



Conserving America's Wetlands 2007: Three Years of Progress Implementing the President's Goal

Council on Environmental Quality
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This report to Congress shows how Federal agencies are implementing President George W. Bush's 2004 Earth Day goal to "work to restore and to improve and to protect at least three million acres of wetlands over the next five years." The report includes the accomplishments of the first three years and the requested budget and planned accomplishments for FY 2008, with descriptions of contributing Federal programs.

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**Department of Agriculture
Department of Commerce
Department of Transportation**

**Department of the Army
Department of the Interior
Environmental Protection Agency**

Council on Environmental Quality
April 2007



EXECUTIVE OFFICE OF THE PRESIDENT
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WASHINGTON, D.C. 20503

Members of Congress:

This third annual progress report on President George W. Bush's Wetlands Initiative brings you more good news. The goal President Bush set on Earth Day 2004 to create, improve, and protect at least three million wetland acres by Earth Day 2009 will likely be achieved one year early, by Earth Day 2008.

Since the President set the goal to move beyond "no net loss" of wetlands and attain an overall increase in the amount and quality of wetlands in America, we have restored, protected, or improved 2,769,000 acres of wetlands. We now have 888,000 acres of wetlands that did not exist in 2004, we have improved the quality of 1,029,000 existing wetland acres, and we have protected another 852,000 acres of existing wetlands. These accomplishments were achieved through our proactive conservation programs, such as the Wetlands Reserve Program, National Wildlife Refuge System, North American Wetlands Conservation Act, Aquatic Ecosystem Restoration Program, and the National Estuary Program. These are more substantial and distinct from our regulatory mitigation programs that replace wetlands developed for other uses.

Our successes also reflect the benefits of the Cooperative Conservation Executive Order 13352, which promotes conservation partnerships. The Departments of the Interior, Agriculture, Commerce, and Defense, and the Environmental Protection Agency continue to collaborate on better ways to meet conservation goals by working in partnership with state, local, and tribal governments; private institutions; and other nongovernmental entities and individuals.

Through Coastal America's Corporate Wetlands Restoration Partnership, more than 400 corporations and NGOs contributed to the President's wetlands goal by providing matching funds and in-kind services for wetlands restoration and protection projects. For example, corporations provided matching funds that helped leverage Federal dollars for the Bahia Grande, a 10,000-acre wetlands restoration project in Texas.

Last October, the President signed the *Partners for Fish and Wildlife Act*. The Partners program is a vanguard for voluntary, citizen and community-based stewardship efforts for fish and wildlife conservation. The program operates on the premise that fish and wildlife conservation is a responsibility shared by citizens and government. In 2008 the President requested a net increase of \$5.6 million for the program to expand restoration activities on private lands.

As a result of the devastating hurricanes of 2005, the American public has an increased awareness of the importance of wetlands in sustaining a resilient coast. These massive storms resulted in 217 square miles of wetlands loss on the Louisiana coast and have left the region more vulnerable to future coastal storms. There is now a renewed sense of urgency for restoring, improving, and protecting coastal wetlands that all Americans can appreciate in light of the loss of life and property on the Gulf Coast.

Integrating wetlands restoration into the larger recovery plans for the Gulf region clearly makes good ecological sense, and it also makes good economic sense. But wetlands conservation and restoration is not only critical for recovery efforts on the Gulf Coast. With more than half of the Nation's population living in coastal counties, wetlands conservation and restoration must be included in our approach to community planning and development nationwide.

Congress has been an essential partner in the President's conservation agenda. To ensure that the strides made in the past three years not only continue but increase, we will start today to lay the foundation to ensure that all wetlands decision-makers, inside and outside the Federal Government, have real-time access to the information they need to make enlightened decisions. Our ecology and economy are interdependent; a healthy environment and strong economy must both flourish. I am looking forward to the day we celebrate reaching the President's goal for restoring, improving, and protecting America's wetlands.

Sincerely,



James L. Connaughton
Chairman

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Executive Summary

On Earth Day 2004, President Bush celebrated the opportunity to move beyond the Federal policy of “no net loss” of wetlands and called for a new commitment to attain an overall increase in the quality and quantity of wetlands in America.

As President Bush said in April 2004, *“The old policy of wetlands was to limit the loss of wetlands. Today I’m going to announce a new policy and a new goal for our country: Instead of just limiting our losses, we will expand the wetlands of America.”*

President Bush described his goal for expanding wetlands acreage as both creating new wetlands and improving the quality of existing wetlands. The President also required that we protect existing, high-quality wetlands. His goal is to achieve at least one million acres in each of these separate categories between Earth Day 2004 and 2009. This goal reflects agency performance in restoring, improving, and protecting wetland acres. The goal does not reflect a net acreage total (*i.e.*, the goal does not reflect loss of wetlands).

After three years of progress toward the President’s five-year goal, the team of six Federal departments working with multiple states, communities, tribes, and private landowners is on track to meet or exceed this goal.

Since this goal was set, 2,769,000 acres of wetlands have been restored or created, improved, or protected.

This report also highlights anticipated progress between Earth Day 2007 and 2008, during which time the Bush Administration expects an additional one million wetland acres to be restored or created, improved, or protected.

	2005-06 Reports*	This Report
Acres Restored or Created	588,000	300,000
Acres Improved	541,000	488,000
Acres Protected	601,000	251,000
Total Acres	1,730,000	1,039,000

**Agency accomplishments as adjusted by actual results; these totals do not reflect net totals, as they do not account for wetland acres lost or damaged.*

The President’s focus on wetlands has prompted these accomplishments, as well as improvements in cooperation and understanding among the many Federal departments, states, communities, tribes, and landowners that care for and manage wetlands. The Federal Government team includes the Environmental Protection Agency and the Departments of the Interior, Agriculture, Commerce, Transportation, and the Army.

Many agencies of government contribute to the continuing goal of “no net loss” by ensuring mitigation for wetlands that are developed for other uses. Even though mitigation for wetlands replaces more wetland acres than are lost, these numbers are not included in the three categories reported here. The report describes these and other programs that contribute to maintaining the Nation’s wetlands base.

This report chronicles the major contributions of Federal agencies, working together and in partnership with others, to achieve the President’s wetlands goal of three million acres by 2009.

Landscape Change Processes on the Deltaic Gulf Coast

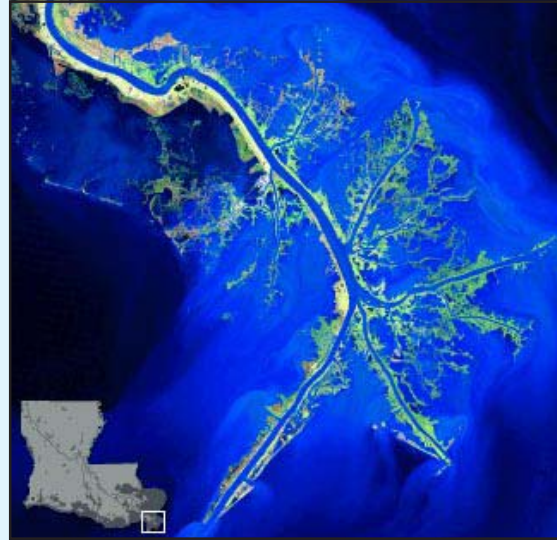
The hurricanes of 2005 have brought a sense of urgency to Gulf Coast restoration. The Mississippi River is a lifeline for transporting goods and services, and its coastal delta is the gateway. The Port of South Louisiana handles the most tonnage of any port in the Nation. This economic engine coexists with unique ecosystems that support important fisheries and habitats for migratory birds.

Although recent hurricanes have highlighted its vulnerability, the Gulf Coast was already experiencing the impacts of human modification to the Mississippi River system. Enormous challenges are posed by the need to restore the northern coast of the Gulf of Mexico to an ecologically functioning system, while also maintaining the navigation of the Mississippi and Atchafalaya Rivers, flood control structures, and hurricane levees and other storm protection devices. *Meeting these challenges will require new data and more cross-disciplinary methods in support of goals that transcend the interest of any single stakeholder group.*

Land-Building, Then and Now

The Mississippi River Deltaic Plain is a succession of river deltas formed over the past 10,000 years by the sediment eroded from the continent into the Mississippi River and its tributaries during rainfalls, storms, and floods. When the river reached shallow coastal waters, its velocity slowed and suspended sediments dropped out, creating deltaic land on the Continental Shelf. Following the most efficient route to the Gulf, the river changed its course every 1,000 to 1,500 years, creating new deltas. Plants took hold and stabilized the new land, and erosional forces of winds, waves, and surge periodically eroded the new landscapes, scoured adjacent waterbottoms, and transported sediments along the coast.

Today, this natural cycle of marsh-building in the Delta has been interrupted. Hundreds of locks and dams along the Mississippi River and its tributaries preclude sediments from reaching the Delta and surrounding wetlands. Soil conservation and dams reduce the sediment load to the river from storms. Levees and river bank stabilization reduce the natural erosion of the stream bank, and levees prevent natural flooding and land-building as the river passes through the Deltaic Plain.



Mississippi River Delta, January 25, 2007. (USGS)

While these land-building processes are being interrupted, both natural and human-caused destructive processes persist, such as erosion, saltwater intrusion, the invasive nutria that eats vegetation, subsidence (sinking), and increasing sea level rise. In 2005, Hurricanes Katrina and Rita transformed 217 square miles of Louisiana's coastal lands to open water, 119 miles of which lay in the Deltaic Plain. This amount of loss in one year represents almost half of the land loss scientists predicted would take place over a 50-year period.

The Scientific Challenge

Many proposals are being developed to achieve a sustainable coast, including retaining Mississippi River sediments in coastal wetlands to emulate the natural geologic and hydrologic processes. These processes, which once built the wetlands, are now critically needed to protect human communities. To provide sound science for decision making, the U.S. Geological Survey works with Federal, state, university, and other partners to monitor wetlands recovery; research impacts related to sedimentation, elevation change, plant community structure, and physical and chemical wetland attributes; create landscape predictive models; use radar to study impacts to and recovery of wildlife populations and habitats; and monitor restoration success and evaluate restoration alternatives.

Introduction

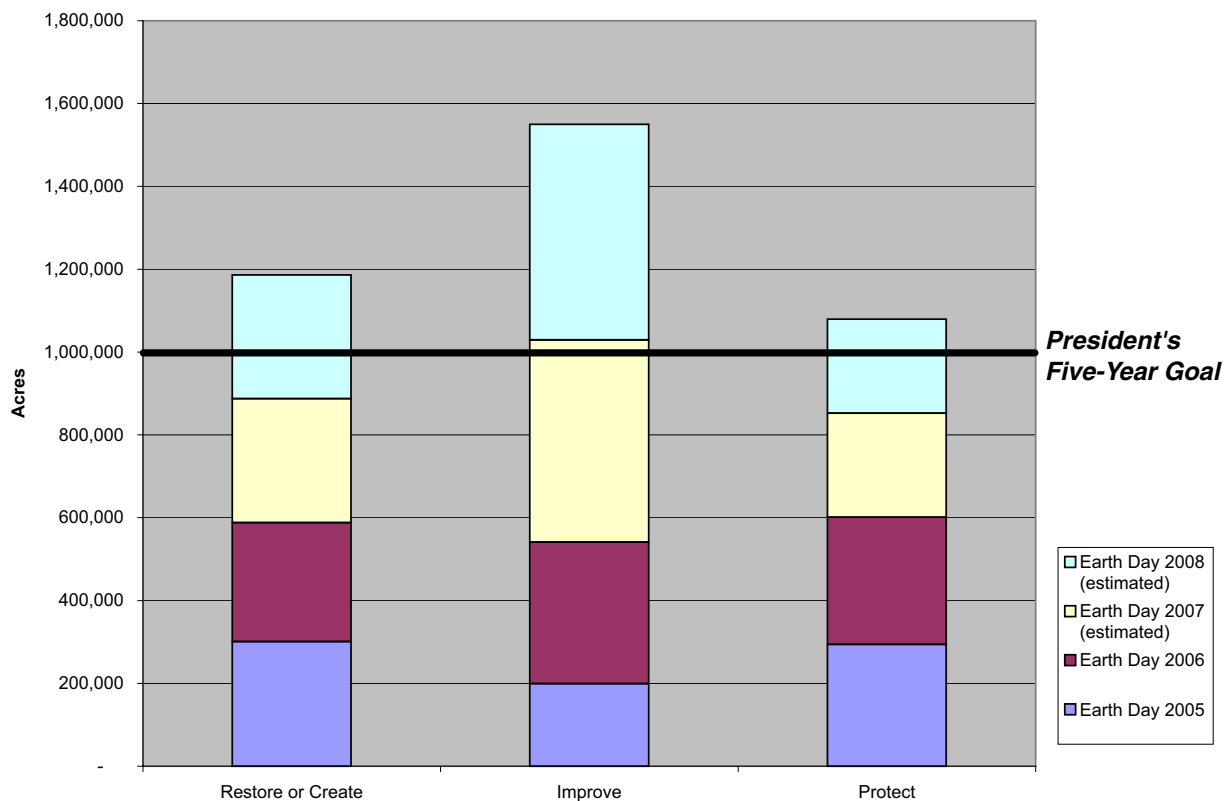
Wetlands have long been recognized as critical to a clean, properly functioning environment and to ecosystem health. They provide a protective buffer for our towns and cities against floods and storm surges, and they provide important ecological benefits, contributing to water quality, supplying life-sustaining habitat for hundreds of species, and connecting aquatic and terrestrial ecosystems. The Nation's wetlands provide an array of benefits to society, and their continued ability to function and thrive affects the economic, ecological, and cultural heritage of all Americans.

The importance of wetlands stewardship is reflected in the array of public-private partnerships that have formed, enhanced through efforts at the Federal level. Recognizing the need for more effective use and coordination of Federal wetlands activities, on April 22, 2004, President George W. Bush announced a new national policy on wetlands to achieve an overall increase of U.S. wetlands each year, with a goal to restore or create, improve, or protect at least three million wetland acres between Earth Day 2004 and 2009.

Three years after the President underscored the importance of wetlands, significant progress is being made toward achieving the Earth Day goal to increase overall wetlands acreage and its quality. Between Earth Day 2004 and 2007, approximately 888,000 acres have been restored or created, 1,029,000 acres have been improved, and 852,000 acres have been protected (Figure 1).

Since Earth Day 2004, the primary programs making contributions to restoration or creation are the Wetlands Reserve Program (USDA/NRCS), National Wildlife Refuge System (DOI/FWS), North American Wetlands Conservation Act (DOI/FWS), Conservation Reserve Program (USDA/FSA), and Partners for Fish and Wildlife Program (DOI/FWS). The primary contributors to the improvement goal are the National Wildlife Refuge System; Aquatic Ecosystem Restoration Program (DOA/USACE, Civil Works); North American Wetlands Conservation Act; Conservation Technical Assistance Program (USDA/NRCS); and the Coastal Wetland Planning, Protection and Restoration Act (USACE, EPA, FWS, and NOAA). Wetlands protection

Figure 1. Estimated Progress Toward the President's Wetlands Goal



Note: Agencies' performance estimates have been adjusted for double-counted acres.

through acquisitions or long-term easements is being accomplished by the North American Wetlands Conservation Act; Wetlands Reserve Program; National Wildlife Refuge System, Federal Duck Stamp Program (DOI/FWS); National Estuary Program (EPA); and Coastal Program (DOI/FWS).

