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Policies of Loss: Coastal Erosion and the Struggle to Save Louisiana's Wetlands

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POLICIES OF LOSS: COASTAL EROSION AND THE STRUGGLE TO SAVE LOUISIANA'S WETLANDS

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For Vincent:
Thank you for your support
(and letting me ignore you when I was writing)

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LIST OF SELECTED ABBREVIATIONS

CARA – Conservation and Reinvestment Act

CBRA – Coastal Barrier Resources Act

CEIP – Coastal Energy Impact Program

CEPTF – Coastal Environment Protection Trust Fund

CEQ – President's Council on Environmental Quality

CIAP – Coastal Impact Assistance Program

CMP – Coastal Management Plan

CPC – City Planning Commission of New Orleans

CPRA – Louisiana Coastal Protection and Restoration Authority

CRCL – Coalition to Restore Coastal Louisiana

CUP – Coastal Use Permit

CWA – Clean Water Act

CWEL – Coastal Wetlands Environmental Levy

CWPPRA – Coastal Wetlands Planning, Protection, and Restoration Act (Breaux Act)

CZMA – Coastal Zone Management Act

DNR – Louisiana Department of Natural Resources

DOTD – Louisiana Department of Transportation and Development

DWF – Louisiana Department of Wildlife and Fisheries

EIS – Environmental Impact Statement

EWRA – Emergency Wetlands Resources Act

FSA – Food Security Act of 1985

FWPCA – Federal Water Pollution Control Act

FWS – United States Fish and Wildlife Service

GOMESA – Gulf of Mexico Energy Security Act

LACCMR – Louisiana Advisory Commission on Coastal and Marine Resources

LCA – Louisiana Coastal Area program

LCC – Louisiana Coastal Commission

LCWRP – Louisiana Coastal Wetlands Restoration Plan

LOOP – Louisiana Offshore Oil Port

LPVHPP – Lake Pontchartrain and Vicinity Hurricane Protection Project

LWCF – Land and Water Conservation Fund

MLODS – Multiple Lines of Defense Strategy

MRC – Mississippi River Commission

MRGO – Mississippi River Gulf Outlet

NEPA – National Environmental Policy Act

NRC – National Research Council

OCS – Outer Continental Shelf

PAR – Public Affairs Research Council of Louisiana

PPL – Priority Project List

SLCRMA – State and Local Coastal Resources Management Act

SLO – Louisiana State Land Office

USACE – United States Army Corps of Engineers

WCRTF – Wetlands Conservation and Restoration Trust Fund

WLFC – Louisiana Wildlife and Fisheries Commission

WRPA – Water Resources Planning Act

ABSTRACT

Since the 1930s, Louisiana has lost approximately 1,800 square miles of land due to the subsidence of the state's coastal wetlands. By the early 1970s, public officials and private citizens were starting to become aware of the crisis on the coast, and a broad agreement developed among state and federal representatives that action was needed to address the problem. Over the course of nearly forty years, policymakers in Louisiana and Washington, D.C., implemented a series of laws and regulations meant to protect vulnerable ecosystems like the state's wetlands. In the 1980s, officials also started crafting policies to help restore Louisiana's shrinking coastline. While considerable progress has been made to slow the subsidence, stopping or reversing coastal erosion has proven to be nearly impossible. Inefficient bureaucratic management, insufficient funding, and the failure to substantially alter land-use and water-use policies in Louisiana have undermined the state's conservation and restoration efforts since the 1970s. The catastrophic consequences of Hurricane Katrina forced officials in Baton Rouge and the federal government to correct some long-standing problems, but the implementation of a fully comprehensive restoration and management plan remains piecemeal – even a decade after the devastating 2005 hurricane season. This dissertation examines the broad context of the political and economic climate that contributed to the development of coastal erosion in Louisiana and closely examines the state and federal policy responses to the crisis between 1970 and 2009.

INTRODUCTION

Between 1932 and 2010, the state of Louisiana experienced a net loss of land that totaled 1,883 square miles.[1] The average rate of loss during the time period 1956-1978 was about thirty square miles per year, while the annual rate of loss was approximately sixteen square miles from 1985-2010.[2] The sinking of wetlands is a normal part of the deltaic cycle, but Louisiana gained more land than was lost until the twentieth century. After the 1930s, the state's coastline started to retreat as wetlands were lost without being replaced. Government representatives and the public became aware that Louisiana was losing land by the early 1970s, and officials began to implement a series of laws and regulations to combat the erosion. Yet the policy responses were often slow, poorly funded, or too fragmented to effectively halt the loss of wetlands. Not until 2007 did the state commit to the sort of large-scale restoration program that had been urged by coastal experts for at least twenty years. Specific projects designed to reduce land loss and flooding events did not appear in a comprehensive master plan until 2012.[3] Given the significance of Louisiana's wetlands to its economy, infrastructure, and coastal population, one might wonder what took so long.

A lack of support for coastal restoration does not seem to explain the long gap between recognition and action. When state officials were considering whether to accept the master plan

[1] Brady Couvillion et al., *Land Area Change in Coastal Louisiana from 1932 to 2010* (Denver, CO: U.S. Geological Survey, 2011) 4, http://pubs.usgs.gov/sim/3164/downloads/SIM3164_Pamphlet.pdf.

[2] Louisiana Coastal Protection and Restoration Authority, "Louisiana Coastal Facts," (Baton Rouge, LA: Louisiana Coastal Protection and Restoration Authority, 2011), 1, http://www.americaswetland.com/photos/article/Coastal_facts_sheet_03_27_2012.pdf. Rates of loss have been reported differently by public and private entities, and rates of loss have also varied over time. The total land losses reported in the opening paragraph are current government estimates and included to give an overall view of land loss since the mid-1950s. For the remainder of this dissertation, rates of loss are reported as they appeared in source material. This is done to reflect the information available to the public and policymakers at the time.

[3] Amy Wold, "Protective Pattern – Master Coastal Plan Called Realistic," *Advocate* (Baton Rouge, LA), January 13, 2012, sec. A, Newsbank Louisiana News Sources (MERLIN_17036557). For the remainder of this dissertation, the *Advocate* refers to the newspaper published in Baton Rouge, and "NewsBank Louisiana News Sources" will be abbreviated "NB LA."

in 2012, a poll conducted on behalf of the National Audubon Society indicated that eighty-six percent of the state's residents wanted their legislators to vote in favor of the proposal. Just over ninety percent of Louisianans rated the coastal zone and wetlands as "very important" to the future of the state.[4] Groups such as the Coalition to Restore Coastal Louisiana (CRCL) or the Lake Pontchartrain Basin Foundation had been advocating for the protection and restoration of Louisiana's wetlands for decades. Political leaders such a U.S. Senators John Breaux and J. Bennett Johnston had fought for federal assistance to help pay for restoration during the 1990s, and Governor Mike Foster helped launch the America's WETLAND Foundation to bring national attention to the problem of coastal erosion in 2002.[5]

A lack of economic, social, or ecological importance also does not seem to explain why the development of a large-scale comprehensive master plan took so long. In recent years, ninety percent of the oil and gas that comes from the Outer Continental Shelf (OCS) flows through infrastructure that is protected by Louisiana's wetlands. A fifth of the nation's commerce moves through the state's southern waters on an annual basis. Over two million people live in the nineteen parishes that make up the coastal zone. The state's wetlands serve as a habitat for five million migratory birds every winter, and the marshes provide other critical ecological functions such as storing flood waters and filtering nutrients.[6] Seafood catches from Louisiana's waters account for twenty-five percent of the total annual yield from the contiguous United States. Each of these resources is in jeopardy while the wetlands continue to disappear. More importantly, so

[4] Amy Wold, "Poll Says Most Back La. Coastal Plan," *Advocate*, April 4, 2012, sec. B, NB LA (MERLIN_17753625).
[5] Marmillion + Company, *America's WETLAND: Progress Report, 2002-2009* (New Orleans, LA: Marmillion + Company for America's WETLAND Foundation, 2009), 1, http://www.americaswetland.com/photos/article/102408_aw-reportFinal.pdf.
[6] Louisiana Coastal Protection and Restoration Authority, *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (Baton Rouge, LA: Louisiana Coastal Protection and Restoration Authority, 2012), 20, http://sonris-www.dnr.state.la.us/dnrservices/redirectUrl.jsp?dID=4379731; William M. Lewis, *Wetlands Explained: Wetland Science, Policy, and Politics in America* (New York: Oxford University Press, 2001), 47-48; 52-53.

are human lives. Even the mildest predictions of continued land loss estimate that the state risks losing another 770 square miles of land by 2060 unless significant action is taken. Further, scientists have projected that global warming will exacerbate the problem of sea level rise in southern Louisiana, and the Gulf of Mexico could be anywhere from two to six feet higher by the end of the twenty-first century. The economic costs associated with just infrastructure losses could be a minimum of $7.7 billion *per year* over the next five decades.[7]

Clearly, there is ample evidence to support the necessity of protecting or preserving Louisiana's marshes and swamps, whether the reasons for doing so are economic, environmental, political, or social. Yet the long delay between initial reports of land loss in the early 1970s and the 2012 master plan occurred because combating coastal erosion required altering policies and patterns that have provided the foundation for economic and social growth in the state. One of the primary factors that contributed to the subsidence of Louisiana's wetlands was engineering of the Mississippi River. During the nineteenth and twentieth century, extensive systems of levees were constructed to protect both lives and property from flooding events. Humans were able to expand into areas that had previously been prone to inundation, but the levees also prevented the river from flowing onto the land to deposit the fresh water and sediments necessary to sustain the wetlands. The oil and gas industry has been a source of jobs and government revenue in Louisiana since the early twentieth century, but the pipes and canals built to facilitate production altered hydrology patterns along the coast. Large swaths of wetlands died due to the resulting salt water intrusion, and the marshes have not come back. Many of them never will.

[7] George Hobor, Allison Plyer, and Ben Horowitz, *The Coastal Index: April 2014* (New Orleans, LA: The Data Center, 2014), 12-13, https://s3.amazonaws.com/gnocdc/reports/TheDataCenter_TheCoastalIndex.pdf.

Undoing or altering the policies that contributed to land loss has been complicated by the political climate in Louisiana, as well as how Americans in general have viewed the environment. Ambitious politicians such as Earl Long saw the exploitation of natural resources as a means of funding the expansion of government services, and the idea of protecting ecosystems was not widely considered a national priority until the 1960s. In Louisiana, the government was not well-suited to incorporate environmental protection into its political and economic systems, especially when those protections clashed with industrial or urban growth. When public officials and the citizenry began to recognize the loss of wetlands as a crisis in need of a response, the policies and practices that supported Louisiana's economy and politics were already deeply entrenched and difficult to transform – particularly when doing so presented a serious financial burden. The national government became a partner in encouraging environmental protection and funding anti-erosion projects in Louisiana, but federal policies had also contributed to the loss of wetlands in the state. Enacting effective protection and restoration programs required navigating the political climate in Baton Rouge, as well as in Washington, D.C.

If politics is how we determine who gets what and when they get it, then public policy is how we implement those decisions.[8] This dissertation is primarily a study of the policy responses carried out by the state and federal governments to stop or mitigate the impacts of coastal erosion between the early 1970s and 2009. By studying policy development over a number of years, we are able to accomplish two goals. First, we are able to track changes in how a society prioritizes what it values. In other words, what do we believe is vital enough to our existence to promote or protect its sustainability and growth? As Americans started to place more importance on human

[8] Broadly defining politics as "who gets what" comes from political scientist Harold Lasswell's classic work, *Politics: Who Gets What, When, and How* (New York: P. Smith, 1950).

health and improved quality of life in the 1960s, reducing pollution and preserving natural spaces became more prominent in public policy. As Louisianans began to realize the loss of wetlands threatened their well-being, modifying activities in the coastal zone was integrated into legislation. However, new priorities and values frequently clashed with older ones such as supporting industrial growth. The resulting conflict between different values is related to the second goal for studying coastal erosion and restoration policies. By understanding the development of policy over a long period of time, we are able to gain insight about the strengths and weaknesses that have been present in policymaking. A sense of perspective on what has been effective in combating coastal erosion can assist political representatives and the public as they make future decisions about how to protect Louisiana's wetlands.

Through the examination of policy development, several themes emerge and will be discussed in the chapters that follow. One is the impact that the state's bureaucratic structure has had on decision-making within Louisiana. Weak oversight in public institutions and piecemeal planning were common among administrative agencies in Louisiana during the twentieth century and that adversely affected the management of the coastal zone. Government was not well-organized to facilitate developing the sort of comprehensive, streamlined policies that were necessary for managing complex ecosystems such as the state's wetlands. The bureaucracy lacked well-developed mechanisms for resolving disputes among coastal users, and the state did not have adequate planning processes to evaluate the broad impacts of economic and social developments on its environment.

A second theme to emerge is that the policies which supported industrial and social expansion in Louisiana also contributed to the loss of wetlands. Trying to incorporate conservation or protection into policymaking often led to conflicts among coastal users, some of

whom wanted to prioritize economic growth and some of whom wanted to see conservation of the state's wetlands as a primary policy objective. As a result, government officials attempted to rely on the "multiple use" strategy to guide policymaking in an effort to satisfy the sometimes contradictory needs of coastal users. The assumption that a single resource could fulfill multiple functions exacerbated the development of piecemeal policies. Louisiana's wetlands were simply not an ecological system that performed important environmental functions; they were also the site of economic, social, or recreational investments and had to be managed in a way that supported those different uses. By pursuing policies that depended on the exploitation of the wetlands for socio-economic growth, achieving a "sustainable" coast was an exceedingly difficult goal to reach.

The involvement of the federal government as both a contributor to the problem of coastal erosion and a partner in addressing the crisis is a third theme. Louisiana was not in the vanguard of environmental protection during the twentieth century, nor did the state have the financial resources to implement large-scale conservation, protection, and restoration programs in the coastal zone. The federal government spurred Louisiana into developing those sorts of policies and became the main source of funding for them. In turn, officials were able to use the state's importance to the national economy and the negative impacts of federal policies to generate support for coastal restoration projects. Yet the state became so reliant on federal dollars to pay for programs that officials in Baton Rouge frequently found their options restrained not just by Louisiana's own budgetary problems but also by congressional reluctance.

A fourth theme that emerges upon examining policy developments is the issue of land use. Running as undercurrent to the discussions about how to promote economic growth or implement environmental protections has been the issue of how Americans use the nation's

lands. Closely related to ideas of land use is the control of water resources. A society will have a difficult time growing and thriving if it cannot irrigate its lands or bring drinking water to its population. In a place like southern Louisiana, the relationship between the use of land and the control of water is even more pronounced. Earth and water have quite literally mixed to create the landscape on which all activities occur, and cities such as New Orleans depend on successfully managing both in order to survive. The failure to do so could be catastrophic, which leads us to the final theme – the role of crisis in policy developments regarding Louisiana's wetlands and coastal erosion. Local groups or individuals placed pressure on officials to implement policies to conserve or protect the wetlands, but external forces also played a significant role in decision-making. Sometimes the outside pressure came from the federal government, but in other cases the influence came from nature itself. In particular, hurricanes and major floods were critical events that pushed lawmakers and the public to re-evaluate how policies were crafted and implemented. Those shifts did not always lead to positive results for the nation's wetlands, but a major crisis could precipitate change more rapidly than was typically the norm.

Other authors have examined some of these themes to varying degrees. In discussions about American attitudes regarding land use, Aldo Leopold was instrumental in advancing the idea that land should not be used merely to enrich individuals. He also enlarged the concept of what constituted the human "community" in his work, *A Sand County Almanac*. Leopold argued that soil, air, water, and wildlife – in essence, the components that made up the land – should be included in the boundaries of a "community." He posited the natural world was connected to the human one and that responsible land use meant people had to behave as citizens of nature rather

than its conquerors.[9] His ideas about land and the need for a "land ethic" were extremely important viewpoints that made their way into ecology and works like *Silent Spring* by Rachel Carson.

Several historians have explored ideas about land and land-use practices in the United States, including Kenneth T. Jackson and Adam Rome. Both authors examined the importance of abundant land in the suburbanization of America, and each demonstrated that the expansion of communities into open spaces was facilitated by government policies.[10] Eric T. Freyfogle discussed land use and its relationship to private property rights in *This Land We Share: Private Property and the Common Good*. Like Jackson and Rome, he noted that American views about land use and ownership have been influenced by government policy. Freyfogle argued Americans have associated private property with economic or political independence, but he also noted that regulation of land use has been a long-standing priority of government.[11] Anne Vileisis tied land use and property rights to environmental protection regarding the nation's wetlands in *Discovering the Unknown Landscape: A History of America's Wetlands*. Among the many topics she covered in her writing, Vileisis noted that most wetlands have been privately owned and established notions about land-development rights broke down rapidly when applied to wetlands. Draining swamps or marshes can have a profound impact on an entire watershed,

[9] Aldo Leopold, *A Sand County Almanac and Sketches Here and There* (New York: Oxford University Press, 1949), 203-204.
[10] Kenneth T. Jackson's work, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985) covered policy developments to promote housing, and one of the factors he identified as crucial to suburban sprawl was the availability of cheap land across much of the country. Adam Rome also looked at policies that facilitated the growth of suburbs, but he tied problems of suburban sprawl to the development of U.S. environmentalism in his work, *Bulldozer in the Countryside: Suburban Sprawl and the rise of American Environmentalism* (Cambridge, UK: Cambridge University Press, 2001). Rome posited that as suburban expansion consumed more green space or moved into areas which were risky to develop, Americans saw environmental protections as critical improving their quality of life.
[11] Eric T. Freyfogle, *This Land we Share: Private Property and the Common Good* (Washington, D.C.: Island Press/Shearwater Books, 2003), 13-20.

not just the immediate area where the wetlands were converted. According to Vileisis, Americans were relatively slow to recognize how vital wetlands were to nearby dry lands and flowing waters.[12]

There have also been works dedicated specifically to the loss of wetlands and coastal erosion in Louisiana. Journalist Mike Tidwell wrote about the impact on Cajun communities in his book, *Bayou Farewell: The Rich Life and Tragic Death of Louisiana's Cajun Coast*. After several months of traveling through small towns and speaking to scientific experts, Tidwell concluded that the residents of Louisiana's coast cared deeply about the effects of coastal erosion on their lives and livelihoods but not enough was being done to stop the loss of swamps and marshes.[13] Biologist Bill Streever also chronicled the problem of wetlands loss in *Saving Louisiana? The Battle for Coastal Wetlands* through the lens of the scientists who study the coast. Like Tidwell, the researchers and experts in Streever's book generally concurred that not enough was being done to save the state's wetlands at the beginning of the twenty-first century. A lack of coordination among government agencies slowed progress, but so did perceptions and misunderstandings about the science of coastal restoration. Streever noted that the public expected to see immediate success from all projects, but the scientists he interviewed stressed that was not how the process worked. Many of the techniques or strategies being suggested by experts were new and had never been tried before on such a large scale.[14]

Another book about the loss of Louisiana's wetlands is Christopher Hallowell's *Holding Back the Sea: The Struggle for America's Natural Legacy on the Gulf Coast*. In his work, he

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[12] Ann Vileisis, *Discovering the Unknown Landscape: A History of America's Wetlands* (Washington, D.C.: Island Press, 1997), 5-6.
[13] Mike Tidwell, *Bayou Farewell: The Rich Life and Tragic Death of Louisiana's Cajun Coast* (New York: Pantheon Books, 2003), 334-338.
[14] Bill Streever, *Saving Louisiana? The Battle for Coastal Wetlands* (Jackson, MS: University of Mississippi Press, 2001), 165; 177.

described the effects of coastal erosion on the oil industry, alligator hunters, fur trappers, and shrimpers, as well as the organizations such as the Coalition to Restore Coastal Louisiana working to bring attention to the issue. Hallowell argued saving the wetlands was imperative for the state and the nation because a healthy environment was beneficial to humans and the economy. He posited one of the most important lessons to be learned from Louisiana was that Americans have long enjoyed easy access to plentiful lands and bountiful natural resources without much thought about environmental limitations. As a result, the general public remains woefully unprepared for the impending shortages of both as an increasing number of spaces become ecologically compromised.[15]

Rather than looking at the impact that coastal erosion has had on a particular industry or group, Jason Theriot examined how the oil and gas sector has affected the state's coast in *American Energy, Imperiled Coast: Oil and Gas Development in Louisiana's Wetlands*. The book followed policymaking and changes in environmental attitudes in relation to energy development in post-World War II Louisiana. Theriot suggested that oil and gas production had a significant, and perhaps unintended, impact on the state's environment even while the industry provided jobs. Similar to Hallowell, Theriot noted that healthy, sustainable wetlands would be good for the oil business as the industry's infrastructure is heavily dependent on coastal marshes for protection against wave action. He argued that when politicians, residents, and environmental organizations began to value the wetlands as ecologically important, policy changed to reflect new attitudes about the state's environment. Oil and gas companies were no longer permitted to

[15] Christopher Hallowell, *Holding Back the Sea: The Struggle for America's Natural Legacy on the Gulf Coast* (New York: HarpersCollins Publishers, 2001), 217; 237.

trek through the marshes without care. Instead, they had to follow a host of new regulations to limit the damage done to the state's wetlands.[16]

This dissertation builds on the work of these authors but also offers new perspectives. There is not an overview of policy developments for Louisiana's coastal zone management from its genesis in the early 1970s through the post-Katrina time period, which this study intends to remedy. Further, this work also places policymaking for the state's wetlands and restoration programs into the context of broader political and environmental trends in Louisiana and the nation. The piecemeal, incremental approach to preserving and protecting the wetlands has often resulted from the interplay of larger forces in the state and the nation. The general political climate of Louisiana affected the specifics of coastal zone management, just as national shifts in environmental attitudes boosted support for the conservation and protection of areas such as the state's wetlands. Yet new ideas or values that emphasized ecological vitality did not replace older ones that promoted economic and social growth. Americans and Louisianans wanted to have a healthy, appealing environment while also pursuing industrial and urban expansion. Policymaking became an expression of negotiating between old and new. This dissertation follows that process by looking at the concepts of multiple-use planning, management, and land-use philosophies in the context of the efforts to fight coastal erosion and rebuild some of the marshes or swamps that had already been lost.

Chapter 1 discusses the broad political and economic factors in the state's history that have impacted the development of coastal conservation or restoration plans in Louisiana. As the state's government grew over the course of the twentieth century, certain characteristics became entrenched in Louisiana's political climate. First, the haphazard growth of bureaucracy resulted

[16] Jason P. Theriot, *American Energy, Imperiled Coast: Oil and Gas Development in Louisiana's Wetlands* (Baton Rouge, LA: Louisiana State University Press, 2014), 222-227.

in disorganized administration, and government institutions were often ill-suited to resolve problems that arose from competing interests. Second, Louisiana's fiscal foundations were shaky and tended to rely on extractive industries or regressive sales taxes to fund basic government services. Both of those characteristics negatively impacted problem-solving and policymaking in Louisiana, and each one manifested in coastal conservation and restoration programs.

The second chapter briefly explains how coastal erosion evolved in the state, as well as attitudinal shifts about the environment that facilitated people viewing wetlands as ecosystems worthy of legal protections. Engineering the Mississippi River for flood control and navigation had the most significant impact on the development of coastal erosion in the twentieth century in Louisiana. Two other important contributors were the construction of oil and gas pipelines in the state's wetlands and the conversion of marshes or swamps into dry lands for urban or agricultural expansion. Each of these factors facilitated economic and social growth in southern Louisiana, and changing the policies that supported them was extremely difficult. Yet pressure to alter the state's management of its wetlands grew starting in the 1970s as environmentalism became a significant force in national politics. Americans saw the deterioration of their surroundings as a serious problem that required government action, and efforts to protect Louisiana's wetlands were part of that trend. Officials had to address the public's concerns about the degradation of a vital ecosystem while still trying to maintain circumstances that were favorable to economic growth.

With the relevant political and economic context established in Chapters 1 and 2, the remaining four chapters trace specific policy developments from the early 1970s through 2009. Chapter 3 discusses the policy developments undertaken by Louisiana and the national government in the 1970s. Both state and federal officials crafted laws and regulations to improve

conditions in the country's environment and targeted specific ecosystems such as coastal wetlands. However, the policies often contained significant gaps in protection. One of the reasons for piecemeal policymaking was that officials tended to adopt the concept of "multiple use" planning as the basis for legislation or regulatory schemes. Such an approach supported the belief that economic and social growth did not have to be substantially curbed in order to have a healthy environment. Americans could enjoy the benefits of a thriving economy and pleasing surroundings as long as officials planned sufficiently for multiple uses. Another reason for piecemeal policymaking was that Americans had fundamental disagreements about land-use practices, which was an issue that affected discussions about conserving or restoring wetlands throughout the remainder of the twentieth century.

Chapter 4 explores the policy developments during the 1980s, some of which were responses to the gaps that existed in contemporary legislation or regulations. State and federal officials did not abandon the idea of "multiple use," but there were efforts to fix some of the contradictory policies that contributed to the loss of wetlands. Still, policymaking in the 1980s continued to be only partially effective in reducing the loss of marshes and swamps in Louisiana. Scientists and politicians agreed that the state needed to pursue restoration plans to help replace some of the lands that had been lost, but a lack of funding impeded the implementation of that agenda. The price of oil dropped during the early 1980s, and the decline in severance taxes negatively impacted Louisiana's fiscal standing. Paying for expensive restoration projects was a low priority when the state struggled to meet its basic budgeting needs.

The fifth chapter examines policy developments in the 1990s and explores how the state and federal government became partners in the restoration of Louisiana's coast. The Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA or Breaux Act) passed in 1990

and brought a steady stream of federal dollars to help pay for conservation and restoration projects in the state. Hailed as a major breakthrough for saving Louisiana's coast, the act also established a task force to oversee the selection of projects and bring more cohesion to the management of the state's wetlands. Still, budgetary problems and inefficient administration continued to undermine the efficacy of coastal zone protection in Louisiana. By the end of the decade, government officials and private citizens agreed that the state needed a "master plan" to guide development and management of the coast. Released in 1998, the *Coast 2050* report sought to unify the different approaches to coastal management and restoration, but inadequate funding remained a major factor in implementation.

Chapter 6 discusses policy developments between 2000 and 2009 and examines how the role of Hurricane Katrina changed the trajectory of Louisiana's coastal restoration program. Prior to 2005, many of the issues that had contributed to piecemeal policymaking in the preceding decades were still present. While the state's congressional delegation managed to secure two new sources of federal revenues for Louisiana, the amounts promised to the state were insufficient to the task. When Hurricane Katrina made landfall in 2005, the consequences of Louisiana's vanishing wetlands became clear in stark and dramatic terms. Several major changes followed the 2005 hurricane season, including the consolidation of the state's coastal administration, the adoption of a master plan that incorporated restoration and hurricane protection, and a commitment by the federal government to provide more funding. By 2009, Louisianans had reason to be hopeful about the prospect that the state was finally on the path to a well-funded, well-planned restoration program.

Residents of the state also had ample reason to be skeptical about the post-Katrina order. Despite the progress made after 2005 in the management of Louisiana's coastal zone, insufficient

funding and unresolved conflicting interests persisted. More broadly, fundamental changes in land-use patterns or altering the basics of the state's budgetary structure failed to materialize. The scope of Louisiana's master plan expanded significantly after Katrina, but the vision for rebuilding the state's wetlands arguably remained too narrow. Policies in other states along the Mississippi River impact the coastal marshes and swamps, but regulating activities across multiple states falls under the purview of the federal government. Further, the effects of climate change are likely to pose an increasing number of challenges as the globe continues to warm and sea levels rise in response. These issues are discussed in the dissertation's conclusion, along with some of the lessons that can be learned by studying four decades of policymaking for Louisiana's wetlands.

