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Julia C. Webb

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RESPONSIBLE RESPONSE: DO THE EMERGENCY AND MAJOR DISASTER EXCEPTIONS TO FEDERAL ENVIRONMENTAL LAWS MAKE SENSE FROM A RESTORATION AND MITIGATION PERSPECTIVE?

JULIA C. WEBB*

INTRODUCTION

Severe hurricanes are devastating events. They destroy homes, streets, and playgrounds indiscriminately and can affect the lives of millions. When it is safe to return, residents typically want to restore things to the way they were as quickly as possible. The removal of debris and rebuilding efforts draw national attention, sympathy, and resources.

With all of the focus on human devastation, needs, and desires, it is easy to forget that hurricanes are just as devastating to the coastal environments they disrupt. After the people have evacuated, the dunes and marshes remain to face the storm. In the rush to recover and rebuild, concern for the environment is not typically high on the federal government's priority list.

This Note examines the attention paid by the federal government to environmental issues when responding to large hurricane damage. Through the exemption of disaster relief efforts from federal laws and regulations designed to protect the environment, hurricane response often causes further damage to environments already injured by the storms themselves.¹

At least six, but perhaps more than a dozen, federal laws regulate governmental actions towards the environment.² Part I discusses the portions of these statutes relevant to hurricane response and attempts to piece together a view of what, if any, attention the government is required to pay to the environment during the disaster response process.

* Julia C. Webb is a 2007 J.D. Candidate at William & Mary School of Law. She received an A.B. in Philosophy and Government, *cum laude*, from Dartmouth College in 2004. The author would like to thank the Editorial Board and staff of the *Review* for their work in preparing this Note for publication, and her family for their support throughout the process.

¹ See *infra* Part III.B.

² THOMAS A. BIRKLAND, *AFTER DISASTER: AGENDA SETTING, PUBLIC POLICY, AND FOCUSING EVENTS* 50 (1997).

Part II provides background information on an ecosystem that is one of the most common victims of hurricane activity in the United States: the Gulf Coast. An understanding of the general state of the environment in this area is crucial to assessing the impact caused by hurricane landfall and disaster relief efforts. The Gulf Coast is home to a fragile, yet extremely important, ecosystem, damage to which is detrimental to the safety and economy of the communities that call it home.³

Part III profiles the federal response to Hurricane Katrina—a Category 4 hurricane that hit the Gulf Coast in 2005—with a focus on environmental impact and concern. From the examination of this event, a picture of the weight actually given to environmental restoration (or at the very least, the avoidance of further environmental harm) in the course of disaster relief efforts can be assembled.

To understand the ideal amount of interaction between the federal disaster response mechanisms and environmental concern, and where in the process this interaction should take place, it is important to examine the stages of disaster planning and response. Part IV examines these stages, as well as some barriers to the implementation of effective mitigation measures.

Part V addresses whether the federal government should be paying more attention to environmental damage caused by hurricanes, and to the further impact that humanitarian relief efforts have on the environment. This Note concludes by discussing whether a more environmentally-conscious hurricane response framework would be worth the resources it would require, arguing that concern for the needs of human victims is not incompatible with concern for environmental stewardship.

I. FEDERAL ENVIRONMENTAL LAWS TRIGGERED BY HURRICANE RESPONSE EFFORTS

Hurricanes, particularly severe hurricanes, cause a wide range of environmental damage both directly and indirectly through a combination of strong winds, large waves, torrential rains, and flooding from storm surges.⁴ Wetlands can be filled with surging floodwaters that may contain significant chemical and solid waste.⁵ Rescue and rebuilding

³ See *infra* Part II.

⁴ National Hurricane Center, Hurricane Basics, <http://www.nhc.noaa.gov/HAW2/english/basics.shtml> (last visited Mar. 1, 2007).

⁵ See *generally* National Oceanic and Atmospheric Administration, Hazmat Challenges From Hurricanes Bring Strong NOAA Response, <http://www.noaanews.noaa.gov/stories/2005/s2517.htm> (last visited Mar. 1, 2007).

efforts may cause additional damage to wetland environments as they take a back seat to restoring the human standard of living in the devastated region. Thomas Birkland, the author of multiple scholarly works on the natural disaster response policy, explains that:

Rather than a coherent national program to deal with hurricanes, there are at least six federal statutes that indirectly influence federal response towards hurricanes . . . [N]one of these statutes address[es] the hurricane problem directly, but, rather, [they] touch on the problem as part of broader issues such as flood control or barrier island conservation.⁶

Without a unified approach to environmental issues that arise during hurricane relief, a surprising number of statutes can theoretically apply to post-disaster decisions. Some of the most important statutes that must be considered include: the Coastal Zone Management Act;⁷ the Robert T. Stafford Disaster Relief and Emergency Assistance Act;⁸ the Coastal Barrier Resources Act;⁹ the Clean Water Act;¹⁰ the Clean Air Act;¹¹ the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA");¹² the Endangered Species Act;¹³ and the National Environmental Policy Act.¹⁴

⁶ BIRKLAND, *supra* note 2, at 50.

⁷ Coastal Zone Management Act of 1972, Pub. L. No. 92-582, 86 Stat. 1280 (1972) (codified as amended at 16 U.S.C. §§ 1451-66 (2007)).

⁸ Robert T. Stafford Disaster Relief and Emergency Assistance Act, Pub. L. No. 93-288, 88 Stat. 143 (1974) (codified as amended at 42 U.S.C. §§ 5121-5207 (2007)).

⁹ Coastal Barrier Resources Act, Pub. L. No. 97-348, 96 Stat. 1653 (1982) (codified as amended at 16 U.S.C. §§ 3501-10 (2007)).

¹⁰ Federal Water Pollution Control Act, Pub. L. No. 80-845, 62 Stat. 1155 (1948) (codified as amended at 33 U.S.C. §§ 1251-1387 (2007)). This statute is commonly referred to as the Clean Water Act.

¹¹ Air Pollution Control Act, Pub. L. No. 88-206, 77 Stat. 392 (1963) (codified as amended at 42 U.S.C. §§ 7401-7671 (2007)). This statute is commonly referred to as the Clean Air Act.

¹² Comprehensive Environmental Response, Compensation and Liability Act, Pub. L. No. 96-510, 94 Stat. 2767 (1980) (codified as amended at 42 U.S.C. §§ 9601-75 (2007)).

¹³ Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973) (codified as amended at 16 U.S.C. §§ 1531-1544 (2007)).

¹⁴ 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)).

Fortunately for lawyers and local governments, almost all of these acts contain exemptions for emergency or major disaster situations.¹⁵ Partial suspension of requirements during emergencies can be found in: the Clean Air Act; the Clean Water Act; CERCLA; the Endangered Species Act; the Federal Insecticide, Fungicide and Rodenticide Act; the Ocean Dumping Act; the Resource Conservation and Recovery Act; the Wilderness Act; and the Toxic Substances Control Act.¹⁶ The Clean Water Act, CERCLA, the Oil Pollution Act, and the National Environmental Policy Act contain more comprehensive "act of God" exemptions from liability or other consequences for failing to comply with these laws.¹⁷ Congress may also specifically exempt emergency or disaster response activities from environmental laws at any time.¹⁸

To understand the effect of exempting emergency and major disaster response efforts from federal environmental laws, it is helpful to examine the operation of a few major laws under normal circumstances as a baseline.

A. *Selected Examples of Federal Environmental Laws Under Non-Emergency Circumstances*

1. The Coastal Zone Management Act

The Coastal Zone Management Act ("CZMA")¹⁹ was passed in 1972 to create a national structure through which coastal zones could be managed.²⁰ Although it is a federal law, the CZMA is implemented almost entirely by state and local governments.²¹ Under the CZMA, states develop coastal management plans that must contain certain elements in order to be approved by the federal government.²² Once a state's coastal

¹⁵ Michael B. Gerrard, *Disasters First: Rethinking Environmental Law After September 11*, 9 WIDENER L. SYMP. J. 223, 230 (2003).

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ Coastal Zone Management Act of 1972, Pub. L. No. 92-582, 86 Stat. 1280 (1972) (codified as amended at 16 U.S.C. §§ 1451-66 (2007)).

²⁰ MARK S. DENNISON, WETLAND MITIGATION: MITIGATION BANKING AND OTHER STRATEGIES FOR DEVELOPMENT AND COMPLIANCE 46 (1997).

²¹ *Id.*

²² 16 U.S.C. § 1455(d)(2) requires that the state's management program must include each of the following elements:

(A) An identification of the boundaries of the coastal zone subject to the management program.

management plan is approved, all federal activities affecting the coastal management zone, as well as all private activities that require a federal permit or license, must be consistent with the plan.²³ Thus, a state can identify large swaths of land as coastal zones under the CZMA. For example, the entire state of Florida is considered a coastal zone under that state's coastal management plan.²⁴

2. The Clean Water Act

Congress passed the Federal Water Pollution Control Act,²⁵ commonly known as the Clean Water Act, to "restore and maintain the chemical,

(B) A definition of what shall constitute permissible land uses and water uses within the coastal zone which have a direct and significant impact on the coastal waters.

(C) An inventory and designation of areas of particular concern within the coastal zone.

(D) An identification of the means by which the State proposes to exert control over the land uses and water uses referred to in subparagraph (B), including a list of relevant State constitutional provisions, laws, regulations, and judicial decisions.

(E) Broad guidelines on priorities of uses in particular areas, including specifically those uses of lowest priority.

(F) A description of the organizational structure proposed to implement such management program, including the responsibilities and interrelationships of local, areawide, State, regional, and interstate agencies in the management process.

(G) A definition of the term "beach" and a planning process for the protection of, and access to, public beaches and other public coastal areas of environmental, recreational, historical, esthetic, ecological, or cultural value.

(H) A planning process for energy facilities likely to be located in, or which may significantly affect, the coastal zone, including a process for anticipating the management of the impacts resulting from such facilities.

(I) A planning process for assessing the effects of, and studying and evaluating ways to control, or lessen the impact of, shoreline erosion, and to restore areas adversely affected by such erosion.

16 U.S.C. § 1455(d)(2).

²³ "Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs." 16 U.S.C. § 1456(c)(1)(A). For additional requirements of consistency with an approved state coastal management plan, see 16 U.S.C. § 1456(c).

²⁴ DENNISON, *supra* note 20, at 47.

²⁵ Federal Water Pollution Control Act, Pub. L. No. 80-845, 62 Stat. 1155 (1948) (codified as amended at 33 U.S.C. §§ 1251-1387 (2007)).

physical, and biological integrity of the Nation's waters."²⁶ Among many other provisions, the Clean Water Act requires that anyone who wishes to discharge dredged or fill material into a waterway, including wetland areas, must obtain a permit.²⁷ The Army Corps of Engineers and the Environmental Protection Agency jointly issue these permits.²⁸ Though the standard of what qualifies as a discharge of such materials had traditionally been quite narrow, in 1990 the Army Corps of Engineers indicated that all land-clearing activities using mechanized equipment and certain projects placed on pilings would require a permit.²⁹ Violations of this provision of the Clean Water Act—either by failure to obtain a permit or failure to comply with the terms of an issued permit—may be enforced by administrative compliance orders, civil enforcement proceedings, or criminal enforcement actions as determined by the Environmental Protection Agency and the Army Corps of Engineers.³⁰

3. The Endangered Species Act

The Endangered Species Act,³¹ while not protecting wetland areas directly, does protect them in their role as essential habitat for numerous endangered species of animals.³² The U.S. Fish and Wildlife Service is the administrative agency that promulgates and administers regulations made pursuant to the Act. It has defined the "harm" to species prohibited by the Act as "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral

²⁶ 33 U.S.C. § 1251(a).

²⁷ See 33 U.S.C. § 1344; DENNISON, *supra* note 20, at 34 (discussing the process of determining whether or not a permit is required).

²⁸ DENNISON, *supra* note 20, at 35.

²⁹ *Id.* Before 1990, the EPA, the Army Corps of Engineers, and the courts had all agreed that the Clean Water Act regulations applied only to physical discharges of material into navigable waters. *Id.* A 1990 Regulatory Guidance Letter issued by the Army Corps of Engineers indicated their intent to expand its application as discussed. *Id.*

³⁰ *Id.* at 36. Dennison goes on to discuss each of the three enforcement mechanisms in detail, explaining the circumstances in which they are likely to be used. *Id.* at 36-38. The most drastic consequence—that of a criminal enforcement action—is not just an idle threat. The courts have issued convictions for knowingly filling wetlands without a Section 404 permit, the criminal penalty for which is imprisonment for not more than three years and/or a fine of between \$5,000 and \$50,000 per violation. *Id.* at 38.

³¹ Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973) (codified as amended at 16 U.S.C. §§ 1531-44 (2007)).

³² See DENNISON, *supra* note 20, at 54-55.

patterns, including breeding, feeding or sheltering.”³³ The Fish and Wildlife Service has also asserted in courts and other settings that indirect effects that have the potential to cause future harm are within the realm of the regulations.³⁴ In 1995, the Supreme Court held that this was a reasonable interpretation of the Endangered Species Act.³⁵

4. The National Environmental Policy Act

While many other federal environmental laws regulate the way that public agencies and private entities interact with the environment directly, the National Environmental Policy Act (“NEPA”)³⁶ takes an indirect approach.³⁷ NEPA requires federal agencies to prepare a detailed Environmental Impact Statement (“EIS”) for all major projects that may significantly affect the quality of the environment.³⁸ “If it is not clear whether a project would have significant impacts, an Environmental Assessment (EA) must be prepared in order to make that determination.”³⁹ The public must be given the opportunity to participate in the decision-making process, and the EIS must include a real analysis of alternatives to the proposed action.⁴⁰ The EIS is then forwarded to EPA, which provides review and comments publicly.⁴¹ No agency has enforcement authority over compliance with NEPA’s requirements, however, and critics cite as a major drawback the litigation generated when citizens disapprove of allegedly non-compliant projects.⁴² Regardless of enforcement difficulties, NEPA manages to take significant steps towards its goal of convincing agencies to “incorporate consideration of environmental impacts into decisions on permit applications and other discretionary

³³ 50 C.F.R. § 17.3 (2007). See also DENNISON, *supra* note 20, at 55.

³⁴ DENNISON, *supra* note 20, at 55.

³⁵ *Id.* at 55-56. See *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995).

³⁶ 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)).

³⁷ See DENNISON, *supra* note 20, at 45.

³⁸ LINDA LUTHER, CONG. RESEARCH SERV., ORDER CODE RL33104, NEPA AND HURRICANE RESPONSE 1 (2005), available at <http://ncseonline.org/NLE/CRSreports/06Mar/RL33104.pdf>. For the specific language requiring that an Environmental Impact Statement be prepared, see 40 C.F.R. § 1501.4 (2007).

³⁹ LUTHER, *supra* note 38, at 1.

⁴⁰ DENNISON, *supra* note 20, at 46.

⁴¹ LUTHER, *supra* note 38, at 2 n.5.

⁴² *Id.* at 2.

actions taken by . . . agencies."⁴³ Though agencies are not required to select the option that is best for the environment,⁴⁴ the process of preparing the EIS may help to identify previously unseen alternatives. In addition, the NEPA process gives the public the opportunity to vocalize any objections they may have to the environmental consequences of the project.⁴⁵

*B. Select Exemptions from Environmental Regulations for
Emergency or Natural Disaster Situations*

The federal environmental laws mentioned above, as well as many others, attempt to prevent the environment from being damaged in situations where there are strong competing interests. Emergency and natural disaster conditions create precisely that dilemma. In emergency situations, however, public policy has traditionally required that short-term concerns trump these longer-range environmental goals.⁴⁶ This public policy is implemented through a variety of methods: 1) the Robert T. Stafford Disaster Relief and Emergency Assistance Act ("Stafford Act") exempts a variety of federal actions taken in response to a disaster from compliance with NEPA;⁴⁷ 2) the Council on Environmental Quality, which is charged with "providing oversight and guidance to [federal] agencies with regard to EIS preparation," may provide "emergency alternative arrangements" for meeting NEPA requirements without the preparation and filing of a full Environmental Impact Statement;⁴⁸ 3) individual environmental statutes may contain regulation-specific emergency or disaster exemptions;⁴⁹ and 4) Congress may pass additional legislation exempting specific federal actions from a specific range of federal environmental regulations in response to a particular emergency or disaster.⁵⁰

⁴³ DENNISON, *supra* note 20, at 46.

⁴⁴ LUTHER, *supra* note 38, at 2.

⁴⁵ *Id.*

⁴⁶ See, e.g., Robert T. Stafford Disaster Relief and Emergency Assistance Act, Pub. L. No. 93-288, 88 Stat. 143 (1974) (codified as amended at 42 U.S.C. §§ 5121-207 (2007)) (demonstrating that in disaster and emergency situations, at a minimum the listed federal actions are considered more important than evaluating environmental affects according to NEPA).

⁴⁷ 42 U.S.C. § 5159. See *infra* Part I.B.1.

⁴⁸ LUTHER, *supra* note 38, at 2 n.5, 4. See *infra* Part I.B.2.

⁴⁹ See *infra* Part I.B.3.

⁵⁰ The fourth and final approach, that of passing disaster-specific legislation that exempts certain actions from applicable environmental regulations, is discussed in Part III as it relates to legislation introduced after Hurricane Katrina. Since each piece of legislation varies substantially, it is not particularly productive to address as a general approach here.

1. The Robert T. Stafford Disaster Relief and Emergency Assistance Act

The Stafford Act⁵¹ exempts many federal actions taken in response to declared disasters or emergencies from the responsibility to comply with NEPA requirements.⁵² Some response actions that are explicitly excluded from NEPA by the Stafford Act's "[p]rotection of environment" provision include:

- The provision of certain federal resources or assistance essential to meeting immediate threats to life and property resulting from a major disaster. . . .
- The repair, restoration, and replacement of public facilities or certain non-profit facilities, damaged or destroyed by a major disaster. . . .
- Debris removal from public or private land after a major disaster.⁵³

NEPA's role in encouraging federal agencies to examine the consequences of their actions on the environment is therefore significantly disabled during natural disasters and declared emergencies.

⁵¹ 42 U.S.C. § 5121.

⁵² The specific statutory language states:

An action which is taken or assistance which is provided pursuant to section 5170a, 5170b, 5172, 5173, or 5192 of this title, including such assistance provided pursuant to the procedures provided for in section 5189 of this title, which has the effect of restoring a facility substantially to its condition prior to the disaster or emergency, shall not be deemed a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969 (83 Stat. 852) [42 U.S.C.A. 4321 et. seq.]. Nothing in this section shall alter or affect the applicability of the National Environmental Policy Act of 1969 to other Federal Actions taken under this chapter or under any other provisions of law.

42 U.S.C. § 5159. *See also* LUTHER, *supra* note 38, at 1.

⁵³ LUTHER, *supra* note 38, at 3. The "[p]rotection of environment" provision of the Stafford Act, found at 42 U.S.C. § 5159, refers to exempted activities by the number of the code section that discusses them: 42 U.S.C. § 5170(a)-(b) address the provision of federal resources or assistance essential to meeting immediate threats to life and property; 42 U.S.C. § 5172 discusses actions regarding public facilities; 42 U.S.C. § 5173 focuses on debris removal. For the purposes of this Note, it is less important to discuss specific exemptions than it is to understand that a substantial number of federal actions taken in response to disasters are exempted from NEPA's requirements for consideration of the environmental impacts of those actions.

2. "Emergency Alternative Arrangements" Provided by the Council on Environmental Quality

In emergency situations, NEPA allows agencies to communicate with the Council on Environmental Quality ("CEQ") about alternative ways to comply with NEPA requirements:

Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council will limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.⁵⁴

It appears that the CEQ may choose to allow agency activities immediately related to emergency disaster assistance even when those activities don't fall under Stafford Act exemptions to make alternative arrangements. This creates an even broader range of actions that may be exempt. The CEQ's ability to create alternative arrangements during emergencies, when viewed alongside the Stafford Act, demonstrates that NEPA and its objectives are to be given only a passing glance during federal disaster relief and portions of the recovery and restoration process.

3. Emergency Exceptions to Applicability Within Statutes

In addition to laws that override environmental regulations in emergency or disaster situations, such as the Stafford Act, specific environmental statutes may contain their own special procedures for these situations. One example is the Endangered Species Act, which substantially eases the process involved in requesting an exemption for Presidentially-declared disaster areas.⁵⁵

In the absence of a disaster situation, the Secretary of the Interior, before forwarding an exemption request to the Endangered Species Committee ("Committee") for final consideration, determines whether the federal agency attempted to develop and consider alternatives, conducted any required biological assessments, and refrained from making

⁵⁴ 40 C.F.R. § 1506.11 (2007).

⁵⁵ 16 U.S.C. § 1536(p) (2007).

any irreversible or irretrievable commitment of agency resources to the project.⁵⁶ The Committee then grants an exemption only if they find that:

- (i) there are no reasonable and prudent alternatives to the agency action;
- (ii) the benefits of such action clearly outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat, and such action is in the public interest;
- (iii) the action is of regional or national significance; and
- (iv) neither the Federal agency concerned nor the exemption applicant made any irreversible or irretrievable commitment of resources.⁵⁷

The Committee is authorized to establish any mitigation or enhancement measures necessary to minimize the adverse effects of the agency actions.⁵⁸

During natural disasters, the Endangered Species Act provides the President authority to grant exemptions to federal agencies concerning actions in any area that he has declared a "major disaster area."⁵⁹ The ability of Federal agencies to appeal to the President for a quick decision in major disaster areas allows them to avoid a significantly involved process, though the same requirements appear to apply.

As the preceding examples in this Part illustrate, while the United States has made great strides in adopting legislation designed to protect the environment, the wide-sweeping exemptions for emergency and disaster situations undermine these efforts.

⁵⁶ *Id.* § 1536(g).

⁵⁷ *Id.* § 1536(h)(1)(A).

⁵⁸ *Id.* § 1536(h)(1)(B).

⁵⁹ The specific statutory language states:

In any area which has been declared by the President to be a major disaster area under the Disaster Relief and Emergency Assistance Act, the President is authorized to make the determinations required by subsections (g) and (h) of this section for any project for the repair or replacement of a public facility substantially as it existed prior to the disaster under section 405 or 406 of the Disaster Relief and Emergency Assistance Act, and which the President determines (1) is necessary to prevent the recurrence of such a natural disaster and to reduce the potential loss of human life, and (2) to involve an emergency situation which does not allow the ordinary procedures of this section to be followed.

Id. § 1536(p).

II. AN INTRODUCTION TO A COMMON COASTAL VICTIM: THE GULF COAST

The Louisiana coast is home to one quarter of the nation's wetlands and forty percent of the lower forty-eight states' salt marshes.⁶⁰ It is also home to eighty percent of the country's annual wetlands losses.⁶¹ Over thousands of years, the Mississippi River has created roughly five million acres of marsh and swamp in its search for the best path to the Gulf.⁶² In the last century, over a million of those acres of swamp have disappeared.⁶³ Estimates place wetland loss anywhere from 16,000 acres to 35,000 square miles per year.⁶⁴ This means that Louisiana is losing a mass of wetlands the size of a football field every fifteen minutes, or one the size of Manhattan every year.⁶⁵

While wetland loss in Louisiana is of obvious concern to the local residents, it has significant consequences for the rest of the country that are largely ignored. Roughly thirty percent of the nation's seafood catch (excluding Alaska) comes from Louisiana, as does twenty-five percent of the oyster harvest each year.⁶⁶

Furthermore, without coastal Louisiana's contributions to energy production, this country would be in dire straights. Twenty percent of the nation's oil and a quarter of its natural gas either comes from or travels across the state's wetlands.⁶⁷ Louisiana waters account for a massive eighty percent of the country's offshore oil and gas production.⁶⁸ A gauge located in a pipeline in the small town of Erath, Louisiana—located only eight miles from the receding coastline—determines the price of natural gas on the New York Mercantile Exchange.⁶⁹

In addition to providing exceptional food and energy resources to the entire country, Louisiana's extensive wetlands help to mitigate the

⁶⁰ CHRISTOPHER HALLOWELL, *HOLDING BACK THE SEA: THE STRUGGLE ON THE GULF COAST TO SAVE AMERICA* 11 (2001).

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.* Other sources characterize the loss slightly differently. See, e.g., BILL STREEVER, *SAVING LOUISIANA? THE BATTLE FOR COASTAL WETLANDS* 22 (2001) ("An area the size of Rhode Island has disappeared since the 1930s.").

⁶⁶ HALLOWELL, *supra* note 60, at 12.

⁶⁷ *Id.*

⁶⁸ *Id.* at 13.

⁶⁹ *Id.*

potentially devastating effects of hurricanes.⁷⁰ By absorbing wind-driven high waters, coastal wetlands can decrease a storm's surge by one foot for every 2.7 miles of wetlands.⁷¹ Wetlands loss also decreases the quality of drinking water in coastal Louisiana as saltwater creeps further and further up the Mississippi River, destroying productive freshwater marshes along the way.⁷² Animal populations, including twenty percent of North America's shrimp population, experience drastic fluctuations as their environments either change or disappear.⁷³

So why, after thousands of years of wetland creation, are the Louisiana wetlands disappearing? The Mississippi river naturally changes course over time in its search for the easiest and fastest route out to the Gulf.⁷⁴ Humans have improved upon natural levees by building large concrete structures that constrain the mighty river to its present course and prevent it from straying as it has done in the past.⁷⁵ While keeping the water out of inhabited areas on the other side of the levees is beneficial for human development, the levees cause land that used to get its nutrients from periodic flooding to starve.⁷⁶

Canals dredged for the convenience of oil and gas industries also disrupt natural drainage patterns and flood fragile marshes, causing them to lose their soil.⁷⁷ A study by the United States Geologic Survey indicated

⁷⁰ See Oliver A. Houck, *Land Loss in Coastal Louisiana: Causes, Consequences, and Remedies*, 58 TUL. L. REV. 3, 75-76 (1983); see also IVOR VAN HEERDEN & MIKE BRYAN, *THE STORM: WHAT WENT WRONG AND WHY DURING HURRICANE KATRINA—THE INSIDE STORY FROM ONE LOUISIANA SCIENTIST* 153 (2006). Heerden and Bryan put this point in very clear terms: "The wetlands are absolutely vital for protecting this whole part of the state [of Louisiana] from any hurricane's storm surge. Along with the barrier islands, they are the best, most natural, least expensive buffer available." *Id.*

⁷¹ HALLOWELL, *supra* note 60, at 13.

⁷² *Id.* at 17.

⁷³ *Id.* at 18. In fact, "Louisiana's richest seafood crops—menhaden, shrimp, and oysters—are completely dependent upon the coastal marshes for their existence." Houck, *supra* note 70, at 84.

⁷⁴ STREEVER, *supra* note 65, at 9.

⁷⁵ HALLOWELL, *supra* note 60, at 16.

⁷⁶ See Houck, *supra* note 70, at 22-23. "Historic natural riverine processes of overbank flooding, crevassing, and upstream diversion were responsible for extensive sedimentation and deltaic plain progradation. Virtual elimination of these processes, coupled with extensive canalization and hydrocarbon extraction, has led to the serious land loss problem we now face." *Id.* (citations omitted) (internal quotation marks omitted).

⁷⁷ *Id.* at 24. See also MICHAEL ERIC DYSON, *COME HELL OR HIGH WATER: HURRICANE KATRINA AND THE COLOR OF DISASTER* 85 (2006) ("Oil and gas activities, plus the federal government's attempts to control the Mississippi River for navigation and flood control, contribute significantly to massive coastal erosion."); STREEVER, *supra* note 65, at 19 (mentioning an

that thirty-six percent of wetlands loss in Southern Louisiana between 1932 and 1990 can be directly attributed to exploration, drilling, and transportation.⁷⁸ An additional twenty-one percent of wetlands loss during that period is due to "altered hydrology," or the containment of the natural patterns of the Mississippi river.⁷⁹

With the alarmingly fast loss of Louisiana's coastal wetlands, individual residents and corporate citizens alike began to recognize that a severe hurricane could devastate the region as never before without the natural buffer of the marshes. "In February 2000, State Farm Insurance, which carries one-third of the state's homeowner policies, announced a severe curtailment on the writing of new policies in coastal Louisiana because the potential for massive hurricane damage [was] becoming too great."⁸⁰ Christopher Hallowell, in his 2001 book *Holding Back the Sea*, ominously predicted that:

Storms now have leeway to topple oil rigs, destroy the 20,000-mile-plus maze of pipelines that zigzag across the coast carrying gas and crude oil to refineries, to wash out roads and railroads, and to fill the basin that the city of New Orleans occupies, drowning its citizens, its history, and eclectic cultural melange in a horrific inundation of mud-fortified water.⁸¹

Against this eerily accurate academic background, Hurricane Katrina's devastation simply cannot be said to have come as a surprise to anyone versed in coastal wetlands loss. Coastal Louisiana's 2.8 million people, ninety percent of whom live less than three feet above sea level, know now more than ever how important and valuable the gulf coast wetlands are to the very development that destroys them.⁸²

alternative theory that "wetland loss is not from sediment starvation and subsidence, not from controlling the Mississippi River, but from extensive coastal zone canal construction, mostly for support of the oil and gas industry"). For a more in-depth treatment of this topic, see Houck, *supra* note 70, at 33-44.

⁷⁸ HALLOWELL, *supra* note 60, at 17.

⁷⁹ *Id.*

⁸⁰ *Id.* at 18.

⁸¹ *Id.* at 19.

⁸² Louisiana is a particularly salient example of the value of wetlands. Bill Good of the Louisiana Department of Natural Resources has said:

We're under more pressure than they are in other states. . . . We've got more at stake. The Delta is dying. People are affected directly. They can

III. FEDERAL HURRICANE RESPONSE IN ACTION: HURRICANE KATRINA

A. *The Impact of Hurricane Katrina*

Hurricane Katrina hit the gulf coast on August 29, 2005.⁸³ The hurricane swept in with 140 mile-per-hour winds and twenty to thirty foot storm surges on the coast.⁸⁴ When it hit the city of New Orleans, the wind was still blowing over 100 miles per hour.⁸⁵ The levees that protect the city could not hold the water back, and entire neighborhoods were underwater.⁸⁶ Many areas received more than ten inches of rain from Katrina.⁸⁷ "At least 80 percent of the City of New Orleans was at some point underwater, though the flooding ranged from as little as one or two feet in areas such as the French Quarter to over 20 feet in the Lower Ninth Ward."⁸⁸ Six states—Louisiana, Mississippi, Alabama, Georgia, Florida, and Tennessee—experienced direct damage from the storm.⁸⁹

Even after the storm had passed through, a delayed federal response left thousands of people without adequate food, water, and sanitary systems for several days.⁹⁰ The floodwaters quickly became toxic, as storm-damaged pipelines spilled oil which mixed with sewage and other toxic materials.⁹¹ While the human cost is difficult to quantify, Hurricane Katrina necessitated, without a doubt, "one of the largest natural disaster relief and recovery operations in United States history."⁹² This is true even

see the changes in their own lifetimes. . . . What's happening here in Louisiana is a good case study linking the environment and economy. What happens here underscores what will happen anywhere the environment is ignored.

Streever, *supra* note 65, at 173 (quoting Bill Good, Louisiana Department of Natural Resources).

⁸³ National Climate Data Center, Summary of Hurricane Katrina, <http://www.ncdc.noaa.gov/oa/climate/research/2005/katrina.html> (last visited Mar. 1, 2007).

⁸⁴ *Id.*

⁸⁵ *Id.* The House report on the Gulf Coast Recovery Act of 2005 lists similar wind speed statistics. H.R. REP. NO. 109-364, at 1 (2005).

⁸⁶ National Climate Data Center, *supra* note 83.

⁸⁷ H.R. REP. NO. 109-364, at 1.

⁸⁸ *Id.* at 2.

⁸⁹ *Id.*

⁹⁰ Eric Lipton et al., *Breakdowns Marked Path from Hurricane to Anarchy*, N.Y. TIMES, Sept. 11, 2005, at 1; Keith O'Brien & Bryan Bender, *Chronology of Errors: How a Disaster Spread*, BOSTON GLOBE, Sept. 11, 2005, at A1.

⁹¹ Lipton et al., *supra* note 90; O'Brien and Bender, *supra* note 90.

⁹² *Hurricane Katrina: Providing Oversight of the Nation's Preparedness, Response, and Recovery Activities: Hearing Before the H. Subcomm. on Oversight and Investigations of*

in the midst of severe criticism from across the nation that the government was late to react and has not done enough to assist the victims.⁹³

In the days after Katrina hit, it quickly became apparent that numerous significant environmental health and safety issues would need to be addressed immediately. Dr. Julie Louise Gerberding, Director of the Centers for Disease Control Prevention, formed a joint taskforce to assess the environmental health needs in New Orleans.⁹⁴ This taskforce concluded that, among other potential environmental health concerns, New Orleans also had significant problems with drinking water, waste management, disposal of debris, soil contamination, standing flood waters, rodent control, and food safety.⁹⁵

In order to drain New Orleans, contaminated floodwaters were pumped back into Lake Pontchartrain.⁹⁶ These floodwaters contained "a mix of raw sewage, bacteria, heavy metals, pesticides and toxic chemicals, among other things."⁹⁷ High levels of fecal bacteria were found in

the H. Comm. on Energy and Commerce, 109th Cong. 1 (2005) (statement of Norman J. Rabkin, Managing Director, Homeland Security and Justice Issues, Government Accountability Office) [hereinafter Statement of Norman J. Rabkin], available at <http://www.gao.gov/new.items/d051053t.pdf>.

⁹³ See Lipton et al., *supra* note 90; O'Brien and Bender, *supra* note 90.

⁹⁴ ENVTL. HEALTH NEEDS & HABITABILITY ASSESSMENT JOINT TASKFORCE, CTRS. FOR DISEASE CONTROL AND PREVENTION & U.S. ENVTL. PROT. AGENCY, HURRICANE KATRINA RESPONSE: INITIAL ASSESSMENT iii (2005) [hereinafter INITIAL ASSESSMENT], available at http://www.epa.gov/katrina/reports/envneeds_hab_assessment.pdf.

⁹⁵ *Id.* at 7. The joint taskforce recognized in the report that "[t]he most striking feature of the disaster is the array of key environmental health and infrastructure factors affected all at once." *Id.* at 24.

⁹⁶ HEERDEN & BRYAN, *supra* note 70, at 188-89. Heerden & Bryan describe the decision to pump the "water" into Lake Pontchartrain as follows:

Another question was whether this water—this toxic stuff—should be pumped directly into Lake Pontchartrain, from which it could spread into the marshes and swamps, or into the Mississippi River, thence into the Gulf of Mexico? The question was asked, but only two of the pumps for New Orleans discharge into the river. The priority had to be getting the water out of the city, no matter where it ended up or how toxic it turned out to be. The water would go into the lake.

Id.

⁹⁷ PERVAZE A. SHEIKH, CONG. RESEARCH SERV., ORDER CODE RL33117, THE IMPACT OF HURRICANE KATRINA ON BIOLOGICAL RESOURCES 6 (2005), available at <http://ncseonline.org/nle/crsreports/06Mar/RL33117.pdf>. Despite the concession of many agencies and individuals, reflected in the works cited in this Part, that the storm surge was highly contaminated and dangerous, the Assistant to the President for Homeland Security and Counterterrorism, wrote in a report to President Bush that "[t]he storm's collective environmental damage, while not creating the 'toxic soup' portrayed in the media, nonetheless

the water flooding New Orleans, and testing of sediments demonstrated contamination both with bacteria and fuel oils.⁹⁸ “As the flood water recedes, and the toxic-laden sediment and residue dries, a fine dust begins to swirl with wind or disturbance. This fine, toxic dust presents a serious risk to citizens if inhaled.”⁹⁹ It is too early to tell what the impact of these contaminants will be on Lake Pontchartrain’s ecosystem, but it is difficult to see how plants and fish living in or alongside the lake would not be affected.

The amount and variety of hazardous debris left behind when the floodwaters were cleared present additional environmental challenges. In a hearing before the House Committee on Energy and Commerce, an attorney from the National Resources Defense Council explained that:

[A]n estimated 100 million cubic yards of debris have been generated by Katrina—enough to cover over 1,000 football fields 50-feet-deep with waste. This far exceeds the waste generated by any previous hurricane, and dwarfs the 1.5 million tons of debris from the World Trade Center attacks on 9/11. While some of this debris is merely downed trees or vegetation, much of it is destroyed housing, commercial buildings, 350,000 ruined vehicles, and a wide array of other detritus, much of which has been soaked by petroleum or other toxic chemicals, and much of which is intermixed with plastics and other materials that will become toxic if burned.¹⁰⁰

In nearby Baton Rouge, contaminants considered “likely to be found” in the storm waters included “tens of millions of pounds of concrete, lumber, cars, animal carcasses and all the other solid waste of a major metropolitan

did create a potentially hazardous environment for emergency responders and the general public.” FRANCES FRAGOS TOWNSEND, ASSISTANT TO THE PRESIDENT FOR HOMELAND SECURITY AND COUNTERTERRORISM, *THE FEDERAL RESPONSE TO HURRICANE KATRINA: LESSONS LEARNED* 61 (2006).

⁹⁸ ROBERT ESWORTHY ET AL., CONG. RESEARCH SERV., ORDER CODE RL33115, *CLEANUP AFTER HURRICANE KATRINA: ENVIRONMENTAL CONSIDERATIONS 14-17* (2005), available at <http://ncseonline.org/nle/crsreports/05oct/RL33115.pdf>.

⁹⁹ *Hurricane Katrina: Assessing the Present Environmental Status: Hearing Before the Subcomm. on Environment and Hazardous Materials of the H. Comm. on Energy and Commerce*, 109th Cong. 2 (2005) (statement of Erik D. Olson, Senior Attorney, National Resources Defense Council) [hereinafter Statement of Erik D. Olson], available at <http://www.nrdc.org/legislation/katrina/0509291a.pdf>.

¹⁰⁰ *Id.* at 6.

area.”¹⁰¹ An estimated 350,000 cars were trapped by the storm and subjected to extensive flooding.¹⁰² The amount of gasoline and other toxic fluids in these cars added significantly to the contamination of the water and surrounding debris.¹⁰³

Hurricane Katrina hit areas containing Superfund hazardous waste sites.¹⁰⁴ 575 spills of oil or other hazardous chemicals have been reported as a result of Katrina, releasing more than seven million gallons of oil alone.¹⁰⁵ Concerns about air pollution and air quality also arose from these releases.¹⁰⁶

The impact of the hurricane disrupted the economy of the gulf coast as well as its environment.¹⁰⁷ Ports hit by Katrina “accounted for 4.5 percent the total exports of goods from the United States last year, and 5.4 percent of total U.S. imports.”¹⁰⁸ Commercial fishing in the areas hit by Hurricane Katrina produces ten percent of the shrimp and forty percent of the oysters sold in the United States.¹⁰⁹ The region hit by the storm contained “15 major fishing ports, 177 seafood processing facilities, 1,816 federally permitted fishing vessels, and more than 13,000 state-permitted fishing vessels.”¹¹⁰ The hurricane and the resulting flooding caused structural damage to many fishing industry buildings, machines, and vessels, in addition to the damage done to the harvestable supply and workforce displacement.¹¹¹ “Initial losses to seafood production from Katrina were estimated at \$1.1 billion for Louisiana and may exceed \$200 million for Alabama, exclusive of infrastructure; Mississippi losses are comparable to those of Alabama.”¹¹² Oyster beds were “extensively

¹⁰¹ Timothy Dwyer et al., *Katrina Takes Environmental Toll*, WASH. POST, Sept. 7, 2005, available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/09/06/AR2005090600498.html>.

¹⁰² Statement of Erik D. Olson, *supra* note 99, at 2.

¹⁰³ *Id.*

¹⁰⁴ *Id.* (“Impacts to fisheries, timberland, agricultural, and recreational sites contain not only environmental costs, but a significant economic cost as well.”).

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* at 3.

¹⁰⁷ SHEIKH, *supra* note 97, at 1.

¹⁰⁸ Statement of Norman J. Rabkin, *supra* note 92, at 2.

¹⁰⁹ EUGENE H. BUCK, CONG. RESEARCH SERV., ORDER CODE RS22241, HURRICANES KATRINA AND RITA: FISHING AND AQUACULTURE INDUSTRIES—DAMAGE AND RECOVERY 1 (2005), available at <http://www.nationalaglawcenter.org/assets/crs/RS22241.pdf>.

¹¹⁰ *Id.*

¹¹¹ *Id.* at 3.

¹¹² *Id.* at 1. A partial breakdown of these numbers can be gleaned from the Louisiana Department of Wildlife and Fisheries, who have estimated the twelve-month potential

damaged, if not totally destroyed, by siltation and contamination related to Katrina.”¹¹³ The joint taskforce composed of the Center for Disease Control and the Environmental Protection Agency issued a report only two weeks after the hurricane which recognized that there would be a need to assess the “safety of fish and shellfish [for consumption] as a result of unwatering into Lake Pontchartrain and associated water systems.”¹¹⁴

In addition to the human and economic costs, Hurricane Katrina caused substantial damage to the gulf coast environment. Erik Olson, a Senior Attorney for the National Resources Defense Council, claimed that “Katrina is perhaps the single worst environmental catastrophe ever to befall the United States as a result of a natural disaster.”¹¹⁵ For example, “Katrina went through several areas of shallow-shelf estuarine waters including extensive oyster reefs, large marine and estuarine submerged aquatic vegetation beds, and wetlands.”¹¹⁶ Salt water, brought in by the storm surge or contained in the floodwaters, found its way into sensitive and ecologically important freshwater ecosystems, substantially altering the habitat for a number of species of birds, fish, and shrimp.¹¹⁷ Hurricane Katrina damaged sixteen federal wildlife refuges, totalling 365,000 acres.¹¹⁸ The storm altered the habitats of at least three endangered or threatened species.¹¹⁹

The hurricane also changed the size and shape of several barrier islands.¹²⁰ These islands not only served as important habitat for local wildlife, but they also formed natural buffers to hurricanes and storm surges.¹²¹ Hurricanes Katrina and Rita converted over seventy square miles of marsh into open water,¹²² exacerbating the already-extensive problem of wetland loss in the area.¹²³

losses at dockside as follows: “crab (12.3 million), menhaden (\$44.6 million), other saltwater fish (\$11.8 million), and freshwater fish (\$190,000).” *Id.* at 3. Twelve-month potential production losses at the retail level were also calculated: “crab (\$82 million), menhaden (\$93 million), other saltwater fish (\$79 million), and freshwater fish (\$1.3 million).” *Id.*

¹¹³ *Id.* at 2.

¹¹⁴ INITIAL ASSESSMENT, *supra* note 94, at 15.

¹¹⁵ Statement of Erik D. Olson, *supra* note 99, at 1.

¹¹⁶ SHEIKH, *supra* note 97, at 1.

¹¹⁷ Statement of Erik D. Olson, *supra* note 99, at 7.

¹¹⁸ SHEIKH, *supra* note 97, at 3.

¹¹⁹ *Id.*

¹²⁰ *Id.* at 2.

¹²¹ *Id.*

¹²² *Id.* at 3 (noting that before Hurricanes Katrina and Rita, only about 15,000 acres of wetlands per year were being converted to open water).

¹²³ See *supra* Part II.

The relief, recovery, and restoration efforts begun after Hurricane Katrina made landfall have created some continuing environmental concerns. One example is toxic underwater sediment:

[O]ne major source of toxins that has received very little public attention to date is the toxic sediment that has accumulated at the bottom of many of the lakes, rivers, and streams in industrialized areas over many decades due to industrial spills. These toxic underwater hotspots have long been of concern to state and federal officials. According to experts with whom we have spoken in Louisiana, many of these toxic hotspots have now been stirred up, and toxic sediment has been re-suspended, and re-deposited across large land areas, including in residential communities, by storm surge and floodwater.¹²⁴

Disposal of the large amount of debris created by the storm also creates an ongoing concern about the protection of the environment.¹²⁵ The contaminated waste will need to be taken to landfills or possibly burned.¹²⁶ The composition of the debris causes concerns about the effect of even contained burning on air quality in the area.¹²⁷ "The unique issues associated with the volume and diversity of debris and waste may lead to innovative/creative approaches for disposing of these materials."¹²⁸

B. Federal Agency Response to Hurricane Katrina and the Use of Disaster Exemptions From Environmental Regulations

In responding to Hurricane Katrina, the federal government utilized several of the emergency and disaster exemptions from environmental regulations. The Fish and Wildlife Service ("FWS") announced its recognition of the emergency consultation provisions for requesting exemptions from the Endangered Species Act.¹²⁹ "Specifically, the FWS states that the restoration of 'any infrastructure damaged or lost due to

¹²⁴ Statement of Erik D. Olson, *supra* note 99, at 3.

¹²⁵ ESWORTHY, *supra* note 98, summary.

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ *Id.*

¹²⁹ SHEIKH, *supra* note 97, at 4.

the hurricane back into the original footprint does not require ESA consultation with the Service.”¹³⁰

The Army Corps of Engineers, the agency responsible for several disaster relief, recovery, and reconstruction activities, invoked its emergency procedures only five days after the hurricane hit the gulf coast.¹³¹ These procedures require district commanders to consider only the “probable environmental consequences” of their emergency actions and to communicate with CEQ about NEPA arrangements.¹³² Actions defined as emergency actions for the purpose of the provision include “Flood Control and Coastal Emergencies Activities . . . and projects constructed under sections [sic] 3 of the River and Harbor Act of 1945 or 14 of the Flood Control Act of 1946 of the Continuing Authorities Program.”¹³³ Actions taken in response to Hurricane Katrina clearly fell within this scope. Several of the emergency actions taken by the Army Corps of Engineers, such as shoring up the levees to prevent further breaches, would also be automatically exempt from NEPA requirements under the Stafford Act.¹³⁴ The Army Corps of Engineers has drawn criticism by planning to rebuild

¹³⁰ *Id.* (citations omitted).

¹³¹ JAMES E. MCCARTHY & CLAUDIA COPELAND, CONG. RESEARCH SERV., ORDER CODE RL33107, EMERGENCY WAIVER OF EPA REGULATIONS: AUTHORITIES AND LEGISLATIVE PROPOSALS IN THE AFTERMATH OF HURRICANE KATRINA 4 (2005), *available at* <http://ncseonline.org/nle/crsreports/06Mar/RL33107.pdf>.

¹³² 33 C.F.R. § 230.8 (2007). This provision is found in Part 230, which covers “Procedures for Implementing NEPA.” Section 230.8 is entitled “Emergency Actions,” and provides that:

In responding to emergency situations to prevent or reduce imminent risk of life, health, property, or severe economic losses, district commanders may proceed without the specific documentation and procedural requirements or other sections of this regulation. District commanders shall consider the probable environmental consequences in determining appropriate emergency actions and when requesting approval to proceed on emergency actions, will describe proposed NEPA documentation or reasons for exclusion from documentation. NEPA documentation should be accomplished prior to initiation of emergency work if time constraints render this practicable. Such documentation may also be accomplished after the completion of emergency work, if appropriate. . . . When possible, emergency actions considered major in scope with potentially significant environmental impacts shall be referred through the division commanders to HQUSACE (CECW-RE) for consultation with CEQ about NEPA arrangements.

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁴ See *supra* Part I.B.1.

the levees to the same specifications as before Hurricane Katrina.¹³⁵ While recognizing that several of these levees were completely leveled by the storm, “[t]he Corps for its part says that it does not have the funding to do it better.”¹³⁶

On September 8, 2005, CEQ put out a memo regarding “emergency alternative arrangements” for compliance with NEPA.¹³⁷ In this memo, CEQ explained that any federal agency taking an action with significant environmental impacts should consult with CEQ, which would then develop emergency alternative arrangements for compliance with NEPA based on the specific facts and circumstances of the situation.¹³⁸ The memo also lists several factors to be addressed during the consultation with CEQ.¹³⁹ Once an agency and CEQ come to an agreement about emergency alternative arrangements for compliance with NEPA, CEQ will put the arrangements and the facts on which they are based in writing.¹⁴⁰ Courts have not reversed emergency alternative arrangements, though they are subject to judicial review.¹⁴¹

CEQ has issued the Federal Emergency Management Agency (“FEMA”), the primary player in federal disaster relief, recovery, and reconstruction operations, an individualized set of NEPA policies and procedures.¹⁴² These procedures contain guidance for FEMA officials about

¹³⁵ CNN REPORTS, KATRINA: STATE OF EMERGENCY 171 (2005).

¹³⁶ *Id.*

¹³⁷ Memorandum from Horst G. Greczmiel, Council on Env'tl. Quality, Emergency Actions and NEPA (Sept. 8, 2005), *available at* http://ceq.eh.doe.gov/nepa/regs/Emergency_Actions_and_NEPA_Memo_for_Federal_NEPA_Contacts.pdf.

¹³⁸ *Id.*

¹³⁹ *Id.* These factors include:

[The] nature and scope of the emergency; actions necessary to control the immediate impacts of the emergency; potential adverse effects of the proposed action; components of the NEPA process that can be followed and provide value to decisionmaking (e.g. coordination with affected agencies and the public); duration of the emergency; and potential mitigation measures.

Id.

¹⁴⁰ *Id.*

¹⁴¹ *Id.* (“Courts afford CEQ substantial deference regarding its determination of emergency alternative arrangements. Alternative arrangements have been unsuccessfully challenged three times.”).

¹⁴² 44 C.F.R. §§ 10.1-.14 (2007). The policy goals stated in the procedures begin with the general statement that:

FEMA shall act with care to assure that, in carrying out its responsibilities, including disaster planning, response and recovery and hazard mitigation and flood insurance, it does so in a manner consistent with

when an EIS is and is not required, as well as a list of more than twenty categories for which it is assumed that no EIS needs to be prepared.¹⁴³ Actions of an emergency nature are still statutorily excluded by the Stafford Act, but many FEMA actions may fall outside of those exclusions.¹⁴⁴ If the action falls into a categorical exclusion listed in the CEQ procedures, the agency will not have to prepare an EIS unless "extraordinary circumstances" are present.¹⁴⁵ However, "[i]f extraordinary circumstances exist within an area affected by an action, such that an action that is categorically excluded from NEPA compliance may have a significant adverse environmental impact, an environmental assessment shall be prepared."¹⁴⁶ These circumstances include:

(i) Greater scope or size than normally experienced for a particular category or action;

....

(iii) Potential for degradation, even though slight, of already existing poor environmental conditions;

....

(v) Presence of endangered or threatened species or their critical habitat . . .

....

(vii) Actions with the potential to affect special status areas adversely or other critical resources such as wetlands, coastal zones, wildlife refuge and wilderness areas; [and]

(viii) Potential for adverse effects on health or safety.¹⁴⁷

FEMA has at its disposal several methods of avoiding compliance with environmental regulations in connection with its disaster response efforts to choose from, including both the blanket Stafford Act exemptions and tailored CEQ procedures that accommodate the emergency nature of much of their work.

national environmental policies. Care shall be taken to assure, consistent with other considerations of national policy, that all practical means and measures are used to protect, restore, and enhance the quality of the environment, to avoid or minimize adverse environmental consequences . . .

Id. § 10.4.

¹⁴³ *Id.* § 10.8(d).

¹⁴⁴ See *supra* Part I.B.1.

¹⁴⁵ 44 C.F.R. § 10.8(d)(3).

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

Unlike the Army Corps of Engineers or FEMA, who follow regulations administered by other agencies, the Environmental Protection Agency ("EPA") enforces several federal laws.¹⁴⁸ After Hurricane Katrina, however, the EPA "temporarily waived regulations regarding gasoline and diesel fuel in all 50 states."¹⁴⁹ This development is perhaps more frightening to those concerned with environmental integrity in the face of natural disasters than the breadth of exemptions to environmental regulations.

Agencies responding to Hurricane Katrina must also deal with state environmental regulations. Many of these regulations have provisions exempting actions taken in response to emergencies or disasters similar to those discussed above,¹⁵⁰ and therefore have not required agencies to focus on the environment to a greater extent than required by federal regulations.

For example, the State of Louisiana Department of Environmental Quality Emergency Declaration provides that owners and operators of solid waste management facilities that had permits from the Department before the hurricane "are authorized to make all necessary repairs to restore essential services and the functionality of stormwater management and leachate collection systems damaged by the Hurricane, without prior notice to the Department." The order provides that vegetative debris and construction and demolition debris mixed with other hurricane-generated debris need not be segregated prior to disposal.¹⁵¹

This order also gives local governments the authority to burn vegetative debris without prior notice, and waives requirements relating to the cleanup of asbestos materials.¹⁵² As state officials begin to relax or waive air pollution requirements in order to permit the burning of toxic debris, concern for the public and environmental health has increased.¹⁵³

In their efforts to respond to Hurricane Katrina, agencies have taken advantage of emergency and disaster exemptions from both state

¹⁴⁸ Environmental Protection Agency, About EPA: What We Do, <http://www.epa.gov/epahome/aboutepa.htm#whatwedo> (last visited Mar. 1, 2007).

¹⁴⁹ MCCARTHY & COPELAND, *supra* note 131, at 6.

¹⁵⁰ *Id.* at 5.

¹⁵¹ *Id.* (citations omitted).

¹⁵² *Id.*

¹⁵³ *See, e.g.*, Statement of Erik D. Olson, *supra* note 99, at 7.

and federal environmental regulations. "In the short term, . . . it would not appear that environmental regulations have posed an obstacle to local, state, federal, or private response efforts. As a result, the question of whether additional waiver authority is needed would appear to be best addressed in the context of longer term recovery efforts."¹⁵⁴

C. *Federal Legislative Proposals to Expand Exemptions From Environmental Regulations for Hurricane Response Purposes*

Following Hurricane Katrina, four bills were introduced in Congress that would have created additional exemptions from environmental regulations for response to that particular disaster.¹⁵⁵ Three Senate bills—two of which were identical—and one House bill were proposed shortly after the disaster hit the gulf coast.

S. 1711¹⁵⁶ would have allowed the Environmental Protection Agency to "waive or modify the application of *any requirement that is contained in any law*" under EPA's administrative jurisdiction, if it "is necessary to respond, in a timely and effective manner, to a situation or damage relating to Hurricane Katrina."¹⁵⁷

Four days after S. 1711 was introduced, Senators Vitter and Landrieu, both of Louisiana, introduced identical bills in the Senate.¹⁵⁸ While aimed at increasing disaster relief and recovery funds, the bills would also give the President the power to issue emergency permits.¹⁵⁹ The bills would authorize the President to issue a permit for "any project carried out in response to, or as a part of a reconstruction effort relating to, Hurricane Katrina or a related condition, as the President determines to be in the best interests of the United States."¹⁶⁰ In addition to giving this waiver power to the President, the bills would have established a commission to develop a work plan for ensuring economic and social recovery

¹⁵⁴ MCCARTHY & COPELAND, *supra* note 131, at 8.

¹⁵⁵ *Id.* at summary.

¹⁵⁶ S. 1711, 109th Cong. (2005). S. 1711 was sponsored by Senator James Inhofe, Chairman of the Senate Environmental and Public Works Committee, and Senator David Vitter of Louisiana on September 16, 2005, only eighteen days after Hurricane Katrina made land-fall. *See id.*; *see also* MCCARTHY & COPELAND, *supra* note 131, at summary.

¹⁵⁷ S. 1711 (emphasis added).

¹⁵⁸ Both bills are entitled "Louisiana Katrina Reconstruction Act." S. 1765, 109th Cong. (2005); S. 1766, 109th Cong. (2005).

¹⁵⁹ *See* S. 1765; S. 1766.

¹⁶⁰ S. 1765 § 502(a)(1); S. 1766 § 502(a)(1).

in the region.¹⁶¹ Any projects undertaken by this commission in accordance with this work plan would automatically be deemed to comply with NEPA.¹⁶²

In addition to S. 1711, S. 1765, and S. 1766, a House bill proposed in response to Katrina would have allowed for extensive variations in environmental regulations in certain specific instances.¹⁶³ Also known as the Fuel Supply Improvement Act of 2005, H.R. 3836 would have required authorities to approve applications for permits to reconstruct refineries within ninety days.¹⁶⁴ The law would have applied to permits issued under a wide variety of environmental regulations, including the Clean Air Act, the Federal Water Pollution Control Act, the Safe Drinking Water Act, CERCLA, the Solid Waste Disposal Act, the Toxic Substances Control Act, and NEPA.¹⁶⁵

A report on all four legislative proposals prepared by the Congressional Research Service on September 29, 2005, was skeptical of the need for such broad grants of exemptions and waiver.¹⁶⁶

[T]he report raises questions concerning the waiver authority that new legislation might grant, including what its scope (both geographic and regulatory) would be, how facilities granted waivers would be regulated after the expiration of the waiver period, the effect of such legislation on state and local requirements, and whether substantive as well as procedural requirements should be waived, if waivers are to be granted.¹⁶⁷

Though the Senators and Representatives sponsoring these bills may have intended only to eliminate some red tape and expedite the recovery and reconstruction process, the legislation could have created major loopholes in environmental regulation in the affected regions. At least one environmentalist went even further, accusing the sponsors of these bills of an additional motivation altogether:

¹⁶¹ The commission would have been called the "Protecting Essential Louisiana Infrastructure, Citizens, and Nature Commission," or the "Pelican Commission." S. 1765 § 501; S. 1766 § 501. *See also* LUTHER, *supra* note 38, at 7-8.

¹⁶² S. 1765 § 501; S. 1766 § 501. *See also* LUTHER, *supra* note 38, at 7-8.

¹⁶³ *See* MCCARTHY & COPELAND, *supra* note 131, at summary; *see also* LUTHER, *supra* note 38, at 9.

¹⁶⁴ H.R. 3836, 109th Cong. § 3(a) (2005). *See also* LUTHER, *supra* note 38, at 9.

¹⁶⁵ H.R. 3836 § 3(c). *See also* LUTHER, *supra* note 38, at 9.

¹⁶⁶ *See* MCCARTHY & COPELAND, *supra* note 131.

¹⁶⁷ *Id.* summary.

Lobbyists and their congressional allies are already lining up hoping to undercut long-standing health and environmental safeguards in the name of hurricane recovery. In a few select cases, it may make sense to make temporary accommodations in federal health and environmental rules to address legitimate needs. But nearly all of these can be accommodated without changes in current law, much less the blanket suspension legal safeguard being proposed by special interests.¹⁶⁸

None of these four bills made it out of committee, though similar bills could very well be proposed in the wake of future disasters. The perception that the continued protection and restoration of the environment should be of secondary importance to the restoration of man-made structures after major natural disasters, though politically popular, only increases human vulnerability to future storms.

IV. THE DISASTER CYCLE: PREPAREDNESS, MITIGATION, AND RESPONSE

“Natural disaster” may be a misnomer since people are responsible for the increased problems as they make their environment more prone to disasters and themselves more vulnerable to those hazards. After a flood, for example, people almost invariably move back into hazard zones, and sometimes in greater numbers.¹⁶⁹

¹⁶⁸ Statement of Erik D. Olson, *supra* note 99, at 10.

¹⁶⁹ Beverly A. Cigler, *Current Policy Issues in Mitigation*, in *MANAGING DISASTER: STRATEGIES AND POLICY PERSPECTIVES* 39, 40-41 (Louise K. Comfort ed., 1988). A similar argument is made by Charles Meade and Megan Abbott:

[M]any have claimed that the desires and habits of Americans are largely responsible for the rising economic losses. Specifically, population migration to high-risk areas—seismically active regions, remote areas susceptible to wildfires, coastlines—has increased steadily in recent years. More than 50 percent of U.S. citizens now live in coastal areas, where they are vulnerable to flooding and hurricanes. . . . As populations increase in an area, so do[es] the clearing of forests for new homes and businesses, the destruction of wetlands, and the paving of roads and parking lots, all of which increase the runoff from heavy rainfall, putting lives and property at risk.

CHARLES MEADE & MEGAN ABBOTT, *ASSESSING FEDERAL RESEARCH AND DEVELOPMENT FOR HAZARD LOSS REDUCTION* 4 (2003) (citation omitted), *available at* http://www.rand.org/pubs/monograph_reports/2005/MR1734.pdf.

Disaster-prone areas may be particularly attractive for residential and economic development.¹⁷⁰ This is certainly true of coastal areas that are often hit by hurricanes.¹⁷¹ However, there are many ways in which authorities can address the likelihood of disasters before any particular disaster occurs.

The federal government's involvement in natural disasters such as hurricanes can be separated into three stages: preparedness, mitigation, and response.¹⁷² The steps taken in a given geographic area during each of these stages greatly influence the work required in the others.¹⁷³ Preparedness and mitigation efforts are an indispensable part of any effort to decrease the amount of response, recovery, and reconstruction necessary after a given disaster because they help to reduce the amount of damage done.¹⁷⁴ "[M]itigation and preparedness are central to an effective disaster

¹⁷⁰ See Leonard I. Ruchelman, *Natural Hazard Mitigation and Development: An Exploration of the Roles of the Public and Private Sectors*, in *MANAGING DISASTER: STRATEGIES AND POLICY PERSPECTIVES*, supra note 169, at 53, 62 ("A study sponsored by the United States Department of the Interior of some 300 barrier islands off the Atlantic and Gulf Coasts found that, despite warnings, at least half of the seventeen or more federal agencies that have jurisdiction have actually encouraged development on these islands. The development, in turn, has made the islands more hazardous places in which to live.").

¹⁷¹ *Id.*

¹⁷² See generally MARY COMERIO, *DISASTER HITS HOME: NEW POLICY FOR URBAN HOUSING RECOVERY* (1998); PETER MAY & WALTER WILLIAMS, *DISASTER POLICY IMPLEMENTATION: MANAGING PROGRAMS UNDER SHARED GOVERNANCE* (1986).

¹⁷³ See generally COMERIO supra note 172; MAY & WILLIAMS, supra note 172.

¹⁷⁴ See MAY & WILLIAMS, supra note 172. May and Williams provide a brief summary of the interaction between disaster preparedness, disaster mitigation, and disaster response:

For many years, federal policymakers have sought ways to limit both disaster losses and federal disaster relief costs. Historically, the main federal policy approach has been to try to control flood hazards through the building of dams, levees, and other structures. More recently, the emphasis has been upon greater preparedness for responding to disasters and upon averting disaster losses through land use regulations, appropriate construction practices, and other efforts to limit development in hazardous areas.

In principle, the recent efforts to control the growth of federal disaster relief outlays and to control the longer-run growth of disaster losses make eminent sense. By increasing preparedness capacities, governmental entities are better situated to issue warnings or respond in a fashion that helps minimize disaster losses. Through land use revisions and other hazardous development modifications—called in general *nonstructural* mitigation efforts—disaster losses can be averted. In practice, however, disaster preparedness and mitigation raise two basic dilemmas for federal disaster policy. First, there is a political dilemma

policy that can prevent and lessen loss rather than simply respond when disasters strike.¹⁷⁵ In responding to disasters and leading disaster recovery efforts, the federal government should incorporate mitigation planning to the greatest degree possible in order to offset the ways in which it encourages development in disaster-prone areas.¹⁷⁶

A. *Preparedness*

The term “preparedness” refers to actions taken in advance of a disaster that increase readiness to deal with disasters when they do occur.¹⁷⁷ Though it is important to recognize how preparedness influences the way that federal agencies respond to natural disasters, preparedness will not receive extensive coverage in this Note. For the purposes of evaluating the intelligence of exemptions from environmental regulations in disaster situations, it is enough to point out that the degree to which an agency is prepared to evaluate and include environmental effects in its disaster response choices will greatly influence its ability to avoid causing further damage to the environment.

B. *Mitigation*

According to FEMA, hazard mitigation is any “sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event.”¹⁷⁸ Both structural and non-structural measures are often involved in mitigation strategies.¹⁷⁹ Structural measures commonly employed include

coming from the disjunctive nature of federal disaster policymaking. Second, there is an implementation dilemma arising from the shared governance of disaster policy among different layers of government.

Id. at 2. These two dilemmas are addressed *infra* Part IV.D.

¹⁷⁵ MAY & WILLIAMS, *supra* note 172, at 1. See also COMIERO, *supra* note 172, at 27 (explaining that a “good disaster recovery program starts with a serious commitment to reducing future damage through preparedness and mitigation”).

¹⁷⁶ See *infra* Part IV.D.

¹⁷⁷ See FED. EMERGENCY MGMT. AGENCY, ARE YOU READY? AN IN-DEPTH GUIDE TO CITIZEN PREPAREDNESS 7 (2004), available at http://www.fema.gov/pdf/areyouready/areyouready_full.pdf.

¹⁷⁸ Federal Emergency Management Agency, Hazard Mitigation Planning, <http://www.fema.gov/plan/mitplanning/index.shtml> (last visited Mar. 1, 2007).

¹⁷⁹ Cigler, *supra* note 169, at 41.

dams,¹⁸⁰ levees,¹⁸¹ sea walls,¹⁸² seismic retrofitting,¹⁸³ and reinforcing highway bridges.¹⁸⁴ In addition to their relatively high cost, "levees, seawalls, diversions, and other structural measures . . . can disrupt or destroy the natural environment. Structural projects may also create a false sense of security, increasing the amount of property at risk of flooding as people and businesses locate behind levees and flood walls."¹⁸⁵ Nonstructural measures include a wide range of creative efforts to reduce disaster damage such as "land use regulations, zoning laws, building codes, economic programs (such as tax and insurance incentives),"¹⁸⁶ "[w]arning and evacuation planning,"¹⁸⁷ "[p]roperty acquisition,"¹⁸⁸ "[p]ublic information,"¹⁸⁹ and even conservation of wetlands and the prevention of coastal dune erosion.¹⁹⁰ While structural measures are designed to mitigate the damage a disaster causes once it hits an area, nonstructural mitigation measures are "designed to keep vulnerable structures and activities out of the most hazard-prone areas or to minimize the likelihood of structural damage."¹⁹¹

Though "[p]ostdisaster actions such as rebuilding damaged structures in hazard-resistant ways or relocating structures and people are also mitigation strategies due to their concerns with the long-term reduction

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² *Id.*

¹⁸³ MEADE & ABBOTT, *supra* note 169, at 6-7.

¹⁸⁴ *Id.*

¹⁸⁵ DAVID A. GODSCHALK ET AL., NATURAL HAZARD MITIGATION: RECASTING DISASTER POLICY AND PLANNING 31 (1999) (citation omitted).

¹⁸⁶ See Cigler, *supra* note 169, at 41.

¹⁸⁷ RUTHERFORD H. PLATT, DISASTERS AND DEMOCRACY: THE POLITICS OF EXTREME NATURAL EVENTS 70 (1999).

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*

¹⁹⁰ See GODSCHALK, *supra* note 185, at 499. While protection of the natural environment is itself of value to many people, it also plays a valuable role in protecting people and property from severe storm damage:

[P]rotection of the environment is often the most effective strategy for mitigating natural hazards. Conservation of wetlands, for instance, can serve as an effective and economical flood control strategy; coastal dune systems act as natural seawalls. Protection of natural values in watersheds is a preventative, cost-effective strategy for flood mitigation.

Id. See also PLATT, *supra* note 187, at 70; Statement of Norman J. Rabkin, *supra* note 92, at 6-7 (recognizing that "[t]he condition of environmental resources has an important role in both the prevention . . . [of and] recovery from natural disasters").

¹⁹¹ Cigler, *supra* note 169, at 41.

of the effects of hazards,"¹⁹² plans for post-disaster recovery and reconstruction are not the same as mitigation plans.¹⁹³ While both are forward-looking, "[t]he primary purpose of mitigation planning is to identify community policies, actions, and tools for implementation over the long term that will result in a reduction in risk and potential for future losses communitywide."¹⁹⁴

In 1995, FEMA revealed a National Mitigation Strategy.¹⁹⁵ Though an important step in the Federal government's recognition of the value of mitigation efforts, the National Mitigation Strategy has met with significant criticism.¹⁹⁶ Several years later, Congress passed the Disaster Mitigation Act of 2000, which created the Hazard Mitigation Grant Program.¹⁹⁷ The program was intended:

- (1) to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters; and
- (2) to provide a source of predisaster hazard mitigation funding that will assist States and local governments (including Indian tribes) in implementing effective hazard mitigation measures that are designed to ensure the continued functionality of critical services and facilities after a natural disaster.¹⁹⁸

¹⁹² *Id.*

¹⁹³ See JIM SCHWAB ET AL., PLANNING FOR POST-DISASTER RECOVERY AND RECONSTRUCTION 15 (1998).

¹⁹⁴ *Id.*

¹⁹⁵ MEADE & ABBOTT, *supra* note 169, at 6.

¹⁹⁶ See, e.g., GODSCHALK, *supra* note 185, at 58. David Godschalk has explained that: The *National Mitigation Strategy* is a major accomplishment and a watershed document in the history of U.S. mitigation policy. However, many of its goals and objectives are broad, subject to substantial interpretation ('adopt incentives . . . promote awareness'), and not overly ambitious. The vision presented is neither clear nor compelling. Since the plan's completion, it is not clear that many of the shorter-term objectives have been accomplished. Nevertheless, it is the first attempt at the federal level to think strategically about mitigation and begin to put forth a systematic agenda for advancing mitigation in the United States.

Id.

¹⁹⁷ Disaster Mitigation Act of 2000, Pub. L. 106-390, 114 Stat. 1552 (2000).

¹⁹⁸ Disaster Mitigation Act of 2000 § 101(b), 114 Stat. at 1553. For more information on FEMA's role in the Hazard Mitigation Grant Program, see 44 C.F.R. §§ 201.3-201.5 (2007).

Despite the explicit recognition of the impact that mitigation can have on disaster damage and recovery costs, Congress cut the budget for the Hazard Mitigation Grant Program in half in 2003.¹⁹⁹ Only after the tragedy of Hurricane Katrina did Congress act to return funding to its previous level.²⁰⁰

Despite the efforts that have been made to incorporate hazard mitigation strategies into the federal disaster response system, many critics see more talk than action.²⁰¹ A recent federal study found that research on mitigation strategies is vastly underfunded, and that "R&D focused on long-term loss reduction strategies could improve the resilience of communities and infrastructure, protecting life and property in a far more substantial way."²⁰² This is an effect unique to mitigation; neither preparedness or response efforts can accomplish similar results.²⁰³ Other critics have voiced similar concerns, pointing out that "[a]fter three decades of the National Flood Insurance Program, two decades since the formation of FEMA and over one decade since the Stafford Act, there has been no systematic effort to evaluate the effectiveness of various approaches to flood hazard mitigation, let alone mitigation of other natural risks."²⁰⁴ In addition to their skepticism over the effectiveness of the few mitigation measures that have been implemented, critics are also concerned that proven mitigation measures have not yet found a place in federal policies.²⁰⁵

¹⁹⁹ *Reducing Hurricane and Flood Risks in the Nation: Hearing Before the H. Subcomm. on Water Resources and Environment of the H. Comm. on Transportation and Infrastructure*, 109th Cong. (2005) (statement of Rod Emmer, Association of State Floodplain Managers Member and Executive Director, Louisiana Floodplain Management Association) [hereinafter Statement of Rod Emmer], available at <http://www.house.gov/transportation/water/10-20-05/emmer.pdf>.

²⁰⁰ Gulf Coast Recovery Act of 2005, H.R. 4438, 109th Cong. (2005). The House Committee on Transportation and Infrastructure recommended that the Bill pass in a report filed on Dec. 22, 2005. H.R. REP. NO. 109-364 (2005). However, no action was taken after the Committee's report.

²⁰¹ See GODSCHALK, *supra* note 185, at 58; MEADE & ABBOTT, *supra* note 169, at xiii; PLATT, *supra* note 187, at 71.

²⁰² MEADE & ABBOTT, *supra* note 169, at xiii.

²⁰³ See generally *id.*

²⁰⁴ PLATT, *supra* note 187, at 71. Platt continues by arguing that the failure to evaluate the effectiveness of mitigation approaches is most likely due to the failure to concretely define what is meant by "mitigation." *Id.* "The federal government, and particularly FEMA, are [sic] still struggling to define, achieve, evaluate, and improve their efforts in hazard mitigation. Despite abundant rhetoric, it remains unclear what mitigation really means, and who should pay for it." *Id.*

²⁰⁵ *Id.* Platt quotes a 1994 report by the Natural Academy of Sciences, which complained that "[m]itigation has been an underlying requirement of federal emergency management policy for about 30 years, beginning with floodplain management requirements in the

Rutherford Platt offers the following explanation for these failures to take mitigation seriously:

Mitigation has had a checkered history over the past three decades. While universally supported in principle, it has often proven to be the unwelcome guest at the post-disaster banquet. Rebuilding more safely may cost more, take longer, and sometimes conflicts with private property interests and public tax base and economic priorities. And despite recent expansion of funding for mitigation, the lion's share of federal disaster assistance is still devoted to rebuilding the *status quo ante*, as quickly as possible.²⁰⁶

Thus, while mitigation has been recognized as an important part of the puzzle of reducing the costs of natural disasters, it has not yet been implemented in such a way that it can make a significant impact.²⁰⁷ Political problems, discussed later in this Part, may be the single largest barrier to wide-ranging implementation of mitigation strategies.²⁰⁸

C. *Response, Recovery, and Reconstruction*

In the first two weeks after a disaster, thousands of decisions are made by exhausted volunteers and government workers under pressure to do all they can. At the same time, thousands of promises are made by politicians in front of TV cameras. Victims who have lost everything, and victims who have lost a few of grandma's dishes, all expect to be made whole²⁰⁹

Disaster situations do not start off organized. It is the role of the federal government to come into these often chaotic situations and decide who gets what type of help and when that help will come.²¹⁰ Understandably, the initial focus is on the inhabitants' physical health and safety,

1960s. In actual practice, however, only a fraction of the mitigation measures known to be effective have been implemented." *Id.* (internal quotation marks omitted).

²⁰⁶ *Id.* at 71.

²⁰⁷ See generally *id.*; MEADE & ABBOTT, *supra* note 169.

²⁰⁸ See *infra* Part IV.D.

²⁰⁹ COMERIO, *supra* note 172, at 19.

²¹⁰ See, e.g., 42 U.S.C. §§ 5121, 5170a, 5170b, 5172 (2007).

as well as their ability to be economically self-sufficient. It is against this backdrop that decisions about what and how to rebuild are made. These early decisions, however, "can foreclose many opportunities to reshape the patterns of development in a community so as to make it better and safer by reducing vulnerability to future disasters," creating "a cycle of damage and repair."²¹¹

Federal agencies that are involved in dispersing funds for reconstruction after a disaster must consider alternatives to simply rebuilding to the pre-existing specifications. A handbook for urban planning professionals aimed at planning for post-disaster recovery explains that "[t]he plan for post-disaster recovery and reconstruction should have, as part of its policy objectives concerning economic recovery, not just the objective of restoring normal economic activity but that of making it more resistant to such disruptions should nature strike again."²¹² Much of the time, it is possible to implement simple requirements for reconstruction, such as tougher building codes that incorporate proven mitigation techniques.²¹³ At times, however, these easier mitigation efforts, such as tougher

²¹¹ SCHWAB, *supra* note 193, at 7. Michael Eric Dyson offers San Francisco's response to the earthquake and fire in 1906 as an example of this cycle of disaster and repair:

[I]n their rush to quickly rebuild San Francisco, city leaders gave in to the wishes of a well-financed and well-insured private business community, which sparked the city's quick recovery from disaster.

The business community ignored redevelopment plans that took into account the city's precarious site. Instead, they followed the original patterns of streets and land use. . . . San Francisco chose to "build at a rate and manner which made the city not only less beautiful than was possible, but more dangerous." . . . In 1989, their words rang true: San Francisco's Marina District, resting on the rubble from 1906, was severely damaged in the Loma Prieta earthquake.

DYSON, *supra* note 77, at 38-39.

²¹² SCHWAB, *supra* note 193, at 55. The handbook explains:

In essence, this means seizing the opportunity, where it is deemed appropriate, to move the community's most vital businesses out of harm's way. In other cases, such as waterfront or water-related activities that must remain along the coast or shoreline or in a floodplain, the objective may instead be to make them less vulnerable to damage through floodproofing, elevation, or other structural mitigation approaches.

The most dramatic examples of building a disaster-resistant economy have come from small towns that have either completely relocated or at least moved their central business district[s] from the path of disaster. Soldiers Grove, Wisconsin, set a notable example by relocating its entire downtown away from the Kickapoo River floodplain in the early 1980s, thus forever eliminating what had been a repetitive problem.

Id. (citation omitted)

²¹³ *Id.*

building codes, may not be enough to solve the problem.²¹⁴ More drastic approaches, such as the re-zoning of the land or, in extreme cases, the relocation of entire towns may be appropriate.²¹⁵ Though this sounds severe, it may make significantly more sense in the longer term.

Many property owners are facing the need to rebuild or to repair damaged buildings, and while this circumstance generally leads to pressure to allow them to rebuild the same structures in the same places, this need not always be the outcome—certainly not where the local government is prepared with some alternatives and has identified in advance some resources with which to implement them.²¹⁶

By refusing to re-create a recently destroyed status quo, the federal government could prevent the continuation of a cycle of disaster and help to drastically reduce the costs required in subsequent response and recovery efforts.

D. Political Problems

[T]he politically most popular policy—expanding federal disaster relief assistance—is both costly and does little to control longer-run growth of disaster losses. On the other hand, the policies which are believed to be the most effective in these latter respects—preparedness and mitigation—are politically less salient and therefore unlikely to receive much attention during the active stages of federal disaster policymaking.²¹⁷

Despite their obvious connection to the reduction of future disaster costs, mitigation programs encounter problems of politics when attempting to secure funding.²¹⁸ In addition, disaster relief assistance and other federal government programs encourage just the type of development in coastal areas that mitigation efforts would attempt to discourage if they were appropriately funded.²¹⁹ These political problems present obstacles

²¹⁴ *See id.*

²¹⁵ *See id.* (citing Soldiers Grove, Wisconsin, as an example).

²¹⁶ *Id.* at 62-63.

²¹⁷ MAY & WILLIAMS, *supra* note 172, at 3.

²¹⁸ *See id.* *See also* GODSCHALK, *supra* note 185; PLATT, *supra* note 187.

²¹⁹ *See infra* notes 229-35 and accompanying text.

to the successful operation of mitigation programs that could otherwise save the federal government and taxpayers hundreds of thousands of dollars over the long-term.

Supporting providing communities hit with disasters with sufficient funding to restore them to their previous conditions is politically popular.²²⁰ However, supporting additional building code requirements that would require homeowners (who are also voters) to put additional funds into their homes that they may not recognize as necessary, or to support land use regulations that could appear similarly frivolous is not politically popular.²²¹ In particular, "[t]he property rights movement and the takings issue . . . have diminished the ability or will of federal, state, and local officials to utilize land use regulations."²²²

The federal government also encounters problems of state and local politics when attempting to implement its mitigation programs.²²³ The priorities of state and federal government actors are not always aligned:

On the one hand, federal officials have a strong stake in promoting hazard mitigation and preparedness but little direct control over the effectiveness of such efforts. On the other hand, in the aggregate, subnational governments and individuals owning property in hazardous areas directly control the effectiveness of mitigation and preparedness policies, but for the most part actions consistent with such policies are low on their list of priorities.²²⁴

Due to the inability of the federal government to directly change local building codes or land use regulations, some have suggested that the federal government condition disaster assistance on a community's implementation of

²²⁰ See MAY & WILLIAMS, *supra* note 172, at 3-5.

²²¹ *Id.*

²²² PLATT, *supra* note 187, at 295. The Constitution requires that the government compensate landowners if a land use regulations strips their property of all of its economic value. U.S. CONST. amend. V; *Lucas v. S.C. Coastal Council*, 505 U.S. 1003 (1992).

While the Supreme Court decision in *Lucas v. South Carolina Coastal Council* has not spawned an outpouring of anti-regulatory decisions in the lower federal or state courts, the threat of *Lucas*-based lawsuits has caused public agencies at all levels of government to refrain from restricting property rights, even in the face of well-documented natural hazards.

PLATT, *supra* note 187, at 295 (citation omitted).

²²³ See MAY & WILLIAMS, *supra* note 172, at 5; PLATT, *supra* note 187, at 200.

²²⁴ MAY & WILLIAMS, *supra* note 172, at 5.

mitigation programs.²²⁵ While states with a mitigation plan can receive an increased federal contribution for any mitigation measures taken directly following a declared disaster, in reality this bar has been set quite low.²²⁶ State and local governments, however, are unlikely to change building codes and land use regulations themselves, as they often conflict with economic development goals.²²⁷ Thus far, as one critic so simply explains, “FEMA has not had the visibility, leadership or political clout to bring about the integration of programs or of the investments in mitigation and preparedness.”²²⁸

The federal government itself also encourages development in hazard-prone areas through comprehensive disaster assistance programs.²²⁹ Examples of federal programs that encourage development in areas where mitigation would otherwise discourage it include disaster assistance funds,²³⁰ subsidized flood insurance under the National Flood Insurance Program,²³¹ and tax benefits for disaster losses such as the casualty loss deduction under the tax code.²³² These federal programs are

²²⁵ See PLATT, *supra* note 187, at 297-98. Platt explains:

State and localities have legal authority to guide development away from the most hazardous locations and areas of repetitious damage. The federal government lacks this authority. It is therefore incumbent on the nonfederal members of the “partnership” to do their part in reducing future losses to their citizens, to their own jurisdictions, and to the nation. If they fail to act prudently in their development decisions, their eligibility for flood insurance and public assistance (PA) under the Stafford Act should be suspended, or provided under less favorable financial terms, such as at a higher premium level or nonfederal cost-share requirement.

Id.

²²⁶ 42 U.S.C. § 5165(a) (2007). The only guidelines for the state mitigation plan require the state to:

- (1) identify the natural hazards, risks, and vulnerabilities of areas in the state;
- (2) support development of local mitigation plans;
- (3) provide for technical assistance to local and tribal governments for mitigation planning; and
- (4) identify and prioritize mitigation actions that the State will support, as resources become available.

Id. § 5165(c).

²²⁷ See COMERIO, *supra* note 172, at 200.

²²⁸ PLATT, *supra* note 187, at 88 (quoting a 1993 National Academy for Public Administration report entitled “Coping with Catastrophe”).

²²⁹ See generally GODSCHALK, *supra* note 185, at 35; PLATT, *supra* note 187, at 291-93.

²³⁰ PLATT, *supra* note 187, at 293.

²³¹ GODSCHALK, *supra* note 185, at 35.

²³² *Id.*

so comprehensive that "[a]fter Topsail Island, North Carolina, was devastated by hurricanes Bertha and Fran in the summer of 1996, none of the beachfront communities that share the island had to raise taxes to pay for repair costs."²³³ Though a few innovative programs attempt to avoid this problem,²³⁴ a definitive solution has yet to be implemented nationwide.²³⁵

The federal government's role in encouraging development, coupled with the political unpopularity of mitigation measures and the federal government's current inability to force their adoption by state and local governments, causes proven mitigation measures to be passed up in favor of a more costly and more dangerous disaster response and recovery policy. "The basic challenge for reform is to convert the original Stafford Act approach from a disaster-driven system to a policy- and threat-driven system so that it becomes proactive rather than reactive."²³⁶

²³³ PLATT, *supra* note 187, at 293.

²³⁴ The Coastal Barrier Resources Act ("CoBRA") is perhaps the best example. Enacted in 1982, it removes federal subsidies for development that takes place on designated undeveloped barrier island units. Coastal Barrier Resources Act, Pub. L. No. 97-348, 96 Stat. 1653 (1982) (codified as amended at 16 U.S.C. §§ 3501-10 (2007)).

The area covered by the act was substantially expanded under the Coastal Barrier Improvement Act of 1990 and now includes some 600 barrier island units and 1,200 miles of shoreline. Several national studies have attempted to examine its effectiveness at discouraging barrier island development, and considerable debate has occurred about the actual effects of CoBRA. Although CoBRA has slowed development in some coastal areas, economic pressures often overcome the withdrawal of these public subsidies.

GODSCHALK, *supra* note 185, at 35 (citation omitted).

²³⁵ Some critics, such as Mary Comerio, have proposed a drastic reduction in the disaster recovery and reconstruction funds provided by the federal government as a solution to their inability to control the mitigation policies of state and local governments as well as individual property owners. COMERIO, *supra* note 172, at 26.

One approach to disaster recovery would be to simply let the marketplace sort out the winners and losers after a disaster, focusing government and charitable aid only on the emergency period. Individuals would then make decisions to stay in or leave an area, to rebuild housing or not, based on their jobs and personal financial circumstances. After a disaster, a region might grow with new investment or shrink if people and businesses decided to relocate rather than rebuild. In this circumstance, a government might decide to intervene in financing rebuilding efforts or not, depending on the impacts to particular market sectors or the economic significance of the region . . . If such hard-hearted market-driven models are unacceptable in a society, then private and public disaster recovery requires a reliable source of capital to finance building repairs.

Id.

²³⁶ GODSCHALK, *supra* note 185, at 528.

V. IS THERE A BETTER WAY?

One month after Hurricane Katrina made landfall, Erik Olson, a senior attorney with the National Resources Defense Council, was asked to speak before the House Committee on Energy and Commerce's Subcommittee on Environment and Hazardous Materials about the environmental effects of Hurricane Katrina.²³⁷ After commenting extensively on the possible health effects of the damage to the environment, Mr. Olson explained that "waivers of environmental laws would kick hurricane victims while they are down."²³⁸ Referring specifically to federal response and recovery actions following Hurricane Katrina, Mr. Olson warned of the consequences of these waivers or exemptions: "Throughout this effort, cleanup standards and other health safeguards must be kept strong, to assure that people made vulnerable by the storm are not further threatened by inadequate cleanups or irresponsible reconstruction practices."²³⁹ Mr. Olson's statement shows that it is concern for the future of human residents, not just concern for the state of the environment for its own sake, that has motivated many scholars to question the current federal approach to environmental regulation in the post-disaster context.

After Hurricane Katrina hit the gulf coast in August of 2005, Audwin M. Samuel, Mayor *pro tem* of Beaumont, Texas, testified before the House Committee on Homeland Security that "[t]he highest priority of all levels of government in addressing disaster and terrorism issues should be prevention and mitigation. Mitigation saves lives and reduces injuries; reduces economic losses; maintains and protects critical infrastructure; and reduces the liability borne by local governments and elected officials."²⁴⁰ Yet, a report requested by President Bush entitled *The Federal Response to Hurricane Katrina: Lessons Learned* mentions hazard mitigation only a handful of times in several hundred pages.²⁴¹ The same report devotes substantial attention to recommendations for improving the preparedness of the nation's disaster response system, but

²³⁷ Statement of Erik D. Olson, *supra* note 99, at 2.

²³⁸ *Id.* at 7.

²³⁹ *Id.*

²⁴⁰ *Federalism and Disaster Response: Examining the Roles and Responsibilities of Local, State, and Federal Agencies: Hearing Before H. Comm. on Homeland Security, 109th Cong.* (2005) (statement of Audwin M. Samuel, Councilmember and Mayor *pro tem* of Beaumont, Texas), available at http://chs-republicans.house.gov/Files/Hearing/Testimony/Testimony_Samuel_0.doc.

²⁴¹ See TOWNSEND, *supra* note 97.

does not suggest that hazard mitigation has a role to play in reducing the effects of future storms.²⁴² Even a report from the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina creatively entitled *A Failure of Initiative*, while not hesitating to criticize the actions of the federal government surrounding the hurricane,²⁴³ does not cry out for the implementation of effective hazard mitigation programs.²⁴⁴

Waivers of federal environmental regulations in the wake of natural disasters such as hurricanes open the door for response, recovery, and reconstruction efforts that pay little attention to impacts on the natural environment.²⁴⁵ The coastal wetlands of the gulf coast play an important role not only in the region's economy, but also in slowing down incoming hurricanes and mitigating the damage that they cause to people and property in the surrounding areas.²⁴⁶ The experience of Hurricane Katrina demonstrates the disastrous consequences that wetlands loss and environmentally careless response activities have on a region's population and natural environment as well as the focus of federal government officials on these immediate response activities at the expense of long-term avoidance of future devastation.²⁴⁷ Despite political barriers to its implementation and widespread use, mitigation plays an essential role in disrupting the cycle of property damage from natural disasters such as hurricanes.²⁴⁸ Our federal government must behave "in a way that reduces the risk of flooding and hurricanes in the future, and the human suffering that follows."²⁴⁹ This cannot be done without increased attention to the effects

²⁴² *Id.*

²⁴³ See SELECT BIPARTISAN COMMITTEE TO INVESTIGATE THE PREPARATION FOR AND RESPONSE TO HURRICANE KATRINA, *A FAILURE OF INITIATIVE* (2006). The first sentence of the "Executive Summary of Findings" opens: "The Select Committee identified failures at all levels of government that significantly undermined and detracted from the heroic efforts of first responders, private individuals and organizations, faith-based groups, and others." *Id.* at 1.

²⁴⁴ See *id.*

²⁴⁵ See *supra* Part I.

²⁴⁶ See *supra* Part II.

²⁴⁷ See *supra* Part III.

²⁴⁸ See *supra* Part IV.

²⁴⁹ Statement of Rod Emmer, *supra* note 199, at 2. Several authors have expressed the opinion that a forward-looking response program is necessary, as opposed to the current model which predominantly addresses disasters after they occur. Mary Comerio discussed the financial implications of each strategy:

The frequency and intensity of disasters since 1989 reopens the question of how society organizes disaster response and pays for recovery assistance. We cannot continue under the present model. Insurers are no

of federal disaster response programs and policies on delicate environments. Ideally, disaster response would not only restore people and property to their pre-disaster status, but address any damage sustained by the natural environment at the same time. Such a program would decrease disaster response costs over the long term and could reduce damages beginning with the very next hurricane.

longer willing to provide affordable coverage for full replacement value on every house in areas of high risk. They would rather leave the market entirely. At the same time, government cannot take on the role of a full-service disaster-recovery lender. Further growth of government spending in disaster recovery raises the issue of whether there should be any public assistance for private losses.

COMERIO, *supra* note 172, at 23. Rod Emmer addressed the issue of the fairness of the Hurricane Katrina spending policies to taxpayers who chose to live in places that are not hazard-prone:

All of us will contribute to the rebuilding of the Gulf Coast and the New Orleans area, not only through our personal contributions but with our tax dollars. Therefore, [not only must] there . . . be an evaluation of how we plan, mitigate, and respond to natural hazards in order to ensure that the nation is not ignoring natural hazards while positioning to deal with human-caused disasters and acts of terrorism. We must rebuild in a way that reduces the risk of flooding and hurricanes in the future, and the human suffering that follows.

Statement of Rod Emmer, *supra* note 199, at 2. Erik Olson, speaking on behalf of the Natural Resources Defense Council, addressed the role that attention to the environment has in the process of revising disaster planning and response:

We must adopt a major coastal wetland restoration program in the wake of Katrina to build back what we ourselves destroyed. It is also critical to ensure that flood control projects ordered by Congress and developed by the Army Corps of Engineers are prioritized to protect population centers and serve legitimate flood control purposes, not the call of pork-barrel politics.

Statement of Erik D. Olson, *supra* note 99, at 9.