Because more than 85 percent of our Nation's wetlands are on non-Federal lands, the effectiveness of Federal efforts to improve the health, quality, and use of the Nation's wetlands will be greatly enhanced by expanding public-private partnerships. Through cooperative conservation, the Federal Government can facilitate these partnerships by providing matching grants, technical assistance, and opportunities for the reestablishment, rehabilitation, enhancement, and protection of wetlands.

Federal agencies must continue to encourage and partner with non-Federal parties (state and local governments, tribes, and nongovernmental organizations). Well-coordinated public-private partnerships focused on wetlands opportunities will yield significant ecological benefits.

About This Report

Conserving America's Wetlands 2007: Three Years of Progress Implementing the President's Goal presents a snapshot of Federal efforts to achieve the President's goal for wetlands acreage. In providing information, the participating agencies used terminology similar to that developed by the White House Wetlands Working Group and the same terminol-



Mangrove forest restoration project in Puerto Rico. (FWS)

ogy used in previous editions of this report. Agencies reported all notable accomplishments toward the President's goal in the year the project was completed, or projected to be completed, rather than the year the project was funded. Adjustments were made to account for projects reported by multiple agencies ("double-counting"). Projected estimates in the 2006 report were adjusted in this year's report as actual results became available. Appendix A provides a thorough discussion of terminology and methodology, Appendix B describes efforts that maintain the wetlands base, and Appendices C through I present program-level information and descriptions.

Accomplishments

The President's goal for wetlands has led the responsible Federal agencies to focus their resources to achieve results. Agencies do this by managing programs more strategically, leveraging resources, and partnering with others whenever possible. The following sections summarize accomplishments planned for each of the three goal areas included in the President's FY 2008 budget. Major contributing programs are identified and highlighted. Wetland Reserve accomplishments reflect the anticipated increase in the wetland enrollment acreage cap and mandatory funding under the new Farm Bill, assuming that all authorized acres are enrolled.

Restore or Create Wetlands

First Three Years of Accomplishment: 888,000 acres
Estimated Accomplishment Earth Day 2008: 298,000 acres
(totals adjusted for double-counting)

Wetlands can be added by creating new wetlands or by restoring former wetlands lost to drainage. New wetlands are created in upland areas or deepwater sites. A gain in wetland acres may also be achieved by re-establishing former wetlands to restore functions and values approximating natural/historic conditions. Because of difficulties in establishing wetlands in upland areas, agencies have preferred to re-establish former wetlands when possible. In many cases the necessary soils and seed stock still exist, and wetlands flourish once more as soon as the hydrology is restored.

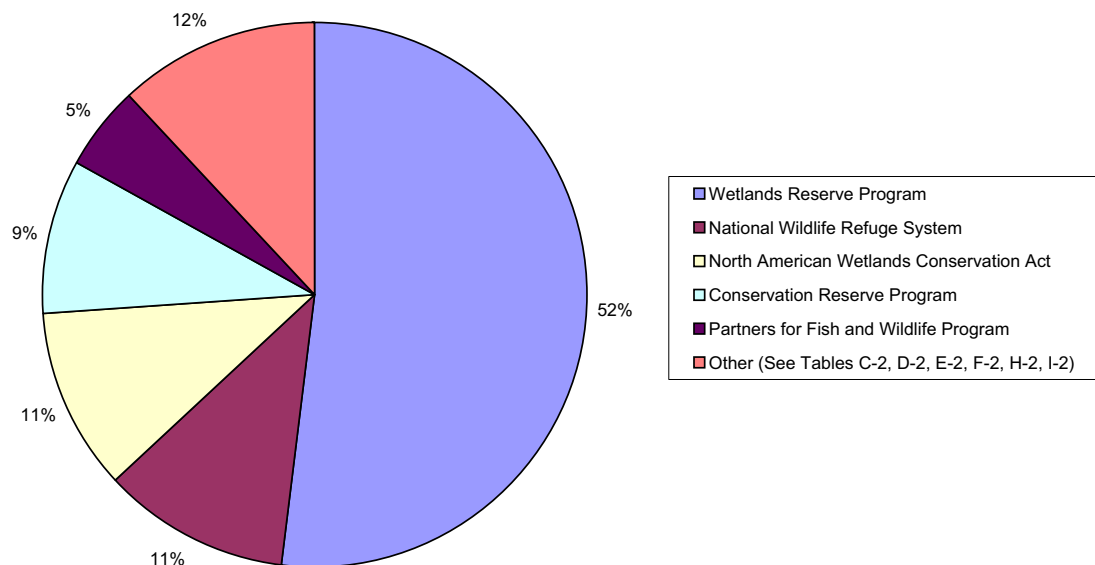
During the first three years (April 2004 through April 2007), Federal agencies reported restoring or creating 888,000 acres of new wetlands. By Earth Day 2008, Federal agencies plan to restore or create an additional 298,000 acres of wetlands. Ninety-three percent of the gains will result from re-establishing former wetlands, and only seven percent from establishing (*i.e.*, creating new) wetlands (primarily on upland sites).

The Federal Government will restore wetlands in FY 2008 primarily through the Wetlands Reserve Program, national Wildlife Refuge System, North American Wetlands Conservation Act, Conservation Reserve Program, and Partners for Fish and Wildlife (Figure 2).

Wetlands Reserve Program

The Wetlands Reserve Program (WRP) is administered by the USDA Natural Resources Conservation Service (NRCS). The types of wetlands restored by this program vary, from floodplain forest to prairie potholes to coastal marshes. Floodplain forest and associated sloughs and small emergent marsh wetlands account for approximately 65 percent of the program's restoration activity. A majority of the enrolled floodplain acres offered into the program occur in areas subject to frequent flooding that were originally drained or cleared for agricultural production.

Figure 2. Proportion of Wetland Acres Anticipated to be Restored or Created by Major Programs in FY 2008





Whooping cranes use a re-established wetland in north central Iowa. (Greg Hanson, Indiana Department of Natural Resources)

WRP expects to restore or create approximately 160,000 acres of wetlands in FY 2007 and 171,000 acres in FY 2008.

National Wildlife Refuge System

The National Wildlife Refuge System restores wetlands on its lands nationwide. For example, at the Laguna Atascosa National Wildlife Refuge, Ocean Trust, the Fish and Wildlife Service, and the Natural Resources Conservation Service (USDA) are working together and with more than 60 private and public partners in south Texas to restore 10,000 acres of tidal wetlands on the refuge known as the Bahia Grande (Grand Bay). Until the mid-1930s, these wetlands served as highly productive habitats for a wide variety of fish, shellfish, waterbirds, and waterfowl. Human-caused changes to tidal pathways brought dry, sun-baked basins and over 70 years of dust to surrounding communities. In 2006, human connections and tidal connections came together to once again flood the Bahia Grande. The response was immediate—thousands of shorebirds, egrets, herons, and brown pelicans flocked to the newly flooded area to take advantage of the abundant fish.

This program expects to restore or create approximately 35,000 acres of wetlands in FY 2007 and 37,000 acres in FY 2008.

North American Wetlands Conservation Act

This FWS program promotes long-term conservation of North American wetland ecosystems for the benefit of waterfowl and other migratory birds, fish, and wildlife. Funds are provided by appropriations and by nonappropriated sources such as the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA); interest earned on Pittman Robertson Funds; and fines collected under the Migratory Bird Treaty Act.

In FY 2007, the Lower Mississippi Valley Ecosystem IV project partners will use their \$1 million grant to build on their previous achievements in the landscape-scale protection, restoration, and enhancement of the alluvial valley's wetland ecosystem. In this phase, 15,238 acres of wetland habitats will be affected in the project area, with multiple conservation activities

occurring on 1,970 of those acres. Project partners will protect 1,400 acres of palustrine forested wetlands in perpetuity through conservation easements donated by three private landowners in Arkansas, Louisiana, and Mississippi. Partners also will restore 5,346 acres of wetlands and enhance 8,492 acres on a mix of private and public lands in the three states, including on Louisiana's Bouef and Bayou Macon Wildlife Management Areas. The conservation easement tract in Arkansas is located close enough to the Cache River National Wildlife Refuge and Dagmar Wildlife Management Area to be in range of the ivory-billed woodpecker, a species considered extinct for the past 60 years that was recently rediscovered in the area. Other protected tracts in the project area are within the known range of the Louisiana black bear. Restoration and enhancement activities on 10,698 acres of Federal land are complementing project partners' efforts in the Lower Mississippi Alluvial Valley, and advance the habitat conservation goals of the Lower Mississippi Valley Joint Venture. Project partners are contributing \$2,302,615 in matching funds and \$140,000 in nonmatching other Federal dollars.

NAWCA anticipates restoring or creating approximately 37,000 acres of wetlands in FY 2007 and FY 2008.

Conservation Reserve Program

Wetlands restored through this USDA program range from prairie potholes to floodplains to bottomland hardwood forest. Currently, 1 million acres of wetlands and 1.4 million

acres of associated buffers are under contract. Conservation Reserve Program wetlands successes include partnerships with states through the Conservation Reserve Enhancement Program (CREP), which has enrolled over 87,000 acres of wetlands and associated buffers. In addition, several initiatives designed to further increase wetland enrollment have been established: (1) the Non-Floodplain Wetland and Playa Lakes Restoration Initiative targets 250,000 acres for enrollment, (2) the Bottomland Timber Establishment on Wetlands Initiative has allotted 500,00 acres, and (3) the Duck Nesting Habitat Initiative is targeting 100,000 acres mostly in North and South Dakota. These wetlands provide important environmental benefits, including critical breeding habitat for ducks and grassland birds. Wildlife biologists at the Department of the Interior estimate that this program's efforts have resulted in a 30 percent increase in duck populations and significant increases in grassland bird populations on Conservation Reserve Program lands compared to cropland.

The Conservation Reserve Program anticipates restoring or creating 30,000 acres of wetlands in FY 2007 and another 30,000 acres in FY 2008.

Partners for Fish and Wildlife

The Partners for Fish and Wildlife Program is a popular and effective FWS program for voluntary and citizen-based wetlands restoration and enhancement activities. The Partners program serves as a bridge to owners and managers of private lands to develop partnerships for improvement of fish and wildlife populations and their habitats. Its approach is simple: engage willing partners, through nonregulatory incentives, to conserve and protect wildlife values on their property. In its 20 years, the Partners program has developed more than 41,000 private landowner agreements, re-establishing or enhancing over 800,000 acres of wetlands nationwide. As the delivery mechanism for strategic habitat conservation, the Partners program will continue to coordinate with public and private partners to reach national conservation goals. By working cooperatively with private landowners to restore and enhance habitat on private lands, the Partners program helps reduce the reliance on regulation to achieve the FWS mission of conserving Trust species and keeping common species common.

Partners for Fish and Wildlife anticipates restoring or creating approximately 15,000 acres of wetlands in FY 2007 and 17,000 acres in FY 2008.



More than 15,000 acres of former commercial salt ponds are being rehabilitated in San Francisco Bay, California. (FWS)

Improve Wetlands

First Three Years of Accomplishment:

1,029,000 acres

Estimated Accomplishment Earth Day 2008:

521,000 acres

(totals adjusted for double-counting)

Some degraded wetlands do not function properly because of past or present stressors. Agencies can improve wetlands by modifying the physical, chemical, or biological characteristics of a degraded wetland site with the goal of repairing its natural/historic functions and associated values (referred to as rehabilitation). They also can modify the physical, chemical, or biological site characteristics to heighten, intensify, or improve specific functions or to change the growth stage or composition of vegetation. These actions are taken with a specific goal in mind, such as improving water quality, floodwater retention, or wildlife habitat. This type of improvement,

called enhancement, results in a change in wetland functions and associated values, may lead to a decline in other wetland functions and values, and does not result in a gain in wetland acres.

Between Earth Day 2004 and 2007, Federal agencies estimated improving the quality of 1,029,000 acres of existing wetlands. By Earth Day 2008, Federal agencies plan to improve the quality and associated values of an additional 521,000 acres of existing wetlands. Of the third-year improvements, 14 percent of the gains in wetlands quality will result from rehabilitating the natural/historic functions and associated values of degraded wetlands, and the remaining 86 percent will come from enhancing specific functions and values.

The major programs that are planning FY 2008 wetland improvements include the National Wildlife Refuge System; Coastal Wetlands Planning, Protection and Restoration Act; North American Wetlands Conservation Act; and Conservation Technical Assistance Program (Figure 3).

National Wildlife Refuge System

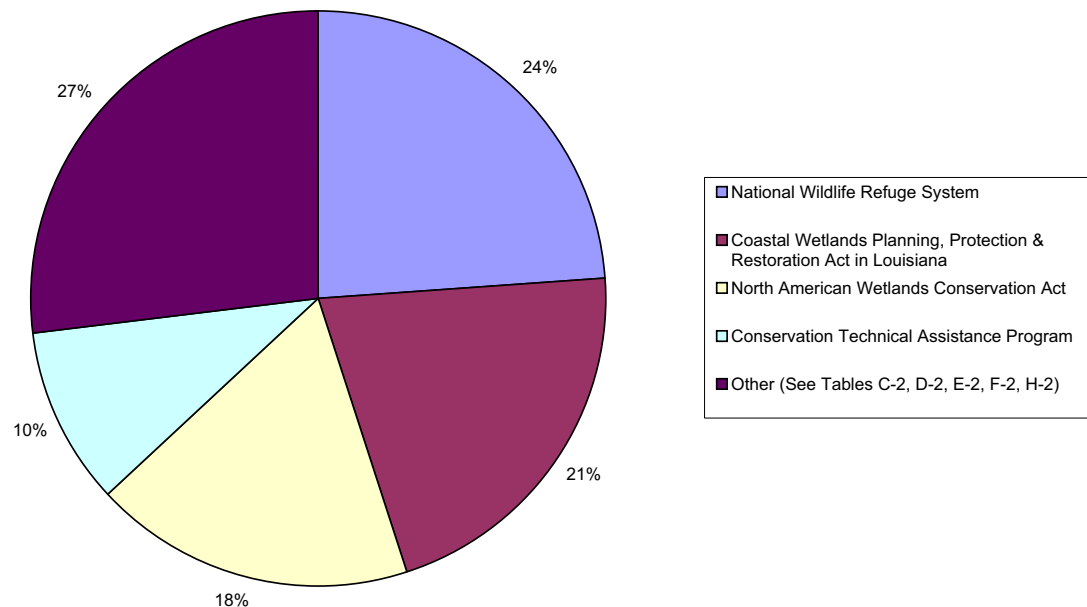
National Wildlife Refuges focus on management purposes and wildlife goals that depend on healthy wetland habitats. Over the past two centuries, more than 85 percent of San

Francisco Bay's rich tidal marshes were destroyed by development, agricultural practices, and commercial salt production. This dramatic decline significantly reduced the populations of marsh-dependent fish and wildlife species, including the endangered California clapper rail and salt marsh harvest mouse.

In 2006, through a series of carefully formulated and executed levee breaches, the Fish and Wildlife Service reintroduced San Francisco Bay water to the Island Ponds near Alviso, California. The effort heralded a major step forward in the ambitious 15,100-acre South Bay Salt Pond Restoration Project, the largest tidal wetland restoration project ever undertaken on the West Coast. The South Bay Project will create a network of tidal marshes and ponds for wildlife, and provide public access for wildlife viewing and recreation. The project will restore the bay's tidal wetlands as habitat for endangered species, waterfowl, and migrating and wintering shorebirds, and filter pollution, inhibit nutrient runoff, and provide flood protection.

