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Wetlands: An Overview of Issues

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Summary

Recent Congresses have considered numerous policy topics that involve wetlands. Many reflect issues of long-standing interest, such as applying federal regulations on private lands, wetland loss rates, and restoration and creation accomplishments.

The issue receiving the greatest attention recently has been determining which wetlands should be included and excluded from requirements of the Clean Water Act (CWA), especially the Section 404 permit program that regulates waste discharges affecting wetlands, which is administered by the Army Corps of Engineers and the Environmental Protection Agency (EPA). As a result of Supreme Court rulings in 2001 and 2006 that narrowed federal regulatory jurisdiction over certain isolated wetlands, the jurisdictional reach of the permit program has also been narrowed. In 2015, EPA and the Army Corps promulgated a rule to define the scope of waters protected by the CWA. The rule revises the existing administrative definition of "waters of the United States" consistent with the Supreme Court's rulings and consistent with science concerning the interconnectedness of tributaries, wetlands, and other waters and the effects of these connections on the chemical, physical, and biological integrity of downstream waters. The rule has been controversial with groups and many Members of Congress who contend that it would vastly increase federal assertion of jurisdiction that triggers CWA regulatory requirements.

Wetland protection efforts continue to engender controversy over issues of science and policy. Topics include the rate and pattern of loss, whether all wetlands should be protected in a single fashion, the effectiveness of the current suite of laws in protecting them, and the fact that 75% of remaining U.S. wetlands are located on private lands.

Many public and private efforts have sought to mitigate damage to wetlands and to protect them through acquisition, restoration, enhancement, and creation, particularly coastal wetlands. While recent data indicate success in some restoration efforts, leading to increases in some types of wetlands in some locations, many scientists question if restored or created wetlands provide equivalent replacement for natural wetlands that contribute multiple environmental services and values.

One reason for controversies about wetlands is that they occur in a wide variety of physical forms, and the numerous values they provide, such as wildlife habitat, also vary widely. In addition, the total wetland acreage in the lower 48 states is estimated to have declined from more than 220 million acres three centuries ago to 110.1 million acres in 2009. The national policy goal of no net loss, endorsed by Administrations for the past two decades, had been reached by 2004, according to the Fish and Wildlife Service, as the rate of loss had been more than offset by net gains through expanded restoration efforts authorized in multiple laws. However, more recent data show wetlands losses of nearly 14,000 acres per year. Many protection advocates say that gains do not necessarily account for the changes in quality of the remaining wetlands, and many also view federal protection efforts as inadequate or uncoordinated. Others, who advocate the rights of property owners and development interests, characterize these efforts as too intrusive. Numerous state and local wetland programs add to the complexity of the protection effort.

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Introduction

Wetlands, with a variety of physical characteristics, are found throughout the country. They are known in different regions as swamps, marshes, fens, potholes, playa lakes, or bogs. Although these places can differ greatly, they all have distinctive plant and animal assemblages because of the wetness of the soil. Some wetland areas may be continuously inundated by water, while other areas may not be flooded at all. In coastal areas, flooding may occur daily as tides rise and fall.

Prior to the mid-1980s, federal laws and policies to protect wetlands were generally limited to providing habitat for migratory waterfowl, especially ducks and geese. Some laws encouraged destruction of wetland areas, including selected provisions in the federal tax code, public works legislation, and farm programs.

Since the mid-1980s, the values of wetlands have been recognized in different ways in numerous national policies, and federal laws either encourage wetland protection, or prohibit or do not support their destruction. These laws, however, do not add up to a fully consistent or comprehensive national approach. The central federal regulatory program, found in Section 404 of the Clean Water Act, requires permits for the discharge of dredged or fill materials into many but not all wetland areas. However, other activities that may adversely affect wetlands do not require permits, and some places that scientists define as wetlands are exempt from this permit program because of physical characteristics or the type of activity that takes place. One agricultural program, swampbuster, is a disincentive program that indirectly protects wetlands by making farmers who drain wetlands ineligible for federal farm program benefits; those who do not receive these benefits (62% of all farmers received no direct payments from the farm subsidy program in 2007) have no reason to observe the requirements of this program. Numerous other acquisition, protection, and restoration programs complete the current federal effort.

Although numerous wetland protection bills have been introduced in recent Congresses, the most significant new wetlands legislation to be enacted has been in farm bills. Congress also has reauthorized several wetlands programs, mostly setting higher appropriations ceilings, without making significant shifts in policy. The George W. Bush Administration endorsed wetland protection in legislation, such as the farm bill and the North American Wetlands Conservation Act reauthorization, and at events, such as Earth Day presentations. The Bush Administration also issued rules on mitigation policies. In 2015 the Obama Administration promulgated controversial changes to regulatory program jurisdiction (see discussion below).

Congress has provided a forum in numerous hearings where conflicting interests in wetland issues have been debated. These debates encompass disparate scientific and programmatic questions and conflicting views of the role of government where private property is involved. Broadly speaking, the conflicts are between:

- Environmental interests and wetland protection advocates who have been pressing for greater wetlands protection as multiple values have been more widely recognized, by improving coordination and consistency among agencies and levels of governments, and strengthened programs; and
- Others, including landowners, farmers, and small businessmen, who counter that protection efforts have gone too far, by aggressively regulating privately owned wet areas that provide few wetland values. They have been especially critical of the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA), asserting that they administer the Section 404 program in an overzealous and inflexible manner.

Recent wetland legislative activity in Congress centered broadly on two issues. One was on wetlands conservation provisions in the farm bill. Provisions enacted in the 2014 farm bill (P.L. 113-79) repealed the wetlands reserve program, but it created a new conservation easement program, which continues voluntary efforts to protect and restore wetlands. The law also reauthorized the Conservation Reserve Program (CRP), the largest federal, private-land retirement program, but reduced the acreage enrollment cap by 25%. CRP compensates landowners who voluntarily remove land from agricultural production for the benefit of soil and water quality and wildlife habitat.

The second major area of recent legislative interest has been proposals addressing the scope of geographic jurisdiction of wetlands regulations under the Clean Water Act. This interest arises because federal courts have played a key role in interpreting and clarifying the limits of federal jurisdiction to regulate activities that affect "waters of the United States," including wetlands, especially since a 2001 Supreme Court ruling in the so-called *SWANCC* decision and another in 2006 in *Rapanos vs. United States.* For several Congresses, legislation intended to reverse the *SWANCC* and *Rapanos* rulings was introduced but not enacted. More recently, legislation that instead would halt or redirect Obama Administration rules to re-define "waters of the United States" has been introduced, including numerous bills in the 114th Congress.[1]

Wetlands: Science and Information

Scientific questions about wetlands, with answers that can be important to policymakers, include how to define wetlands; how to catalogue the rate and pattern of wetland declines and losses as well as restorations and increases; and how to assess the importance of wetland changes to broader ecosystems. Wetlands science has made considerable strides in developing a fuller and more sophisticated knowledge about many aspects of wetlands in the more than two decades since protecting wetlands became a general policy goal in federal law and program administration.[2]

There are two topics where scientific information and wetland protection policies remain inconsistent: should all regulated wetlands be treated equally; and if all scientifically defined wetlands are not covered by the federal regulatory program, what subset should be covered, and how should such decisions be made? While discussion of either question has major science elements, both are primarily addressed in the section below about the Clean Water Act Section 404 program.

What Is a Wetland?

Scientists generally agree that the presence of a wetland can be determined by a combination of soils, plants, and hydrology. The only definition of wetlands in law, in the swampbuster provisions of farm legislation (P.L. 99-198) and in the Emergency Wetlands Resources Act of 1986 (P.L. 99-645), lists those three components. This definition does not include more specific criteria, such as exactly what conditions must be present and for how long, thus leaving interpretation to scientists and regulators on a case-by-case basis. Controversies are exacerbated when many sites that have those three components and are identified as wetlands by experts,

[1] See discussion below ("Congressional Response") and, The "Waters of the United States" Rule: Legislative Options and 114th Congress Responses, by Claudia Copeland.

[2] Two places to view material on some of the changes in scientific knowledge and understanding are through information on the websites of the Association of State Wetlands Managers, http://www.aswm.org, and the Society of Wetland Scientists, http://www.sws.org.

either may have wetland characteristics only some portion of the time, or may not look like what many people visualize as wetlands. Also, many of these sites have been directly or indirectly modified by human activities that diminish their appearance (and their ability to perform wetland functions).

Wetlands currently subject to federal regulation are a large subset of all places that members of the scientific community would call a wetland. These regulated wetlands, under the Section 404 program discussed below, are currently identified using technical criteria in a wetland delineation manual issued by the Corps in 1987. This manual was prepared jointly and is used by all federal agencies to carry out their responsibilities under this program (the Corps, EPA, Fish and Wildlife Service [FWS], and the National Marine Fisheries Service [NMFS]). It provides guidance and field-level consistency for the agencies that have roles in wetland regulatory protection. (A second and slightly different manual, agreed to by the Corps and the Natural Resources Conservation Service [NRCS], is used for delineating wetlands on agricultural lands.) While the agencies try to improve the objectivity and consistency of wetland identification and delineation, judgment continues to play a role and can lead to site-specific controversies. Cases discussed below (see "Section 404 Judicial Proceedings: *SWANCC* and *Rapanos*") center on whether wetlands should be included or exempted from the regulatory program in certain circumstances, such as the physical setting.

What Functional Values Are Provided by Wetlands?

