THE STATUS AND RECENT TRENDS OF WETLANDS IN THE UNITED STATES

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Wetlands are a vital part of the American landscape. Whether it is through the recreational opportunities that lakes and rivers provide, the recharge and purification of groundwater, protection from flooding, or as a source of food and wildlife habitat, wetlands provide many valuable services.

Figure 1. Aerial view of palustrine and lacustrine wetlands in northeast South Dakota.

The USDA-Natural Resources Conservation Service (NRCS) National Resources Inventory (NRI) began in 1982 and includes the monitoring of acres of wetlands on non-federal, private lands in the United States. The NRI uses the modified Cowardin (Cowardin et al., 1979) classification system to recognize five different types of wetland and deepwater habitats. These types include marine (oceans), lacustrine (lakes), riverine (rivers), estuarine (saltwater marsh), and palustrine (freshwater marsh). Each of these categories is further sub-divided based on the predominant vegetation. Sub-categories include forested, shrubbed, emergent or grass-based, and open water or bare of vegetation. The 2010 NRI summary report (U.S. Department of Agriculture, 2013) combines these into two major categories: palustrine and estuarine wetlands and other aquatic habitats which includes lakes, rivers, marine and some estuaries. In 2010 the NRI reported over 159.7 million acres of non-federally owned wetlands in the coterminous United States, Hawaii, and Puerto Rico, or about 8.2% of the total land mass in the country (excluding Alaska). This estimate included over 111 million acres of palustrine and estuarine wetlands and over 48 million acres of other aquatic habitats.

TYPES OF WETLANDS

Table 1. Wetland and Deepwater Habitats in the United States (thousands of acres with margins of error). *

Year	Palustrine and Estuarine Wetlands	Other Aquatic Habitats	Total
1992	111,444.6 ±1,412.0	47,390.4 ±303.5	158,835.0 ±1,363.2
1997	111,267.7 ±1,422.2	47,793.2 ±297.6	159,060.9 ±1,373.8
2002	111,322.1 ±1,275.2	48,071.3 ±304.5	159,393.4 ±1,278.9
2007	111,342.3 ±1,321.9	48,283.7 ±305.7	159,626.0 ±1,356.2
2010	111,398.6 ±1,306.4	48,325.0 ±302.3	159,723.6 ±1340.0

*Excludes Alaska and federally owned lands.

Nearly 70% of the wetlands in the U.S. (excluding Alaska) are classified as palustrine or estuarine (P&E). These wetlands provide a multitude of important functions and ecosystem services. They are sometimes referred to as nature's kidneys (Groening, 2012) in the way that the soil biology can break down fertilizers, pesticides, and other contaminants to purify the water that passes through them. They also store billions of gallons of water to prevent surface waters from flooding and help to recharge ground water supplies.

Figure 2. Palustrine emergent wetland in St Landry Parish, Louisiana.

The remaining 30% of wetlands are classified in the NRI as Other Aquatic Habitat. These are lakes, rivers and open water marine habitats that much of the nation depends on for its water supply, shipping transportation, recreational use, and habitats for waterfowl, fish, shellfish, and other aquatic organisms.

Figure 3. Scenic Clear Creek in California is classified as a riverine wetland and is captured under Other Aquatic Habitat.

A BRIEF HISTORY OF WETLANDS IN THE U.S.

For the first two centuries in a nation rich in natural resources, wetlands were viewed as a hindrance. These wet habitats created difficulties in overland transportation and were thought of as disease breeding swamps. They posed obstacles to development and infrastructure. Wetlands limited the ability of the land to produce commodity crops. Wetland soils yield large amounts of plant biomass, are very rich in organic matter, and are very productive when drained. Prior to the 1970's, it was generally accepted that wetlands should be eliminated and reclaimed for other purposes, mainly agriculture. About a half million acres were drained annually from the mid-1950's to the mid-1970's and converted to production agriculture (Dahl and Allord, 1996). Surface drainage was considered to be a conservation practice. Wetlands hydrology was also changed along major river floodplains like the Mississippi and Missouri which were channelized to accommodate a growing shipping industry. In the 1950's the Watershed Protection and Flood Prevention Act (Public Law 83-566) encouraged the drainage of wetlands near flood control projects. By the mid-1970's, the U.S. had lost nearly half of the palustrine and estuarine wetlands that were present prior to European colonization (Dahl and Allard, 1996).

During the 1970's, attitudes toward wetlands began to change as the important functions of wetlands such as purifying water, storing carbon, and providing habitat for wildlife were better understood. The Food Security Act of 1985 (Public Law 99-198, also known as the 1985 U.S. Farm Bill), included provisions designed to greatly restrict surface drainage which came to be known as the "Swampbuster" legislation. The Wetland Reserve Program (now known as the Wetland Reserve Easement program) authorized by Congress in 1990 and offered nationwide by 1995 has helped to restore wetland hydrology to millions of acres of cropland. In fact, the period between 1997 and 2007 was the first decade in modern history that saw an increase in palustrine and estuarine wetlands (U.S. Department of Agriculture, 2012). Since 1997, the trend has been a gradual overall increase in P&E wetlands; however, a regional breakdown discussed later in this report shows that the eastern third of the country is still experiencing wetland loss.

Figure 4. Wetlands provide vital habitat to thousands of unique plants and animals.

GEOGRAPHY OF WETLANDS

Wetlands are found in every state, although most of America's wetlands occur in the eastern half of the continent where climate and natural geologic processes such as glaciation created an abundance of aquatic habitat. Minnesota, Florida, and Louisiana each have over 10 million acres of wetlands.

Figure 5. Acres of wetlands by state reported in the 2010 National Resources Inventory Summary Report (thousands of acres).