CHAPTER 1: LOUISIANA POLITICS AND ECONOMICS IN THE TWENTIETH CENTURY

"Louisiana Men of Good Purpose"

On March 28, 1950, one hundred fourteen men met at the Bentley Hotel in Alexandria to form an organization that would "promote efficiency in government" in Louisiana. Inspired by the good-government group New Orleans Bureau of Governmental Research, the Public Affairs Research Council (PAR) agreed to "work in co-operation with public officials in the interest of improvement of government" and to "tell the facts about municipal and state government no matter who is in office." The newly formed council would be based in Baton Rouge with additional "focal points" in Alexandria, Lafayette, Lake Charles, Monroe, New Orleans, and Shreveport. The *Times-Picayune* in New Orleans referred to the meeting's attendees as "Louisiana men of good purpose," and the organization's ranks included prominent businessmen, lawyers, and other professionals from around the state. Despite PAR's membership hailing from the middle and upper classes, the organization's leadership did not envision PAR as being an advocacy group for well-to-do taxpayers.[1] Rather, the council would be "non-political" and dedicate itself to the "study of expenditures, operation and administration of state and local government." The executive director of PAR, Dr. Robert W. French of Tulane University, emphasized the group's non-partisan nature in 1951 when he stated the council would "endorse no candidates and campaign for no issues. It analyzes problems, presents factual information, and examines alternative solutions. Action will be left to individual citizens."[2]

[1] Ken Gormin, "State Research Council Formed," *Times-Picayune* (New Orleans, LA), March 29, 1950, America's Historical Newspapers; John Maginnis, *The Politics of Reform – PAR: 50 Years of Changing Louisiana* (Baton Rouge, LA: Public Affairs Research Council, 2000), 9-12. For the remainder of this dissertation, the *Times-Picayune* or the *Times-Picayune/States-Item* refers to the newspaper published in New Orleans, and "America's Historical Newspapers" will be abbreviated "AHN."
[2] "Research Group Setup Complete," *Times-Picayune*, May 5, 1951, AHN.

There certainly was a need for an organization such as PAR in Louisiana during the mid-twentieth century, and the council set out to inform citizens of the "Pelican State" about the activities of their elected officials. Within its first regular year of operation, PAR began publishing reports such as the 1952 "Voter's Guide to the Amendments" to help residents sort through the intricacies of state government and administration.[3] The group also researched budgetary matters, the use of patronage by the executive branch, and the persistent increase of administrative agencies.[4] By the 1960s, PAR was distributing regular newsletters that explored the various challenges faced by the state, including analysis on health care for senior citizens, the potential for using public bonds to attract industry, and the extensive powers held by the state's governor.[5] As of 2016, the organization is still an active commentator on the public affairs of Louisiana and continues to put out reports about a range of concerns, including briefs about the state's budget crisis and guides on constitutional amendments.[6]

Upon reviewing the variety of publications issued by PAR over the years, there is remarkable consistency in the issues that the organization has commented on during the last six decades – budgetary problems, explanations of yet more constitutional amendments, or public health matters to name a few. The reasons for the consistency are tied to the historical events and

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[3] Public Affairs Research Council of Louisiana, *Voter's Guide to the Amendments*, PAR Guide no. 3 (Baton Rouge, LA: Public Affairs Research Council of Louisiana, 1952), 6-7.
[4] "State Spending Rated as Third Highest in U.S.," *Times-Picayune*, July 3, 1951, AHN; "State Back to Waste," *Times-Picayune,* November 6, 1951; "Public Affairs Group to Elect," *Times-Picayune*, March 24, 1951, AHN.
[5] Public Affairs Research Council of Louisiana, "Analysis of Kerr-Mills Act in LA.," *PAR Analysis*, no. 109 (Baton Rouge, LA: Public Affairs Research Council of Louisiana, February 1963); Public Affairs Research Council of Louisiana, Inc., "Public Bonds for Private Industry," *PAR Analysis*, no. 120 (Baton Rouge, LA: Public Affairs Research Council of Louisiana, Inc., September 1964); Public Affairs Research Council of Louisiana, "Powers of the Governor and Gubernatorial Succession," *PAR Analysis*, no. 127 (Baton Rouge, LA: Public Affairs Research Council of Louisiana, April 1965).
[6] Public Affairs Research Council of Louisiana, "PAR Guide to the State Budget Crisis: How We Got Here – The Jindal Record – The Real Priorities," *PAR Research Brief*, (Baton Rouge, LA: Public Affairs Research Council of Louisiana, April 2015), http://www.parlouisiana.com/studiesreportsbydate.cfm; Public Affairs Research Council of Louisiana, *PAR Guide to the 2015 Constitutional Amendments: An Independent, Non-Partisan Review*, no. 336 (Baton Rouge, LA: Public Affairs Research Council of Louisiana, September 2015), http://www.parlouisiana.com/studiesreportsbydate.cfm.

circumstances of Louisiana's development over the twentieth century. Reforms and changes to the system of government in the state have often been slow, piecemeal, and unevenly implemented. As a result, governmental organization in Louisiana has not been conducive to coherent, comprehensive policymaking – particularly in areas that required long-term, nuanced planning. Instead, the bureaucratic structure often led to inefficient administration, weak oversight mechanisms, and favoritism toward special interest groups.[7] The state's fiscal policies also failed to provide consistent funding for the services expected of governments as the twentieth century advanced, and Louisiana has frequently attempted to meet its budgetary needs by relying on extractive industries such as oil and gas production or on regressive sales taxes.[8]

The persistence of these issues has impacted the state's response to a variety of challenges, including the problem of coastal erosion. Administrative and fiscal weaknesses present in the broad structure of government also manifested in the bureaucracy that managed Louisiana's coastal zone. The result has been piecemeal, inconsistent policy responses that were often inadequately funded. Even as officials and the public acknowledged that the loss of wetlands presented a serious threat to the welfare of the state, Louisiana struggled to create and

[7] The concept of efficiency – whether a policy or organization performs efficiently or inefficiently – draws on Daniel Elazar's discussion of American political culture in his work, *American Federalism: A View from the States* (New York: Thomas Y. Crowell Company, 1972). Elazar defined "efficiency" as "the achievement of goals in a manner that involves the least wasteful or minimum expenditure of resources" (91). He continued that "efficiency is measured in predominantly commercial terms" and has often been expressed primarily in relation to the exercise of power. In other words, a "hierarchical organization" such as a government agency would be considered efficient if that agency were to use its authority to meet goals that further the "exchange of goods, services, or ideas" and did so in a manner that generates as little waste as possible – waste of time, money, or resources (92). In this sense, Louisiana's bureaucracy often exercised power in ways that directly wasted time, money, or resources, and in some cases, indirectly wasted those things by failing to address goals that could have prevented waste. See 90-93 in *American Federalism* for a fuller discussion of Elazar's examination of efficiency in the context of American political culture.

[8] Louisiana collects revenues from extractive industries in several ways. The severance tax is applied to the removal of natural resources from lands or waters belonging to the state. Bonuses are paid one time when a mineral lease is secured from the state. Rental fees are paid annually when a mineral well stands idle, and royalty fees are paid yearly when a well is producing oil or gas. The value of those taxes and fees have varied over the years and were mostly in place by the late 1920s or early 1930s. Severance taxes generally make up the bulk of revenues generated by oil and gas revenues in Louisiana. See Diane M. Lindstedt et al., *History of Oil and Gas Development in Coastal Louisiana* (Baton Rouge, LA: Louisiana Geological Survey, 1991), 29-30; 103-104.

fund conservation and restoration programs that were on par with the extent of the erosion crisis. This chapter will focus on how bureaucratic disorganization and dependence on shaky revenue sources such as severance taxes became part of the state's political climate. The circumstances of those two factors evolved and persisted as the twentieth century progressed, and each one ultimately affected the state's approach to coastal erosion.

Big Government Comes to Louisiana

Both state and national governments grew in size and scope over the course of the twentieth century. Economic challenges, issues of national security, or increased demands from citizens for political influence prompted governments to assume new roles and functions. With more duties to fulfill, bureaucracies became more numerous and "big government" became a fixture of American political life.[9] The story of big government in Louisiana usually starts with Huey P. Long in 1928. As the tale often begins, Long rescued the state's population from decades of neglect and a small, apathetic government that did little to assist the public.[10] Long advocated the idea that the state should spend money to help its citizens, even if that meant going into debt or raising taxes on industry. While serving as governor, he orchestrated policies that provided free textbooks to school children, increased people's access to health care with new

[9] Marc Landy and Sydney Milkis discussed the expansion of government's roles and responsibilities during the course of the twentieth century in their work, *American Government: Balancing Democracy and Rights* (New York: Cambridge University Press, 2008). The authors identified the growth of government as being primarily related to a key idea in New Deal liberalism – the idea that the government should embrace "more egalitarian public policies" and assume a more active role in promoting or protecting the rights of citizens (19). For this study, "big government" refers to 1) the growth of government in terms of an increasing number of employees, agencies, and programs, and 2) an activist government – one that implements policies to protect or expand the rights of citizens or provides services meant to benefit the general welfare. Practically speaking, growth in Louisiana's government did not always stem from promoting the general welfare, nor did the results of growth necessarily lead to public benefits. However, the argument that growth in government could be positive for society was a useful framing tool and was tied to the ideals of government activism found in early twentieth-century Progressivism and New Deal liberalism. See 19-20; 215-219 in *American Government*.

[10] Michael Kurtz and Morgan Peoples, *Earl K. Long: The Saga of Uncle Earl and Louisiana Politics* (Baton Rouge, LA: Louisiana State University Press, 1990), 3.

hospitals, and built over nine thousand miles of highways.[11] However, Long's attempts to make Louisiana's government more responsive to the needs of the people were not entirely unprecedented. Governors in the early twentieth century instituted Progressive-style reforms by abolishing the convict-lease program, introducing a primary system to select political nominees, and establishing a minimum wage.[12]

Long set himself apart from previous politicians by attacking "the moneyed interests and the corporations" and by seeking support for his proposals from "the people" – the groups "who had neglected the political process and been neglected by it."[13] For example, small farmers and merchants in the state's northern and Acadian parishes gave him their enthusiastic support with majorities of sixty and even seventy percent in some places during the primary election in 1928.[14] Long used the increased participation of a "population previously ignored" by earlier ruling elites to help him dictate the state's political agenda.[15] He also used the power of patronage to maintain a firm grip over Louisiana's government by handing out jobs to loyal supporters. In a state devastated by the Mississippi River flood of 1927 and the Great Depression, the promise of state employment held considerable sway. By 1930, there were over ten thousand people on Louisiana's payrolls and the numbers continued to increase over the course of the twentieth century.[16]

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[11] Jerry Sanson, "'What He Did and What He Promised to Do…' Huey Long and the Horizons of Louisiana's Politics," *Louisiana History: The Journal of the Louisiana Historical Association* 47, no. 3 (Summer 2006): 266; 269-270, http://www.jstor.org/stable/4234200.
[12] Kurtz and Peoples, *Earl K. Long*, 3.
[13] Paul Grosser, "Political Parties," in *Louisiana Politics: Festival in a Labyrinth,* ed. James Bolner (Baton Rouge, LA: Louisiana State University Press, 1982), 264-265.
[14] Richard White, *Kingfish: The Reign of Huey P. Long* (New York: Random House, 2006), 34.
[15] Grosser, "Political Parties," 265.
[16] William Ivy Hair, *The Kingfish and His Realm* (Baton Rouge, LA: Louisiana State University Press, 1991), 166; 199.

Long paid for a larger government and more services through a combination of taxes on extractive industries and consumer-related goods and by taking out bonds to finance infrastructure projects. Early in his tenure as governor, Long convinced the legislature to implement what became a modest increase in severance taxes on oil, gas, and timber. Instead of basing the levy on "percentages of gross market value," the new rate of taxation would be "set by the quantity and quality extracted."[17] The vast amounts of oil and gas that were available in Louisiana brought in much of the money Long needed to expand services.[18] When the state required even more revenues to fund bonds for roads or salaries for new employees, Long directed the legislature to raise taxes on cigarettes and gasoline. One source of funding that Long did not take was the "dole money" being distributed by the federal government through New Deal programs in 1933-1935. Though he was out of the governor's office by that time, Long still controlled Louisiana's politics through his successor, Oscar K. Allen. The Kingfish had no interest in accepting money if he could not dictate how it was spent.[19]

Long's ironclad control over the state's legislature, the judiciary, bureaucracies, hospitals, schools, and businesses increased the dominance of the governor because there were "few checks and balances to thwart his rule." Yet the people of Louisiana did not seem to mind his dictatorial style or the graft associated with his administration.[20] Long appealed to the poor and working classes by promising that the state would provide services without much cost to the average citizen, even when he actually raised quite a number of individual and corporate taxes.[21] The circumstances of the Great Depression and Louisiana's vast wealth of natural resources helped

[17] Ivy Hair, *The Kingfish and His Realm,* 164. Legal action delayed the implementation of the tax increase until 1930.
[18] Wayne Parent, *Inside the Carnival: Unmasking Louisiana Politics* (Baton Rouge, LA: Louisiana State University Press, 2004), 71-72.
[19] Ivy Hair, *The Kingfish and His Realm*, 232; 238.
[20] White, *Kingfish*, 223-224; 251-253.
[21] Kurtz and Peoples, *Earl K. Long*, 269; Sanson, "'What He Did and What He Promised to Do…,'" 269-270.

Long amass unprecedented power for himself. He also committed the state government to a path where the idea of "free services" provided by numerous bureaucracies and paid for with mineral revenues became part of the accepted political culture.

Sam Jones and the Entrenchment of Big Government in Louisiana

Growth in Louisiana's government services continued during the 1930s, even after Long's assassination in 1935. Elected in 1936, Richard Leche and his administration enacted several policies that benefitted the state's residents. He made peace with the Roosevelt administration and brought one hundred million dollars in New Deal money to Louisiana. The governor also increased the homestead property tax exemption, established the first old age pension for the elderly, and returned control of school boards to local parishes.[22] However, Leche and other public officials engaged in levels of corruption that could not be ignored by the citizenry or the national government. In 1939, federal prosecutors issued 250 indictments against legislators, department heads, and even the president of Louisiana State University (LSU).[23]

The following year, a majority of voters made their displeasure over the Louisiana Scandals known at the polls. Though Louisianans elected Sam Houston Jones with just 51.8 percent of the vote, the margin was sufficient enough to remove the Long machine from the governor's mansion for the first time since 1928.[24] An attorney from Lake Charles, Jones drew much of his support from small business owners, as well as Louisianans who wanted to see a more businesslike approach to government. During his campaign, he denounced the excesses of "Longism" and said at an event in Shreveport in 1939, "Nobody is in favor of graft and corruption such as it has been revealed in Louisiana in recent months. I invite all factions to unite

[22] Kurtz and Peoples, *Earl K. Long*, 82-83.
[23] White, *Kingfish*, 270.
[24] Mark Carleton, "Four Anti-Longites: A Tentative Assessment," *Louisiana History: The Journal of the Louisiana Historical Association* 30, no. 3 (Summer 1989): 252-253, http://www.jstor.org/stable/4232738.

behind the man who has the most strength so that we can defeat this crowd of grafters and crooks." Jones, of course, meant that he should be that man and promised to provide a "business administration" for Louisiana.[25] He also promised to reduce the number of state employees and implement a merit-based civil service system. His proposals echoed early twentieth-century governors by stressing that government should be efficient and not place an undue burden on taxpayers.[26]

After his inauguration, Jones' first major action was to reorganize Louisiana's government. In 1940, there were 174 different state agencies, boards, and commissions, some of which were inoperative or only existed on paper. The Administrative Code of 1940 consolidated the existing agencies into twenty different departments and four independent agencies. Under the new code, departments with more than two divisions were required to keep centralized administrative records and produce annual reports on their operations. Jones also ensured that fiscal reform accompanied the administrative changes. Act 48 of 1940 introduced regular audits of the state's revenues and expenses, along with formal policies for purchasing and revenue collection. Legal challenges from pro-Long factions eventually caused parts of the reorganization to be scrapped, but the governor was still able to consolidate some of Louisiana's unwieldy bureaucracy.[27]

In addition to administrative reform, Jones intended to change how state agencies were staffed. The number of employees working for Louisiana's government had increased steadily over the twentieth century, partly in response to the growing role that the state had as a regulator

[25] "Noe, Morrison, Jones, Moseley Speak at Fair," *Times-Picayune*, October 26, 1939, AHN; "Scandals Give 10 Candidates Ammunition against Long," *Times-Picayune*, October 23, 1939, AHN.
[26] Charles Pellegrin, "Louisiana Progressivism and the American Reform Experience: Administrative Reorganization in Louisiana, 1940-1948," *Louisiana History: The Journal of the Louisiana Historical Association* 37, no. 2 (Spring 1996): 207-208, http://www.jstor.org/stable/4233291.
[27] Ibid., 208-214.

and service provider.[28] The ability to fill those jobs had long been a source of power for governors, and the power of appointment over various agencies, boards, and commissions had been written into the 1921 constitution. Huey Long used that ability expertly, and by 1935, controlled almost every state employee through patronage.[29] Jones and his supporters believed that such an approach had resulted in unqualified employees, inefficiency, and waste. By implementing a system that relied on examinations and merit to guide hiring practices, promotions, and pay raises, Jones argued that government could be more honest and less corrupt. Voters agreed with his proposal and endorsed the plan in November 1940. Employees who became "classified" as part of the civil service system could not be fired for political reasons, but they also could not engage in activities such as campaigning. A commission comprised of five members would oversee the civil service system and could not be dismissed by the governor.[30]

Newspapers and business-oriented reformers hailed the new system as a major step forward for Louisiana. However, Jones' civil service reforms did not undo the tradition of using patronage to consolidate power for the faction in charge. The governor used the two years between approval of the reform plan and its implementation to purge Long supporters and replace them with his own people. That ensured Jones' allies were more likely to remain in place since the law stipulated that employees who held their positions when the service went into effect had to take less stringent examinations. Future job seekers would have to take more difficult tests to secure positions with the government. Further, a number of state employees were excluded from civil service. Teachers, state board members, and highway workers were

[28] Charles Holbrook and Mark Carleton, "The Bureaucracy" in *Louisiana Politics: Festival in a Labyrinth*, ed. James Bolner (Baton Rouge, LA: Louisiana State University Press, 1982), 124.
[29] Pellegrin, "Louisiana Progressivism and the American Reform Experience," 206-207.
[30] Kurtz and Peoples, *Earl K. Long*, 113-115.

still dependent on political favor to remain employed.[31] Jones' reforms improved the organization of Louisiana's administration and also increased the level of professionalism in the state's civil service. The extent of his efforts to bring a "business administration" to Louisiana should not be overstated though. An unwieldy bureaucracy remained in place at the end of his tenure, and Jones did not fundamentally alter the use of patronage in the state.

World War II and its Impact on Louisiana's Economy

Jones' efforts to reorganize some parts of the state's administration were not the only changes that took place during his term. Events outside his control also had significant impact on the state's operations. In 1941, the United States entered World War II, and Louisiana became an important part of the nation's war efforts. Southern states received 17.6 percent of federal funds spent on war preparation and production, and Louisiana was the second highest recipient in the South. Over thirteen million dollars were spent on bases and training facilities for soldiers. Louisiana factories manufactured high-octane aviation fuel, aluminum, shell casings, machine lubrications, and ships.[32] The state's farms produced sugarcane, cotton, rice, and sweet potatoes, much of which was purchased by the federal government to feed U.S. soldiers.[33] Cities such as Lake Charles, which had been an important industrial center since the 1920s, experienced manufacturing growth and diversification during the war. Continental Oil Company built a five million dollar complex in 1939, and factories around the port city began producing synthetic rubber, ammonia, and magnesium.[34]

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[31] Ibid., 115-116.
[32] Sanson, *Louisiana during World War II: Politics and Society, 1939-1945* (Baton Rouge, LA: Louisiana State University Press, 1999), 211; 214-217.
[33] Jason Theriot, "Cajun Country during World War II," *Louisiana History: The Journal of the Louisiana Historical Association*, 51, no. 2 (Spring 2010): 142-146, http://www.jstor.org/stable/25699394.
[34] Sanson, *Louisiana during World War* II, 220-221.

The immediate effects of World War II helped end the lingering grip of the Great Depression and brought about some notable changes to the state's demographics. Per capita income went up, retail sales went up, and more farmers owned their farms at the end of the war than at the beginning.[35] By 1945, the influx of military personnel and people looking for jobs had increased the state's population by over thirteen percent. More residents meant greater strain was placed on public services such as schools, but the growth spike also meant more tax revenues.[36] People moved to the cities during the war, and by 1950, Louisiana was more urban than rural.[37] The war also brought federal dollars to the state. Between 1940 and 1944, the federal government poured $1.7 billion into Louisiana through war contracts and helped move along the state's process of industrialization. Some historical features of the economy remained in place though, even with the wartime changes. Per capita income stayed below the national average, and agriculture remained the largest single sector of employment after the war ended.[38]

A signal of the coming post-World War II order, Louisiana's petroleum production grew in importance during war and was a significant reason for federal investment. Six of the seven metropolitan areas that received over one hundred million dollars for plants and related equipment were located in Texas and Louisiana. Five of those cities were home to substantial petroleum-based manufacturing.[39] As demand for petroleum products increased during the

[35] Sanson, *Louisiana during World War II*, 208; 213.
[36] Ibid., 237-238.
[37] U.S. Census Bureau, *1970 Census of Population: Characteristics of the Population – Louisiana*, vol. I, part 20 (Washington, D.C.: U.S. Government Printing Office, 1973), 20-7, https://www.census.gov/prod/www/decennial.html.
[38] Sanson, *Louisiana During World War II*, 213; 239-239; U.S. Census Bureau, *Statistical Abstract of the United States, 1950* (Washington, D.C.: U.S. Government Printing Office, 1950), 178; 182; 188, http://www2.census.gov/library/publications/1950/compendia/statab/71ed/1950-01.pdf.
[39] Robert Lewis, "World War II Manufacturing and the Postwar Southern Economy," *The Journal of Southern History* 73, no. 4 (November 2007): 862, http://www.jstor.org/stable/27649570.

1940s, the oil and gas industry in states along the Gulf of Mexico responded.[40] In Louisiana, oil production went from twenty-three million barrels of oil in 1930 to over two hundred million barrels in 1950. Production continued to climb during the next several decades, as did the amount of money that Louisiana collected from the oil and gas industry.[41] By 1960, severance taxes made up forty-two percent of total revenues collected by the state, a trend which continued until the mid-1970s.[42] The growth of the oil industry had other long-term consequences as well, specifically in terms of environmental impacts. Though pipelines had been constructed in Louisiana's marshes throughout the 1930s, their numbers increased during the war because of fears related to German U-boat attacks.[43] Eventually, the web of pipelines and canals constructed on the coast would contribute to the loss of the state's wetlands.[44]

The development of the oil industry as an important component of the economy and budget was similar to events previously seen in the state's history. Louisiana had exploited its abundant natural resources before in order to fuel economic development. For example, in the late nineteenth century, northern timber companies were looking for new places to harvest trees for lumber. Many of the forests surrounding the Great Lakes had been significantly depleted, and Louisiana held considerable promise. There was a large number of cypress trees available in the state's southern swamps, and there was also a desire for new types of industry to spur economic

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[40] Joseph Pratt, *Growth of a Refining Region: Industrial Development and the Social Fabric*, vol. 4 (Greenwich, CT: JAI Press, 1980), 89-92; 95.
[41] Lindstedt et al., *History of Oil and Gas Development in Coastal Louisiana*, 99-100.
[42] Louisiana State Office of Planning, *Louisiana State of the State 1978: An Economic and Social Report to the Governor* (Baton Rouge, LA: Louisiana State Planning Office, 1979), Table 4-4, 97. The percentage of severance taxes in comparison to total revenues collected was not steady between 1960 and 1975, but generally speaking, the rate remained around forty percent per year for eleven out of fifteen years in that time period.
[43] Lauren Penney, "In the Wake of War: World War II and the Offshore Oil and Gas Industry," *History of the Offshore Oil and Gas Industry in Southern Louisiana, Papers on the Evolving Offshore Industry*, vol. I (New Orleans, LA: Minerals Management Service, 2008), 42-43, https://www.data.boem.gov/PI/PDFImages/ESPIS/4/4530.pdf.
[44] Louisiana-Mississippi Gulf Coast Ecosystem Restoration Working Group, *Roadmap for Restoring Ecosystem Resiliency and Sustainability* (Washington, D.C.: Council on Environmental Quality, 2010), 2, https://www.whitehouse.gov/sites/default/files/microsites/ceq/100303-gulf-coast-roadmap.pdf.

growth.[45] Starting in 1876, developers bought one million acres of forestlands and launched a forty-year extraction boom. By the mid-1920s, almost all of the mature cypress trees were gone, and new trees could not grow in their places because the process of removal had been so destructive. As the supply of cypress trees declined, so did the number of lumber developers. In 1915, there were one hundred and fifty mill towns. Five years later, ninety mill towns were still in operation, but by 1940, that number was down to four.[46] The decline of the timber industry in southern Louisiana demonstrated one of the potential problems with relying on natural resources to boost economic growth. If the resource disappeared, so did the industry and the funds that went along with it.

"Uncle Earl" and Post-World War II Louisiana

After World War II came to an end, the American economy was growing steadily, and Huey Long's brother, Earl, decided to make a second run for governor in 1948.[47] Voters responded well to his bawdy humor and plain-spoken promises to serve the people by giving him 41.5 percent of the vote in the first primary. They then gave him an astounding 65.9 percent in the February runoff. He won all but two parishes in the state and carried seventy-five percent of pro-Long candidates to victory. Once in office, Long sought to undo some of the reforms from previous administrations and resume the expansion of government services. He boosted the old-age pension to fifty dollars a month, increased funding for education to ensure school children received a free, hot lunch, and gave teachers across the state a pay raise. Long also expanded appropriations to the state's universities, built hundreds of new schools, and increased funding

[45] John Dennis, *The Great Cypress Swamps*, (Baton Rouge, LA: Louisiana State University Press, 1988), 1-2.
[46] Vileisis, *Discovering the Unknown Landscape*, 117-122.
[47] Earl Long made an unsuccessful run for governor against Sam Jones in 1940. In 1944, Long ran for the position of lieutenant governor but lost that race as well. (Kurtz and Peoples, *Earl K. Long*, 112; 119-120.)

for families with disabled children. He raised the homestead exemption tax credit for veterans to five thousand dollars and gave them a thousand dollar bonus for serving in World War II.[48]

Expanding public services for the people was not the only item on Long's agenda. He also intended to consolidate his control of the government and Long-machine politics. The governor convinced the legislature to repeal the civil service system in 1948, allowing him to purge thousands of employees who held anti-Long sentiments. Long replaced them with people who were loyal to him and added four thousand additional workers to the state's payrolls. He also established the Department of Administration to strengthen his control over the state's budget and hiring.[49] The power wielded by Earl Long was perhaps related to his personality, but his ability to control the government also rested in the worsening disorganization of Louisiana's bureaucracy. Even with Governor Jones' attempts to increase efficiency and transparency several years earlier, coherent administration in the state remained a significant problem.