Functional values, both ecological and economic, at each wetland depend on its location, size, and relationship to adjacent land and water areas. Many of these values have been recognized only recently. Historically, many federal programs encouraged wetlands to be drained or altered because they were seen as having little value as wetlands (for example, flood protection programs of the Corps and U.S. Department of Agriculture (USDA) have modified or eliminated many floodplain wetlands through alterations of the hydraulic/hydrologic regime). Wetland values can include

- habitat for aquatic birds and other animals and plants, including numerous threatened and endangered species; production of fish and shellfish;
- water storage, including mitigating the effects of floods and droughts;
- water purification;
- recreation;
- timber production;
- food production;
- education and research; and
- open space and aesthetic values.

Usually wetlands provide some combination of these values; single wetlands rarely provide all of these values. The composite value typically declines when wetlands are altered. In addition, the effects of alteration often extend well beyond the immediate area, because wetlands are usually part of a larger water system. For example, conversion of wetlands to urban uses has increased flood damages; this value has received considerable attention as the costs of natural disaster costs mounted since the 1990s.

How Fast Are Wetlands Disappearing, and How Many Acres Are Left? What Is Their Condition?

A number of reports document changes in wetland acres. The U.S. Fish and Wildlife Service (FWS) periodically surveys national net trends in wetland acreage using the National Wetlands Inventory (NWI). It has estimated that when European settlers first arrived, wetland acreage in the area that would become the 48 states was more than 220 million acres, or about 5% of the total land area. According to its most recent report of national trends, issued in 2011, total wetland acreage in 2009 was estimated to be 110.1 million acres.[3] Until recently, NWI data had shown small annual gains overall in wetland acreage. However, the 2009 total was a slight decline in acreage over the previous five years (62,300 acres), or about 13,800 acres lost per year, reflecting a combination of some losses and some gains in acres and types of wetlands across the country. FWS also has published reports on wetland status and trends in several individual regions and states, such as Florida, Texas, Delaware, South Carolina, and Alaska.[4]

Of particular interest to scientists and natural resource managers are coastal wetlands, which provide important ecosystems services, because they serve as buffers to protect coastal areas from storm damage and sea level rise, while providing habitat for fish, shellfish, and wildlife that are commercially and recreationally important. Coastal watersheds, where these wetlands are located, are affected by population growth more than non-coastal areas, since 52% of the total U.S. population lives in counties that drain to coastal watersheds, although these counties are less than 20% of U.S. land area, excluding Alaska. Coastal wetlands are vulnerable to direct and indirect effects of residential and commercial development, pollutant discharges, and other human activities. A 2013 report by the FWS and National Oceanic and Atmospheric Administration (NOAA) found that in 2009 there were an estimated 41.1 million acres of wetlands in the coastal watersheds of the United States, representing 37.3% of total wetland area in the lower 48 states. The report also found that U.S. coastal wetlands are vanishing at a rate of more than 80,000 acres per year, about six times greater than the estimated rate of wetland loss for the entire United States. The increased loss, measured between 2004 and 2009, was attributed to severe weather in the Gulf of Mexico and urban and rural development in other areas, and the reported loss was 25% greater than the annual loss rate found in a previous report covering the years 1998 to 2004. The largest loss, according to the report, was in the Gulf of Mexico region, where 257,150 acres of coastal wetlands disappeared due to erosion and/or inundation. Throughout the Gulf region, saltwater wetlands have been adversely affected by the cumulative effect of oil and gas development that increased their vulnerability to intense storms.[5]

Over the last decade, working with states and tribes, EPA has conducted a series of national aquatic resource assessments, to gather information on the ecological condition of the nation's waters. A 2016 report under this effort evaluated the ecological condition of tidal and non-tidal wetlands. It found that nearly half of wetland area (48%) is in good condition, 32% is in poor condition, and the remaining 20% is in fair condition. Plant presence, abundance, and trait information are used to assess biological condition of wetlands, and EPA reported that less than half of wetland areas nationally have healthy plant communities. Physical disturbances to

[3] Thomas E. Dahl, *Status and Trends of Wetlands in the Conterminus United States, 2004-2009*, U.S. Department of the Interior, Fish and Wildlife Service, 2011.

[4] For information, see http://www.fws.gov/wetlands/Status-And-Trends/index.html.

[5] Thomas E. Dahl and Susan-Marie Stedman, *Status and Trends of Wetlands in the Coastal Watersheds of the Conterminous United States 2004-2009*, U.S. Department of the Interior, Fish and Wildlife Service, and National Ocean and Atmospheric Administration, National Marine Fisheries Service, October 2013.

wetlands and surrounding habitat, such as surface hardening and vegetation removal or loss, are the most widespread problems, EPA said.[6]

In 2002, the George W. Bush Administration endorsed the concept of "no-net-loss" of wetlands—a goal declared by President George H. W. Bush in 1988 and also embraced by President Clinton to balance wetlands losses and gains in the short term and achieve net gains in the long term. On Earth Day 2004, President Bush announced a new national goal, moving beyond no-net-loss to achieve an overall increase of wetlands. The goal was to create, improve, and protect at least 3 million wetland acres over the next five years in order to increase overall wetland acres and quality. (By comparison, the Clinton Administration in 1998 announced policies intended to achieve overall wetland increases of 200,000 acres per year by 2005.) The Bush strategy also called for better tracking of wetland programs and enhanced local and private sector collaboration.

In April 2008, the Bush Administration issued a report saying that more than 3.6 million acres of wetlands had been restored, protected, or improved as part of the President's program to create, improve and protect wetlands, and that the number was expected to climb to 4.5 million acres by the original date set by that program—Earth Day 2009.[7] The report documented gains, but not offsetting loses. It summarized accomplishments for each federal wetland conservation program. Environmental groups criticized the report as presenting an incomplete picture, because it failed to mention wetlands lost to agriculture and development.

Numerous shifts in federal policies since 1985 (and changes in economic conditions as well) strongly influence wetland loss patterns, but the composite effects remain unmeasured beyond these raw numbers. There usually is a large time lag between the announcement and implementation of changes in policy, and collection and release of data that measure how these changes affect loss rates. Also, it is often very difficult to distinguish the role that policy changes play from other factors, such as agricultural markets, development pressures, and land markets.

Further, these data only measure acres. This may have been appropriate two or three decades ago when scientists knew less about how to measure the specific functions and values found in wetlands. By providing data limited to number of acres, these data provide few insights into changes in their quality, as measured by the values they provide, which is often determined by factors such as where a wetland is located in a watershed, and what are the surrounding land uses. Scientists caution that there are a number of questions about the qualitative and ecological integrity of existing wetlands. The wetlands trends data reported by FWS in 2011 show increases in certain types of freshwater wetlands since 2004, particularly freshwater ponds constructed to replace lost wetlands. However, FWS noted that there is no clear scientific consensus about the functional equivalency of replacement wetlands.

Wetlands and Climate Change

As described above, coastal wetlands provide critical services such as absorbing energy from coastal storms, preserving shorelines, protecting human populations and infrastructure, absorbing pollutants, and serving as critical habitat for migratory species. Many scientists believe that these resources and services will be threatened as sea-level rise associated with a changing climate

[6] U.S. Environmental Protection Agency, *National Wetland Condition Assessment 2011: A Collaborative Survey of the Nation's Wetlands*, EPA-843-R-15-005, May 2016.

[7] Office of the President, Council on Environmental Quality, *Conserving America's Wetlands 2008: Four Years of Progress Implementing the President's Goal*, April 2008.

inundates wetlands. Due in part to their limited capacity for adaptation, wetlands have been considered among the ecosystems most vulnerable to a changing climate. Changes in climatic conditions that affect water conditions (e.g., wetter, drier, more saline) are predicted to have substantial impact on species that use wetlands and on ecosystem services provided by wetlands, or make efforts to reestablish wetlands more challenging.[8]

In 2010, a group of international scientists published results of research modeling efforts to identify conditions under which coastal wetlands could survive rising sea level. Using a rapid sea-level rise scenario, the scientists estimated that most coastal wetlands worldwide will experience inundation that leads to rapid and irreversible conversion of marshland into unvegetated, subtidal surfaces and will disappear near the end of the 21st century. Under moderate and slow sea-level rise scenarios, some coastal wetlands would be vulnerable to inundation, depending on amounts of sediment present: larger amounts of sediment would enable the wetland to adapt and modify naturally and thus be more likely to survive sea-level rise.[9]

Coastal wetlands also serve as a "sink" for absorbing carbon dioxide (CO_2), the most common greenhouse gas (GHG) that is associated with climate change. Scientists recognize that tidal wetlands hold large amounts of carbon, some within standing plant biomass, but most within deep organic-bearing soils. Carbon that is stored in soils has been built up over millennia and reflects pools of CO_2 that have been transferred from the atmosphere and sequestered within roots and other organic material.[10] However, the loss of wetland areas, for example through inundation and erosion, eliminates its ongoing sequestration capacity, and draining wetlands for development releases within a few decades carbon that took centuries to accumulate. A 2011 World Bank report concluded that drainage and degradation of coastal wetlands has become a major cause of carbon dioxide emissions that contribute to climate change, large enough globally that carbon dioxide emissions from drained coastal wetlands should be included in carbon accounting and emission inventories, and in policy frameworks to reduce emissions.[11] Some policymakers concerned with mitigating climate change have begun to consider whether it is possible to halt the release of carbon from converted or eroded wetlands and reverse carbon losses through wetland restoration. Further, some are considering whether the ecosystem benefits of wetlands, from a carbon sequestration standpoint, can be quantified in financial terms to enable use of wetlands restoration and management as potential generators of GHG offsets in the context of climate change policy.[12]

Selected Federal Wetlands Programs

Federal program issues include the administration of programs to protect, restore, or mitigate wetland resources (especially the Clean Water Act Section 404 program); relationships between agricultural and regulatory programs; whether all wetlands should be treated the same in federal

[8] T. E. Dahl, *Status and Trends of Wetlands in the Conterminous United States, 2004-2009*, U.S. Department of the Interior, Fish and Wildlife Service, 2011, p. 86.