Since the initial restoration activities have begun and pond salinity has been reduced, Refuge staff have already observed a 100 percent increase in waterfowl and a 130 percent increase in shorebirds' use of these ponds. The three goals of the long-term restoration plan are to restore habitat, improve flood protection, and increase public access and

Figure 3. Proportion of Wetlands Acres Anticipated to be Improved by Major Programs in FY 2008



wildlife-dependent recreation in the South Bay. This wetland rehabilitation is critical to ensuring the vitality of this region and the Pacific Flyway (flyways are the routes followed by migratory birds). The Western Hemispheric Shorebird Reserve Network has designated the area as a Shorebird Reserve of Hemispheric Importance. It is the most important estuary along the West Coast for migrating shorebirds.

In FY 2007, the National Wildlife Refuge System expects to improve approximately 109,000 acres of wetlands, and an additional 114,000 acres in FY 2008.

Coastal Wetlands Planning, Protection and Restoration Act

The Coastal Wetlands, Planning, Protection and Restoration Act was passed to acquire, restore, and enhance wetlands of coastal states and the trust territories. The Jonathan Davis Wetland Restoration project started in 1998 and will be completed in 2008 by NRCS and the Louisiana Department of Natural Resources. This Coastal Wetlands Planning, Protection and Restoration Act project lies between the northern, freshwater portion of the Barataria Basin and the southern, brackish/saline portion. As land is lost to the south, salinity intrudes northward through bayous and canals. The Jonathan Davis area also lies at the northern end of Bayous Perot and Rigolettes, where wave action causes shoreline erosion. Several plugs and weirs were built to reduce tidal exchange and prevent salinity increase. Bank protection was constructed along the southern boundary to prevent marsh loss. Over the 20-year project life, 510 net acres of marsh will be conserved that otherwise would have been lost with no action. A total of 4,753 acres of marsh will be enhanced by increasing the growth of common plant species, such as bull tongue. Fish and wildlife habitat will be improved and there will be some increase in birds, mammals, and fish. The project will cost \$29 million, including monitoring.

Coastal Wetlands Planning, Protection and Restoration Act projects are expected to improve approximately 72,000 acres of wetlands in FY 2007, and 101,000 acres in FY 2008.



Jonathan Davis Wetland Restoration, using a freshwater diversion in the north end of Barataria Bay, Louisiana. (NRCS)

North American Wetlands Conservation Act

NAWCA grants are awarded to improvement projects that modify a functioning wetland ecosystem to provide additional long-term wetland conservation benefits. The Northern San Joaquin Valley in California, with its internationally important wetlands, is a significant site for migratory shorebirds and waterfowl. It provides wintering or stopover habitat to an estimated 60 percent of the Pacific Flyway's waterfowl population, or 20 percent of the continental population overall. Some 90 percent of California's historic 5 million acres of wetlands are now gone, and those that remain are threatened by ever-encroaching urban development and agriculture.

North San Joaquin Valley Wetland Habitat Phase II Project partners will use their \$1 million NAWCA grant to improve and protect 16,304 acres of wetlands and associated riparian and upland habitats on private and public lands in three of the Central Valley Joint Venture's focus areas. Private and public partners will restore 507 acres and enhance 14,916 acres more by employing various water control techniques in wetland areas, planting riparian trees, and seeding uplands. Conservation easements will be acquired on 761 acres of habitat, and

another 120 acres will be purchased. The California Waterfowl Association will secure 30-year management agreements with the 10 private landowners participating in the project. At least 13 Federally and state listed endangered or threatened species will benefit from partners' efforts. Project partners are contributing \$2,829,225 in matching funds and \$138,761 in nonmatching funds.

NAWCA expects to improve approximately 87,000 acres of wetlands in FY 2007 and FY 2008.

Conservation Technical Assistance

The broad purpose of NRCS's Conservation Technical Assistance (CTA) program is to help private landowners, conservation districts, tribes, and other organizations by providing technical assistance through a national network of locally respected, technically skilled, professional conservationists. These conservationists deliver consistent, science-based, site-specific solutions to help private landowners conserve, maintain, and improve the Nation's natural resource base. The CTA program provides the foundation for NRCS to assist farmers, ranchers, other landowners, local groups, tribes, and

local governments to plan and implement natural resource conservation systems.

In FY 2006, CTA was the major source of technical assistance for planning and applying conservation practices and systems to protect and enhance natural resources on non-Federal land. These conservation actions deliver public benefits in the form of better soil quality, reduced delivery of sediment and nutrients to surface and ground waters, increased conservation of water supplies, healthier grazing and forest land ecosystems, diverse and healthier wildlife habitat, and improved wetlands condition and function.

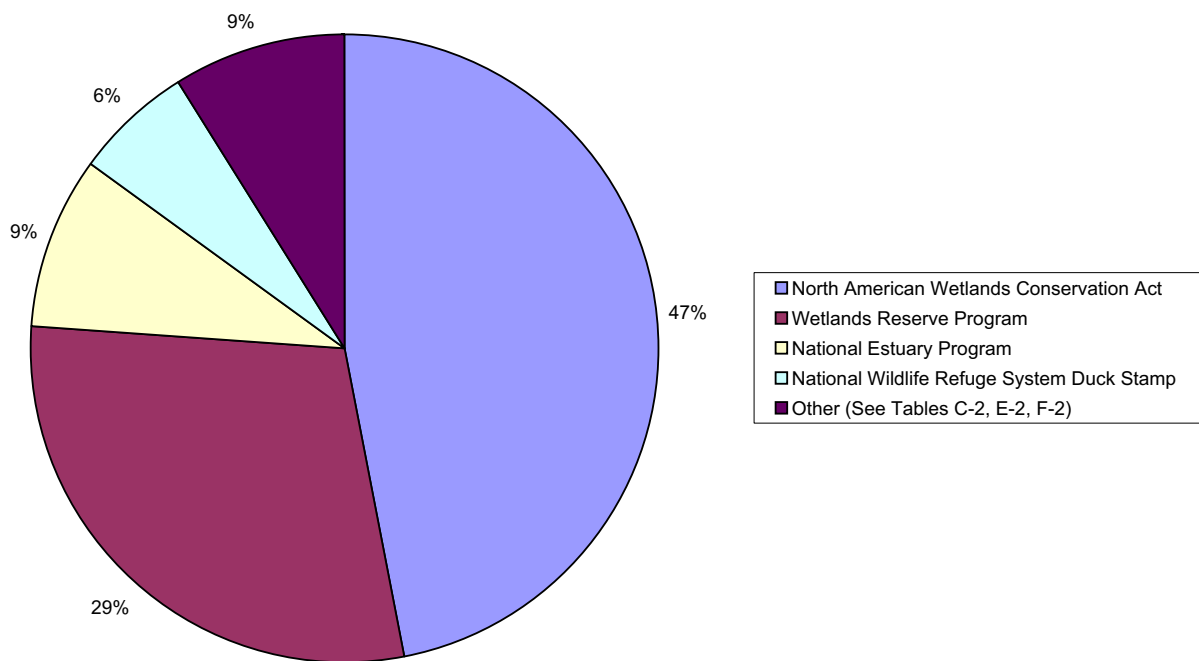
CTA expects to improve approximately 49,000 acres of wetlands in FY 2007 and FY 2008.

Protect Wetlands

First Three Years of Accomplishment: 852,000 acres
Estimated Accomplishment Earth Day 2008: 227,000 acres
(totals adjusted for double-counting)

Priority wetlands can be protected from activities that may imperil their existence or condition. In this report, protection refers to acquisition of land or easements of at least

Figure 4. Proportion of Wetland Acres Anticipated to be Protected by Programs in FY 2008





A NAWCA grant helped protect the floodplain of the Savannah River on the Hamilton Ridge Wetlands Management Area in South Carolina. (FWS)

30 years. Because protection maintains the base of existing wetlands, it does not result in a gain of wetland acres or function.

During the first two years of the President's Wetlands Initiative, Federal actions protected 601,000 acres of existing wetlands. In the third year, Federal agencies estimated they protected an additional 251,000 acres. By Earth Day 2008, Federal agencies plan to protect an additional 227,000 acres of wetlands. The major programs planning wetland protection in FY 2008 are the North American Wetlands Conservation Act, Wetlands Reserve Program, National Estuary Program, and National Wildlife Refuge System Federal Duck Stamp Program (Figure 4).

North American Wetlands Conservation Act

NAWCA projects often involve partnerships of state and local governments and nongovernmental and private organizations seeking to acquire wetland habitat. These acquisitions may be incorporated into the FWS National Wildlife Refuge System or into a state's protected area system, or they may be included in holdings protected by a nonprofit conservation organization (e.g., The Nature Conservancy).

One such project was the Hamilton Ridge Tract in Hampton County, South Carolina. In addition to their \$1 million NAWCA grant, partners in the Savannah River Conservation Initiative/Hamilton Ridge Tract Project will use \$2.1 million in matching funds and \$20.1 million in nonmatching funds to acquire and protect the 13,281-acre Hamilton Ridge Tract. This tract contains 8.5 miles of frontage along the Savannah River and is located within the South Lowcountry Focus Area of the Atlantic Coast Joint Venture. The owner of the tract, International Paper Corporation, recently offered the property at a bargain price to project partners. As a result of timely collaboration and action, this land will be permanently protected as wildlife habitat instead of being sold to the highest bidder on the open market. The State of South

Carolina will own the property, which is adjacent to a combined 12,600 acres of already protected habitat—the Webb and Palachucola Wildlife Management Areas. The project property contains 6,584 acres of wetlands and 6,697 acres of upland habitat, primarily loblolly pine, and will be incorporated into South Carolina's Wildlife Management Area Program for public recreational uses.

This program expects to protect approximately 145,000 acres of wetlands in FY 2007 and FY 2008.

Wetlands Reserve Program

This voluntary program provides technical and financial assistance to eligible landowners to address wetland, wildlife habitat, soil, water, and related natural resource concerns on private lands. The program provides financial incentives for landowners to restore, protect, and enhance wetlands in exchange for retiring marginal land from agriculture. Enrollment options include permanent easements, 30-year easements, and restoration cost-share agreements.

The Wetlands Reserve Program (WRP) was reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm

Bill). The program is administered by NRCS and funded by the Commodity Credit Corporation. In FY 2005, NRCS state offices secured 751 easements on approximately 134,200 acres. NRCS is especially proud of the partnership efforts that have been generated as a result of this program's activities. For example, some 95 acres of land used for cranberry production in Plymouth, Massachusetts, will remain open space thanks to the NRCS and a partnership of landowners, local and Federal agencies, and nonprofit organizations. Through WRP, NRCS contributed more than \$300,000 toward conservation easements, construction for the restoration of the stream and surrounding wetlands, and other associated costs. Partners included two private landowners, the town of Plymouth, The Nature Conservancy, the Wildlands Trust of Southeastern Massachusetts, the Cape Cod Cranberry Growers Association, the Hornblower Foundation, the Sheehan Family Foundation, and local residents.

NRCS is also proud of WRP's contributions toward restoring rare and unusual wetland communities that have been all but lost through past conversion to non-wetland uses. For example, in Sumter, South Carolina, the Booth family entered into a permanent easement to restore hydrology to a 100-acre area that was drained for row crops during the 1930s. The protected area is a Carolina Bay, a unique elliptical wetland depression found only along the coastal regions of North and South Carolina. The origin of these unique wetlands has long been the center of debate and remains a mystery. Today, only 10 percent of the original bays remain, having been drained by loggers and farmers, but programs like the Wetlands Reserve Program provide funding to landowners to restore and protect these areas.

In FY 2007, WRP expects to protect approximately 98,000 acres of wetlands, and an additional 90,000 acres in FY 2008.

National Estuary Program

At the 28 National Estuary Program (NEP) sites around



Wetlands purchased in the Nueces River Delta of the Coastal Bend area near Corpus Christi, Texas. (EPA)

the country, local stakeholders work together to identify and prioritize the problems in their estuaries. NEP community stakeholders include citizens; educators; government representatives at the state, local, and Federal levels; environmental advocates; business leaders; scientists; farmers; and people who fish. Each community develops and implements a Comprehensive Conservation and Management Plan with specific actions designed to protect the estuary and its resources. The plan addresses all aspects of environmental protection for the estuary, including water quality, habitat, living resources, and land use practices, which leads to restoration/creation, improvement, and protection activities including land protection and acquisition projects.

For example, the Nueces River Delta, Texas, contains a diverse array of coastal marsh and prairie habitats, including salt marshes, freshwater marshes and lakes, mudflats, fringe riparian corridors, and uplands. The delta provides habitat for several species of concern, including the brown pelican, least tern, and snowy and piping plover. Development throughout the Coastal Bend area near Corpus Christi, Texas, is resulting in the loss, degradation, and fragmentation of crucial habitat and a decline in the abundance and diversity of our living resources. The Coastal Bend Bays and Estuaries Program (CBBEP) helps ensure that these crucial habitats will exist for

decades to come through continued habitat acquisition in the delta. CBBEP first implemented this habitat acquisition initiative in 2002, and to date has acquired approximately 5,400 acres in the Nueces River Delta. In FY 2006 alone, CBBEP protected approximately 2,500 acres. CBBEP continues negotiations with landowners, and is nearing completion of preliminary activities (survey and appraisal) needed to begin negotiations for the acquisition of another 5,100 acres in the delta.

NEP expects to protect approximately 29,000 acres of wetlands in FY 2007 and FY 2008.

National Wildlife Refuge System (Federal Duck Stamp Program)

The U.S. Fish and Wildlife Service Federal Duck Stamp Program acquires wetlands and associated habitats from willing sellers to benefit waterfowl species and other migratory birds most in need of habitat protection. FWS focuses its efforts on migratory bird breeding areas, resting places, and wintering areas under the authority of the Migratory Bird Conservation Act and the Migratory Bird Hunting and Conservation Stamp Act (“Duck Stamp”). Many of the lands and interests acquired are small natural wetlands located in the Prairie Pothole region of the Upper Midwest portion of the Central Flyway. Wetlands and migratory bird habitats located within the Atlantic, Mississippi, and Pacific Flyways are also targeted. A recent acquisition in Linn County,



U.S. Fish and Wildlife Service biologist discusses wetland restoration with a Boy Scout in Puerto Rico. (FWS)

Oregon, added 36 acres to the William L. Finley National Wildlife Refuge, thereby protecting these acres in perpetuity. The Refuge is located within the Willamette Valley floodplain and its primary focus is to provide wintering habitat for dusky Canada geese and other waterfowl.

Migratory Bird Conservation Funds will be used to protect approximately 18,000 acres of wetlands in FY 2007 and FY 2008.

Federal agencies accomplished many tasks this year as they moved closer to the President's wetlands goal. Each of the agencies developed creative solutions, with particular emphasis on public-private partnerships and cooperative conservation.

Progress toward the President's Earth Day goal is supported by over \$994 million in the FY 2008 President's Budget specifically for increasing the quality and quantity of wetlands in America (Figure 5).

Cooperative conservation continues to be a successful means of accomplishing the President's Wetlands goal. Voluntary programs that work directly with individual landowners, including Partners for Fish and Wildlife (FWS), and the Wetlands Reserve and Conservation Reserve programs (USDA), continue to be key to restoring, improving, and protecting wetlands.

