



United States Department of Agriculture
Natural Resources Conservation Service

Wetlands Conservation

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Key Points:

- Agriculture, once the major cause of wetlands conversion, achieved a net gain of nearly 263,000 acres between 1997 and 2003.
- These agricultural gains reflect years of accomplishments in wetland conservation by landowners, conservation groups, states and Federal agencies.
- Between 1992 and 1997 nearly 50 percent of all wetland losses were due to development.
- Healthy wetland ecosystems function to modulate drought and floods, provide wildlife habitat, filter pollutants, retain sediment, store carbon, and cycle nutrients.
- More than 43 percent of all species that are Federally designated as endangered or threatened in the U.S. are wetland dependent for food, shelter, or breeding at some point in their life cycle.
- The Nation's wetlands goal now calls for restoring, enhancing, and protecting wetland quantity and quality.

Overview

In 2004, USDA's 2002 Annual National Resources Inventory (NRI) was released. Through statistically reliable estimates, it showed that agriculture succeeded in achieving net wetland gains. The NRI results figured prominently in the Administration's 2004 Wetlands Initiative announcement describing a strategy to move beyond "no net loss." The 2003 Annual NRI release further showed that the Nation had reached overall net wetland gains between 1997 and 2003.

A 2001 Supreme Court ruling raised concern about the ability of the CWA 404 permitting program to protect "isolated wetlands." Results from a U.S. Fish and Wildlife Service (FWS) study indicate that isolated wetlands can represent a significant component of the Nation's wetlands. In half of the 72 study areas, 10 to 30 percent of wetlands were identified as geographically isolated. With regulatory uncertainties, voluntary conservation programs are increasingly important in achieving national wetland objectives.

The private sector role in wetland restoration and protection is expanding through wetland mitigation banking. The number of commercial mitigation banks has increased dramatically since the 1990s. Mitigation banking instruments also have improved, now incorporating performance standards and mechanisms for providing assurance those projects are likely to succeed.

Natural Resource Conditions and Trends

Healthy wetland ecosystems modulate hydrologic extremes, provide wildlife habitat, filter pollutants, retain sediment, store carbon and cycle nutrients. Wetlands vary widely in hydrologic regime, plant and animal assemblages, and the extent and number of services they provide -- from bottomland hardwoods that play a major role in floodplain management to estuarine wetlands that serve as valuable nursery habitat for important commercial fisheries. Their functions and condition are influenced profoundly by their location in the landscape, their proximity to other wetlands and surrounding stresses.

- Market based approaches to conserving the nation's wetlands resources are growing. Beginning with a handful of single user mitigation banks in the 1980s, there are about 400 wetlands mitigation banks today.

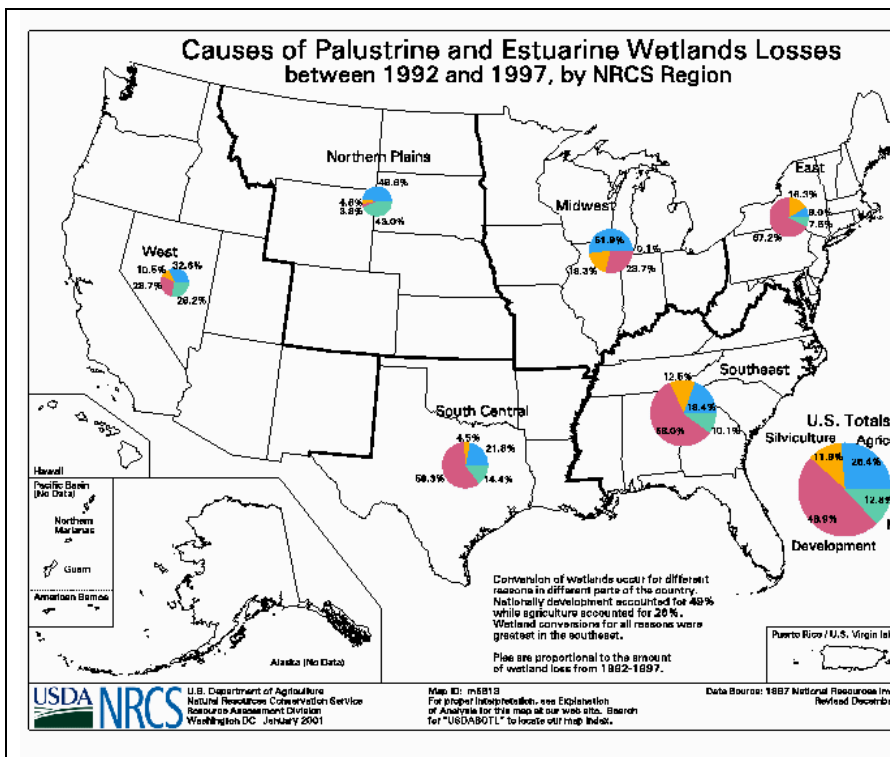
- Since the 1700s, the Nation has converted, or otherwise lost, more than 50 percent of its wetland resources. In the 1780s, an estimated 224 million wetland acres were scattered across what is now the 48 contiguous United States.
- Declines were not uniform, with much of the loss occurring in the Midwest, Delta, Gulf, and Southeast regions where land was cleared for agriculture and other development.