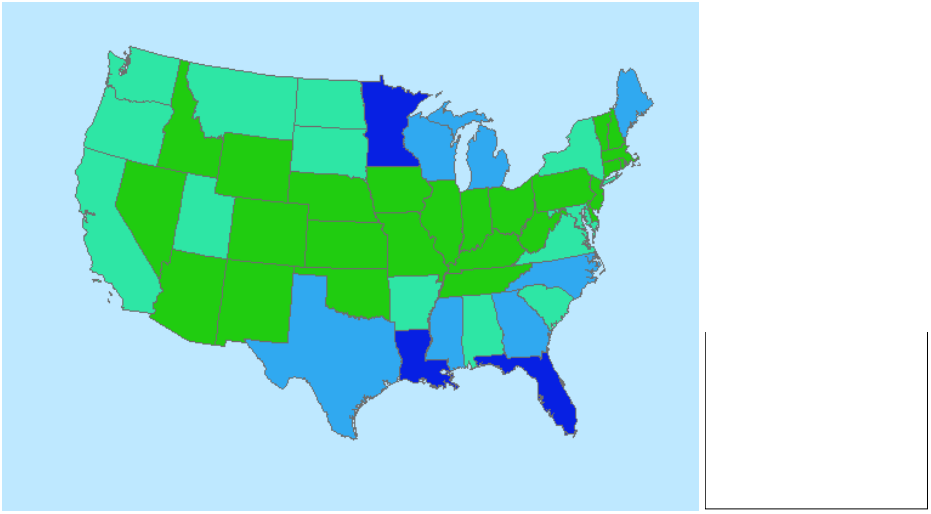


Table 2. States with highest acreages (all types) of wetlands on non-federally owned land (thousands of acres with margins of error).

State	Palustrine and Estuarine Wetlands			Other aquatic habitats			Total
	Palustrine	Estuarine	Total	Lacustrine	Other*	Total	
Minnesota	10,790.4 ±395.0	0.0	10,790.4 ±395.0	2,627.8 ±28.5	451.2 ±14.4	3,079.0 ±29.1	13,869.4 ±401.8
Louisiana	7,802.3 ±313.4	2,292.0 ±234.5	10,094.3 ±232.5	1,079.6 ±35.0	2,675.5 ±20.5	3,755.1 ±42.3	13,849.4 ±236.7
Florida	8,242.3 ±324.6	549.9 ±175.1	8,792.2 ±316.1	1,189.3 ±22.7	1,763.8 ±19.6	2,953.1 ±30.5	11,745.3 ±312.3
Texas	4,840.3 ±271.1	633.5 ±215.5	5,473.8 ±259.2	1,684.9 ±42.2	1,933.4 ±64.7	3,618.3 ±68.6	9,092.1 ±288.0
Georgia	6,081.8 ±234.5	428.9 ±141.5	6,510.7 ±207.7	556.4 ±26.5	382.4 ±18.9	938.8 ±31.4	7,449.5 ±201.6
North Carolina	4,508.6 ±215.3	183.7 ±89.6	4,692.3 ±194.5	384.3 ±10.2	2,331.4 ±16.8	2,715.7 ±19.7	7,408.0 ±197.9
Michigan	5,929.9 ±275.1	0.0 --	5,929.9 ±275.1	884.3 ±18.0	884.3 ±18.0	1,073.8 ±22.4	7,003.7 ±274.8

Wisconsin	5,565.9 ±269.2	0.0 --	5,565.9 ±269.2	943.9 ±18.1	281.3 ±21.7	1,225.2 ±29.6	6,791.1 ±277.8
Maine	5,376.4 ±450.2	16.1 ** ±26.2	5,392.5 ±454.9	903.0 ±7.9	337.7 ±19.6	1,240.7 ±22.8	6,633.2 ±456.2
Mississippi	4,726.7 ±241.8	53.9 ±42.0	4,780.6 ±235.4	359.6 ±17.2	286.3 ±16.2	645.9 ±19.2	5,426.5 ±233.5

*Includes deep water estuaries, marine and riverine wetlands
**Figures in red are not statistically reliable

Coastal states typically have a high percentage of their total area that are wetlands. Several states have twenty percent or more of their total area classified as wetlands.

The report, *Status and Trends of Wetlands in the Coastal Watersheds of the Conterminous United States 2004 to 2009*, was released on November 21, 2013 by the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration. This study tracked wetland changes in the coastal watersheds of the Pacific, Atlantic, and Gulf of Mexico as well as the Great Lakes. It concludes that more than 80,000 acres of coastal wetlands are being lost on average each year, up from 60,000 acres lost per year during the previous study from 1998-2004 (Dahl and Stedman, 2013).

Notable wetland losses were recorded along the Gulf Coast (257,150 acres). The Atlantic Coast lost 111,960 acres and the Pacific Coast 5,220 acres. The watersheds of the Great Lakes region experienced a net gain in wetland area of an estimated 13,610 acres.

In some coastal watersheds, rising ocean levels are encroaching into wetlands from the seaward side, while development from the landward side prevents wetlands from being able to migrate inland. This dual threat squeezes wetlands into an ever smaller and more fragile coastal fringe.

The full report is available for viewing or downloads at:

http://www.fws.gov/wetlands/

Figure 6. Percentage of each state that is classified as a wetland.