Shortly after its creation, the Public Affairs Research Council published a set of findings on the state of Louisiana's executive branch in November 1951. The group observed that it was "impossible to escape the conclusion that the present structure of the executive branch is not conducive to efficiency, economy, or responsibility" and that "without a definite pattern of observation, there will inevitably be a waste of state revenue and a level of performance below that which the citizen has a right to expect." The council also noted that the problem had deep historical roots, asserting Louisiana's executive branch was the "result of 140 years of haphazard development" and also that it was "a hodgepodge of 151 separate agencies dominated by the governor." In many cases, those different agencies had been created by the legislature over

[48] Public Affairs Research Council of Louisiana, *Voter's Guide to the Amendments*, PAR Guide no. 3, 11; Kurtz and Peoples, *Earl K. Long*, 123-128; 130-131.
[49] Kurtz and Peoples, *Earl K. Long*, 133.

successive administrations to "meet particular problems, without any over-all plan of organization and with little consideration of existing agencies and their functions." According to PAR, the result had all too often been "conflict, duplication, and overlapping and gaps in the administrative structure."[50]

Long's tenure as governor did little to ameliorate problems of inefficiency, and the electorate voted Robert F. Kennon as chief executive in 1952. Hailing from Webster Parish in northern Louisiana, Kennon campaigned against Longism and promised voters a "common sense administration, efficient in its operation and devoid of deadheads." [51] Once elected, the former judge kept many of his campaign promises by pursuing the type of good-government reforms that had been enacted during Sam Jones' administration. Kennon brought back the state's civil service system and ensured that it would be properly protected by a constitutional amendment. He also signed a law that mandated voting machines be placed in all state precincts to cut down on election tampering, and his administration aggressively pushed to shut down illegal gambling operations.[52]

Kennon's reform agenda came to an end when Earl Long returned to the governor's mansion in 1956. Long campaigned by promising voters more services and increased spending on education, health, and welfare. His appeals worked, and Long won the first primary with 51.5 percent of the vote.[53] From 1956 to 1959, Earl continued his first-term agenda of expanding public services. He boosted pensions for the elderly and gave school teachers a twenty-eight percent pay raise. Appropriations for education, health, welfare, and highways all increased, so

[50] "Research Group Setup Complete," *Times-Picayune*, May 5, 1951, AHN; "Executive Branch of State Government is Criticized: Report Hits Hodgepodge under Governor's Rule," *Times-Picayune*, November 5, 1951, AHN.
[51] Walter Goodstein, "Change in State Wanted – Kennon: 'Free Voters Indicate They Seek New Administration," *Times-Picayune*, February 11, 1952, AHN; Carleton, "Four Anti-Longites," 254-255.
[52] Carleton, "Four Anti-Longites," 256.
[53] Kurtz and Peoples, *Earl K. Long*, 179-184.

much that Louisiana ranked number one in the South for per capita spending on those services. Within four years, state expenditures rose from $471 million to $566 million, but Long refused to take on debt to pay for his programs. He kept balanced budgets during the late 1950s by paying for expanded services with oil and gas revenues. That decision was good for Long's popularity, but the governor's fiscal policies contributed to Louisiana's shaky financial foundations. Residents grew more averse to paying for services through increased income or property taxes when mineral revenues seemed more than adequate to support the state's budgetary needs.[54]

Louisiana, "Uncle Sam," and the Tidelands Controversy

Long's willingness to rely on oil and gas revenues to pay for services had other lasting consequences in the "Pelican State." In what was known as the "tidelands controversy," Louisiana and the federal government became embroiled in a legal dispute over the oil and gas reserves beneath the waters of the Gulf of Mexico. Prior to the late 1930s, state ownership of submerged lands that were adjacent to a state's shoreline had been relatively uncontested. The Federal Mineral Leasing Act of 1920 required that applications for offshore leasing be directed to the coastal states, which meant states could approve leases and then collect revenues from production associated with those leases. However, in 1937, U.S. Interior Secretary Harold Ickes began keeping applications for offshore leases instead of referring them back to the states. Two years later, President Roosevelt ordered a study be conducted about how to approach ownership or jurisdiction over the submerged lands of the continental shelf. For Roosevelt, the primary issue was ensuring the federal government had the authority to protect adjacent waters in an

[54] Ibid., 185-186.

international context. He was less interested in the implications that such an action would have on state-federal relations.[55]

However, officials in the affected states were greatly concerned about the potential encroachment of the federal government into offshore leasing. In response, the Louisiana legislature passed Act 55 in 1938. The law was an attempt to keep recent oil discoveries under state jurisdiction and declared that Louisiana's southern boundary extended twenty-seven nautical miles from the state's coast.[56] There was little debate over the issue during World War II, but in September 1945, President Truman issued a proclamation that asserted federal authority over continental shelf resources. Between 1947 and 1950, the Supreme Court ruled in three separate cases brought against California, Texas, and Louisiana that the states had no jurisdiction over the lands that sat beyond the low water mark next to their shores. States still retained rights to the resources of lands up to the low tide mark, but officials in Texas and Louisiana were furious over the Supreme Court's decisions. Leases had already been granted in the contested areas and losing them to the federal government meant losing out on potential revenues.[57]

While the Truman administration prepared its cases against the states in the late 1940s, Congress involved itself in the debate. By 1947, over fifty bills had been introduced to prevent the federal government from assuming jurisdiction over mineral leasing on the continental shelf. Officials in Texas and Louisiana were aware of the impending lawsuits, and representatives from both states sought out room for compromise with the administration. Speaker of the House Sam Rayburn tried to broker a deal that would be favorable to both Texas and the federal government,

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[55] Tyler Priest, "Claiming the Coastal Sea: The Battles for the 'Tidelands,' 1937-1953," *History of the Offshore Oil and Gas Industry in Southern Louisiana, Papers on the Evolving Offshore Industry*, vol. I (New Orleans, LA: Minerals Management Service, 2008), 70-71, https://www.data.boem.gov/PI/PDFImages/ESPIS/4/4530.pdf.
[56] Blaine Miller, "Louisiana's Tidelands Controversy: The United States vs. State of Louisiana Maritime Boundary Cases," *Louisiana History: The Journal of the Louisiana Historical Association* 38, no. 2 (Spring 1997): 205-206, http://www.jstor.org/stable/4233394.
[57] Priest, "Claiming the Coastal Sea," 72-77.

but the state's attorney general was not interested in compromise. Price Daniel argued instead that Texas should have full sovereignty over the submerged lands past the low tide mark, up to three leagues from the Texas shoreline. He convinced the state's political leadership to reject Rayburn's proposal, and appeared before the Supreme Court to make his case in 1950. He failed to convince the justices, which meant that Texas lost out on the potential revenues that would have been part of Rayburn's compromise. Daniel did, however, manage to use the controversy as a central campaign issue in 1952 and won election to the U.S. Senate.[58]

Rayburn also attempted to facilitate a compromise between Louisiana and the federal government in spring 1948. Concerned about the implications of the 1947 *United States v. California* ruling for Louisiana, Earl Long sent his attorney general, Bolivar Kemp, and lieutenant governor, William Dodd, to Washington D.C., to see if there were a potential deal that could benefit the state. With Truman's blessing, Rayburn offered the Louisiana delegation a compromise similar to what had been presented to Texas: two-thirds of the revenues generated by oil leases up to three miles off Louisiana's coastline and 37.5 percent of the revenues from the lands beyond the three-mile mark. Additionally, Louisiana could keep all the revenues from leases already granted, and the state's mineral board would be in charge of administering offshore leasing and production. Both Kemp and Dodd were in favor of the deal, but they needed Long's permission to accept.[59]

When state officials and legal experts gathered in Baton Rouge to discuss the offer, most were in agreement with Kemp and Dodd. The only political figure to object to the Truman administration's proposal was Leander Perez. Elected as district attorney in Plaquemines Parish

[58] Tyler Priest, "Claiming the Coastal Sea," 78-80.
[59] Ibid., 80.

in 1924, Perez had used his position to gain political control of Plaquemines and St. Bernard.[60] He argued that Louisiana should fight for control of lands beyond the low-tide mark and failure to do so was to surrender local power to the federal government. Though Perez had had long made an issue over states' rights, his motivation for opposing Truman's compromise probably had more to do with the economics of oil development. About thirty-eight percent of the reserves off Louisiana's coastline were adjacent to Plaquemines and St. Bernard.[61] Perez had made a personal fortune by serving as the attorney for oil companies that obtained lease rights in the waters near his parishes. If the federal government assumed control over the lands, both he and his allies stood to lose substantial amounts of revenue from future leases.[62]

Several days after the meeting in the state's capital, Long announced that he would not accept Truman's compromise despite the advice from his attorney general and lieutenant governor. His decision was almost entirely personal and held little relationship to what would have been good for Louisiana. Leander Perez had ensured Plaquemines and St. Bernard went in Long's favor during the 1948 gubernatorial race, and the district attorney had also vowed to undermine the election of Russell Long to the U.S. Senate if Earl took Truman's deal. Earl Long wanted to secure his nephew's victory and thus strengthen the Long machine's political power in Louisiana.[63] Perez was convinced that the state could win claims to the submerged lands beyond the low-tide mark, but he and Long miscalculated badly. The Supreme Court ruled in favor of the federal government in 1950, and three years later Congress codified the court's decision in the Submerged Land Acts and Outer Continental Shelf Lands Act.[64]

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[60] Ibid., 81.
[61] Glen Jeansonne, *Leander Perez: Boss of the Delta*, 2nd ed. (Jackson, MS: University of Mississippi Press, 2006), 166.
[62] Tyler Priest, "Claiming the Coastal Sea," 81.
[63] Ibid., 81-82.
[64] Lindstedt et al., *History of Oil and Gas Development in Coastal Louisiana*, 20.

Combined, the court rulings and legislation affirmed federal supremacy over offshore waters and mineral leasing, but Congress attempted to mollify the coastal states with a few concessions. The Submerged Lands Act established state control of underwater lands up to three nautical miles from a state's shorelines and also provided the opportunity to obtain jurisdiction up to three marine leagues. Additionally, the act recognized that shorelines could change depending on erosion and accretion, and Congress directed the states and federal government to work out where the boundaries actually were.[65] The 1953 laws ameliorated earlier court rulings to some extent by granting states three-mile jurisdiction, but Louisiana still lost billions of dollars in revenue that it would have received had Earl Long accepted Truman's 1948 compromise.[66] Litigation over Louisiana's claims to offshore lands continued in the 1950s, but after 1954, little challenged federal supremacy on the continental shelf.[67] Earl Long's blunder would eventually prove even more detrimental to the state's budget as coastal erosion accelerated, and Louisiana's shoreline boundary moved further inland.[68]

Big Oil Takes a Toll on the Environment

The growing impact of the oil and gas industry during the mid-twentieth century was not limited solely to its economic importance. Several decades before the problem of coastal erosion became clear, there was already an indication that the industry could negatively affect fish and

[65] Miller, "Louisiana's Tidelands Controversy," 209.
[66] Priest, "Claiming the Coastal Sea," 83.
[67] Tyler Priest, "Auctioning the Ocean: The Creation of the Federal Offshore Leasing Program, 1954-1962," *History of the Offshore Oil and Gas Industry in Southern Louisiana, Papers on the Evolving Offshore Industry*, vol. I (New Orleans, LA: Minerals Management Service, 2008), 98-101, https://www.data.boem.gov/PI/PDFImages/ESPIS/4/4530.pdf.
[68] The U. S. Supreme Court tied Louisiana's coastal boundary to its barrier islands in the mid-1970s. As the state's islands eroded and the three-mile boundary moved landward in response, Louisiana risked losing revenues from mineral leasing. Federal officials permanently fixed the state's boundary in 1986 so that future erosion of the coast would not affect the three mile demarcation for state-controlled waters. See: Charles Hargroder, "Federal Offshore Gas Tax Bill Moves Nearer Senate Okay," *Times-Picayune*, June 27, 1978, sec. 1, AHN; Mindy Heidel, "Louisiana's Seaward Boundaries," *Louisiana Coastal Law*, August 2003, 14-15, http://www.laseagrant.org/wp-content/uploads/lcl_82.pdf.

wildlife habitats in Louisiana. When hunters and fishers demanded their recreational spaces be protected from pollution, state officials had to decide how to respond. One example of that dynamic took place in northern Louisiana near the Arkansas border. Located in Claiborne Parish, Corney Creek was a small but popular stream for local hunters and fishers. In the early 1940s, residents began to complain about the spot's declining water quality.[69] Oil-field brine discharges from drillers in Arkansas were flowing into the Corney Creek system, and the runoff was hurting the area's fish and wildlife. After several unsuccessful attempts to work with state officials in Arkansas and Louisiana, Claiborne residents gave up and decided to take their concerns to the federal government in 1952.[70]

The U.S. Public Health Service (PHS), which was responsible for intervening in cases of interstate pollution, initiated several investigations into the pollution at Corney Creek. Sensitive to Louisiana's resistance to federal intrusion in legal matters, the agency moved cautiously over the next several years as it collected information. By February 1957, the PHS decided that there was enough evidence to warrant federal intervention. Agency officials issued a cease and desist order to eighteen Arkansas well operators and told them they could no longer dispose of brine discharge into the Corney Creek system. When the agency did follow-up inspections three years later, they found that the drillers were still in compliance and that the quality of Corney Creek's waters had improved.[71]

The involvement of the PHS stemmed from the fact that Louisiana's officials had been reluctant to take a strong position on pollution in the Corney system.[72] The state's abundant

[69] Craig Colten, "Contesting Pollution in Dixie: The Case of Corney Creek," *The Journal of Southern History* 72, no. 3, (August 2006): 605-606, http://www.jstor.org/stable/27649150.
[70] Ibid., 618-620.
[71] Ibid., 624-629.
[72] Ibid., 619; 606-607.

natural resources were a strong draw for manufacturers, and limiting the use of those resources was considered to be a risk to industrial development and economic growth.[73] Though there was a constitutional mandate to protect Louisiana's natural resources, enforcement of that directive was relatively weak.[74] The state's administrative structure factored into the lax oversight. In the middle of the twentieth century, the Department of Wild Life and Fisheries was responsible for monitoring water pollution, but the Stream Control Commission was in charge of developing the criteria by which to measure water quality. At least four other agencies had duties related to environmental oversight, and there was no central authority to coordinate activities among them. As a result, Louisiana lacked a comprehensive, systematic approach to environmental regulation throughout much of the twentieth century.[75] That fact was particularly important as the petrochemical industry expanded its operations in the context of an administrative system that was predisposed to favoring economic development over protection of natural resources. As oil and gas extraction became more entrenched in the state's coastal wetlands, protection of the swamps and marshes in southern Louisiana had to compete with an industry that held considerable economic and political sway.

John McKeithen, Administrative Problems Continue, and Growing Industry

During the 1963-1964 gubernatorial race, voters in Louisiana were more concerned about issues of race than they were about offshore oil drilling or wildlife habitats. For that election, ten candidates entered the field, including former governor Robert Kennon and Public Service Commissioner John McKeithen. The latter had been a floor leader during Earl Long's

[73] Barbara Allen, *Uneasy Alchemy: Citizens and Experts in Louisiana's Chemical Corridor* (Cambridge, MA: The MIT Press, 2003), 9-10.
[74] Colten, "Contesting Pollution in Dixie," 609.
[75] Charles McCowan, "The Evolution of Environmental Law in Louisiana," *The Louisiana Law Review* 52, no. 4, (March 1992): 908-911, http://digitalcommons.law.lsu.edu/lalrev/vol52/iss4/5.

administration and like most of his fellow candidates, McKeithen voiced disapproval of federal meddling in the issue of civil rights. Combined with folksy requests for the people to "please h'ep" him, McKeithen used the issue of defending segregation to appeal to voters. He employed that strategy in the primary and then again in the run-off, which allowed him to do well in rural districts and parts of New Orleans.[76]

Once in office, McKeithen recognized that resisting desegregation was futile. He created a biracial commission to discuss race relations in the state and strongly supported the enforcement of the Civil Rights Act of 1964. Under his leadership, schools in Louisiana continued to slowly, and for the most part, peacefully integrate.[77] Many white residents of the state were displeased with his actions, and tensions sometimes escalated into violence. On one occasion, McKeithen sent the National Guard to Washington Parish in order to protect civil rights protesters. The issue of race did not dominate McKeithen's agenda though, and he focused much of his attention on good-government reforms and economic growth. He signed bills that expanded the investment of state funds and initiated an inventory of public properties.[78] The governor kept one of his campaign promises and oversaw the establishment of a state ethics commission, along with the creation of a strong code of ethics for state legislators.[79]

McKeithen also appointed thirteen members to a committee formed by the legislature "to study possible changes in the powers, duties and responsibilities of Louisiana's Chief Executive." In May 1966, the committee issued a report, detailing the problems, weaknesses, and disorder they found in an examination of the state's government. Some of their findings echoed

[76] Maginnis, *The Politics of Reform*, 42-43.
[77] Michael L. Kurtz, "Chapter 16," in *Louisiana: A History*, ed. Bennett H. Wall (Wheeling, IL: Harlan Davidson, Inc., 2008), 380-381.
[78] Maginnis, *The Politics of Reform*, 43; 46.
[79] Kurtz, "Chapter 16," in *Louisiana: A History*, 382-383.

the observations made by PAR fifteen years earlier, particularly in regard to how the executive branch was structured. For example, the committee determined that the governor had the ability to unduly influence local politics through the power of appointment. According to the group's assessment, the governor should not be involved in deciding the composition of "city athletic commissions" or "water district boards" because "generally speaking, governors do not know local problems." Further, the process of filling over one thousand "appointive positions" that had "local characteristics" was "time consuming and [detracted] from important duties at the state level."[80]

The committee went on to observe that the governor's ability to effectively oversee state government was compromised by the "useless agencies and overlapping boards." By the report's estimation, if the chief executive wanted to spend time on addressing administrative issues in "the sprawling empire of agencies," he might have one day every two years to do that. With 240 agencies to supervise, the governor simply did not have the time to oversee such a large collection of bureaucratic entities. The structure of the agencies themselves hampered administration as well. Overlapping and duplicative duties undermined smooth operations, and the committee stressed that a lack of effective communication and clear outline of responsibilities for agencies was also a substantial issue.[81] Committee members made a number of recommendations to address the problems they identified with Louisiana's government, but reform at a constitutional level would not take places until the 1970s.

While McKeithen's administrative reforms were relatively limited, the governor invested a considerable amount of energy into recruiting business. He toured the world to lure large corporations to Louisiana, and his efforts proved quite successful. Over two billion dollars

[80] "Preface, Text of Study Group's Report to Governor," *Times-Picayune*, May 12, 1966, sec. 3, AHN.
[81] Ibid.

poured into the state's economy to fund construction of new plants. Fifty thousand Louisianans found employment in the growing manufacturing industries, and many of the positions paid extremely well.[82] Production in petroleum, chemicals, textiles, paper, glass, and machinery all increased.[83] The years 1964-1968 were particularly notable for how quickly industrial expansion occurred. During those years, petrochemical growth in Louisiana "outpaced all other states" in the country. A reduction in taxes on natural gas was especially important for luring new companies, along with other tax incentives offered by McKeithen. The governor's push to bring petrochemical companies to Louisiana continued into the following decade and was hailed as a major boon for the state's workers and economy.[84]

Big Reforms, Small Changes

With economic conditions favorable during the early 1970s, seventeen people entered the gubernatorial race in 1971. The top two candidates in the primary were state Senator J. Bennett Johnston and U.S. Representative Edwin W. Edwards. A native of the Shreveport area, Johnston had the support of the northern parishes, middle-class whites in large cities, and oil and gas interests. Born in Avoyelles Parish and having practiced law in Crowley before being elected to Congress, Edwards was backed by Cajuns, Catholics, labor groups, and African Americans. The lead-up to the runoff was brutal and expensive, but Edwards managed to secure a narrow victory. He went on to defeat the Republican candidate in the general election, though the campaign was tougher than Edwards expected.[85]

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[82] Kurtz, "Chapter 16," in *Louisiana: A History*, 384.
[83] Louisiana Department of Employment Security, *Louisiana Income and Employment, 1960-1969* (Baton Rouge, LA: Louisiana Department of Employment Security, 1971), 24.
[84] Barbara Allen, "The Making of Cancer Alley: A Historical View of Louisiana's Chemical Corridor," in *Southern United States: An Environmental History* (Santa Barbara, CA: ABC-CLIO, 2006), 241; Timothy J. Minchin, *Forging a Common Bond: Labor and Environmental Activism during the BASF Lockout,* (Gainesville, FL: University of Florida Press, 2003), 4-5.
[85] John Maginnis, *The Last Hayride* (Baton Rouge, LA: Gris Gris Press, 1984), 18-21.

Once in office, Edwards set out to fulfill a campaign promise to modernize and streamline Louisiana's government – a goal that had been pursued or at least considered by governors for over thirty years. In 1974, PAR reaffirmed the observations made by the group in the early 1950s, stating:

> One of the most significant defects in Louisiana state government is its administrative structure. The structure is weakened by the multiplicity of separate agencies and by the fragmentation of authority among numerous elected officials and commissions which enjoy special constitutional protection.[86]

Perhaps the most pressing issue to help with administrative reforms was the state's need for a new constitution.[87] Since 1921, Louisiana's governing document had been amended 536 times and consisted of 255,000 words.[88] The constitution contained conflicting amendments and provisions specific to individual parishes or municipalities. Measures dealing with local sewage treatment plants or the classification of civil service employees who worked for cities were the sort of issues routinely put before the entire state. Further, interest or even understanding of the lengthy constitution among Louisianans was dubious. During the 1950s and 1960s, as little as six percent of the electorate voted on the amendments put before them.[89]

Edwards called for a convention in 1973, and most of the delegates who participated were middle-class businessmen, lawyers, or representatives already serving in the legislature. After several months of work, the convention produced a constitution that was an improvement over the previous one and contained articles that gave some protection against discrimination, normalized the meeting schedule of the legislature, and increased the independence of parish and

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[86] Public Affairs Research Council, *Constitution '74: PAR's Voter's Guide to the 1974 Proposed Constitution*, (Baton Rouge, LA: Public Affairs Research Council, 1974), 13.
[87] Maginnis, *The Last Hayride*, 21.
[88] Maginnis, *The Politics of Reform*, 67-68.
[89] Mark Carleton, "The Louisiana Constitution of 1974," in *Louisiana Politics: Festival in a Labyrinth*, ed. James Bolner (Baton Rouge, LA: Louisiana State University Press, 1982), 18-19.

municipal governments.[90] The constitution protected the status of homestead exemptions, but tax breaks for industry were not included in the new document. That meant that voters had to approve any increases for personal property taxes, while the legislature could raise taxes on businesses by statute. Critics of the convention charged that the new constitution included too many of the special provisions and tax breaks that had riddled the 1921 document. The Public Affairs Research Council concluded that the constitution was unfavorable to business interests but benefitted middle-class homeowners.[91] Despite the criticisms from groups such as PAR, fifty-eight percent of the voters approved the constitution in 1974.[92]

The new constitution helped modernize Louisiana's government by re-organizing its bureaucracy into a cabinet-style system. The problem of numerous agencies, appointees, and insufficient management pointed out in 1966 had not improved considerably. By 1973, there were 267 agencies, boards, commissions, and offices and mostly administered by gubernatorial appointees.[93] Louisiana's governor was responsible for appointing approximately 1,425 officials to the state's multitude of bureaucracies. Such extensive appointment powers endowed the governor with huge leeway in doling out patronage to loyal supporters but also impacted effective oversight. The new constitution sought to reduce the number of agencies and called for no more than twenty departments. Nine departments would be headed by elected officials, including the Departments of Justice, Agriculture, and the Treasury. Eleven departments, such as the Department of Natural Resources (DNR) or the Department of Revenue and Taxation, would be administered by appointees of the governor. Reorganization began in December 1975 and was completed in July 1978. The number of gubernatorial appointees fell to 1,340, and almost ninety

[90] Carleton, "The Louisiana Constitution of 1974," 24-30.
[91] Maginnis, *The Politics of Reform*, 71.
[92] Maginnis, *The Politics of Reform*, 69-71; Carleton, "The Louisiana Constitution of 1974," 40.
[93] Carleton, "The Louisiana Constitution of 1974," 28-29.

agencies, boards, commissions, and officers were absorbed into the new departments or abolished completely.[94]

Another area of significant change that took place during Edwards' first term was in regard to severance taxes. In 1974, the governor orchestrated a change in how levies on mineral extraction were assessed. Under the new policy, severance taxes on petroleum became based on the market value of oil rather than the volume removed.[95] Edwards' decision to change the method of assessment came from his desire to increase state services without significantly raising taxes on the state's residents. In 1972, the state spent less than $1.9 billion per year; by 1979, that figure had increased to $4.5 billion. The influx of oil and gas money allowed Edwards to eliminate the state property tax and reduce the sales taxes on food and drugs.[96] In 1979, the *State of the State* report noted that Louisiana had "been able to sustain a lower per capita collection of sales and income taxes through the receipt of sizeable severance tax revenues" but that the scenario was likely unsustainable. "A major proportion of Louisiana's severance taxes are paid by persons living outside of Louisiana…as Louisiana reduces its reliance on the severance tax, it will be less able to 'export' a part of its tax burden."[97]

The Oil Bust and "Slaying the Dragon"

In 1979, the state elected a Republican to the governor's mansion for the first time since Reconstruction. David Treen, an attorney who was born in Baton Rouge and raised in New Orleans, had made a strong showing against Edwards in the 1972 governor's race. After his loss that year, Treen went on to serve in the U.S. House of Representatives for three terms before

[94] Ed Renwick, "The Governor," in *Louisiana Politics: Festival in a Labyrinth*, ed. James Bolner (Baton Rouge, LA: Louisiana State University Press, 1982), 79-80; Louisiana State Planning Office, *Louisiana State of the State 1978: An Economic and Social Report to the Governor* (Baton Rouge, LA: Louisiana State Planning Office, 1979), 225-227. The offices of the governor and lieutenant governor were excluded from the total number of departments.
[95] Lindstedt et al., *History of Oil and Gas Development in Coastal Louisiana*, 103-104.
[96] Parent, *Inside the Carnival*, 22.
[97] Louisiana State Planning Office, *Louisiana State of the State 1978*, 230.

returning for another run at the governor's office. While Treen worked in the nation's capital, the number of registered Republicans in Louisiana had climbed from twelve thousand to over one hundred thousand. Democrats still outnumbered Republicans by a margin of ten to one, but the Republican Party was slowly gaining momentum. During the campaign, Treen proved preferable to the electorate than the liberal Democrat who had placed second in the state's initial primary.[98]

Treen's victory thrilled business leaders and good-government proponents. The newly elected governor had campaigned on reducing the size of the state's bureaucracy while increasing efficiency, but his supporters were ultimately disappointed. Even with the reorganization efforts of the late 1970s, the state's poor administrative structure continued. For example, in 1979, the legislature passed the Louisiana Environmental Affairs Act, which attempted to place most pollution-control programs under the authority of the Department of Natural Resources. Four years later, at Governor Treen's prompting, legislators established an entirely separate agency to oversee pollution regulations when they created the Department of Environmental Quality (DEQ). However, not all pollution control programs were moved to the DEQ. The Department of Agriculture and the State Police continued to have enforcement duties related to pesticides and transportation.[99] With supervision and control spread across multiple agencies, Louisiana continued to experience pollution problems even after the state created a department specifically to oversee its environment.