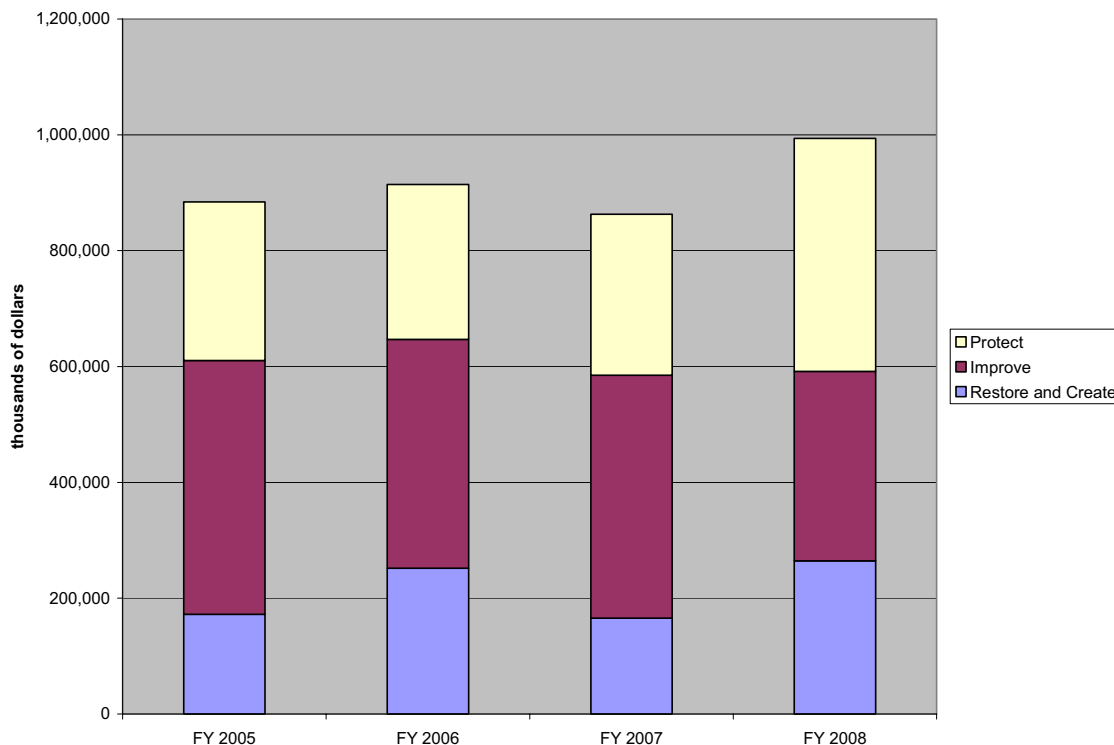
Large-scale ecosystem restorations in areas such as the USACE Civil Works projects in South Florida and coastal Louisiana continue to help address coastal wetlands issues.

Holistic approaches are employed to restore these critical habitats. Integrating wetlands restoration into the larger recovery plans for the Gulf Coast in the aftermath of Katrina and other hurricanes makes good ecological sense, but it also makes good economic sense. Conserving and restoring wetlands is not only critical for recovery efforts along the Gulf Coast, but is also an important part of our national approach to community planning and development, as more than half of the population lives in coastal counties.

Increased Federal attention to wetlands efforts has heightened public awareness of the importance of wetlands and their role in sustaining a resilient coast. The devastating hurricanes of 2005 have served to increase the sense of urgency in the American public for conserving, restoring, and creating coastal wetlands. An informed public working in partnership with Federal, state, tribal, and local agencies provides an opportunity to ensure wetlands are conserved for future generations.

These collaborative conservation and stewardship efforts depend on accurate, timely, and reliable data that support a

Figure 5. Requested Budget for Wetlands Goal in FY 2005 through FY 2008 (thousands of dollars)



common operating picture of where restoration efforts have been realized, are in progress, or need to be initiated. Although the National Wetlands Inventory and National Resources Inventory provide a base of information for this purpose, an integrated national, regional, and local information system to capture, manage, and share the site information on restoration efforts would make this information more valuable for decision makers. This system could provide real-time access to information that can be viewed and validated by a community of partners in the context of map location and landscape. To satisfy these requirements the system must be geospatially enabled with geographic information systems (GIS) technology and it must take advantage of the power of the Internet for promoting collaboration. Such a system could significantly improve the tracking of accomplishments, management of data, dissemination of information, environmental analyses, and

decision making. Such a system will allow state and Federal agencies and private sector partners to share GIS-based information concerning wetlands. Decision makers and managers at all levels inside and outside the government will be able to make better informed and quicker wetland decisions.

We estimate that the President's Earth Day 2004 goal to create, improve, and protect at least three million wetland acres will be achieved a year earlier than our target date of Earth Day 2009. To ensure that the strides made in achieving the wetlands goal not only continue but increase, one next step would be to lay the foundation to make sure that all decision makers, including individual citizens, have browser-based access to the information they need to track past accomplishments and make the coordinated strategic decisions that will ensure our Nation's wetland and economic bases continue to expand.



Early fall migrants on recently enhanced wetland on the Frasier Farms, North San Joaquin Valley, California. (FWS)

Appendix A.

Methodology and Definitions

Data Call to the Agencies

The data call for wetlands performance and budget data went to the Departments of Agriculture, Army, Commerce, the Interior, and Transportation and to the Environmental Protection Agency. The Working Group improved interagency guidance based on lessons learned last year. The guidance increased the consistency and accuracy of the estimates developed, and projected estimates in the previous report were adjusted using actual results for FY 2006.

Reporting Period

Performance and funding data for programs covered the following time periods:

- FY 2006 enacted budget and performance results
- FY 2007 continuing resolution budget and estimated performance results
- FY 2008 President's requested budget and estimated performance results.

To assess progress for the third year since the President's April 2004 announcement, half of the reported achievements for FY 2006 were used and combined with half of the planned accomplishments for FY 2007.

Year Performance and Budget Data Reported

Performance data are reported in the year the project is completed, land acquired, or easement purchased. However, funding is reported in the year it is appropriated. For example, funding for a multi-year wetlands improvement project would be reported in FY 2006 and FY 2007 when funding is appropriated, but the number of acres improved could be reported in FY 2008 and FY 2009 as the accomplishments are realized.

Scope of Funding Included in the Report

Wetlands activities funded by both discretionary and mandatory funds are included. Discretionary funds are controlled by appropriations acts, and manda-

tory funds are controlled by laws other than appropriations acts (e.g., Coastal Wetlands Planning, Protection, and Restoration Act funds, and funds collected from the sale of Migratory Bird Conservation Stamps ["Duck Stamps"]). All annually appropriated funds are considered to be discretionary funds. The funding amounts identified in this report are estimates that were available at the time the President's FY 2008 Budget Request was presented to Congress. Future reports will capture updated FY 2007 funding amounts that reflect passage of H.J. Resolution 20 (P.L. 110-5) making appropriations for FY 2007.

Wetlands only

Programs that perform both wetlands activities and non-wetlands activities reported funding and performance related only to the wetlands component, not their entire program. For example, when land is purchased for waterfowl management it may include both wetlands and associated upland nesting cover. These upland acres were deducted from the acres reported as contributing to the President's wetlands goal, and the cost of these acres was generally deducted from the funds expended for the project. The number of acres of wetlands contributed by a program to the President's wetlands goal will be smaller than the



Native Gulf cordgrass lines the banks of the new channels and will be used to stabilize and enrich the soil, within the Babia Grande wetland complex, Texas. (Thor Lassen, Ocean Trust)



Wintering habitat for migratory waterfowl on Jordan Lake, Hamilton Ridge Wetlands Management Area, South Carolina. (FWS)

number of habitat acres reported in other budget documents because the habitat acres typically include upland buffer strips, associated upland cover, and nesting islands.

Eradication and abatement activities in wetlands

The first year an invasive plant or animal is eradicated or its population abated, the acreage will be reported as a gain under “improve.” Additional eradication or abatement work on the same area is considered to be maintenance and is not counted in the improve category.

Winter flooding of agricultural lands

Whether this acreage is counted depends on (1) whether the land is wetland or upland before the flooding and (2) whether the land is being newly flooded or the land is within a footprint that has been flooded in past winters. If the field is upland before being artificially flooded during the winter and upland after the water is removed in the spring, the acres are not counted. If the field is a farmed wetland before the flooding and this is the first year the field has been flooded, the acres are counted. Subsequent years of winter flooding are considered management and are not counted. The acreage will be reported as an improvement in quality through enhancement, because adding winter water results in the heightening, intensification, or improvement of one or more selected

functions and associated values. Enhancement is undertaken for a purpose such as water quality improvement, floodwater retention, or wildlife habitat. Farmed wetlands are defined as areas where the soil surface has been mechanically or physically altered for production of crops, but hydrophytes will become established if farming is discontinued.

Definitions of Accomplishments

In 2000, the White House Wetlands Working Group (WHWWG)—composed of representatives from all major Federal agencies involved in wetlands work—agreed to use wetlands terminology and definitions that had been developed during the mid-1990s. Information was provided by the participating agencies using terminology similar to that previously developed by the WHWWG and the same terminology used in previous Earth Day

wetlands reports.

To “restore or create” wetlands results in a gain of wetland acres and includes:

- Creation of wetlands that did not previously exist on an upland or deepwater site. These actions are referred to as “establishment” by the WHWWG.
- Restoration of a former wetland to its natural/historic function and resulting value. Typically, such a former wetland had been drained for some purpose. These actions are known as “re-establishment” by the WHWWG.

To “improve” wetlands results in a gain of wetlands functions or quality, rather than additional acreage, and includes:

- Repair of the natural/historic functions and associated values of a degraded wetland. The WHWWG refers to these actions as “rehabilitation” of wetlands. Rehabilitation results in a gain in wetlands quality.
- Heightening, intensification, or improvement of one or more selected functions and associated values. The WHWWG called these types of actions “enhancement.” Enhancement is undertaken for a purpose such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in the gain of

selected wetland functions and associated values but may also lead to a decline in other wetland functions and values.

To “protect” wetlands includes:

- Acquisition of land or easements of at least 30 years duration.

Activities Excluded from Acreage Counted toward the President’s Goal

Accomplishments outside the United States

Due to the migratory nature of birds, some programs work to restore, improve, and protect wetlands in Canada, Mexico, and the Caribbean. International portions of programs were not included in the data reported.

Uplands work

Many programs carry out activities in upland areas that are crucial to the health and sustainability of wetlands. These upland acres were not counted toward the President’s wetlands goal.

Wetland activities that maintain the Nation’s wetland base

Many important wetland activities are not counted

toward meeting the President’s goal because they are focused on maintaining or managing the Nation’s wetlands base and do not add acres, increase wetland quality, or fall within the definition of “protect.” Many agencies spend more funds maintaining and managing the existing wetlands base than they do making additions to the base. The base is critically important, because wetland gains can only be built on a stable foundation. The activities that help maintain the wetlands base are briefly described below and are included in Appendix B with further discussion.

Cyclical work: Work carried out to sustain wetlands (e.g., habitat maintenance on a National Wildlife Refuge to maximize wetland habitat values). Cyclic water-level management and other cyclic wetland activities are used to mimic naturally occurring flood regimes for the benefit of wildlife. Only new activities on a footprint of wetlands not previously manipulated for increased value were counted in the “improved” category as rehabilitation or an enhancement.

Management and maintenance activities: Effective management and maintenance activities are critical to sustain wildlife and plant populations. Management activities involve periodic manipulation of the physical, chemical, or biological character-



Moose on Selawink National Wildlife Refuge, Alaska. (Hillebrand, FWS)

Restoring Wetlands Injured by Oil Spills and Contaminant Releases

Because wetlands provide important habitats for many species of fish and wildlife, contaminants entering wetlands can injure fish and wildlife and decrease productivity. As a result of concerns over the influx of contaminants into the environment, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also known as CERCLA or “Superfund”); the Clean Water Act as amended in 1977 (CWA); and the Oil Pollution Act of 1990 (OPA). These three laws authorize natural resource trustees—such as the Department of the Interior (DOI) and the National Oceanic and Atmospheric Administration (NOAA)—to assess injuries to natural resources from contaminants and to seek restoration from those responsible for the injury.

Restoration projects may focus on either restoring the habitat (*e.g.*, improving hydrology and reducing runoff into wetlands) needed for the injured fish and wildlife, or on actions to increase their populations (*e.g.*, reducing predators and providing nesting substrate and habitat). Where injured habitat cannot be restored, replacement habitat can be restored or purchased. In addition, trustees may seek projects (or funds for projects) to compensate for lost services (*e.g.*, improved access to fishing sites) from the time of injury until recovery. Following are examples of restoration projects conducted in 2006 under CERCLA, OPA, and/or CWA.

- The U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources are working in partnership with Ducks Unlimited and Rush Lake Watershed Restoration Inc., to improve water clarity and quality, remove invasive species, and restore prairie pothole vegetation to Rush Lake in Wisconsin. These efforts will compensate for injuries to fish and wildlife from PCB releases into the Fox River/Green Bay ecosystem. The restoration of Rush Lake will benefit many of the injured wildlife and fish, including Forster’s terns; black-crowned night herons; red-necked grebes; sandpipers; redhead, ruddy, and wood ducks; and northern pike and yellow perch. Increases in fish and wildlife will also enhance fishing, hunting, and trapping opportunities. Projects completed in 2006 include installation of a dam, and dredging and

regrading of outlet channels to improve stream flow and facilitate lake drawdown. When complete, more than 3,000 acres will be restored.

- The Bridge Creek Restoration Project on Staten Island was completed by NOAA in partnership with the New York Department of Environmental Conservation, City Parks Foundation, and New York City Parks and Recreation Natural Resources Group, to compensate for damages caused when a pipeline released over 500,000 gallons of oil into the Arthur Kill waterway in 1990. The project has reconfigured and resized the Bridge Creek channel to alter the hydrologic regime. This has affected current flow, velocity, volume, tidal amplitude, and flow patterns in Bridge Creek to restore 18 acres of vegetation in a former smooth cord grass salt marsh. The project is expected to improve habitat for nearshore and inshore finfish, benthic invertebrates, marsh crabs, blue crabs, muskrat, shorebirds, wading birds, and waterfowl.
- NOAA and the U.S. Fish and Wildlife Service worked with Pierce County, Washington, and the city of Fife to restore 6.7 acres of tidal wetlands and 0.5 stream miles to create off-channel habitat for juvenile salmonids adjacent to Hylebos Creek. The restored wetland and emergent marsh, plus an additional 8.6 acres of riparian forest and freshwater wetlands, are now protected in perpetuity by a conservation easement and deed restriction. This is one of several restoration projects being implemented to restore resources injured by years of industrial contamination in Commencement Bay, Washington.



Fencing will prevent geese from grazing on the newly planted salt marsh at Bridge Creek, New York. (Bob Strovnik)

istics critical to maintaining habitat quality. These manipulations mimic natural regimes through periodic flooding, mowing, or prescribed burns. Maintenance activities include the repair of water control structures, fences, or structural protection. Cessation of management and maintenance activities triggers loss in wetland quality. Maintenance activities do not result in an increase in wetlands acreage or quality.

Mitigation: Wetlands created or improved as mitigation for the loss or degradation of other wetland values are not counted. The rehabilitation of wetlands at former hazardous waste sites are considered to be compensatory mitigation. Programs that mitigate for wetland losses are not counted as contributing to the new wetlands goal because they maintain the Nation's wetlands base. Examples of these types of programs are the Federal Highway Administration programs that mitigate the impacts of highways on wetlands, the Clean Water Act provisions that require the mitigation of permitted wetland losses, and the Natural Resources Damage Assessment and Restoration Program, which restores and improves wetlands at former hazardous waste sites.

Shoreline stabilization: The preservation of a marsh or channel using shoreline stabilization techniques (e.g., rock revetments, or steel or plastic sheet pile protection) is called armored or hard shoreline stabilization. Partial protection of shoreline erosion using vegetative plantings is called soft shoreline protection. Shoreline stabilization prevents loss of wetland acreage due to subsidence; erosion by tides, wind, and boat traffic; and similar factors. This acreage is not counted toward the President's goal.