[9] Matthew L. Kirwan, Glenn R. Guntenspergen, and Andrea D'Alpaos et al., "Limits on the adaptability of coastal marshes to rising sea level," *Geophysical Research Letters*, vol. 37, no. L23401 (December 2010).

[10] While tidal wetlands do effectively sequester carbon, some wetlands (especially those with low salinity levels) also are a source of GHGs by emitting methane, which is approximately 21 times more powerful as a GHG than CO_2.

[11] Stephen Crooks, Dorothee Herr, and Jerker Tamelander et al., "Mitigating Climate Change Through Restoration and Management of Coastal Wetlands and Near-shore Marine Ecosystems, Challenges and Opportunities," The World Bank Environment Department, March 2011, http://siteresources.worldbank.org/ENVIRONMENT/Resources/MtgtnCCthruMgtofCoastalWetlands.pdf.

[12] Stephen Emmett-Mattox, Stephen Crooks, and Jette Findsen, "Wetland Grasses and Gases: Are Tidal Wetlands Ready for the Carbon Markets?," *National Wetlands Newsletter*, November-December 2010, pp. 6-10.

programs, and which wetlands should be subject to regulation; and whether protecting wetlands by acres is an effective proxy for protecting wetlands based on the functions they perform and the values they provide. In addition, private property questions are raised, because almost three-quarters of the remaining wetlands are located on private lands. Some property owners believe that they should be compensated when federal programs limit how they can use their land and for decisions that arguably diminish the value of the land.

The Clean Water Act Section 404 Program

The principal federal program that provides regulatory protection for wetlands is found in Section 404 of the Clean Water Act (CWA). Its intent is to protect water and adjacent wetland areas from adverse environmental effects due to discharges of dredged or fill material. Enacted in 1972, Section 404 requires landowners or developers to obtain permits from the Corps of Engineers to carry out activities involving disposal of dredged or fill materials into waters of the United States, including wetlands.

The Corps has long had regulatory jurisdiction over dredging and filling, starting with the River and Harbor Act of 1899. The Corps and EPA share responsibility for administering the Section 404 program. Other federal agencies, including NRCS, FWS, and NMFS, also have roles in this process. In the 1970s, legal decisions in key cases led the Corps to revise this program to incorporate broad jurisdictional definitions in terms of both regulated waters and adjacent wetlands. Section 404 was last amended in 1977.

This judicial/regulatory/administrative evolution of the Section 404 program has generally pleased those who view it as a critical tool in wetland protection, but dismayed others who would prefer more limited Corps jurisdiction or who see the expanded regulatory program as intruding on private land-use decisions and treating wetlands of widely varying value similarly. Underlying this debate is the more general question of whether Section 404 is the best approach to federal wetland protection.

Some wetland protection advocates have proposed that it be replaced or greatly altered. First, they point out that it governs only the discharge of dredged or fill material, while not regulating other acts that drain, flood, or otherwise reduce functional values. Second, because of exemptions provided in 1977 amendments to Section 404, major categories of activities are not required to obtain permits. These include normal, ongoing farming, ranching, and silvicultural (forestry) activities. Further, permits generally are not required for activities that drain wetlands (only for those that fill wetlands), which excludes a large number of actions with potential to alter wetlands. Third, in the view of protection advocates, the multiple values that wetlands can provide (e.g., fish and wildlife habitat, flood control) are not effectively recognized through a statutory approach based principally on water quality, despite the broad objectives of the Clean Water Act.

The Permitting Process

The Corps' regulatory process involves both general permits for actions by private landowners that are similar in nature and will likely have a minor effect on wetlands, and individual permits for more significant actions. According to the Corps, it evaluates more than 85,000 permit requests annually. Of those, more than 95% are authorized under a general permit, which can apply regionally or nationwide, and is essentially a permit by rule, meaning the proposed activity is presumed to have a minor impact, individually and cumulatively. They authorize landowners to proceed without having to obtain individual permits in advance. More than one-half of the general permits require pre-notification or prior approval by the Corps.

Nationwide permits are a key means by which the Corps minimizes the burden of its regulatory program. A nationwide permit is a form of general permit that authorizes a category of activities throughout the nation and is valid only if the conditions applicable to the permit are met. They are issued for periods of no longer than five years. According to Corps data, in FY2015, nationwide and other general permits that required Corps approval entailed average processing time of 59 days, in contrast with standard individual permits, which, on average, took 291 days of processing and evaluation, once an application was completed.[13]

The current nationwide permit program has few strong supporters, for differing reasons. Developers say that it is too complex and burdened with arbitrary restrictions. Environmentalists say that it does not adequately protect aquatic resources. At issue is whether the program has become so complex and expansive that it cannot either protect aquatic resources or provide for a fair regulatory system, which are its dual objectives.

Less than 5% of all permits are required to go through the more detailed evaluation for a standard individual permit, which typically involves complex proposals or sensitive environmental issues. Regulatory procedures on individual permits allow for interagency review and public comment, a coordination process that can generate delays and an uncertain outcome, especially for environmentally controversial projects.

EPA is the only federal agency having veto power over a proposed Corps permit; EPA has used its veto authority 13 times in the 40-plus years since the program began. However, critics have charged that implied threats of delay by the FWS and others practically amount to the same thing. Reforms during the Reagan, George H. W. Bush, and Clinton Administrations streamlined certain of these procedures, with the intent of speeding up and clarifying the Corps' full regulatory program, but concerns continue over both process and program goals.

Controversy also surrounded revised regulations issued by EPA and the Corps in 2002, which redefine two key terms in the 404 program: "fill material" and "discharge of fill material." These definitions are important, because material defined as "fill" is regulated and permitted under Section 404 procedures, while other waste discharges are regulated under more stringent CWA rules and procedures. The agencies said that the revisions were intended to clarify certain confusion in their joint administration of the program due to previous differences in how the two agencies defined those terms. However, environmental groups contended that the changes allow for less restrictive and inadequate regulation of certain disposal activities, including disposal of coal mining waste, which could be harmful to aquatic life in streams. Legislation to reverse the agencies' action by clarifying in the law that fill material cannot be composed of waste has been introduced regularly since the 107th Congress, including H.R. 6411 in the 114th Congress.[14]

As previously described, three criteria—hydrology, soil type, and plants—are used in making wetlands delineations under several environmental laws and programs, including Section 404 permitting. Scientists generally agree that each of the three parameters must be met to identify an area as a wetland. Because growth of plants in wetland areas typically is contingent on the presence of hydric soils and the availability of sufficient water, the vegetation parameter often is determinative of whether an area qualifies as a wetland or not.

In 2012, the Corps revised the National Wetlands Plant List (NWPL), which is used by federal and state agencies for determining whether a particular area contains a prevalence of hydrophytic

[13] For information, see CRS Report 97-223, *The Army Corps of Engineers' Nationwide Permits Program: Issues and Regulatory Developments*, by Claudia Copeland and Jonathan L. Ramseur.

[14] For additional information, see, CRS Report RL31411, *Controversies over Redefining "Fill Material" Under the Clean Water Act*, by Claudia Copeland.

(i.e., wetland) vegetation. This was the first major revision of the plant list since its publication in 1988 and was intended to improve the accuracy of the overall list. The updated list contains 8,200 plant species, an increase of 1,472 species, or 22%, primarily as a result of new taxonomic interpretations. The Corps said it did not expect major changes to wetland delineations as a result of the updated list, but some commenters contend that the new list is likely to cause more areas to qualify as wetlands.[15]

Section 404 authorizes states to assume many of the Corps' permitting responsibilities. Two states have done this: Michigan (in 1984) and New Jersey (in 1992). Others reasons cited for not joining these two states include the complex process of assumption, the anticipated cost of running a program, and the continued involvement of federal agencies because of statutory limits on waters that states could regulate. Efforts continue to encourage more states to assume program responsibility. If a state or tribe is considering assuming such responsibilities, among the first questions that needs to be answered is for which waters will the state or tribe assume permitting responsibility and which waters will the Corps retain permitting authority. States have raised concerns that Section 404 and its implementing regulations lack sufficient clarity to enable states and tribes to estimate the extent of waters for which they could assume permitting responsibility and thus estimate the associated implementation costs. In 2015 EPA convened an advisory committee, consisting of states, tribes, industry, environmentalists, and others, to provide advice and recommendations on how the EPA can best clarify which waters a state or tribe may assume permitting responsibility. The committee is expected to issue a report in 2017.

Should All Wetlands Be Treated Equally?

Under the Section 404 program, there is a perception that all wetlands are treated equally, regardless of size, functions, or values. In reality, this is not the case, because the Corps' general permits do provide accelerated regulatory decisions for many activities that affect wetlands. Further, a number of types of activities are fully exempt from 404 permit requirements as a result of statutory provisions enacted in 1977 (including ongoing farming, ranching, and forestry activities, as specified in Section 404(f)) and regulatory exemptions (including for prior converted croplands, which are wetlands that were drained, dredged, filled, leveled, or otherwise manipulated before December 23, 1985, to make production of an agricultural commodity possible).

However, this perception has led critics to focus on situations where a wetland has little apparent value, but the landowner's development proposal is not approved, or the landowner is penalized for altering a wetland without a federal permit. Critics believe that one possible solution may be to have a tiered approach for regulating wetlands. Legislation introduced in past Congresses proposed to establish multiple tiers (typically three)—from highly valuable wetlands that should receive the greatest protection to the least valuable wetlands where alterations might usually be allowed. Some states (New York, for example) use such an approach for state-regulated wetlands.

Three questions arise: (1) What are the implications of implementing a classification program? (2) How clearly can a line separating each wetland category be defined? (3) Are there regions where wetlands should be treated differently? Regarding classification, even many wetland protection advocates acknowledge that there are some situations where a wetland designation with total protection is not appropriate. But they fear that classification for different degrees of protection could be a first step toward a major erosion in overall wetland protection. Also, these advocates would probably like to see almost all wetlands presumed to be in the highest protection category unless experts can prove an area should receive a lesser level of protection, while critics

[15] The updated list of wetland plants is available at http://wetland_plants.usace.army.mil.

who view protection efforts as excessive would seek the reverse. In response to these concerns, Corps and EPA officials note that existing guidance and regulations already provide substantial flexibility to implement current programs, allowing, for example, less vigorous permit review to small projects with minor environmental impacts. Some types of wetlands are already treated differently—for example, playas and prairie potholes, which have somewhat different definitions under swampbuster (discussed below). However, this differential treatment contributes to questions about federal regulatory consistency on private property.

Locating the boundary line of a wetland can be controversial when the line encompasses areas that do not meet the image held by many. Controversy would likely grow if a tiered approach required that lines segment wetland areas. On the other hand, a consistent application of an agreed-on definition might lead to fewer disputes and result in more timely decisions.

Some states have far more wetlands than others. Different treatment has been proposed for Alaska, because about one-third of the state is designated as wetlands, yet a very small portion has been converted. In the past, legislative proposals have been made to exempt that state from the Section 404 program until 1% of its wetlands have been lost.

Section 404 Judicial Proceedings: *SWANCC* and *Rapanos*

The Section 404 program has been the focus of numerous lawsuits, most of which have sought to narrow the geographic scope of the regulatory program.

SWANCC

An issue of long-standing controversy is whether isolated waters are properly within the jurisdiction of Section 404. Isolated waters (those that lack a permanent surface outlet to downstream waters) that are not physically adjacent to navigable surface waters often appear to provide few of the values for which wetlands are protected, even if they meet the technical definition of a wetland. In January 2001, the Supreme Court ruled on the question of whether the CWA provides the Corps and EPA with authority over isolated waters and wetlands. The Court's 5-4 ruling in *Solid Waste Agency of Northern Cook County (SWANCC) vs. U.S. Army Corps of Engineers* (531 U.S. 159 (2001)) held that the denial of a Section 404 permit for disposal on isolated wetlands solely on the basis that migratory birds use the site exceeds the authority provided in the CWA. The full extent of retraction of the regulatory program resulting from this decision remains unclear, even more than a dozen years after the ruling. Environmentalists believe that the Court misinterpreted congressional intent on the matter, while industry and landowner groups welcomed the ruling.[16]

Policy implications of how much the decision restricts federal regulation depend on how broadly or narrowly the opinion is applied, and, since the 2001 Court decision, other federal courts have issued a number of rulings that have reached varying conclusions. Some federal courts have interpreted *SWANCC* narrowly, thus limiting its effect on current permit rules, while a few read the decision more broadly. Attorneys for industry and developers say that the courts will remain the primary battleground for CWA jurisdiction questions, so long as neither the Administration nor Congress takes steps to define jurisdiction.

The government's view on the key question of the scope of CWA jurisdiction in light of *SWANCC* and other court rulings came in a legal memorandum issued jointly by EPA and the Corps in

[16] For additional information, see archived CRS Report RL30849, The Supreme Court Addresses Corps of Engineers Jurisdiction Over "Isolated Waters": The SWANCC Decision, by Robert Meltz.

2003.[17] It provided a legal interpretation essentially based on a narrow reading of the Court's decision, thus allowing federal regulation of some isolated waters to continue (in cases where factors other than the presence of migratory birds may exist, thus allowing for assertion of federal jurisdiction), but it called for more review by higher levels in the agencies in such cases. Administration press releases said that the guidance demonstrates the government's commitment to "no-net-loss" wetlands policy. However, it was apparent that the issues remained under discussion, because at the same time, the Administration issued an advance notice of proposed rulemaking (ANPRM) seeking comment on how to define waters that are under the regulatory program's jurisdiction. The ANPRM did not actually propose rule changes, but it indicated possible ways that CWA rules might be modified to further limit federal jurisdiction, building on *SWANCC* and some of the subsequent legal decisions. The government received more than 133,000 comments on the ANPRM, most of them negative, according to EPA and the Corps. Environmentalists and many states opposed changing any rules, saying that the law and previous court rulings call for the broadest possible interpretation of the CWA (and narrow interpretation of *SWANCC*), but developers sought changes to clarify interpretation of the *SWANCC* ruling.

In December 2003, EPA and the Corps announced that the Administration would not pursue rule changes concerning federal regulatory jurisdiction over isolated wetlands. The EPA Administrator said that the Administration wanted to avoid a contentious and lengthy rulemaking debate over the issue. Nonetheless, interest groups on all sides have been critical of confusion in implementing the 2003 guidance, which constitutes the main tool for interpreting the reach of the *SWANCC* decision. Environmentalists remain concerned about diminished protection resulting from the guidance, while developers said that without a new rule, confusing and contradictory interpretations of wetland rules likely will continue. In that vein, a Government Accountability Office (GAO) report concluded that Corps districts differ in how they interpret and apply federal rules when determining which waters and wetlands are subject to federal jurisdiction, documenting enough differences that the Corps undertook a comprehensive survey of its district office practices to help promote greater consistency.[18] Concerns over inconsistent or confusing regulation of wetlands also drew congressional interest.[19]

Rapanos-Carabell

Federal courts continue to have a key role in interpreting and clarifying the *SWANCC* decision. In February 2006, the Supreme Court heard arguments in two cases brought by landowners (*Rapanos vs. United States*; *Carabell vs. U.S. Army Corps of Engineers*) seeking to narrow the scope of the CWA permit program as it applies to development of wetlands. The issue in both cases had to do with the reach of the CWA to cover "waters" that were not navigable waters, in the traditional sense, but were connected somehow to navigable waters or "adjacent" to those waters. (The act requires a federal permit to discharge dredged or fill materials into "navigable waters.") Many legal and other observers hoped that the Court's ruling in these cases would bring greater clarity about the scope of federal regulatory jurisdiction.

The Court's ruling was issued on June 19, 2006 (*Rapanos et al., vs. United States*, 547 U.S. 715 (2006)). In a 5-4 decision, a plurality of the Court, led by Justice Scalia, held that the lower court

[17] See http://www.epa.gov/owow/wetlands/pdf/Joint_Memo.pdf.

[18] U.S. Government Accountability Office, *Corps of Engineers Needs to Evaluate Its District Office Practices in Determining Jurisdiction*, GAO-04-297, February 2004.

[19] U.S. Congress, House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment, *Inconsistent Regulation of Wetlands and Other Waters*, Hearing 108-58, 108th Cong., 2nd sess., March 30, 2004.

had applied an incorrect standard to determine whether the wetlands at issue are covered by the CWA. Justice Kennedy joined this plurality to vacate the lower court decisions and remand the cases for further consideration, but he took different positions on most of the substantive issues raised by the cases, as did four other dissenting Justices.[20] Legal observers suggested that the implications of the ruling (both short-term and long-term) are far from clear. Because the several opinions written by the Justices did not draw a clear line regarding what wetlands and other waters are subject to federal jurisdiction, one result has been more case-by-case determinations and continuing litigation.

In 2008, EPA and the Corps issued guidance to enable their field staffs to make CWA jurisdictional determinations in light of the decision. According to the nonbinding guidance, the agencies would assert regulatory jurisdiction over certain waters, such as traditional navigable waters and adjacent wetlands. Jurisdiction over others, such as non-navigable tributaries that do not typically flow year-round and wetlands adjacent to such tributaries, would be determined on a case-by-case basis, to determine if the waters in question have a significant nexus with a traditional navigable water. The guidance details how the agencies should evaluate whether there is a significant nexus. The guidance was not intended to increase or decrease CWA jurisdiction, and it did not supersede or nullify the 2003 guidance memorandum, discussed above, which addressed jurisdiction over isolated wetlands in light of *SWANCC*. The guidance said that waters are jurisdictional if they satisfy *either* the plurality or Kennedy tests in *Rapanos*. The 2008 guidance also provided detail for determining whether a wetland is adjacent to a traditional navigable water and whether a tributary of a navigable water is subject to the act—key issues raised by the *Rapanos* decision.

In 2011, the Obama Administration weighed into the CWA jurisdiction debate as EPA and the Corps proposed new joint agency guidance to clarify regulatory jurisdiction over U.S. waters and wetlands and to replace the agencies' 2008 guidance. Like the existing guidance, the proposed revisions would adopt the Kennedy-test-or-plurality-test view of interpreting *Rapanos*. However, the agencies believed that a wider evaluation of jurisdiction is possible than the existing guidance suggests, stating, "after careful review of these opinions, the agencies concluded that previous guidance did not make full use of the authority provided by the CWA to include waters within the scope of the Act, as interpreted by the Court."[21]

The 2011 proposed guidance quickly generated substantial controversy. Some critics argued that the guidance represented over-reaching by the agencies, beyond authority provided by Congress. Others faulted the continued reliance on federal guidance, which is not binding and lacks the force of law, yet can have significant impact on regulated entities. For various reasons, the 2011 draft guidance was not finalized, and in 2013, EPA and the Corps announced that the document had been withdrawn from interagency review and also announced that revised regulations to define "waters of the United States" were being developed. In March 2014, the agencies released a proposed rule that was intended to clarify CWA jurisdiction, but the proposal was extremely controversial. Groups representing property owners, land developers, and the agriculture sector contended that it was a massive federal overreach beyond the agencies' statutory authority. Most state and local officials are supportive of clarifying the extent of CWA-regulated waters, but some were concerned that the rule could impose costs on states and localities as their own actions (e.g., transportation or public infrastructure projects) become subject to new requirements. Most environmental advocacy groups welcomed the intent of the proposal to more clearly define U.S.

