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WETLANDS MITIGATION: RETROACTIVE APPLICATION OF CLEAN WATER ACT REQUIREMENTS TO PROPERTY DESTROYED BY NATURAL DISASTERS

JOHN STAPLEFORD*

INTRODUCTION

Scientists and environmental groups have long recognized that wetlands are an important part of this country because they serve a variety of purposes, ranging from mere scenery to important protection against potentially devastating floods. Legislators have come to see the wisdom of this thinking and have also passed laws to protect wetlands from unnecessary and destructive development.

One such law, the Clean Water Act, requires developers to mitigate the harmful effects of development by constructing one new acre of wetland for every acre of wetland that they destroy.¹ This law applies when new developments are being built on previously untouched soil, but it is unclear whether it also applies retroactively to the development of previously developed land that has been destroyed by a natural disaster.

Hurricane Katrina demolished much of the Gulf Coast of Mississippi and Louisiana, and landowners will need to rebuild. The government could arguably require those landowners whose property may be categorized as a wetland to comply with all current wetlands development regulation, including mitigation regulations, even though the ruined structures on their property were built before any such legislation was enacted.

The government should, in fact, require these landowners to comply with the mitigation regulations retroactively. Allowing the re-development of wetlands without compliance would waste an enormous opportunity for cost-discounted environmentalism and would set a shaky precedent that could be manipulated by developers in the future. The advantages of requiring compliance far outweigh any possible disadvantages, especially when the long-term benefits are considered.

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¹ See *infra* notes 39-41 and accompanying text.

Part I of this Note will present the statutory definition of a wetland. It will also discuss the history of wetlands legislation, along with its current requirements and various options for implementation.² Part II will then examine retroactive applications of wetlands laws in general. Analysis of the statutory language, available legislative history, and judicial interpretation support the argument that retroactive application does not constitute any sort of a regulatory taking and is a legally viable—if not mandatory—position for the government to take.³ Part III examines the history of natural disaster response and mitigation, from 1871 until 1993. After presenting the federal government's current hazard mitigation legislation and implementation policies, Part III argues that the circumstances of Hurricane Katrina and Rita on the Gulf Coast support a plan of action that justifies the retroactive implementation of wetlands mitigation requirements as a form of disaster hazard mitigation.⁴ Part IV of this Note focuses on the policy implications of this strategy, comparing the practical and political pros and cons of retroactive application in the Gulf Coast's present situation.

I. LEGISLATION PROTECTING WETLANDS

A. *Definition and Importance of Wetlands*

For the purposes of the Clean Water Act, wetlands are defined as areas of land characterized by the presence of “water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.”⁵ Although wetlands are generally associated with areas that are commonly referred to as bogs, swamps, or marshes,⁶ wetlands do not necessarily have to have standing water.⁷ Wetlands can be seasonal,⁸

² See *infra* Part I.

³ See *infra* Part II.

⁴ See *infra* Part III.

⁵ 40 C.F.R. § 230.3(t) (2007). See also 33 C.F.R. § 328.3(b) (2007) (stating the identical definition of wetlands used by the Army Corps of Engineers (“Corps”). Both the Environmental Protection Agency (“EPA”) and the Corps use the same Delineation Manual to identify wetlands. See generally U.S. ARMY CORPS OF ENG’RS, CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987), available at <http://www.wetlands.com/pdf/wdm0225e.pdf>.

⁶ 40 C.F.R. § 230.3(t).

⁷ Environmental Protection Agency, Section 404 of the Clean Water Act: How Wetlands Are Defined and Identified, <http://www.epa.gov/owow/wetlands/facts/fact11.html> (last visited Apr. 15, 2007) (“The presence of water by ponding, flooding, or soil saturation is

and can also include tracts of land with no standing water but merely a high groundwater table⁹ if that groundwater causes soil conditions to support vegetation consistent with the Corps' definition of a wetland.¹⁰

Wetlands are worth conserving for several reasons. They provide functions that are beneficial to humanity, such as improving water quality,¹¹ storing flood waters,¹² protecting against shoreline erosion,¹³ maintaining global climate conditions,¹⁴ and providing unique wildlife habitats.¹⁵ Scientists can determine the economic value of a wetland by measuring the degree to which its functions serve and benefit humanity,¹⁶ and taking this value into account when making decisions that could adversely affect the wetland's functions.¹⁷

B. *Origin and History of Legislation Protecting Wetlands*

The origin of modern wetlands legislation can be traced to the Rivers and Harbors Act of 1899.¹⁸ As this Act did not expressly apply to areas

not always a good indicator of wetlands. Except for wetlands flooded by ocean tides, the amount of water present in wetlands fluctuates as a result of rainfall patterns, snow melt, dry seasons and longer droughts.”).

⁸ Environmental Protection Agency, What Are Wetlands?, <http://www.epa.gov/owow/wetlands/vital/what.html> (last visited Apr. 15, 2007) (explaining that wetlands can be dry for one or more seasons per year, or “may be wet only periodically”).

⁹ Michigan Department of Environmental Quality, What Is a Wetland?, http://www.michigan.gov/deq/0,1607,7-135-3313_3687-24312--,00.html (last visited Apr. 15, 2007).

¹⁰ 33 C.F.R. § 328.3(b). *See also* United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 121 (1985). The Corps is the regulatory body responsible for reviewing applications and issuing permits allowing dredging and filling of wetlands. U.S. Army Corps of Engineers, Services for the Public, <http://www.usace.army.mil/public.html> (last visited Apr. 15, 2007).

¹¹ Environmental Protection Agency, Wetlands and People, <http://www.epa.gov/owow/wetlands/vital/people.html> (last visited Apr. 15, 2007).

¹² *Id.*

¹³ *Id.*

¹⁴ Environmental Protection Agency, What Are Wetlands: Wetlands and Nature, <http://www.epa.gov/owow/wetlands/vital/nature.html> (last visited Apr. 15, 2007).

¹⁵ *Id.*

¹⁶ *See* U.S. ENVTL. PROT. AGENCY, EPA-843-F-01-002C, FUNCTIONS AND VALUES OF WETLANDS, 1 (2001) (“For example, a value can be determined by the revenue generated from the sale of fish that depend on the wetland, by the tourist dollars associated with the wetland, or by public support for protecting fish and wildlife.”).

¹⁷ *Id.* (“Decision-makers must understand that impacts on wetland functions can eliminate or diminish the values of wetlands.”).

¹⁸ River and Harbor Act of 1899, ch. 425, 30 Stat. 1121 (1899) (codified as amended at 33 U.S.C. §§ 401-26 (2007)). This Act gave the U.S. Army Corps of Engineers the power to regulate, through permit issuance, dredge and fill activities that directly obstructed or affected navigable waters. *Id.* § 10, 30 Stat. at 1151.

of land outside of the high water mark, wetlands were largely ignored for almost seventy years.¹⁹ In 1969, Congress passed the National Environmental Policy Act, which required all federal agencies to consider the environmental implications of their actions prior to taking major actions.²⁰ This requirement and its broad interpretation gave the Corps greater power to use permits to regulate a wide range of dredge and fill activities because the scope of their permit power was extended to activities that *might* have adverse environmental impacts on navigable waters.²¹

Modern wetlands legislation began to take shape in 1972 after Congress passed amendments to the Federal Water Pollution Control Act.²² Commonly known as the Clean Water Act, it is now the cornerstone of all federal regulations related to the "discharges of pollutants into waters of the United States."²³ Section 404 of the Clean Water Act specifically addresses the permit requirements for discharging dredged or filled materials, and serves as the principal federal authority for wetlands regulation and protection.²⁴

¹⁹ *See id.*

The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

33 C.F.R. 328.3(e).

²⁰ National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. §§ 4321-70 (2007)).

²¹ *See Zabel v. Tabb*, 430 F.2d 199, 124 (1970) (holding that Congress's power under the Commerce Clause allows them to authorize the Corps to deny a permit for factually substantial ecological reasons even if the proposed project would not interfere with navigation).

²² Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, 86 Stat. 816 (1972) (codified as amended at 33 U.S.C. §§ 1251-1387 (2007)).

²³ Environmental Protection Agency, Clean Water Act: Clean Water Act History, <http://www.epa.gov/region5/water/cwa.htm> (last visited Apr. 15, 2007).

²⁴ 33 U.S.C. § 1344; 33 C.F.R. § 328.3 (noting that the Corps defines "waters of the United States" to include "[w]etlands adjacent to waters," and "[a]ll other waters such as . . . wetlands . . . the use, degradation or destruction of which could affect interstate or foreign commerce"). Dennison and Berry explain that even though the statute's facial language is limited to regulating discharges into "navigable waters," pressure from the EPA and public interest groups caused the term's meaning to be expanded to mean "waters of the United States." MARK S. DENNISON & JAMES F. BERRY, CHALLENGING WETLAND REGULATION OF LAND DEVELOPMENT, 53 AM. JUR. TRIALS § 511 (2005). *See also* *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 131-134 (1985) (holding that the Corps' broad "construction of a statute it is charged with enforcing" is reasonable and "not in conflict with the expressed intent of Congress," and is therefore entitled to deference).

C. *Current Requirements of Legislation Protecting Wetlands*

1. *The Partnership Between EPA and the Corps*

In passing the Clean Water Act, Congress wanted to eliminate or minimize the harmful effects of development on wetlands and navigable waters.²⁵ To achieve this goal, Congress gave EPA and the Corps joint jurisdiction to: (1) identify wetlands; and (2) make and enforce decisions granting or refusing permits, required under Section 404, to discharge dredged or fill material into wetland areas.²⁶

Even though the Act does not specify each agency's individual responsibilities, EPA and the Corps reached a mutual understanding in order to maximize the program's effective administration.²⁷ EPA's main responsibilities include developing the environmental criteria used when evaluating permit applications²⁸ and determining the scope of geographic jurisdiction.²⁹ The Corps is in charge of administering the program by reviewing all individual permit applications, making issuance decisions, and developing policy regarding possible remedies to unavoidable wetlands destruction.³⁰ EPA retains the right to review and veto permit decisions made by the Corps, although it rarely exercises this right.³¹

²⁵ See 33 U.S.C. § 1251.