Correcting for Over-Reporting of Acreage

More and more programs are participating in cooperative conservation partnerships. They have proven to be effective and efficient mechanisms to leverage resources and expertise. Many programs work cooperatively with both internal and external Federal partners as well as non-Federal partners. Correcting for over-reporting of acreage is a challenge to accurately reporting accomplishments. One partner may provide materials and equipment, another labor, another



Heavy equipment operators remove excess material to create one of the channels connecting the three basins within the Babia Grande wetland complex, Texas. (Thor Lassen, Ocean Trust)

technical assistance, and yet another land. For example, a 100-acre project with four partners could be reported by each of the partners, and could appear to be 400 acres when combined. In some cases, one partner may not be aware that a landowner is working with multiple partners.

These partnerships may result in over-reporting of performance. To correct for this "double-counting," partnership worksheets were used. Programs were asked to identify partnership groups separately on the worksheets. More than 60 percent of the reported acreage was accounted for on the partnership worksheets. Some agencies do not collect partnership data, and of those that do, most do not collect this data to the level of detail necessary to make refined adjustments for double-counting. Although more of the performance data was accounted for on the partnership worksheets, the quantity and quality was not sufficient to make adjustments to individual program accomplishments. Therefore, an overarching correction was necessary to avoid over-reporting the acres created or restored, improved, and protected.

To calculate this double-counting adjustment, all the acreage reported as accomplished through Federal partnerships was summed by category. The calculation assumed two Federal partners were involved in situations where at least one additional Federal partner was reported by the reporting agency. Half of the total acreage accomplished through

CEAP-Wetlands:

Quantifying Ecosystem Services and Modeling Wetland Quality

National protocols to measure wetlands acreage have advanced in the past two decades through the USDA National Resources Inventory and the DOI National Wetlands Inventory. To further quantify the environmental benefits of conservation practices and Farm Bill programs, USDA developed the Conservation Effects Assessment Project (CEAP). The wetlands component of this project (CEAP-Wetlands) is engaged in the following interrelated activities:

- Conduct regional investigations to quantify ecosystem services provided by wetlands and associated lands on agricultural landscapes.
- Develop predictive wetland condition indicator models.
- Produce a synthesis of the literature addressing the effects of conservation practices and programs on ecosystem services provided by wetlands and associated environments on agricultural landscapes.
- Build on existing collaborations or develop new ones to strengthen the science foundation of CEAP-Wetlands and enhance application of new technologies.
- Develop the scientific and institutional framework of a national wetlands adaptive management approach for USDA to routinely monitor anthropogenic effects—including those from conservation practices and programs—on wetland ecosystem services and wetland condition, and conduct risk-based assessments to more strategically allocate resources to conserve wetland ecosystems.

The CEAP-Wetlands Approach

A CEAP-Wetlands conceptual design model was developed to guide the regional investigations and predictive condition models. Of prime interest is the comparison of ecosystem service estimates before and after implementation of conservation practices, and interpretation of the

results to better inform national agricultural wetland policy and programs.

Regional investigations involve sampling wetlands and associated lands across an alteration gradient, focusing on wetland classes that historically have been altered and where USDA conservation efforts are focused. Ecosystem services and measures for them are identified during a scoping meeting involving scientists, resource managers, USDA conservation practitioners, and other conservation stakeholders. Existing data that could be of use are identified, as well as any gaps in the data. Collaborations with USDA and non-USDA scientists are formed to conduct the regional investigations, including development of the predictive wetland condition indicator models.

The models, developed using multivariate tools, describe the relationship between variables used to calculate an ecosystem service estimate and multiple-scale factors that influence the condition of those variables. Relationships between field-collected data that are incorporated in the model and remote data are investigated to identify potential surrogates for the model while maintaining its integrity. The inclusion of model factors measured via remote data complement existing USDA National Resources Inventory protocols to produce national wetlands status and trends information.

Contribution to the President's Wetlands Goal

CEAP-Wetlands regional investigations will produce quantitative ecosystem service estimates for wetlands and associated lands on agricultural landscapes and produce associated models of wetland quality. Ongoing investigations to address temporal and spatial variability in ecosystem service estimates and in wetland condition will improve the accuracy of these estimates and models. A national wetlands adaptive management approach, using CEAP-Wetlands as the catalyst, will ensure that objective, quantitative information on wetland ecosystem services and condition on private land is available for national decision makers.

multiple Federal partnerships by category was subtracted from the raw total, by category.

Moving Toward a Performance Measurement and Tracking System

This document reflects the lessons learned in developing the 2006 report. The estimates reported last year were adjusted as actual results became available. Over-reporting due to partnerships remains a significant concern. The agencies will continue to work on the double-counting problem during the next year, particularly to determine whether the problem can be solved through the use of geographic information system (GIS) technology or other geoenabled technologies.

The use of GIS technology to track wetland programs and their contribution toward the national goal would simplify the

problem of adjusting for double-counting. The digital project boundaries could be entered into a GIS and analyzed for multiple overlaps. This approach would have the additional advantage of allowing the information to be overlaid on a digital map of the United States. The map would facilitate the development of monitoring programs to ensure wetlands are restored, improved, and protected and that they provide the intended functions and values.

Tracking systems require agreement on common performance measures and definitions. They assess whether the restoration and enhancement projects quantitatively and qualitatively meet national goals. The President noted this need in his 2004 Earth Day announcement by committing the Federal Government to “gain further experience and develop useful protocols for measuring wetland outcomes.” The Federal agencies continue to make progress in developing a procedure to track wetland accomplishments.



Exotic plant species were removed from the banks of a stream in the Appomattox Court House National Historic Park, Virginia. (NPS)

Appendix B.

Maintaining the Wetlands Base

Federal agencies engage in various actions that help maintain the existing base of wetlands. The President's goal helps sharpen focus on these activities. A policy of having an "overall increase" of wetlands must be built on a strong foundation of "no net loss." Key programs that contribute to the base, but that are outside the President's initiative, fall into the following categories:

- Managing wetlands
- Cooperative conservation
- Regulation and mitigation
- Support activities.

Managing Wetlands

Approximately 13 percent of the Nation's current base of wetlands is managed by Federal agencies. Many units of the National Wildlife Refuge System were established for their wetland values, and FWS spends approximately \$25 million annually to actively manage more than 1.1 million acres of wetlands. Wetlands management activities include creating desired conditions through the use of canals, levees, water control structures, and pumps. Cyclical water level and management activities—including mechanical disturbance, prescribed burning, or chemical treatment—also are used to produce native wildlife foods in wetlands. Other Federal agencies managing wetlands include the National Park Service, U.S. Forest Service, Bureau of Land Management, National Oceanic and Atmospheric Administration, Bureau of Reclamation, Bureau of Indian Affairs, and Department of Defense. All of these wetlands are being conserved for sustainable benefits.

Cooperative Conservation

Seventy-four percent of the land in the United States is privately owned. To better conserve privately owned wetlands, the Federal government relies on voluntary, incentive-based conservation programs. For example, technical and financial assistance provided by the Natural Resources Conservation Service and the U.S. Fish and Wildlife Service help private landowners apply needed conservation techniques on their land. When private landowners use these programs to restore, protect, and improve wetlands on their property, they serve as stewards of our environment. Other cooperative conservation efforts include:

Public-private partnerships

The success of Federal actions to encourage and partner with non-Federal parties—state and local governments, Indian tribes, and nongovernmental entities—increases opportunities to make progress through cooperative endeavors. Recent trends are encouraging. For example, through the Corporate Wetlands Restoration Partnership, over 225 corporate partners and 100 non-Federal partners—including environmental organizations, foundations, and state and local governments—are working with Federal agencies to implement wetlands projects (see <http://www.coastalamerica.gov/text/cwrp.html>). The number of partnerships is projected to increase in the future. The coordinated use of public-private efforts focusing on priority wetlands opportunities should yield major ecological benefits. Another example of successful public-private partnerships are the FWS Joint Ventures (JVs). Formed to implement the North American Waterfowl Management Plan, they are self-directed partnerships involving Federal, state, and local governments; corporations; and a wide range of nongovernmental conservation organizations. JVs have proven to be successful tools for developing cooperative conservation efforts to protect waterfowl and other bird habitat. JVs address multiple local, regional, and continental goals for sustaining migratory bird populations by developing scientifically based habitat projects that benefit waterfowl and other migratory bird populations.

Technical assistance

Most Federal agencies involved with wetlands activities provide Federal, state, and local partners with technical (biological, engineering, hydrological, etc.) expertise to support various development, conservation, and restoration projects across the country. These programs offer technical assistance to help conserve, restore, and protect a variety of fish and wildlife and their habitats. Among the laws providing a foundation for technical assistance and conservation partnerships are the Fish and Wildlife Coordination Act, National Environmental Policy Act, Clean Water Act, Federal Power Act, Estuary Restoration Act, and Environmental Restoration Act.

Regulation and Mitigation

Water quality

An important aspect of the President's Wetlands Initiative is its continued emphasis on the goal of "no net loss" of wetlands by existing programs that regulate certain activities in wetlands and other waters. Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands, and is jointly administered by the USACE and EPA. The USACE has primary responsibility for day-to-day permitting of activities in jurisdictional "waters of the United States," a broad category of aquatic resources that includes wetlands. A comprehensive permit review requires applicants to first avoid and then minimize impacts, and finally use compensatory mitigation to replace wetland functions lost. Regulated activities under this program include fills for development, water resource projects (such as dams and levees), and infrastructure development (such as highways and airports). During the past three years, more than 270,000 permit applications were processed requiring applicants to avoid impacts to more than 22,000 acres of wetlands, and maintaining a ratio of more than two acres of mitigation for every acre of permitted impacts to wetlands. In addition, the USACE has developed new performance standards that increase the emphasis on field evaluations of mitigation sites. The USACE also is providing field guidance to improve mitigation success through interagency efforts associated with the national Wetlands Mitigation Action Plan, and promulgating a joint rule with EPA that proposes integrating the watershed approach in mitigation planning.

Farmland

The Wetland Conservation ("Swampbuster") provision established in the 1985 Farm Bill, and amended in the 1990 Farm Bill, requires all agricultural producers to protect the wetlands on the farms they own or operate if they wish to be eligible for certain USDA farm program benefits. Producers are not eligible if they have planted an agricultural commodity on a wetland that was converted by drainage, leveling, or any other means after December 23, 1985, or if they have converted a wetland for the purpose of agricultural commodity production, or for making such production possible, after November 28, 1990. NRCS Conservation Technical Assistance staff make wetland determinations, develop wetlands mitigation and restoration plans, and administer other Swampbuster-related provisions.

Transportation

Under Federal Aid Highway legislation, state transportation agencies may use national Highway System and Surface Transportation Program funds to finance wetland and natural habitat conservation planning and implementation, as well as compensatory mitigation and restoration projects that offset unavoidable losses from transportation projects. The Department of Transportation (DOT) has a goal of 1½-to-1 wetland acre mitigation; under the Federal Aid Highway Program it has achieved over 49,000 acres of wetland mitigation since 1996, with mitigation exceeding acres impacted by over 31,000 acres. The 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users requires that metropolitan and statewide plans reflect environmental mitigation and coordination with resource agencies. The Federal Highway Administration also funds research on wetlands mitigation in connection with highways, and wetlands mitigation is an eligible project cost for Federal transit and airport assistance.

Support Activities

Wetland inventories

The FWS strategically maps the Nation's wetlands and deepwater habitats to gather information on their characteristics, extent, and status and trends through the National Wetlands Inventory (NWI). As part of the President's Wetlands Initiative, the FWS completed an updated national wetlands status and trends report in 2005. The study found that there are about 107.7 million acres of wetlands in the conterminous United States. Between 1998 and 2004, there was an estimated gain in wetlands acreage of 191,750 acres, or about 32,000 acres per year. The net gain in wetlands acreage was attributed to an increase in freshwater ponds, conversion of agricultural lands or former agricultural lands that had been idled, in combination with wetland restorations. Freshwater wetland losses to silviculture and to urban and rural development offset some acreage gains. The report did not document or address changes in wetlands quality. There is additional work to be done to ensure that the Nation's wetlands base is sustained and provides the necessary functions, diversity, and structure to improve the quality of our wetland resources as outlined in the President's 2004 message.

The NRCS conducts the National Resources Inventory (NRI), also a scientifically based statistical survey of the Nation's natural resources that provides updated information on the status, condition, and trends of land, soil, water, and

related resources on the Nation's non-Federal land. The NRI is unique in that it is a nationally consistent database constructed specifically to estimate five-, 10-, and 15-year trends for natural resources. The NRI process has reported that between 1997 and 2003 there was an estimated net gain of 263,000 acres of wetlands due to agricultural activities, an average annual increase of 44,000 acres.

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

The NWI Status and Trends study was designed specifically to sample wetlands and wetland change, whereas the NRI is a landscape characterization of all natural resources, of which wetlands make up one component. The FWS designed its study to develop wetlands trend information for all lands in the conterminous United States, whereas the NRI collects data on non-Federal rural lands.

<http://www.fws.gov/nwi/statusandtrends.htm>

Monitoring and evaluation

When actions are taken to restore or enhance natural resources or ecosystems, a considerable amount of time may pass before the full effects are evident. For this reason, the responsible Federal agencies monitor the targeted wetlands to measure and track progress. Results from monitoring are useful for evaluating the effectiveness of the actions taken; in some cases, management goals or actions to meet them may be modified. In addition, the Federal Government provides both financial and technical assistance to states and tribes to help them monitor their wetlands conservation work.

Research and education

Federal agencies also are engaged in research to better understand wetlands, wetland plants, and their responses to targeted actions. Among the most prominent programs are the national Wetlands Research Center (USGS), Engineer Research and Development Center (USACE), Plant Materials Centers (NRCS), the Center for Forested Wetlands Research (USFS), and the Office of Research and Development (EPA).

Appendix C.

Department of Agriculture (USDA)

Table C-1. USDA Programs Supporting the President's Wetlands Goal in FY 2006. Funding (millions of dollars)

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands Funding for Goal FY 2008	Difference from FY 2007
FSA	Conservation Reserve Program	13.660	5.970	0.000	19.630	3.060
NRCS	Conservation Technical Assistance Program	2.000	24.950	0.000	26.950	0.000
NRCS	Environmental Quality Incentives Program	0.010	0.001	0.000	0.011	0.000
NRCS	Farm and Ranchlands Protection Program	0.000	0.000	3.000	3.000	0.000
NRCS	Grasslands Reserve Program	0.000	0.000	3.700	3.700	0.000
NRCS	Wetlands Reserve Program	124.800	12.100	318.100	455.000	191.410
NRCS	Wildlife Habitat Incentives Program	1.025	0.310	0.000	1.335	0.000
Total		141.495	43.331	324.800	509.626	194.470

USDA Programs Supporting the President's Wetlands Goal

Farm Service Agency (FSA)

Conservation Reserve Program: This program was originally authorized in 1985 and then re-authorized through 2007. It establishes permanent vegetative cover on eligible acreage of environmentally sensitive farmlands (including cropped and prior converted wetlands) through long-term rental agreements. Currently, 2.4 million wetland acres, including upland buffers, have been

restored and are being maintained under 10- to 15-year contracts with annual rental payments of \$126 million. The 2002 Farm Bill authorized that, at any one time, up to 39.2 million acres may be enrolled in this program during 2002 through 2007, an increase from 36.4 million acres authorized to be enrolled through 2002. <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp>

Natural Resources Conservation Service (NRCS)

Conservation Technical Assistance (CTA) Program: In

Table C-2. USDA Programs Supporting the President's Wetlands Goal in FY 2008. Planned Accomplishments (in acres)

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands FY 2008	Difference from FY 2007
FSA	Conservation Reserve Program	30,400	4,300	0	34,700	-7,700
NRCS	Conservation Technical Assistance Program	2,000	49,300	0	51,300	0
NRCS	Environmental Quality Incentives Program	4,000	300	0	4,300	0
NRCS	Farm and Ranchlands Protection Program	0	0	2,400	2,400	0
NRCS	Grasslands Reserve Program	0	0	7,800	7,800	0
NRCS	Wetlands Reserve Program	171,500	13,900	89,600	275,000	7,450
NRCS	Wildlife Habitat Incentives Program	6,972	739	0	7,711	0
Total		214,872	68,539	99,800	383,211	-250

FY 2006, CTA helped landowners protect water quality on 13,634,478 acres; improve fish and wildlife habitat quality on 4,138,481 acres; and create, restore, or enhance 65,300 acres of wetlands.