[20] For additional information, see CRS Report RL33263, *The Wetlands Coverage of the Clean Water Act (CWA): Rapanos and Beyond*, by Claudia Copeland and Alexandra M. Wyatt.

[21] U.S. Environmental Protection Agency and Army Corps of Engineers, "Draft Guidance on Identifying Waters Protected by the Clean Water Act," April 27, 2011, p. 2, on file with author.

waters that are subject to CWA protections, but beyond that general support, some favored an even stronger rule.

2015 Revised Rule

On May 27, 2015, EPA and the Corps issued a final rule revising their regulations that define the scope of waters protected under the CWA. The revised rule became effective on August 28, 2015, 60 days after publication in the *Federal Register*.[22] The rule was immediately challenged in federal courts by multiple stakeholders, as described below, and in October 2015, a nationwide stay of the rule was issued while legal proceedings play out.

The 2015 revised rule retains much of the structure of the agencies' existing definition of "waters of the United States."[23] It focuses particularly on clarifying the regulatory status of surface waters located in isolated places in a landscape and streams that flow only part of the year, along with nearby wetlands—the types of waters with ambiguous jurisdictional status following the Supreme Court's rulings. Like the 2003 and 2008 guidance documents and the 2014 proposal, it identifies categories of waters that are and are not jurisdictional, as well as categories of waters and wetlands that require a case-specific evaluation.

The agencies' intention was to clarify questions of CWA jurisdiction, in view of the Supreme Court's rulings and consistent with the agencies' scientific and technical expertise. Much of the controversy since the Court's rulings has centered on the many instances that have required applicants for CWA permits to seek a time-consuming case-specific evaluation to determine if CWA jurisdiction applies to their activity, due to uncertainty over the geographic scope of the act. In the rule, the Corps and EPA intended to clarify jurisdictional questions by clearly articulating categories of waters that are and are not protected by the CWA and thus limiting the types of waters that still require case-specific analysis. However, critical response to the proposal from industry, agriculture, many states, and some local governments was that the rule was vague and ambiguous and could be interpreted to enlarge the regulatory jurisdiction of the CWA beyond what the statute and the courts allow.

Officials of the Corps and EPA vigorously defended the proposed rule. But they acknowledged that it raised questions that required clarification in the final rule. The 2015 final rule does reflect a number of changes from the proposal, especially to provide more bright line boundaries and simplify definitions that identify waters that are protected under the CWA.[24] The agencies' intention was to clarify the rules and make jurisdictional determinations more predictable, less ambiguous, and more timely. While some stakeholders believe that the agencies largely succeeded in that objective, others believe that they did not.

Legal challenges to the 2015 rule were filed in multiple federal courts soon after it was announced. These lawsuits, filed by industry groups, more than half of the states, and several environmental groups (nearly 90 plaintiffs in all), will test whether the agencies' interpretation of CWA jurisdiction is consistent with the Supreme Court's rulings and whether the rule complies with substantive and procedural requirements of the CWA and other laws.

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[22] Department of the Army, Corps of Engineers, and Environmental Protection Agency, "Clean Water Rule: Definition of 'Waters of the United States,' Final Rule," 80 *Federal Register* 37054-37127, June 29, 2015.

[23] The definition of "waters of the United States" is found at 33 C.F.R. §328.3 (Corps) and 40 C.F.R. §122.2 (EPA). The term is similarly defined in other EPA regulations, as is the term "navigable waters."

[24] See CRS Report R43455, *EPA and the Army Corps' Rule to Define "Waters of the United States"*, by Claudia Copeland.

Because of uncertainty about the correct judicial venue for challenging the rule,[25] petitions for review were filed both in federal district courts and appellate courts. The petitions for review in courts of appeals were consolidated in the U.S. Court of Appeals for the Sixth Circuit. On October 9, 2015, a three-judge panel of the Sixth Circuit placed a nationwide stay on the rule, pending further developments. In June 2016, this court set the initial briefing schedule in the litigation; the court's schedule likely would lead to oral arguments in February 2017 or later. Other legal complexities remain, however, including continuing district court cases over the rule in other circuits and decisions on the same issue in appeals before other federal appellate courts.[26]

As a result of the Sixth Circuit's rulings and ongoing judicial review of the regulation, the Corps and EPA are again making CWA jurisdictional determinations based on the 2008 guidance, as they did before promulgation of the 2015 rule.

Congressional Response

Legislation to reverse the *SWANCC* and *Rapanos* decisions was introduced on several occasions since the 107th Congress. In the 111th Congress, the Senate Environment and Public Works Committee approved S. 787—the first such proposal to advance from a congressional committee. Companion House legislation was introduced in the 111th Congress (H.R. 5088). There was no further legislative action on either bill.[27] Legislation that instead would narrow the definition of "waters of the United States" also was introduced.

Stakeholders with different perspectives seemingly agree on one point—that Congress must clarify the important issues left unsettled by the Supreme Court's 2001 and 2006 rulings and by the Corps/EPA guidance and rule—but they disagree on what that would entail. Environmental advocates argue that legislation is needed to "reaffirm" what Congress intended when the CWA was enacted in 1972 and what EPA and the Corps have subsequently been practicing until the two Supreme Court rulings, in terms of CWA jurisdiction. But critics questioned the constitutionality of legislation that was proposed and asserted that it would expand federal authority, thus likely increasing confusion, rather than settling it. Indeed, many developer and other groups that have been critical of EPA and the Corps favor greater restrictions on waters and wetlands that are considered to be "jurisdictional" for CWA regulatory purposes.

EPA's and the Corps' efforts to develop revised *Rapanos* guidance and revised regulations have been controversial and received congressional attention. Legislative provisions to prohibit the agencies from funding activities related to the 2011 draft guidance and the "waters of the United

[25] The judicial review section of the CWA, Section 509, vests exclusive, original review jurisdiction over enumerated EPA actions under the act in the federal courts of appeals. The initial issue with Section 509 is that none of the listed EPA actions clearly cover the Clean Water Rule. Indeed, in the preamble to the final rule, EPA and the Corps acknowledge that "[t]he Supreme Court and lower courts have reached different conclusions on the types of actions that fall within section 509," and offers no opinion of its own as to review of the Clean Water Rule. If a court finds that the rule is not covered by Section 509, review jurisdiction presumably will lie in the district courts pursuant to the federal question statute. That statute, applicable where no more specific statute provides otherwise, gives the district courts original jurisdiction over "all civil actions arising under the ... laws ... of the United States." (28 U.S.C. §1331). See CRS Legal Sidebar WSLG1369, *The EPA/Corps Clean Water Rule: What Court or Courts Get to Rule on the Legal Challenges?*

[26] For further analysis, see CRS Legal Sidebar WSLG1503, *UPDATED: Sixth Circuit Will Hear Challenges to EPA's Clean Water Act Jurisdiction ("Waters of the United States") Rule, but Litigation Uncertainties Remain Unresolved*, by Alexandra M. Wyatt.

[27] For information on the 111th Congress legislation, see CRS Report R41225, *Legislative Approaches to Defining "Waters of the United States"*, by Claudia Copeland.

States" rule were included in appropriations bills since the 112th Congress, but none of these appropriations restrictions was enacted.

Congressional interest continued to be strong in the 114th Congress. In February 2015, the Senate Environment and Public Works Committee and the House Transportation and Infrastructure Committee held a joint hearing on impacts of the 2014 proposed rule on state and local governments, hearing from public and EPA and Corps witnesses. Hearings also have been held by other congressional committees. As well, a number of bills were introduced, most of them intended either to prohibit the agencies from finalizing the 2014 proposed rule or to detail procedures for a new rulemaking to replace the 2015 rule. The House passed legislation to require EPA and the Corps to start a new rulemaking (H.R. 1732). Related legislation was approved by a Senate committee (S. 1140), but the Senate failed to advance that bill. The Senate and House passed a resolution of disapproval under the Congressional Review Act (S.J.Res. 22), which President Obama vetoed.[28]

Agriculture and Wetlands

National surveys more than two decades ago indicated that agricultural activities had been responsible for about 80% of wetland loss in the preceding decades, making this topic a focus for policymakers seeking to protect the remaining wetlands. Congress responded by creating wetland conservation programs in farm legislation starting in 1985. Conservation programs in the farm bill use both incentives and disincentives to encourage landowners to protect and restore wetlands. For example, the Conservation Reserve Program's wetland program uses incentives to protect wetlands, while swampbuster uses disincentives.[29]

Members of the farm community have expressed a wide range of views about wetland protection, from strong opposition to strong support. These views are frequently framed in the context of two general concerns about wetland protection efforts. First, as a philosophical matter, some object to federal regulation of private lands, regardless of the societal values those lands might provide. Second, many farmers want certainty and predictability about the land they farm to limit their financial risk. Therefore, if wetlands are located on farm property, they want assurances that the boundary line delineating wetlands will remain where located for as long as possible.

Swampbuster

Swampbuster, enacted in 1985, uses disincentives rather than regulations to protect wetlands on agricultural lands. It removes a farmer's eligibility from all government price and income support programs for activities such as draining, dredging, filling, leveling or otherwise altering a wetland. Producers who plant a program crop on a wetland converted to agricultural use after December 23, 1985, or who convert wetlands, making agricultural commodity production possible, after November 28, 1990, are ineligible for certain USDA program benefits. Swampbuster has been controversial with farmers concerned about redefining an appropriate federal role in wetland protection on agricultural lands, and with wetland protection advocates concerned about inadequate enforcement. Since 1995, the NRCS has made wetland determinations only in response to requests because of uncertainty over whether changes in regulation or law would modify boundaries that have already been delineated.

[28] For details, see CRS Report R43943, *The "Waters of the United States" Rule: Legislative Options and 114th Congress Responses*, by Claudia Copeland.

[29] For information, see CRS Report R40763, *Agricultural Conservation: A Guide to Programs*, by Megan Stubbs.

Swampbuster amendments in 1996 (P.L. 104-127) granted producers greater flexibility by making changes, such as exempting swampbuster penalties when wetlands are voluntarily restored; providing that prior converted wetlands are not to be considered "abandoned" if they remain in agricultural use; and granting good-faith exemptions. They also encourage mitigation, established a mitigation banking pilot program, and repealed required consultation with the FWS.

In 2014 Congress enacted legislation to renew the farm bill (P.L. 113-79), including limited modifications to the swampbuster program. The enacted bill adds crop insurance premium subsides as an ineligible benefit, if found to be out of compliance. The wetlands compliance provision of the farm bill includes a number of exempt lands, such as wetlands created by irrigation delivery systems. The 2014 farm bill amendments extend the list of exemptions for compliance violators, allowing additional time for producers to remedy or mitigate the wetland conversion before losing crop insurance premium subsidies.[30]

Other Agricultural Wetlands Programs

Several USDA conservation programs provide federal payments to private agricultural landowners for voluntary changes in land use or management to achieve environmental benefits, including wetlands protection.[31] The Wetland Reserve Program (WRP), enacted in 1990, provided landowners with payments for placing easements on farmed wetlands. It provided long-term technical and financial assistance to landowners with the opportunity to protect, restore, and enhance wetlands on their property, and to establish wildlife practices and protection. Strong farmer interest led Congress to raise the WRP enrollment ceiling in both the 2002 and 2008 farm bills. The 2008 legislation authorized a Wetlands Reserve Enhancement Program, allowing USDA to enter into agreements with states in order to leverage federal funds for wetlands protection and enhancement.

Farm bill legislation enacted in 2014 (P.L. 113-79) modified agriculture conservation programs in several respects. The legislation repealed the WRP and two other easement programs and created a new Agricultural Conservation Easement Program (ACEP). The new program retains wetlands reserve easements similar to WRP to protect and restore wetlands, along with agricultural land easements for the other repealed programs. Program participants agree to restore and maintain wetlands according to an approved wetland reserve easement plan, while in return, USDA provides technical and finance assistance for wetland restoration. Landowners are compensated for the wetland reserve easement based on the fair market value of the land and the length of the easement or contract.

The farm bill also includes the Environmental Quality Incentives Program (EQIP), which may have incidental protection benefits for wetlands. For example, EQIP supports the installation or implementation of structural and management practices, and the 2008 farm bill expanded the program to include practices that enhance wetlands. The 2014 farm bill reauthorized the financial and technical assistance elements of EQIP and also incorporated into EQIP a previously separate program, the Wildlife Habitat Incentives Program (WHIP), which provides assistance to landowners for development of wetland wildlife and other types of wildlife habitat. As amended, the farm bill now requires that 5% of total EQIP payments benefit wildlife habitat. Finally, some programs could less directly help protect wetlands, such as the Conservation Stewardship

[30] For details, see CRS Report R43504, *Conservation Provisions in the 2014 Farm Bill (P.L. 113-79)*, by Megan Stubbs.

[31] For additional information, see CRS Report R40763, *Agricultural Conservation: A Guide to Programs*, by Megan Stubbs.

Program, which provides payments to maintain and improve existing conservation practices on agricultural lands and to adopt additional conservation activities.

Building on programs expressly authorized in the farm bill, USDA administers several conservation programs that it established administratively. One is the Wetland Restoration, Non-Floodplain Initiative to allow enrollment of up to 250,000 acres of large wetland complexes and playa lakes located outside the 100-year floodplain in the CRP. CRP, the largest federal, private-land retirement program in the United States, allows producers to enter into 10- to 15-year contracts to install certain conservation practices. As of July 2014, there were 245,000 acres enrolled in the Wetland Restoration, Non-Floodplain Initiative. USDA also established a Wetland Restoration Initiative to enroll wetlands located in the 100-year floodplain in the CRP. As of July 2014, a total of 265,000 acres were enrolled. Participants in these programs receive incentive payments equal to 25% of the cost to help pay for restoring the hydrology of the site, as well as rental payments and cost-sharing assistance to install eligible conservation practices.

Agricultural Wetlands and the Section 404 Program

The CWA Section 404 program applies to qualified wetlands in all locations, including agricultural lands. But the Corps and EPA exempt "prior converted lands" (wetlands modified for agricultural purposes before 1985) from Section 404 permit requirements under a memorandum of agreement (MOA) by rule, and since 1977 the CWA has exempted "normal farming activities" from Section 404. The Supreme Court's *SWANCC* decision exempted certain isolated wetlands from Corps jurisdiction; NRCS estimated that about 8 million acres in agricultural locations might be exempted by this decision.

While these exemptions and the MOA displease some protection advocates, they probably dampened some of the criticism from farming interests over federal regulation of private lands, at least for a while. On the other hand, the prospect that Congress might enact legislation to reverse the Court's 2001 and 2006 rulings, discussed above, particularly alarmed farm groups, who fear that changes in law or regulations could negatively affect their activities. Because of differences between the CWA and farm bill on the jurisdictional status of certain wetlands (e.g., isolated wetlands may be regulated differently by federal agencies), in 2005 the Corps and NRCS signed a memorandum of understanding and issued joint guidance clarifying circumstances where wetlands delineation made by one agency can be accepted for determining the jurisdiction of the other agency.[32]

Recently, agriculture industry groups have been among the most vocal critics of the EPA-Army Corps "waters of the United States" rule, discussed above, out of concern that the rule would bring agricultural lands and activities under Clean Water Act jurisdiction.

Other Federal Protection Efforts

Many federal agencies have been active in wetland improvement efforts in recent years. In particular, the Fish and Wildlife Service (FWS) has been promoting the success of its Partners for Fish and Wildlife program, which Congress reauthorized through FY2011 in 2006 (P.L. 109-294). Through voluntary agreements, the Partners program provides technical assistance and cost-share incentives directly to landowners for wetland restoration projects on private lands.[33]

[32] See http://www.usace.army.mil/Portals/2/docs/civilworks/mous/foodsecurity_cleanwateract.pdf.

[33] See http://www.fws.gov/partners/.

FWS also administers the National Coastal Wetlands Conservation Grant Program, established by Title III of P.L. 101-646, Coastal Wetlands Planning, Protection and Restoration Act of 1990. Under this program, federal grants, matched by contributions from states and localities, as well as from private landowners and conservation groups, are used to acquire, restore, or enhance coastal wetlands and adjacent uplands to provide long-term conservation benefits to fish, wildlife, and their habitats. The federal government generally provides 50% of the total costs of a project, but the federal share can be increased to 75% if the state maintains a fund for acquiring coastal wetlands. Since 1992, about $183 million in grants have been awarded to 25 coastal states and one U.S. territory for projects involving 250,000 acres of coastal wetland ecosystems.[34]

Other programs also restore and protect domestic and international wetlands. One of these derives from the North American Wetlands Conservation Act, reauthorized in P.L. 111-149 with an appropriations ceiling of $75 million annually. This act, also administered by FWS, provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States, Canada, and Mexico for the benefit of wetlands-associated migratory birds and other wildlife. Grants consist of standard grants, which support projects in all three countries, and small grants, which support similar activities but at a smaller scale and for fewer dollars. Both are competitive grants programs and require that grant requests be matched by partner contributions at no less than a 1-to-1 ratio. According to the FWS, from September 1990 through March 2014, approximately 5,000 partners in 2,421 projects have received nearly $1.3 billion in grants. They have contributed another $2.7 billion in matching funds to affect 27.5 million acres of habitat.[35]

Under the Convention on Wetlands of International Importance, more commonly known as the Ramsar Convention, the United States is one of 169 nations that have agreed to slow the rate of wetlands loss by designating wetland sites of international importance. These nations have designated 2,247 sites, totaling 531 million acres, since the convention was adopted in 1971. The United States has designated 38 sites pursuant to the convention, encompassing 4.6 million acres.[36]

Private Property Rights and Landowner Compensation

An estimated 74% of all remaining wetlands in the conterminous states are on private lands. Questions of federal regulation of private property stem from the argument that landowners should be compensated when a "taking" occurs and alternative uses are prohibited or restrictions on use are imposed to protect wetland values. The U.S. Constitution provides that property owners shall be compensated if private property is "taken" by government action. The courts generally have found that compensation is not required unless all reasonable uses are precluded. Many individuals or companies purchase land with the expectation that they can alter it. If that ability is denied, they contend, then the land is greatly reduced in value. Many argue that a taking should be recognized when a site is designated as a wetland.

Congress has explored these wetlands property rights issues on several occasions. An example is a 2001 hearing by the House Transportation and Infrastructure Committee, Subcommittee on

[34] For information, see http://www.fws.gov/coastal/coastalgrants/.

[35] See http://www.fws.gov/birds/grants/north-american-wetland-conservation-act.php.

[36] See http://www.ramsar.org.

Water Resources and the Environment.[37] Recent Congresses considered, but did not enact, property rights protection proposals.

State Protection Efforts

In addition to federal programs and activities, wetlands in the United States are regulated and protected through a variety of state and local laws and regulations, as well as through initiatives and actions of nongovernmental organizations, schools and universities, and private citizens. The role of states in wetland protection is especially important, as noted in a study by the Environmental Law Institute.

> States have long held the right and the responsibility to provide stewardship over their resources, and state agency staff typically have a well-versed understanding of the "lay of the land," in terms of both topography and state priorities, policies, and practices. Finally, in light of recent uncertainty over federal jurisdiction of wetlands and limited federal resources for wetland protection, the role of states in conserving wetlands may be more important now than ever before.[38]

States use a variety of programs and tools to protect and manage wetlands, including regulation and mitigation, wetland water quality standards, monitoring and assessment, voluntary restoration, tax incentives, coordination among state and federal agencies, and public/private partnerships. Programs vary substantially from state to state and often derive their authorities from more than one statute and/or regulation. As a result, different programs may be administered by different state agencies. In addition, programs may change from year to year.[39]

Every state regulates, to some degree, activities that affect wetlands, but two-thirds of the states lack regulatory programs that *comprehensively* regulate wetlands. Many states rely solely or primarily on authority in CWA Section 401, under which states may review any activity that requires a federal permit or license to determine its effect on the state's water quality standards.[40] Section 401 gives states the authority to approve, condition, or deny the federal permit—including a Section 404 permit—or license based on their review. In areas where there is no Section 404 permit requirement, and therefore no opportunity for review under Section 401, some states also require a state permit for activities that affect aquatic resources: 23 states have authority to issue permits for dredge and fill activities in wetlands and other waters of the state, such as geographically isolated wetlands (although as described previously, only New Jersey and Michigan have been delegated 404 permitting authority).

As is the case with the federal regulatory program under CWA Section 404, an important consideration is how a state determines which waters fall within its regulatory jurisdiction. States' definitions of their waters are typically much broader than the federal definition of "waters of the United States," meaning that states may exert jurisdiction over waters within their boundaries that

[37] U.S. Congress, House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment, *The Wetland Permitting Process: Is It Working Fairly?* Hearing 107-50, 107th Cong., 1st sess., October 3, 2001.

[38] Environmental Law Institute, *State Wetland Protection: Status, Trends & Model Approaches*, March 2008, p. 6. Hereinafter, ELI State Wetland Protection.

[39] See Association of State Wetland Managers, "State Wetland Program Summaries," at http://www.aswm.org/state-summaries.

[40] Twenty-two states rely on Section 401 as the sole form of state-level regulation, and 15 additional states rely on Section 401 as the primary form of state-level regulation but also have adopted laws that provide additional protection to certain wetland categories, such as coastal wetlands. ELI State Wetland Protection, p. 13.

are not covered by the CWA. State definitions often include phrases such as "all surface waters." They also may exclude certain waters, such as private lakes or ponds. Groundwater is not included in the federal regulatory definition, but most states include groundwater in their regulatory programs.[41] All 50 states include wetlands in either or both their statutory and regulatory definitions of state waters—32 make this inclusion explicit, and 18 define waters more generally, including wetlands implicitly. The inclusion of wetlands in a state's definition of state waters does not give automatic protection to these waters; the state must also have some form of complementary regulatory authority, such as to issue permits.[42]

Other findings of the ELI report include the following.

- The majority of states have adopted legislation, policies, and/or guidelines for mitigating impacts to aquatic resources that are permitted in their states. Mitigation provisions range from general requirements to specific replacement ratios, site preferences, and mitigation options such as purchasing credits from a mitigation bank (also see "Wetland Restoration and Mitigation").
- One-third of states report having a wetland-specific monitoring and/or assessment program or monitoring wetlands as part of a larger state monitoring program.
- Nearly one-half of the states operate a formal program for partnering with private landowners on restoration or conservation, and a majority of states report that they conduct outreach or provide technical assistance to private landowners. Ninety percent of states have one or more agencies that carry out education and outreach activities related to wetlands.

The Louisiana Experience

Much of the attention to reversing wetland loss has focused on Louisiana, where an estimated 80% of the total loss of U.S. coastal wetlands has occurred and where about 40% of U.S. coastal wetlands that remain in the lower 48 states are located (coastal wetlands are about 5% of all U.S. wetlands). Changes to Louisiana's coastal area result from a combination of natural environmental processes (erosion, saltwater intrusion into fresh systems, sea level rise) and human-related activities, according to the U.S. Geological Survey (USGS). Wetland loss has occurred naturally for centuries, but until recently, land losses have been counterbalanced by various natural wetland-building processes.

USGS estimates that, since 1932, coastal Louisiana has experienced a net change in land area of approximately 1,883 square miles—an area the size of Delaware. Land loss rates on the Louisiana coast have slowed from an average of more than 30 square miles per year between 1956 and 1978, to an estimated 11.8 square miles per year from 1985 to 2004. When the hurricanes of 2005 and 2008 are factored in, the trend increased the amount of land loss to 16.6 square miles from 1985 to 2010. According to USGS, if this loss were to occur at a constant rate, it would equal losing more than a football field every hour.[43] As a result of wetlands loss, the natural flow of

[41] See Environmental Council of the States, "The States' Definitions of 'Waters of the State,'" February 2009, at http://www.ecos.org/section/publications.

[42] ELI State Wetland Protection, p. 17.

[43] B. R. Couvillion, J. A. Barras, and G. D. Steyer, et al., *Land Area Change in Coastal Louisiana from 1932 to 2010*, U.S. Geological Survey, Pamphlet to accompany U.S. Geological Survey Scientific Investigations Map 3164, June 2011, http://pubs.usgs.gov/sim/3164/downloads/SIM3164_Pamphlet.pdf.

Mississippi River and floodwaters to feed sediment to the marshes has been reduced. Saltwater has invaded the brackish estuaries, destroying vegetation and areas that are needed for fish, shellfish, and wildlife. In response to these losses, Congress authorized a task force, led by the Corps, to prepare a list of coastal wetland restoration projects in the state, and also provided funding to plan and carry out restoration projects in this and other coastal states under the Coastal Wetlands Planning, Protection and Restoration Act of 1990, also known as the Breaux Act.[44] The projects range from reintroduction of freshwater and diversion of sediment to construction of shoreline barriers and planting of vegetation. In total, the estimated total cost to complete all 147 approved projects is $1.78 billion.

In a 2007 report, GAO reported that it is impossible to determine the collective success of restoring coastal wetlands in Louisiana, because of an inadequate approach to monitoring. GAO had reviewed the Breaux Act program to identify the types of projects that have been designed and lessons that have been learned from 74 projects that have been completed so far.[45] Others, including the National Oceanic and Atmospheric Administration, disagreed with GAO's findings, observing that long-term data being provided through ongoing project monitoring are intended to yield insight into qualitative and quantitative project performance.

In the wake of hurricanes Katrina and Rita in 2005, multiple legislative proposals were introduced to fund additional restoration projects already planned by the U.S. Army Corps of Engineers and to explore other opportunities that would restore and stabilize wetlands in southern Louisiana. Before the hurricanes, Congress was considering legislation that would have provided about $2 billion to the restoration effort. Since the 2005 hurricanes, more expansive options costing up to $14 billion that were proposed in the 1998 report *Coast 2050* have also been considered.[46] The Gulf of Mexico Energy Security Act, legislation that authorizes additional revenues to states adjacent to offshore oil and gas production activities, was passed during the final days of the 109th Congress.[47] One of the purposes for which these revenues can be spent is wetland restoration, and the availability of these funds may affect the amount and scale of wetland restoration activity in the central Gulf Coast.

Concern for Louisiana's coastal wetlands was heightened by the oil spill following the April 2010 explosion of BP's drilling rig, the Deepwater Horizon, in the Gulf of Mexico. Although efforts focused on preventing oil from reaching coastal shorelines, some oil escaped capture and was pushed by wind and tides toward land. The degrees of impacts of oil on wetland vegetation are variable and complex and can be both acute and chronic, ranging from short-term disruption of plant functioning to mortality. The primary acute damage to the marshes is that plants, which hold the soil in place and stabilize shoreline, suffocate and die, especially if multiple coatings of oil occur. Once vegetation dies, the soil collapses. Then the soil becomes flooded, and plants cannot regrow. If plants cannot reestablish, soil erosion is accelerated, giving rise to even more flooding and further wetland loss. If oil penetrates into the sediments, roots are continuously exposed to

[44] For information on this program, see CRS Report RS22467, Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA): Effects of Hurricanes Katrina and Rita on Implementation, by Jeffrey A. Zinn.

[45] U.S. Government Accountability Office, *Coastal Wetlands: Lessons Learned from Past Efforts in Louisiana Could Help Future Restoration and Protection*, GAO-08-130, December 2007.

[46] See http://www.coast2050.gov. For a more detailed discussion of the effects of the hurricanes on planning for wetland restoration, see CRS Report RS22276, Coastal Louisiana Ecosystem Restoration After Hurricanes Katrina and Rita, by Jeffrey A. Zinn.

[47] S. 3711 was attached to a broad tax relief measure that was enacted in December 2006 (H.R. 6111, P.L. 109-432). For additional information, see CRS Report RL33493, Outer Continental Shelf: Debate Over Oil and Gas Leasing and Revenue Sharing, by Marc Humphries.

oil, with chronic toxicity making production of new shoots problematic. Consequently, plant recovery is diminished, and eventually land loss occurs. In addition to direct impacts on plants, oil that reaches wetlands also affects animals that use wetlands during their life cycle, especially benthic organisms that reside in the sediments and are a foundation of the food chain.[48]

Public and private efforts were taken to protect the wetlands from oil that moved through Gulf waters towards coastal areas, but scientists remained concerned that high tides and wind could push oil into the marshes, and that the grasses and other vegetation that provide habitat for fish and wildlife would likely be destroyed. Wetland plants can be affected both by oil that floats over the surface of the marsh and by oil that has been incorporated into sediment. While oil was still flowing from the Deepwater Horizon site, cleanup of marshes was limited to triage of heavily oiled marshes and wetlands, because experts were concerned that greater harm than good could be done to the sensitive environmental ecosystems. The well was capped, and oil stopped flowing from the well site in mid-July 2010. Experts say that spill response efforts succeeded in keeping large amounts of oil from reaching coastal marshes. Nevertheless, oil remains in the Gulf environment, and potential for re-oiling of coastal areas, for example as a result of storms, will remain a concern for some time.

A recent federal report observes that Louisiana's *Coast 2050* is a comprehensive plan to protect and restore the state's coastal wetlands, but that other Gulf of Mexico states are only beginning similar planning processes for restoration of the damage caused by the Deepwater Horizon spill.[49]

Wetland Restoration and Mitigation

Mitigation has become an important cornerstone of the Section 404 program in recent years. A 1990 MOA signed by the agencies with principal regulatory responsibilities (EPA and the Corps) outlines a sequence of three steps leading to mitigation: first, activities in wetlands should be avoided when possible; second, when they cannot be avoided, impacts should be minimized; and third, where minimum impacts are still unacceptable, mitigation is appropriate. Therefore, to compensate for such impacts, mitigation may be required as a condition of a Section 404 permit. Compensatory mitigation is typically accomplished through one of three ways: a mitigation bank, in-lieu fee program, or permittee-responsible mitigation.

Federal wetland policies during the past 30 years have increasingly emphasized restoration of wetland areas. Much of this restoration occurs as part of efforts to mitigate the loss of wetlands at other sites. The mitigation concept has broad appeal, but implementation has left a conflicting record. Examination of this record, presented in a 2001 report from the National Research Council, found it to be wanting. The NRC report said that mitigation projects called for in permits affecting wetlands were not meeting the federal government's "no net loss" policy goal for wetlands function.[50] Likewise, a 2001 GAO report criticized the ability of the Corps to track the impact of projects under its current mitigation program that allows in-lieu-fee mitigation projects

[48] Dennis F. Whigham, Stephen W. Broome, and Curtis J. Richardson et al., Statement of the Environmental Concerns Committee, Society of Wetland Scientists, "The Deepwater Horizon Disaster and Wetlands," http://www.docsrush.net/3039416/the-deepwater-horizon-disaster-and-wetlands-statement-from.html.

[49] Thomas E. Dahl and Susan-Marie Stedman, *Status and Trends of Wetlands in the Coastal Watersheds of the Conterminous United States 2004-2009*, U.S. Department of the Interior, Fish and Wildlife Service, and National Ocean and Atmospheric Administration, National Marine Fisheries Service, October 2013, p. 37.

[50] National Academy of Sciences, National Research Council, *Compensating for Wetland Losses under the Clean Water Act* (Washington, DC, 2001).

in exchange for issuing permits allowing wetlands development.[51] Both scientists and policymakers debate whether it is possible to restore or create wetlands with ecological and other functions equivalent to or better than those of natural wetlands that have been lost over time. Results so far seem to vary, depending on the type of wetland and the level of commitment to monitoring and maintenance.

Some wetland protection advocates are critical of mitigation, which they view as justifying destruction of wetlands. They believe that the Section 404 permit program should be an inducement to avoid damaging wetland areas. These critics also contend that adverse impacts on wetland values are often not fully mitigated and that mitigation measures, even if well-designed, are not adequately monitored or maintained. Supporters of current efforts counter that they generally work as envisioned, but little data exist to support this view. Questions about implementation of the 1990 MOA and controversies over the feasibility of compensating for wetland losses further complicate the wetland protection debate.

In response to criticism in the NRC and GAO reports on mitigation, in 2001, the Corps issued new guidance to strengthen the standards on compensating for wetlands lost to development. But the guidance was criticized by environmental groups and some Members of Congress for weakening rather than strengthening mitigation requirements and for the Corps' failure to consult with other federal agencies. In 2002, the Corps and EPA released an action plan including 17 items that both agencies believed would improve the effectiveness of wetlands restoration efforts.[52]

In Section 314 of the 2004 National Defense Authorization Act (NDAA, P.L. 108-136), Congress directed the Army Corps to develop regulations, consistent with CWA Section 404, that establish equivalent standards and criteria for mitigation banks, in-lieu fee programs, and permittee-responsible mitigation.

In 2008, in response to the NRC and GAO reports and the NDAA directive, the Corps and EPA promulgated a mitigation rule to replace the 1990 MOA with clearer requirements on what will be considered a successful project to compensate for wetlands lost to activities like construction, mining, and agriculture.[53] The rule sets performance standards and criteria for three types of wetlands mitigation: mitigation banks, in-lieu programs, and permittee-responsible compensatory mitigation. It sets standards to mitigate the loss of wetlands and associated aquatic resources and is intended to improve the planning, implementation, and management of compensatory mitigation projects designed to restore aquatic resources that are affected by activities that disturb a half-acre or more of wetlands. It also is designed to help ensure no net loss of wetlands by addressing key recommendations raised in the 2001 NRC report. Under the rule, all compensation projects must have mitigation plans that include 12 fundamental components, such as objectives, site selection criteria, a mitigation work plan, and a maintenance plan.[54] Mitigation banks are believed to be the most reliable form of compensatory mitigation, because the mitigation is

[51] U.S. Government Accountability Office, *Wetlands Protection: Assessments Needed to Determine the Effectiveness of In-Lieu-Fee Mitigation*, GAO-01-325, May 2001.

[52] U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, "National Wetlands Mitigation Action Plan, December 24, 2002." See http://water.epa.gov/lawsregs/guidance/wetlands/upload/2003_07_10_wetlands_map1226withsign.pdf.

[53] U.S. Army Corps of Engineers and Environmental Protection Agency, "Compensatory Mitigation for Losses of Aquatic Resources, Final Rule," 73 *Federal Register* 19594, April 10, 2008.

[54] Information on compensatory mitigation can be found at http://water.epa.gov/lawsregs/guidance/wetlands/wetlandsmitigation_index.cfm.

undertaken before an activity that would affect aquatic resources is permitted, and thus are the preferred option under the 2008 rule.

In 2015, the Corps and EPA completed a retrospective review of the 2008 rule.[55] Among its main findings was that, as a result of the rule, impacts to wetlands and waters covered by the CWA are avoided and minimized as much as possible. It also found that there has been an increased focus on stream mitigation since the rule's release and that the use of mitigation banking and ILF programs to meet compensatory mitigation requirements has reduced permitting times, while permit processing times for projects that utilize permittee-responsible mitigation have been increasing. For Corps-permitted authorizations between 2010 and 2014 that required compensatory mitigation, 41% of projects used mitigation bank credits, 11% used in-lieu fee program credits, and 48% did permittee-responsible mitigation.

Numerous public and private banks have been established. In a study of mitigation, the Environmental Law Institute determined that as of 2005, there were 330 active banks.[56] More recent data paint a larger picture. According to the Army Corps, as of September 2016, there are 1,521 approved and active mitigation banks and in-lieu fee programs.[57]

For permit applicants, obtaining compensatory mitigation credits for a planned project can be a challenge, and concerns about a mitigation bank program with available credits not being located sufficiently close to a project site are not unknown, as are concerns about the established price of credits. Mitigation banks are economics-driven, that is, if bankers do not see a potential market or potential development that will need credits and do not see a potential profit opportunity, banks will not be established. The market for mitigation bank credits depends upon the demand for credits, which, in turn, depends upon mandates for compensatory mitigation for unavoidable losses to aquatic resources. Potential bankers face market and regulatory risks. A sponsor's decision to establish a bank is likely influenced by many factors, including cost and demand. Under the 2008 rule, the Corps does not determine the price of compensatory mitigation credits, which is solely determined by the sponsor of the mitigation bank or ILF program.

Congress has repeatedly endorsed mitigation through legislation. Provisions in several laws, such as the farm bill and the 1998 Transportation Equity Act (TEA-21), endorse the mitigation banking concept. In 2003, Congress enacted wetlands mitigation provisions as part of the FY2004 Department of Defense (DOD) authorization act (P.L. 108-136). Section 314 of that act directed DOD to make payments to wetland mitigation banking programs in instances where military construction projects would result or could result in destruction of or impacts to wetlands. Further, the Water Resources Development Act (WRDA) of 2007 (P.L. 110-114) identified mitigation banking as the preferred mechanism for offsetting unavoidable wetland impacts associated with Corps civil works projects.

[55] U.S. Army Corps of Engineers, Institute for Water Resources, and U.S. Environmental Protection Agency, *The Mitigation Rule Retrospective, A Review of the 2008 Regulations Governing Compensatory Mitigation for Losses of Aquatic Resources*, 2015-R-03, October 2015, http://www.iwr.usace.army.mil/Portals/70/docs/iwrreports/2015-R-03.pdf.

[56] For more information on mitigation generally, and mitigation banks specifically, see Environmental Law Institute, *2005 Status Report on Compensatory Mitigation in the United States*, April 2006.

[57] See http://geo.usace.army.mil/ribits/index.html.

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