Dispersed authority was not the only issue; the size of Louisiana's government had continued to grow even after constitutional reforms. The number of agencies, boards, and commissions swelled to 325, and gubernatorial appointments climbed to 1,556. Treen struggled to manage such a large bureaucracy effectively and his decisions contributed to inefficient

[98] Maginnis, *The Last Hayride,* 33-39.
[99] Murchison, "Enforcing Environmental Standards Under State Law," 498-499.

administration in the state. In one case, he created yet another commission to see how the state could reduce the amount of redundancy in its agencies.[100] The governor also refused to use patronage as a way of rewarding loyalty and neglected to remove Edwards' supporters from their positions. In another instance, Treen appointed associates of an influential state legislator from New Orleans to the state mineral board. That particular board had usually been considered off-limits to anyone but the governor's personal allies because it was responsible for granting lucrative state mineral leases. Treen hoped placing the legislator's preferred candidates would lead to more bipartisan cooperation, but instead, he found that the board often voted against his wishes.[101]

Despite his difficulties with administration, Treen remained personally popular among Louisianans. The state's residents considered him to be honest, and they generally liked him. He also managed to get some of his legislation passed. One example was bringing an end to lifetime certification for teachers and linking their pay raises to college attendance, though he failed to stop legislators from lowering some of the requirements in the final bill. In one of his more popular moves, the governor oversaw an increase of the homestead tax exemption to $75,000, and he reduced personal income taxes by more than $100 million. To pay for those tax breaks and increases in employment, Treen tapped into the $515 million surplus left to him by Edwards – a surplus which had been partially generated by booming oil revenues.[102]

By using that surplus to pay for his political agenda, the governor's fiscal policy was not all that different from those of his predecessors. However, during Treen's tenure, Louisiana began to experience significant economic trouble when the price of oil crashed half-way through

[100] Maginnis, *The Politics of Reform*, 90-91.
[101] Maginnis, *The Last Hayride*, 42-45.
[102] Maginnis, *The Politics of Reform*, 89.

his term. Louisiana's heavy reliance on the petrochemical industry made the state especially sensitive to the decline in oil prices, particularly since the changes to severance tax assessments in the mid-1970s. He had to rescind the income tax cuts he had made and then initiate spending freezes. As Treen prepared to run for re-election, the recession plaguing the rest of the nation finally came to Louisiana. Edwards, who had amassed over $12 million in campaign funds for the 1983 race, hammered Treen on the vanishing surplus and mounting budget shortfalls. Treen hoped to appeal to voters on the basis of integrity, but they were more interested in the faltering economy than honest government. With over one million ballots cast in his favor, Edwards won the first primary with sixty-two percent of the vote.[103]

Edwards' third term turned out to be quite different than his first two. The economy continued to founder, and instead of cutting state employment to save money, Edwards proposed tax increases to make up for falling revenues. The first hike came from taxes on gasoline and was used to pay for road construction and maintenance. He went on to propose a $1.2 billion tax package, only half of which got through the legislature. There was some discussion of repealing the homestead exemption, but the idea never gained any real traction. Compounding the economic problems faced by the state, Edwards had to deal with personal and ethical problems. In 1985, he faced federal corruption charges and endured two different trials before being acquitted in early 1986.[104]

When the 1987 gubernatorial campaign began, support for the embattled governor had eroded but not disappeared. He still had the loyalty of the state's black constituents and their votes almost guaranteed him a spot in a run-off. Also hoping to make their way to the second election, the sitting secretary of state and four current or previous congressmen entered the race.

[103] Maginnis, *The Politics of Reform*, 89-91; 93-95.
[104] Ibid., 95-99.

Among them, a relatively unassuming and underfunded candidate emerged as a late favorite in September 1987. Charles "Buddy" Roemer, who hailed from the Shreveport area, proved to be particularly appealing to young, college-educated voters when he promised to "slay the dragon" of big, inefficient government. Despite the early assumptions that Roemer was a longshot candidate, his promises worked and he placed first in the primary with thirty-three percent of the vote. Edwards came in second with twenty-seven percent of the vote, but instead of going on to the run-off, the governor decided to concede the election to his opponent. The move was a calculated one; by denying Roemer the opportunity to gain a majority of votes in a second election, Edwards hoped to undermine any chance that the Democratic congressman might have at claiming a mandate.[105]

Though he took the governor's mansion with only a plurality of votes, Roemer had grand ambitions. He intended to reduce government patronage and address the state's continuing fiscal problems. His first order of business was to tackle the $800 million budget deficit he inherited. To accomplish that, Roemer and the legislature approved one billion dollars in bonds to cover the state's debts. The bonds would be paid for by setting aside one cent of the state sales tax for the next seven years. Along with the money from the bonds, spending cuts, and fee increases helped produce a balanced budget for the first time in three years. When Roemer moved on to restructuring the state's tax code, he had far less success. He eventually got the legislature to pass a bill that raised "sin" taxes but left personal and industrial income taxes mostly untouched.[106]

Despite his efforts to alleviate Louisiana's budget problems, Roemer continued to face shortfalls even after taking out bonds worth one billion dollars. The oil bust that occurred in the mid-1980s continued to undermine the state's economy, and to make up for a lack of funds,

[105] Maginnis, *The Politics of Reform*, 101-102.
[106] Ibid., 103-105.

Roemer decided to support certain forms of legalized gambling. In 1990, he endorsed a constitutional amendment that created a lottery. One year later, the governor approved the introduction of video poker machines and riverboat casinos. Raising taxes to cover the state's expenditures on services and employment was not politically viable, and gambling money was an easy way to fill in some of the holes left by the decline in oil revenues. Along with playing an increasing role in the state's economy, the gaming industry exerted a growing influence on Louisiana's politicians. By 1995, campaign contributions from gaming surpassed those coming from petrochemical interests.[107]

Chemical Reaction

Even though the gaming industry had emerged as a powerful interest in the state, the winner of the 1995 gubernatorial election ran on anti-gambling platform. Republican Mike Foster placed first in the primary and then went on to defeat a far more liberal candidate in the run-off.[108] However, Foster did little to roll back the gaming industry once he was in office. He blocked the legislature from banning video poker machines in 1996 and oversaw the opening of Harrah's Casino in New Orleans in 1999. Foster's reluctance to put an end to gaming in Louisiana might have been the result of the industry's extensive influence, but the governor also likely recognized its economic importance. The state had not fully recovered from the financial malaise of the late 1980s and early 1990s, and the gaming industry was a source of jobs.[109] Unemployment remained higher in Louisiana than the country as a whole, and the state's per capita income sat at eighty-one percent of the national average.[110] By the end of the century,

[107] Tyler Bridges, *Bad Bet on the Bayou: The Rise of Gambling in Louisiana and the Fall of Edwin Edwards* (New York: Farrar, Straus and Giroux, 2001), 41-43; 266.
[108] Maginnis, *The Politics of Reform,* 118-119.
[109] Bridges, *Bad Bet on the Bayou*, 375.
[110] Melinda Bringol and Glen Daigre, "Economic Development," in *State of the State 1996*, (Baton Rouge, LA: Louisiana Office of Planning and Budget), 17-21.

gaming revenues contributed nine percent to the state's budget. In comparison, the revenues from Louisiana's mineral reserves provided eight percent, which was a significant decline from the 1970s and early 1980s.[111]

To help spur economic development in areas other than gaming, Governor Foster followed the precedent set by John McKeithen and worked to recruit large corporations to Louisiana. One example involved a Japanese chemical firm named Shintech. In 1996, Foster offered the company tax breaks worth $135 million if it constructed a new complex in the state.[112] Shintech found the offer appealing and applied to the Environmental Protection Agency (EPA) for emission permits under the Clean Air Act. The company wanted to build a polyvinyl chloride plant near the tiny town of Convent and needed both state and federal approval to operate.[113] Advertising that their $700 million establishment would bring 165 positions, Shintech developed a close relationship with the officials of St. James Parish who were supportive of the deal.[114] There were also some residents who favored construction of the facility. Doris LeBlanc, a St. James resident who helped push for the plant's approval, stated, "Everybody who lives near the plant wants it. We want the plant. We need the jobs."[115] A spokesperson for the St. James Citizens Coalition commended Shintech, saying, "It was the only company that ever came to talk to the people in the neighborhood who wanted to listen. I welcome Shintech."[116]

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[111] House Legislative Services, *State and Local Government: An Overview, 2000-2004 Term* (Baton Rouge, LA: Louisiana House of Representatives, House Legislative Services, 1999), 79.
[112] Allen, *Uneasy Alchemy*, 84-85.
[113] Robert Bullard, *Dumping in Dixie: Race, Class, and Environmental Quality* (Boulder, CO: Westview Press, 1990), 134
[114] Allen, *Uneasy Alchemy*, 57; Bullard, *Dumping in Dixie*, 134
[115] John McMillan, "Groups Clash Over Shintech: Environmentalists Halt Jobs Meeting," *Advocate*, July 27, 1997, sec. B, NB LA (451).
[116] Chris Gray, "Experts Say Shintech May Not Deliver Jobs – But Some Defend Plant," *Times-Picayune*, January 25, 1998, sec. B, NB LA (9801250112).

Even with an unemployment rate of thirteen percent, other residents in Convent were unconvinced that the jobs would be worth accepting another chemical company in their community. There were already a dozen plants nearby, and few of the town's people worked at them. Local activists were concerned about the impact of adding more pollution to the air, especially when past promises of employment went unfulfilled.[117] When the state showed little interest in reversing its approval of Shintech's operating permits, organizers turned to the federal government for assistance and asked that the Environmental Protection Agency take action to stop the plant's construction.[118] In early September 1997, the EPA responded to the community's concerns and put the company's emissions permits on hold. A year of public hearings, protests, and legal maneuvering followed the EPA's decision, and in 1998, Shintech abandoned its plans to build the plant in Convent.[119]

Despite the events in St. James Parish, successful opposition to industrial development was not widespread in Louisiana. An eighty-five-mile stretch between Baton Rouge and New Orleans had become home to over one hundred and thirty petrochemical companies in the decades following World War II. Drawn by cheap land and easy access to the Mississippi River, companies such as Shell Chemicals and BASF built huge complexes along the "Chemical Corridor." The residents who lived in the corridor's neighboring parishes were among the poorest and least educated in the state and lacked the clout to block development.[120] They were also exposed to high levels of pollution. In 1996, the EPA cited Louisiana as having one of the worst environmental enforcement records in the country. With the exception of Buddy Roemer's

[117] Bullard, *Dumping in Dixie*, 134.
[118] Francis Adeoloa, "Environmental Injustice in the State of Louisiana?: Hazardous Wastes and Environmental Illness in the Cancer Corridor," *Race, Gender, & Class* 6, no. 1 (1998): 91, http://www.jstor.org/stable/41658850.
[119] Bullard, *Dumping in Dixie*, 134.
[120] Allen, *Uneasy Alchemy*, 1-13.

administration, the Department of Environmental Quality tended to work with industries rather than acting to regulate them. In response to the EPA's criticisms of its performance in the mid-1990s, the DEQ said that issuing high fines for noncompliance would harm industrial development and cost the state jobs. Yet at the end of the twentieth century, Louisiana lagged behind other states with large petrochemical industries in economic growth and quality of life indicators.[121] Despite its abundance of natural resources and extensive mineral wealth, Louisiana failed to elevate its citizens' standard of living in significant ways. In some cases, as with pollution in the Chemical Corridor, residents actually saw quality of life indicators decline as more industries moved into their neighborhoods.

Conclusion

The poor condition of Louisiana's environment in the 1990s was a testament to the state's legacy of inefficient bureaucracies and heavy reliance on extractive industries to meet budget needs. Government agencies were structurally limited in managing the state's natural resources due to dispersed authority and oversight. Political leaders such as Earl Long were prone to rely on the revenues generated by resource extraction, while officials such as Mike Foster saw Louisiana's natural abundance as a recruiting tool for industry. That is not to say there were no efforts to conserve resources or protect the environment during the twentieth century. Despite their difficulties with leadership, both David Treen and Buddy Roemer sought to enhance environmental protections. However, Louisiana's institutions were not well-suited for broad, comprehensive management of complex ecosystems. They were geared toward supporting economic growth, which often depended on exploiting the environment and "improving" lands to support development. Officials did make attempts to conserve, protect, or restore Louisiana's

[121] Ibid., 7; 62-63.

wetlands starting in the 1970s, but their efforts were rooted in a political climate that did not have the means or inclination to consistently prioritize environmental protection in policymaking, especially when doing so challenged existing bureaucratic and economic systems. Those tendencies and weaknesses would manifest themselves in the state's anti-erosion efforts as well, along with the long-standing idea that the environment was a commodity to be exploited rather than an ecosystem to be maintained in support of ecological and human vitality.

CHAPTER 2: THE POLICIES OF LOUISIANA'S COAST AND AMERICAN ENVIRONMENTALISM

"A One-Block Disaster Area"

On May 3, 1978, the metropolitan area surrounding New Orleans received over ten inches of rain in a twenty-four hour period. The heavy rains surpassed the previous record set in 1948 and caused severe flooding in Orleans, Jefferson, and St. Bernard Parishes. Five people were killed during the storm, and public officials estimated damages at $240 million.[1] One of the locations to sustain the worst flooding was Coubra Drive, "a one-block disaster area" situated in the neighborhood of Bayou Estates in Marrero, Jefferson Parish.[2] Residents who lived on Coubra Drive had experienced flooding prior to the May 3 storm, and they would see their homes flood again in 1979, 1980, 1982, and 1983.[3] The homeowners lost vehicles, appliances, and other possessions due to repeated flooding, and as a result, twenty-four families or individuals filed a lawsuit against Coubra's developer and Jefferson Parish in August 1978.[4] A second lawsuit was filed in relation to the 1982 flooding event. In each suit, the plaintiffs alleged that Regent Development Corp. and Jefferson Parish contributed to property damages through shoddy building practices, improper inspections, and negligence.[5]

The charges levied in the lawsuit were not unfounded. Coubra Drive was a foot lower than other streets in Bayou Estates, and when Regent cleared the block for development, the company improperly filled the area with tree stumps. Further, a study conducted in 1968 by an

[1] Ed Anderson, "Area Flood Price Tag $240 million," *Times-Picayune*, May 6, 1978, sec. 1, AHN; Clancy DuBos, "A Record? Rain Gauge Victim, Too," *Times-Picayune*, May 4, 1978, sec. 1, AHN.
[2] Joe Darby, "Floods Not the Only Problem in Marrero Disaster Area," *Times-Picayune*, May 12, 1978, sec. 1, AHN.
[3] Darby, "Floods not the Only Problem"; Joe Darby, "Disaster Hits Coubra Again," *Times-Picayune*, February 7, 1979, sec. 1, AHN; Vincent Lee, "Flooding Hits Area," *Times-Picayune*, April 3, 1980, sec. 1, AHN; Richard Boyd, "Homeowners Hope Suit Can Hold Water," *Times-Picayune*, September 11, 1983, sec. 7, AHN.
[4] Darby, "Negligence Cited in Street Damage Suits," *Times-Picayune*, August 11, 1978, sec. 1, AHN.
[5] Boyd, "Homeowners Hope Suit Can Hold Water."

engineering firm noted that the pumping stations responsible for draining the area would be inadequate with the addition of more streets. There was also some question as to whether local officials had followed appropriate procedures before accepting the street for public maintenance in 1972. Charles Julian, an engineer who worked for Jefferson Parish's Department of Roads and Bridges, testified during the civil trial in 1983 that he never gave approval after his initial examination of the site. The parish council voted to accept the street anyway, despite the lack of records for Julian's decision.[6] While human error and negligence certainly contributed to the suffering of Coubra Drive's residents, there was perhaps another, more fundamental problem with the development. The street had been built on swamplands that were drained during what the *Times-Picayune* called a period of "build now, worry later" growth in areas such as Jefferson Parish. Other neighborhoods on the West Bank experienced flooding during heavy storms, and Coubra Drive had simply become "an embarrassing symbol" of a larger issue – poorly planned urban expansion on "hastily drained wetlands."[7]

Clearing out swamps to allow for housing development was taking place throughout the nation by the mid-twentieth century. Starting in the late 1950s, home builders accelerated the construction of neighborhoods on drained wetlands in states such as Florida, New Jersey, and Ohio. Wetlands were not widely seen as productive ecological areas in need of preservation; rather they were impediments to social and economic growth.[8] Yet the potential consequences of building on drained wetlands could be seen in the cracked foundations and flooded homes of Coubra Drive. Certainly, there were actions that builders could take to mitigate flooding. For

[6] Richard Boyd, "Coubra Drive Never OK'd, Engineer Says," *Times-Picayune*, September 14, 1983, sec. 1, AHN; Boyd, "Homeowners Hope Suit can Hold Water."
[7] Joe Darby, "Coubra Problem Solution?" *Times-Picayune*, May 16, 1978, sec., AHN; "Lesson of Coubra Drive," *Times-Picayune*, August 23, 1980, sec. 1, AHN.
[8] Rome, *The Bulldozer in the Countryside*, 154-155.

example, had Regent used sand instead of trees the street's sinking might have been less pronounced. Improved drainage mechanisms could have also reduced the severity of flooding. Still, even when the alteration of wetlands was carried out with more caution than had been exercised on Coubra Drive, the loss of swamps and marshes for urban expansion was part of a broader trend in southern Louisiana during the twentieth century – the engineering of the state's coastal zone to facilitate economic and social growth. While there were benefits to pursuing activities and policies that promoted development, Louisianans also began to experience significant drawbacks from alterations to the coast. In fact, the loss of the state's wetlands after the 1930s became increasingly detrimental to the very economic and social growth that government officials sought to support.

Simmering beneath the political discussions and decision-making about Louisiana's environment and natural resources was the issue of land use. Questions about how Americans should use the land they lived and worked on were linked to questions about what the government should do to facilitate the social and economic development of communities. This chapter will examine how Louisiana's coast formed geologically and how specific policies contributed to the high rates of land loss during the twentieth century. Discussions about the development of environmentalism in the U.S. and changing perceptions about the value of wetlands are also considered. Examining how the problem of coastal erosion evolved in Louisiana and what shaped reactions to the loss of wetlands are vital to understanding how anti-erosion and coastal restoration policies progressed after 1970.

A Coastal Environment

Louisiana's coastline stretches three hundred and ninety-seven miles along the Gulf of Mexico and is bordered on the east by the Pearl River and on the west by the Sabine River. The

state's tidal shoreline, including areas such as barrier islands that are affected by tides, is 7,721 miles.[9] When land-water interfaces such as marshes, lakes, and canals are all considered, the total amount of "coast" in Louisiana reaches almost 30,000 miles.[10] That vast expanse of land includes over nine million acres of swamps, marshes, and barrier islands.[11] When discussing "Louisiana's wetlands," these are generally the areas that come to mind – the mixture of wet and dry places that exist somewhere south of Baton Rouge and north of the Gulf.

The state's coast and wetlands have been primarily created by the Mississippi River and its drainage basin, which began to form about eighteen thousand years ago toward the end of the last ice age. As massive sheets of glacial ice retreated across the North American continent, they gouged huge grooves in the land. The melting glaciers filled what became small streams, and over several thousand years, those small streams eventually merged into a larger, more complex water system. The largest part of that system became the Mississippi River. Early in the river's history, its waters carried tremendous amounts of sediment toward the Gulf of Mexico. Time and gravity caused a large portion of those sediments to accumulate into six different "lobes" or deltas where the river met the sea. Vegetation and natural rises in the land took shape as the river deposited sediments over the course of several thousand years.[12]

Land loss is a normal part of the cycle that formed southern Louisiana. Tidal action, subsidence, and major storms are all reasons why coastal wetlands might be lost – that is be

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[9] U.S. Census Bureau, *Statistical Abstract of the United States: 2012* (Washington, D.C.: U.S. Census Bureau, 2012), 225, http://www.census.gov/library/publications/2011/compendia/statab/131ed.html.
[10] Louisiana Coastal Wetlands and Restoration Task Force and the Wetlands Conservation and Restoration Authority, *Coast 2050: Toward a Sustainable Coastal Louisiana* (Baton Rouge, LA: Louisiana Department of Natural Resources, 1998), 41, http://www.coast2050.gov/report.pdf.
[11] Diane Lindstedt, "Renewable Resources at Stake: Barataria-Terrebonne Estuarine System in Southeast Louisiana," *Journal of Coastal Research*, special issue no. 44 (Spring 2005): 162, http://www.jstor.org/stable/25737055.
[12] Committee on the Restoration and Protection of Coastal Louisiana (National Research Council), *Drawing Louisiana's New Map: Addressing Land Loss in Coastal Louisiana*, (Washington, D.C.: The National Academies Press, 2006), 14-15, http://www.nap.edu/catalog/11476.html.

transformed into open water. For much of the state's history, the loss of wetlands was not a threat to the coast's sustainability since the delta-building process was able to create more land than was destroyed. In the twentieth century, that dynamic began to change and wetlands were lost faster than they were built. As a result, the state's coastline started to retreat because, in essence, the wetlands *are* the coast.[13] The decline in vegetation that held the soils in place was one of the key reasons why Louisiana's "boot" began rapidly disappearing after the 1930s.

The high rates of loss over the last eighty years are almost entirely related to human activities. Three major factors have contributed to the loss of wetlands and coastal erosion in Louisiana: the manipulation of the Mississippi River for flood control and navigation, conversion of wetlands to dry lands for agriculture and urban sprawl, and finally, the creation of infrastructure to support the extraction of oil and gas in Louisiana and the Outer Continental Shelf. In all three cases, the state and federal government enacted policies that supported the development of flood control, land conversion, and the oil industry. Exploring how these factors became interwoven in political, economic, and social developments in Louisiana is critical to understanding why modifying them has presented substantial challenges – even when officials and the public began to recognize the environmental significance of the state's wetlands.

Engineering the Mississippi River

Perhaps the largest contributor to coastal erosion has been the engineering of the Mississippi River for flood control and navigation. The most significant alterations to "Big Muddy" took place during the nineteenth and twentieth centuries, but human attempts to control the river started much earlier. As the Spanish and French began exploring the Mississippi Delta in the sixteenth and seventeenth centuries, they observed that the Native Americans who

[13] U.S. Department of the Interior, *The Impact of Federal Programs on Wetlands: A Report to Congress by the Secretary of the Interior*, vol. II (Arlington, VA: U.S. Fish and Wildlife Service, 1994), 154.

inhabited the area seemed content to live with the annual flooding of the river. They adapted their lifestyles to work with nature, rather than trying to force nature to work for their way of life. French settlers had no such intentions when they set out to make the delta theirs. Settlers began constructing artificial levees to keep the river from inundating their living spaces. By 1726, levees ranging in height from four to six feet surrounded the city of New Orleans.[14] Within a decade, the French had constructed fifty miles of levees on both sides of the river and added another ten miles to their network by 1752 to protect a growing number of plantations.[15]

Spanish and American landowners continued the French policy of building levees to contain the river. By 1812, the levee system extended more than one hundred and fifty miles north of New Orleans. In 1858, the network consisted of over one thousand miles of levees on both sides of the river. Constructing levees reduced flooding to a certain extent, but the structures also created new problems. Critics voiced concerns about the increasing height of the levees as early as 1816 and suggested that artificial spillways be constructed near New Orleans. They argued that an outlet could be used to funnel water from the Mississippi during flood stages and reduce the risk of a levee failure. Proponents of the levees opposed constructing outlets because they said doing so would remove the amount of liquid volume from the river. Less water flowing down the channel would result in a reduced speed and allow sediments to accumulate, thus raising the height of the river.[16]

In 1861, the differing opinions on how best to contain the Mississippi became far less important as the outbreak of the Civil War consumed the nation's attention. Due to general

[14] John Barry, *Rising Tide: The Great Mississippi Flood of 1927 and How it Changed America* (New York: Simon & Schuster Paperbacks, 2007), 40.
[15] Christopher Morris, *The Big Muddy: An Environmental History of the Mississippi and Its Peoples from Hernando De Soto to Hurricane Katrina* (New York: Oxford University Press, 2012), 61.
[16] Barry, *Rising Tide*, 40-41.

neglect and devastation from the war, the levee system was almost completely destroyed by 1865.[17] After hostilities ended, Louisiana officials discussed rebuilding the state's levees without federal assistance but made limited progress over the next decade. A shift in national policy occurred in June 1879 when President Rutherford Hayes signed legislation that created the Mississippi River Commission (MRC). The law established a seven-member board to plan for the management of the Mississippi River and consisted of both military and civilian engineers. Though the bill that created the MRC emphasized navigation more than flood control, the new commission represented a major step forward in the federal government's willingness to take broader control of the river.[18]

Congress charged the MRC with the authority to improve navigation conditions along the Mississippi River, and in the early 1880s, the seven-member board began considering its options – whether to "tame" the river for better navigability, reduced flooding, or a combination of both. Ultimately, the commission chose to implement what became known as the "levees-only" policy. The MRC decided that the best way to manage the Mississippi River was to contain it within a consistent, well-built system of levees. By squeezing the Mississippi's waters into a confined space, the MRC reasoned that the river would deepen its own channel, enabling ships to pass more freely and also reducing flood events. There would be no outlets or cutoffs to allow the Mississippi to interact with the deltaic plain, even in circumstances "controlled" by humans. Such a policy had been rejected by the experts who studied the river over the course of the nineteenth century. The MRC pursued the levees-only policy anyway as congressional interest in

[17] Charles Camillo and Matthew Pearcy, *Upon Their Shoulders: A History of the Mississippi River Commission from Its Inception through the Advent of the Modern Mississippi River and Tributaries Project* (Vicksburg, MS: Mississippi River Commission, 2004), 18.
[18] Martin Reuss, *Designing the Bayous: The Control of the Atchafalaya River Basin, 1800-1995* (College Station, TX: Texas A&M University Press, 2004), 64-65.

the Mississippi River waned during the 1890s. Those members who still supported the MRC were unwilling to fund construction for projects that were more expensive than the levees.[19]

As the MRC continued to oversee levee construction during the early twentieth century, the board's main mission remained navigational improvements rather than flood control. However, severe floods in 1912, 1913, and 1916 challenged congressional reluctance in supporting flood control measures. Property damages from the 1912 flood reached over $40 million, and local governments were quickly approaching a crisis point. The cost of maintaining and repairing levees had become increasingly prohibitive without federal assistance.[20] A bill co-sponsored by Louisiana Senator Joseph Ransdell in 1913 acknowledged that issue, declaring that states "unaided, cannot cope with this giant problem."[21] Still, conservative members of Congress continued to resist providing more direct assistance until 1917, when pro-flood control members finally prevailed. About a month before the United States entered World War I, President Woodrow Wilson signed the Flood Control Act of 1917. The law provided up to $45 million in funds for levee construction related to flood control and required that states match federal spending. Once the levees were completed, states became responsible for maintenance.[22]

By the mid-1920s, the MRC and federal policy regarding the Mississippi River was fully dependent on levees for flood control. In 1926, the commission issued a report that rejected the possibility of building spillways due to high costs. One year later though, the MRC and the national government had to reconsider the country's approach to flood control. In 1927, a series

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[19] John Barry, *Rising Tide,* 90-92; Camillo and Pearcy, *Upon Their Shoulders,* 65; 68; 94-95.
[20] Camillo and Pearcy, *Upon Their Shoulders*, 105.
[21] B.G. Humphreys and Joseph Randsdell, "Bill for Flood Prevention" in *Flood control of the Mississippi River: An Address before the National Drainage Commission* by Colonel C. McD. Townsend (Memphis, TN: Mississippi River Levee Association, 1913), 15, LSU Libraries Louisiana Waterways Collection, Baton Rouge, LA, http://cdm16313.contentdm.oclc.org/cdm/singleitem/collection/p16313coll35/id/11/rec/2. Humphreys was a representative in the U.S. House from Mississippi.
[22] Morris, *The Big Muddy*, 164.

of floods sent the Mississippi River spilling across the delta, inundating communities from Missouri to Louisiana.[23] Over the course of several months, the river flooded sixteen million acres, destroyed 41,000 buildings, and displaced at least 600,000 people. As many as five hundred individuals lost their lives. The devastating flood of 1927 brought into question the wisdom of relying exclusively on levees to control the Mississippi. Congress held hearings in the wake of the disaster, listening to three hundred witnesses and sifting through dozens of proposals for better flood control practices. One plan emerged as the compromise most likely to be accepted by Congress and President Calvin Coolidge. Proposed by the Chief of Engineers for the U.S. Army, Major General Edgar Jadwin's plan upheld the importance of the levees but acknowledged other measures should be employed to control flooding along the Mississippi River.[24]

The Army's chief engineer called for a new spillway to be constructed close to New Orleans, modest extensions of the existing levee system, and federal fiscal contributions of up to eighty percent.[25] Despite heavy criticism of the bill for not being bold enough, Coolidge indicated he would veto anything more expensive. Congress conceded to most of Coolidge's demands, and the president signed the Flood Control Act in May 1928.[26] Politicians in the Mississippi Valley states considered the act's appropriation of $325 million too low, but the legislation signaled a major shift in flood-control policy.[27] Controlling flooding was finally considered a national priority. Yet structural improvements were not the only contribution of the Jadwin plan; it also implicitly endorsed the idea that Americans could rely on engineering

[23] Morris, *The Big Muddy*, 164-165.
[24] Reuss, *Designing the Bayous*, 103; 109.
[25] Matthew Pearcy, "After the Flood: A History of the 1928 Flood Control Act," *Journal of Illinois State Historical Society* 95, no. 2 (Summer 2002): 181, http://www.jstor.org/stable/40193521.
[26] Pearcy, "After the Flood,"189-190.
[27] Morris, *The Big Muddy*, 166.

measures to protect properties in risky areas or turn to federal assistance in the event of a technological failure. The new approach was based on an old idea – that humans could control natural processes for the benefit of society. The "control" in the Jadwin plan would simply have to be savvier than the measures employed by the MRC in earlier decades.[28]

Tasked with overseeing the implementation of the 1928 Flood Control Act, the U.S. Army Corps of Engineers (USACE) eventually made modifications to the basic premise of the Jadwin plan. Between 1932 and 1935, the Corps constructed cutoffs along the Mississippi in order to "straighten" the river's course and encourage its waters to flow more rapidly down the main channel. The maximum height for levees was raised, and new outlets were built to ease pressure on the Atchafalaya River during severe flooding.[29] Construction of higher levees proceeded throughout the 1930s, and by 1941 most of the structures had been completed.[30] Two major outlets were built between 1929 and 1953, the Bonnet Carré Spillway in St. Charles Parish and the Morganza Spillway in Pointe Coupee Parish. In addition to construction, the Corps also routinely dredged parts of the Mississippi and Atchafalaya Rivers to maintain navigation channels.[31]

Engineering adjustments were not the only challenges that the Corps faced during the mid-twentieth century. After the 1927 flood, there were increasing concerns that the Mississippi was going to abandon its main channel for the Atchafalaya. By the late 1940s, those fears seemed increasingly likely. In 1888, seven percent of the Mississippi's waters flowed into the Atchafalaya, but that number had grown to twenty-five percent by 1950. If the Mississippi did

[28] Ted Steinberg discussed the subsidization of risk in his book, *Acts of God: The Unnatural History of Natural Disasters in America* (New York: Oxford University Press, 2000). He argued that federal flood-control policies have ultimately exacerbated, rather than alleviated, the problems of building communities in high-risk areas such as floodplains.
[29] Reuss, *Designing the Bayous*, 177-181.
[30] Ibid., 201-207.
[31] Ibid., 154-156.