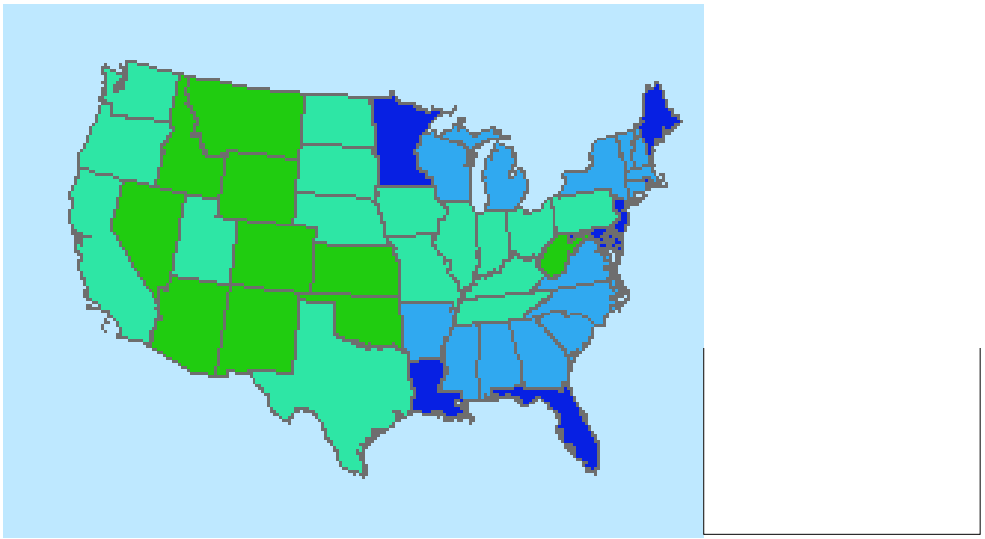


Table 3. State with highest percentage of surface area classified as wetlands (thousands of acres with margins of error).

State	Total Area	2010 Wetland Acres*	Percentage of Total Area that are Wetlands
Louisiana	31,376.8 -	13,849.4 ±236.7	44.14%
Delaware	1,533.5 -	549.4 ±42.6	35.83%
Maryland	7,869.9 -	2,554.9 ±74.5	32.46%
Maine	20,966.2 -	6,633.2 ±456.2	31.64%
Florida	37,533.7 -	11,745.3 ±312.3	31.29%
Rhode Island	813.3 -	245.1 ±16.9	30.14%
Minnesota	54,009.9 -	13,869.4 ±401.8	25.68%
New Jersey	5,215.6 -	1,302.6 ±66.2	24.98%
South Carolina	19,939.3 -	4,464.3 ±139.0	22.39%
North Carolina	33,709.3 -	7,408.0 ±197.9	21.98%

*Excludes federally owned land

REGIONAL TRENDS

Since the NRI began tracking wetlands, the overall trend has been a decrease in palustrine and estuarine wetlands and an increase in other aquatic habitats through the continued creation of lakes and ponds. However, Table 1 shows that since 1997, there has been an increase in all types of wetlands across the country with most of the gains coming from the highly agricultural central region of the U.S.