²⁶ U.S. ENVTL. PROT. AGENCY, EPA 843-F-04, WETLAND REGULATORY AUTHORITY: REGULATORY REQUIREMENTS 1 (1995) [hereinafter WETLAND REGULATORY AUTHORITY], available at <http://www.epa.gov/owow/wetlands/facts/fact10.html> (noting that the EPA and the Corps jointly administer the program). In addition, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and State resource agencies have important advisory roles. *Id.* at 1-2.

²⁷ Jurisdiction of Dredged and Fill Program, 45 Fed. Reg. 45,018, 45,018-20 (July 2, 1980); Memorandum of Agreement: Clean Water Act Section 404(b)(1) Guidelines, 55 Fed. Reg. 9,210, 9,210-13 (Mar. 12, 1990) [hereinafter Memorandum of Agreement].

²⁸ WETLAND REGULATORY AUTHORITY, *supra* note 26, at 1; Memorandum of Agreement, *supra* note 27. The full set of guidelines developed by EPA can be found at 40 C.F.R. §§ 230.1-.80 (2007).

²⁹ WETLAND REGULATORY AUTHORITY, *supra* note 26, at 1; Memorandum of Agreement, *supra* note 27.

³⁰ WETLAND REGULATORY AUTHORITY, *supra* note 26, at 1; Memorandum of Agreement, *supra* note 27. To determine if the site qualifies as a wetland, the Corps uses the technical specifications in its Delineation Manual. U.S. ARMY CORPS OF ENG'RS, TECH. REP. Y-87-1, CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987) [hereinafter CORPS DELINEATION MANUAL], available at <http://www.saj.usace.army.mil/permit/documents/87manual.pdf>.

³¹ CONG. RESEARCH SERV., ORDER CODE NO. 97-849, WETLAND MITIGATION BANKING: STATUS AND PROSPECTS (1997), <http://www.ncseonline.org/nle/crsreports/wetlands/wet-8.cfm> (follow "Environmental Protection Agency" hyperlink) [hereinafter WETLAND MITIGATION

2. Procedures for Issuing a Permit

When a landowner or developer wants to begin a project involving the discharge of fill or dredge materials on land that might be classified as a wetland, he/she must first file an application with the Corps for a permit to develop the wetland for a specified purpose.³² If the Corps determines the site to fit within the definition of a wetland, then the Corps will review the application in accordance with the guidelines set forth by EPA.³³ The guidelines prohibit granting a permit if doing so would have one of several specified adverse affects, or if a practicable alternative exists that would lessen or minimize adverse effects.³⁴ After analyzing the application in accordance with the Guidelines, the Corps makes a decision approving or rejecting a permit's issuance.³⁵ The Corps is not required to restrict its permit decisions to an outright acceptance or rejection. It can also decide to issue a permit if the applicant agrees to abide by various conditions, including wetlands mitigation.³⁶

3. Mitigation Options

Wetlands mitigation is "the attempted replacement of the functions and values of wetlands proposed for filling through creation of new wetlands or enhancement of existing wetlands—that is, 'compensating' for lost functions."³⁷ This compensatory mitigation is required to replace the wetland functions lost due to unavoidable adverse environmental effects of proposed discharges.³⁸ The goal of compensatory mitigation is to further

BANKING]; DENNISON & BERRY, *supra* note 24, at §§ 562-63 (explaining that even though the EPA's veto power is rarely used, it often serves as a deterrent); WETLAND REGULATORY AUTHORITY, *supra* note 26, at 1.

³² 33 C.F.R. 325.1 (2007). For a complete list of specific details needed to complete an application, see *id.*

³³ See 40 C.F.R. §§ 230.1-.80.

³⁴ 40 C.F.R. § 230.10.

³⁵ See 33 C.F.R. § 320.4(a) (2007) (requiring the Corps to balance a proposed project's reasonably foreseeable benefits against its reasonably foreseeable detriments when deciding whether to issue a permit).

³⁶ WETLAND MITIGATION BANKING, *supra* note 31 (follow "Corps of Engineers" hyperlink).

³⁷ DENNISON & BERRY, *supra* note 24, § 511.

³⁸ U.S. ENVTL. PROT. AGENCY, EPA 843-F-03-002, WETLANDS COMPENSATORY MITIGATION, <http://www.epa.gov/owow/wetlands/pdf/CMitigation.pdf> [hereinafter WETLANDS COMPENSATORY MITIGATION].

the national goal³⁹ of ensuring that there is no net loss of wetland values and functions.⁴⁰ Developers and landowners whose permit is contingent on a compensatory mitigation requirement usually have several options when deciding how best to meet the requirement.⁴¹

a. On-Site Mitigation

A landowner's first option is on-site mitigation.⁴² If this alternative is practicable, the landowner must create a new wetland area on the same or adjacent tract of land where it was destroyed by his project.⁴³

b. Off-Site Mitigation

If on-site compensatory mitigation is not practicable, off-site mitigation is the developer's final option if the project is to move forward.⁴⁴ Off-site compensatory mitigation allows the developer to create new wetlands

³⁹ U.S. ENVTL. PROT. AGENCY & U.S. ARMY CORPS OF ENG'RS, NATIONAL WETLANDS MITIGATION ACTION PLAN 1 (2002), *available at* <http://www.epa.gov/owow/wetlands/pdf/map1226withsign.pdf>.

⁴⁰ See Memorandum of Agreement, *supra* note 27, at 9,212-13 ("[F]or wetlands, such mitigation should provide, at a minimum, one for one functional replacement . . . with an adequate margin of safety to reflect the expected degree of success associated with the mitigation plan."). Developers can usually meet this requirement by creating one new acre of wetland for every one acre they destroy, but some cases require them to create more than they destroy:

[T]his ratio may be greater where the functional values of the area being impacted are demonstrably high and the replacement wetlands are of lower functional value or the likelihood of success of the mitigation project is low. Conversely, the ratio may be less than 1 to 1 for areas where the functional values associated with the area being impacted are demonstrably low and the likelihood of success associated with the mitigation proposal is high.

Id. at 9,213. See also U.S. Army Corps of Engineers, Mitigation/Environmental Frequently Asked Questions, http://www.usace.army.mil/cw/hot_topics/me_faq.htm (last visited Apr. 15, 2007).

⁴¹ See Memorandum of Agreement, *supra* note 27, at 9,211 (providing guidance that the Corps must adhere to when "considering mitigation requirements for standard permit applications").

⁴² *Id.* at 9,212 (explaining that, if after analyzing and implementing the on-site mitigation options of avoidance and minimization of adverse effects, the Corps determines that adverse impacts still remain, it will then require compensatory mitigation, which will occur on-site if practicable).

⁴³ *Id.*

⁴⁴ WETLAND MITIGATION BANKING, *supra* note 31 (follow "Summary" hyperlink).

at a location far away from the development site.⁴⁵ Developers can create their own off-site mitigation wetlands, or they can choose to engage in mitigation banking.⁴⁶ A mitigation bank is a large off-site tract of land that EPA describes as an "area that has been restored, created, enhanced or (in exceptional circumstances) preserved, which is then set aside to compensate for future conversions of wetlands for development activities."⁴⁷ The bank's sponsor⁴⁸ sells off the bank's credits⁴⁹ to developers as they need them to compensate for the amount of wetlands their proposed projects are likely to destroy.⁵⁰ Once the sponsor sells the credit, he becomes responsible for maintaining the wetland.⁵¹

Compensatory mitigation banking has inspired heated debate between advocates and opponents in the scientific community.⁵² Proponents of mitigation banking contend that the banks have the following advantages, among others, over fragmented on-site or off-site mitigation projects: (1) sponsors provide more financial support and better planning to banks; (2) the bank's economy of scale lowers the cost to developers; and (3) mitigation banks are maintained and monitored better than individual sites.⁵³ In response, opponents of mitigation banks argue that the banks' low cost to developers actually encourages wetlands destruction, that the banks will replace lost wetlands with wetlands whose functions and values are dissimilar or inadequate, and that there are not adequate safeguards against the failure of mitigation banks.⁵⁴ Thus, opponents

⁴⁵ *Id.* (follow "Mitigation Banking Defined" hyperlink).

⁴⁶ *Id.* (follow "Summary" hyperlink).

⁴⁷ WETLANDS COMPENSATORY MITIGATION, *supra* note 38, at 2.

⁴⁸ A "sponsor" is someone who "restores, enhances, or creates wetlands at the bank site." WETLAND MITIGATION BANKING, *supra* note 31 (follow "Mitigation Banking Defined" hyperlink). Government agencies, nonprofit organizations, and corporations can become sponsors as long as EPA or the Corps agrees. *Id.*; Environmental Protection Agency, Mitigation Banking Fact Sheet, <http://www.epa.gov/owow/wetlands/facts/fact16.html> (last visited Apr. 15, 2007).

⁴⁹ "The value of a bank is determined by quantifying the wetland functions restored or created in terms of 'credits.'" WETLANDS COMPENSATORY MITIGATION, *supra* note 38, at 2.

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² WETLAND MITIGATION BANKING, *supra* note 31 (follow "Support for Mitigation Banking" hyperlink).

⁵³ See *id.*; Federal Guidance for the Establishment, Use and Operation of Mitigation Banks, 60 Fed. Reg. 58,605, 58,507 (Nov. 28, 1995) [hereinafter Operation of Mitigation Banks], available at <http://www.epa.gov/owow/wetlands/guidance/mitbankn.html>.

⁵⁴ WETLAND MITIGATION BANKING, *supra* note 31 (follow "Criticisms of Mitigation Banking" hyperlink).

argue that wetland values are lost at both the old and new sites.⁵⁵ Despite opponents' concerns, the national government has embraced compensatory mitigation banks as an adequate means to achieve its "no net loss" objective.⁵⁶

The regulations associated with Section 404 of the Clean Water Act clearly apply to developers building structures on previously undeveloped wetlands. However, the requirements for development of land that could be classified as a wetland, but was developed prior to wetlands regulation and has since been destroyed for various reasons, are unclear and have not been fully explored or developed in the law.