"jump" channels, such a scenario would have been devastating for the economies of Baton Rouge and New Orleans. More immediately, the loss of water moving down the river's main channel meant more sediment could accumulate on the riverbed and potentially raise flood heights.[32] The Army Corps of Engineers and the Mississippi River Commission held a series of meetings between 1951 and 1952 to discuss possible solutions.[33] By 1955, the Corps and the MRC devised a plan that would keep the Mississippi River from switching channels and would also make use of the Atchafalaya as an outlet for floodwaters. The Old River Control Structure was completed in 1963 and designed to direct all of the waters from the Red River and twenty-five percent of the Mississippi into the Atchafalaya. That same year, the Corps also dammed the Old River and cut it off from the main course of the Mississippi.[34]

Despite investing billions of dollars to tame "Big Muddy," the nation still faced the prospect of ever-increasing flood losses due to population settlement patterns. After 1930, flood-related property damages climbed even as death rates declined. Construction rates increased as the twentieth century progressed, and the per capita losses from flooding more than doubled in the years between 1951 and 1985. In the late 1960s, Congress attempted to discourage people from living in high-risk locations through the National Flood Insurance Program (NFIP), but the law had little success in promoting more judicious use of the land. Rather than outright limiting development to keep people out of harm's way, governments instead tried to rely on technology to control nature and protect property.[35] However, the efforts to safeguard property and lives by engineering the Mississippi had serious consequences for the state's coastal lands. The sediment load of the river fell by sixty percent after the 1950s, and much of what remained ended up in the

[32] Ibid., 209-211.
[33] Ibid., 219-230.
[34] Ibid., 238-241.
[35] Steinberg, *Acts of God*, 117-119.

Gulf of Mexico instead of being deposited in the wetlands. Those sediments were crucial to maintaining the cycle of land-building in the southern part of the state.[36]

Converting Wetlands to Dry Lands

Another way that humans contributed to coastal erosion during the twentieth century was closely linked to the engineering of the Mississippi. The river's propensity to flood regularly put lives and property at risk but also made agriculture difficult to pursue. More specifically, the Mississippi's flooding made the sort of agriculture that European settlers were accustomed to hard to implement. The French colonists who built the first levees along the Mississippi did so because they could not envision living in an environment that was prone to regular flooding.[37] Educated Anglo-Americans shared the French view that dry lands were preferable to wet ones. Nineteenth century engineers spoke of "reclaiming" forests and swamps in southern Louisiana and also equated improving the land with improving morality.[38]

Such sentiments were present in 1849 when congressional delegations from Louisiana and Missouri proposed legislation to facilitate the conversion of swamplands to areas suitable for farming. Proponents of the Swamplands Act argued that creating farmland in Louisiana was good for the entire country. Not only would small, independent farmers produce food for the nation, they would also contribute to the strength of American democracy.[39] Speaking of the impact that swamp reclamation could have in Louisiana in 1848, a member from the House of Representative's Committee on Public Lands asserted:

> The most of these overflowed lands are represented as the richest in the world, being admirably adapted, if reclaimed, to the cultivation of sugar, rice, and [cotton]; and there would be no doubt that the proceeds of their products would support a population of millions…when it is found that these rich lands can be cultivated without risk of life or

[36] U.S. Department of the Interior, *The Impact of Federal Programs on Wetlands*, 144-146.
[37] Morris, *The Big Muddy*, 1-2.
[38] Ibid., 112.
[39] Vileisis, *Discovering the Unknown Landscape*, 72-75.

> health, it does not require the gift of prophecy to foretell that they will immediately be settled by an industrious and enterprising population, who will soon transform the tangled forests and gloomy cane breaks into fruitful fields and smiling gardens.[40]

The bill passed easily in March 1849 and established a program to help Louisiana encourage agricultural development and acquire funding for levee construction. The Swamplands Act transferred federally owned swamplands in Louisiana to the state government, which officials could then sell to private interests at low prices. Money raised from the sales was to be used to fund levee construction and drainage projects. By providing the opportunity to get cheap farmland, supporters of the deal believed that more people would move into the state and expand the tax base. Proponents also argued that the national government had a role to play in encouraging agriculture because farming was essential to the moral and economic health of the country. The ideas and proposals proved so appealing that one year later, Congress passed a second Swamplands Act and expanded the program to include fourteen additional states.[41]

Despite some of the high ideals behind the Swampland Acts, neither brought about substantial drainage of swampy areas. One of the problems that arose was trying to define which lands were swampy enough to qualify for transfer. Even after the federal government and states determined what areas could be included, states still did not have enough money to pay for large-scale drainage projects. A lack of technology to drain lands effectively presented another challenge.[42] Attempts at turning wetlands into dry lands took place again in Louisiana at the beginning of the 1900s, but those too failed for many of the same reasons that had complicated efforts during the previous century.[43]

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[40] U.S. Congress, House of Representatives, *Swamp Lands in Louisiana*, Report no. 816, at 4 (1848), LSU Libraries Louisiana Waterways Management Collection, Baton Rouge, LA, http://cdm16313.contentdm.oclc.org/cdm/singleitem/collection/p16313coll35/id/57/rec/1.
[41] Vileisis, *Discovering the Unknown Landscape*, 72-75.
[42] Ibid., 77-80; 90.
[43] Ibid., 132-133.

Widespread drainage in the state finally occurred during the 1930s and 1940s as a result of New Deal programs. The Flood Control Act of 1936 authorized the Army Corps of Engineers to expand its levee building and dam construction. As a result, lands that had previously been unsuitable for farming or residential development became available for those purposes. In 1940, the state of Louisiana initiated its own program to build on federal efforts to create a more effective system of drainage. World War II caused a delay in significant drainage, but the state had begun "reclaiming" wetlands for farmers and families by 1944. The state identified eleven million acres that could be drained and transformed into cropland. One year later, Louisiana set aside $5 million to fund the drainage programs and negotiated with the Army Corps of Engineers to build improved outlets.[44]

Louisiana's encouragement of wetland drainage was typical of national trends in both the nineteenth and twentieth centuries. When Europeans first began settling in North America, there were approximately 224 million acres of wetlands in what is now the contiguous United States. Between the initial arrival of Europeans in the sixteenth century and 1954, approximately forty percent of wetland areas were drained and converted to dry lands, primarily for agricultural purposes. Conversion slowed after 1954, but reclamation remained common with an average of 458,000 acres per year being transformed to dry lands. After the mid-twentieth century, wetlands were increasingly likely to be drained to support urban expansion instead of agriculture.[45] For example, in southern Louisiana, almost two thousand acres of wetlands were destroyed by the construction of federal highways between 1967 and 1976. The expansion of interstates had an

[44] Ibid., 174-175.
[45] Ralph Heimlich et al., *Wetlands and Agriculture: Private Interests and Public Benefits*, Agricultural Economic Report no. 765 (Washington, D.C.: Economic Research Service, U.S. Department of Agriculture, 1998), 18-21, http://www.ers.usda.gov/media/929243/aer765_002.pdf.

indirect effect on the wetlands as well by encouraging population dispersal.[46] During much of the nation's history, Americans wanted to use their lands for economic and social development and wetlands were not considered suitable for such purposes.

Building up Big Oil

A third way that humans contributed to coastal erosion in Louisiana was related to the extraction of oil and gas. More specifically, infrastructure built during the twentieth century to support the expansion of the oil and gas industry exacerbated the loss of wetlands. After kerosene became a popular fuel for lamps in the mid-1800s, demand for petroleum products began to increase. In 1866, drillers dug an exploratory well in Louisiana's Calcasieu Parish but did not find commercial quantities of oil for nearly forty years. Another exploratory well turned into a "gusher" in Jennings, Louisiana in 1901, and the state became more attractive to oil prospectors. Locating additional fields in the marshy swamps of southern Louisiana was difficult though, and much of the state's early oil development took place in the northern parishes of Caddo and Monroe.[47]

Starting in the 1920s, technological advances improved exploration techniques and allowed the oil industry to move into areas that had previously been too difficult to develop. By the 1930s, innovations such as the "marsh buggy" and submersible drilling rigs facilitated operations in Louisiana's coastal parishes. Greater understanding about geological processes also bolstered activities in the southern part of the state when prospectors connected the presence of salt domes to potential oil reserves.[48] Experiments with barge-based platforms and improved drill bits during the late 1930s allowed explorers to tentatively move offshore. In 1937, Pure Oil and

[46] U.S. Department of the Interior, *The Impact of Federal Programs on Wetlands*, 153.
[47] Lindstedt et al., *History of Oil and Gas Development in Coastal Louisiana*, 7.
[48] Lindstedt et al., *History of Oil and Gas Development in Coastal Louisiana*, 10-11.

Superior Oil built a platform in fifteen feet of water, one mile from the nearest on-shore supply station in Cameron Parish. By 1938, oil companies had seven hundred wells that were surrounded by water.[49]

Labor shortages and rationing created a lull in offshore exploration and slowed onshore development during World War II, but the oil industry remained crucial to the nation's war efforts. Oil was necessary for the production of vital materials, including TNT, synthetic rubber, gasoline, and lubricants for machinery. Concerns about U-boat attacks elevated the importance of pipelines for transporting oil and gas from the Gulf to the major population centers on the east coast. There were fears that shortages could undermine the war effort, and the federal government created the Petroleum Administration for War to ensure that the country had adequate supplies. Significant amounts of oil were required to fly airplanes, fuel warships, and drive trucks domestically and abroad.[50]

After the war ended in 1945, demand for oil accelerated rather than declined even as the military demobilized. Americans began buying more homes, automobiles, and appliances, and European countries started to transition from coal to petroleum as their main source of energy. The United States needed greater access to oil, and companies looked to places where they could expand their operations. Oilfields in the Middle East were one source, but the oil industry still believed there was potential beneath the waters of the Gulf of Mexico. Companies purchased surplus boats, engines, and other materials from the War Assets Administration and used those items to resume exploration in the Gulf. In 1947, the Kerr-McGee Corporation drilled an oil

[49] Tyler Priest, "Technology and Strategy of Petroleum Exploration in Coastal and Offshore Gulf of Mexico," *History of the Offshore Oil and Gas Industry in Southern Louisiana*, *Papers on the Evolving Offshore Industry*, vol. I (New Orleans, LA: Minerals Management Service, 2008), 30-32, https://www.data.boem.gov/PI/PDFImages/ESPIS/4/4530.pdf.
[50] Penney, "In the Wake of War: World War II," 42-45.

well eleven miles off Louisiana's shore and was soon followed by California Oil and Humble Oil. Drilling technologies, radio, and sonar also helped oil companies explore further offshore during the late 1940s.[51]

To support the exploration, extraction, and transportation of oil and gas in Louisiana and eventually the Outer Continental Shelf, infrastructure had to be expanded. During the mid-1950s, pipeline expansion projects began with the three hundred and fifty-five mile "Muskrat Line."[52] The oil and gas industry also needed better ways to move people and equipment through the wetlands of south Louisiana. The federal government responded and during the 1960s and 1970s, Congress instructed the Army Corps of Engineers to build navigation channels to facilitate transportation. In southeast Louisiana, the Corps built the Houma Navigation Channel, and in the southwest portion of the state, the Calcasieu Ship Channel. Both the pipelines and the navigation channels were important to the development of oil and gas in Louisiana and in particular, the OCS. Without the ability to move oil, gas, and supplies in a cost-efficient manner, development would have likely proceeded at a much slower pace.[53]

Currently, over nine thousand miles of pipelines crisscross the state's coast, a total that includes 191 major pipeline systems coming in from the Outer Continental Shelf. Additionally, thousands of miles of canals have been constructed to support oil and gas development. Some of those canals are small and are used mainly to access drilling wells, while others such as the Gulf Intracoastal Waterway are much larger and are used for commercial transportation.[54] The infrastructure is crucial to the nation's energy supply, but the pipelines and canals have also

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[51] Penney, "In the Wake of War: World War II," 55-56.
[52] Theriot, *American Energy, Imperiled Coast*, 46-47.
[53] Ibid., 76-77.
[54] Louisiana Coastal Protection and Restoration Authority, *Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast* (Baton Rouge, LA: Louisiana Coastal Restoration and Protection Authority, 2007), 7, http://sonris-www.dnr.state.la.us/dnrservices/redirectUrl.jsp?dID=4063376; Theriot, *American Energy, Imperiled Coast*, 3-4.

contributed to the loss of the state's wetlands. Initial construction of pipelines and canals directly removes wetland vegetation, but a secondary and more damaging effect is the long-term problem of saltwater intrusion. The loss of vegetation alters the local hydrology of marshes as salt water moves into areas with plant life that is not suited to increased salinity levels. That causes more vegetation to die, which results in salt water moving further inland to damage more areas.[55]

Despite the problems associated with pipelines, stopping the extraction of oil and gas has not been a particularly attractive political option for public officials. Similar to engineering the Mississippi or converting wetlands to dry lands, policies that supported oil and gas production became firmly entrenched in the state's politics and economics during the twentieth century. A degraded coastal ecosystem put lives, property, and commerce at risk in southern Louisiana, but policymakers had to contend with enduring notions that prioritized economic growth over environmental protection. Americans have long seen the environment as a commodity to be used for the financial benefit of individuals, but the deterioration of the nation's waterways, landscapes, and breathable air prompted public demands for action after World War II. The response to the loss of wetlands in Louisiana would be shaped by these sometimes contradictory impulses – the desire to promote socio-economic growth and the aspiration to protect the environment.

An American Environment

From the founding of the nation through the nineteenth century, Americans viewed their surroundings in two distinct ways. First, humanity was not part of nature but rather maintained a dominant position over the natural world. Second, nature was to be tamed and used to help human society expand. Further, land and natural resources were seen as unlimited on the North

[55] Louisiana Coastal Protection and Restoration Authority, *Louisiana's Comprehensive Master Plan* (2012), 18, http://sonris-www.dnr.state.la.us/dnrservices/redirectUrl.jsp?dID=4379731.

American continent, and humans could make use of both without reservation. Growth – whether that meant territorial acquisition or economic prosperity – was seen as an unquestionable good. Early Americans did not think about their surroundings in terms of preservation but rather exploitation. That viewpoint remained an integral part of the nation's attitude toward the natural world well into the twentieth century.[56]

Regardless of attitudes about exploitation, Americans still found their surroundings to be worthy of admiration. In the 1800s, landscape painters such as Thomas Cole and Thomas Moran were wildly popular. Their works showed imposing mountains, sweeping meadows, and idyllic streams – images of the American continent where nature was mighty and undefiled. The natural majesty in the United States was seen as a key component of American identity; the republic's strength came from the moral purity derived by a blessed landscape. Even as industrialization transformed some parts of the continent into unnatural, sullied spaces, Americans could look to the West and to the paintings of Cole or Moran to comfort themselves that pristine nature still dominated.[57]

Mountains, forests, and rivers were not the only features of American topography though. There were millions of acres of swamps, marshes, and bogs that were part of the nation's landscape, but those areas were not viewed with the same reverence or awe. Instead, colonial

[56] Benjamin Kline, *First Along the River: A Brief History of the U.S. Environmental Movement* (Lanham, MD: Rowman & Littlefield Publishers, 2011), 14-15; 26. According to Kline, European settlers in North America based their attitudes about nature on a mixture of Judeo-Christian beliefs and Enlightenment ideals. Christian scholars pointed to God's commandment that Adam assume dominion over the earth as evidence that humans were meant to be superior to nature. Enlightenment thinkers also argued that humans were superior to nature but not because of biblical stories or religious doctrine. Instead, humanity was meant to dominate nature because humans were capable of rational inquiry and scientific analysis. By using those abilities, humans could determine the laws that governed the natural world and then manipulate those laws for the benefit of society. While Judeo-Christian thinking and Enlightenment philosophies used different means to reach the conclusion that humans were superior to nature, both viewpoints held that society's progress depended on humans maintaining their rightful dominance over the natural world (5-15).

[57] John Opie, *Nature's Nation: An Environmental History of the United States*, 198-205.

settlers and early Americans tended to view swampy areas with suspicion or outright disdain.[58] They also sometimes saw wetlands as impediments to development, especially in cases like those related to transportation infrastructure. Roads and bridges had to be built outside of swamps, and when doing so was not feasible, canals had to be constructed.[59] By the mid-nineteenth century, Americans associated wetlands with outbreaks of malaria and believed that the "bad air" of swamps caused people to become ill.[60] There was little incentive to protect wetlands, and the scant legislation that existed was meant to encourage drainage for agriculture, flood control, or public health.[61]

Despite the prevailing view that the exploitation of nature was a common good, there were a few Americans who questioned that perspective. Writers such as Henry David Thoreau worried over the decline in the nation's pristine wilderness and questioned how the loss of those spaces would affect American character. For Thoreau and others who shared similar ideas, nature sustained the human spirit and gave strength to civilization.[62] Abundant, unsullied natural spaces provided Americans with a political and moral advantage over the rest of the world.[63] As industrialization hastened the exploitation of nature, there were a variety of growing concerns about the ramifications of unchecked progress. For example, citizens across the nation began

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[58] Rodney Giblett, *Postmodern Wetlands: Culture, History, Ecology* (Edinburgh, Scotland: Edinburgh University Press, 1996), 3-4.
[59] Giblett, *Postmodern Wetlands*, 18-19. There were exceptions to early Americans' aversion to the development of wetlands, most notably the Great Dismal Swamp in Virginia and North Carolina. In 1764, a group of six investors – including George Washington – set out to take advantage of the abundant timber in the area. Starting in the late 1760s, slave labor was used to dig ditches and canals through the swamp to improve access to the bald cypress trees. The company also had intentions to establish farms on the wetlands once they were drained, but those plans were abandoned by the mid-1770s. Instead, the "Adventurers for draining the great Dismal Swamp" company focused on extracting timber. While Washington called the swamp a "glorious paradise," the first man to survey the area said the "foul damps" corrupted the air and made it "unfit for Respiration" (Vileisis, 36; 42).
[60] Jeffrey K. Stine, *America's Forested Wetlands: From Wasteland to Valued Resource* (Durham, North Carolina: Forest History Society, 2008), 7-8.
[61] Ibid., 8-9.
[62] Kline, *First Along the River*, 39-40.
[63] Opie, *Nature's Nation*, 204.

pressing municipal governments to temper the excesses of development that threatened to undermine human health and well-being. Doctors, women's clubs, social workers, and engineers formed grassroots organizations to demand that public officials craft policies to better regulate sanitation or air quality.[64]

Around the turn of the twentieth century, Progressives at the national level started to advocate for the use of professional expertise and scientific management to counter some of the worst problems created by unregulated growth. For Progressive politicians including President Theodore Roosevelt, a properly managed natural world could serve as both a respite from industrial cities and a source for American prosperity. The philosophy of conservation developed within Progressive circles and called for using natural resources as efficiently as possible to ensure long-term sustainability. Under a conservationist outlook, resources would no longer be exploited by individuals without regard for future generations. A scientific, centralized approach to nature would be employed to control consumption of resources, and public management techniques would be included in policymaking instead of relying on private entities to regulate themselves.[65]

Conservation persisted as a guiding influence for federal policies regarding natural resources through World War II, but the management approach often became undermined by

[64] Adam Rome, "Coming to Terms with Pollution: The Language of Environmental Reform," *Environmental History* 1, no. 3 (July 1996): 7, http://www.jstor.org/stable/3985154. Rome argued that the earliest conceptualizations of pollution by reformers were fluid as demonstrated by the language they used. Industrial wastes in rivers or streams concerned citizens, but the idea of "pollution" also carried moral connotations. For example, a group of citizen advocates in New York City in the late nineteenth century identified poor immigrants as a major source of pollution while engineers were more likely to see industries as contributing to the deterioration of environmental quality. Regardless, urban reformers were inclined to think of pollution as a public health issue in contrast to conservationists or preservationists who viewed protection of natural resources as more pressing. The connection between the good health and well-being of humans with their surroundings became more prominent when the modern environmentalism movement took shape in the 1960s.

[65] Hal K. Rothman, *Saving the Planet: The American Response to the Environment in the Twentieth Century* (Chicago: Ivan R. Dee, 2001), 34-39.

competing interests.[66] Republicans in the 1920s saw little reason to intervene, and in particular, President Herbert Hoover believed the best approach to managing the environment was to encourage voluntarism among states and businesses to regulate the use of natural resources.[67] The Great Depression brought about a return of more conservationist activities by the federal government, but the purpose was not necessarily to boost efficiency in resource usage or protect forests from degradation. Rather, President Franklin Roosevelt's use of conservation was closely tied to the creation of jobs, and agencies such the Soil Conservation Service (SCS) taught farmers how to manage their soil to avoid erosion problems. The "New Conservation" was also influenced by the goal of "improving" natural spaces to benefit society. For example, the Tennessee Valley Authority (TVA) built sixteen dams by 1946 and helped bring electricity to some of the most impoverished states in the country.[68] That "improvement" came at a cost though. When the dams were built to control flooding or create hydroelectricity, over five hundred thousand acres of land were submerged and approximately seven thousand rural families had to abandon their homes.[69]

New Deal conservation emphasized the economic benefits of conservation but did not significantly challenge the nation's perceptions that natural resources were meant to benefit human society. That attitude continued during World War II as industrialization spread beyond the Northeast and port cities of the nation. States such as Nevada, Oregon, and New Mexico saw

[66] Thomas Wellock, *Preserving the Nation: The Conservation and Environmental Movement, 1870-2000* (Wheeling, IL: Harlan-Davidson, Inc., 2007), 81-85. As an example of competing interests, Wellock discussed the conundrum faced by the National Park Service in the 1920s. With expanded access to automobiles after World War I, more Americans came into contact with the nation's parks and other wildlife areas. The National Park Service had been charged with protecting parks from abuse, but the parks needed to attract tourists in order to survive. Increased use by visitors at the parks resulted in environmental degradation.
[67] Ibid., 90-96.
[68] Ibid., 98-104.
[69] Donald E. Davis, "Metropolis: Paradise Lost," in *Southern United States: An Environmental History* (Santa Barbara, CA: ABC-CLIO, 2006), 175-178.

new pockets of wealth with the development of airplane manufacturing or magnesium processing. In fact, Americans across the country saw their incomes rise as they went to work in wartime factories and shipyards. Even groups that had long been at the bottom of the economic ladder benefitted, including African Americans and rural migrants from the South. However, wartime manufacturing took a heavy toll on the environment. Sewage and industrial wastes were dumped into waterways, and factories released emissions into the air without much consideration about the potential impacts of pollution. In fact, such practices as they were often viewed to be a necessary part of the war effort.[70]

An American Environment in Crisis

While Americans enjoyed unprecedented economic prosperity following the end of World War II, they also experienced a growing sense of anxiety.[71] As more people moved into suburban areas outside of cities, there were renewed concerns about the loss of natural spaces. Less than a decade after the war's conclusion, those worries were reflected in a controversy about a little known national park.[72] In the early 1950s, the Bureau of Reclamation proposed flooding the Dinosaur National Monument as part of the Colorado River Storage Project (CRSP). Located near the border between Colorado and Utah, the area had been classified as a national monument in 1908 to regulate the removal of dinosaur fossils. By the 1920s though, most of the fossils were gone and the area mainly became a recreational space. However, visitation to the

[70] Hal Rothman, *The Greening of a Nation?: Environmentalism in the United States since 1945*, (Fort Worth, TX: Harcourt Brace College Publishers, 1998), 12-15.
[71] Rothman, *Saving the Planet*, 88-95. In his book, Rothman included examples of increasing environmental pressures such as the growth of suburban sprawl seen in places like Levittown on Long Island. By 1950, there were 1.7 million family homes in Levittown, and by 1970, there would be more people living in suburbs than cities. The open spaces that had once circled cities began to disappear, and freeways were built to connect metropolitan areas. Rapid urban and industrial growth also introduced pollution into new places at ever-increasing levels. For example, in Donora, Pennsylvania, a thermal inversion event in 1948 resulted in the deaths of twenty people due to complications related to the trapped smog.
[72] Kline, *First Along the River*, 80-81.

monument was relatively low due its remote location. When the Bureau of Reclamation proposed building a dam that would result in the area's flooding, agency officials and supporters of the CRSP expected there to be little opposition.[73]

Instead, almost three hundred state and national conservationist organizations rallied together to block the Bureau's plans and tried to persuade federal officials to leave the monument alone. When the pressure proved to be ineffective, conservation groups appealed to the broader American public with the use of pamphlets, movies, and newspaper articles. Pro-conservation forces argued that flooding Dinosaur National Monument would be the essence of unchecked development and could lead to the persistent loss of open spaces. The public relations campaign was effective, and conservationist organizations managed to make the remote park a national concern. Congressional offices were inundated with mail from people throughout the country who opposed to the project, even though most of them had never been to the monument. After several years of intense debate, Congress approved the CRSP in 1956 without the dam that would have flooded the park.[74]

Six years later, Americans received another jolt that forced them to rethink how the country used its resources when Rachel Carson published *Silent Spring*. In the opening pages of her book, the author refers to a town that had once been full of beauty but had become stricken with a "strange silence." Humans and animals became mysteriously ill, and plants withered and died. Though the place she describes was imaginary, Carson wrote that real towns across the country were suffering similar fates. She asked, "What has already silenced the voices of spring in countless towns in America?"[75] Her answer was the proliferation of chemicals such as DDT

[73] Rothman, *The Greening of a Nation?*, 139-40.
[74] Ibid., 41-45.
[75] Rachel Carson, *Silent Spring*, First Mariner Books Edition (First Mariner Books edition, 2002), 3.

that had been used to improve agriculture but instead had poisoned the animals, plants, and rivers of the nation. She argued the relentless use of chemicals endangered human lives and that diseases such as small pox were no longer the main concern of civilized society. Rather, humans had created a more dangerous environment with their overuse of synthetic chemicals. Carson emphasized that all of the planet's life forms were connected and that harm to even the smallest creature could reverberate up to more complex organisms. She referred to this "web of life" as constituting the basis of ecology.[76]

With eloquent writing and well-explained science, Carson exposed Americans to the ideas of ecology and the harm that unchecked "progress" could do to the planet and human bodies. While conservationists had primarily been concerned about preserving natural spaces, *Silent Spring* argued that society and nature were intimately connected. Carson also advocated the idea that humans had a duty to protect nature from destruction, and her perspectives found a broad audience. *Silent Spring* spent thirty-one weeks on the *New York Times*' bestseller list in 1962 and sold over one million copies. The television network CBS aired a special based on Carson's work in April 1963, and individuals and groups began protesting the indiscriminate use of chlorinated hydrocarbons in the following years. Within a decade of *Silent Spring*'s publication, the federal government banned the use of DDT.[77]

The debate over Dinosaur National Monument and the publication of *Silent Spring* are generally considered important milestones in the development of modern environmentalism. Both served as indicators of how attitudes about the environment were shifting. In the minds of many Americans, humans were no longer dominant over nature but rather part of the "web of life" described by Carson. A growing segment of the population also began to recognize that the

[76] Ibid., 187-189.
[77] Opie, *Nature's Nation*, 413-415.

negative impacts of environmental exploitation could be seen in urban and suburban spaces.[78] By the mid-1960s, politicians were facing a steady rise in public pressure to do *something* about deterioration in the environment. State and federal officials responded by crafting a series of new policies intended to increase protections for ecologically valuable spaces. Those policies initially drew on tactics used by conservationists in the early twentieth century, but legislative efforts eventually expanded to address specific problems of pollution and land use in the 1970s.