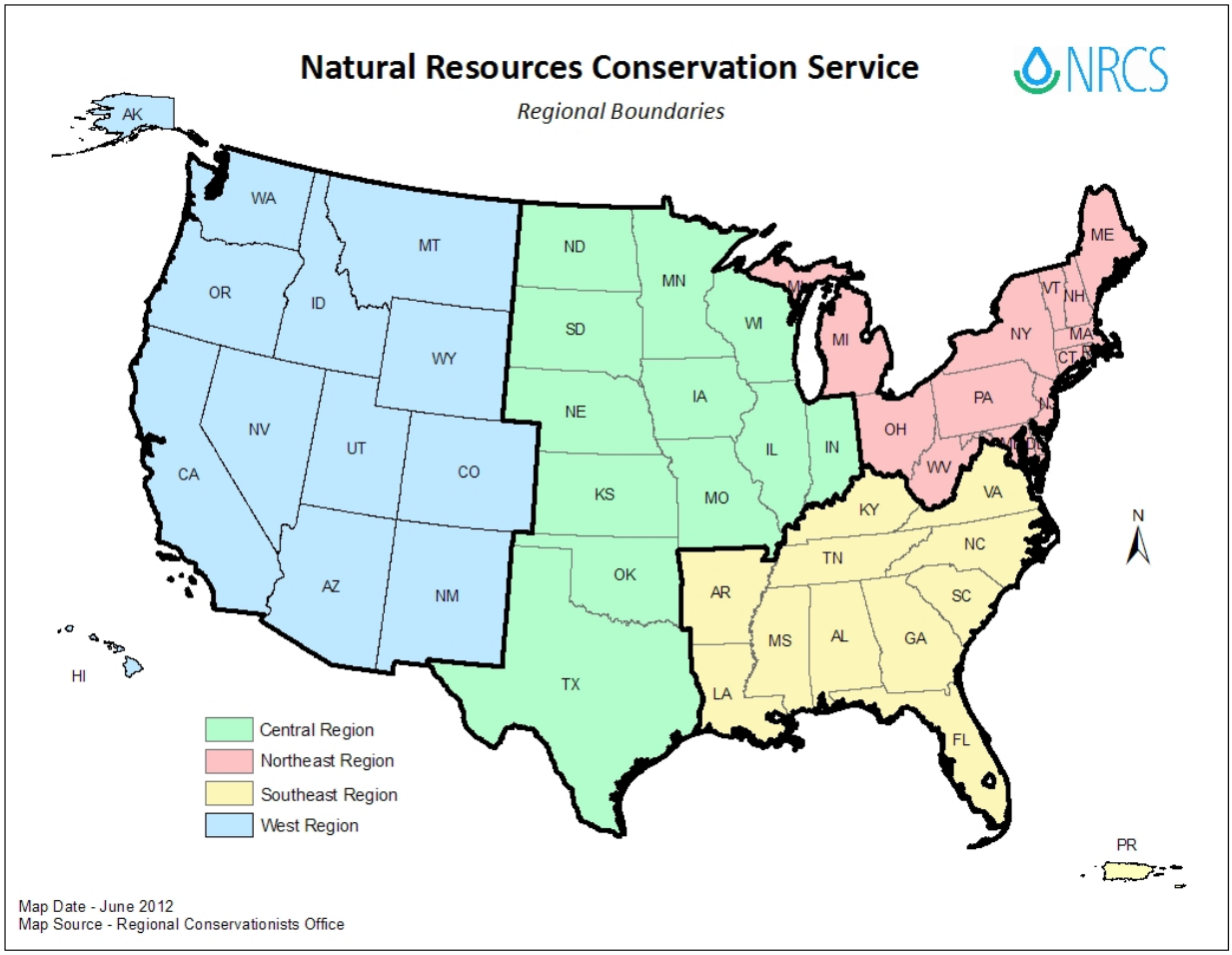


Figure 7. NRCS regional boundaries.

NORTHEAST REGION

The Northeast region has seen a gradual loss of palustrine and estuarine wetlands. While there were still more than 20.6 million acres of these P&E wetlands in this region in 2010, that figure is over 100,000 acres less than the total for 1992 (Fig. 8). Urban development is the primary reason wetlands are drained in the Northeast.

Table 4. Wetland and Other Aquatic Habitats in the Northeast Region of the United States (thousands of acres with margins of error). *

NORTHEAST REGION	Palustrine and Estuarine Wetlands	Other Aquatic Habitats (includes lakes, rivers, and deep marine waters)	Total Cowardin Wetlands
1992	20,775.6 ±605.4	7,999.9 ±49.6	28,775.5 ±611.6
1997	20,720.8 ±605.8	8,017.9 ±49.6	28,738.7 ±611.0
2002	20,692.0 ±606.2	8,043.8 ±47.8	28,735.8 ±611.9
2007	20,676.0 ±630.5	8,064.3 ±54.9	28,740.3 ±636.3
2010	20,674.3 ±630.5	8,068.6 ±54.8	28,742.9 ±635.9

*Excludes federally owned lands

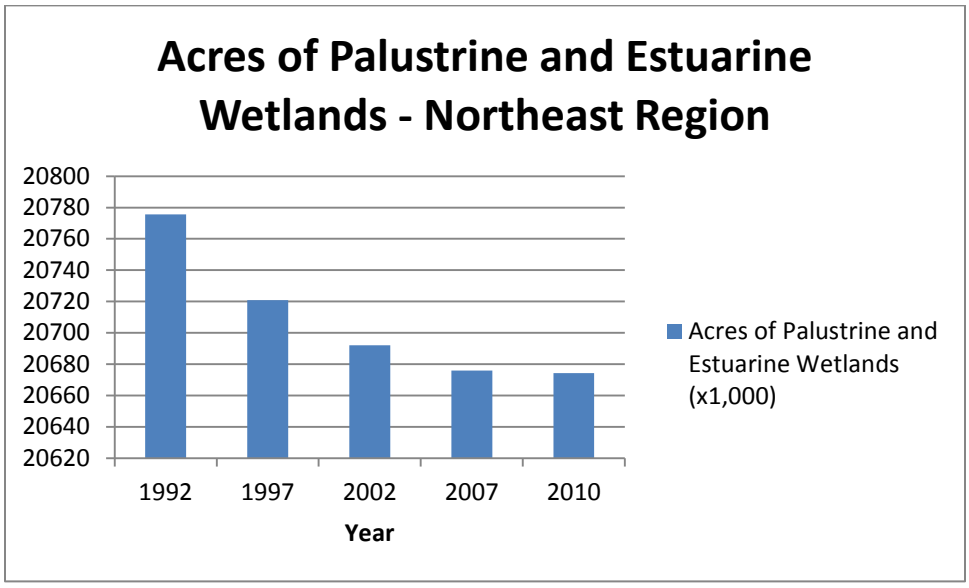


Figure 8. Acres of palustrine and estuarine wetlands in the Northeast region, 1992-2010.

SOUTHEAST REGION

The Southeast region covers a little more than 340 million acres and represents 17% of the land mass in the coterminous United States. However, due to the moist climate, this area has nearly 48 million acres of palustrine and estuarine wetlands. This is by far more than any other region of the country and accounts for over 43% of the nation's palustrine and estuarine wetlands. Most of these wetlands are forested.

Figure 9. Cypress trees dominate this palustrine forested wetland in Georgia.

Table 5. Wetland and Other Aquatic Habitats in the Southeast Region of the United States (thousands of acres with margins of error). *

SOUTHEAST REGION	Palustrine and Estuarine Wetlands	Other Aquatic Habitats (includes lakes, rivers, and deep marine waters)	Total Cowardin Wetlands
1992	48,158.2 ±757.2	16,574.3 ±63.3	64,732.5 ±766.6
1997	48,024.5 ±757.4	16,658.7 ±69.8	64,683.2 ±767.2
2002	48,019.8 ±746.3	16,776.4 ±87.8	64,796.2 ±748.5
2007	47,920.3 ±767.4	16,913.8 ±80.6	64,834.1 ±774.3
2010	47,924.5 ±777.8	16,936.5 ±81.1	64,861.0 ±788.3

*Excludes federally owned lands

Despite the overall increase in total wetlands in the Southeast, there has been a reduction of more than 200,000 acres of palustrine and estuarine wetlands since 1992 (Fig. 10).