II. RETROACTIVE APPLICATION OF MITIGATION REQUIREMENTS

A. *Legislative Language and Intent*

Nothing in the textual language of Section 404 of the Clean Water Act explicitly limits the scope of the Act's application and permit requirements to proposed projects that would alter previously undeveloped lands.⁵⁷ In fact, the only such textual limitations that might apply are specifically listed in the Act⁵⁸ and in the Corps' definition of "waters of the United

⁵⁵ *Id.* These concerns have led the government to allow in-lieu-fee mitigation, wherein developers pay a fee to a designated natural resource entity for use in a future mitigation project, as an alternative to mitigation banking. Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation, 65 Fed. Reg. 66,914 (Nov. 7, 2000), available at <http://www.epa.gov/owow/wetlands/pdf/inlieufee.pdf>.

⁵⁶ NATIONAL WETLANDS MITIGATION ACTION PLAN, *supra* note 39, at 1. See also U.S. ARMY CORPS OF ENGR'S, REG. GUIDANCE LETTER NO. 01-1, GUIDANCE FOR THE ESTABLISHMENT AND MAINTENANCE OF COMPENSATORY MITIGATION PROJECTS (2001), available at http://www.usace.army.mil/civilworks/hot_topics/rgl01_1.pdf; Operation of Mitigation Banks, *supra* note 53, at 58,605.

⁵⁷ 33 U.S.C. § 1344 (2007).

⁵⁸ *Id.* § 1344(f)(1).

(1) Except as provided in paragraph (2) of this subsection, the discharge of dredged or fill material—

(A) from normal farming, silviculture, and ranching activities such as plowing, seeding, cultivating, minor drainage, harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices;

(B) for the purpose of maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, and bridge abutments or approaches, and transportation structures;

(C) for the purpose of construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance of drainage ditches;

States,” specifically amended to exclude prior converted cropland in 1993, that leaves final discretion left to EPA.⁵⁹ The listed exceptions to the Federal Water Pollution Control Act are extremely limited in their nature and do not include many forms of buildings and structures including houses, malls, offices, etc. that are currently built on land that could arguably be considered to be wetlands.⁶⁰

EPA recognizes wetland “creation” as occurring when a wetland is placed on a non-wetland site, which they define as land that has not been a wetland for the past one hundred to two hundred years.⁶¹ If wetlands are only created when placed somewhere that has not been a wetland for one hundred to two hundred years, then classifying land that has the

(D) for the purpose of construction of temporary sedimentation basins on a construction site which does not include placement of fill material into the navigable waters;

(E) for the purpose of construction or maintenance of farm roads or forest roads, or temporary roads for moving mining equipment, where such roads are constructed and maintained, in accordance with best management practices, to assure that flow and circulation patterns and chemical and biological characteristics of the navigable waters are not impaired, that the reach of the navigable waters is not reduced, and that any adverse effect on the aquatic environment will be otherwise minimized;

(F) resulting from any activity with respect to which a State has an approved program under section 1288(b)(4) of this title which meets the requirements of subparagraphs (B) and (C) of such section, is not prohibited by or otherwise subject to regulation under this section.

Id.

⁵⁹ 33 C.F.R. § 328.3(a)(8) was amended in 1993 to include this provision. *See* Clean Water Act Regulatory Programs, 58 Fed. Reg. 45,008, 45,036 (Aug. 25, 1993). The strict textual parameters and the specificity with which Section 404 was crafted and later amended leads to the conclusion that the legislature intended to give EPA broad discretion when determining whether a permit is necessary. Recent proposed amendments to 33 U.S.C. § 1344 support this conclusion. *See* Federal Wetlands Jurisdiction Act of 2005, H.R. 2658, 109th Cong. (2005) (proposing to limit the definition of wetlands and navigable waters that are subject to federal jurisdiction and § 1344 requirements to exclude isolated wetlands and those that are saturated solely by groundwater). By proposing such detailed and explicit exceptions to the federal laws, Congress obviously feels that if it wants to recognize a situation that precludes the law, then it will expressly exempt that situation in the statutory language. Because nothing in that language specifically excludes retroactive application, then it is safe to assume that Congress does not intend for it to be excluded.

⁶⁰ *See* 33 U.S.C. § 1344(f)(1); Environmental Protection Agency, River Corridor and Wetland Restoration: Definitions and Distinctions, <http://www.epa.gov/owow/wetlands/restore/defs.html> (last visited Apr. 15, 2007).

⁶¹ River Corridor and Wetland Restoration, *supra* note 60.

requisite natural characteristics,⁶² but has been developed within the past one hundred to two hundred years as a wetland, is logically something less than “creation.” Environmental groups could argue that this classification of such tracts of land constitutes mere wetlands “restoration”⁶³ in hopes that such a classification would make the idea of retroactively applying mitigation requirements more palatable, both politically and in the public’s perception. This would strengthen the environmentalists’ case for the land’s return to its natural wetlands function—or more practically, the requirement for mitigation—even if the exact nature of that specific wetland’s previous function(s) is not fully known or understood.⁶⁴ Therefore, land that had wetlands functions less than one hundred years ago, but which has subsequently been developed, could still be eligible for government-mandated wetlands mitigation if the owner wants to redevelop or make further improvements that involve dredging and filling.

EPA explains that wetlands restoration and creation are valuable endeavors that provide substantial benefits and environmental protections against the harmful effects of rapid land development in the United States.⁶⁵ Environmental groups such as the Sierra Club have taken EPA’s

⁶² See *supra* note 5 and accompanying text.

⁶³ See River Corridor and Wetland Restoration, *supra* note 60. Wetlands restoration is the “return of an ecosystem to a close approximation of its condition prior to disturbance . . . [R]estoration means the reestablishment of predisturbance aquatic functions and related physical, chemical and biological characteristics . . . [It is] a holistic process not achieved through the isolated manipulation of individual elements.” NAT’L RESEARCH COUNCIL, RESTORATION OF AQUATIC ECOSYSTEMS: SCIENCE, TECHNOLOGY, AND PUBLIC POLICY 17 (1992) [hereinafter RESTORATION OF AQUATIC ECOSYSTEMS], available at <http://fermat.nap.edu/openbook/0309045347/html/index.html>. See also River Corridor and Wetland Restoration, *supra* note 60.

⁶⁴ See River Corridor and Wetland Restoration, *supra* note 60; see also National Defense Authorization Act for FY2004, Pub. L. No. 108-136, § 314, 117 Stat. 1392, 1431 (2003) (requiring the Secretary of the Army to “maximize available credits and opportunities for mitigation, provide flexibility for regional variations in wetland conditions, functions and values”).

⁶⁵ See Environmental Protection Agency, River Corridor and Wetlands Restoration: Benefits of Restoration, <http://www.epa.gov/owow/wetlands/restore/benefits.html> (last visited Apr. 15, 2007).

Without an active and ambitious program in the United States, our swelling population and its increasing stresses on aquatic ecosystems will certainly reduce the quality of human life for present and future generations. By embarking now on a major national aquatic ecosystem restoration program, the United States can set an example of aquatic resource stewardship that ultimately will also improve the management of other resource types and will set an international example of environmental leadership.

RESTORATION OF AQUATIC ECOSYSTEMS, *supra* note 63, at 13.

position to the next level, championing wetlands restoration and advocating drastic methods to reverse wetlands destruction.⁶⁶

B. Judicial Review and the Takings Clause

Retroactive application of any law is generally considered to be unfair.⁶⁷ Punishing an act that was not illegal at the time it was committed is unjust, and laws having this kind of effect are unconstitutional.⁶⁸ Although the retroactive application of criminal laws is prohibited, it can be permitted for civil legislation depending on the specific circumstances. The Supreme Court provided useful guidance for analyzing the existence and validity of retrospective laws in *Landgraf v. USI Film Products*.⁶⁹ In this case, the Court explained that there is a presumption against retroactive application in cases involving federal statutes that were enacted after the events that lead to an individual lawsuit.⁷⁰ When determining whether a statute can be applied retrospectively, a court should first analyze whether Congress has expressly intended such an effect.⁷¹ The court should then determine whether the application "would impair rights a party possessed when he acted, increase his liability for past conduct, or impose new duties with respect to transactions already completed."⁷²

Although the guidelines regarding analysis of retrospective laws leave ample room for judicial discretion and environmental groups continuously lobby for wetlands restoration almost no caselaw exists examining the validity of retrospective wetlands regulation. In one of the few cases touching on the subject, a Massachusetts court held that a successor in interest to land that was subject to a valid environmental conservation restriction had the right to make reasonable repairs, including building an

⁶⁶ See Sierra Club Conservation Policies: Wetlands, <http://www.sierraclub.org/policy/conservation/wetlands.asp> (last visited Apr. 15, 2007).

⁶⁷ See NORMAN J. SINGER, THE PROBLEM OF RETROACTIVITY, 2 SUTHERLAND STATUTES AND STATUTORY CONSTRUCTION § 41:2 (6th ed. 2000).

⁶⁸ See U.S. CONST. art I, § 9 (prohibiting ex post facto laws).

⁶⁹ 511 U.S. 244 (1994). "Retrospective" means the same as, and is interchangeable with, "retroactive." See BLACK'S LAW DICTIONARY 1318 (7th ed. 1999).

⁷⁰ *Id.* at 245.

⁷¹ *Id.* If Congress has done so, the analysis is over and the statute's retroactive application is valid. If not, then further analysis is required. *Id.*

⁷² *Id.* at 245. If the statute would have one or more of these effects, then retroactive application usually will be prohibited absent express Congressional intent. The statute may overcome this negative presumption if its purpose serves an important public good. See SINGER, *supra* note 67, at 375-80.

improved structure, to a passageway over the restricted premises.⁷³ Although this case does not deal directly with wetlands regulation, it addresses the tension between property rights and environmental restrictions, and provides relevant initial insight into understanding how a court might decide to weigh the issues in future decisions. Owners of previously developed land could try to use this case as precedent to claim the right to make reasonable repairs or improvements, but any group advocating retroactive mitigation requirements could argue that the holding applies only to the specific facts of this case.⁷⁴

Any action claiming that imposing Section 404 wetlands regulations and mitigation requirements produced unacceptable retrospective effects on previously developed property would have to follow a *Landgraf* analysis.⁷⁵ First, a court would have to decide whether the statute's language demonstrates any express Congressional intent. The text of Section 404 does not explicitly mention retroactive application.⁷⁶ The court would then decide whether the requirements impair a right, increase a liability, or impose any new duties that would have affected any of the property owner's actions taken prior to the statute's enactment.⁷⁷ The court's analysis and decision for this step would likely turn on the court's interpretation of what specific action triggered the statute's application. If the court decided that the date of re-development was the critical date, then the analysis would be over and the regulation would be valid. If the court decided that the pre-enactment date was the catalyst, then it would have to examine the specific facts of the case to decide if the statute's requirements would unacceptably alter the owner's rights, liabilities, or obligations.⁷⁸

⁷³ Chatham Conservation Found. v. Farber, 779 N.E.2d 134 (Mass. App. Ct. 2002).

⁷⁴ See *id.* The court limited the scope of its holding to repairing easements. It did not consider the legality of full reconstruction of large structures. Also, the environmental restriction at issue in this case was a contractual one; it did not involve any federal regulations or restrictions and specifically did not deal with wetlands or Section 404 of the Clean Water Act. *Id.* The massive scale of the reconstruction necessary on the Gulf Coast dwarfs that of the repairs allowed in this case, which buttresses the argument that the two situations should be treated differently.

⁷⁵ See *supra* notes 69-72 and accompanying text.

⁷⁶ See 33 U.S.C. § 1344.

⁷⁷ See *supra* note 72 and accompanying text.

⁷⁸ The property owner would likely argue that the time of his or her initial purchase and development of the property is the critical date and that application of the statute would adversely affect the rights, liabilities, and duties that they relied on when deciding to purchase and develop the parcel of land. Conversely, the Corps or EPA would probably argue that the critical date should be the date of the decision to rebuild or further develop the property. This would avoid the problem of retroactive application altogether, because most rebuilding or redevelopment has occurred after Congress enacted Section 404 in 1972.

Assuming *arguendo* that the court sided with the property owner as to the statute's triggering event, perhaps the best argument against the retroactive application of Section 404's mitigation requirements is that their imposition on property developed prior to the statute's enactment would constitute a regulatory taking.⁷⁹ The takings clause of the Fifth Amendment⁸⁰ and the due process clause of the Fourteenth Amendment⁸¹ of the U.S. Constitution require the government to provide a landowner just compensation for any taking of his property for the public good.⁸² The Supreme Court has briefly addressed this issue in the context of environmental conservation.⁸³ The Court held that the Corps' use of a broad interpretation of wetland characteristics when deciding whether to issue a permit⁸⁴ does not constitute a regulatory taking.⁸⁵ In a separate case,

⁷⁹ See DENNISON & BERRY, *supra* note 24, § 566 ("A regulatory taking results when a governmental regulation places such a burdensome restriction on a landowner's use of property that the government has for all intents and purposes 'taken' the landowner's property.").

⁸⁰ U.S. CONST. amend. V ("[N]or shall private property be taken for public use, without just compensation.").

⁸¹ U.S. CONST. amend. XIV, § 1 ("[N]or shall any State deprive any person of life, liberty, or property, without due process of law . . .").

⁸² See *United States v. Sec. Indus. Bank*, 459 U.S. 70, 78 (1982) ("[O]ur cases show that takings analysis is not necessarily limited to outright acquisitions by the government for itself.").

⁸³ *United States v. Riverside Bayview Homes*, 474 U.S. 121 (1985).

⁸⁴ *Id.* at 131. "An agency's construction of a statute it is charged with enforcing is entitled to deference if it is reasonable and not in conflict with the expressed intent of Congress." *Id.* However, the Court limited its deference to the EPA's broad interpretation in 2001. See *Solid Waste Agency of N. Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001). In *Solid Waste Agency of Northern Cook County*, the Court held that the Migratory Bird Rule ("MBR") (adopted by the Corps in 33 C.F.R. 328.3.3(a)(3)) extending the definition of "waters of the United States" to include land used by migratory birds for habitat was not supported by the text or legislative history of the Clean Water Act. *Id.* However, because the Court expressly refused to define the term "other waters" in the language of Section 404(g), lower courts have interpreted this holding narrowly to affect only the MBR. See *United States v. Interstate Gen. Co.*, 152 F.Supp.2d 843 (2001); *Cal. Sportfishing Prot. Alliance v. Diablo Grande, Inc.*, 209 F.Supp.2d 1059 (2002). The Corps subsequently changed the language of their definition of "waters of the United States" to eliminate the MBR:

All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
(ii) From which fish or shellfish are or could be taken and sold in

however, the Court held that the retroactive application of a bankruptcy law did constitute a regulatory taking.⁸⁶

When reviewing regulatory taking claims in wetlands permit cases, courts use two separate analyses: a "balancing of interests test focusing on the nature and extent of the benefit derived for the public and the nature and extent of the loss occasioned on the landowner,"⁸⁷ and a "harm- prevention analysis."⁸⁸ Even though court decisions have used the harm-prevention analysis to reject claims of regulatory taking when the regulation is implemented to prevent a serious harm to the public, a 1992 Supreme Court case held that just compensation is due if the protectionist regulation deprives the landowner of all beneficial and productive use of his property.⁸⁹

interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purpose by industries in interstate commerce;

33 C.F.R. § 328.3(a)(3).

⁸⁵ *Riverside Bayview Homes*, 474 U.S. at 127 (holding that "the application of land-use regulations to a particular piece of property is a taking only 'if the ordinance does not substantially advance legitimate state interests . . . or denies an owner economically viable use of his land.'"). The Court supported the legitimacy of land-use permit systems, explaining that "the very existence of a permit system implies that permission may be granted, leaving the landowner free to use the property as desired. Moreover, even if the permit is denied, there may be other viable uses available to the owner." *Id.*

⁸⁶ *Sec. Indus. Bank*, 459 U.S. 70. The Court specifically mentioned that the holding from this case was inapplicable to the permit system required by the Clean Water Act:

Such an approach [narrowly interpreting a statute to avoid a retroactive taking problem] is sensible where it appears that there is an identifiable class of cases in which application of a statute will necessarily constitute a taking. As we have observed, this is not such a case: there is no identifiable set of instances in which mere application of the permit requirement will necessarily or even probably constitute a taking.

Riverside Bayview Homes, 474 U.S. at 128 n.5.

⁸⁷ DENNISON & BERRY, *supra* note 24, § 567-68 ("[T]he courts look to three factors in making a taking determination: (1) the character of the government action; (2) the economic impact of the regulation; and (3) interference with the landowner's reasonable investment-backed expectations.").

⁸⁸ *Id.* ("Many courts will employ a harm-prevention analysis and uphold a regulation even when all economically viable use of the landowner's property has been taken so long as the regulation is aimed at preventing a serious public harm.").

⁸⁹ *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1015 (1992) (holding that a South Carolina statute that completely barred Lucas from building any permanent housing structures on his beachfront property constituted a regulatory taking because it barred all economically beneficial or productive use of land). This case differs from most takings claims that would arise from the Section 404 permit process because, unlike the South Carolina statute that acted as a complete bar to development, the Corps can offer Section 404 applicants the chance to avoid an outright bar by complying with appropriate mitigation

If a party were to bring a lawsuit claiming that wetlands regulation was a regulatory taking, it is not clear what the result would be due to the uncertainty about retroactive regulation application. However, the Supreme Court's opinion in *Riverside Bayview Homes* leads to the conclusion that the regulation requiring permit applications would have to severely burden the applicant, by essentially rendering his property useless to him, for such a system to be considered a regulatory taking.⁹⁰ Any financial burden that compliance with the Corps' conditional permit issuance imposes on an average, fully insured landowner seeking to rebuild structures on his or her property would not be significant enough to qualify as a taking.⁹¹ Therefore, if the government retroactively applied wetlands regulation to land that is being redeveloped, cases extreme enough to warrant the payment of just compensation would generally be few and far between.

Wetlands mitigation regulations can and should apply retroactively. Nothing in the statutory language of the Clean Water Act mandates otherwise. Congress did not explicitly preclude retroactive mitigation in either the original Act or any of its subsequent amendments. The judiciary has held that in all but a few extreme cases, permit systems do not constitute a regulatory taking, even when they affect landowners retroactively. The combination of supporting statutory language, legislative intent, and judicial opinion should, at the very least, support the argument that retroactive application of Section 404 permit requirements is legally permissible.

III. NATURAL DISASTERS

A. *Response and Hazard Mitigation Policy: 1871-Present*

While requiring retroactive mitigation is generally legal, political influences might cause legislators and administrative officials to shy away from that strategy. Public opinion may deem it harsh to impose such regulations on previously developed property that is destroyed by a natural disaster such as a hurricane, flood, or earthquake. Politicians who desire to be perceived as compassionate leaders might go out of their way to help devastated citizens by making their rebuilding as painless and

processes. Thus, the Corps' requirements may act as a hurdle, but rarely as one so insurmountable as to deprive the landowner of all economically viable use of the property.

⁹⁰ See *Riverside Bayview Homes*, 474 U.S. 121.

⁹¹ See *supra* notes 84-85 and accompanying text.

affordable as possible. While this compassion is an understandable, natural human response to tragedy, it often only works in the short-term.

Throughout American history, natural disasters have devastated major cities, small communities, and individual lives all across the country.⁹² After providing the humanitarian aid necessary during the immediate aftermath of these events, the government also took the time to develop reconstruction plans that implemented higher standards in order to mitigate against the possibility and potential effects of future disasters.⁹³ The government successfully rebuilt after these events because it did not rush into quick and easy solutions. Rather, the government studied the causes of the enormous amount of damage and formulated plans accordingly to fix the problems that it was capable of solving.

More recent natural disasters have unfortunately elicited a mixed bag of governmental responses that sometimes provide relatively weak long-term solutions.⁹⁴ The federal government's response to two of the biggest and most recent natural disasters—Hurricane Andrew⁹⁵ and the

⁹² See Nat'l Pub. Radio, *An American History of Disaster and Response* (Sept. 23, 2005), <http://www.npr.org/templates/story/story.php?storyId=4839530> (summarizing the destruction caused by historical disasters such as the Great Chicago Fire of 1871, the Galveston Hurricane of 1900, and the San Francisco Earthquake of 1906).

⁹³ See Jo Ann Rayfield, *Tragedy in the Chicago Fire and Triumph in the Architectural Response*, 4 ILL. HIST. TCHR. 34, 35 (1997), available at <http://www.lib.niu.edu/ipo/1997/ih419734.html> ("In the wake of the fire the city's fire code and building code had been strengthened Pressure from insurers led to more stringent regulations and more thorough safety inspections. Improvements in fireproofing systems was an important prerequisite for the age of the skyscraper."); U.S. Geological Survey, 1906 Marked the Dawn of the Scientific Revolution, <http://quake.wr.usgs.gov/info/1906/revolution.html> (last visited Apr. 15, 2007) (explaining that the 1906 San Francisco Earthquake led to the commission of scientific studies whose findings provided the basis for improved building codes that provided greater protection against earthquakes).

⁹⁴ The public's ever-increasing access to instantaneous information through expanding communication media such as cable news, the internet, and satellite television may explain the government's preference for quick, short-term fixes. The government does not want to appear stagnant or indecisive, so it takes immediate action and implements easy solutions as quickly as possible, instead of trying to develop a solution that might not be as appealing to the public but will be more effective in the long run. See The Brookings Inst., "The CNN Effect": How 24-Hour News Coverage Affects Government Decisions and Public Opinion (Jan. 23, 2002), <http://www.brookings.edu/comm/transcripts/20020123.htm>; The Brookings Inst., *The Impact of the New Media* (Mar. 22, 2005), <http://www.brookings.edu/comm/events/20050322.htm>.

⁹⁵ See National Hurricane Center, *Hurricane History: Hurricane Andrew 1992*, <http://www.nhc.noaa.gov/HAW2/english/history.shtml#andrew> (last visited Apr. 15, 2007) (explaining that in August of 1992, the Category 4 Hurricane Andrew, the third most intense hurricane in U.S. history, devastated south Florida and Louisiana, causing an estimated \$26.5 billion in damage).

Mississippi River Flood of 1993⁹⁶—illustrates the uncertainty of its approach to disaster recovery and reconstruction. The public considered the federal government's response to Hurricane Andrew to be a failure.⁹⁷ The response was so poorly received by the public that it contributed to George H.W. Bush's loss of the presidency in 1993, and the Clinton Administration did not want to make the same mistakes when it responded to the Great Flood in 1993.⁹⁸ The Clinton Administration took definitive action by allocating federal funds to pay for nearly all of the recovery effort at an estimated cost of \$6.3 billion.⁹⁹ The federal government also allocated much of the Federal Emergency Management Agency's ("FEMA") \$1.14 billion share of the total contribution to hazard mitigation projects focused on preventing or reducing the effects of future disasters.¹⁰⁰

FEMA defines hazard mitigation as long term measures to "reduce the loss of life and property due to natural disasters."¹⁰¹ FEMA's authority to allocate federal disaster relief funds for hazard mitigation projects comes from Section 404 of the Disaster Relief and Emergency Assistance Act.¹⁰²

⁹⁶ See Lee W. Larson, Chief, Hydrologic Research Lab., Office of Hydrology, Nat'l Weather Serv., *The Great USA Flood of 1993* (1996), http://www.nwrhc.noaa.gov/floods/papers/oh_2/great.htm (explaining how the Mississippi River flooded during the summer of 1993, causing \$15 billion of damage).

⁹⁷ See ASS'N OF STATE FLOODPLAIN MANAGERS, *HURRICANES KATRINA & RITA: USING MITIGATION TO REBUILD A SAFER GULF COAST 1* (2005), available at http://www.floods.org/PDF/ASFPM_HurricaneKatrina_WhitePaper_090905.pdf ("Hurricane Andrew demonstrated that we had inadequate policy to deal with the situation when a large area is impacted and that significant pressure will be brought forth politically to relax reconstruction standards perhaps leaving the rebuilt structures more hazard prone than prior to the disaster."); see also GOV'T ACCOUNTABILITY OFFICE, GAO/RCED REP. NO. 93-186, *DISASTER MANAGEMENT: IMPROVING THE NATION'S RESPONSE TO CATASTROPHIC DISASTERS 5* (1993), available at <http://archive.gao.gov/t2pbat5/149631.pdf> (estimating total federal monetary assistance at only \$1.8 billion of the total \$26.5 billion of damage caused by the hurricane).

⁹⁸ See Eric Boehlert, *The Politics of Hurricane Relief*, SALON, Sept. 5, 2005, http://archive.salon.com/opinion/feature/2005/09/05/hurricane_track_record/index_np.html.

⁹⁹ See Peter G. Gosselin & Alan C. Miller, *Why FEMA Was Missing in Action*, L.A. TIMES, Sept. 5, 2005, at A1 (stating that FEMA was also able to mitigate the damage to hundreds of Illinois homes by purchasing homes in high-risk areas and moving the residents inland).

¹⁰⁰ See GARY P. JOHNSON ET AL., U.S. GEOLOGICAL SURVEY, *THE GREAT FLOOD OF 1993 ON THE MISSISSIPPI RIVER—10 YEARS LATER 4* (2004), available at <http://il.water.usgs.gov/pubs/fs2004-3024.pdf>.

¹⁰¹ Federal Emergency Management Agency, Hazard Mitigation Grant Program: Frequently Asked Questions, <http://www.fema.gov/government/grant/hmgp/faqs.shtml> (last visited Apr. 15, 2007).

¹⁰² Disaster Relief and Emergency Assistance Amendments of 1988, Pub. L. No. 100-707, § 404, 102 Stat. 4689, 4698 (1988) (codified as amended at 42 U.S.C. § 5170c (2007)).

This Act gives the President statutory authority to use Federal resources to fund and administer proactive hazard mitigation projects as he sees fit in order to minimize the possible damage of any future natural catastrophes, rather than merely react after a natural disaster has ravished an area.¹⁰³

B. Wetlands Mitigation as Form of Hazard Mitigation in the Gulf Coast

Hazard mitigation can take many forms, depending on the needs of the area and the specific disaster risks it faces.¹⁰⁴ Wetlands restoration, mitigation, and creation are identified as mitigation strategies that may be appropriate to prevent or reduce the risk of ocean and river flooding and protect against the storm surges produced by hurricanes.¹⁰⁵ After the Great Flood of 1993, the U.S. Fish and Wildlife Service used federal funds to acquire over 8,000 properties to create the Big Muddy National Fish and Wildlife Refuge.¹⁰⁶ After the experience with Hurricane Katrina in the fall of 2006, the federal government would be smart to use wetlands mitigation in the near future as a form of hazard mitigation to minimize the effects of any future hurricanes along the Gulf Coast of Louisiana and Mississippi.

a. In General. The President may contribute up to 75 percent of the cost of hazard mitigation measures which the President has determined are cost-effective and which substantially reduce the risk of future damage, hardship, loss, or suffering in any area affected by a major disaster. Such measures shall be identified following the evaluation of natural hazards under section 5165 of this title and shall be subject to approval by the President. Subject to section 5165, the total of contributions under this section for a major disaster shall not exceed 7.5 percent of the estimated aggregate amount of grants to be made (less any associated administrative costs) under this Act with respect to the major disaster.

42 U.S.C. § 5170c.

¹⁰³ See 42 U.S.C. § 5170c.

¹⁰⁴ See National Oceanic and Atmospheric Administration Coastal Services Center, Mitigation Strategies Applied to Specific Coastal Hazards, <http://www.csc.noaa.gov/products/nchaz/htm/dinfo2.htm> (last visited Apr. 15, 2007) (matching coastal hazards with appropriate mitigation strategies).

¹⁰⁵ *Id.* See also Monica Perin, *Houston Oil Giant Backs Research Project on Louisiana Wetlands*, HOUSTON BUS. J., July 11, 2003, <http://houston.bizjournals.com/houston/stories/2003/07/14/story7.html?page=2> (explaining that “[e]very two and a half miles of marsh, or about one acre, absorbs about a foot of storm surge”).

¹⁰⁶ See JOHNSON ET AL., *supra* note 100 (explaining how FEMA uses U.S. Geological Survey stream-flow data collected from the Refuge to forecast future flood information).

On August 29, 2006, Hurricane Katrina made landfall in Louisiana.¹⁰⁷ At the time Katrina was the strongest hurricane ever recorded in the Gulf of Mexico with its winds peaking at 175 mph.¹⁰⁸ Katrina caused huge storm surges that breached the artificial levees protecting New Orleans and flooded much of the city.¹⁰⁹ The current death toll stands at just over 1,700 with almost 2,000 more people still missing.¹¹⁰ In addition to the massive toll on human life, Katrina caused an estimated \$81 billion of damage, making it by far the costliest hurricane in American history.¹¹¹

Although terrible, the amount of damage caused by Hurricane Katrina was not completely unexpected.¹¹² Several factors combined with the sheer force of the hurricane to exacerbate its effects on the area. Some have theorized that global warming may have heightened the danger to the low-lying city¹¹³ by raising the sea level and creating warmer ocean temperatures that might increase the frequency and severity of storms.¹¹⁴

¹⁰⁷ RICHARD D. KNABB ET AL., TROPICAL CYCLONE REPORT: HURRICANE KATRINA, NATIONAL HURRICANE CENTER 3 (2005), available at http://www.nhc.noaa.gov/pdf/TCR-AL122005_Katrina.pdf.

¹⁰⁸ National Oceanic and Atmospheric Administration, *Katrina Among Strongest Hurricanes Ever to Strike U.S.*, <http://www.noaanews.noaa.gov/stories2005/s2506.htm> (last visited Apr. 15, 2007).

¹⁰⁹ See KNABB ET AL., *supra* note 107, at 8 (stating that eighty percent of the city was flooded and that the water was twenty feet deep in some areas).

¹¹⁰ See Robert Lindsay, *Katrina Death Toll Passes 4,000*, <http://www.robertlindsay.blogspot.com/2007/03/katrina-death-toll-passes-4000.html> (Mar. 30, 2007, 22:00 EST); Steve Osunami, ABC News, *Katrina's Missing Still Number in the Thousands* (Feb. 28, 2006), <http://abcnews.go.com/WNT/story?id=1668003>.

¹¹¹ See KNABB ET AL., *supra* note 107, at 12. In addition to the enormous amount of damage to New Orleans, Hurricane Katrina's storm surges also caused several smaller Gulf Coast communities to be completely destroyed. *Id.* at 11.

¹¹² See Mark Schleifstein & John McQuaid, *The Big One*, TIMES-PICAYUNE, June 24, 2004, http://www.nola.com/hurricane/index.ssf/?washingaway/thebigone_1.html (discussing how FEMA had already recognized the threat that a major hurricane would pose to New Orleans and begun to devise response scenarios); see also Joel K. Bourne Jr., *Gone with the Water*, NAT'L GEOGRAPHIC, Oct. 2004, at 88; Mark Fischetti, *Drowning New Orleans*, SCI. AM., Oct. 2001, <http://www.sciam.com/issue.cfm?issueDate=Oct-01> (follow "Drowning New Orleans" hyperlink); Jim Wilson, *New Orleans Is Sinking*, POPULAR MECHANICS, Sept. 11, 2001, at 42.

¹¹³ See Schleifstein & McQuaid, *supra* note 112 (stating that the average elevation of New Orleans is five feet below sea level).

¹¹⁴ See Jeffrey Kluger, *Is Global Warming Fueling Katrina?*, TIME, Aug. 29, 2005, <http://www.time.com/time/nation/article/0,8599,1099102,00.html>; John Roach, *Is Global Warming Making Hurricanes Worse?*, NAT'L GEOGRAPHIC NEWS, Aug. 4, 2005, http://news.nationalgeographic.com/news/2005/08/0804_050804_hurricanewarming.html.

Others have cited the flawed design and poor conditions of the levees protecting the city as contributors to the high levels of damage.¹¹⁵

The seriously depleted condition of the coastal wetlands along the coast of Mississippi and Louisiana constituted one final aggravating factor.¹¹⁶ Wetlands serve as a natural protection against the flood waters caused by a hurricane's storm surges.¹¹⁷ Unfortunately for the communities along the Gulf Coast, the wetlands separating and protecting them from the Gulf are disappearing at an alarming rate. One government survey has reported that from 1978 to 2000, the Gulf Coast lost over 1,700 square miles,¹¹⁸ while another has stated, "[i]t is now believed that more than 1.2 million acres of wetlands [in Louisiana], an area approximately the size of Delaware, has been converted to open water since the 1930s."¹¹⁹ Over the past century the erosion essentially brought New Orleans thirty miles closer to the Gulf, so that by 2005 the ocean was only twenty miles away with more than half of its natural protection gone.¹²⁰

Several factors have contributed to the rapid erosion of the Gulf Coast. First, the dams and levees built along the Mississippi River to protect against floods have had the secondary effect of preventing the natural deposit of silt and sediment necessary to sustain the wetlands in the river delta and coastal Louisiana.¹²¹ Second, channeling the river and interfering with its natural shifts has caused a permanent compaction of sediment that renders it useless for building and maintaining the coastal barrier islands.¹²² These islands serve as natural buffers by protecting

¹¹⁵ See Lisa Myers, NBC News, New Orleans Levee Reported Weak in 1990s (Sept. 30, 2005), <http://www.msnbc.msn.com/id/9532037> (reporting that the Army Corps of Engineers was alerted to structural problems of levees and floodwalls, but chose not to make improvements); Mark Schleifstein & John McQuaid, *Shifting Tides*, TIMES-PICAYUNE, June 26, 2002, http://www.nola.com/hurricane/index.ssf/?washingaway/corps_1.html (arguing that the Army Corps of Engineers' construction of protective levees and channels has inadvertently caused rapid erosion of the Louisiana coast and the natural protections it provided).

¹¹⁶ See Tim Hirsch, BBC News, Hurricane Katrina Blamed on Wetland Loss (Nov. 1, 2005), <http://news.bbc.co.uk/2/hi/americas/4393852.stm>.

¹¹⁷ See Wetlands and People, *supra* note 11.

¹¹⁸ JOHN BARRAS ET AL., U.S. GEOLOGICAL SURVEY, OFR 3-334, HISTORICAL AND PROJECTED COASTAL LOUISIANA LAND CHANGES: 1978-2050, at 4 (2004), available at <http://www.nwrc.usgs.gov/special/NewHistoricalland.pdf>.

¹¹⁹ JEFFREY ZINN, CONG. RESEARCH SERV., ORDER CODE NO. RS22276, HURRICANES KATRINA AND RITA AND THE COASTAL LOUISIANA ECOSYSTEM RESTORATION 2 (2005), available at <http://fpc.state.gov/documents/organization/54248.pdf>.

¹²⁰ See Perin, *supra* note 105.

¹²¹ See ZINN, *supra* note 119, at 2.

¹²² See U.S. Geological Survey, Louisiana Coastal Wetlands: A Resource at Risk, <http://marine.usgs.gov/fact-sheets/LAWetlands/lawetlands.html> (last visited Apr. 15, 2007).

the wetlands from exposure to the harsh Gulf currents.¹²³ The erosion of these barrier islands exposes the area's wetlands, and this problem is compounded during the violent conditions during a hurricane.¹²⁴ Lastly, oil and gas companies have created vast systems of canals for pipelines and drilling rigs.¹²⁵ When these canals are connected to the ocean, the ocean's salt water mixes with the fresh water inland and creates a mix that is incapable of sustaining wetland vegetation.¹²⁶ Without the vegetation's root system to stabilize the soil, it becomes easily susceptible to erosion.¹²⁷ These three processes have combined to weaken one of the region's strongest protections against hurricanes.

Hurricane Katrina was one of the worst natural disasters in American history,¹²⁸ and it will not be the last hurricane to wreak havoc in the Gulf of Mexico.¹²⁹ Future storms could easily cause as much devastation or perhaps even more.¹³⁰ With this in mind, the federal government needs to focus its efforts and resources not only on clean up and relief efforts, but also on long-term hazard mitigation solutions that will lessen the impact of future hurricanes. Hurricane mitigation in the Gulf Coast can be achieved by reinforcing the area's levee system, combating global warming, and restoring the wetlands. Although it is not as easy as fixing the levees, wetlands restoration is an effective form of hazard mitigation that does not encounter many of the of the obstacles faced by an attempt to reverse global warming.¹³¹

¹²³ See U.S. Geological Survey, Louisiana's Barrier Islands: A Vanishing Resource, <http://marine.usgs.gov/fact-sheets/Barrier/barrier.html> (last visited Apr. 15, 2007).

¹²⁴ *Id.*

¹²⁵ See Perin, *supra* note 105.

¹²⁶ See U.S. ENVTL. PROT. AGENCY, EPA 230-02-87-026, SAVING LOUISIANA'S COASTAL WETLANDS: THE NEED FOR A LONG-TERM PLAN OF ACTION 10 (1987), available at <http://www.p2pays.org/ref/16/15088.pdf>.

¹²⁷ *Id.* at 17 (noting the particular vulnerability of cypress swamps to saltwater intrusion). See also Perin, *supra* note 105 (noting that even abandoned canals continue to erode, doubling in width every fourteen years).

¹²⁸ See *supra* notes 113-14 and accompanying text.

¹²⁹ See ROBERT E. LITAN, THE BROOKINGS INST., POLICY BRIEF NO. 150, PREPARING FOR FUTURE "KATRINAS" (2006), available at <http://www.brookings.edu/comm/policybriefs/pb150.htm>.

¹³⁰ See Roach, *supra* note 114.

¹³¹ *Global Warming: Seeing the Problem, Not the Solution*, TIME, Apr. 3, 2006, at 41, available at <http://www.time.com/time/magazine/article/0,9171,1176975,00.html> (noting that a recent poll indicates that a large majority of Americans mistakenly believe that there is disagreement in the scientific community regarding the reality and effects of global warming). This kind of public opinion might make politicians hesitant to take steps, such as raising energy taxes, that have an immediate adverse effect on citizens but do not produce any similar immediate benefits.

IV. RETROACTIVE APPLICATION OF SECTION 404 REQUIREMENTS TO GULF COAST REDEVELOPMENT

A. *The Objective of Retroactive Regulation*

Retroactive application of wetlands mitigation regulations is a valid strategy for achieving the hazard mitigation goals of wetlands restoration and therefore the federal government should apply Section 404 to landowners who wish to redevelop property that was destroyed by Hurricane Katrina.

The federal government should require landowners to comply with Section 404's mitigation requirements when re-developing their property, but the permit standards should be relaxed. Even though off-site mitigation is usually the last option that the Corps offers developers, it is the most fair and effective option for landowners who must retroactively comply with the permit requirements.¹³² Requiring, or even preferring, on-site mitigation could deprive landowners of virtually all the value of a portion of their land, and could therefore make the Corps' requirements more vulnerable to a takings clause challenge.¹³³

The circumstances of the Gulf Coast situation make off-site mitigation banking the most cost-effective and socially valuable mitigation option. If the federal government funded the restoration of the coastal wetlands and barrier islands,¹³⁴ it could designate the area as a mitigation bank. The government could then simultaneously sell the bank's credits to affected landowners. This injection of private money would offset a portion of the government's initial restoration expenditure, and shift a portion of the cost away from taxpayers across the nation and onto the people who benefit most from the added protection.

When considering how best to implement the retroactive application of Section 404 regulations, the President and Congress must take many factors into account and weigh the benefits against the possible negatives.

¹³² See WETLANDS MITIGATION BANKING, *supra* note 31 (follow "Summary" hyperlink).

¹³³ See *supra* notes 79-89 and accompanying text.

¹³⁴ See generally LA. COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE, COAST 2050: TOWARD A SUSTAINABLE COASTAL LOUISIANA (1998) [hereinafter COAST 2050], available at http://www.lca.gov/net_prod_download/public/lca_net_pub_products/doc/2050report.pdf (reporting that wetlands restoration on Coastal Louisiana will cost \$14 billion over 30 years).

B. Arguments Favoring Retroactive Regulation

Hazard mitigation provides the first and foremost benefit of retroactively enforcing the requirements of Section 404.¹³⁵ New Orleans ranks as one of America's most important cities, both culturally and commercially, and the federal government should insulate it from future disasters as much as possible. The Port of New Orleans is one of the largest and most active in the country.¹³⁶ It provides access to the Mississippi River and handles more than 11 million tons of cargo each year.¹³⁷ Retroactive application of Section 404 requirements and the resulting wetlands restoration would also help maintain Louisiana's profitable seafood industry.¹³⁸

Perhaps the strongest economic incentive for hazard mitigation in the Gulf Coast is the region's large oil and gas industry. Presently, there are "10 major navigation canals and 9,300 miles of pipelines in coastal Louisiana serving about 50,000 oil and gas production facilities."¹³⁹ The Gulf Coast produces one fifth of the country's oil and one fourth of its natural gas.¹⁴⁰ In an ironic catch-22, the oil and gas companies, whose canals and pipelines are partially responsible for the destruction of the wetlands,¹⁴¹ are coming to realize the wetlands' vital role in preserving that same energy infrastructure.¹⁴² Protecting the wetlands that surround Louisiana's energy industry is a matter of national security.¹⁴³ This

¹³⁵ See *supra* Part III.B.