Post-World War II Efforts to Protect Natural Spaces

One of the ways the federal government protected wildlife or scenic landscapes prior to the 1970s was to designate tracts of public land as wildlife refuges or national parks.[79] To assist with that goal, Congress authorized the Wilderness Act in 1964, which established the National Wilderness Preservation System (NWPS). The act immediately set aside 9.1 million acres and banned timbering, construction, and most use of motor vehicles on those lands.[80] Congress also established the Land and Water Conservation Fund (LWCF) in 1965 to help state and federal entities purchase private lands for the purposes of turning them into reserve areas. In the early 1970s, about sixty percent of the LWCF funds went to the states, and the remaining forty percent went to the National Park Service, the Forest Service, the U.S. Fish and Wildlife Service (FWS), and the Bureau of Land Management.[81] By the late 1960s, about five percent of the nation's lands had been set aside for public purposes such as wildlife protection.[82]

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[78] Samuel P. Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985* (New York, Cambridge University Press, 1987), 29-32.
[79] Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report of the Council of Environmental Quality* (Washington, D.C.: U.S. Government Printing Office, 1975), 258. President Theodore Roosevelt established the nation's first waterfowl refuge in 1903 at Pelican Island in Florida.
[80] Ibid., 250-251.
[81] Ibid., 246.
[82] Council on Environmental Quality, *Environmental Quality: The First Annual Report of the Council on Environmental Quality Together with the President's Message to Congress* (Washington, D.C.: U.S. Government Printing Office, 1970), 166.

In addition to setting aside tracts of wilderness, political representatives pursued other strategies to address concerns about the American environment. The protection of natural spaces was becoming more important, but so were issues of urban and industrial pollution. Yet economic growth remained a top national priority, and government officials sought ways to balance that growth with preserving environmental quality. In 1961, President John Kennedy requested that the Secretaries of the Army, Interior, Agriculture, and Health, Education, and Welfare prepare a set of standards for the executive branch that would guide the development of water bodies, such as rivers, and nearby lands influenced by those waters. One year later, the four secretaries presented their report to the administration and outlined what they believed should be guiding principles for decision-making.[83]

The committee stated that water resource development should be based on the promotion of economic growth, preservation of natural spaces, and protection of the "well-being of people." To give each of those principles sufficient consideration, the committee suggested two strategies. The first was to plan for multiple uses of water and related land resources. Recreation, navigation, protection of historic sites, and safe drinking water were all equally viable uses of water resources, and planners should encourage management schemes that allowed for each when possible. The second strategy was to use river basins as a geographical unit of planning. Doing so allowed for the consideration of a broad range of impacts without the area becoming too large and unmanageable. State and federal agencies could form river basin commissions to oversee regional development and would be responsible for evaluating projects that took place in

[83] U.S. Congress, Senate, *Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans For Use and Development of Water and Related Land Resources: Prepared under the Direction of the President's Water Resources Council*, S. Doc. No. 97, at v-vii (1962), http://planning.usace.army.mil/toolbox/library/Guidance/PoliciesStandardsProceduresWResources1962wSupp1_1964.pdf

their respective basins. Project proposals had to be evaluated by several different criteria, including the necessity of the project, how the project related to the entire basin, whether there were more suitable alternatives, and if the public supported the proposal.[84]

Congress approved the committee's suggestions and translated them into law in 1965 with the Water Resources Planning Act (WRPA). The act recognized that river systems and nearby lands were interrelated and that long-term planning was the best way to ensure multiple uses of the nation's water resources. When commissions considered project proposals, they would have to weigh economic development, the need for conservation, and public opinion before making a decision to approve. The WRPA created a national Water Resources Commission (WRC), which would provide technical advice and help resolve potential conflicts in development decisions. No state could be compelled to participate but would become eligible for financial assistance from the federal government if it chose to do so.[85]

States in regions such as New England and the Pacific Northwest eventually formed commissions, but the successful implementation of the WPRA was limited.[86] When funds from the act became available in 1967, states were reluctant to commit matching assets in order to get federal monies. State and local agencies were more likely to invest in waste treatment rather than planning development activities.[87] However, the WPRA was a precursor of trends in environmental legislation that evolved in the 1970s. Considering the impact of projects on natural resources along with economic benefits became an important policy mechanism, as did

[84] Ibid., at 1-6.
[85] Henry Caulfield, Jr., "Environmental Management: Water and Related Land," *Public Administration Review* 28, no. 4 (July-Aug 1968): 306-309, http://www.jstor.org/stable/973511.
[86] William E. Taylor and Mark Gerath, "The Watershed Protection Approach: Is the Promise about to be Realized?" *Natural Resources and Environment* 11, no. 2 (Fall 1996): 16, http://www.jstor.org/stable/40923630.
[87] William C. Wright, Ronna Cohen, and Jeffrey H. Heath, "Decentralizing Water Resource Planning and Management," *Journal (American Water Works Association)* 74, no. 7 (July 1982): 335, http://www.jstor.org/stable/41271053.

expecting resources to fulfill multiple functions. Additionally, state and federal agencies increasingly turned toward making cooperative plans that encompassed broad areas or systems instead of seeing localities as unrelated to one another. Those ideas formed the basis of comprehensive planning - a technique that assumed that natural resources were interrelated, that those resources often needed to fulfill multiple uses, and that an effective strategy would accommodate as many interests as was economically and ecologically possible. Comprehensive management would be used during administration and would follow the principles developed during planning.

Policymakers considered applying comprehensive planning and management to areas other than river systems, including the nation's marine resources. In 1969, the Commission on Marine Sciences, Engineering and Resources (CMSER) published a landmark report entitled *Our Nation and the Sea*. Generally referred to as the Stratton Commission in honor of its chair, Julius A. Stratton, the CMSER had been established by the Marine Resources and Engineering Development Act of 1966. Though the commission did not give a precise definition of what constituted the "coastal zone," the report assumed that the area generally meant the landward side of the low tide mark. The commission recognized that increasing pressures on marine resources would result in irreparable damage to the nation's coastal zone if development was left unchecked. Commissioners also noted that comprehensive coastal zone management was not a major priority in states and efforts by the federal government were scattered at best.[88] To help consolidate federal activities, the commission recommended that the newly created National Oceanic and Atmospheric Administration (NOAA) be placed in charge of reviewing state plans,

[88] U.S. Congress, House of Representatives, Commission on Marine Science, Engineering and Resources, *Our Nation and the Sea: A Plan for National Action*, H.R. Doc. No. 91-92, at 49-56 (1969), https://archive.org/details/ournationseaplan00unit

as well as offering technical expertise and assistance to state officials developing management programs.[89]

The WPRA and the Stratton Commission acknowledged the need for a broader outlook when making decisions about resource development and that cooperation among state, federal, and research institutions could facilitate policy planning. However, there was no legal requirement to encourage state or federal officials to do so. The country had some programs to protect or preserve specific resources, but there was little incentive to consider broadly how socio-economic growth might impact the environment. Development projects were generally designed and implemented based on concerns about cost or technical feasibility, not on how they might affect the condition of natural resources. By the end of the 1960s, representatives in Congress recognized that the country needed such a policy and took action to formulate one.

Incorporating the Environment into Policy

In December of 1969, both houses of Congress passed the National Environmental Policy Act (NEPA), which President Richard Nixon signed into law on January 1, 1970. The act included several of the principles that had been present in the WPRA. One, federal agencies would be required to give equal consideration to the environment when making policy or development decisions.[90] Two, any action or piece of legislation that could have a significant impact on the environment had to be evaluated by the planning agency and a "detailed statement" on the proposed project had to be compiled.[91] The findings of that statement then had to be made available to both decision-makers and the public. Finally, NEPA established the

[89] Ibid., at 61-62.

[90] "Equal consideration" was used frequently by federal and state governments and the courts when discussing how to incorporate environmental considerations into policymaking. Generally speaking, this meant that planners in agencies such as the Army Corps of Engineers should consider the environment to be "equal" in value to economic or social interests.

[91] National Environmental Policy Act, Pub. L. No. 91-190 (1970).

Council on Environmental Quality (CEQ), which would serve as an advisory body for the president on matters relating to the environment. Additional legislation in 1970 empowered the CEQ to develop guidelines and recommend priorities for Congress and federal agencies to follow when making decisions.[92]

The National Environmental Policy Act became the basis of environmental protection in the United States and reflected some of the proposals made in the 1960s. Evaluating projects solely based on cost or technical feasibility was no longer sufficient; officials also had to consider the impact on natural resources or the potential pollution hazards. Seventy federal agencies became obligated to follow NEPA, though some such as the Forest Service already considered environmental impacts in their planning processes.[93] By compelling officials to consider possible damages and design alternatives in decision-making, the authors of NEPA hoped to prevent environmental damage instead of trying to repair harm after it had already occurred.[94] One of the most well-known examples in the early history of NEPA's impact on federal policymaking was the decision by President Nixon to halt the construction of a barge canal being built to cross northern Florida. The Army Corps of Engineers had already completed a portion of the canal when the CEQ advised the president to abandon the project out of concern over environmental damage. Nixon concurred with the council's recommendation and ordered the Corps to stop the project from proceeding any further.[95]

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[92] Council on Environmental Quality, *Environmental Quality: The First Annual Report*, 20-22.
[93] Council on Environmental Quality, *Environmental Quality: Twenty-Fifth Anniversary Report* (Washington, D.C.: U.S. Government Printing Office, 1995), 47-49, https://ceq.doe.gov/nepa/reports/1994-95/25th_ann.pdf; Council on Environmental Quality, *Environmental Quality: The Third Annual Report of the Council on Environmental Quality*, Washington, D.C.: U.S. Government Printing Office, 1972), 239, http://www.slideshare.net/whitehouse/august-1972-the-second-annual-report-of-the-council-on-environmental-quality.
[94] Council on Environmental Quality, *Environmental Quality: The First Annual Report*, 22.
[95] Council on Environmental Quality, *Environmental Quality: The Third Annual Report*, 226.

One of the ways that NEPA nudged government agencies into considering the environment was to include a mechanism that required officials to examine potential impacts on natural resources. Referred to as a "detailed statement" in the law, that mechanism eventually became known as an Environmental Impact Statement (EIS).[96] Major projects required the planning agency consult with relevant bureaucracies at local, state, and federal levels and issue a report that explained the purpose of the project, potential impacts, and possible alternatives. The report was then open to the public for review and could lead to modifications or abandonment of the project.[97] Non-governmental parties were also subject to the provisions of NEPA by way of having regulatory powers applied to their activities. For example, if an oil company wanted to construct a canal through a waterway overseen by the Army Corps of Engineers, the Corps would have to evaluate the potential environmental impact of the canal before granting permission for its construction.[98]

Incorporating consideration of the environment as a matter of policy was a new trend for the federal government in the 1970s, and legislative and administrative actions to protect specific resources from degradation also became more stringent.[99] Two of the most significant laws that passed were the Clean Air Act (CAA) Amendments in 1970 and the amendments to the Federal Water Pollution Control Act (FWPCA) in 1972.[100] The former established air quality standards in relation to six major classes of pollutants and required that emissions of those pollutants be reduced by 1977. Under the CAA, states would be responsible for developing implementation

[96] National Environmental Policy Act, Pub. L. No. 91-190 (1970).
[97] Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report*, 627-629.
[98] Council on Environmental Quality, *Environmental Quality: The Third Annual Report*, 225-226.
[99] Council on Environmental Quality, *Environmental Quality: The Tenth Annual Report of the Council on Environmental Quality* (Washington, D.C.: U.S. Government Printing Office, 1979), 2, http://www.slideshare.net/whitehouse/august-1979-the-tenth-annual-report-of-the-council-on-environmental-quality.
[100] The 1972 FWPCA amendments are often referred to as the Clean Water Act (CWA) of 1972 in modern parlance, but the phrase "Clean Water Act" was not consistently applied to the law until additional amendments were passed in 1977. The use of "Clean Water Act" in this dissertation refers to the FWPCA as amended in 1972 and 1977.

and monitoring plans. The primary goal of the act was to protect human health, while secondary goals included protecting property and preserving the scenic beauty of landscapes.[101]

Two years after the CAA became law, Congress passed amendments to the FWPCA of 1948. The objective of the amendments was "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[102] Federal legislators were interested in protecting water quality for human health, wildlife, and recreational purposes by limiting the amount of pollution discharged into the country's waterways. One of the strongest indicators that Congress was serious about improving water quality was the funding provision that obligated the federal government to cover up to seventy-five percent of construction costs for municipal wastewater treatment facilities. The law also directed the newly established Environmental Protection Agency to develop standards for pollution emissions by stationary sources such as factories. The EPA, which had been created by presidential executive order in 1970, had become the nation's central anti-pollution agency and was in charge of overseeing enforcement of the CAA and the FWPCA amendments.[103]

Protecting air and water quality were major steps taken by the federal government in the early 1970s, but there was also interest in applying more comprehensive management techniques to land use. In the context of policymaking, "land use" usually referred to planning for social, economic, and industrial growth in a deliberate, orderly fashion and had long been the prerogative of municipal governments. In 1909, Boston and Los Angeles passed some of the earliest ordinances regulating land use by restricting building heights in certain areas. Those types of laws generally became thought of as zoning, which was how governments decided to

[101] Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report*, 44.
[102] Federal Water Pollution Control Act, 33 U.S.C. 1251 (1972).
[103] Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report*, 59-63.

direct use of the lands in their respective jurisdictions. Commercial properties could be built in one zone, industry in another, and so on. By the 1920s, zoning was almost exclusively left to local authorities, and within another two to three decades, the number of zone types had expanded to encompass a range of activities within urban areas.[104]

States rarely became involved in zoning ordinances, and land use was generally considered an urban issue even if a large city could negatively affect nearby areas. By the 1960s, there was a shift in that approach. Hawaii became the first state to pass a land use law that directed how government and private entities would make use of the islands' lands in 1961. Concerns about urban growth prompted Hawaii's government to divide the state into four districts: agriculture, rural, urban, and conservation. No urban uses of land, such as major transportation hubs, would be allowed in the other three districts. A commission comprised of seven private citizens and two government officials would oversee administration of the law's requirements to ensure that the state's lands fulfilled a range of needs from agriculture to tourism.[105]

Maine, Massachusetts, Vermont, and Wisconsin soon followed Hawaii and passed laws that regulated the use of land in order to protect certain areas.[106] Some federal officials also explored the idea of applying regulation or comprehensive planning to land use at the national level. In 1971, the Nixon administration proposed the National Land Use Policy Act, which would provide federal grants to help states develop and administer land-use plans. The recommended legislation stated that such a policy was necessary because "decisions about the

[104] Fred Bosselman and David Callies, *The Quiet Revolution in Land Use Control* (Washington, D.C.: U.S. Government Printing Office, 1971), 1-2, http://files.eric.ed.gov/fulltext/ED067272.pdf. Adam Rome also has an excellent discussion of land use policies and proposals developed during the 1960s and 1970s in *Bulldozer in the Countryside*, Chapter 7, "Toward a Land Ethic: The Quiet Revolution in Land-Use Regulation."
[105] Bosselman and Callies, *The Quiet Revolution*, 5-8.
[106] Ibid., 54-59.

use of land significantly influence the quality of the environment" and that current methods of "regulating land use of more than local impact" were inadequate.[107] Two years later, Nixon declared in his *State of the Union Message on Natural Resources and the Environment* that the goal of land management should be "to harmonize development with environmental quality."[108]

A key element in this new approach to land use was the evolving perspective about the purposes that land served. For much of American history, land was a commodity to be used by its owner as a way of achieving economic goals. A subtle shift had begun taking place during the rise of environmental awareness. Land was no longer just a commodity to be traded; it was also a resource that had uses beyond economic benefits and could be protected to serve multiple functions.[109] However, the shift in perspective about land use should not be overstated. Nixon's proposed land-use bill never became law and there were few states that passed legislation as comprehensive as Hawaii's. Still, just a few years after Congress passed NEPA, the federal government implemented legislation that targeted land use in more specific areas such as the nation's coastal zones. Louisiana's approach to managing its wetlands would be influenced by the new law, but the policy's effectiveness would be complicated by long-standing issues associated with politics, economics, and resource use.

Conclusion

The development of policies that contributed to the rapid loss of Louisiana's wetlands took place before the "environmental decade" of the 1970s. Engineering the Mississippi River or draining wetlands for agricultural and urban sprawl reflected long-standing notions about how

[107] National Land Use Policy Act, S. 992, H.R. 4332, 92nd Congress (1971).
[108] Council on Environmental Quality, *The President's 1973 Environmental Program* (Washington, D.C.: U.S. Government Printing Office, 1973) 7, Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C., https://www.gpo.gov/fdsys/pkg/CZIC-hc110-e5-p733-1973/pdf/CZIC-hc110-e5-p733-1973.pdf. This collection will be abbreviated "CZIC Collection" for the remainder of this dissertation.
[109] Bosselman and Callies, *The Quiet Revolution*, 314-318.

humans viewed their surroundings – nature was something that should be manipulated for the benefit of society. However, new attitudes about the environment and the importance of ecosystems such as wetlands began to manifest in the post-World War II period and challenged existing notions about land or resource use. Environmental advocates maintained that healthy environments ensured a better quality of life, and government officials responded with laws like the Clean Water Act (CWA). There was also an element of practicality to passing laws to encourage environmental protection in the 1970s. Unchecked development could lead to situations like the one on Coubra Drive, and regulations that protected the environment were intended to reduce the costs of a "build now, worry later" mindset.

Still, considerable gaps in policies and regulations remained in regard to the nation's use of land and resources as of 1979. Negotiating between older values such as the promotion of economic growth and newer values such as reducing industrial pollution presented a challenge – especially in a place like Louisiana that had based much of its economic development on the exploitation and manipulation of its environment. As citizens in the state began to see the loss of wetlands as a problem, potential solutions had to be incorporated into a system that treated the coastal zone as a space for economic or social growth. Certainly, the deterioration of the wetlands posed a significant risk to the economy or urban expansion, but the policies that led to coastal erosion were difficult to undo without also threatening traditional approaches to economic and social development.

The idea of "multiple use" management was intended to remedy the thorny problem of balancing economic and social growth with environmental protection. Advocates of the approach maintained that society could enjoy a robust economy that made use of environmental resources while also protecting the integrity of sensitive ecosystems such as Louisiana's wetlands. Yet

policies that were based on multiple-use management ran into a consistent problem. By using and exploiting environmental resources, humans inevitably contributed to the degradation of their surroundings. While laws such as NEPA were important, they were ultimately tweaks rather than a fundamental reimagining of how Americans should make use of their environment. As a result, many of the policies that developed during the 1970s were piecemeal and often not well-suited to address problems as complex as the persistent loss of Louisiana's wetlands.

CHAPTER 3: POLICY DEVELOPMENTS IN THE 1970s

"Texas Water Rustlers"

In 1966, Congress authorized the Army Corps of Engineers and the Bureau of Reclamation to investigate the possibility of moving water from the Mississippi River to the west and southwest portions of Texas for irrigation and agriculture.[1] Two years later, the Texas Water Development Board published a report that stressed there were insufficient water sources within the state to meet future needs and that "12 to 13 million acre-feet of water per year must be sought." According to the board's "preliminary planning estimates," water from the Mississippi River could be siphoned off somewhere in the state of Louisiana and diverted through a series of structures to provide the necessary amounts of water for cities or farms in western Texas.[2] Officials in Louisiana were skeptical of the proposal, and members of the Louisiana Wildlife and Fisheries Commission (WLFC) expressed concerns that the decline in fresh water from the Mississippi River could have significant consequences. Clark Hoffpauer of the WLFC noted in 1969 that "the entire oyster, shrimp, and fur industries would be the first to feel the impact of higher salinities in the estuarine areas." He went on to say that the state should "immediately organize a task force to combat this menace to industry, wildlife and fisheries resources. There is little time to be lost. Texas has taken the initiative and Louisiana must prepare to meet this threat."[3]

The "threat" from the Texas Water Plan lessened in August 1969 when voters in the "Lone Star" state voted down a bill that would have authorized over $3 billion in bonds to help

[1] Texas Water Development Board, *The Texas Water Plan: Summary* (Austin, TX: Texas Water Development Board, 1968), 1, http://www.twdb.texas.gov/publications/State_Water_Plan/1968/1968_Water_Plan.pdf.
[2] Ibid., 12.
[3] Arthur C. Roane, Jr., "Plan to Divert River's Waters under Study," *Times-Picayune*, July 20, 1969, sec. 3, AHN.

pay for the construction of the proposed Mississippi River diversion.[4] Supporters of the plan, dubbed "Texas water rustlers" by opponents, tried to revive the proposal in 1976 to no avail.[5] Though the massive construction project never happened, there were a number of studies conducted under the auspices of federal agencies before advocates finally relented. In one case, the Corps contracted a young professor named Sherwood Gagliano, who worked at the Coastal Studies Institute at Louisiana State University. Gagliano examined hundreds of aerial maps depicting southern Louisiana and what he discovered was alarming – the state's wetlands were sinking into the Gulf of Mexico at a faster rate than the deltaic cycle could rebuild them.[6] Gagliano reported in 1970 that the state was losing 16.5 square miles per year of land and that "the gradual loss of land threatens to upset the balance of nature by constricting wildlife territory and by allowing greater salt water intrusion inland." He went on to say that "Louisiana can ill afford to have any of its water from the Mississippi diverted out of state since there are considerably more resources at stake than just water."[7]

The proposal to move water from the Mississippi to western Texas was one of the largest public works projects proposed in the nation's history, but the plan was not completely without precedent.[8] As discussed in the previous chapter, both the state and federal governments had been manipulating the river for decades to facilitate navigation, commercial transportation, and flood control. Private entities had also contributed to the reshaping of Louisiana's coastal environment by promoting activities such as oil exploration. The consequences of those actions were beginning to manifest more dramatically by the early 1970s, or perhaps more accurately,

[4] "Texans Nix Big Water Draught," *Times-Picayune*, August 9, 1969, sec. 1, AHN.
[5] "Texas Water Rustlers," *Times-Picayune*, October 22, 1976, sec. 1, AHN.
[6] McKay, Betsy, "Moving the Mississippi," *The Wall Street Journal*, October 29, 2005, sec. A, ProQuest (398922709).
[7] "La. Coast Said Losing 16.5 Square Miles Per Year," *Times-Picayune*, April 3, 1970, sec. 1, AHN.
[8] Roane, "Plan to Divert River's Waters under Study."

humans were finally starting to pay greater attention to what they were doing to the environment in which they lived. In fall 1970, Gagliano presented his findings at a conference for the National Academy of Sciences and predicted that if nothing was done about the disappearing wetlands, the state would lose another 500 square miles of land by 2000.[9] Several months later, the *Times-Picayune* called for the state's government to "begin serious consideration of a coherent, overall and sharp-toothed system for managing its vast multi-parish wetlands." The newspaper also stated that the "key to the problem" was establishing "multiple-use development guidelines" to oversee growth and expansion in the state's coastal zone.[10]

As public officials and private citizens began to think about ways to address the deteriorating condition of natural resources, multiple-use planning and management to guide development became cornerstones of the environmental legislation and policies crafted during the 1970s.[11] Essentially, the idea behind the multiple-use strategy drew on the conservationist approach to managing the country's natural resources – to make use of those resources in a way that produced what Gifford Pinchot characterized as the "greatest good for the greatest number for the longest time."[12] "Multiple-use" did not preclude development of environmental resources; instead, the approach allowed for regulated exploitation of the nation's resources with an eye on the many roles that environmental resources played. Laws and policies should afford protections

[9] "Decreasing LA. Size Reported," *Times-Picayune*, October 23, 1970, sec. 1, AHN.
[10] "Time to Control Wetlands Use," *Times-Picayune*, March 20, 1971, sec. 1, AHN.
[11] C. Brant Short, *Ronald Reagan and the Public Lands: America's Conservation Debate, 1979-1984* (College Station, TX: Texas A&M University Press, 1989), 6-7.
[12] Short, *Ronald Reagan and the Public Lands*, 3. Pinchot was the first chief of the U.S. Forest Service and served in that position from 1905-1910. Samuel P. Hays discussed Pinchot's contributions to the conservation movement in Chapter 3 of *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Pittsburgh, PA: University of Pittsburgh Press, 1999). Pinchot's insistence that the government use science-based management techniques in its stewardship of the nation's forests had considerable influence over U.S. resource policy prior to World War II. Pinchot and other conservationists believed the country should allow development of resources such as timber within limits to provide for resource longevity.

to the environment, but they could also allow economic and social development to continue – within limits.