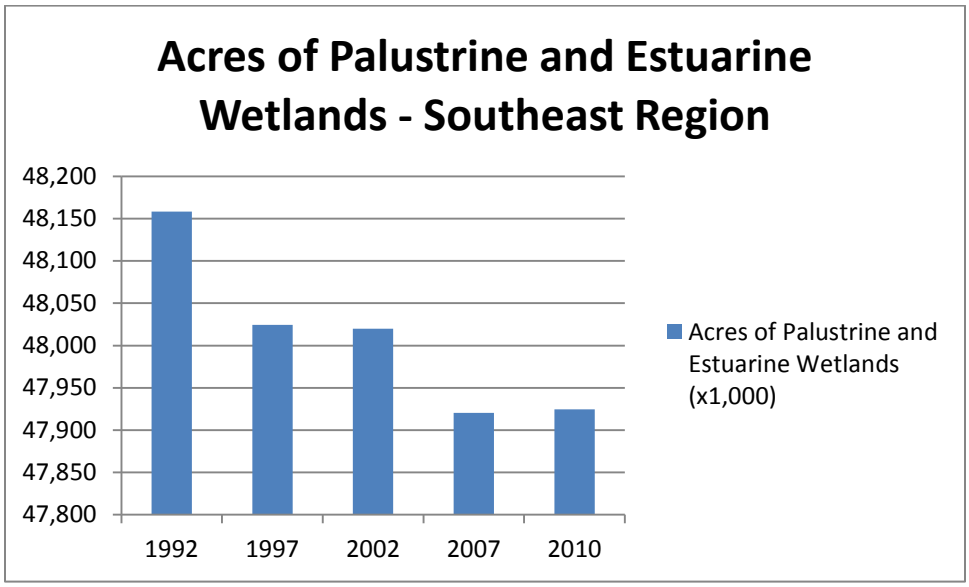


Figure 10. Acres of palustrine and estuarine wetlands in the Southeast region, 1992-2010.

CENTRAL REGION

The dominant land use in the Central region is row crop agriculture. Highly productive soils in this region make it the leading producer of corn, soybeans, wheat, sorghum and cotton (U. S. Department of Agriculture, 2014). Despite the increased land values and high demand for commodity crops, this region has seen nearly a 300,000 acre increase in palustrine and estuarine wetlands since 1992. This trend is continuing with a 40,000 acre increase between 2007 and 2010 alone.

Table 6. Wetland and Other Aquatic Habitats in the Central Region of the United States (thousands of acres with margins of error). *

CENTRAL REGION	Palustrine and Estuarine Wetlands	Other Aquatic Habitats (includes lakes, rivers, and deep marine waters)	Total Cowardin Wetlands
1992	33,661.9 ±855.2	13,290.5 ±82.1	46,952.4 ±857.7
1997	33,678.4 ±856.8	13,401.2 ±83.8	47,079.6 ±863.8
2002	33,760.0 ±787.4	13,530.9 ±110.5	47,290.9 ±805.8
2007	33,887.1 ±822.7	13,580.6 ±101.3	47,467.7 ±827.4
2010	33,927.7 ±822.6	13,600.5 ±99.4	47,528.2 ±829.0

*Excludes federally owned lands

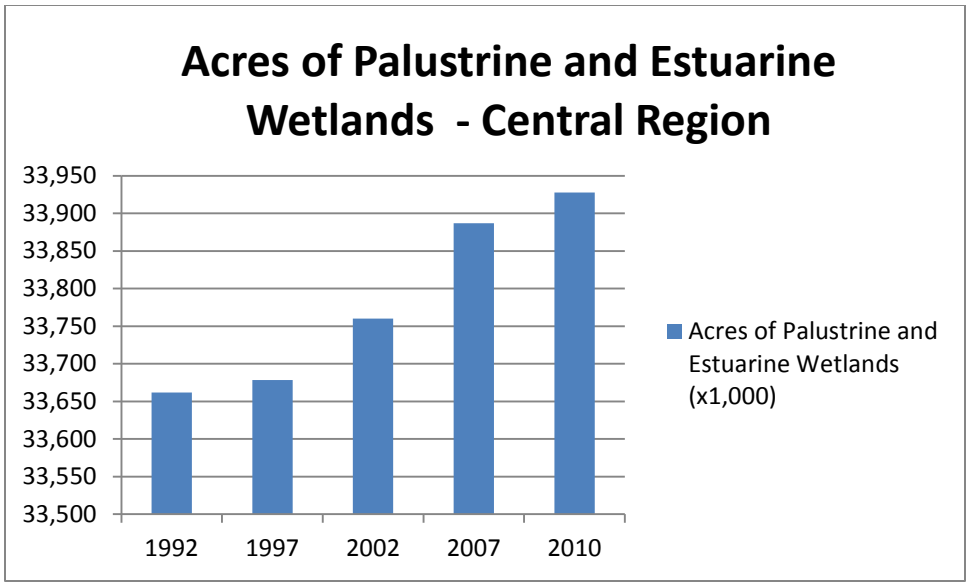


Figure 11. Acres of palustrine and estuarine wetlands in the Central region, 1992-2010.

WEST REGION

The largest region in the country is the West. It covers more than 760 million acres (not including Alaska). Because of the arid climate, there are only about 9 million acres or a little over 1% of the area in non-federally owned palustrine and estuarine wetlands in this region. Most of these wetlands can be found along the Pacific coast.

Figure 12. Sedges and other hydrophytic grasses dominate this palustrine emergent wetland in Washington.

It is important to note that these estimates do not include wetlands on federally owned land nor do they account for Alaska. Over 350 million acres in the West region are federally owned and, until recently, NRI data were not collected on federal land. Over 88% of federally owned land in the coterminous U.S. is in the West region.

Table 7. Wetland and Other Aquatic Habitats in the West Region of the United States (thousands of acres with margins of error). *

WEST REGION	Palustrine and Estuarine Wetlands	Other Aquatic Habitats (includes lakes, rivers, and deep marine waters)	Total Cowardin Wetlands
1992	8,848.9 ±558.7	9,525.7 ±262.8	18,374.6 ±638.5
1997	8,844.0 ±561.9	9,715.4 ±262.3	18,559.4 ±642.7
2002	8,850.3 ±579.8	9,720.2 ±294.2	18,570.5 ±697.4
2007	8,858.9 ±609.8	9,725.0 ±312.2	18,583.9 ±733.3
2010	8,872.1 ±619.8	9,719.4 ±309.1	18,591.5 ±733.1

*Excludes Alaska and federally owned lands

The West has seen a slow but steady increase in the restoration and creation of palustrine and estuarine wetland; nearly 30,000 acres were gained between 1997 and 2010.

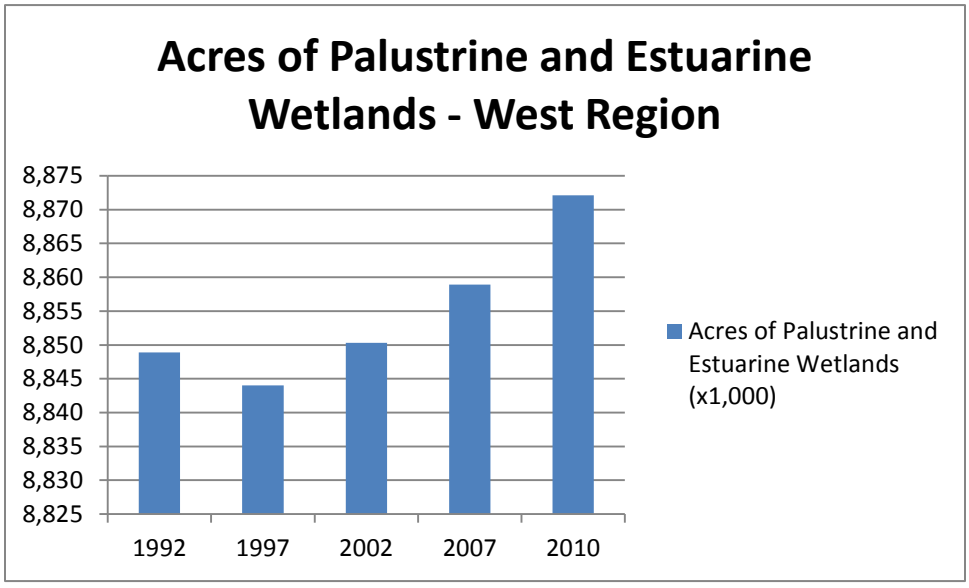


Figure 13. Acres of palustrine and estuarine wetlands in the West region, 1992-2010.

Attitudes towards palustrine and estuarine wetlands still vary across the country. The following three case studies demonstrate some of the different strategies toward the management and use of this valuable natural resource.

CASE STUDY # 1 – Palustrine Wetlands in the Mississippi River Basin

A palustrine wetland is land that is saturated with water, either permanently or where there is flooding or a fluctuating high water table in most years. The main factor that distinguishes wetlands from other land is the vegetation that is adapted to its often saturated soil conditions. Wetlands have a substrate that consists primarily of hydric soil, which supports aquatic plants (hydrophytes).

Wetlands play a number of roles in the environment, principally water purification, flood control, and shoreline stability. Wetlands also are considered the most biologically diverse of all ecosystems, serving as home to a wide range of plant a**n**d animal life. The saturated soils in wetlands create an environment that is depleted of oxygen. Specific plants and microorganisms that can live in this environment cycle and filter nutrients and contaminants.

Researchers estimated that movement through the riparian areas reduces the nitrate-nitrogen content of the upland runoff nearly 85 percent annually, from 27 pounds of NO_3-N per acre at the agricultural field edge to approximately 4 pounds per acre at the wetland edge near the streams (Jacobs and Gilliam, 1985). Most of the nitrate-nitrogen was removed as the flow passed through the narrow bands of vegetation between the agricultural fields and streams.

In the Mississippi River Basin, great strides are being realized in the effort to restore natural wetlands on the landscape. Vital to the nation for its ability to produce food, this area also has historically seen some of the highest rates of soil erosion by water. Additionally, corn production in this region utilizes significant additions of nitrogen fertilizer.

The swampbuster legislations and the introduction of the Wetland Reserve Program in the 1990 Farm Bill (Public Law No: 101-624. Amendment S.AMDT.2406) have been successful in promoting the restoration of more acres of wetlands in the Mississippi River Basin. Table 8 illustrates the trend in palustrine wetland acres in the intensely farmed Corn Belt region of the United States.

Table 8. Acres of palustrine wetlands in the Corn Belt region of the Mississippi River watershed (thousands of acres with margins of error).*

	1992	1997	2002	2007	2010
Illinois	1,174.9 ±100.4	1,168.5 ±100.4	1,174.8 ±95.3	1,177.5 ±51.9	1,175.9 ±101.7
Indiana	689.7 ±88.8	687.9 ±89.2	694.6 ±92.9	723.3 ±104.7	725.0 ±104.3
Iowa	885.3 ±113.5	882.5 ±113.5	911.7 ±119.6	918.4 ±129.4	918.5 ±129.8
Missouri	898.7 ±88.4	909.6 ±88.4	949.7 ±103.9	971.8 ±102.1	991.2 ±101.6

Four State Total	3,648.6 ±195.2	3,648.5 ±196.4	3,730.8 ±187.0	3,791.0 ±218.0	3,810.6 ±211.6

*Excludes federally owned lands

Between 1997 and 2010, over 150,000 acres of palustrine wetlands were created or restored in these four states along the Mississippi River watershed. This contributes to reductions in soil erosion and decreased runoff of agriculture related chemicals and an increase in the ability of the land to absorb and store water.

Figure 14. A restored wetland in Worth County, Iowa.

CASE STUDY # 2 – The Wetland Reserve Easement Program in New York

From the 1780's to 1985, it is estimated that about 60% of New York's wetlands were lost, primarily due to conversion to agriculture and development. The loss of wetlands had a significant impact on the landscape for two major reasons: 1) one acre of wetland typically stores about one million gallons of water, and 2) about one half of the 160 species identified as endangered or threatened by the New York State Department of Environmental Conservation are wetland dependent.

Figure 15. A. Aerial view of ditches draining water from a farm field. The tree lines indicate where drainage ditches are located.

B. The same field restored to its natural hydrology. A berm was installed at the northern and eastern edges of the property which flooded the easement by preventing water from draining off.

Stopping the Loss of Wetlands

Unfortunately, New York is not unique when it comes to wetland loss. Some states have lost up to 90% of their original wetlands. Recognizing the impact agriculture has had, Congress passed the Food Security Act of 1985 which discouraged the conversion of wetlands to crop fields after that date. Several years later, the Wetlands Reserve Program (now known as the Wetland Reserve Easement (WRE) program) was created, a voluntary program for landowners which takes cropped wetlands permanently out of production and restores them back to their original function. Nationally, in the 20 years of the program's existence, more than 11,000 private landowners have enrolled over 2.3 million acres into the Wetlands Reserve Program.

Restoring wetlands on marginal agricultural lands has been a high priority. New York is currently second in the nation for number of wetland easements (more than 1,000), just behind Iowa. The easements amount to 51,000 acres in the state enrolled in a conservation easement where the wetland hydrology has been restored. The conservation easements prohibit agriculture and development (no structures). It does allow for hunting and other limited uses that enhance the value for wildlife. Conservation programs such as Wetland Reserve Easements along with federal, state, and local land use regulations as well as greater awareness about the importance of wetlands are having a positive effect. Not only has the loss of wetlands slowed, some states are seeing an increase in wetland acres.

Table 9. Changes in wetland and deepwater habitats in New York between 2007 and 2010 (thousands of acres with margins of error).

2007 Classification	2010 Classification				2007 Total
	Palustrine and Estuarine Wetlands*	Other Aquatic Habitats*	Uplands*	Federal Land	
1000 acres					
Palustrine and Estuarine Wetlands*	3,401.5 ±155.6	0.2 ±0.4	1.3 ±1.4	0.0 -	3,403.0 ±156.0
Other Aquatic Habitats*	0.0 -	1,239.8 ±30.6	0.1 ±0.4	0.0 -	1,239.9 ±30.4
Uplands*	2.8 ±4.1	0.3 ±0.6	26,509.5 ±164.2	0.0 -	26,512.6 ±165.0
Federal Land	0.0 -	0.0 -	0.0 -	205.3 -	205.3 -
2010 Total	3,404.3 ±155.0	1,240.3 ±30.6	26,510.9 ±163.9	205.3 -	31,360.8 -

*Excludes federal lands

Table 9 shows that there are more than 4.6 million acres of the total 31 million acres in New York that are classified as some type of wetland. It also shows that between 2007 and 2010, about 2,800 acres

were created or restored to palustrine and estuarine wetlands to offset the 1,300 acres of palustrine wetlands that were lost during the same period. Urban development has taken over as the primary reason for the draining or alteration of wetlands.

Restoring Farmed Wetlands

Wetland restoration in New York begins with the enrollment of eligible land into WRE taking the parcel out of agricultural production and placing a 30-year or permanent conservation easement on the property. A restoration plan is developed by a biologist. If tile drains and ditches are present, they are typically broken or plugged. Areas that had been filled and leveled are excavated into shallow (less than 4 feet deep) ponds called potholes. Sometimes low berms can be installed to flood areas. The berms serve to plug ditches that had been created to drain the area.

New York's restored wetlands provide habitat for a variety of wildlife. Migrating waterfowl utilize these sites for staging areas in the spring and fall. Some species such as mallard, wood duck, and blue-winged teal will nest in the adjacent upland habitat and utilize the pools for rearing their brood. Show birds also utilize these sites during their annual migration. It is not unusual to also see muskrat, beaver, and even otters in these restored sites. Some sites target the restoration of habitat for rare and endangered species such as the bog turtle.

While natural wetlands often provide better habitat, restored wetlands can be very valuable. Compared with natural reference sites, the richness and abundance of aquatic life such as frogs and fish typically does not differ from restored sites after a few years.

Figure 16. The picture shows a WRP restored site. Prior to restoration, the area had filled in with sediment and was overgrown with mainly purple loose strife. Just 6 months after construction it is teeming with a variety of plants and animals.

CASE STUDY # 3 – Competition for Urban Real Estate in Florida

In heavily populated metropolitan areas, the pressure for competing land uses is still apparent. The demand for land to develop for real estate leads to the draining of thousands of acres of wetlands each year. In Florida alone, there has been a net loss of over 95,000 acres of palustrine and estuarine wetlands. The NRI captures some information for wetland loss. More than 65% of the time, wetlands were drained in Florida for development.

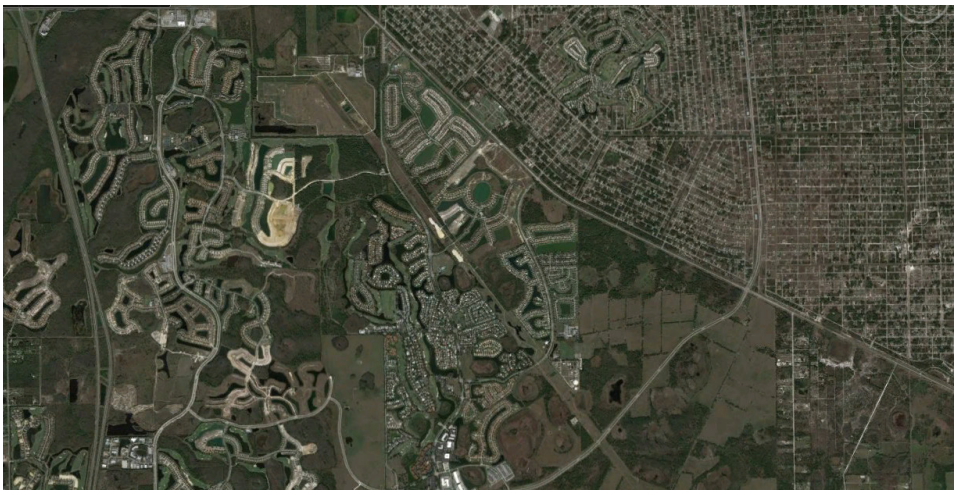
Table 10. Acres of palustrine and estuarine wetlands in Florida (thousands of acres with margins of error).

	1992	1997	2002	2007	2010
Florida	8,887.3 ±311.2	8,867.5 ±314.2	8,830.0 ±325.9	8,795.2 ±317.1	8,792.2 ±316.1

The loss of these wetlands leads to greater shoreline erosion, increased susceptibility to groundwater contamination, much higher rates of storm water runoff with less land available to store the storm water, and a higher likelihood for the development of sinkholes in specific geologic areas (Grossmann, 2013).

Figure 17. The following set of images shows the rapidly changing landscape in Lee County, Florida.

A. Approximately 20,000 acres near Fort Myers, Florida, January, 1995.



B. The same parcel of land in January, 2013 shows significantly more development.

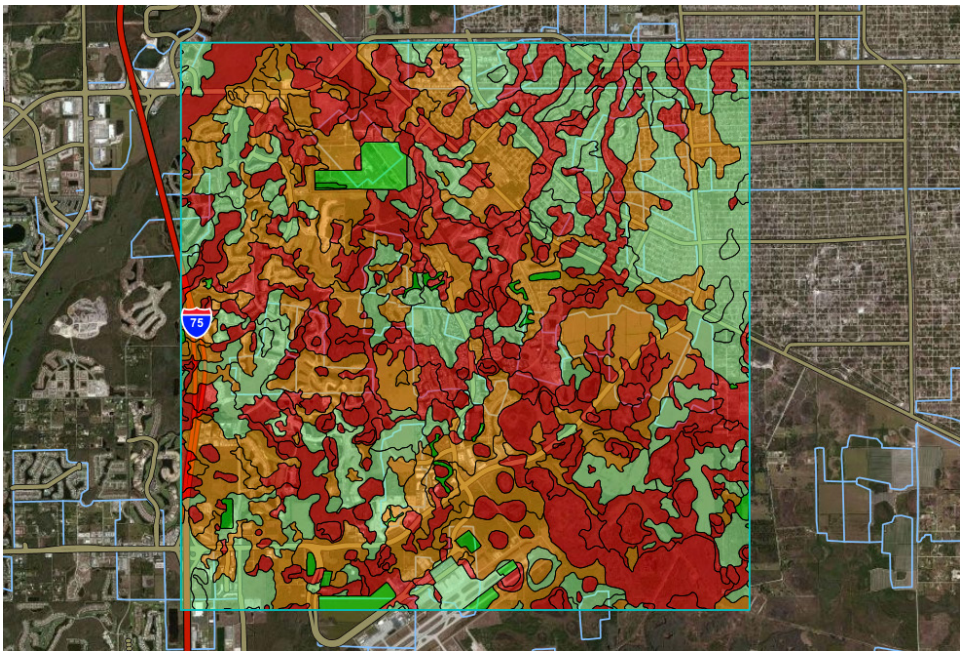


Figure 18. An interpretive map from the Lee County, Florida soil survey.

The map in Figure 18 shows a predominance of areas in orange and red that have greater than 90 percent hydric or seasonally saturated soils unless they are artificially drained. These soils are typically saturated within a foot of the soil surface. In order to make the land conducive to development of roads, buildings and other infrastructure, the saturated soils are drained through a system of tile drains and canals.

ABOUT THE NRI

Since its founding, NRCS (formerly the Soil Conservation Service (SCS)) has conducted periodic inventories of the Nation's natural resources (U.S. Department of Agriculture, 2013). The 1945 Soil and Water Conservation Needs Inventory (CNI), reconnaissance study, was the foundation for the 1958 and 1967 CNI's, which represented the agency's first efforts to collect data nationally for scientifically selected field sites. The 1975 Potential Cropland Study examined the conversion of the Nation's best farmland to urban development and provided statistical data on the potential for converting other lands to cropland. Periodic NRI's were conducted in 1977, 1982, 1987, 1992, and 1997. Since 2000, NRI data have been gathered annually, though major releases of these data had continued to be reported at 5-year intervals until the release of the 2010 NRI summary report.

The 2010 NRI report presents national and state-level estimates from the 48 conterminous states, Hawaii, and the Caribbean Territories for basic NRI data themes, including changes and trends in land cover/use, irrigation, land capability class and subclass, prime farmland, soil erosion, and wetlands.

To download a copy of the complete 2010 NRI summary report or to access to historical NRI archives, go to: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/nri/results/

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