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

Environmental Quality Incentives Program (EQIP): As a voluntary conservation program, EQIP promotes agricultural production and environmental quality as compatible national goals. Through EQIP, farmers and ranchers may receive financial and technical help to install and maintain conservation practices that enhance soil, water, and related natural resources, including wetlands. The program has restored 33,347 acres of wetlands, and an additional 147,056 acres have been enhanced or improved since the program was established in

1996. The 2002 Farm Bill authorized \$400 million for FY 2002, \$700 million for FY 2003, \$1 billion for FY 2004, \$1.2 billion for both FY 2005 and FY 2006, and \$1.3 billion for FY 2007.

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

Farm and Ranchlands Protection Program: This program provides matching funds to help purchase development rights to keep productive farm and rangeland in agricultural uses for protecting topsoil by limiting conversion to nonagricultural uses of land.

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

Grasslands Reserve Program: This voluntary program offers landowners the opportunity to protect, restore, and enhance grasslands on their property. The program will conserve vulnerable grasslands from conversion to cropland or

other uses and conserve valuable grasslands by helping maintain viable ranching operations. The program is jointly administered by NRCS and FSA (NRCS has lead responsibility on technical issues and easement administration, and FSA has lead responsibility for rental agreement administration and financial activities). In FY 2006, program staff processed 812 new applications totaling 970,628 acres valued at approximately \$581,070,482. Of these totals, farmers and ranchers protected 1,500 acres of wetlands using common management practices to maintain the viability of the conserved grassland. <http://www.nrcs.usda.gov/programs/grp>

Wetlands Reserve Program (WRP): WRP is a voluntary program that assists landowners with restoring and protecting wetlands through conservation easements and cost-share agreements. Since 1992, 1,893,672 wetland and associated upland acres have been enrolled in the program. The 2002 Farm Bill requires, to the maximum extent practicable, an additional 250,000 acres to be enrolled in the program each year, for a total program enrollment of 2,275,000 acres by the end of 2007. Total program enrollment at the end of FY 2006 neared 1.9 million wetland acres and associated upland acres. <http://www.nrcs.usda.gov/programs/wrp>

Wildlife Habitat Incentives Program (WHIP): WHIP is a voluntary program that provides technical and financial assistance to enable eligible participants to develop upland wildlife, wetland wildlife, threatened, and endangered species, fish, and other types of wildlife habitat in an environmentally beneficial and cost-effective manner. The purpose of the program is to create high-quality wildlife habitats that support wildlife populations of local, state, and national significance. In FY 2005 through 2007, approximately 11,000 acres of wetlands will have been protected, restored, developed, or enhanced under WHIP. <http://www.nrcs.usda.gov/programs/whip/>

USDA Programs that Maintain the Wetlands Base

NRCS programs help private landowners apply needed conservation techniques on their land. When private landown-

ers use these programs to restore, protect, and improve wetlands on their property, they serve as stewards of our environment. Other cooperative conservation efforts include:

Plant Materials Program: Focuses on development of plants and technology to help conserve natural resources including wetland plants. There are currently 27 Plant Materials Centers (PMC) located across the country. Each Center develops vegetative solutions to natural resource problems and issues. In the wetlands arena, PMCs have selected plants for restoration work as well as for nutrient filtering in constructed wetlands. The PMCs also develop the technology to successfully propagate, establish, and manage plant materials in wetland settings. In FY 2006, PMCs were working on over 250 studies to further the scientific understanding of wetland vegetation. This included updating technology to protect and restore coastal marshes (especially along the gulf areas), restore or enhance wetlands, protect shorelines of wetlands, and enhance wetlands for wildlife uses. Several PMCs are finishing a large cost-reimbursable contract with the USACE to grow plants for a coastal wetland on Long Island, New York. <http://plant-materials.nrcs.usda.gov>

National Resources Inventory (NRI): NRCS conducts the National Resources Inventory (NRI) in cooperation with Iowa State University's Center for Survey Statistics and Methodology. The NRI is a scientifically based longitudinal (statistical) survey of the Nation's natural resources that provides information on status and trends of land use and soil, water, and related resources for the Nation's non-Federal land. The NRI is unique in that it provides nationally consistent statistical data that are explicitly linked to the NRCS Soil Interpretations database and that support analysis of resource trends on rural and developed land over all regions of the United States since 1982. The NRI shows that between 1997 and 2003 there was an estimated net gain of 263,000 acres of wetlands due to agricultural activities—an average annual increase of 44,000 acres. <http://www.nrcs.usda.gov/technical/NRI>

Appendix D.

Department of Commerce

National Oceanic and Atmospheric Administration (NOAA)

Table D-1. NOAA Programs Supporting the President's Wetlands Goal in FY 2008. Funding (millions of dollars)

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands Funding for Goal FY 2008	Difference from FY 2007
NOAA	Fisheries Habitat Restoration	0.842	13.430	0.000	14.272	-3.542
NOAA	Great Lakes Restoration Program	0.000	1.500	0.000	1.500	0.000
Total		0.842	14.930	0.000	15.772	-3.542

Table D-2. NOAA Programs Supporting the President's Wetlands Goal in FY 2008. Planned Accomplishments (in acres)

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands FY 2008	Difference from FY 2007
NOAA	Fisheries Habitat Restoration	2,000	3,000	0	5,000	500
NOAA	Great Lakes Restoration Program	0	75	0	75	0
Total		2,000	3,075	0	5,075	500

NOAA Programs Supporting the President's Wetlands Goal

Community-based Restoration Program (CRP): The CRP applies a grassroots approach to restoration by actively engaging community members in on-the-ground restoration of coastal fishery habitats around the Nation. The CRP embraces cooperative conservation by establishing partnerships that collaboratively restore NOAA trust resources, improving environmental quality and strengthening stewardship within local communities. FY 2008 funding request is \$12.8 million.

http://www.nmfs.noaa.gov/habitat/restoration/projects_programs/crp/

Great Lakes Habitat Restoration Program: In FY 2008, NOAA will establish a cross-NOAA program to coordinate habitat restoration and protection efforts. Taking into account the priority needs identified by the Great Lakes Interagency Task Force, NOAA will focus its restoration and protection to support ongoing efforts at watersheds within Great Lakes Areas of Concern. FY 2008 funding request is \$1.5 million.

NOAA Programs that Maintain the Wetlands Base

National Estuarine Research Reserve System: This network of protected areas was established for long-term research, education, and stewardship. The partnership program between NOAA and the coastal states protects more than one million acres of estuarine land and water, which provides essential habitat for wildlife; offers educational opportunities for students, teachers, and the public; and serves as living laboratories for scientists. FY 2008 funding request is \$16.8 million.

<http://nerrs.noaa.gov>

Coastal Zone Management Program (CZM): CZM is a voluntary Federal–state partnership dedicated to comprehensive management of the Nation’s coastal resources. State CZM programs contain provisions for the protection of estuaries, coastal wetlands, and other natural resources. Funding supports implementation of state CZM programs, including numerous state and local coastal habitat protection and restoration projects. FY 2008 funding request is \$66.1 million.

<http://coastalmanagement.noaa.gov/>

Coastal and Estuarine Land Conservation Program (CELCP): The CELCP was established to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical, or aesthetic values, giving priority to lands with significant ecological values that can be effectively managed and protected. The program provides funding to state and local governments to acquire such lands to ensure they are permanently conserved for the benefit of future generations. FY 2008 funding request is \$15 million.

<http://coastalmanagement.noaa.gov/>

Pacific Coastal Salmon Recovery Fund (PCSRF):

Congress established the PCSRF to contribute to the restoration and conservation of Pacific salmon and steelhead populations and their habitats. The states of Washington, Oregon, California, Idaho, and Alaska, and the Pacific Coastal and Columbia River tribes receive Congressional PCSRF appropriations from NOAA’s National Marine Fisheries Service each year. The fund supplements existing state, tribal, and local programs to foster development of Federal-state-tribal-local partnerships in salmon and steelhead recovery and conservation. The President’s FY 2008 request for the fund is \$66.8 million.

<http://nwr.nmfs.noaa.gov/Salmon-Recovery-Planning/PCSRF/>

National Estuaries Restoration Inventory: This program was created to track estuary habitat restoration projects across the Nation. The purpose of the inventory is to provide information on restoration projects in order to improve restoration methods, as well as to track acreage restored toward the million-acre goal of the Estuary Restoration Act.

<http://neri.noaa.gov>

Damage Assessment, Remediation, and Restoration

Program (DARRP): As a natural resource trustee, NOAA acts on behalf of the public to restore resources injured by oil spills, releases of other hazardous substances, and vessel groundings. DARRP collaborates with other Federal, state, and tribal natural resource trustees in assessing and quantifying injuries to natural resources, seeking damages for those injuries, implementing restoration actions, and monitoring progress to ensure restoration goals are met. FY 2008 funding request is \$8.9 million.

<http://response.restoration.noaa.gov>

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

Appendix E.

Department of the Army

U.S. Army Corps of Engineers, Civil Works

Table E-1. USACE Programs Supporting the President's Wetlands Goal in FY 2008. Funding (millions of dollars)*

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands Funding for Goal FY 2008	Difference from FY 2007
USACE Civil Works	Aquatic Ecosystem Restoration Program	51.873	170.000	0.525	222.398	-60.602

**Excludes regulatory program, mitigation, and Coastal Wetlands Planning, Protection and Restoration Act. Includes funding for projects that will result in acres to be counted in future fiscal years.*

Table E-2. USACE Programs Supporting the President's Wetlands Goal in FY 2008. Planned Accomplishments (in acres)

Program	Program	Restore or Create	Improve	Protect	Total Wetlands FY 2008	Difference from FY 2007
USACE Civil Works	Aquatic Ecosystem Restoration Program	3,795	14,827	185	18,807	-242,547

USACE Projects Supporting the President's Wetlands Goal

Aquatic Ecosystem Restoration: The USACE has numerous study, project-specific, and programmatic authorities for implementing aquatic ecosystem restoration projects. In addition, activities contributing to the President's goal may occur on the 12 million acres of water and land managed by the USACE for other purposes, such as flood damage reduction, navigation, and recreation. Another contribution is the use of dredged material to create, restore, or improve wetland habitat as part of routine maintenance dredging of Federal channels.

The data in the tables above represent a subset of the total USACE commitment to achieving the President's goal. Because most USACE restoration projects take several years to complete, the funds appropriated in any one fiscal year have a minimal correlation to the number of acres that count toward the President's goal in that fiscal year. Projects are included in the

budget based on their effectiveness in addressing significant regional or national aquatic ecological problems. The aquatic ecosystem studies and projects proposed by the USACE for funding in FY 2008 include the following examples (the large number of projects precludes a comprehensive list within this document):

Comprehensive Everglades Restoration Plan (CERP):

The primary and overarching purpose of CERP is to restore the South Florida ecosystem, which includes the Everglades. The plan provides the framework and guidance to restore, protect, and preserve the water resources of the greater Everglades ecosystem. CERP has been described as the world's largest ecosystem restoration effort, and includes providing more natural flows of water, improved water quality, and more natural hydro-periods within the remaining natural areas. The plan is intended to help restore the ecosystem while ensuring clean and reliable water supplies, and providing flood protection in urban areas.

<http://www.evergladesplan.org>

Louisiana Coastal Area Ecosystem Restoration: More than one million acres of Louisiana's coastal wetlands have been lost since the 1930s; another one-third of a million acres could be lost over the next 50 years unless large-scale corrective actions are taken. The ecosystem restoration program will construct significant restoration features; undertake demonstration projects; study potentially promising large-scale, long-term concepts; and take other needed actions to restore the ecosystem. A 10-year plan of studies and projects was developed through a public involvement process, and working closely with other Federal agencies and the State of Louisiana.
<http://www.mvn.usace.army.mil/prj/lca/>

Upper Mississippi River Restoration: Originally authorized in 1986 but significantly modified in 1999, this program provides for planning, construction, and evaluation of measures for fish and wildlife habitat rehabilitation. Multiple habitat projects are helping to revitalize the side channels and to restore island, aquatic, and riparian habitat in the Upper Mississippi River. The program also includes funds for the collection of project and systemic baseline data and monitoring.
<http://www.mvr.usace.army.mil/EMP/default.htm>

USACE Programs that Maintain the Wetland Base

Together with their partners, the USACE provides environmental stewardship of nearly 12 million acres of public land and water and oversees the natural resources management of 456 operating civil works water resources projects nationwide. The USACE strives to provide sound environmental stewardship of lands and waters entrusted to its care, while accomplishing multiple authorized project purposes. Its Natural Resources Management Mission is to manage and conserve those natural resources (including fish and wildlife, woodlands and grasslands, wetlands, soils, and water) consistent with ecosystem sustainability principles, to serve the needs of present and future generations.

The stewardship of wetland resources is an integral part of the USACE responsibility. Although the classification and quantity of wetlands acreage under USACE stewardship has not yet been determined, an inventory of natural resources (including wetlands) is required for each project. This effort is under way and is being accomplished as fiscal resources allow. Information from the inventories is incorporated into master plans and operational management plans and used to help

manage, conserve, and protect wetland resources. Where feasible, wetland resources management is integrated to capture mutual benefits (e.g., for efforts to manage wetland-dependent plants and animals, including endangered species). In addition, the effects of existing and proposed land use activities are monitored or evaluated to guard against wetland degradation or loss. Opportunities to enhance wetland quality and quantity are implemented where feasible, employing partnerships and volunteer assistance where possible.
<http://corpslakes.usace.army.mil/employees/envsteward/envsteward.html>

Engineer Research and Development Center: Within the Environmental Laboratory, the Wetlands and Coastal Ecology group conducts field and laboratory investigations on biotic and abiotic resources in wetlands and coastal systems and develops products/systems supporting assessment, restoration, and management of wetlands and coastal ecosystems. Examples of wetlands research include the development of improved standards, techniques, and guidelines for the planning, design, and construction of USACE wetlands restoration and creation projects; completion of a GIS-based decision support system for prioritizing candidate wetlands restoration sites with the greatest potential for success; and exploration of innovative plant harvesting/installation methods for the large-scale restoration of submerged aquatic vegetation (SAV) ecosystems in the Chesapeake Bay. In addition, state-of-the-art tools and methods for wetlands restoration will be integrated to forecast physical, chemical, and biological responses to water resource management activities and to manage these resources within a watershed-scale perspective. Approximately \$1.8 million is included in the FY 2008 budget for wetlands research.
<http://el.erdc.usace.army.mil/org.cfm?Code=EE-W>

Regulatory Clean Water Act 404 Program: The USACE manages the Nation's wetlands through a regulatory program requiring permits for the discharge of dredged and fill material into jurisdictional waters of the United States. In a typical year the USACE receives permit requests to fill about 25,000 acres of jurisdictional waters. Of these, about 5,000 acres are not permitted, and for the 20,000 permitted acres the USACE requires mitigation on average of more than two acres for each permitted acre lost. FY 2008 funding request is \$180 million.
<http://www.usace.army.mil/inet/functions/cw/cecwo/reg>

Appendix F.

Department of the Interior (DOI)

DOI Programs Supporting the President's Wetlands Goal

Bureau of Land Management (BLM)

Land Acquisition Program: The program is focused on consolidating land ownership and conserving resource values within 2,300 units, which compose the Bureau's Special Management Areas. Acquisition through exchange, purchase, and donation is an important component of BLM's land management strategy. BLM acquires land and easements in land when in the public interest and consistent with publicly approved land-use plans. Wetlands, in concert with other important resource values in these Special Recreation Management Areas, are an important factor in developing purchase, donation, and exchange initiatives.

<http://www.blm.gov/nbp/wbat/lands/realty/tenure/>

Management of Lands and Resources/Oregon and California Grant Lands: The BLM uses these appropriations to address a wide variety of natural resource management needs. These activities frequently include on-the-ground projects that conserve, protect, and restore wetlands. Funding to protect, manage, and reforest the revested Oregon and California Railroad grant lands is also used for projects that directly restore and protect wetlands. Funding made available for wetlands-related conservation activities depend on annual funding levels and competing resource priorities within BLM.

<http://www.blm.gov/nbp/wbat/>

National Park Service (NPS)

Exotic Plant Management Teams: The invasion of exotic, invasive plants can dramatically alter wetland ecosystems by changing plant community composition, waterflow patterns, water temperatures, and habitat for invertebrates, fish, and other wildlife species. Sixteen Exotic Plant Management Teams deployed in parks across the country, in concert with park programs, are targeting the control of invasive plants and restoration of wetland ecosystems. Treatments are focused on areas where invasive plant infestations are just taking hold, at the source of infestations, and in areas where management is coordinated across jurisdictions. More information on the

teams and invasive plant programs is available at <http://www.nature.nps.gov/biology/invasivespecies>

U.S. Fish and Wildlife Service (FWS)

Coastal Program: The Coastal Program works in 22 specific coastal communities to improve the health of watersheds for fish, wildlife, and people by building partnerships; identifying, evaluating, and mapping important habitats; restoring habitats; and providing technical assistance and financial support to help protect important coastal habitats. Since 1994, the program has restored 115,000 acres of coastal wetlands, 28,000 acres of coastal uplands, and more than 1,150 miles of coastal streamside habitat. It has also helped protect 1.35 million acres of coastal habitat. FWS also provides technical assistance to other Federal, state, and local agencies under this program.

<http://www.fws.gov/coastal>

Fish and Wildlife Management Assistance (FWMA): This program delivers scientific information and projects that support cooperative efforts to conserve America's fisheries and wildlife resources. FWMA includes on-the-ground conservation activities, such as assessing the condition of habitats, restoring stream and wetland habitats, restoring fish passage, and controlling aquatic nuisance species through physical, chemical, and biological means.

<http://www.fws.gov/fisheries/fwma/>

Landowner Incentive Program: This program provides grants to state and tribal conservation agencies to help landowners restore habitats of listed, proposed, candidate, or other species determined to be at risk on private and tribal lands. Many of these species occur in wetland environments, and states and tribes focus some of their efforts on wetland habitats as appropriate. These efforts may range from providing technical assistance and developing wildlife management plans for these species and their habitats, to performing actual habitat manipulation as appropriate, to acquiring conservation easements or other forms of protection on wetlands.

<http://Federalaid.fws.gov/lip/lip.html>

National Coastal Wetlands Conservation Grant Program (CWPPRA Funds): Since 1990, the program has made available \$183 million to 25 coastal states and one U.S. territory to acquire, conserve, or restore over 250,000 acres of coastal wetland ecosystems. Typically, \$13 to \$17 million is awarded

DOI tables are on pages 38-41.

**Table F-1. DOI Programs Supporting the President's Wetlands Goal in FY 2008.
Funding (millions of dollars)**

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands Funding for Goal FY 2008	Difference from FY2007
BLM	Land Acquisition	0.000	0.000	1.500	1.500	-1.950
BLM	Oregon and California Grant Lands	0.000	3.095	0.000	3.095	0.179
BLM	National Fish and Wildlife Foundation	0.000	1.000	0.000	1.000	0.350
BLM	Yuma East Wetlands Restoration Project	0.000	0.035	0.000	0.035	0.000
NPS	NPS Exotic Plant Management Teams	0.000	1.600	0.000	1.600	0.000
FWS	Coastal Program	3.384	0.310	3.724	7.418	0.000
FWS	Fish and Wildlife Management Assistance	0.000	0.700	0.000	0.700	0.200
FWS	Landowner Incentive Program	0.000	0.000	0.000	0.000	-0.100
FWS	National Coastal Wetlands Grant Program (mandatory CWPPRA funds)	3.260	0.000	13.040	16.300	-2.456
FWS	National Wildlife Refuge System	4.495	4.975	5.000	14.470	0.352

Table F-1. DOI Programs Supporting the President's Wetlands Goal in FY 2008.
Funding (millions of dollars) (continued)

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands Funding for Goal FY 2008	Difference from FY2007
FWS	National Wildlife Refuge System (mandatory Migatory Bird Fund)	0.000	0.000	13.297	13.297	0.000
FWS	North American Wetlands Conservation Act (appropriated)	2.620	1.003	16.847	20.470	0.479
FWS	North American Wetlands Conservation Act (mandatory CWPPRA funds)	2.912	1.115	18.725	22.752	0.000
FWS	North American Waterfowl Management Plan - Joint Ventures	0.000	0.350	0.350	0.700	-0.005
FWS	Partners for Fish and Wildlife Program	18.499	4.001	0.000	22.500	2.500
Total		35.170	18.184	72.483	125.837	-0.451

**Table F-2. DOI Programs Supporting the President's Wetlands Goal in FY 2008.
Planned Accomplishments (in acres)**

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands FY 2008	Difference from FY 2007
BLM	Land Acquisition	0	0	530	530	-478
BLM	Oregon and California Grant Lands	0	25,446	0	25,446	1,000
BLM	National Fish and Wildlife Foundation	0	55	0	55	38
BLM	Yuma East Wetlands Restoration Project	0	1,400	0	1,400	0
NPS	NPS Exotic Plant Management Teams	0	4,000	0	4,000	0
FWS	Coastal Program	4,000	5,500	10,000	19,500	0
FWS	Fish and Wildlife Management Assistance	0	22,000	0	22,000	7,000
FWS	Landowner Incentive Program	0	0	469	469	0
FWS	National Coastal Wetlands Grant Program (mandatory CWPPRA funds)	993	0	4,670	5,663	0
FWS	National Wildlife Refuge System	36,906	114,135	1,876	152,917	5,937

**Table F-2. DOI Programs Supporting the President's Wetlands Goal in FY 2008.
Planned Accomplishments (in acres) (continued)**

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands FY 2008	Difference from FY 2007
FWS	National Wildlife Refuge System (mandatory Migatory Bird Fund)	0	0	17,865	17,865	0
FWS	North American Wetlands Conservation Act appropriated	14,056	32,984	52,066	99,106	0
FWS	North American Wetlands Conservation Act (mandatory CWPPRA funds)	23,030	54,046	93,249	170,325	0
FWS	North American Waterfowl Management Plan - Joint Ventures	2,599	16,995	1,132	20,726	-6,426
FWS	Partners for Fish and Wildlife Program	17,546	4,000	0	21,546	2,546
Total		99,130	280,561	181,857	561,548	9,617

annually through a national competitive process. Grants for an individual project are limited to \$1 million. Funding for this program comes from excise taxes on fishing equipment and motorboat and small engine fuels. States are required to provide either 50 or 75 percent of the total cost of the project, depending on whether the state has established and maintains a special fund for acquiring coastal wetlands, other natural areas, and open space. The program does not provide grants to support planning, research, monitoring activities, or construction or repair of structures for recreational purposes.

<http://www.fws.gov/coastal/CoastalGrants>

National Wildlife Refuge System: The mission of the National Wildlife Refuge System, managed by FWS, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. Approximately one-quarter of the 96-million-acre National Wildlife Refuge System consists of wetlands. The Refuge System protects, restores, rehabilitates, enhances, and conducts research on these wetlands. The Refuge System manages wetlands to enhance their value for migratory waterfowl and shorebirds, threatened and endangered species, and a myriad of native fish, wildlife, and plants. The wetland restoration and conservation programs of the Refuge System protect the biodiversity and environmental health of these habitats across diverse landscapes, and provide wildlife-dependent recreational opportunities for the American public.

<http://www.fws.gov/refuges/>

North American Wetlands Conservation Act (NAWCA) Program: This program supports voluntary public-private partnerships to conserve North American wetland ecosystems. It provides matching grants to public and private groups and agencies for wetlands restoration and protection in the United States, Canada, and Mexico. More than 14.6 million acres of wetlands and associated uplands have been affected by protection, restoration, or enhancement activities since 1991.

<http://birdhabitat.fws.gov/NAWCA/grants.htm>

North American Waterfowl Management Plan-Joint Ventures: This tri-national strategic plan fosters the creation of partnerships between the Federal government, states, tribes, corporations, private organizations, and individuals to cooperate in the planning, funding, and implementation of projects to conserve and enhance wetland habitat in high-priority "joint venture" regions. The plan calls for 16.1 million acres of

wetlands and associated uplands to be protected and 12.1 million acres to be restored or enhanced.

<http://www.fws.gov/birdhabitat/NAWMP/index.shtm>

Partners for Fish and Wildlife Program: Authorized by the Partners for Fish and Wildlife Act, this voluntary program, begun in 1987, works with landowners to restore wetlands on private lands using cooperative agreements. The FWS has entered into more than 41,000 agreements with partners. The program has restored 800,000 acres of wetlands, more than 1.6 million acres of uplands, and more than 6,000 miles of riparian and in-stream habitat. FWS also provides technical assistance to other Federal, state, and local agencies under this program.

<http://www.fws.gov/partners>

DOI Programs that Maintain the Wetlands Base U.S. Bureau of Reclamation (USBR)

Wildlife Habitat Augmentation Program: The program's purpose is to implement projects that protect, enhance, and restore riparian, wetland, and associated habitats within the watersheds of USBR's California Central Valley Project. This project consists of a system of 18 dams and reservoirs, canals, power plants, and other facilities located mainly in the Sacramento and San Joaquin valleys. The project manages about nine million acre-feet of water for urban, industrial, agricultural, and environmental uses; produces electrical power; and provides benefits for flood protection, navigation, fish and wildlife, recreation, and water quality.

<http://www.usbr.gov/mp/cvp.html>

U.S. Fish and Wildlife Service

National Wildlife Refuge System: In FY 2006, the National Wildlife Refuge System managed 145,461 acres for moist soils and 945,771 acres received other water-level manipulation. In FY 2007, those management activity accomplishments are expected to be 115,030 moist soil acres managed, with water-level manipulation being achieved on 888,436 acres of water impoundments. FY 2008 funding request is \$8.152 million.

<http://www.fws.gov/refuges/>

National Wetlands Inventory (NWI): The goal of the NWI is to produce information on the characteristics, extent, and status of the Nation's wetlands and deepwater and riparian habitats in order to promote the understanding and conservation of these resources. Federal, state, and local government agencies; tribes; academic institutions; Congress; and the

private sector use this information and digital maps to guide natural resource planning, management, and project development. Wetlands data are used in planning for emerging conservation issues such as energy development, avian influenza, and global climate change, where they are used to model sea-level rise. The wetlands data are available over the Internet. Wetlands status and trend data and reports provide contemporary information for decisionmaking and for wetlands policy formulation and assessment. The FY 2008 funding request is \$4.8 million.

<http://www.fws.gov/nwi>

Natural Resource Damage Assessment and Restoration Program: The Division of Environmental Quality provides approximately \$1.5 million in toxicology, ecology, and habitat restoration expertise to EPA and other Federal and state partners to minimize impacts to wetlands during the cleanup of contaminated areas. The division makes substantial contributions to maintaining the base of wetland acres as well as restoring and improving wetlands at former hazardous waste sites and areas impacted by oil and chemical spills.

<http://contaminants.fws.gov/Issues/Restoration.cfm>

U.S. Geological Survey (USGS)

USGS provides scientific expertise to address wetlands management issues identified by Federal resource managers. This expertise helps decision makers build and implement adaptive management strategies to support wetlands restoration and creation and to effectively improve and protect coastal, forested, and freshwater wetlands. USGS wetlands science addresses priorities in understanding the wetland structure, dynamics, functions, and interactions with the surrounding landscape; responses to natural and anthropogenic stressors; role of wetland functions (ecosystem services) from a socioeconomic perspective; and the support tools to help managers identify and achieve sustainable wetland conditions in restoration, creation, and rehabilitation activities. USGS wetlands research is primarily focused in the following regions:

Prairie Pothole Region/Great Plains: Research in this region expands the ecological understanding of processes that influence wetland functions and values in agriculture landscapes. Research on global climate change, sediment and nutrient dynamics, the effectiveness of wetland restoration and enhancement for flood storage and wildlife habitat, and the potential of prairie pothole wetlands to sequester carbon are also being addressed. FY 2008 funding request is \$0.375 million.

<http://www.npwrc.usgs.gov/about/factsheet/wetlands.htm>

Great Lakes: In this region, the effects of Great Lakes water-level fluctuations on wetlands are being researched, in addition to global climate change studies of wetlands that focus on interactions between climate change, lake levels, groundwater hydrology, and wetland response. This research provides scientific information to support the restoration, conservation, and management of wetlands. FY 2008 funding request is \$0.790 million.

<http://www.glsc.usgs.gov>

Gulf Coast: Hurricanes Katrina and Rita placed a high priority on research, spatial analyses, predictive modeling, technology development, and information synthesis and outreach related to the impacts to the Nation's critical Gulf Coast coastal and freshwater wetlands and habitats. USGS wetlands science in this region provides the scientific information needed by resource managers and planners to stabilize, restore, rehabilitate, and manage wetlands, including seagrass beds, inland grass beds, coastal saltwater and freshwater marshes, and forested wetlands. In addition, global climate change studies in the Lower Mississippi River Valley focus on riverine and coastal wetland response to CO₂ levels and sea-level rise. FY 2008 funding request is \$6.63 million.

<http://www.nwrc.usgs.gov>

Atlantic Coast: Wetlands research in the Atlantic region provides scientific information on restoration, enhancement, and creation of coastal and estuarine wetlands. Studies on global climate change focus on wetland response to sea-level rise and wetlands management options. In addition, the effects of varying fire regimes on wetland habitats and response to sea-level rise are being investigated. FY 2008 funding request is \$2.376 million.

<http://www.pwrc.usgs.gov/wetlands/>

Appendix G.

Department of Transportation (DOT)

Federal Highway Administration (FHWA) Programs Supporting the President's Wetlands Base

Under the Federal-aid highway legislation (Title 23, United States Code, Highways), state transportation agencies may use national Highway System and Surface Transportation Program funds to finance wetland and natural habitat conservation planning and implementation, as well as compensatory mitigation and restoration projects that offset unavoidable losses from transportation projects. The Department of Transportation/Federal Highway Administration has a goal of 1.5-to-1 wetland acre mitigation. Under the Federal-Aid Highway Program, FHWA has achieved over 49,000 acres of wetland mitigation since 1996, with the mitigation amount exceeding the amount impacted by over 31,000 acres. Through FHWA, the Department of Transportation also funds research on wetlands mitigation in connection with highways.

Fiscal Years 1996-2006 Total	Acres of Compensatory Wetland Mitigation	Acres of Wetland Impacts	Mitigation Ratio/Percent Increase	Acreage Gain
Total	49,882	18,327	2.7:1 170 percent	31,555*

**Gains from mitigation programs are not counted as acres toward the President's wetlands goal.*

Eligibility

In 1980, FHWA issued 23 CFR Part 777, Mitigation of Impacts to Privately Owned Wetlands, which gave sponsors of Federally assisted highway projects the flexibility to use Federal-aid funds to mitigate impacts to wetlands. The regulation was updated in 2000 to include more recent legislative, regulatory, and policy developments. The regulation specifies that funds eligible for mitigation and enhancement apply to all projects carried out under the Federal-Aid Highway Program.

Funding

Because Federal-aid highway programs operate under contract authority implemented through the states, total annual expenditures of Federal assistance are at the discretion of the states within obligation limits established by Congress for each program. The total of all expenditures each year for a given program must be

at or below the congressional obligation limit. But the Federal Government does not direct program expenditures under the annual limit; instead, the states determine how and where the funds are spent based on levels allocated to them by formula each year. Therefore, the states determine what portion of their total allocated funding authority will go to finance wetland mitigation and enhancement. The Federal Government provides projections that estimate and provide recommendations only on the total annual program obligation limits, not on specific authorizations for wetland mitigation and enhancement.

Performance

As a measure of performance under FHWA's net gain policy and commitments made under the Clean Water Action Plan, the agency monitors annual wetlands loss and gain under the Federal-aid highway programs nationwide. Monitoring began in

FY 1996. Program-wide, the FY 2006 figures from 17 states indicate that Federal-aid highway projects provided 2.4 acres of compensatory wetland mitigation for each acre of impact, excluding data from Florida. Florida reported 2,167 acres of mitigation against 91 acres of impacts (these data were included in the 11-year totals but not in averages and mitigation ratios for 2006). Data collected by FHWA over the past 11 years indicate that, nationwide, Federal-aid highway programs have achieved a 170 percent gain in wetlands acreage (2.7:1 gain/loss ratio). In terms of acres, Federal-aid highway programs reported a net gain of 31,555 acres of wetlands nationwide between 1996 and 2006.

Costs of wetlands mitigation have increased several-fold during the past 25 years. Costs of mitigation were estimated in 1995 as approximately \$16,000 per acre of mitigation nationwide, based on available data obtained from 1992 to 1994. This results in an estimated total cost from 1996 to 1999 for all Federally assisted highway programs of approximately \$50 to \$80 million per year for replacement of wetlands (in pre-1995 dollars). A Government Accountability Office (GAO) report to the Transportation Subcommittee on Highway Planning (August 1994) quotes data from 1992 for wetlands costs from 37 states. Annual costs reported for 1988 to 1992 averaged \$79 million.

Research and Other Cooperative Efforts to Support the Wetlands Goal

The FHWA coordinates wetlands programs and research initiatives with other Federal agencies, including EPA and DOI. FHWA wetlands research is not identified separately. FHWA, EPA, and USACE implemented guidance on how the TEA-21 preference on the use of mitigation banks can be exercised under the Section 404, Clean Water Act permitting process, one of the first actions completed under the National Wetlands Mitigation Action Plan.

Planning

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted in 2005, requires metropolitan and statewide transportation plans (highway and transit) to include a discussion of potential environmental mitigation activities and potential areas to carry out these activities, developed in consultation with Federal, state, and tribal wildlife, land management, and regulatory agencies.

Federal Aviation and Transit Programs

The programs of the Federal Transit Administration provide Federal funding for wetlands mitigation related to assisted transit projects as part of project costs. As noted above, under SAFETEA-LU, transportation plans must address environmental mitigation.

Wetlands mitigation related to airport projects receiving Federal assistance under Federal Aviation Administration (FAA) programs is an eligible project expense. In 1996, FAA issued a Wetlands Banking Mitigation Strategy to provide guidance to ensure that Federally assisted airport projects and FAA projects effectively and efficiently meet Section 404 permit requirements and environmental responsibilities. This document provides a framework for the FAA to mitigate unavoidable impacts before they occur by purchasing credits from a wetlands bank. The use of wetlands mitigation banking is voluntary, and is considered on a project-by-project basis. If chosen as an option for an airport project, the airport sponsor may recover the cost of purchasing wetlands bank credits from Federal Airport Improvement Program funding. In July 2003, FAA signed an interagency memorandum of agreement that addresses wetlands mitigation and restoration projects near airports and ways to reduce aircraft-wildlife strikes and maintain aviation safety.

Appendix H.

Environmental Protection Agency (EPA)

Table H-1. EPA Programs Supporting the President's Wetlands Goal in FY 2008. Funding (millions of dollars)

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands Funding for Goal FY 2008	Difference from FY 2007
EPA	Five Star Program	0.004	0.247	0.000	0.251	0.000
EPA	National Estuary Program	0.671	1.469	4.660	6.800	-1.600
EPA	Nonpoint Source Management Program	32.631	2.029	0.000	34.660	0.000
Total		33.306	3.745	4.660	41.711	-1.600

Table H-2. EPA Programs Supporting the President's Wetlands Goal in FY 2008. Planned Accomplishments (in acres)

Agency	Program	Restore or Create	Improve	Protect	Total Wetlands FY 2008	Difference from FY 2007
EPA	Five Star Program	89	6,846	0	6,935	0
EPA	National Estuary Program	4,145	9,079	28,799	42,023	0
EPA	Nonpoint Source Management Program	3,136	195	0	3,331	0
Total		7,370	16,120	28,799	52,289	0

EPA Programs Supporting the President's Wetlands Goal

Five Star Challenge Grants Program: EPA and its partners—National Fish and Wildlife Federation, National Association of Counties, Southern Company, and Wildlife Habitat Council—have helped catalyze over 400 projects in all 50 states, the District of Columbia, and the U.S. Virgin Islands.

Each year, 50 to 60 grants of \$5,000 to \$20,000 are awarded. The purpose of the Five Star Restoration Program is to support community-based efforts to restore wetlands, river streams/corridors, and coastal habitat; build diverse partnerships within the community; and foster local stewardship of resources through outreach.

<http://www.epa.gov/owow/wetlands/restore/5star>

National Estuary Program (NEP): This program works to restore and protect these sensitive and vital ecosystems. The NEP provides funding and technical assistance to citizens, governments, businesses, researchers, and organizations in local communities to create and implement plans they develop collectively. These plans address problems facing their estuaries, such as excess nutrients, pathogens, toxic chemicals, introduced species, overfishing, and habitat loss and degradation. With its partners, the NEP works to safeguard the health of some of our Nation's most productive natural resources and transfers the lessons learned to other watersheds.

<http://www.epa.gov/owow/estuaries>

Nonpoint Source Management Plan: Under Section 319 of the Clean Water Act, states, territories, and Indian tribes receive grant money that supports a wide variety of activities, including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint-source implementation projects, some of which include wetlands restoration projects.

<http://www.epa.gov/owow/nps/cwact.html>

EPA Programs that Maintain the Wetlands Base

Wetlands Grants Program: The EPA annually has provided \$16 million to states, local governments, tribes, and nongovernmental organizations to strengthen and build comprehensive non-Federal regulatory and nonregulatory wetlands programs. FY 2008 funding request is \$16.8 million.

<http://www.epa.gov/owow/wetlands>

Clean Water Act Section 404 Program: EPA and USACE share regulatory responsibility pursuant to CWA Section 404. EPA and USACE establish the regulations and policies for implementation of the program, including development and implementation of the Section 404(b)(1) guidelines. The guidelines establish the substantive environmental criteria used to evaluate applications for permits to discharge under Section 404. FY 2008 funding request is \$21.5 million.

<http://www.epa.gov/owow/wetlands/>

Ecological Research Program: One of several components of this Office of Research and Development program, the Environmental Monitoring and Assessment Program (EMAP) conducts research on the design, methods, and analysis used in the assessment of the ecological quality of the Nation's waters, including wetlands. EMAP partners with states and tribes to demonstrate how assessments of wetland condition can be conducted and how the results can be used to report on the effectiveness of protection and restoration actions. EMAP currently has \$1.1 million in pending awards for assessments of wetland condition in the Mid-Atlantic and Southeast, and has set aside \$1 million of FY 2007–2008 dollars to fund wetland projects in states in the Midwest and West. In addition, technical assistance is being provided in support of the 2011 National Wetland Survey, including the funding of a pilot assessment of coastal wetlands in the Gulf of Mexico region. Other technical assistance, including transfer of research and training, is being provided to states and tribes to aid in the development of wetland monitoring and assessment programs. The overall research program will also increasingly focus on the ecosystem services provided by wetlands at multiple scales within the context of their condition.

<http://www.epa.gov/ord>

Appendix I.

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA)

Table I-1. CWPPRA Funding Supporting the President's Wetlands Goal in FY 2008. Funding (millions of dollars)

Program	Restore or Create	Improve	Total Wetlands Funding for Goal FY 2008	Difference from FY 2007
CWPPRA	1.988	76.386	78.374	2.416

Table I-2. CWPPRA Acres by Agency Supporting the President's Wetlands Goal for FY 2008. Planned Accomplishments (in acres)

Agency	Restore or Create	Improve	Total Wetlands FY 2008	Difference from FY 2007
EPA	77	0	77	70
FWS	785	2,478	3,263	-15,360
NMFS	1,466	67	1,533	-474
NRCS	48	98,781	98,829	46,827
USACE	261	0	261	74
Total	2,637	101,326	103,963	31,137

The Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) is funded by the Aquatic Resources Trust Fund (Wallop-Breaux fund), which was passed in 1990 and is authorized until 2019. The fund is created from excise taxes on fishing equipment and on motorboat and small engine fuels. Funds are distributed to the Louisiana Coastal Wetlands Conservation and Restoration Task Force, North American Wetlands Conservation Act Program, and the National Wetlands Conservation Grant Program at rates of 70 percent, 15 percent, and 15 percent, respectively.

The CWPPRA funding distributed to the Louisiana Coastal Wetlands Conservation and Restoration Task Force is used to design and construct projects to preserve and restore Louisiana's coastal landscape. The Louisiana portion of CWPPRA is provided an average of \$50 million per year. The USACE administers the funding and tracks project status of all CWPPRA projects. With the USACE as chair, a task force

consisting of NOAA's National Marine Fisheries Service, FWS, NRCS, EPA, and the State of Louisiana (the non-Federal sponsor) manages the program. Currently, the program has 163 approved projects, of which 68 are complete and 19 are under construction.

http://www.mvn.usace.army.mil/pd/cwppra_mission.htm

The Louisiana CWPPRA accomplishments are presented in this appendix. The other CWPPRA accomplishments are presented in Appendix F under the appropriate FWS Program areas. In addition to the 103,963 acres of coastal wetlands restored, created, and improved reported above in Table I-2, the Louisiana CWPPRA will conserve 424 acres in FY 2008 that would otherwise be lost by protecting shorelines, diverting freshwater and nutrients, and restoring hydrology.

A map of Louisiana restoration sites is available at http://lacoast.gov/maps/coastal_la_2005_restoration_projects.pdf

Shoreline Protection

Wetlands loss in coastal Louisiana is an environmental crisis of national importance. Traditional engineering and construction methods for conserving Louisiana's coastal wetlands from shoreline erosion and interior losses are often not cost effective or feasible due to many factors, including



Placement of the bottom layer of geotextile fabric over existing foundation in native foundation displacement reach. (USACE)



Placement of sand foundation on geotextile in native foundation displacement reach. (USACE)

poor soils, wave action, and water depths. USACE is leading efforts to develop new technologies and methods for constructing projects that protect wetland habitats. As part of the larger CWPPRA South White Lake Shoreline Protection Project, USACE constructed a demonstration of alternate foundation improvement techniques under 5,400 linear feet of the South White Lake rock dike. The objective of this demonstration project is to test foundation improvement measures intended to increase the cost effectiveness of shoreline protection projects in coastal Louisiana. In spring and summer 2006, two treatments applying sand beneath the rock dike were installed. The two improvement measures included:

- Installing sand foundations that displaced soft near-surface material (*photos at left*).
- Installing sand foundations with soft near-surface material removed via dredging.

Each sample section, along with control sections, were instrumented with four sets each of crown, front and rear settlement plates, inclinometers, extensometers, and peizometers (*below*).

The geotechnical instruments will be monitored and recorded over the next five years. The recorded monitoring data will be analyzed to determine the effectiveness of the two foundation improvement treatments compared to traditional construction methods.



Typical view of geotechnical instruments (USACE).

Acronyms

BLM	Bureau of Land Management, DOI	FSA	Farm Service Agency, USDA
CBBEP	Coastal Bend Bays and Estuaries Program	FWMA	Fish and Wildlife Management Assistance
CEAP	Conservation Effects Assessment Project, USDA	FWS	Fish and Wildlife Service, DOI
CELCP	Coastal and Estuarine Land Conservation Program, NOAA	GAO	Government Accountability Office, Congress
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980	GIS	Geographic Information System
CEQ	Council on Environmental Quality	JVs	Joint Venture Partnerships, DOI/FWS
CERP	Comprehensive Everglades Restoration Plan	NAWCA	North American Wetlands Conservation Act, DOI/FWS
CREP	Conservation Reserve Enhancement Program	NEP	National Estuary Program, EPA
CRP	Community-based Restoration Program, DOC/NOAA	NOAA	National Oceanic and Atmospheric Administration, DOC
CTA	Conservation Technical Program, USDA/NRCS	NPS	National Park Service, DOI
CWA	Clean Water Act	NRCS	Natural Resources Conservation Service, USDA
CWPPRA	Coastal Wetlands Planning, Protection and Restoration Act	NRI	National Resources Inventory, USDA/NRCS
CZM	Coastal Zone Management Program, NOAA	NWI	National Wetlands Inventory, DOI/FWS
DARRP	Damage Assessment, Remediation, and Restoration Program, DOC/NOAA	NWRS	National Wildlife Refuge System, DOI/FWS
DOA	Department of the Army	OMB	Office of Management and Budget
DOC	Department of Commerce	OPA	Oil Pollution Act of 1990
DOI	Department of the Interior	PCSRF	Pacific Coastal Salmon Recovery Fund, DOC/NOAA
DOT	Department of Transportation	PMC	Plant Materials Center, USDA/NRCS
EMAP	Environmental Monitoring and Assessment Program, EPA	SAFETEA	Safe, Accountable, Flexible, Efficient Transportation Equity Act
EPA	Environmental Protection Agency	USACE	U.S. Army Corps of Engineers, DOA
EQIP	Environmental Quality Incentives Program, USDA/NRCS	USBR	U.S. Bureau of Reclamation, DOI
FAA	Federal Aviation Administration, DOT	USDA	U.S. Department of Agriculture
FHWA	Federal Highway Administration, DOT	USFS	U.S. Forest Service, USDA
		USGS	U.S. Geological Survey, DOI
		WHIP	Wildlife Habitat Incentives Program, USDA/NRCS
		WHWWG	White House Wetlands Working Group
		WRP	Wetlands Reserve Program, USDA/NRCS