However, multiple-use planning and management meant that society was not protecting ecosystems from interference or alteration so much as attempting to insert environmental protection into a development framework that already favored economic and social growth. As a result, policies intended to protect sensitive areas such as Louisiana's wetlands were piecemeal and contained gaps in regulation to allow for continued development. Total protection of the state's marshes and swamps was not possible without fundamentally changing economic and social trends that were deeply entrenched, particularly in regard to land use.[13] This chapter will trace the recognition of Louisiana's disappearing wetlands as a problem and the responses to the issue during the 1970s. The state and federal governments implemented several important policies during the "environmental decade" to increase the protection of wetlands, but those policies would ultimately slow, rather than stop, the deterioration of the state's swamps and marshes.

[13] Defining what constitutes "protection" of the environment can be complicated, whether the spaces in question are natural landscapes such as mountain ranges or human-made landscapes such as cities. Is a stream "protected" if there is no detectable levels of pollution or if the pollutants are below thresholds that can harm human health? Is a forest "protected" if timber removal is limited or banned completely? Are children living a city "protected" if only ten percent of homes have lead-based paint? Answering questions such as these has challenged policymakers and citizens alike, particularly as new laws designed to "protect the environment" were crafted after World War II. Eric T. Freyfogle provided some basis for what constitutes "protection" when he addressed the problem of deciding what "good land use" was versus "bad land use" in his work, *The Land We Share*. He argued that "good land use" in relation to the environment generally meant that policy goals included maintaining the ecological functions of a given system to allow for continued biodiversity (161-164). Aldo Leopold defined the issue even more clearly in *A Sand County Almanac* when he reflected that "healthy land" has the "internal capacity" for "self-renewal" (194-195). Generally speaking, the legislation passed in the 1970s aimed to limit pollution, promote biodiversity, and ensure ecosystems were sustainable over extended time periods. The Clean Water Act provides an example of this as the law did not call for the total reduction of pollutants; rather, the act set a goal of reducing pollution to levels below "toxic amounts" and directed that discharges into the nation's waterways be regulated rather than eliminated (Clean Water Act, 33 U.S.C. 1251). When this study refers to "protecting the environment," the concept is meant to reflect that general approach – ensuring that an ecosystem or a resource was able to persist in its existence and maintain the basic functions that supported biodiversity or minimized conditions that harmed the health of humans, wildlife, and plant life.

Louisiana's Coast in Crisis

Louisiana's eroding wetlands began to receive considerable attention from state officials after Gagliano published his findings in 1970, but worries about the health of the wetlands were not unprecedented. In 1928, a biologist who worked for the Conservation Commission in Louisiana published an article about the impact that humans were having on the state's wet areas. In "Louisiana Wet Lands and the Value of the Wild Life and Fishery Resources," Percy Viosca described the importance of wetlands as habitats for economic and recreational purposes.[14] He also detailed the damage being done to swamps and marshes by human activities, stating:

> Man-made modifications in Louisiana wet lands which are changing the conditions of existence from its very foundations, are the result of flood protection, deforestation, deepening channels, and the cutting of navigation and drainage canals…Reclamation and flood control as practiced in Louisiana have been more or less a failure, destroying valuable natural resources without producing the permanent compensating benefits originally desired. Reclamation experts and real estate promoters have been "killing the goose that laid the golden egg." In view of the fact that the affected wet lands have been impaired by the so-called improvements, and because they are not needed and will not be needed for other purposes for many generations, if ever, our future conservation policy should be a restoration of those natural conditions best suited to an abundant marsh, swamp, and aquatic fauna, but under some degree of control at all times, to the end that the state and nation may enjoy a more balanced diet, healthful recreation, and enduring prosperity.[15]

Despite the warnings from Viosca, there were few efforts to stop such practices in Louisiana or the rest of the nation. In fact, conservation policies during the New Deal proved particularly detrimental to wetlands as several federal agencies had programs that encouraged drainage.[16] The population and housing boom that followed World War II put even more pressure on the nation's wetlands. Americans pushed further out into what had once been marginal lands, and federal agencies continued to sponsor wetland drainage by providing

[14] Percy Viosca, "Louisiana Wet Lands and the Value of the Wild Life and Fishery Resources," in *Ecology* 9, no. 2 (April 1928): 223-226, http://www.jstor.org/stable/1929355.
[15] Ibid., 228-229.
[16] Vileisis, *Discovering the Unknown Landscape*, 173-174.

expertise or equipment to land developers. A few years after the war ended, over 170,000 acres of wetlands were made dry by the use of electric pumps as recommended by the Soil Conservation Service. The U.S. Fish and Wildlife Service, which had gained authority over the nation's wildlife and fisheries in 1940, had become increasingly concerned by the impact of drainage and conversion on the nation's wetlands.[17]

In the early 1950s, the agency launched a survey to take stock of wetlands in the United States. Though the U.S. Department of Agriculture had previously conducted surveys of wetlands, their intentions had been to identify areas that might be suitable for farming. The FWS agenda was different in that the organization's goal was to quantify and qualify wetlands based on wildlife values. What the FWS found was concerning. Officials estimated that forty-five million acres of the nation's pre-colonial wetlands had been lost or converted for other uses. They urged the federal government to develop better coordinated policies to protect the wetlands that were being used by birds and other species.[18] Scientists who worked for the FWS kept track of wetland changes after the report was issued in 1956 and continued to release their findings to the public.[19]

Slowly, the information from those studies made their way into public discussions as school textbooks, popular magazines, and television documentaries started to portray wetlands as valuable for a variety of ecological reasons.[20] On March 16, 1958, a reporter for the *Times-Picayune* noted that flood control projects and drainage efforts had been "enormously destructive of fish and wildlife values in the last quarter century within the [Mississippi River] floodplain, from the Ohio river to the Gulf of Mexico." The article also mentioned some of the other

[17] Vileisis, *Discovering the Unknown* Landscape, 200-201.
[18] Ibid., 201-202.
[19] Stine, *America's Forested Wetlands*, 36.
[20] Ibid., 37.

activities that been destructive in Louisiana, stating that the "damage along the delta coast is being hastened by oil development and agricultural and industrial activities. New waterways for navigation threaten the destruction of huge areas of marsh and the extinction of fisheries."[21]

The growing attention being paid to wetlands as valuable spaces started to manifest in public policy by the 1960s. Beginning with Massachusetts in 1963, a total of seven coastal states passed laws that offered some measure of protection to wetlands by 1972.[22] Though Louisiana did not pass protective legislation in the 1960s, both the national government and public entities in the state showed increasing interest in coastal management. In 1967, Congress directed the Army Corps of Engineers to conduct a study of the state's coast to determine if improvements could be made for more effective hurricane protection, the prevention of saltwater intrusion, and the protection of wildlife.[23] The following year, Louisiana's Wildlife and Fisheries Commission partnered with the National Marine Fisheries Service as part of a multi-state examination of estuary systems along the Gulf of Mexico. Researchers intended to use their findings to provide a baseline of conditions in the state's estuaries for comparisons in future investigations.[24]

Another group of studies began in 1969 and was conducted by the Coastal Research Unit (CRU) in the Center for Wetland Resources at Louisiana State University. The scientists involved concluded that Louisiana's coastal zone was showing signs of "serious, perhaps irreversible" stress as the result of flood control measures, hurricane protection, and mineral extraction.[25] Researchers also believed there were opportunities to manage the state's coast more

[21] R.G. Lynch, "Lower Mississippi Valley Has Many Critical Problems," *Times-Picayune*, March 16, 1958, sec. 6, AHN.
[22] Stine, *America's Forested Wetlands*, 36-41.
[23] Louisiana Advisory Commission on Coastal and Marine Resources, *Louisiana Wetlands Prospectus: Conclusions, Recommendations, and Proposals of the Louisiana Advisory Commission on Coastal and Marine Resources*, (Baton Rouge, LA: Louisiana Advisory Commission on Coastal and Marine Resources, 1973), 289.
[24] Ibid., 293-296.
[25] Ibid., 301.

effectively and ensure that the area continued to support economic, social, recreational, and ecological functions. Some of the recommendations made by the CRU included implementing better maintenance programs for the state's barrier islands and minimizing the impact of mineral extraction in estuaries and fresh-brackish water marshes. The studies also emphasized that unplanned development had contributed significantly the area's deterioration and that continuing to evaluate coastal activities on an individual basis was untenable.[26]

Two other events in 1969 had the potential to impact policymaking decisions for the nation's environment, including Louisiana's wetlands. The first event took place near Santa Barbara, California on January 28, 1969. A blow-out on a rig near Santa Barbara released 235,000 gallons of crude oil into the waters, much of which washed up along thirty miles of pristine white beaches of the scenic resort town. Americans watched in disbelief as oil-drenched birds died by the thousands and brought the fragility of coastal areas into sharp focus. Environmental groups across the country pressured politicians to give the same amount of attention to the preservation of the environment as was given to economic development – a shift which was acknowledged by officials in Louisiana during the early 1970s.[27] In 1973, a report put together by a special commission studying the state's wetlands commented that "Ever since the Santa Barbara spill of 1969…there have been increasing pressures by environmental groups to give preservation and protection of the environment equal stature with economic growth and development."[28]

[26] Ibid., 397-316.
[27] Rothman, *The Greening of a Nation?*, 101.
[28] Louisiana Advisory Commission on Coastal and Marine Resources, *Wetlands '73: Toward Coastal Zone Management in Louisiana* (Baton Rouge, LA: Louisiana Advisory Commission on Coastal and Marine Resources, 1973), i-iv; Louisiana Advisory Commission on Coastal and Marine Resources, *Louisiana Government and the Coastal Zone* (Baton Rouge, LA: Louisiana Advisory Commission on Coastal and Marine Resources, 1972), 1-2.

The second event of importance in 1969 was the establishment of a Sea Grant office at LSU. Initiated by Congress three years earlier and administered by the National Oceanographic and Atmospheric Agency, the national Sea Grant Program provided grants to universities to pursue marine-related research. Along with conducting studies, researchers and scientists were to provide information and technical advice to users of marine and coastal environments.[29] With that mandate in mind, LSU's Sea Grant Office worked with Louisiana's Wildlife and Fisheries Commission to draft legislation that would create an advisory committee to study coastal zone planning for the state. In 1971, the Sea Grant Office presented the draft to the Joint Legislative Committee on Environmental Quality during a series of hearings being held about the environment in Baton Rouge. The committee approved the office's draft and subsequently introduced the bill to the full legislature. Governor John McKeithen signed Act 35 into law on June 29, 1971.[30]

Several months later, McKeithen appointed nine members to the Louisiana Advisory Commission on Coastal and Marine Resources (LACCMR). Each commissioner represented various groups and different interests along the state's coast, including the oil and gas industry, fisheries, transportation, landowners, marine scientists, labor, conservation organizations, and state administration. The commissioners were charged with representing the public's interests rather than their respective groups and instructed to carry out two objectives. First, they were to study the trends, activities, and conditions of Louisiana's coast. Second, they were to ascertain what role the state should have in coastal zone management and what policies might be

[29] Louisiana Advisory Commission on Coastal and Marine Resources, *Wetlands '73*, i-iv; National Sea Grant College Program Act, Pub. L. No. 89-688 (1966).
[30] Louisiana Advisory Commission on Coastal and Marine Resources, *Louisiana Government and the Coastal Zone-1972*, 4-5.

developed to facilitate the "orderly, long range conservation and development of the state's coastal zone."[31]

The commission's first major report declared that the state was in urgent need of planning for the coastal zone, an area which the group defined as being the lands roughly south of Baton Rouge. Industrial activities, transportation, commercial fishing, and recreational interests all competed to use the same area for different reasons. Declining oyster productivity, increasing pollution, escalating saltwater intrusion, and the loss of land were some of the major results associated with unchecked growth and unregulated uses of the coastal zone. Those factors, along with a growing population and public-works projects designed to control flooding, had put significant pressure on the coast. Without adequate management, the commission warned the entire ecosystem that supported life in southern Louisiana was threatened.[32] The LACCMR also stated that any plans for managing the coast should consider the area as interdependent system because development projects were not isolated in their effects.[33] As of 1972, the state did not have any policies in place that treated the coastal zone as a comprehensive ecosystem, and there were serious deficiencies in how Louisiana's bureaucracy regulated the multiple uses of the coast. The commission stated that "with all of these conflicts over coastal resources, there are no definitions of state policy about the coastal zone. There are no identified procedures for resolving all the issues of the coastal zone."[34]

Certain agencies such as the Wildlife and Fisheries Commission and the State Land Office (SLO) did recognize the interrelated nature of problems on the coast, but the overall legislative and regulatory agenda of Louisiana dealt with issues of development or deterioration

[31] Ibid., 5-8.
[32] Ibid., 1-3.
[33] Ibid., 13.
[34] Ibid., 4.

on a case-by-case basis. When the WLFC reviewed projects at requested of state or federal governments, the agency had no statutory guidance to follow when conducting evaluations. Boards or commissions that might address coastal zone development were routinely underfunded and understaffed. There was also frequent overlap among state organizations in regard to planning for the entire state. For example, plans for water transportation were overseen by port and harbor districts and the Department of Public Works. Highway and road planning was carried out by the Highway Department in conjunction with the federal Department of Transportation. Pipeline planning and construction were done by private groups who subsequently received approval from the WLFC, the Department of Public Works, and the Army Corps of Engineers.[35]

In short, there was no real system in place to monitor or manage the state's wetlands as an environmental resource. The LACCMR identified twenty-three separate agencies that had some influence on coastal zone activities, but there was no central authority to coordinate among them.[36] Most agencies were viewed as being significant because of their regulatory mandates for broad areas, not necessarily because they had specific coastal policies. For example, the Air Control Commission (ACC) had no section devoted to the coast but was responsible for monitoring emissions by petrochemical plants. Much of that industry was located in the coastal zone.[37] In another example, the State Land Office was responsible for surveying and appraising state lands, and the SLO was also in charge of collecting royalties from the oil and gas industry. Both of those facts required the SLO to pay special attention the coast, but the agency was

[35] Ibid., 37-41.
[36] Ibid., 28.
[37] Ibid., 52.

routinely understaffed. The office had only two field investigators to conduct appraisals for the whole state.[38]

To add more disorder to Louisiana's coastal administration, the federal government also played a role in decision-making about the activities on the coast. The Army Corps of Engineers worked with local levee boards and the Department of Public Works on projects involving flood control. Pollution control was overseen by the ACC, the Stream Control Commission, and the Environmental Protection Agency. Further, agencies sometimes had no clear statutory guidance to direct their interaction with the federal government. The State Mineral Board consulted with the Department of the Interior on mineral leases to receive advice on conservation issues, but the arrangement lacked structure and was not clearly defined. Perhaps the most important issue in regard to federal-state and federal-local interactions was that in a number of significant activities such as flood control, the federal government was the primary decision-maker.[39]

The second report released by the LACCMR in March 1973 once again emphasized the need for regional planning in the state's coastal zone. In addition to the need to manage industrial, infrastructure, and residential growth for "orderly" development, the commission identified the growing environmental movement and recent environmental legislation at the federal level as being important considerations too. The "awakening of environmental consciousness" had led to projects being challenged that would have likely gone unnoticed a decade earlier – across the country and in Louisiana.[40] For example, in St. Bernard Parish, residents had voiced strenuous objections to proposed plans to widen the Mississippi River Gulf Outlet. Supporters of the project said the extension would keep the Port of New Orleans

[38] Ibid., 147-149.
[39] Ibid., 34-37.
[40] Louisiana Advisory Commission on Coastal and Marine Resources, *Wetlands '73*, 1.

competitive with other national ports, but opponents who lived in the area wanted the project to be "drastically modified or abandoned altogether due to the possible adverse environmental impacts."[41]

In September 1973, the LACCMR released its final report which included a full analysis of the state's coastal activities, problems in the coastal zone, and detailed proposals for a coastal zone management plan. The report concluded that the guiding principles in the state's use of the coast had been economic development and that considerations for conservation or environmental impacts had been insufficient. However, the commission did not recommend halting development activities in the coastal zone at all or even significantly. On the contrary, the LACCMR stated that "Louisiana's fundamental policy [should] be to encourage full use of coastal resources by as many citizens as possible."[42] There were stipulations to that recommendation though, including increasing the amount of scrutiny on projects that would affect water quality and treating the marshes as comprehensive ecosystems.[43] Indeed, the emphasis placed on the wetlands was one of the prominent points in the 1973 prospectus, as was the threat that land loss posed to the coast's future. The LACCMR argued that because the dominant feature of the coast was the wetlands, the fundamental task of coastal zone management should be protecting the wetlands as much as possible while still planning for continued development.[44]

Overall, the LACCMR prospectus provided a vision for how Louisiana could manage its coast and its wetlands. By developing a comprehensive approach to management, streamlining agency involvement, and treating the health of the wetlands as crucial for a productive coast, the

[41] Ibid., 1-2.
[42] Louisiana Advisory Commission on Coastal and Marine Resources, *Louisiana Wetlands Prospectus*, 10-11.
[43] Ibid., 11.
[44] Ibid., 7.

commission was arguing for a systematic approach. The commission stated that their recommendations should not be seen as a list of restrictions but rather a blueprint for a "positive statewide program" that could ensure the economic, social, and ecological values of the coastal zone for the future. By the LACMMR's assessment, coastal zone management was fundamentally an approach to the use of living and non-living resources with the long-term goal of sustainability in mind. Physically, the coastal zone was where the influence of the tide was evident and where the wetlands performed a number of ecological functions. The coastal zone was also a social, economic, and recreational space. Each of those uses had to be properly managed by the state in order to ensure that those uses could continue.[45]

The creation of the LACCMR was probably one of the most important steps Louisiana took during the early 1970s to address the problems of coastal erosion. However, the commission did not create legislation or policy; that would be up to the legislature, the governor, and various state agencies. What the LACCMR did though was to frame Louisiana's coast in broad way that emphasized its economic, social, and ecological values. The *loss* of wetlands was seen through the same lens – as a threat to those economic, social, and ecological values. Such a perspective carried with it the long history that had defined how Americans had interacted with their environment and used their lands. Treating the coast as a resource to benefit society had roots all the way back to the colonial period. Trying to use those resources as efficiently as possible echoed the ideas espoused by conservationists at the turn of the twentieth century. Finally, seeing the coast as inherently valuable because its ecological functions improved the quality of people's lives was part of the emerging environmental movement. Yet the LACCMR was essentially promoting the adoption of multiple-use planning to direct policy for the coast, and such an

[45] Ibid., 6.

approach meant that activities which contributed to the loss of wetlands were more likely to be limited rather than eliminated.

Incorporating the Coastal Zone and Wetlands into Policy

In Louisiana, a system of altering the wetlands to promote development and protect property had evolved over multiple decades. Retooling that system to implement environmental protections came with significant challenges – particularly regarding the issue of land use. Efforts to pass a national land-use policy fell flat during the early 1970s, but Congress did pass more precise laws that sought to encourage orderly development in specific areas. One example of such legislation was the Coastal Zone Management Act of 1972 (CZMA).[46] Due to a variety of economic and social activities, Congress recognized that coastal lands and waters were at risk for long-term harm due to multiple "competing, conflicting demands."[47] Based on the recommendations from the Stratton Commission in the late 1960s, the CZMA encouraged the voluntary participation of states to "inventory their valuable features…establish priorities for land and water uses…and to plan for natural resource protection and orderly development."[48] By planning accordingly, states could achieve multiple uses for their coastal zones while also reducing the amount of damage done to fragile ecosystems such as estuaries. In fact, a key feature of the CZMA was to encourage protection for coastal wetlands, a trend already reflected in a handful of states. Connecticut, Georgia, Maryland, Massachusetts, and Virginia had all granted their coastal wetlands special legal status before 1972.[49]

[46] Hays, *Beauty, Health, and Permanence*, 167-168.
[47] Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report*, 140.
[48] Commission on Marine Science, Engineering and Resources, *Our Nation and the Sea*, 56-60; Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report*, 143-144.
[49] Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report*, 140-144.

The CZMA became effective in 1973 and within two years, thirty coastal states had applied for grant money to develop management plans.[50] Louisiana received its first round of funding on June 30, 1974, and used the recommendations made by the Louisiana Advisory Commission on Coastal and Marine Resources as a starting point for the state's coastal management plan (CMP). At least six state agencies were identified as having a significant role in managing activities in the state's coastal zone, including the Department of Public Works and the State Land Office. The State Planning Office and the Louisiana Coastal Commission (LCC) had been put in charge of CMP development and were to consult with a variety of groups, including the Wildlife and Fisheries Commission and the Sea Grant Program at Louisiana State University.[51]

Local governments in Louisiana also became interested in developing management plans for coastal and wetland resources. In 1975, the City Planning Commission (CPC) of New Orleans published a three volume report on how the city could plan better for urban growth in a way that protected the environment, specifically the area's wetlands. The CPC recognized that the seven million acres of wetlands in the city's vicinity held both social and economic value – recreation, hunting grounds, protection from storms, and flood water storage. Natural stresses such as subsidence and human-made stresses such as canal construction had disrupted "runoff and tidal change, watershed management, tributary dams, hurricane protection levees, [and] river flood protection levees." According to the report's opening chapter, the "time [had] come to manage the wetlands in order to preserve their value for mankind" and the city's CMP would be

[50] Office of Coastal Zone Management (NOAA), *Report to the Congress on Coastal Zone Management, July 1974 through June 1975* (Washington, D.C.: U.S. Government Printing Office, 1976), 1, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u55-1976/pdf/CZIC-ht392-u55-1976.pdf.
[51] Office of Coastal Zone Management (NOAA), *State Coastal Zone Management Activities, 1975-1976* (Washington, D.C.: U.S. Government Printing Office, 1976), 1-2-Louisiana, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u558-1976/pdf/CZIC-ht392-u558-1976.pdf.

the "needed management tool" to help New Orleans give full deliberation to "ecological, cultural, historic and aesthetic values, as well as to needs for economic development."[52] The commission went on to say that many of New Orleans' economic activities were related directly or indirectly to the environment and all development plans needed to be considered from multiple perspectives.[53]

One of the main issues the CPC saw in wetlands management was also present in varying degrees at the national and state levels of government. There was no clear plan or central authority to guide development decisions and oversee the various activities that took place within the coastal zone. The CPC identified twenty-six federal agencies, sixteen state agencies, and nine municipal agencies as having a role or influence over what went on in the coastal zone near the city.[54] Without a defined management plan, New Orleans could not effectively strategize for multiple organizations operating in the city's vicinity. Additionally, the CPC noted that the existing regulatory tools available to the city were not adequate for protecting wetlands because the legal codes did not expressly recognize wetlands as an area that fell under the city's management jurisdiction. To correct that, the CPC recommended that amendments be added to the city's existing building and zoning ordinances by expanding the areas regulated with "land use and control measures" to include "marshes, swamps, wetlands, estuaries, waterways, and environmentally sensitive areas in the City of New Orleans."[55]

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[52] New Orleans City Planning Commission, *Coastal Zone Management Plan, 1975*, vol. I (New Orleans, LA: New Orleans City Planning Commission, 1975), 1, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-ht168-n35-n4-1975-v-1/pdf/CZIC-ht168-n35-n4-1975-v-1.pdf.
[53] Ibid., 118.
[54] New Orleans City Planning Commission, *Coastal Zone Management Plan, 1975*, vol. II (New Orleans, LA: City Planning Commission, 1975), 39-52, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-ht168-n35-n4-1975-v-2/pdf/CZIC-ht168-n35-n4-1975-v-2.pdf.
[55] Ibid., 53; 68-69.

A final problem that the CPC noted was the lack of a statewide coastal zone management plan. Though the city could gain more control over the use of its wetlands with a CMP, there would ultimately be substantial deficiencies until Louisiana adopted a statewide management plan. Even if the city could prevent or regulate construction or drainage protects within its own jurisdiction, activities outside New Orleans could still negatively impact the area's wetlands. Commissioners also encouraged the state to ensure that any plan it adopted included measures that gave substantial control to local authorities in making decisions about local environment and resources. Finally, the CPC suggested that a single state agency be established to oversee local CMPs and that the primary planning responsibility for the coastal zone be assigned to the Wildlife and Fisheries Commission.[56] Yet despite the encouragement from entities such as the New Orleans CPC, the state legislature struggled to pass a CMP through the mid-1970s.

Challenges in Implementing Wetlands Policies

Legislative inaction in Louisiana was one difficulty with the formulation and implementation of wetlands policies during the middle of the "environmental decade," but there were other challenges too. The official stance of the national government was to include environmental awareness into decision-making as mandated by NEPA or the Clean Water Act. However, some agencies were reluctant to embrace their new roles as prescribed by NEPA or the Clean Water Act. For example, Section 404 of the CWA required that dredge and fill activities in the nation's waterways be approved by the Army Corps of Engineers. The Corps preferred to use the traditional definition of "navigable waters" when applying Section 404 to permit applications, which meant the USACE considered rivers, streams, and lakes obviously related to

[56] New Orleans City Planning Commission, *Coastal Zone Management Plan, 1975*, vol. III (New Orleans, LA: New Orleans City Planning Commission, 1975), 9-10, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-ht168-n35-n4-1975-v-3/pdf/CZIC-ht168-n35-n4-1975-v-3.pdf.

commerce to be under their jurisdiction. Wetlands that were not directly connected to such bodies of water would not be subject to the Corps' permit authority under Section 404.[57]

In reaction to the Corps' limited application of Section 404, the Natural Resources Defense Council (NRDC) sued the agency in 1974. The court ruled in favor of the NRDC and ordered that the Corps of Engineers extend its jurisdiction to include a wider array of wetlands in the administration of Section 404.[58] The Corps responded by consulting with the EPA to develop guidelines that satisfied the requirements of the 1975 ruling and issued new rules by the end of the decade. Despite that action, the issue of determining when wetlands fell under the jurisdiction of Section 404 remained uncertain in the following years.[59] Multiple federal agencies had diverse methods for identifying wetlands, which complicated the delineation of wetlands for regulatory purposes or administrative oversight.[60]

Another challenge that policymakers faced during the 1970s was the impact that wetlands regulations had on areas of economic or urban development. Protections for sensitive ecosystems began to present complications in areas such as transportation, which had previously been constrained only by cost or technical feasibility. One such example was the proposed construction of the "Dixie Freeway" or Interstate 410 (I-410) in the late 1960s and early 1970s. The initial project had been put forth by the St. Charles Parish police jury as a way of improving transportation in a parish that was split in half by the Mississippi River. Additionally, the parish's population had been increasing steadily since World War II, and the economic base of

[57] Council on Environmental Quality, *Environmental Quality*: *The Sixth Annual Report*, 206.
[58] Ibid., 206-207.
[59] Elinor Lander Horwitz, *Our Nation's Wetlands: An Interagency Taskforce Report* (Washington, D.C.: U.S. Government Printing Office, 1978), 5, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-gb621-h67-1978/pdf/CZIC-gb621-h67-1978.pdf.
[60] Biological Services Program (U.S. FWS), *Classification of Wetlands and Deepwater Habitats in the United States* (Washington, D.C.: U.S. Governing Printing Office, 1979), iii, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-gb624-c6-1979/pdf/CZIC-gb624-c6-1979.pdf.

St. Charles was transitioning from agriculture to industry. Parish officials deemed that improvements in transportation routes were necessary to accommodate future socio-economic growth. By 1971, the "St. Charles Expressway" had become part of a larger interstate project aimed at improving transportation in the New Orleans metro area. The Dixie Freeway would total over fifty miles, running south of the city of New Orleans and into St. Bernard Parish, where it would terminate near Interstate 10.[61]

The environmental impact statement for the project noted that the proposed highway route would cut through hundreds of acres of wetlands, farmlands, and timberlands. Despite the impact that construction of a highway was expected to have on those areas, state and federal officials believed that the negative consequences of the project would be minimal. Further, any disruptions to the hydrology, soils, or wildlife near the Dixie Freeway could be reduced and would likely be temporary with careful planning.[62] The state and federal agencies that reviewed the EIS generally concurred with the transportation departments and only a few noted that perhaps greater consideration could be paid to the potential impact that I-410 might have on hunters or possible archaeological sites.[63] Overall, public officials supported the addition of the freeway to the interstate system in Louisiana and asserted the "proposed action will have a

[61] Federal Highway Administration and Louisiana Department of Highways, *Final Environmental Statement for State Project No. 700-07-72/Federal Aid Project No. I-410-4(28) 217, Interstate Route 410*, (Baton Rouge, LA: Louisiana Department of Highways, 1971) 1-8.
[62] Ibid., 3-4.
[63] State and federal agency letters re: Interstate Route 410 in *Final Environmental Statement for Interstate Route 410*, following Appendix I. These letters are not included under a specific heading and have no page number relative to the document. Agencies include: Louisiana Bureau of Outdoor Recreation, LSU Department of Geography and Anthropology, U.S. Soil Conservation Service, New Orleans District of the U.S. Army Corps of Engineers, U.S. Department of Health, Education, and Welfare, U.S. Department of the Interior, and the U.S. Geological Survey.

positive social and economic impact" in the region.[64] Business groups also voiced approval for the construction of the highway and lobbied for parish governments to encourage construction.[65]

The 1971 EIS characterized the proposal of I-410 as mostly uncontroversial and stressed that the benefits of the project outweighed possible environmental consequences. While officials emphasized the need for improved transportation infrastructure, the environment had played a role in the agencies' evaluations of the project – in direct response to the National Environmental Policy Act.[66] However, opposition to the Dixie Freeway began to build over the next several years, and critics charged that the EIS was inadequate.[67] There were also accusations that I-410's construction would have little benefit to the average Louisianan and that real estate developers would be the ones who profited from the highway's construction. Opponents argued that the entire project would place too much pressure on the state's wetlands and that the estimated $1 billion price tag was far too expensive.[68] In testimony before a legislative committee in Baton Rouge, John Hammond of the New Orleans Center for Housing and Environmental Law stated that "no other single public works project will have such a devastating impact on the wetlands as I-410." He went on to criticize the short-sightedness of the proposed freeway and noted that "New Orleans is a man-made island floating on the Mississippi River floodplain in the center of productive estuaries. We must recognize this and learn to plan with, not against, nature."[69]

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[64] Federal Highway Administration and Louisiana Department of Highways, *Final Environmental Statement for Interstate Route 410*, 3.
[65] Jeff Barry, "Jeff Approves New I-410 Route," *Times-Picayune*, March 30, 1973, sec. 1, AHN.
[66] Federal Highway Administration and Louisiana Department of Highways, *Final Environmental Statement for Interstate Route 410*, iv.
[67] Dan Greene, All Outdoors, *Times-Picayune*, February 28, 1973, sec. 2, AHN.
[68] Cornelia Carrier, "Hurricane Shields, Links to Highway – for Swamps?" *Times-Picayune*, November 4, 1972, sec. 1, AHN; Paul Atkinson, "Council Approves I-410 Route through Orleans," *Times-Picayune*, June 29, 1973, sec. 1, AHN; Brent Manley, "Freeway Not Dead, Far From Alive," *Times-Picayune*, September 16, 1973, sec. 2, AHN.
[69] Dan Greene, All Outdoors, *Times-Picayune*, February 28, 1973, AHN.

As the controversy over I-410 continued, some coastal experts echoed Hammond's suggestion to work with rather than against nature. In 1973, an environmental consultation firm recently established by Sherwood Gagliano after he left LSU, published its own report at the request of Louisiana's Department of Transportation and Development. Coastal Environments, Inc., noted that the proposed route of I-410 took the highway close to two major estuaries, a fact which was not uncommon for the state's road construction at the time. The initial building of interstates disturbed sensitive areas, but more importantly, interstates encouraged urban expansion and growth into the wetlands over long periods of time. Coastal Environments, Inc., recommended that the state develop a land-use plan which would encourage the construction of highways on natural levees and to use new transportation routes to direct growth away from the wetlands. The report suggested that the Dixie Freeway follow those recommendations and that the route be changed to minimize impact on the state's wetlands.[70]

A few months after Coastal Environments, Inc., reported its findings, state officials agreed to a new route for the Dixie Freeway and planned to take the interstate further away from sensitive wetlands.[71] Even after rerouting the highway, opposition to I-410 continued. In March 1974, several environmental groups joined forces with the Louisiana Shrimpers Association to file a lawsuit against the U.S. Department of Transportation, the Federal Highway Administration, and the state of Louisiana. The plaintiffs argued that the EIS was inadequate and had failed to fully consider the impacts of Dixie Freeway in a comprehensive manner. Federal officials disagreed with the complaints, and the Army Corps of Engineers issued disposal permits under Section 404 of the Clean Water Act in April 1974. Work began on the Luling Bridge

[70] Coastal Environments, Inc., *Environmental Considerations Interstate I-410* (Baton Rouge, LA: Coastal Environments, Inc., 1973), 15-18; 52-53.
[71] Barry, "Jeff Approves new I-410 Route,"; "I-410: Ecology on the Road," *Times-Picayune*, April 2, 1973, sec. 1, AHN.

portion of the Dixie Freeway in 1975, but a temporary injunction put a halt to any additional construction. Court proceedings continued on for another year until the lawsuit's parties reached a compromise in 1976. Transportation officials withdrew thirty-fives miles of highway from the I-410 proposal, and most of the suit's participants agreed to no further action on the remaining portions.[72]

State and federal officials intended to continue with construction on the Luling Bridge and a small section of highway in St. Charles Parish, but the Dixie Freeway had essentially been abandoned over concerns about land use, cost, and environmental damages. In 1977, Louisiana officials petitioned the Federal Highway Administration to approve the transfer of $438 million in funding that had been earmarked for I-410 to another project. Two years later, officials in Jefferson Parish acknowledged efforts to revive the Dixie Freeway would be "fruitless." Parish President Douglas Allen stressed that despite the loss of I-410, his community still needed to expand its transportation infrastructure. He agreed that future projects would have to consider the economic and ecological costs of building freeways near wetlands and plan accordingly.[73]

The Dixie Freeway had been approved as a project in the late 1960s during an era of urban growth and expansion but also right around the same time that Americans were increasingly urging public officials to protect the environment from degradation. Transportation infrastructure was seen as a way to promote progress and economic development, and initially government officials believed that I-410 could improve transportation without significant harm

[72] Federal Highway Administration and the Louisiana Office of Highways, *Draft Supplement to the Final Environmental Impact Statement for State Project No. 700-07-72 and Federal Aid Project I-410-4(67)217, Interstate Route 410* (Fort Worth, TX: Federal Highway Administration, 1977), 1-2 – 1-13; 1-16 – 1-18.
[73] Federal Highway Administration and the Louisiana Office of Highways *Draft Supplement to the Final Environmental Impact Statement for Interstate Route 410*, 1-17 – 1-18; "Funds Transfer to North-South Road is Urged," *Times-Picayune*, January 12, 1977, sec. 1, AHN; John LaPlace, "Jeff President Plans to Push for West Bank Interstate Corridor," *Times-Picayune*, January 13, 1977, sec. 2, AHN; "Louisiana Interstate Construction Continues," *Times-Picayune*, January 28, 1979, sec. 7, AHN.

to the environment. However, citizens living in coastal Louisiana disagreed, and by the mid-1970s, they had effective legal tools at their disposal to force the government to respond to their objections. The EIS requirement in NEPA mandated that state and federal highway departments consider the environment, and when concerned observers deemed the EIS for the Dixie Freeway to be inadequate, NEPA again provided environmental organizations with a basis for legal action.

Admittedly, the Dixie Freeway controversy did not necessarily herald a new age of restrained development in Louisiana. Infrastructure projects continued, but the debate over I-410 did reveal that government officials would have to do a better job considering the impact that a project might have on the environment. The dispute also demonstrated that the new legal tools provided by environmental legislation such as NEPA could allow citizens to force government officials to take actions that protected the environment, even if politicians had greater incentive to push economic growth and expansion. Finally, the controversy showed that the protection of Louisiana's wetlands had become one of the multiple interests that needed to be addressed by policymakers. Protection of wetlands was certainly not the only concern that had to be considered by officials, but neither could the ecosystem be completely ignored.

Creating a Policy to Regulate Louisiana's Wetlands

As state and federal highway agencies struggled to move forward on the Dixie Freeway, Louisiana's legislature continued to wrestle with the creation of a coastal master plan. Though state representatives were considering a draft bill that would have established a CMP in the mid-1970s, there had been little substantive action after the LACCMR disbanded in 1973.[74] Despite

[74] Office of Coastal Zone Management (NOAA), *State Coastal Zone Management Activities, 1975-1976* (Washington, D.C.: U.S. Government Printing Office, 1976), 1-5-Louisiana, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u558-1976/pdf/CZIC-ht392-u558-1976.pdf.

the limited progress, public officials generally agreed the state needed its own CMP. That consensus was based on several factors, some of which included the idea that the state's coastal zone and wetlands were vital economically and ecologically. Another reason that state officials concurred a CMP was necessary had to do with Louisiana's relationship with the federal government. Section 307 of the CZMA contained a "federal consistency clause," which mandated that federal agencies tailor their coastal activities to coincide with the requirements of a state's CMP. That meant once Louisiana had a federally approved management plan, agencies such as the Army Corps of Engineers would have to implement projects that were in line with the state's CMP.[75]

Public officials expressed concerns that without a federally approved CMP, there was little incentive for the national government to consult with Louisiana over development projects. When speaking at a Coastal Zone Management Conference in February 1974, Governor Edwin Edwards encouraged the legislature to develop a plan not only because of the economic and environmental necessity, but also because "where the states don't move, the feds will."[76] Three years later, that crucial point was articulated again by the editorial board of the *Times-Picayune*. "Many Louisianans complain that the federal government…has too much jurisdiction in our wetlands, but an approved coastal zone management plan is the only way the state can assume that jurisdiction."[77]

Another reason officials in Louisiana agreed the state needed a CMP had to do with the Coastal Energy Impact Program (CEIP). The CEIP was added as an amendment to the CZMA in 1976 and provided federal loans or grants to help states mitigate the economic and environmental

[75] Coastal Zone Management Act, Pub. L. 92-583 (1972); Cornelia Carrier, "Coastal Zone Said Top Issue," *Times-Picayune*, February 14, 1974, sec. 1, AHN.
[76] Carrier, "Coastal Zone Said Top Issue."
[77] "Last Chance for CZM," *Times-Picayune*, July 8, 1977, sec. 1, AHN.

costs associated with energy development.[78] To qualify for the CEIP funds, a state had to at least be in the process of forming a coastal zone management plan, which Louisiana was doing in 1977.[79] However, federal funds that were available for planning activities would no longer be available after July 31, 1978. A state could still get an approved coastal plan after that and receive money for implementation, but once the July 1978 deadline passed, there would be no more funds available for planning from the federal government.[80] If Louisiana did submit its CMP to NOAA before July 1978, then the monies from the CEIP could be jeopardy if the state did not have funding to continue planning.

Complicating matters further, the proposal that government officials were considering as Louisiana's CMP in 1977 was widely seen as insufficient. The most serious issue was with the recommended coastal zone boundary. As part of the CZMA, states were required to delineate their own coastal zones. The Louisiana Coastal Commission, which was one of the bodies responsible for developing the management plan, had proposed making the state's coastal boundary extend three miles inland from the shoreline. That definition excluded a substantial portion of what was usually considered part of Louisiana's coastal zone. With the three-mile inland boundary, only small portions of ten parishes would be included and twelve coastal parishes would be excluded entirely.[81]

Despite warnings from NOAA that a CMP with such a limited boundary would not be accepted by the administration, the Louisiana legislature approved the plan in early July 1977 and sent it to Governor Edwards for final submission to NOAA.[82] Those who supported the plan

[78] International City Management Association, "Coastal Zone Management Report," *Management Information Service Reports*, vol. 9, no. 12, December 1977, 3, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-tc330-w55-1977/pdf/CZIC-tc330-w55-1977.pdf.
[79] "Managing Our Coastal Resources," *Times-Picayune/States-Item*, October 1, 1980, sec. 1, AHN.
[80] Joan Treadway, "Coastal Plan Planned," *Times-Picayune*, February 8, 1977, sec. 1, AHN.
[81] Coastal Zone Management Act, Pub. L. 92-583 (1972); Treadway, "Coastal Plan Planned."
[82] "Last Chance for CZM."

argued that more areas could be added later, but the important thing was to get a CMP approved so that Louisiana remained eligible for federal funding. Opponents of the bill called it a "sham, a farce, and a coastal cop-out" and criticized the plan for failing to adequately protect the wetlands. Representative John Hainkel of New Orleans refused to sign the report and said that waiting another year would not matter. In reference to his colleagues' short-sighted approach to the CMP, Hainkel stated, "I hope we'll stop acting like a herd of turtles and act progressively."[83]

The heated debate among state legislators over the 1977 plan revealed some of the tensions involved in developing coastal management strategies. While there was general agreement that the state needed to pass a CMP, there was also a question of who was going to benefit from the money that came along with an approved plan. The LCC had suggested such a narrow boundary due to pressure from parishes that wanted to ensure they would receive a larger share of federal monies once the state had an approved plan. There was also pressure from representatives who feared increased federal involvement in the state's wetlands and wanted to keep the coastal zone limited.[84] Finally, there were concerns that inviting federal power into the state with a CMP would undermine the state's ability to profit from mineral reserves.[85]

However, Representative Ed Scogin of Slidell rejected those sentiments and said that delaying the creation of an acceptable CMP was the real problem. Without a state-issued management plan, federal agencies such as the Army Corps of Engineers held greater authority in Louisiana's wetlands. Further, by failing to develop a plan with sufficient boundaries, the state ran the risk of losing all federal money from the CZMA provisions – including monies from the

[83] "Coastal Report Sent to Edwards," *Times-Picayune*, July 11, 1977, sec. 1, AHN.
[84] Charles Hargroder, "Senate Panel Fails to Act on Coastal Management Bill," *Times-Picayune*, May 19, 1977, sec. 1, AHN.
[85] Larry Ciko, "Dim View of CZM," *Times-Picayune*, July 24, 1977, sec. 2, AHN.

CEIP. Scogin noted that his district was close to Lake Pontchartrain and that the area was suffering extensively from poor management and ad hoc activities pursued by the USACE.[86]

Officials at NOAA rejected Louisiana's 1977 plan, and the legislature did not come to an agreement on a better framework for a new CMP until the following year. Facing an impending deadline for the loss of federal funding, legislators passed the State and Local Coastal Resources Management Act (SLCRMA) of 1978. The SLCRMA met the minimum requirements for what NOAA would accept as a coastal zone boundary and included all or part of nineteen coastal parishes.[87] Through the SLCRMA, the state gained regulatory powers to manage activities in the coastal zone and also included a directive to develop specific guidelines for administration. While the SLCRMA garnered more approval than the plan in 1977, the new law did not pass without controversy either. One area of particular tension was the role that local governments would play in the state's new coastal management duties. Parishes such as Terrebonne objected to too much state control and lobbied for greater representation by local officials.[88] To resolve that dispute, the SLCRMA included a provision that allowed parishes to adopt their own CMPs and if those plans complied with state regulations, then individual parishes could take over much of the regulatory and management responsibilities normally delegated to the state.[89]

Another area of controversy was which agency would be responsible for administering the SLCRMPA and its associated coastal management plan. After NOAA rejected the 1977 proposal, Governor Edwards assigned the secretary of the Department of Transportation and Development (DOTD), George Fischer, to lead development for a plan that could meet federal

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[86] Ibid.
[87] "Managing Our Coastal Resources," *Times-Picayune/States-Item*, October 1, 1980, sec. 1, AHN.
[88] "Police Jury Opposes State CZM Control," *Times-Picayune*, May 21, 1978, sec. 1, AHN.
[89] Office of Coastal Zone Management (NOAA) and Coastal Management Section (Louisiana DNR), *Louisiana Coastal Resources Program: Final Environmental Impact Statement* (Baton Rouge, LA: Louisiana Department of Natural Resources, 1980), 3, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-ht393-l8-f53-1980/pdf/CZIC-ht393-l8-f53-1980.pdf.

approval.[90] Fischer, whose selection likely reflected the fact that he had secured $14 million worth of funding for the state under the Coastal Energy Impact Program in 1977, developed a bill that kept administration of the coastal zone in the DOTD. After substantial debate about the appropriateness of assigning coastal management to an agency that was primarily responsible for development and not conservation, the legislature agreed to a compromise. In the future, governors could move administration and management to the Department of Natural Resources by way of executive order. However, the DNR was responsible for administering oil and gas leases for the state, which also raised the question if that was the best agency to oversee management of the coast's wetlands. In 1973, the Louisiana Advisory Commission on Coastal and Marine Resources had specifically recommended that the Wildlife and Fisheries Commission be placed in charge of a coastal management program. The agency already had experience in monitoring the coastal zone for wildlife and its technical staff was the most qualified to oversee policies for coastal protection. Additionally, the commission's primary function was more conservation-oriented than developmental.[91]

Despite the controversies that had surrounded the SLCRMA, the law established a framework for the management of the state's coastal wetlands. The state would encourage multiple uses of the coast, "while maintaining and enhancing renewable resources, providing adequate economic growth, and minimizing adverse effects of one resource use upon another without imposing any undue restriction on any user."[92] A lofty goal certainly, but the law included several mechanisms to help the officials oversee activities in the coastal zone such as "special management areas." One of the reasons for such areas was to provide for protection or

[90] Jua Nyla Hutcheson, "U.S. CZM Bill Debuts, Gets Edwards' OK," *Times-Picayune*, April 12, 1978, sec. 1, AHN.
[91] "Choosing CZM Agency," *Times-Picayune*, April 23, 1978, sec. 1, AHN.
[92] Office of Coastal Zone Management (NOAA) and Coastal Management Section (Louisiana DNR), *Louisiana Coastal Resources Program: Final Environmental Impact Statement*, 17.

restoration.[93] When the legislature passed the SLCRMA in 1978, two special management areas were included. The first was the Marsh Island Wildlife Refuge and Game Preserve, which was located in Iberia Parish and had been donated to the state in 1920 by the Russell Sage Foundation. According to previous agreements and the SLCRMA, the state had to make preservation of the island its number one priority when making management decisions.[94]

The second priority that the state had to consider in regard to the refuge reflected the ongoing conflicts present in Louisiana's debate about coastal management. Marsh Island was home to herons, egrets, ducks, geese and American alligators, but there was the potential for extracting oil and gas as well. Earlier agreements had allowed the state to pursue mineral development, and authorities wanted to ensure that they would be able to continue under a CMP. The SLCRMA designated Marsh Island as a special management area to preserve its natural environment but also to preserve the state's right to develop oil and gas too. The condition was any development that took place had to disturb the area as little as possible. If that stipulation could be fulfilled, then the state would meet its obligation under the second priority of the special management area for Marsh Island.[95]

Another component of the SLCRMA that contributed to the framework for coastal zone management was policy guidelines to help decision-makers apply regulations in an equitable way.[96] When the DOTD presented the draft guidelines for review to the public in spring 1979, there were concerns that the proposals were too vaguely worded and could be used to stop all activities on the coast or allow any action possible. Additionally, the guidelines did not provide enough direction for how the state should evaluate activities in a cumulative fashion. That

[93] Ibid., 18.
[94] Ibid., 107-108.
[95] Ibid.
[96] Ibid., 4.

contrasted with the guidelines issued by the Army Corps of Engineers which required that all activities be considered in a broad manner, since even small projects could have a larger impact. Writing for the *Times-Picayune* in 1979, Cornelia Carrier noted that the guidelines seemed "to be more oriented toward development than preservation and appear too often to ignore that Louisiana's wetlands are a public resource of importance not only to the state, but to the nation." She went on to say that the "conditioning, modifying terms seem to offer unlimited discretion to administrators, making them vulnerable to undue influence from special interests and leaving the door open to political abuses in the decision-making process."[97]

Within a few months of releasing its proposed guidelines, the DOTD had to substantially rework the draft to improve clarity because "most reviewers" concurred with the sentiments expressed in Carrier's reporting. Commenters complained that the "draft guidelines were too ambiguous" and left "too much discretion to the administrator of the program" in regard to enforcement practices. In May 1979, the DOTD issued revisions that reduced the use of qualifying phrases such as "if feasible" and included a "balancing test" to help officials resolve conflicting interests. The test included different evaluation criteria such as weighing the costs of a proposed activity with the benefits of completion or investigating whether an alternative location might be better.[98]

The conflicts over the coastal zone boundary, the guidelines, and the SLCRMA reflected the varying interests in the state over how to use the coastal zone. Louisiana committed itself to better protection of coastal wetlands, and there were several reasons for that decision – ensuring the future productivity of the coastal zone, assuming more control over activities that took place

[97] Cornelia Carrier, "CZM Guidelines Just 'Bare Bones'," *Times-Picayune*, April 15, 1979, sec. 1, AHN.
[98] Office of Coastal Zone Management (NOAA) and Coastal Management Section (Louisiana DNR), *Louisiana Coastal Resources Program: Final Environmental Impact Statement*, 4-5.

there, and responding to the increasing deterioration of the state's wetlands. Much the same pattern had taken place on a broader scale at the federal level. Legislation such as NEPA, the Clean Air Act, and the amendments to the Federal Water Pollution Control Act in 1972 had resulted from growing pressures to protect the nation's natural resources from degradation, while also still allowing for economic growth. In the case of each law, there was a legitimate interest in formulating policies that allowed government agencies to act as environmental stewards or protectors of public health. However, the desire to use the country's resources for economic benefits did not disappear nor did it assume a lesser role.

Perhaps the best example of this mindset can be seen in how the federal government and the state of Louisiana chose to regulate activities that could impact the quality of the environment. Both the Clean Water Act amendments and the SLCRMA established permitting systems to determine which activities would be allowed in sensitive areas such as wetlands. Section 402 of the CWA required that parties wishing to discharge pollutants into the "waters of the United States" had to obtain permits from the EPA before doing so. In 1975 alone, over 40,000 permits were granted by the agency, and each one detailed the conditions in which a party could discharge effluents. Violators could face judicial injunctions or be placed on a public list that outlined their records of non-compliance. Inclusion on the list barred facilities from eligibility for federal grants, contracts, or loans until they sufficiently addressed pollution problems.[99] Section 404 of the CWA required that any party wishing to dredge or fill in the "waters of the United States" had to first obtain a permit from the Army Corps of Engineers. That section became particularly important for wetland regulation as the 1970s progressed, though there was some controversy over jurisdictional interpretation.[100]

[99] Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report*, 64-68.
[100] Council on Environmental Quality, *Environmental Quality: The Twenty-Fifth Anniversary Report*, 246.

Louisiana's coastal zone law and management plan rested on a permit system as well. Known as the Coastal Use Permit (CUP), the program required any entity wishing to take substantial action in the state's coastal zone to get a permit. Activities that might require a permit were dredging or filling, levee construction, wastewater discharge, mining, drainage projects, or hurricane protection efforts.[101] To ensure that parties would not have to file for duplicate permits, the state arranged a joint-application system that would streamline state agency responses and coordination with the federal government.[102] Neither the state nor federal permit system expressly forbid any pollution or development from taking place in the "waters of the United States" or in sensitive areas such as wetlands. Companies or individuals had to apply for permits before taking action, which was meant to be the mechanism by which agencies such as the Corps regulated activities. There were also exceptions to the permit systems that allowed certain activities to take place without the need for a permit application. In 1977, Congress added exemptions to the CWA for agriculture, silviculture, and ranching, as well as a "nationwide permit" category that could be quickly issued for activities that were assumed to have minor impacts.[103] In Louisiana, the construction of a residence or camp did not require a permit, nor did agricultural activities that had been ongoing for at least a decade.[104]

There was the possibility of outright banning certain activities in coastal zones, as had taken place in Delaware in 1971. However, there seemed little interest in stopping economic, urban, or industrial growth entirely. Instead, states such as Louisiana and the federal government believed that comprehensive planning and permit systems would be sufficient protection for

[101] Office of Coastal Zone Management (NOAA) and Coastal Management Section (Louisiana DNR), *Louisiana Coastal Resources Program: Final Environmental Impact Statement*, 82-84.
[102] Ibid., 3.
[103] Bruce Ray, "Section 404 of the Clean Water Act: An EPA Perspective," *National Resources and Environment* 2, no. 3 (Winter 1987): 22, http://www.jstor.org/stable/40923332.
[104] Office of Coastal Zone Management (NOAA) and Coastal Management Section (Louisiana DNR), *Louisiana Coastal Resources Program: Final Environmental Impact Statement*, 84.

environmental resources and also allow continued development. Additionally, there was some concern that too much regulation could lead to no regulation at all. By prohibiting activities or heavily regulating them, the state and federal government could potentially run into an issue known as "takings." According to the U.S. Constitution, private property owners cannot have their land confiscated by government authorities without being fairly compensated.[105] During the 1970s, there was some question as to whether heavy regulation resulted in what was essentially a "taking" of the property. In order to avoid questions of constitutionality, Louisiana and the federal government relied on the permit system to allow maximum flexibility. Some activities could be heavily monitored or restricted, but courts were more likely to uphold regulatory laws if there was not a widespread pattern of denying property owners the value of their land.[106]

Conclusion

At the national level, the creation of laws such as the Coastal Zone Management Act brought increased attention to sensitive ecosystems such as Louisiana's coastal wetlands. Drawing on the ideas espoused by the Stratton Commission and the WRPA in the preceding decade, the CZMA was meant to blend environmental protection with a more orderly approach to land use. In essence, policymakers subscribed to the idea that environmental quality could be ensured if state governments adopted more systematic planning for a wide variety of uses in their coastal zones. Encouraging states to take the lead on comprehensive land-use management was a departure from earlier trends as municipal governments had once been the primary authorities for overseeing land-use and zoning laws. Despite fears of an overbearing federal government, provisions of the act mandated that the states have considerable control over what happened

[105] The relevant text for the "takings" issue reads, "…nor shall private property be taken for public use, without just compensation" (U.S. Const., amend. V).
[106] Lewis, *Wetlands Explained*, 14-15.

within their respective boundaries. Louisiana was one of thirty states that participated in the CZMA, and the interaction between the government officials in Baton Rouge and Washington D.C., led to the adoption of a coastal zone management law in 1978.

Still, the tide of environmental degradation in the state's wetlands was not reversed so much as slowed down. Regulatory gaps such as the exemptions for 404 permits limited the oversight of the Clean Water Act, and there were a multitude of policies that contradicted the goal of protecting the environment. Indeed, while laws such as the CZMA increased protection for coastal zones, they also contributed to development – especially in the area of energy infrastructure.[107] Regulations were an important step in mitigating environmental degradation, but even the most stringent regulatory schemes could not erase the consequences of past activities. