks Unlimited, (202) 452-8824.
- 3) Trout Unlimited, (703) 281-1100.
- 4) Scott Feierabend, National Wildlife Federation, (202) 797-6800.
- 5) Whooping Crane Conservation Association (Appendix H).
- 6) Your local Audubon, National Wildlife Federation, or other NGO, see Appendix G.
- 7) Wildfowl Trust of North America (see Appendix H)
- 8) International Wild Waterfowl Association (see Appendix H)
- 9) American Ornithologists Union and Association of Field Ornithologists (see Appendix H)

Related Topics

- 1) Endangered Species Act, p. 46.
- 2) Fish and Wildlife Service - Mission and Programs, p.72.
- 3) North American Waterfowl Management Plan, p. 83.

Publications

- 1) Lyons, Janet and Sandra Jordan. *Walking the Wetlands: A Hiker's Guide to Common Plants and Animals of Marshes, Bogs, and Swamps*. New York: John Wiley and Sons, 1989. 222 pages.
- 2) *North American Waterfowl Management Plan, 1990 Update*, US Fish and Wildlife Service.
- 3) US Fish and Wildlife Service 1990 *Wetlands Action Plan*.
- 4) Feierabend, Scott. "Wetlands: The Lifeblood of Wildlife," in Hammer, Donald, ed. *Constructed Wetlands for Wastewater Treatment*. Lewis Publishers, 1990.
- 5) Kraus, Mark. "Urban Wetlands" in *National Wetlands Newsletter*, Vol. 13, No. 1, p.1.
- 6) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. (available from the hotline)
- 7) National Wildlife Federation. *A Citizen's Guide to Wetlands Protection*. 1989.
- 8) Wharton, Charles. *Southern River Swamp*. Georgia State University.

Wetlands Values and Functions

Flood Control

Wetlands function as natural basins, storing flood waters that overflow riverbanks or surface water that collects in isolated depressions. By doing so, wetlands help protect adjacent and downstream areas from flood damage. Trees and other wetland vegetation also help to slow the speed of flood waters.

A one-acre wetland can hold up to 330,000 gallons of water if flooded to a depth of one foot. Saturated wetland soils can also hold large volumes of water like a giant sponge. If wetlands are removed or filled, downstream flood levels will rise and crest much faster. Wetlands can help protect the public from flood damage and may reduce the need for public spending on flood control structures or extensive drainage systems.

In agricultural areas, wetlands can help to reduce the

potential of flood damage to crops. Wetlands within and upstream of cities are especially valuable for flood protection—urban development increases flooding by eliminating vegetation and covering areas where flood waters could seep back into the ground.

National Flood Insurance Program

Lawmakers recognized the value of wetlands for flood control when they passed the National Flood Insurance Act of 1968, which created the National Flood Insurance Program. This program offers low-cost, guaranteed insurance to homeowners in flood-prone communities in return for communities directing new development out of the floodplain and enforcing floodplain regulations.

Notes:

Contacts:

- 1) Tennessee Valley Authority. Jim Wright. (615) 632-4792.
- 2) Rebecca Hughes, Association of State Floodplain Managers, (301) 974-3825.
- 3) Beth Milleman, Coast Alliance, Washington, DC.

- 4) For more information on the National Flood Insurance Program, contact Frank Thomas, Federal Emergency Management Agency, Washington, DC.

Related Topics:

- 1) Erosion Control, p. 102
- 2) Sediment Control, p. 108

- 3) Coastal Barriers Resources Act, p.115

Publications:

- 1) *Cities Under Water: A Comparative Evaluation of Ten Cities' Efforts to Manage Floodplain Use.*
- 2) Butler, David. *Floodplain Harmony.* Association of State Floodplain Managers, 1989.
- 3) Association of State Floodplain Managers Newsletter.

- 4) Beth Milleman and Elise Jones. Improving the National Flood Insurance Program. *National Wetlands Newsletter*. Vol. 12, No. 3 (1990).
- 5) Wharton, Charles. *Southern River Swamp.* Georgia State University.

Wetlands Values and Functions

Natural Resource Products

A wealth of natural products are produced by wetlands. Those available for human use include timber, fish and shellfish, blueberries, cranberries, sugar cane, and wild rice. For more information on the role of wetlands in fisheries and waterfowl hunting, see the following page pages.

Timber

Forested wetlands are an important source of timber. For example, timber production on 2,300 acres of the Alcovy River in Georgia was estimated to be worth over \$1.5 million per year in 1985. There can be problems associated with timber cutting in wetlands.

Other products

Wetlands are highly productive. This productivity is typically seen as lush growth of vegetation, but also extends to very rich soils. Historically, wetlands have had agricultural uses including the production of hay and muck-farm vegetables such as celery and onions, and wetland grasses are very effective mulches. In addition, some wetlands are rich in peat — a type of moss that grows in extremely wet areas. Although peat moss mining has become a common practice in some areas both as fuel and as an agricultural product, mining also can destroy the natural functions of the wetland and is strictly regulated in most states.

Notes:

Contacts:

- 1) For information on fisheries, contact the National Marine Fisheries Service., public affairs office, (202) 377-3263.
- 2) For information on waterfowl hunting in wetlands, contact Ducks Unlimited (see Appendix H for area chapters)
- 3) For information on the role of wetlands in fisheries, contact the American Fisheries Society, (301)

897-8616.

- 4) National Audubon Society (see Appendix H for local chapter).
- 5) For a more scientific perspective, contact the Society of Wetlands Scientists or National Wetlands Technical Council chapter in your region (see Appendix J).

Related Topics:

- 1) Fish and Wildlife Habitat, p.103
- 2) Natural Resource Products, p. 105

- 3) Importance of Wetlands - Overview, p.101.

Publications:

- 1) EPA. *America's Wetlands: Our Vital Link Between Land and Water.* (Available from the Hotline)
- 2) National Wildlife Federation. *A Citizen's Guide to*

- Protecting Wetlands.* 1989.
- 3) South Carolina Research Center Newsletter.

Wetlands Values and Functions

Fisheries

Wetlands are a vital part of the nation's commercial and recreational fishing industries. When wetland plants die, bacteria and fungi transform them into minute fragments of food and vitamin rich detritus which are carried into tidal creeks, bays, and offshore waters. Many species of sport and commercial fish and shellfish are dependent upon this detritus. In addition, salt marshes provide protected nursing areas for important commercial fishes such as cod, herring, and mackerel.

Today, much of the nation's fishing and shellfishing industries harvest wetland-dependent species. For example, in the Southeast 96 percent of the commercial catch and over 50 percent of the recreational harvest are fish and shell fish that depend on the estuary coastal wetland system. Currently, the U.S. commercial fisheries harvest is valued at more than \$10 billion per year.

Notes:

Contacts:

- 1) For information on fisheries, contact the National Marine Fisheries Service, public affairs office, (202) 377-3263..
- 2) For information on the role of wetlands in fisheries, contact the American Fisheries Society. (301) 897-8616.
- 3) For a more scientific perspective, contact the Society of Wetlands Scientists or National Wetlands Technical Council chapter in your region (see Appendix J).

Related Topics:

- 1) Fish and Wildlife Habitat, p. 103
- 2) Natural Resource Products, p.105

Publications:

- 1) EPA. *America's Wetlands: Our Vital Link Between Land and Water.* (Available from the Hotline)
- 2) National Wildlife Federation. *A Citizen's Guide to Protecting Wetlands.* 1989.
- 3) South Carolina Research Center Newsletter.

Wetlands Values and Functions

Recreational and Aesthetic Values

General Recreational and Aesthetic Values

Both tidal and nontidal wetlands are areas of great diversity and beauty and provide open space for recreational and visual enjoyment. Wetlands provide endless opportunities for popular recreational activities, such as hiking, hunting, fishing and swimming. As such, wetlands contribute to the tourist industry in many ways. Increasingly, wetlands are also being viewed as valuable simply for the natural beauty they offer.

Bird Watching

Through the centuries, painters and writers have sought to capture the beauty of wetlands on canvas and paper. A wide variety of birds are dependent on wetlands for breeding. Today, artists are often joined by others with cameras, video and sound recorders seeking the natural diversity of

wetlands. Bird watching and photography enticed an estimated 50 million people to wetlands in this country last year.

Urban Open Space Values

Wetlands provide important open space in and around urban areas. A 1981 study of the Charles River in Massachusetts, for instance, found that land values generally were higher when the land abutted wetlands.

Hunting and Fishing

Twenty million Americans enjoy recreational fishing. Many types of fishes are dependent on wetlands as sources of food or for habitat to spawn. In addition, millions of people hunt waterfowl which depend on wetlands for feeding, breeding, and resting.

Notes:

Contacts:

- 1) Linda Winter, Izaak Walton League (703) 528-1818.
- 2) Glenn Eugster, EPA Headquarters OWP, (202) 382-5045.
- 3) Jeanne Melanson, Federal Agency Coordinator, EPA Office of Wetlands Protection, (202) 382-7073.

For more information on bird watching, contact the one of the following organizations:

- 4) National Audubon Society (see Appendix H for local chapter)
- 5) Wildfowl Trust of North America (see Appendix H)
- 6) International Wild Waterfowl Association (see Appendix H)
- 7) American Ornithologists Union and Association of Field Ornithologists (see Appendix H)

Related Topics:

Fish and Wildlife Habitat, see p. 103

Publications:

- 1) Caduto, Michael. *Pond and Brook: A Guide to Nature in Freshwater Environments*.
- 2) *Walking the Wetlands: A Hiker's Guide*.
- 3) National Wildlife Federation. *A Citizen's Guide to*

Wetlands Protection. 1989.

- 4) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. (Available from the Hotline)

Wetlands Values and Functions

Sediment Control

Problems Associated with Sediment Buildup

Excess sediment in rivers and streams causes a number of problems. It reduces the penetration of light into the water which limits plant growth. Sediment also smothers bottom-dwelling organisms, such as oysters and clams, and can harm many fish species. As little as one-tenth of an inch of sediment on trout or smallmouth bass eggs may prevent them from hatching. Sediment also can fill in spawning areas, destroying a fish's ability to reproduce. In other instances, sediment can eliminate much of the insect life that fish feed on. Finally, as sediment settles to the bottom, it reduces water depth and increases the need or desire for dredging.

The Role of Wetlands in Sediment Control

Wetlands slow down flood waters which reduces the ability of flood waters to erode. Wetland vegetation filters and holds sediment, while the roots of the plants bind the soil in place and prevent further erosion of the site. Wetlands are particularly useful in sediment control in areas of intensive land use or development, such as farms or cities. Also, wetlands play a vital role in protecting water quality along streams and rivers by catching incoming sediments. The Bureau of Land Management, the Forest Service and the National Park Service are all experimenting with wetlands restoration to reduce erosion and sedimentation.

Notes:

Contacts:

- 1) Soil Conservation Service State and District Offices, see Appendix D.
- 2) National Wetlands Technical Council and Society of Wetlands Scientists, see Appendix K.
- 3) Bureau of Land Management Headquarters, (202) 653-9210.
- 4) Bob Thronson, Assessment and Watershed

Protection, US EPA (202) 382-7103 — Contact for "Fifth Federal Interagency Sedimentation Conference, Las Vegas, NV, March 18-21, 1991.
5) Donald A. Hammer, Tennessee Valley Authority.
6) Rebecca Hughes, National Association of Floodplain Managers, (202) 858-8041.

Related Topics:

- 1) Erosion Control, p. 102.
- 2) Water Quality Improvement, p. 110
- 3) Fish and Wildlife Habitat, p. 103

4) USDA Soil and Water Conservation Programs, p. 75.

Publications:

- 1) *Coastal Environmental Quality in the United States, 1990: Chemical Contamination in Sediment and Tissues*, a Special NOAA Report. US Department of

Commerce, 1990.

Wetlands Values and Functions

Treating Acid Mine Drainage

Water passing through active and inactive coal mines is often contaminated with sulfur and other by-products of mining operations. This makes the water unusually acidic when it emerges from the mine, and the result is called "acid mine drainage." In addition, water passing through coal mines often picks up significant concentrations of heavy metals.

Wetlands and Acid Mine Drainage

Artificial wetlands have proved successful at improving the quality of water contaminated with acid mine drainage. In the wetlands, metals can be separated out of the water and taken up by the soil and plants. This process also can remove some of the acidity from the mine waters. It costs

significantly less to maintain artificial wetlands than to maintain conventional treatment systems. As a result, wetlands have been created at more than 100 active and inactive coal mines in Pennsylvania alone. Very few of these wetlands are capable of replacing chemical treatment completely, and their effectiveness in removing metals may decrease over time. Nevertheless, the experience of the mining industry further shows the ability of wetlands to improve water quality. It is important to add that while EPA and other agencies are actively studying the use of created wetlands for treating acid mine drainage, they have not advocated the use of natural wetlands for this purpose.

Notes:

Contacts:

- 1) Howard Marks, Department of the Interior, Office of Surface Mining, (202) 208-2553.
- 2) James McElfish, Environmental Law Institute, (202)

328-5150.

- 3) Donald A. Hammer, Tennessee Valley Authority.

Related Topics:

- 1) Water Quality Improvement, p. 110.

Publications:

- 1) *Wetlands and Water Management on Mined Lands*, Proceedings of a Conference at the Pennsylvania State University on October 23-24, 1985, Sponsored by the School of Forest Resources, College of Agriculture.
- 2) Wieder, R.K. *A Survey of Constructed Wetlands for Acid Coal Mine Drainage Treatment in the Eastern United States*, in *Wetlands*, Vol. 9 (1989), p.299.
- 3) Brodie, GA, DA Hammer, and DA Tomljanovich. *Treatment of Acid Mine Drainage with a Constructed Wetland at the Tennessee Valley Authority 950 Coal*

Mine, in *Constructed Wetlands for Wastewater Treatment*. Lewis Publishers, 1990: 201-210.

- 4) Wilderman, TR, and LS Laudon. *Use of Wetlands for Treatment of Environmental Problems in Mining: Non-Coal Mining Applications*, in *Constructed Wetlands for Wastewater Treatment*. Lewis Publishers, 1990: 221-232.
- 5) Hammer, Donald A. *TVA's Use of Man-Made Marshes to Control Acid Mine Drainage*, in *National Wetlands Newsletter*, Vol. 9, No. 1, p. 5.

Wetlands Values and Functions

Water Quality Improvement

Wetlands help maintain and improve the water quality of our nation's rivers and other water bodies. Wetlands do this by removing and retaining nutrients; processing chemical and organic wastes; and reducing the amount of sediment in the water. Wetlands are particularly good water filters. Due to their position between upland and deep water, wetlands can also intercept surface-water runoff from land before it reaches open water. The water-cleansing function of wetlands is particularly important in agricultural and urban areas where runoff carries a heavy

sediment load.

Nonpoint Source Pollution

Wetlands along rivers and stream edges dramatically reduce nonpoint source pollution helping to improve water quality and protect commercial and sport fisheries. It has been estimated that a high quality wetland can remove more than 90 percent of the nitrogen and phosphorous contained in stormwater runoff.

Notes:

Contacts:

- 1) Society of Wetlands Scientists or National Wetlands Technical Council (see Appendix J) for technical information.
- 2) Cameron Davis, Deputy Director, Lake Michigan

Federation (312) 939-0838.

- 3) Dianne Fish, Office of Wetlands Protection, EPA (202) 382-7071, for policy questions.

Related Topics:

- 1) Acid Mine Drainage, p. 109
- 2) Water Supply, p.112

- 3) Sediment Control, p. 108
- 4) Wastewater Treatment, p. 111.

Publications:

- 1) Hammer, Donald A. *Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural*. Ft. Lauderdale, FL: CRC Press, Inc., 1990. 831pp.
- 2) EPA. *Memo with Attachment: National Guidance: Wetlands and Nonpoint Source Control*. OWRS, 1990.
- 3) EPA. *Report on the Use of Wetlands for Municipal Wastewater Treatment and Disposal*. EPA 430/09-88-005, 1987.
- 4) EPA. *Water Quality Standards for Wetlands*. EPA

440/S-90-011. July, 1990.

- 5) Paulson, Gerald A. *Wetlands and Water Quality: A Citizen's Handbook for Protecting Wetlands*. Lake Michigan Federation, 1990.
- 6) National Research Council. *National Water Quality Assessment, a review of the USGS*. National Academy Press, 1990.
- 7) Shisler, Joseph K. *Are Floodplains Compatible with Stormwater Management?* in *National Wetlands Newsletter*, Vol 10, No. 5.

Wetlands Values and Functions

Wastewater and Stormwater Treatment

Historically, wetlands have been subjected to municipal and industrial wastewater discharges, agricultural and surface mine runoff, and urban stormwater discharges. Recently, however, the planned use of wetlands for water treatment has been tried and studied. In fact, many wetlands are able to provide a high level of wastewater treatment. However, concern has also been expressed about the harmful effects to wildlife, plants and soils of toxic materials and pathogens in wastewaters, and about the long-term degradation of wetlands from their use for water treatment. In addition, some wetlands cannot handle large or continuous flows of wastewaters, and there is a potential in all wetlands for development of odors and an increase in the number of mosquitoes and flies.

Wastewater Treatment

Wetlands plants, soils, and microorganisms appear to perform at least some degree of all the biochemical treatment of wastewater that takes place in conventional water treatment systems. Use of natural wetland treatment systems is limited to removing nutrients and solids from waters that already meet EPA's applicable water quality standards (tertiary treatment). The use of constructed wet-

lands is promising for secondary treatment of municipal wastes. Some large-scale wetlands constructed for wastewater treatment have had many other goals as well, including creating habitat for wildlife.

Permit Requirements for Wastewater or Stormwater Discharge to Wetlands

Proposed modification of wetlands to allow water treatment requires a permit from the Army Corps of Engineers and any discharge into a natural or artificial wetland is subject to relevant EPA permits. In all cases where wetlands may be used for water treatment, the appropriate EPA Regional Office and the Corps District office should be contacted.

EPA Policy

The EPA continues to review requests for the use of natural wetlands for water treatment on a conservative, case-by-case basis. The Agency does, however, encourage the use of artificial wetlands for water treatment and provides construction grants for this purpose. EPA is in the process of writing guidance on the use of wetlands to accept stormwater discharges.

Notes:

Contacts:

- 1) EPA Regional Wetlands Contact, see Appendix A.
- 2) Army Corps of Engineers District Office, see Appendix B.
- 3) For more information on stormwater discharges, contact Frances Eargle, EPA OWP, (202) 245-3954.
- 4) For more information on nonpoint source pollution

and wetlands, contact Sherri Fields, EPA OWP (202) 245-3932.

5) For more information on wetlands and water quality, contact Doreen Robb, EPA OWP (202) 245-3906.

Related Topics:

- 1) Treating Acid Mine Drainage, p. 109
- 2) Wetlands Values and Functions, overview, see

p.101.

Publications:

- 1) EPA. *Report on the Use of Wetlands for Municipal Wastewater Treatment and Disposal*. Document No. 430/09-88-005 (October, 1987).
- 2) EPA. *OW Guidance to Supplement the October 1987 Burdick Report on the Use of Wetlands for Municipal Wastewater Treatment and Disposal*. (September 20, 1988)

- 3) EPA Region IV. *Freshwater Wetlands for Wastewater Management: Environmental Assessment Handbook*. Atlanta, Georgia (September, 1985).
- 4) Hammer, Donald A., ed. *Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural*. Chelsea, Michigan: Lewis Publishers, 1989. 831 pp.

Wetlands Values and Functions

Water Supply

Groundwater

With the growth of urban centers and increasing demands on groundwater supplies, wetlands are increasingly important to watershed management because they can serve as water storage and recharge areas that replenish local aquifers. Wetland plants and soils can absorb great quantities of water. As a result, wetlands can slow down the rate of surface water runoff, permitting it to seep into the ground. Many wetlands store water during the wetter parts of the year and release it at relatively constant rates, helping to maintain regular surface and groundwater flows. This process helps to recharge underground aquifers, an important source of drinking water, especially in coastal

communities. Wetlands can also help purify this water by trapping sediments and other pollutants.

Surface Water

Wetlands can serve a similar function for surface water as for groundwater. As running water pass through wetlands, the water can be absorbed by plants and soils, and released into water bodies at a more constant rate. This helps provide a more stable year-round supply of surface water. In addition, wetlands can help to remove sediment and other pollutants from surface water. Wetlands are also being studied for their capacity to treat wastewater and stormwater.

Notes:

Contacts:

- 1) Jack Lehman, EPA Office of Surface Water Compliance, (202) 382-5400.
- 2) For more information on groundwater and wetlands, contact Peter Cook, EPA Office of Groundwater Protection, (202) 382-7077.
- 3) Rebecca Hughes, Association of State Floodplain Managers, (301) 974-3825.
- 4) Joe Shisler, New Jersey Department of Environmental Protection, for storm-water management issues: (201) 446-3669.
- 5) National Water Resources Association (see Appendix H)

Related Topics:

- 1) Water Quality Improvement, p. 110
- 2) Flood Control, p. 104.

Publications:

- 1) EPA. *America's Wetlands: Our Vital Link Between Land and Water*. (Available from the Hotline)
- 2) *National Wetlands Newsletter*, Focus Issue on Hydrology. Vol. 9, No. 2.

Wetlands Valuation and Assessment

Many scientists and computer modellers today are working to quantify the values and functions of wetlands. These assessments can be used in a variety of policy settings, including determining appropriate mitigation for damage to wetlands. Valuation techniques are becoming more sophisticated, however, it is important to note that the natural diversity of wetlands makes them impossible to value exactly or categorize simply. Two common wetland valuation models are the Wetland Evaluation Technique (WET II) developed by the Federal Highway Administration, and the Habitat Evaluation Procedure (HEP) developed by the Fish and Wildlife Service. The following description of WET II gives an idea of how these techniques work.

The Wetland Evaluation Technique

One example of a computer model for wetland valuation

is the Wetland Evaluation Technique (known as WET II). WET II brings together a wealth of scientific information from field work and journal articles and provides a valuable data base on wetlands. WET II can be accessed through a personal computer and has been used around the country by regulatory agencies and land managers to prioritize wetlands for acquisition, to review applications for wetland alteration, and to rank wetlands under EPA's advanced identification program. The model is intended for those in government who must evaluate wetland functions without regular access to a team of specialists. The authors of WET II have stated that the model is not meant for use in setting general policy, and recommend comparing the results of WET II with another model if possible before using it for any decisions.

Contacts:

- 1) EPA Regional Wetlands Contact, see Appendix A. Appendix B.
- 2) Army Corps of Engineers District Office, see

Related Topics:

- 1) Mitigation, see p. 32.
- 2) Wetlands Values and Functions, overview, p. 101.

Publications:

- 1) Adamus, Paul R., and Ellis J. Clairain, Jr. *Wetland Evaluation Techniques Released in National Wetlands Newsletter* Vol. 10, No. 4 (July/August, 1988): 2-3.
- 2) Kraus, Mark L. *The Unsung Virtues of an Urban Wetland in National Wetlands Newsletter* Vol. 13, No. 1 (January/February, 1991): 8-9.
- 3) Scodari, Paul F. *Wetlands Protection: The Role of Economics* (Washington, DC): Environmental Law Institute, 1990. 89pp.

North American Wetlands Conservation Act

Goal of Act

The North American Wetlands Conservation Act of 1989 encourages partnerships among public agencies and other interests to protect, restore, enhance, and manage wetlands and other wildlife habitats. The Act also seeks to increase protection and restoration of wetlands and birds under the North American Waterfowl Management Plan, and authorizes Congress to appropriate up to \$15 million for the Plan's implementation.

Programs and Reports Created by the Act

Through wetlands conservation projects in the United States, Canada, and Mexico, the Act provides for the purchase of real property interests in land or waters; the restoration, management, or enhancement of wetlands and other wildlife habitats; technical assistance to conserve and manage wetlands in Mexico; and studies on the sustainable use of wetland resources for projects in Mexico. The Act also mandates the production of various government reports on changes in the total acreage wetland habitat and in the numbers of migratory birds. The U.S. Fish and Wildlife Service must produce estimates of the total acre-

age of wetlands in each state for both the 1780s and the 1980s, as well as an estimate of the percentage of wetlands lost in each state during that two-century period.

North American Conservation Council

The nine-member council, appointed by the Secretary of the Interior in spring, 1990, to evaluate wetlands projects and assign priorities for their funding and acquisition, includes:

Peter Bontadelli, director of the California Department of Fish and Game; Gary Myers, executive director of the Tennessee Wildlife Resources Agency; Matthew B. Connolly, Jr., executive vice-president of Ducks Unlimited; W. Alan Wentz, undersecretary of the Kansas Department of Wildlife and Parks; John C. Sawhill, president of The Nature Conservancy; James A. Timmerman, Jr., executive director of the South Carolina Wildlife and Marine Resources Department; William W. Howard, Jr., executive vice-president and chief operating officer of the National Wildlife Federation; John F. Turner, director of the Fish and Wildlife Service; and Charles H. Collins, executive director of the National Fish and Wildlife Foundation.

Notes:

Contacts:

1) U.S. Fish and Wildlife Service, Branch of Federal Activities, David A. Tilton or Frank DeLuise; (202) 358-2183

2) U.S. House of Representatives Document Room, H-226, U.S. Capitol, Washington, DC 20510

Related Topics:

- 1) Wetland Loss Rates; p. 96, 97, 98.
- 2) Fish and Wildlife Service Overview, p. 72

3) North American Waterfowl Management Plan, p. 83

Publications:

- 1) North American Wetlands Conservation Act, Pub.L.No. 101-233 (Senate Bill 804)
- 2) U.S. Department of the Interior, Fish and Wildlife Service (1990). *Wetlands: Meeting the President's Challenge—Wetlands Action Plan 1990*
- 3) U.S. Department of the Interior (1986). *North American Waterfowl Management Plan*
- 4) U.S. Department of the Interior, Fish and Wildlife

Service (1990). *North American Waterfowl Management Plan: Progress Report—A New Beginning*

- 5) U.S. Department of the Interior, Fish and Wildlife Service (1990). *Wetlands Losses in the United States: 1780s to 1980s*

Coastal Barrier Improvement Act of 1990

Land Protection Measures in the Act

The Coastal Barrier Improvement Act of 1990 more than doubles the area protected by the Coastal Barrier Resources System by adding almost 800,000 acres of undeveloped barrier islands and associated wetlands. The system was originally set up by the Coastal Barrier Resources Act of 1982 to protect coastal barriers by prohibiting the use of federal subsidies—such as flood insurance, disaster relief, and community block and water treatment plants—for development on undeveloped barrier islands. The 1990 Act includes, for the first time, almost 30,000 acres along the shores of the Great Lakes, 65,000 acres in the Florida Keys, 20,000 acres in Puerto Rico, and 3700 acres in the Virgin Islands. Hundreds of thousands of acres of wetlands and secondary coastal barriers along the Atlantic and Gulf coasts will also be added to the system. The Act authorizes \$1 million annually for the next four years to implement

the provisions of the 1982 Act and \$2 million over the next two years to carry out the new provisions.

Studies Required by the Act

The Act requires the Department of the Interior to initiate a study of the Pacific coast for potential areas to add to the reserve system, to map all of these areas, and to recommend to Congress the areas that do qualify and that the governors of these states and territories consider appropriate for inclusion within the system. Another provision of the new Act requires the Resolution Trust Corporation and the Federal Deposit Insurance Corporation to issue an annual inventory of all failed savings and loan and bank properties that have acquired 50 or more acres adjacent or contiguous to otherwise protected areas so that Congress and nonprofit organizations can have a 180 days to consider purchasing these properties for protection.

Notes:

Contacts:

- 1) Frank McGilvrey, Fish and Wildlife Service (DOI), (703) 358-2201.
- 2) Elise Jones, National Wildlife Federation; (202) 797-6800

- 3) Congressman Gerry Studds' (D-MA) office; (202) 225-3111
- 4) Beth Milleman, Coastal Alliance, (202) 265-5518.

Related Topics:

- 1) Erosion Control, p.102.

Publications:

- 1) 1982 *Coastal Barrier Resources Act*, Pub. L. No. 97-348
- 2) *Coastal Barrier Improvement Act of 1990*, Pub. L. No. 101-591
- 3) National Research Council Committee on Coastal

Erosion Zone Management (1990). *Managing Coastal Erosion*.

- 4) National Wildlife Federation (1990). Summary of the Coastal Barrier Improvement Act of 1990

Water Resources Development Act of 1990

(H.R. 5314)

Provisions of the Act

The Water Resources Development Act authorizes \$2.3 billion for 26 new Army Corps of Engineers water projects. It requires the Corps to develop a wetlands action plan to achieve an interim goal of no overall net loss of wetlands

and a long-term goal of wetlands gain in quality and quantity. The Act specifically requires the Corps to achieve no net loss of wetlands at all new water projects and to improve the quality of wetlands at existing projects.

Notes:

Contacts:

- 1) Senate Document Room, B-04-Hart Senate Office Building, Washington, DC 20510 (request Senate Bill 2740)
- 2) Senate Committee on Environment and Public Works; (202) 224-6176

- 3) House Committee on Interior and Insular Affairs; (202) 225-2761
- 4) Corps District contact (Appendix B)

Related Topics:

- 1) Army Corps of Engineers Wetland Research, p. 69
- 2) Energy and Water Fiscal Year 1991 Appropriations Act, p.117.
- 3) Mitigation, p. 32.

Publications:

- 1) Water Resources Development Act of 1990, Pub. L. No. 101-640
- 2) *National Wetlands Newsletter*, January/February 1991, p.15.

Energy and Water Fiscal Year 1991 Appropriations Act

The Energy and Water Appropriations Act will provide \$3.3 billion for the Army Corps of Engineers' projects and operations in fiscal year 1991. Many of these projects include provisions for wetlands restoration, preservation, and a no net loss objective. This level of funding represents

an almost 4-percent increase over current appropriations levels. The Act will fund new and ongoing Corps water projects, the largest of which is a \$93 million appropriation for continued work on the Red River Waterway between the Mississippi River and Shreveport, Louisiana.

Notes:

Contacts:

- 1) House Document Room, H-226, U.S. Capitol, Washington, DC 20515 (request H.R. 5019)
- 2) Senate Committee on Appropriations; (202) 224-3471

- 3) House Committee on Appropriations; (202) 225-2771
- 4) U.S. Army Corps of Engineers District Office (Appendix B)

Related Topics:

- 1) U.S. Army Corps of Engineers Wetlands Research, p. 69.
- 2) Water Resources Development Act of 1990, p. 116

Publications:

- 1) Energy and Water Fiscal Year 1991 Appropriations Act, Pub. L. No. 101-514
- 2) *National Wetlands Newsletter*, January/February 1991, p. 16, for summary of 1990 wetlands legislation

Aquatic Nuisance Prevention and Control Act of 1990

Wetlands-Related Provisions

This Act retains the major provisions of the Louisiana Coastal Wetlands Bill, which authorizes spending for wetlands restoration projects, particularly in the state of Louisiana. The Act establishes a task force and planning process for protecting and restoring coastal wetlands in Louisiana. It also contains a related provision that creates a coastal wetlands restoration cost-sharing program open to all coastal states: states that set aside funds for acquiring coastal wetlands and other natural areas and design resto-

ration projects consistent with the National Wetlands Priority Conservation Plan will receive higher priority under the Act for federal cost-sharing dollars. The wetlands provisions will be funded through a gasoline tax on small engines, such as lawn mowers and chain saws, which is projected to generate annual revenues of \$45-80 million. Signed into law by the President in November 1990, this Act also contains provisions from the Zebra Mussel Bill and the Great Lakes Fish and Wildlife Restoration Act.

Notes:

Contacts:

- | | |
|---|--|
| 1) House Document Room, H-226, U.S. Capitol, Washington, DC 20515 (request H.R. 5390) | 4) Senator John Breaux's (D-LA) office; (202) 224-4623 |
| 2) Senate Committee on Environment and Public Works; (202) 224-6176 | 5) Louisiana State Resource Agency (Appendix F) |
| 3) House Committee on Merchant Marine and Fisheries; (202) 225-4047 | |

Related Topics:

Publications:

- | | |
|---|---|
| 1) Aquatic Nuisance Prevention and Control Act of 1990, Pub. L. No. 101-646 | 1991, p. 17, for summary of 1990 wetlands legislation.. |
| 2) <i>National Wetlands Newsletter</i> , January/February | 3) <i>Coastwise</i> . Paul Kemp, Ed. |

Wetlands-Related Bills Currently Pending in Congress

Wetlands Protection and Regulatory Reform Act of 1991

Introduced by Representative John Paul Hammerschmidt (R-Arkansas) as House Resolution 404, this comprehensive bill would amend the Clean Water Act to "establish a no overall net loss policy for wetlands in the United States, to provide for differential levels of protection for wetlands based on their acreage, function, and value, and to reform procedures for issuance of permits for discharges of dredged or fill materials into navigable waters."

Wetlands No Net Loss Act of 1991

Introduced by Representative Charles Bennett (D-Florida) as House Resolution 251, this bill seeks to promote the conservation and enhancement of wetlands and to prevent

wetland losses by establishing several new federal wetlands programs, including a Wetlands Preservation Trust and tax incentives for charitable donations of wetlands.

The Comprehensive Wetlands Conservation Management Act of 1991

Sponsored by Representative Jimmy Hayes (D-Louisiana), this bill seeks to amend Section 404 of the Clean Water Act.

Private Property Rights Act of 1991

Sponsored by Senator Steven Symms (R-Idaho) as Senate Bill 50, this bill would require the U.S. Attorney General to review all federal activities to determine whether they constitute a taking of private property.

Notes:

Contacts:

- 1) House Document Room, H-226, U.S. Capitol, Washington, DC 20515
- 2) Representative Charles Bennett's (D-FL) office; (202) 225-2501

- 3) Representative John Paul Hammerschmidt's (R-AK) office; (202) 225-4301
- 4) Rep. Jimmy Hayes' (D-LA) office; (202) 225-2031

Related Topics:

National Wetlands Policy Forum, p. 84.

Publications:

- 1) *Wetlands No Net Loss Act of 1991*, House Resolution 251.
- 2) *Wetlands Protection and Regulatory Reform Act of 1991*, House Resolution 404.

- 3) *The Comprehensive Wetlands Conservation Management Act of 1991*, House Resolution
- 4) *Private Property Rights Act of 1991*, Senate Bill 50.

State and Local Multiobjective River Corridor Assistance Act of 1989.

Bill overview

Introduced by Congressman McDade in 1989 as House Resolution 4250, this bill seeks to amend the Outdoor Recreation Act of 1963 to provide for multiobjective river corridor planning and assistance. First, the bill would direct the President to establish an interagency Multiobjective River Corridor Council, composed of the secretaries or chief executors of nine of the federal agencies most involved in riverine environmental management. The Council would be charged with making recommendations for the improvement of multiobjective river management at the federal, state, and local levels; developing training; preparing a directory and referral service for assistance, and other duties. Second, the bill would authorize the

provision of matching funds and technical assistance to state, local, and regional governments and to private non-profit organizations to assist in developing multiobjective plans for rivers and riparian lands. Finally, the bill would direct each of the Council members, and all recipients of assistance, to consider carefully the rights and concerns of private landowners.

Bill Status

While Congress defeated the bill in October 1990, sponsors plan to reintroduce a similar bill into the current 1991 session of Congress.

Notes:

Contacts:

1) Rep. Joseph McDade (R-PA) staff, (202) 225-3731.

Related Topics:

Pending 1991 Wetlands Legislation summary, p. 119.

Publications:

1) *State and Local Multiobjective River Corridor Assistance Act of 1989*. McDade (R-PA).

Takings

Overview

The Fifth Amendment to the U.S. Constitution prohibits the federal government from "taking" private property without just compensation. A takings claim may arise where the federal government physically invades private property or where federal regulations affect the use of that property.

In analyzing regulatory taking claims, the approach of the federal courts has not been based on any set formula. Instead, the courts examine the particular facts of each case to determine whether the regulation substantially advances legitimate state interests, and whether the landowner was denied all economically viable use of their land. Another

factor that the courts have considered is whether the landowner has a reasonable expectation of a property right in the land issue, for example, whether the land was purchased after the 1972 enactment of the Clean Water Act.

In March 1988, Executive Order 12630 on takings was issued. Its purpose is to ensure that federal agencies and departments assess the takings implications of proposed policies and actions on property interests protected by the Fifth Amendment. It should be noted that the Executive Order is intended only to improve the internal management of federal agencies and departments and is not intended to provide a basis for suing the federal government.

Notes:

Contacts:

- 1) EPA Office of General Council; (202) 382-2090, for policy questions.
- 2) Sen. Steven Symms' (R-ID) office; (202) 224-6142,

for information on Senate Bill 50, Private Property Rights Act of 1991.

Related Topics:

- 1) Current pending wetlands legislation, p.119.

Publications:

- 1) *Private Property Rights Act of 1991*, S. 50.
- 2) *Wetlands: Mitigating and Regulating Development*

Impacts, David Salveson, The Urban Land Institute, 1990.

U.S. Environmental Protection Agency

REGION I

Advance Planning/Planning Outreach—Region I: Cathy Manwaring	(617)565-4429
Enforcement Coordinator—Region I: Matt Schweisberg	(617)565-4421
Public Outreach—Region I: Stafford Madison	(617)565-4868
State Issues—Massachusetts: Virginia Laszewski	(617)565-2987
State Issues—New Hampshire/Vermont: Mark Kern	(617)565-4426
State Issues—Rhode Island: Peter Holmes	(617)565-4433
State Issues (Enforcement)—Maine, Region I: Kyla Bennett	(617)565-4436
State Issues (Science/Tech Transfer, Highways)—Connecticut: Greg Hellyer	(617)565-4427

REGION II

Contaminants/Superfund—NY, NJ, PR, VI: Mario Paula	(212)264-5170
Enforcement/Agricultural Issues—New York: Karen Sullivan	(212)264-5170
Enforcement/Superfund—New York: John Cantilli	(212)264-5170
Marine & Wetlands Prot. Br.—Mario Del Vicario, Chief	(212)264-5170
SAMPs, ADIDs—New Jersey (Hackensack, Meadowlands): Kathleen Drake	(212)264-5170
SAMPs, ADIDs—New Jersey (Hackensack, Meadowlands): Mary Anne Thiesing	(212)264-5170
State Programs/Public Outreach—New Jersey/NY Harbor: Barbara Spinweber	(212)264-5170
Wetlands Research—New Jersey: Bob Montgomerie	(212)264-5170
Wetlands Research—NY/Long Island: Audrey Moore	(212)264-5170
Wetlands—Daniel Montella, Section Chief	(212)264-5170

REGION III

Enforcement—Maryland/Delaware Watershed: Laurie Richardson	(215)597-1168
---	----------------------

Enforcement—VA/PA/WV/DE: Jeff Lapp	(215)597-3642
Permits/ADID—Pennsylvania: Laury Zicari	(215)597-2940
Permits/Aerial Photo ID/Superfund/ADID—Maryland: Peter Stokely	(215)597-3642
Permits/Dredging/Water Supply—Virginia: Regina Poeske	(215)597-2940
Permits/Mitigation/Grants—WV/DE: John Forren	(215)597-3361
Permits/Plant Ecologist/Transportation—Virginia: Art Spingarn	(215)597-3360
Policy—Regional: Barbara D’Angelo	(215)597-9301
Wetlands Delineation Expert/Regional Wetlands Expert—Regional: Charles Rhodes	(215)597-9922

REGION IV

Permitting & Enforcement—Alabama: Ann Inderbitzen	(404)347-2126
Permitting & Enforcement—Florida: Jim Couch	(404)347-2126
Permitting & Enforcement—Florida: Bill Kruczynski	(904)934-9200
Permitting & Enforcement—Florida: Mike Wylie	(404)347-2126
Permitting & Enforcement—Georgia: Laura Mazanti	(404)347-2126
Permitting & Enforcement—Kentucky: Bill Ainslie	(404)347-2126
Permitting & Enforcement—Mississippi: Mike Wylie	(404)347-2126
Permitting & Enforcement—North Carolina: Lee Pelej	(404)347-2126
Permitting & Enforcement—South Carolina: Steve Chapin	(404)347-2126
Permitting & Enforcement—Tennessee: Laura Mazanti	(404)347-2126
Planning & Public Outreach—All: Gail Vanderhoogt	(404)347-2126
Regulation & Public Outreach—All: Tom Welborn	(404)347-2126

REGION V

All—IL/IN/MI/MN/OH/WI: Doug Ehorn, Supervisor	(312)353-2308
All—Minnesota: Ted Rockwell	(612)297-5288

Enforcement—IL/WI/MI: Dave Schulenberg	(312)886-6680
Enforcement—OH/IN: Greg Carlson	(312)353-2308
Permits—Illinois: Janice Cheng	(312)353-6424
Permits/Planning—Indiana: Sue Elston	(312)886-6115
Permits/Planning—Michigan: Carolyn Bury	(312)886-1765
Permits/Planning—Ohio: Lynn Rothman	(312)353-1613
Permits/Planning—Wisconsin: Cathy Garra	(312)886-0241
Planning/Studies/Training—All: Tom Glatzel	(312)886-6678
Superfund/Data Mgmt—All: Wayne Gorski	(312)886-0140

REGION VI

404 Enforcement—All: Tom Nystrom	(214)655-2263
Ocean Dumping—LA/TX: Darlene Coulson	(214)655-2260
Wetland Initiatives—LA: Norm Thomas	(214)655-2260
Wetlands Regulation—All: Norm Sears	(214)655-2263
Wetlands Science—All: Bill Kirchner	(214)655-2263

REGION VII

Wetlands Protection—Diane Hershberger, Chief	(913)551-7573
Wetlands Protection—Iowa : Bob Barber, Coordinator	(913)551-7297
Wetlands Protection—Kansas: Gerry Shimek, Coordinator	(913)551-7540
Wetlands Protection—Missouri: Kathy Mulder, Coordinator	(913)551-7542
Wetlands Protection—Nebraska: Tom Taylor, Coordinator	(913)551-7226

SECTION VIII

Enforcement—All: John Brink	(303)293-1547
------------------------------------	----------------------

Enforcement/Policy—Colorado: Brad Miller	(303)293-1583
NEPA/404/Water Projects—All: Dave Ruiter	(303)293-1581
Permit Review/Enforcement—Montana: Steve Potts	(406)444-5486
Permit Review/Enforcement—South Dakota/Utah: Bob Mairley	(303)293-1582
Permit Review/Enforcement—Wyoming/Omaha District in Colorado: Vern Helbig	(303)293-1585
Permit Review/230.80/NEPA—Colorado: Sarah Fowler	(303)293-1575
Permit Review/230.80/Enforcement—Montana/North Dakota: John Peters	(303)293-1579
Public Outreach—All: Paul McIver	(303)293-1552
Wetlands—All: Mary Alice Reedy, Section Secretary	(303)293-1258
Wetlands—All: Gene R. Reetz, Section Chief	(303)293-1568

REGION IX

Central Coast California/Nevada—Harriet Hill	(415)744-1972
404 Dredge Material Disposal/Coastal Southern California—Brian Ross	(415)744-1982
Inland Southern California/Arizona—Mary Butterwick	(415)744-1976
North Coast/Central and Northeastern California—Nancy Dubbs	(415)744-1969
Permits and Planning Team—Clyde Morris, Team Leader	(415)744-1974
Regional Wetlands Coordinator—Philip Oshida, Chief	(415)744-1971
Regional Wetlands Technical Specialist/Policy & Science—Tom Yocom	(415)744-1975
Wetlands Assistant (AARP)—May Smith	(415)744-1956
Wetlands Enforcement—Steven John	(415)744-1973
Wetlands—Donna Pinkard, Branch Secretary	(415)744-2300
Wetlands, Oceans and Estuaries Branch—Loretta Barsamian, Chief	(415)744-1953
Wetlands Specialist/Science & Policy—Robert Leidy	(415)744-1070

Region X

Advance Identification/Research/Outreach/Delineation—Fred Weinmann	(206)553-1414
Dredging/Sediment Quality—John Malek	(206)553-1286
Dredging/Sediment Quality—Justine Smith	(206)553-4974
Enforcement—Fletcher Shires	(206)553-8293
Enforcement—Gary Voerman	(206)553-8513
Washington 404 Permit Review/Stormwater—Linda Storm	(206)553-2578
Water Resources Assessment—William M. Riley, Chief	(206)553-1412

ALASKA OPERATIONS OFFICE (907)271-5083

Southeast Alaska—Susan Cantor

Enforcement—Heather Dean

Central and Southwest Alaska—Phil North

North Slope—N/A

IDAHO OPERATIONS OFFICE (208)334-1450

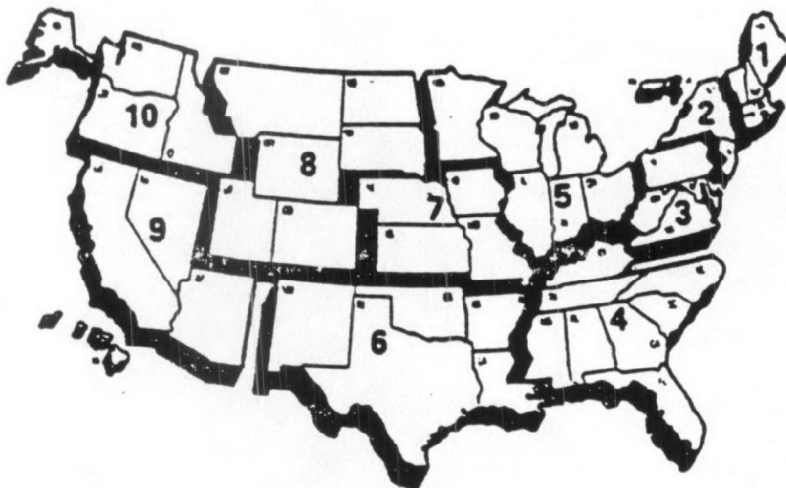
Idaho Permit Review/Enforcement/FERC Review/Wetland & NPS Coordination/Outreach—John Olson

OREGON OPERATIONS OFFICE (503)221-3250

Oregon Permit Reviews/ADID Outreach/Enforcement—Tom Robertson, Ralph Rogers



OFFICE OF WETLANDS PROTECTION
PROGRAM OFFICE CONTACTS
IN REGIONS



Region I--CN. MA. ME. NH. RI. VT

Mr. Doug Thompson, Chief
Wetlands Protection Section (WPP-1900)
Water Management Division
US EPA Region I
John F. Kennedy Federal Building
Boston, MA 02203
617-565-4421

Region II--NJ. NY

Mr. Dan Montello, Chief
Wetlands Protection Section (2WM-MWP)
Water Management Division
US EPA Region II
26 Federal Plaza
New York, NY 10278
212-264-5170

Region III--DE. MD. PA. VA. WV

Ms. Barbara D'Angelo, Chief
Marine and Wetlands Policy Section (JES42)
Environmental Services Division
US EPA Region III
841 Chestnut Street
Philadelphia, PA 19107
215-597-9301

Region IV--AL. FL. GA. KY. MS. NC. SC. TN

Ms. Gail Vanderhoogt, Chief
Wetlands Planning Unit
Water Quality Management Branch (4WM-MEB)
US EPA Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365
404-347-2126

Region V--IN. IL. MI. MN. OH. WI

Mr. Doug Ehorn, Deputy Chief
Water Quality Branch (5W-TUB-s)
Water Management Division
US EPA Region V
230 S. Dearborn Street
Chicago, IL 60604
312-353-2079

Region VI--AR. LA. NM. OK. TX

Mr. Norm Thomas
Technical Assistance Section (6E-FT)
Environmental Services Division
US EPA Region VI
1445 Ross Avenue
Dallas, TX 75202
214-655-2263

Region VII--IO. KS. MO. NE

Ms. Diane Hershberger, Chief
404 Section
Environmental Review Branch (ENRV-404)
US EPA Region VII
726 Minnesota Avenue
Kansas City, KS 66101
913-236-2823

Region VIII--CO. MT. ND. SD. UT. WY

Mr. Gene Reetz, Chief
Water Quality Requirements Section (8WM-SP)
US EPA Region VIII
One Denver Place
999 18th Street
Denver, CO 80202
303-293-1568

Region IX--AZ. CA. HI. NV

Mr. Phil Oshida, Chief
Wetlands Section (W-7-1)
US EPA Region IX
1235 Mission Street
San Francisco, CA 94103
415-744-1971

Region X--AK. ID. OR. WA

Mr. Bill Riley, Chief
Water Resources Assessment Section (WD-138)
US EPA Region X
1200 6th Avenue
Seattle, WA 98101
206-422-1412

MAJOR AREAS OF RESPONSIBILITY

(1) = primary contact
(2) = secondary contact

0 Marjorie Wesley 245-3905

- Public Information and Dissemination
- Wetlands Educational Outreach

- o Cory Giacobbe 382-5907
 - International Coordination
 - Local Outreach
 - Fish and Wildlife Service Liaison
 - North American Waterfowl Management Plan,
 - Migratory Bird Conservation Commission
 - Corps/EPA regulatory data base
 - Audubon's America
- o Judy Johnson 245-3907
 - Special Projects including:
 - Hotline
 - American Wetlands Month
 - Audubon's America

Strategies and Initiatives Team

- o Sherri Fields 245-3932
 - State Wetland Conservation Plan Development
 - NonPoint Source & Wetlands
 - Domestic Policy Council staffing
 - Superfund / RCRA
 - Wastewater Treatment & Wetlands
- o Doreen Robb 245-3906
 - Wetland Water Quality Standards
 - Wetland Biological Criteria & Indicators
 - ORD Liaison on Water Quality
 - 305b Reporting / Monitoring
 - Coastal Louisiana / Great Lakes (support)
 - Superfund / RCRA (technical support)
- o Frances Eargle 245-3954
 - Stormwater & Wetlands
 - Coastal Liaison
 - Ecosystem Initiatives lead
 - Coastal Louisiana
 - Great Lakes Initiative
 - Legislative lead (non-404)
 - Strategic plans OWP
 - 401 Certification & Wetlands (move into lead over time)
 - State Wetland Conservation Plan (support if needed)

- o Martha Stout 475-6745

Alternatives to Impoundments / Water Conservation
Wetland Flora & Fauna lists
Support for Regional Technical Training
Geographic Information Systems
Citizens Monitoring Methods .

- o Dianne Fish: Team Leader 382-7071

CWA Reauthorization Coordinator
DPC Support
State Wetland Conservation Plan Development
Co-chair of NPS / CZMA workgroup
401 Certification (phasing over to Frances)

REGULATORY ACTIVITIES DIVISION

- o (1) Will Garvey 245-3900
- o (2) Sandy Seig-Ross 245-3914
- o (2) Joe DaVia 245-3902

- Elevated Cases
- Section 404(c) and (q)

- o (1) Hazel Groman 475-8798
- o (2) John Goodin 245-3910

- Enforcement
 - in general
 - specific cases

- o (1) John Goodin 245-3910
- o (2) Greg Peck 475-8794

- Advance Identification
- Dredged Material Disposal
(e.g., contaminated sediments)

- o (1) Cliff Rader 382-5087
- o (2) Greg Peck 475-8794

- 404(b)(1) Guidelines
- Mitigation Issues (e.g., sequencing Memorandum of Agreement)
- No Net Loss (related to 404)

- o (1) Tom Kelsch 475-8795
- o (2) Cliff Rader 382 5087
 - Categorization of Wetlands
 - Mitigation Banking
- o (1) Cliff Rader 382 5087
- o (2) Mike Fritz 245-3913
 - 404(f) exemptions
- o (1) Mike Fritz 245-3913
- o (2) Greg Peck 475-8794
 - Agricultural Wetlands Regulatory Policy
- o (1) Menchu Martinez 382-5299
- o (2) Cliff Rader 382-5087
 - Clean Water Act Reauthorization
 - Nationwide Permits (general permits)
- o (1) Hazel Groman 475-8798
- o (2) Greg Peck 475-8794
 - Takings
- o Menchu Martinez 382-5299
 - 404 Legislation
 - Liaison to Department of Transportation Agencies
 - Liaison to Strategies and State Programs Division on:
 - state 404 programs
 - outreach
 - Domestic Policy Council

U.S. Army Corps of Engineers

LOWER MISSISSIPPI VALLEY DIVISION:

Leo Max Reed (Chief); Susan Harrison (Asst.) 601-634-5818/21
Memphis: Larry D. Watson (Chief) 901-544-3471
New Orleans: Ronald J. Ventola (Chief); P. Serio (Asst.); B. Baehr (Asst.) 504-862-2255
St. Louis: Fred Niemann, Jr. (Asst.) 314-331-8575
Vicksburg: E. Galen McGregor (Chief); K. Mosley (Asst.); E. Guynes (Asst.) 601-631-5276/89

MISSOURI RIVER DIVISION:

Mores V. Bergman (Chief) 402-221-7290
Kansas City: Mel Jewett (Chief); L. Keim (Asst.); J. Hughes (Asst.) 816-426-3645
Omaha: John Morton (Chief); R. Rocheford (Asst.); E. Strine (Asst.) 402-221-4133

NEW ENGLAND DIVISION:

William F. Lawless (Chief); Christine Godfrey (Asst.) 617-647-8057

NORTH ATLANTIC DIVISION:

Lenny Kotkiewicz (Chief); John Smutz (Asst.) 212-264-7535
Baltimore: Don Roeske (Chief); Tom Filip (Asst.) 301-962-3670
New York: Joseph Seebode (Chief); Richard Tomer (Asst.) 212-264-3996
Norfolk: William H. Poore, Jr. (Chief); Bruce F. Williams (Asst.) 804-441-7068
Philadelphia: Frank Cianfrani (Chief); Richard A. Hassel (Asst.) 215-597-2812

NORTH CENTRAL DIVISION:

Mitchell A. Isoe (Chief) 312-353-6379
Buffalo: Paul G. Leuchner (Chief); Alan Sisselman (Asst.) 716-879-4313
Chicago: John Rogner (Chief); Peg McBrien (Asst.) 312-353-6428
Detroit: Gary R. Mannesto (Chief); W. Davy, Jr. (Asst.); R. Tucker (Asst.) 313-226-2432
Rock Island: Steven J. Vander Horn (Chief); D. Baugh (Asst.); D. Jones (Asst.) 309-788-6361
St. Paul: Ben Wopat (Chief); Char Hauger (Asst.) 612-220-0375

NORTH PACIFIC DIVISION:

John Zammit (Chief) 503-326-3780
Alaska: Robert K. Oja (Chief) 907-753-2712
Portland: Burt Paynter (Chief); Byron Blankenship (Asst.) 503-326-6995
Seattle: Warren Baxter (Chief); Steve Wright (Asst.) 206-764-3495
Walla Walla: Dean Hilliard (Chief); Brad Daly (Asst.) 509-522-6720/24

OHIO RIVER DIVISION:

Roger D. Graham (Chief); Rodney Woods (Asst.) 513-684-3972
Huntington: Mike Gheen (Chief); Rick Buckley (Asst.) 304-529-5487
Louisville: Don Purvis (Chief); D.L. Evans (Asst.) 502-582-6461
Nashville: Joseph R. Castleman (Chief) 615-736-5181
Pittsburgh: Eugene J. Homyak (Chief); E. Raymond Beringer (Asst.) 412-644-6872

PACIFIC OCEAN DIVISION:

Stanley T. Arakaki (Chief); Warren Kanai (Asst.) 808-438-9258

SOUTH ATLANTIC DIVISION:

James M. Kelly, Jr. (Chief); Ms. Pat Bevel (Asst.) 404-331-2778
Charleston: Clarence H. Ham (Chief); Robert H. Riggs (Asst.) 803-724-4330
Jacksonville: John Hall (Chief); Bertil A. Heimer (Asst.) 904-791-1666
Mobile: Ron Krizman (Chief); Davis L. Findley (Asst.) 205-690-2658
Savannah: Steven Osvald (Chief); Kelly Hendricks (Asst.) 912-944-5347
Wilmington: G. Wayne Wright (Chief); Cliff Winefordner (Asst.) 919-251-4629

SOUTH PACIFIC DIVISION:

Theodore E. Durst (Chief) 415-705-1443
Los Angeles: Charles M. Holt (Chief) 213-894-5606
Sacramento: Art Champ (Chief) 916-551-2275
San Francisco: Calvin C. Fong (Chief); Skid Hall (Asst.) 415-744-3036

SOUTHWESTERN DIVISION:

Vacant (Chief); Larry Buck (Asst.) 214-767-2432/6
Allbuquerque: Andrew J. Rosenau (Chief) 505-766-2776
Fort Worth: Wayne A. Lea (Chief); S. Swihart (Asst.); J. Townsend (Asst.) 817-334-2681
Galveston: Marcos DeLaRosa (Chief); Dolan Dunn (Asst.) 409-766-3930

Little Rock: Louie C. Cockmon, Jr. (Chief); Benny F. Swafford (Asst.) 501-324-5296
Tulsa: Don Ringeisen (Chief); David Manning (Asst.) 918-581-7261

DIVISIONS AND DISTRICTS FOR REGULATORY ACTIVITIES



- DIVISION AND DISTRICT HEADQUARTERS
- DIVISION HEADQUARTERS
- ▲ DISTRICT HEADQUARTERS
- STATE BOUNDARIES
- DISTRICT BOUNDARIES



owa the eastern bank of the Missouri River is regulated by the Omaha office.

U.S. Fish and Wildlife Service

RWC = Regional Wetland Coordinator

SFBC = State Farm Bill Coordinator

FBC = Farm Bill Coordinator

Asst. = Assistant

Alabama

Larry E. Goldman, SFBC, Daphne East Office Plaza, Suite A, 2001

Highway 98, P.O. Box Drawer 1190, Daphne, Alabama 36526 205-690-2181

Region 4: John Hefner, RWC; Charlie Storrs, Asst; Ronnie Haynes, FBC,

Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Alaska

Erv MacIntosh, SFBC, 1011 East Tudor Road, Anchorage, Alaska 99503 907-786-3467

Region 7: Jon Hall, RWC; David Dall, Asst.; Erv MacIntosh, FBC;

1011 East Tudor Road, Anchorage, Alaska 99503 907-786-3403/3467

Arizona

Ron McKinstry, SFBC, 3616 West Thomas Road, Suite 6, Phoenix, Arizona 85019 602-261-4720

Region 2: Warren Hagenbuck, RWC; Curtis Carley, Asst.; Warren Hagenbuck, FBC;

500 Gold Ave., S.W., Room 4012, P.O. Box 1036, Albuquerque, New Mexico 87103 505-766-2914

Arkansas

Robert Barkley, SFBC, Thomas Building, Room 235, 900 Clay Street, Vicksburg, Mississippi 39180 601-638-1891

Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;

Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

California, North

Martha B. Naley, SFBC, 2800 Cottage Way, Room E-1803, Sacramento, California 95825 916-978-4613

Region 1: Dennis Peters, RWC; Howard Browers, Asst.; Jana Nelson, FBC;

1002 NE Holladay St., Portland, OR 97232-4181 503-231-6150/6154

California, South

John Hanlin, SFBC, Federal Building, 24000 Avila Road, Laguna, Negual, CA 92677

Region 1: Dennis Peters, RWC; Howard Browers, Asst.; Jana Nelson, FBC;

1002 NE Holladay St., Portland, OR 97232-4181 503-231-6150

Colorado

Adam Misztal, SFBC, 134 Union Boulevard, P.O. Box 25486,

Denver Federal Center, Denver, Colorado 80225 303-236-8148

Region 6: Chuck Elliot, SFBC, Bill Pearson, Asst.; Ralph Fries, FBC;

134 Union Boulevard, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 303-236-8148

Connecticut

Gordon, Beckett, SFBC; 22 Bridge Street, Ralph Hill Marketplace, Concord, New Hampshire 03301 603-225-1411
Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;
One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Delaware

Glenn Kinser, SFBC; 1825B Virginia Street, Annapolis, Maryland 21301 301-269-5448
Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;
One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Florida

David J. Wesley, SFBC; 3100 University Boulevard, South, Jacksonville, Florida 32216 904-791-2580
Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;
Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Georgia

Philip H. Laumeyer, SFBC; Federal Building, Room 334, Brunswick, Georgia 31520 912-265-9336
Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;
Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Hawaii

John Engbring, SFBC; 300 Ala Moana Boulevard, Room 6307,
P.O. Box 50167, Honolulu, Hawaii 96850 808-546-7530
Region 1: Dennis Peters, RWC; Howard Browers, Asst.; Jana Nelson, FBC;
1002 NE Holladay St., Portland, OR 97232-4181 503-231-6150

Idaho

Walt D. Ray, SFBC; 4696 Overland Road, Room 566, Boise, Idaho 83705 208-334-1931
Region 1: Dennis Peters, RWC; Howard Browers, Asst.; Jana Nelson, FBC;
1002 NE Holladay St., Portland, OR 97232-4181 503-231-6150

Illinois

Tom Goutage, SFBC; Route 3, Box 328, Marion, Illinois 62959 618-997-5491
Region 3: Ron Erickson, RWC; John Anderson, Asst.; Rick Shultz, FBC;
Federal Building, Fort Snelling, Twin Cities, MN 55111 612-725-3570/3536

Indiana

Dave Hudak, SFBC; 718 North Walnut Street, Bloomington, Indiana 47401 812-334-4261
Region 3: Ron Erickson, RWC; John Anderson, Asst.; Rick Shultz, FBC;
Federal Building, Fort Snelling, Twin Cities, MN 55111 612-725-3570/3536

Iowa

Rick Nelson, SFBC; 1830 2nd Avenue, Rock Island, Illinois 61201 309-793-5800
Region 3: Ron Erickson, RWC; John Anderson, Asst.; Rick Shultz, FBC;
Federal Building, Fort Snelling, Twin Cities, MN 55111 612-725-3570/3536

Kentucky

Thomas S. Talley, SFBC; P.O. Box 845, Cookeville, Tennessee 38503 615-528-6481

Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;

Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Kansas

Dewey Carter, SFBC; 215 Southwind Place, Manhattan, Kansas 66505 913-539-3474

Region 6: Chuck Elliot, SFBC, Bill Pearson, Asst.; Ralph Fries, FBC;

134 Union Boulevard, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 303-236-8148/8180

Louisiana

David W. Fruge, SFBC; Brandywine II, Suite 102, 825 Kaliste Saloom,

Lafayette, Louisiana 70508 381-234-7478

Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;

Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Maine

Gordon Beckett, SFBC; 22 Bridge Street, Ralph Pill Marketplace,

Concord, New Hampshire 03301 603-225-1411

Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;

One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Maryland

Glen Kinser, SFBC; 1825B Virginia Street, Annapolis, Maryland 21301 301-269-5448

Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;

One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Massachusetts

Gordon Beckett, SFBC; 22 Bridge Street, Ralph Pill Marketplace,

Concord, New Hampshire 03301 603-225-1411

Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;

One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Michigan

Leonard Schumann, SFBC; 310 Menly Miles Building, East Lansing, Michigan 48823 517-337-6713

Region 3: Ron Erickson, RWC; John Anderson, Asst.; Rick Shultz, FBC;

Federal Building, Fort Snalling, Twin Cities, MN 55111 612-725-3570/3536

Minnesota

Eric Nelson, SFBC; Federal Building, Room 23, 7820 St. Germain, St. Cloud, MN 56301 612-253-4682

Region 3: Ron Erickson, RWC; John Anderson, Asst.; Rick Shultz, FBC;

Federal Building, Fort Snalling, Twin Cities, MN 55111 612-725-3570/3536

Mississippi

Robert Barkley, SFBC; Thomas Building, Room 235, 900 Clay Street,

Vicksburg, Mississippi 39180 601-638-1891

Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;

Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Missouri

Jerry Brabander, SFBC; P.O. Box 1506, Columbia, MD 65205 314-875-5374

Region 3: Ron Erickson, RWC; John Anderson, Asst.; Rick Shultz, FBC;

Federal Building, Fort Snelling, Twin Cities, MN 55111 612-725-3570/3536

Montana

Jim Stutzman, SFBC; Bowdoin National Wildlife Refuge, Box J, Malta, Montana 59538 406-654-2863

Region 6: Chuck Elliot, SFBC, Bill Pearson, Asst.; Ralph Fries, FBC;

134 Union Boulevard, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 303-236-8148

Nebraska

Kim Hanson, SFBC; 2604 St. Patrick Street, Suite 7, Grand Island, Nebraska 68803 308-381-5571

Region 6: Chuck Elliot, SFBC, Bill Pearson, Asst.; Ralph Fries, FBC;

134 Union Boulevard, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 303-236-8148

Nevada

Chester Buchanan, SFBC; 4600 Kietzke Lane, Suite C, Reno, Nevada 89502 702-784-5227

Region 1: Dennis Peters, RWC; Howard Browers, Asst.; Jana Nelson, FBC;

1002 NE Holladay St., Portland, OR 97232-4181 503-231-6150/6154

New Hampshire

Gordon Beckett, SFBC; 22 Bridge Street, Ralph Pill Marketplace,

Concord, New Hampshire 03301 603-225-1411

Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;

One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

New York

Len Corin, SFBC; 100 Grange Place, Cortland, New York 13045 607-753-9334

Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;

One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

New Jersey

Clifford Day, SFBC; 705 White Horse Pike, P.O. Box 534, Absecon, New Jersey 08201 609-646-0620

Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;

One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

New Mexico

Chuck Mullins, SFBC; 3530 Pan American Highway, N.E., Suite D, Albuquerque, New Mexico 87107505-803-7877

Region 2: Warren Hagenbuck, RWC; Curtis Carley, Asst.; Warren Hagenbuck, FBC;

500 Gold Ave., S.W., Room 4012, P.O. Box 1036, Albuquerque, New Mexico 87103 505-766-2914/2174

North Carolina

Linda "Mike" Gantt, SFBC; 551-F Pylon Drive, P.O. Box 33726, Raleigh, North Carolina 27636-3726919-856-4520

Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;

Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

North Dakota

Kevin Willis, SFBC; 1500 Capitol Avenue, Bismarck, North Dakota 58501 701-255-4011/4415
Region 6: Chuck Elliot, SFBC; Bill Pearson, Asst.; Ralph Fries, FBC;
134 Union Boulevard, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 303-236-8148

Ohio

Kent Kroonemeyer, SFBC; 6950-H Americana Parkway, Reynoldsburg, Ohio 43068 614-469-6923
Region 3: Ron Erickson, RWC; John Anderson, Asst.; Rick Shultz, FBC;
Federal Building, Fort Snelling, Twin Cities, MN 55111 612-725-3570/3536

Oklahoma

Dan Stinnert, SFBC; 222 South Houston, Suite A, Tulsa, Oklahoma 74127 918-581-7458
Region 2: Warren Hagenbuck, RWC; Curtis Carley, Asst.; Warren Hagenbuck, FBC;
500 Gold Ave., S.W., Room 4012, P.O. Box 1036, Albuquerque, New Mexico 87103 505-766-2914/2174

Oregon

Patrick D. Wright, SFBC; 727 N.E. 27th Avenue, Portland, Oregon 97232 506-231-6179
Region 1: Dennis Peters, RWC; Howard Browers, Asst.; Jana Nelson, FBC;
1002 NE Holladay St., Portland, OR 97232-4181 503-231-6150

Pennsylvania

Charles Kulp, SFBC; 315 South Allan Street, Suite 322, State College, Pennsylvania 16801 814-234-4286
Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;
One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Puerto Rico

Robert Pace, SFBC; P.O. Box 491, Boqueron, Puerto Rico 00622 809-851-7297
Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;
Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Rhode Island

Gordon Beckett, SFBC; 22 Bridge Street, Ralph Pill Marketplace,
Concord, New Hampshire 03301 603-225-1411
Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;
One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

South Dakota

Lonnie Schroeder, SFBC; P.O. Box 1536, Watertown, South Dakota 57201 605-882-3410
Region 6: Chuck Elliot, SFBC; Bill Pearson, Asst.; Ralph Fries, FBC;
134 Union Boulevard, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 303-236-8148

South Carolina

Roger Banks, SFBC; 217 Fort Johnson Road, P.O. Box 12559, Charleston, South Carolina 19412 . . 803-724-4707
Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;
Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Tennessee

Thomas S. Talley, SFBC; P.O. Box 845, Cookeville, Tennessee 38503 615-528-6481
Region 4: John Hefner, RWC; Charlie Storrs, Asst.; Ronnie Haynes, FBC;
Richard B. Russell Federal Bldg., 75 Spring Street, Atlanta, Georgia 30303 404-331-6343

Texas

Mike McMollum, SFBC; Fritz Lanham Building, Room 9A33,
819 Taylor Street, Fort Worth, Texas 76102 817-334-2961
Region 2: Warren Hagenbuck, RWC; Curtis Carley, Asst.; Warren Hagenbuck, FBC;
500 Gold Ave., S.W., Room 4012, P.O. Box 1036,
Albuquerque, New Mexico 87103 505-766-2914/2174

Utah

Adam Misztal, SFBC, 134 Union Boulevard, P.O. Box 25486,
Denver Federal Center, Denver, Colorado 80225 303-236-8148
Region 6: Chuck Elliot, SFBC, Bill Pearson, Asst.; Ralph Fries, FBC; 134 Union Boulevard,
P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 303-236-8148

Vermont

Gordon Beckett, SFBC; 22 Bridge Street, Ralph Pill Marketplace,
Concord, New Hampshire 03301 603-225-1411
Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;
One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Virginia

Karen Mayne, SFBC; Mid-County Center, US Route 17, P.O. Box 480
White Marsh, Virginia 23183 804-693-6694
Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;
One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Washington

John Karbow, SFBC; 2625 Parkmont Lane, S.W., Bldg. 83, Olympia, Washington 98502 206-753-9440
Region 1: Dennis Peters, RWC; Howard Browers, Asst.; Jana Nelson, FBC;
1002 NE Holladay St., Portland, OR 97232-4181 503-231-6150

West Virginia

Chris Clower, SFBC; P.O. Box 1278, Elkins, West Virginia 26241 304-636-6586
Region 5: Ralph Tiner, RWC; Glenn Smith, Asst.; Elizabeth Herland, FBC;
One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158 617-965-5100

Wisconsin

Eldon McLaury, SFBC; 658 South Gammon Road, Suite 201, Madison, Wisconsin 53719 608-264-5469
Region 3: Ron Erickson, RWC; John Anderson, Asst.; Rick Shultz, FBC;
Federal Building, Fort Snelling, Twin Cities, MN 55111 612-725-3570/3536

Wyoming

Adam Misztal, SFBC, 134 Union Boulevard, P.O. Box 25486, Denver Federal Center,
Denver, Colorado 80225 303-236-8148
Region 6: Chuck Elliot, SFBC, Bill Pearson, Asst.; Ralph Fries, FBC;
134 Union Boulevard, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 303-236-8148

U.S.D.A. Soil Conservation Service

State Conservationists

ALABAMA

Ernest V. Todd, 665 Opelika Rd., P.O. Box 311, Auburn, Alabama 36830 205-821-8070

ALASKA

Burton L. Clifford, 201 East 9th, Suite 300, Anchorage, Alaska 99501-3687 907-271-2424

ARIZONA

Donald W. Gohmert, Suite 200, 201 E. Indianola Ave., Phoenix, Arizona 85012 602-640-2247

ARKANSAS

Ronnie D. Murphy, Federal Office Bldg., Room 5404, 700 West Capitol Ave.,
Little Rock, Arkansas 72201 501-378-5445

CALIFORNIA

Pearlie S. Reed, 2121-C Second Street, Davis, California 95616 916-449-2848

COLORADO

Duane L. Johnson, 655 Parfet Street, Room E200C, Lakewood, Colorado 80215-5517 303-236-2886

CONNECTICUT

Judith K. Johnson, 16 Professional Park Rd., Storrs, Connecticut 06268-1299 203-487-4011

DELAWARE

Elesa K. Cottrell, Treadway Towers, Suite 207, 9 East Loockerman Street,
Dover, Delaware 19901-7377 302-678-4160

FLORIDA

Niles T. Glasgow, Federal Bldg., Room 248, 401 S.E. 1st Ave., Gainesville, Florida 32601 904-377-0946

GEORGIA

Hershel R. Read, Federal Bldg., Box 13, 355 East Hancock Ave., Athens, Georgia 30601 404-546-2272

GUAM

Joan Perry, Director Pacific Basin Office, Suite 602, GCIC Bldg., 414 W. Soledad Ave., Agana, Guam
96910 671-472-7490

HAWAII

Warren M. Lee, 300 Ala Moana Blvd., Room 4316, P.O. Box 50004, Honolulu, Hawaii 96850 808-541-2601

IDAHO

Paul H. Calverley, 3244 Elder Street, Room 124, Boise, Idaho 83705208-334-1601

ILLINOIS

John J. Eckes, Springer Federal Bldg., 301 N. Randolph Street, Champaign, Illinois 61820 217-398-5267

INDIANA

Robert L. Eddleman, 6013 Lakeside Blvd., Indianapolis, Indiana 46278 317-290-3200

IOWA

J. Michael Nethery, 693 Federal Bldg., 210 Walnut Street, Des Moines, Iowa 50309 515-284-4261

KANSAS

James N. Habiger, 760 South Broadway, Salina, Kansas 67401 913-823-4565

KENTUCKY

Billy W. Milliken, 333 Waller Ave., Room 305, Lexington, Kentucky 40504 606-233-2749

LOUISIANA

Horace J. Austin, 3737 Government Street, Alexandria, Louisiana 71302 318-473-7751

MAINE

Charles Whitmore, USDA Building, University of Maine, Orono, Maine 04473 207-581-3446

MARYLAND

Jerome J. Hammond (Acting), John Hanson Business Center, 339 Revell Highway, Suite 301,
Annapolis, Maryland 21401 301-757-0861

MASSACHUSETTS

Richard D. Swenson (Acting), 451 West Street, Amherst, Massachusetts 01002 413-256-0441

MICHIGAN

Homer R. Hilner, Room 101, 1405 S. Harrison Road, East Lansing, Michigan 48823-5202 517-337-6702

MINNESOTA

Gary R. Nordstrom, Farm Credit Services Bldg., 375 Jackson Street, Room 600,
St. Paul, Minnesota 55101-1854 612-290-3675

MISSISSIPPI

Louie P. Heard, Federal Bldg., Suite 1321, 100 West Capitol Street, Jackson, Mississippi 39269 . . . 601-965-5205

MISSOURI

Russell C. Mills, 555 Vandiver Drive, Columbia, Missouri 65202 314-875-5214

MONTANA

Richard J. Gooby, Federal Building, Room 443, 10 East Babcock Street, Bozeman, Montana 59715 . 406-587-6813

NEBRASKA

Ron E. Moreland, Federal Bldg., Room 345, 100 Centennial Mall, N., Lincoln, Nebraska 68508-3866

NEVADA

William D. Goddard, 1201 Terminal Way, Room 219, Reno, Nevada 89502 702-784-5863

NEW HAMPSHIRE

David L. Mussulman, Federal Building, Durham, New Hampshire 03824 603-868-7581

NEW JERSEY

Barbara T. Osgood, 1370 Hamilton Street, Somerset, New Jersey 08873 201-246-1662

NEW MEXICO

Ray T. Margo, Jr., 517 Gold Avenue, S.W., Room 3301, Albuquerque, New Mexico 87102 505-766-2173

NEW YORK

Paul A. Dodd, James M. Hanley Fed. Bldg., Room 771, 100 S. Clinton Street, Syracuse, New York 13260 315-423-5521

NORTH CAROLINA

Bobbie Jack Jones, 4405 Bland Road, Suite 205, Raleigh, North Carolina 27609 919-790-2888

NORTH DAKOTA

Ronnie L. Clark, Federal Building, Rosser Avenue & Third St., P.O. Box 1458,
Bismarck, North Dakota 58502 701-250-4421

OHIO

Joseph C. Branco, 200 North High Street, Room 522, Columbus, Ohio 43215 614-469-6962

OKLAHOMA

C. Budd Fountain, USDA Agricultural Center Bldg., Stillwater, Oklahoma 74074 405-624-4360

OREGON

Jack P. Kanalz, Federal Bldg., Room 1640, 1220 S.W. Third Avenue, Portland, Oregon 97204 503-326-2751

PENNSYLVANIA

Richard N. Duncan, One Credit Union Place, Suite 340, Harrisburg, Pennsylvania 17110 717-782-2202

PUERTO RICO

Humberto Hernandez (Director), USDA-SCS, GPO Box 4868, San Juan, Puerto Rico 00936 809-753-4206

RHODE ISLAND

Robert J. Klumpe, 46 Quaker Lane, West Warwick, Rhode Island 02893 401-828-1300

SOUTH CAROLINA

Billy R. Abercrombie, 1835 Assembly Street, Room 950, Strom Thurmond Federal Bldg.,
Columbia, South Carolina 29201 803-765-5681

SOUTH DAKOTA

Ronald E. Hendricks, Federal Building, 200 4th Street, S.W., Huron, South Dakota 57350 605-353-1783

TENNESSEE

Jerry S. Lee, 675 Estes Kefauver, FB-USCH, 801 Broadway, Nashville, Tennessee 37203615-736-5471

TEXAS

Harry W. Oneth, W.R. Poage Federal Bldg., 101 S. Main Street, Temple, Texas 76501-7682 817-774-1214

UTAH

Francis T. Holt, Wallace F. Bennett, Federal Building, Room 4402, 125 So. State Street,
Salt Lake City, Utah 84138 801-524-5050

NATIONAL TECHNICAL CENTER DIRECTORS

VERMONT

John C. Titchner, 69 Union Street, Winooski, Vermont 05404 802-951-6795

VIRGINIA

George C. Norris, Federal Bldg., Room 9201, 400 North 8th Street, Richmond, Virginia 23240 . . . 804-771-2455

WASHINGTON

Lynn A. Brown, West 920 Riverside Avenue, Room 360, Spokane, Washington 99201 509-353-2335

WEST VIRGINIA

Rollin N. Swank, 75 High Street, Room 301, Morgantown, West Virginia 26505 304-291-4151

WISCONSIN

Duane L. Johnson, 6515 Watts Road, Suite 200, Madison, Wisconsin 53719-2726 608-264-5577

WYOMING

Frank S. Dickson, Jr., Federal Office Bldg., 100 East "B" Street, Room 3124, Casper, Wyoming 82601307-261-5201

MIDWEST NTC

August J. Dornbusch, Jr., Federal Bldg., Room 345, 100 Centennial Mall North,
Lincoln, Nebraska 68508-3866 402-437-5346

NORTHEAST NTC

Arthur B. Holland, 160 East 7th Street, Chester, Pennsylvania 19013 215-499-3904

SOUTH NTC

Paul F. Larson, Fort Worth Federal Center, Building 23, Room 60, Felix & Hemphill Streets,
P.O. Box 6567, Fort Worth, Texas 76115 817-334-5253

WEST NTC

Stanley, N. Hobson, Federal Building, Room 248, 511 N.W. Broadway,

Portland, Oregon 97209-3489 503-221-2824

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COMMITTEES

SENATE COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY	(202)224-2035
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HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION	(202)225-4472

State Resource Agencies

ALABAMA: Gary Ellis, Water Quality Division, Montgomery, AL	(205)271-7829
ALASKA: Doug Redburn, Office of Water Quality Management, Juneau, AK	(907)465-2634
ARIZONA: Edward Swanson, Water Quality Management Unit, Phoenix, AZ	(602)392-4044
ARKANSAS: Steve Brown, Water Division, Little Rock, AR	(501)562-7444
CALIFORNIA: Peter R. Douglas, Coastal Commission, San Francisco, CA	(415)543-8555
COLORADO: Patsy Goodman, Habitat Resources, Denver, CO	(303)291-7274
CONNECTICUT: Dennis Cunningham, Natural Resources Committee, Hartford, CT	(203)566-7220
DELAWARE: William F. Moyer, Wetlands Section, Dover, DE	(302)736-4691
FLORIDA: Mark Latch, Water Quality Management Bureau, Tallahassee, FL	(904)488-0130
GEORGIA: David Word, Water Resources Management Branch, Atlanta, GA	(404)656-4807
HAWAII: Richard G. Poirier, Long-Range Plans Branch, Honolulu, HI	(808)548-4609
IDAHO: Susan Martin, Water Quality, Boise, ID	(208)334-5845
ILLINOIS: Marion Hubbell, Planning Division, Springfield, IL	(217)782-3715
INDIANA: John Winters, Water Quality Section, Indianapolis, IN	(317)243-5028
IOWA: Mike Carrier, Parks, Recreation, & Preservation Division, Des Moines, IA	(515)281-5207
KANSAS: Robert Meinen, Department of Wildlife & Parks, Topeka, KS	(913)296-2281
KENTUCKY: Don Walker, Division of Water, Frankfort, KY	(502)564-3410
LOUISIANA: Charles G. Groat, Coastal Management Office, Baton Rouge, LA	(504)342-7591
MAINE: Donald T. Witherill, Land Quality Control Bureau, Augusta, ME	(207)289-2111
MARYLAND: William Burgess, Wetlands Division, Annapolis, MD	(301)974-3871
MASSACHUSETTS: Gary Clayton, Wetlands and Waterways Regulation Division, Boston, MA	(617)292-5856
MICHIGAN: Steve Sadewasser, Wetland Protection Unit, Lansing, MI	(517)373-8000
MINNESOTA: David B Milles, Permits Unit, St. Paul, MN	(612)296-0516
MISSISSIPPI: Robert Seyfarth, Water Quality Management Section, Jackson, MS	(601)961-5171

MISSOURI: Laurie Bobbitt, Permits Section, Jefferson City, MO (314)751-6821

MONTANA: Loren L. Bahls, Water Quality Management Section, Helena, MT (406)444-2406

NEBRASKA: Dave Jensen, Surface Water Section, Lincoln, NE (402)471-4700

NEVADA: Wendell McCurry, Water Quality Section, Environmental Protection Division,
Carson City, NV (702)885-4670

NEW HAMPSHIRE: Delbert F. Downing, Water Management Bureau, Water Resources Division,
Concord, NH (603)271-3406

NEW JERSEY: John Weingart, Division of Coastal Resources, Trenton, NJ (609)292-2795

NEW MEXICO: Bob Findling, Park Planning, Division of Parks and Recreation, Santa Fe, NM . . . (505)827-7859

NEW YORK: Patricia Riexinger, Wetlands Program, Division of Fish and Wildlife, Albany, NY . . . (518)457-5581

NORTH CAROLINA: Charles Wakild, Water Quality Section, Division of Environmental Management,
Raleigh, NC (919)733-5083

NORTH DAKOTA: Dale L. Henegar, Game and Fish Department, Bismarck, ND (701)221-6300

OHIO: Mike Colvin, Environmental Review, Office of Outdoor Recreational Services, Columbus, OH (614)265-6413

OKLAHOMA: Steven A. Lewis, Department of Wildlife Conservation, Oklahoma City, OK (405)521-3851

OREGON: Ken Bierly, Division of State Lands, Salem, OR (503)378-3805

PENNSYLVANIA: Eugene Counsil, Div Waterway & Stormwater Mgmt, Bur of Dams & Waterway Mgmt,
Harrisburg, PA (717)787-6826

RHODE ISLAND: Dean Albro, Wetlands Section, Division of Groundwater & Freshwater Wetlands,
Providence, RI (401)277-6820

SOUTH CAROLINA: Alfred H. Vang, Water Resources Commission, Columbia, SC (803)737-0800
Wayne Beam, South Carolina Coastal Council, Columbia, SC (803)737-0880

SOUTH DAKOTA: Duane Murphy, Water Resources Management Division, Pierre, SD (605)773-42126

TENNESSEE: Larry Bowers, Natural Resource Section, Division of Water Pollution Control,
Nashville, TN (615)741-7883

TEXAS: See U.S. Army Corps of Engineers phone list.

UTAH: Mike Reichert, Water Quality Mgmt & Grndwtr Sect, Bur of Water Pollution Control,
Salt Lake City, UT (801)538-6146

VERMONT: David Clough, Water Quality Division, Department of Environmental Conservation,
Waterbury, VT (802)244-6951

VIRGINIA: William Pruitt, Marine Resources Commission, Newport News, VA (804)247-2200
WASHINGTON: Rod Mach, Shorelands & Coastal Zone Management Program, Olympia, WA . . . (206)459-6777
WEST VIRGINIA: Frank B. Pelurie, Groundwater, Water Resources Division, Charleston, WV . . . (304)348-2108
WISCONSIN: Robert Roden, Water Regulation & Zoning Bureau, Madison, WI (608)266-8034
WYOMING: E.J. Sanning, Water Quality Division, Cheyenne, WY (307)777-7781

State And Territorial Agencies and Citizens' Groups

ALABAMA

ALABAMA COOPERATIVE FISH AND WILDLIFE RESEARCH UNIT: Auburn, AL (205)242-7100
SEA GRANT PROGRAM: Ocean Springs, MS (601)875-9341

ALASKA

ALASKA SEA GRANT COLLEGE PROGRAM: Fairbanks, AL (907)474-7086
NATIONAL AUDOBON SOCIETY: Anchorage, AL (907)276-7034

ARIZONA

ARIZONA WILDLIFE FEDERATION: Scottsdale, AZ (602)946-6160

ARKANSAS

NATURAL AND SCENIC RIVERS COMMISSION: Little Rock, AR (501)371-8134
TROUT UNLIMITED ARKANSAS COUNCIL: Fayetteville, AR (501)452-5703

CALIFORNIA

CALIFORNIA COOPERATIVE FISHERY RESEARCH UNIT: Arcata, CA (707)826-3268
COUNCIL FOR PLANNING AND CONSERVATION: Beverly Hills, CA (213)276-3202
IZAAK WALTON LEAGUE OF AMERICA, INC.: San Pedro, CA

COLORADO

IZAAK WALTON LEAGUE OF AMERICA, INC.: Trinidad, CO (719)846-2127
NATIONAL WILDLIFE FEDERATION NATURAL RESOURCES CLINIC: Washington, DC . (202)797-6800

CONNECTICUT

CONNECTICUT WILDLIFE FEDERATION: Middletown, CT (203)347-1291
CONNECTICUT AUDOBON SOCIETY: Fairfield, CT (203)259-6305
LONG ISLAND SOUND TASKFORCE: Stanford, CT (203)327-9786

DELAWARE

DELAWARE WILD LANDS, INC.: Odessa, DE (302)834-1332
. (302)378-2736

FLORIDA

FLORIDA COOPERATIVE FISH AND WILDLIFE RESEARCH UNIT, U.S.D.I.:

Gainesville, FL (904)392-1861
GAME AND FRESHWATER FISH COMMISSION: Tallahassee, FL (904)488-1960
FLORIDA AUDOBON SOCIETY: Maitland, FL (407)647-2615
FLORIDA DEFENDERS OF THE ENVIRONMENT, INC.: Gainesville, FL (904)372-6965
IZAAK WALTON LEAGUE OF AMERICA, INC.: Key Largo, FL (305)451-0991
SOUTH FLORIDA WATER MANAGEMENT DISTRICT: West Palm Beach, FL (407)686-8800

GEORGIA

GEORGIA WILDLIFE COMMISSION: Conyers, GA (404)929-3350

HAWAII

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Windsor, Ontario	(519)256-7821
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3. *EPA's Wetlands Protection Program*
4. *EPA: Wetlands Protection*
Wetlands Resource
Wetlands Functions & Values
Wetlands Impacts and Losses
Programs for Protecting Wetlands
The Section 404 Program

EPA fact sheets.

5. *Highlights of Section 404*, EPA. 1989.
6. *Recognizing Wetlands*. U.S. Army Corps of Engineers. 1987.
7. Bibliographic Series – *Wetlands Protection*. EPA.
8. *Beyond the Estuary: The Importance of Upstream Wetlands in Estuarine Processes*. EPA.
9. *Mid-Atlantic Wetlands - A Disappearing Natural Treasure*, Ralph Tiner, Jr.
10. *National Guidance: Wetlands and Nonpoint Source Control Programs*, EPA Memo with Attachment, Martha G. Pruthi. EPA.
11. *Wetland Creation and Restoration: The Status of the Science Vol I*, Executive Summary, order blank. 1986
12. *Wetlands and 401 Certification: Opportunities and Guidelines For States and Eligible Indian Tribes*. EPA. 1989.
13. *America's Wetlands: Our Vital Link Between Land and Water*. EPA. 1988.
14. *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*
15. EPA Regional Office Wetlands Contacts Directory.
16. *American Wetlands Month: May 1991*. EPA Fact Sheet.2
17. Environmental Protection Agency: Clean Water Act Section 404 (b)(1) Guidelines.

18. MOA between EPA and the Corps - *Determination of Mitigation under the Clean Water Act 404(b)(1) Guidelines*.
19. *Adopt A Wetlands* (OWP) April 1990.
20. Clean Water Act §404: 33 U.S.C. 1344.

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2. Report to Congress: Wetland Losses in the United States 1780's to 1980's - Available from Department of Interior, U.S. Fish and Wildlife Service.

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