¹³⁶ See Official Tourism Site of the City of New Orleans: Port of New Orleans, <http://www.neworleansonline.com/neworleans/business/port.html> (last visited Apr. 15, 2007) (reporting that the Port provides 107,000 jobs, \$2 billion in earnings, and \$231 million in tax revenue every year).

¹³⁷ *Id.*

¹³⁸ See Bourne, *supra* note 112 ("Louisiana's wetlands are still a prolific seafood factory, sustaining a commercial fishery that most years lands more than 300 million dollars' worth of finfish, shrimp, oysters, crabs, and other delicacies.").

¹³⁹ John Tibbetts, *Louisiana's Wetlands: A Lesson in Nature Appreciation*, ENVTL. HEALTH PERSP., Jan. 2006, at 40, 42, available at <http://www.pubmedcentral.gov/picrender.fcgi?artid=1332684&blobtype=pdf>.

¹⁴⁰ *Id.*

¹⁴¹ See *supra* notes 125-27 and accompanying text.

¹⁴² See Perin, *supra* note 108, at 1 (quoting Rene Gibson, Shell Oil Co.'s Director of Social Responsibility and Sustainable Development, as mentioning that "[o]ne of the messages we are trying to bring to national attention is the vital importance of the Louisiana wetlands with regard to our energy security. . . . Our pipelines crisscross the wetlands and bring (oil and gas) from offshore to onshore facilities").

¹⁴³ America's Wetland, History, <http://www.americaswetland.com/castompage.cfm?pageid=2&cid=5> (last visited Apr. 15, 2007).

domestic energy supply's importance has recently been amplified as the United States strives to decrease its dependence on foreign oil,¹⁴⁴ and the consequences of impairing the supply were clear following Hurricane Katrina.¹⁴⁵ This energy supply, as well as Louisiana's ports and fishing industry, affects the entire country, and ensuring its protection requires drastic measures to reverse the loss of the area's wetlands and barrier islands.¹⁴⁶

At first glance, implementing this protection might appear to come at too high a price. In 1998, federal and Louisiana state wetlands experts produced an in-depth study of the situation and estimated that it will cost approximately \$14 billion to properly restore Louisiana's coastal wetlands.¹⁴⁷ This figure may seem excessive,¹⁴⁸ but it pales in comparison to the astronomical costs of rebuilding the virtually unprotected region.¹⁴⁹ Considering that future hurricanes could cause even more damage,¹⁵⁰ a one-time investment of \$14 billion now would easily pay for itself by reducing the effects, and thereby reducing the need for recovery expenditures, of future storms. Such efforts would also preserve the country's most priceless commodity: human life. It seems almost pointless to spend so

¹⁴⁴ See Richard A. Lovett, "Addicted to Oil": How Can U.S. Fulfill Bush Pledge?, NAT'L GEOGRAPHIC NEWS, Feb. 16, 2006, http://news.nationalgeographic.com/news/2006/02/0214_060214_bush_oil.html (citing President Bush State of the Union pledge to cut oil imports from the Middle East 75% by 2025).

¹⁴⁵ See Jerry Rhodes, *Analyst Addresses Katrina's Effects on Energy Production*, UDAILY (Univ. of De.), Sept. 27, 2005, <http://www.udel.edu/PR/UDaily/2005/mar/oil092705.html> (reporting on a presentation by John C. Felmy, Chief Economist at the American Petroleum Institute, and noting that "[i]n the immediate aftermath of Katrina, 11 percent of Gulf area refineries were closed and 17 percent were producing at reduced rates. The storm also caused a loss of electric power to a pair of major pipelines that feed the Northeast and the Midwest").

¹⁴⁶ See Tibbetts, *supra* note 139, at 43 (quoting Louisiana State University Coastal Geologist Gregory Stone as saying that land loss in Southern Louisiana "is not a local problem—it's a national problem").

¹⁴⁷ See COAST 2050, *supra* note 134, at 144.

¹⁴⁸ See Bill Walsh, *Bush Calls Coast Aid 'A Good Start'*, TIMES-PICAYUNE, Aug. 3, 2005, <http://www.nola.com/news/t-p/frontpage/index.ssf?/base/news-4/1123048746309400.xml>; Mike Tidwell, *Giving Up on New Orleans*, L.A. TIMES, Dec. 6, 2005, <http://www.latimes.com/news/opinion/commentary/la-oe-tidwell6dec06,0,2886301.story?coll=la-news-comment-opinions> (discussing the Bush Administration's opposition to any federal funding for Coast 2050 prior to Hurricane Katrina, and the grossly inadequate funding—only \$250 million—begrudgingly approved after the hurricane).

¹⁴⁹ See *Bush To Request \$18 Billion More for Katrina* (Feb. 2, 2006), <http://www.msnbc.msn.com/id/11147754> [hereinafter *\$18 Billion More*] (stating that the proposed funding would bring the federal government's total commitment to approximately \$109 billion).

¹⁵⁰ See Roach, *supra* note 114.

much time¹⁵¹ and money¹⁵² to rebuild the area without making a serious investment in its future security.¹⁵³

In addition to the economic benefits that the Gulf Coast wetlands provide for the region, politicians consider environmentally altruistic motivations that favor the application of Section 404 requirements.¹⁵⁴ Louisiana's coastal wetlands "[t]aken as a whole, the unique habitats, with their hydrological connections to each other, upland areas, the Gulf of Mexico, and migratory routes of birds, fish, and other species, combine to place the coastal wetlands of Louisiana among the Nation's most productive and important natural assets."¹⁵⁵

Even if the federal government did not explicitly require landowners to retroactively follow the mitigation regulations, environmental groups could file suit in federal court to have the regulations enforced.¹⁵⁶ These groups could claim that the failure to enforce Section 404 permit regulations during redevelopment creates an actual or threatened injury to its members by exposing them to the effects of a future hurricane.¹⁵⁷ Environmental groups would also have additional reasons motivating them to push the issue in Washington or in court. A lawsuit of this nature would give them a chance to publicize the importance of wetlands and the need to preserve them. Environmental groups might also see this as an opportune chance to challenge the less than environmentally friendly Bush Administration and counteract its weakening of the Clean Water

¹⁵¹ See *New Orleans Recovery Could Take 25 Years* (Mar. 31, 2006), <http://www.msnbc.msn.com/id/12083571> (citing remarks made by Don Powell, the Bush Administration's Gulf Coast recovery coordinator).

¹⁵² See *\$18 Billion More*, *supra* note 149.

¹⁵³ See Tidwell, *supra* note 148.

¹⁵⁴ See *America's Wetland, Wetland Fact Sheet*, <http://www.americaswetland.com/custom.page.cfm?pageid=2&cid=8> (last visited Apr. 15, 2007) (listing the economic windfalls from fishing, hunting, and sight-seeing).

¹⁵⁵ U.S. ARMY CORPS OF ENG'RS, *LOUISIANA COASTAL AREA: ECOSYSTEM RESTORATION STUDY* (2004), available at http://www.lca.gov/main_report.aspx.

¹⁵⁶ An organization may bring an action on behalf of its members if (1) the individual members would have standing to sue; (2) the organization's purpose relates to the interests being vindicated; and (3) the claims asserted do not require the participation of individual members. The individual members have standing if they can demonstrate that an actual or threatened injury exists, which is fairly traceable to the challenged action, and that such injury is likely to be redressed by a favorable decision.

Save Our Sonoran v. Flowers, Inc., 381 F.3d 905, 911 (2004).

¹⁵⁷ *Id.*

Act.¹⁵⁸ Certainly, the government would rather enforce the Section 404 requirements on those rebuilding after a storm than have the courts force them to do so after a long, drawn-out lawsuit.

C. *Arguments Against Retroactive Application*

The strong arguments favoring retroactive application of Section 404 requirements are not the only factors that lawmakers would have to take into consideration. Several issues could make lawmakers hesitant to fully support either Louisiana's wetlands restoration or, if they do support the restoration, retroactive regulations to help achieve that goal.

As the present administration demonstrates,¹⁵⁹ restoration's deceptively high costs¹⁶⁰ may seem to be too high, especially after upwards of \$108 billion have already been designated for Katrina's relief and recovery effort.¹⁶¹ The added cost becomes even more daunting as rampant federal spending on other matters, such as the Iraq war¹⁶² and blatant pork projects¹⁶³ have caused the federal budget to spiral out of control.¹⁶⁴

Lawmakers must come to realize the important economic and security benefits of restoring the Gulf Coast wetlands and prioritize national spending accordingly. Given Coast 2050's thirty year restoration timetable,¹⁶⁵ Congress could easily fund the \$14 billion project¹⁶⁶ by cutting

¹⁵⁸ See EMILY COUSINS ET AL., NATIONAL RESOURCES DEFENSE COUNCIL, *REWRITING THE RULES: THE BUSH ADMINISTRATION'S FIRST-TERM ENVIRONMENTAL RECORD* (2005), available at <http://www.nrdc.org/legislation/rollbacks/rr2005.pdf> (detailing the numerous actions the administration took in four years to dramatically strip America's environmental protections). Cousins and her co-authors describe the Bush Administration as "[u]ndermining the Clean Water Act." *Id.* at 12-15.

¹⁵⁹ See *supra* note 147.

¹⁶⁰ See *supra* notes 147-53 and accompanying text.

¹⁶¹ See *\$18 Billion More*, *supra* note 149.

¹⁶² See generally CONG. RESEARCH SERV., ORDER CODE NO. RL33110, *THE COST OF IRAQ, AFGHANISTAN, AND ENHANCED BASE SECURITY SINCE 9/11* (2005), available at <http://www.fas.org/sgp/crs/natsec/RL33110.pdf> (stating that the Iraq war has cost the federal government \$251 billion to date and could reach \$570 billion by 2010).

¹⁶³ See generally CITIZENS AGAINST GOV'T WASTE, 2005 CONGRESSIONAL PIG BOOK SUMMARY (2005), available at http://www.cagw.org/site/DocServer/2005_Pig_Book.pdf?docID=1441 (listing numerous earmarked projects that cost \$27.3 billion in 2005).

¹⁶⁴ See *Federal Budget Deficit Sparks Worries* (Jan. 15, 2006), <http://www.msnbc.msn.com/id/10868785> (stating that the 2006 fiscal year budget deficit is estimated at more than \$400 billion); OMB Watch, *Initial Analysis of the President's 2007 Budget* (Feb. 6, 2006), <http://www.ombwatch.org/article/articleview/3267/1/90?TopicID=1> (warning that the proposed irresponsible spending and tax policy will have serious long-term consequences).

¹⁶⁵ See COAST 2050, *supra* note 134, at 144.

¹⁶⁶ *Id.*

annual pork project spending¹⁶⁷ by less than two percent. Therefore, the seemingly daunting cost of restoration turns out to be rather small when spread throughout the term of the project. Furthermore, this forecast assumes that the federal government will pay for the entire project, without any funding from Louisiana's state coffers. The Louisiana Senate has already proposed measures to ensure that does not happen.¹⁶⁸ The federal government has also proposed legislation that would facilitate the state funding of any restoration projects by allowing certain states to share in revenues derived from the outer Continental Shelf (i.e., from private oil and gas operations).¹⁶⁹ It seems more than fair to require companies who are raking in record profits while deteriorating the wetlands¹⁷⁰ to contribute significant funds not only to fix a problem they had a big part in creating, but to ensure their own continued operation as well.

Both the Louisiana and federal governments have also proposed legislation capable of rewarding and facilitating private restoration efforts through tax breaks.¹⁷¹ These tax incentives strengthen the policy argument for retroactive application of Section 404 permit and mitigation requirements. When combined with retroactive regulation, the tax credit would create a cost-sharing compromise by relieving a portion of affected landowners' mitigation costs, making it less expensive for them, while simultaneously reducing the federal government's total restoration costs.¹⁷² This course of action should further allay any fears that wetlands mitigation in the Gulf Coast would be too costly to implement any time in the

¹⁶⁷ See CITIZENS AGAINST GOV'T WASTE, *supra* note 163, at 1.

¹⁶⁸ See Jerry Jones, La. State Senate Natural Res. Comm., 2005 Regular Session Highlights: Coastal Restoration (n.d.), <http://senate.legis.state.la.us/NaturalResources/LinkShell.asp?s=Coastal> (summarizing state legislative proposals to collect money for wetlands restoration).

¹⁶⁹ See Outer Continental Shelf Revenue Sharing Act of 2005, S. 1810, 109th Cong. (2005), available at <http://www.govtrack.us/data/us/bills.text/109/s1810.pdf>.

¹⁷⁰ See Steve Stanek, *Oil Industry Posts Record Profits in 2005*, HEARTLAND INST., Mar. 1, 2006, <http://www.heartland.org/Article.cfm?artId=18550>.

¹⁷¹ See Coastal Restoration Tax Credit Act of 2005, H.R. 2102, 109th Cong. (2005), available at <http://www.govtrack.us/data/us/bills.text/109/h2102.pdf> (proposing to provide a federal income tax credit for expenses incurred in restoring and protecting coastal lands); S. Con. Res. 61, 2005 Leg., Reg. Sess. (La. 2005), available at <http://www.legis.state.la.us/billdata/streamdocument.asp?did=315010> (indicating Louisiana's support for the Coastal Restoration Tax Credit Act of 2005).

¹⁷² Requiring retroactive Section 404 regulation injects private money into the restoration project, thereby relieving the federal government of that share of the project's cost. Although the landowner has lost that amount of money, he will subsequently recoup a percentage of it from the tax credit.

near future. Coastal mitigation is not as expensive as it seems and retroactive mitigation regulations make it even more affordable.

The cost of mitigation is not the only concern that lawmakers would have to consider. No politician would want to appear unsympathetic to the victims of Hurricane Katrina, so they might be wary of supporting a position that places the unexpected added burden of mitigation expenses on people whose lives have just been devastated. For this reason, politicians might be tempted not to enforce Section 404's requirements retroactively, or even to craft some legislation waiving them, for situations involving post-disaster recovery.¹⁷³ Despite their benevolent intentions, these sorts of exemptions could set a dangerous precedent. In an effort to avoid compliance with mitigation requirements to save time and costs for projects that were unaffected by a natural disaster, developers might try to manipulate loopholes created by the disaster exemption.¹⁷⁴ This question of retroactive application of mitigation requirements challenges lawmakers to use their head as well as their heart and weigh their desire for good public relations with the possible negative consequences of an exemption and the Gulf Coast's undeniable need for the protections provided by wetlands restoration.

After considering the issues related to wetland restoration and the use of retroactive regulation to achieve it, regulators should decide to use the Section 404 requirements retroactively to facilitate the restoration of the Gulf Coast wetlands through off-site mitigation banking. The cost of inaction dwarfs the relatively short-term cost of restoration. The Gulf Coast's port system, seafood industry, and energy infrastructure are vital to our nation's economic well-being and security. Leaving those precious resources unprotected against hurricanes should not even be an option. The area is much too important to be compromised by politics. The federal government must appropriate the funds necessary to protect it and should apply the Section 404 requirements retroactively as a way of spreading the cost of the project.

¹⁷³ For example, the President may decide to pressure the Corps into issuing a regional permit under 33 C.F.R. § 325.2(e)(2) (2007), or an emergency permit under 33 C.F.R. § 325.2(e)(4), to essentially give landowners a temporary exemption from Section 404 permit requirements.

¹⁷⁴ An exemption may leave uncertainties as to what kind of events qualify as development regulation exemptions. Does a disaster have to be a certain minimum size, or might it apply on an individual scale? Must the event be sudden or does gradual accumulation count as well? The lack of specific answers to these questions makes them vulnerable to manipulation.

CONCLUSION

Wetlands are important, and worth conserving. They provide functions that are beneficial to humanity, such as improving water quality, storing flood waters, protecting against shoreline erosion, maintaining global climate conditions, and providing unique wildlife habitats.¹⁷⁵ The Gulf Coast contains one of the largest wetlands systems in the United States, but it is rapidly disappearing and taking all of its beneficial functions with it.¹⁷⁶ It is critical that the federal government take steps to reverse the destruction of this valuable ecosystem before it is too late.

Section 404 of the Clean Water Act is the main piece of legislation that regulates and preserves wetland habitats.¹⁷⁷ This Section requires anyone wishing to dump dredged or fill material into the nation's waters (including wetlands) to apply for a permit from the U.S. Army Corps of Engineers, who then analyze each application according to guidelines created by the EPA.¹⁷⁸ The Corps requires each applicant to engage in wetlands mitigation procedures to offset any negative impact of a proposed project on the country's wetlands. The mitigation procedures can occur on the development site or at a different location by purchasing credits from a mitigation bank.¹⁷⁹

Although Section 404 permits have generally only been required when developing an empty piece of land, a strong argument can be made to support applying the regulation retroactively to wetlands that were developed prior to the legislation and later destroyed.¹⁸⁰ Nothing in the language or legislative intent of the statute prohibits retroactive application, and the judiciary has upheld similar permit systems.¹⁸¹ The strongest argument against retroactive permits is that such a system constitutes a regulatory taking, but the Supreme Court has been consistently stringent with such claims and allows them only in the most extreme cases.¹⁸²

Requiring retroactive permitting and mitigation provides a legal option. However, political influences might cause legislators and administrative officials to hesitate to require compliance in certain situations, such as after a natural disaster. The American government has been dealing with disaster recovery efforts for more than a century with varying

¹⁷⁵ See *supra* Part I.

¹⁷⁶ See *supra* Part III.B.

¹⁷⁷ See *supra* Part I.B.

¹⁷⁸ See *supra* Part I.C.2.

¹⁷⁹ See *supra* Part I.C.3.

¹⁸⁰ See *supra* Part II.

¹⁸¹ See *supra* Part II.

¹⁸² See *supra* Part II.B.

degrees of success.¹⁸³ Recent disaster responses have begun to focus not only on providing immediate relief, but also implementing steps to minimize the effects of future disasters in the region.¹⁸⁴ This hazard mitigation can take many forms, including wetlands restoration and mitigation to protect against the harmful effects of hurricanes and storm surges. Recently in the Gulf Coast, Hurricane Katrina turned out to be the most destructive hurricane in the nation's history and it highlighted the importance of wetlands restoration as a form of hazard mitigation.¹⁸⁵ Much of Katrina's destructive effect can be attributed to the loss of almost half of the coastal wetlands and barrier islands and the natural drainage and buffering protections they provided.¹⁸⁶

The unexpected effects of the region's protective levees, the loss of the barrier islands, and the adverse effects of the region's oil and gas infrastructure have caused the rapid decline of the wetlands.¹⁸⁷ With stronger storms looming in the future, the United States needs to take steps toward protecting the Gulf Coast's vital port system, seafood industry, and domestic energy infrastructure. Restoring the region's wetlands will substantially increase the security of those vital resources.

The federal government should consider options to spread the cost because it does not want to bear the entire cost of funding comprehensive restoration. Specifically, the government should pursue retroactive application of Section 404 permit requirements for landowners re-developing their property after Hurricane Katrina.¹⁸⁸ Affected landowners should be required to mitigate the environmental consequences of their rebuilding efforts via government-operated or approved mitigation banks committed to restoring the coastal wetlands and barrier islands.

The benefits of wetlands restoration hazard mitigation far outweigh the possible objections, especially when retroactive application of Section 404's permit requirements can help to fairly and effectively spread the cost of rebuilding the Gulf Coast.¹⁸⁹ The government must ensure that this region, which is vital to the United States' prosperity and security, is protected from future hurricanes. The most effective way to achieve this goal is to support the restoration of the coastal wetlands and to require re-developing landowners to contribute the funds for wetland mitigation that the Clean Water Act requires.

¹⁸³ See *supra* Part III.A.

¹⁸⁴ See *supra* Part III.A.

¹⁸⁵ See *supra* Part III.B.

¹⁸⁶ See *supra* Part III.B.

¹⁸⁷ See *supra* Part III.B.

¹⁸⁸ See *supra* Part IV.A.

¹⁸⁹ See *supra* Parts IV.B-C.