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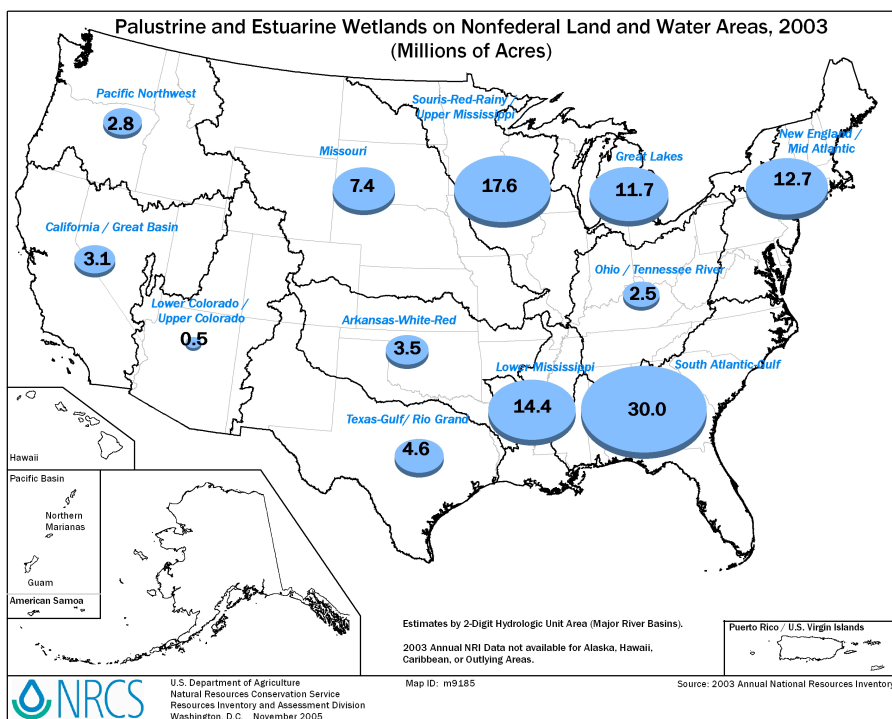
NRCS Web site at www.nrcs.usda.gov.

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Helping People Help the Land

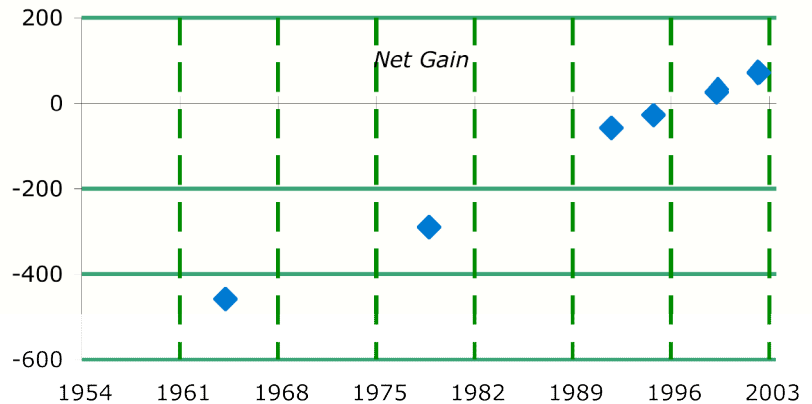


- There are about 111 million acres of wetlands on non-Federal land in the 48 contiguous States, concentrated largely in the eastern United States.
- Most of these wetlands are freshwater (palustrine), accounting for nearly 95 percent of the 111 million acres.
- Most wetlands are found on forested land (about 60 percent), while about 15 percent are found on cropland, pastureland and CRP land.

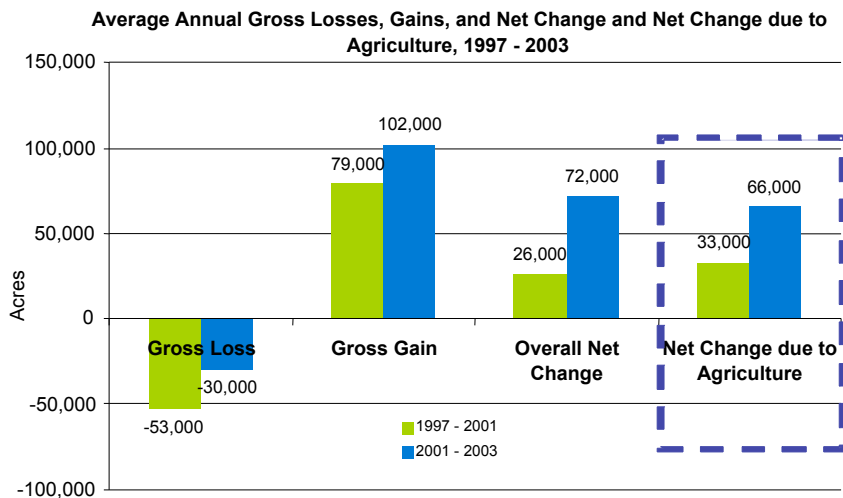


- Wetland losses have declined steadily, and the policies and programs introduced in the 1970s accelerated the shift toward wetland gain.
- The U.S. Fish and Wildlife Service reported that losses averaged around 460,000 acres annually between the mid-1950s and mid-1970s, declining to less than 60,000 acres on average each year between the late 1980s and 1990s.
- National Resources Inventory (NRI) results follow this long-term trend of continuing decline in the rate of wetland conversion. The NRI further showed that between 1997 and 2003, the Nation experienced net wetland gains.

Average Annual Net Wetland Change, 1950s - 2003
Estimates from Status and Trends and National Resources Inventory



Sources:
 Status and Trends, U.S. Fish and Wildlife Service, 1954-1974, 1974-1983, 1986-1997
 National Resources Inventory, Natural Resources Conservation Service, 1992-1997, 1997-2001, 2001-2003



- Overall, wetland gains on non-Federal lands have been increasing since 1997, and at an increasing rate.
- Between 1997 and 2001, net wetland gains averaged 26,000 acres per year. Over the following two years, net wetland gains averaged 72,000 acres per year.
- Agriculture has been an important component of the trend – achieving net gains within the sector and helping to offset losses from other sources.

WETLAND FUNCTIONS

Wetland bioeconomic linkages

Wetland	Private values		Mixed values	Public values		
	Forestry	Fisheries	Recreation	Flood control	Water quality	Endangered species
Function	Tree growth medium	Fish habitat	Wildlife habitat	Flood retention	Water filtration	Wildlife habitat
Service	Commercial timber harvest	Commercial fish harvest	Recreational waterfowl harvest	Reduced flood flows/peaks	Cleaner water	Biodiversity
Economic value	Net economic value of timber	Net economic value of commercial catch	Net economic value of hunting experience	Net economic value of reduced damages	Net economic value of reduced damages	Net option and existence values

Source: Adapted from Bergstrom and Brazeal (1991).

- While wetland extent is important, restoring and revitalizing wetland condition is the next milestone.
- A study of Mississippi Valley, Prairie Pothole, and Playa wetlands showed that function can be measurably improved by conservation practices, but that opportunity remained to move restored wetlands further toward full function.

MITIGATION and RESTORATION

- Private sector role in wetland restoration and creation is increasing. Mitigation banking emerged as an attractive solution to the problems experienced with compensatory mitigation in the 1980s. Mitigation was found to be inadequate or incomplete, failed to produce the expected benefits, and resulted in a temporal lag between the time the loss was suffered and the new wetland began to function.
- The first private commercial banks emerged in the 1990s, and since that time have increased in number, coverage, and sophistication. Strengthened success and performance criteria are providing greater assurances that mitigation banking will deliver improved results. The newest of the mitigation banking instruments show a movement toward integrating amphibian and other biological indicators for success, which is a significant advance over the earliest criteria of "stems per acre." Performance bonds and assurances are now present in banking agreements.
- Between 1992 and 2002, the number of approved banks quadrupled, almost all of the additions were private commercial banks. Today, about 400 mitigation banks exist in 41 states across the Nation.

Table 1. National Trends in Wetland Mitigation Banks, 1992 - 2002

	1992	2002
Approved banks	46	219
Wetlands restored	17,664 acres	139,896 acres
Participating states	18	40
Size of banks (% > 100 ac)	35	57
Private commercial banks	1	135

Environmental Law Institute, 2002

Program Activities

Funding

The Natural Resources Conservation Service administers a wide range of programs to help producers protect, restore, and enhance natural resources on private lands.

NRCS Program Funding, Wetlands Conservation 2002 - 2005

Program	Financial Assistance Funding 2002-2005	Technical Assistance Funding 2002-2005	% of FA	% of TA
Conservation Technical Assistance (CTA)	\$0	\$142,800,000		60%
Environmental Quality Incentives Program (EQIP)	\$9,757,409	\$2,191,054	1%	1%
Wildlife Habitat Incentives Program (WHIP)	\$3,432,574	\$650,354	0%	0%
Wetlands Reserve Program (WRP)	\$658,558,891	\$38,655,499	93%	16%
Resource Conservation & Development_ (RC&D)	\$0	\$22,936,187		10%
Conservation Reserve Program (and Enhancement Program) (CRP)	FSA Provides FA	\$30,173,951		13%
Farm and Ranch Lands Protection Program_ (FRPP)	\$32,075,545	\$951,423	5%	0%
Grassland Reserve Program (GRP)	\$5,480,911	\$1,419,088	1%	1%
Watershed Protection and Flood Prevention Program (WP&FPP)	\$14,000	\$6,000	0%	0%
Ground & Surface Water Conservation (GSWC)	\$393,726	\$93,225	0%	0%
Agricultural Management Assistance (AMA)	\$113,259	\$28,381	0%	0%
Total	\$709,826,315	\$239,905,162	100%	100%

The RC&D program provides benefits for a multiple number of resource issues. Dollar amounts given reflect a percentage of total program funding for RC&D for FY 2002-2004. This figure is pro-rated based on data analysis conducted for the national program evaluation conducted in FY2004 & FY 2005. The same dollar amounts are under wildlife management, wetland conversion and energy, which are captured under the land management element in the RC&D statute.

NRCS estimates that approximately 10% of the acres enrolled in FRPP easements are wetlands, and therefore, these wetlands are protected from impairment.

Conservation Measures

Conservation programs assisted producers to create, restore, enhance, and protect wetlands between 2002 and 2004:

Conservation Measure	Applied
Wetlands Created, Restored, or Enhanced	966,000 acres
Wetland Acres Enrolled in Easements:	
Wetlands Reserve Program	602,000 acres
Emergency Watershed Program (floodplain)	
Conservation Reserve Program (Farmable Wetlands, 2002 – 2003)	85,000 acres

Conservation Effects

The Wetlands Component of the Conservation Effects Assessment Project (CEAP) National Assessment quantifies the effects of conservation practices and resource management systems on ecosystem services provided by wetlands in agricultural landscapes. On-site and off-site conservation effects will be derived from collaborative regional assessments in the contiguous United States. Each assessment will focus on one or more wetland hydrogeomorphic classes dominant on agricultural landscapes in that region. The following wetland ecosystem services will be quantified, depending on the wetland class(es) of interest:

- Biological conservation and sustainability,
- Habitat quality for flora and fauna,
- Pollutant reduction (e.g., sediment, nutrient, and pesticide reduction),
- Mitigation of floods (i.e., floodwater storage, reduction, and attenuation),
- Greenhouse gas emissions reduction (e.g., carbon sequestration in soils and vegetation, nitrous oxide reduction),
- Water quantity sustainability and water partitioning (i.e., groundwater recharge, base streamflow augmentation).

The first regional assessment was initiated in 2004 in the Prairie Pothole Region (PPR) of the United States. Restored depressional wetlands, commonly known as prairie potholes, enrolled in the Wetlands Reserve Program and the Conservation Reserve Program, drained and non-drained wetlands on cropland, and native prairie wetlands that have never been tilled or drained comprise the sample population. The assessment will quantify conservation practice effects on prairie pothole wetland ecosystem services, such as carbon sequestration, nutrient reduction, prairie wildlife habitat quality, amphibian habitat quality, and floodwater storage potential. Predictive functional condition indicator models will also be developed.

The Mississippi Alluvial Valley (MAV) Regional Assessment was initiated in 2005. The regional assessment focuses on quantifying conservation practice effects on wetland ecosystem services, such as nutrient and pesticide reduction, breeding and wintering migratory bird habitat quality, habitat quality for the Federally threatened Louisiana black bear, and sequestration of soil and vegetation carbon, and producing predictive functional condition indicator models for bottomland hardwood wetlands, the dominant type of wetland in the MAV. The study population is composed of existing bottomland hardwood wetlands, USDA program wetlands and drained wetlands on cropland. Preliminary findings from this assessment are due in late 2007.

Partner Programs Entities

Department of Agriculture

- Wetlands Reserve Program
- Conservation Technical Assistance
- Wildlife Habitat Incentives Program
- Farm and Ranchlands Protection Program
- Grasslands Reserve Program
- Conservation Reserve Program
- Wetlands Management Programs

National Oceanic and Atmospheric Administration (NOAA)

- Community-based Restoration Program provides small grants of money to communities to restore wetlands.

U.S. Army Corps of Engineers

- Aquatic Ecosystem Restoration
- Comprehensive Everglades Restoration Plan
- Louisiana Coastal Area Environmental Restoration
- Hamilton Airfield Wetlands Restoration Project

U.S. Environmental Protection Agency

- National Estuary Program
- CWA Section 319
- Five Star Challenge Grants

U.S. Department of the Interior

- Partners for Fish and Wildlife – technical and financial assistance to non-Federal landowners to voluntarily restore wetlands and other fish and wildlife habitats on their land
- Coastal Program
- National Wildlife Refuge System (appropriated and duck stamp)
- North American Wetlands Conservation Act Program (North American Wetlands Conservation Act of 1989) – matching grants to organizations and individuals to carry out wetlands conservation projects in the United States, Canada, and Mexico
- Fish and Wildlife Management Assistance
- North American Waterfowl Management Plan
- National Coastal Wetlands Conservation Grant Program – (Coastal Wetlands Planning, Protection, and Restoration Act (Act) of 1990) – matching grants for acquisition, restoration, management or enhancement of coastal wetlands.
- Land and Water Conservation Fund Wetlands Acquisition Program
- Exotic Plant Management Team

Department of Transportation

- Federal Highway Administration Programs (Federal Highway Aid)

Coastal America

- The National Corporate Wetlands Restoration Partnership (CWRP) is a public-private partnership between the Federal government, state governments and private corporations to restore wetlands and other aquatic habitats. CWRP's objective is to protect, enhance and restore wetlands and other aquatic habitats by partnering to leverage the collective resources, skills and processes of the private and public sectors.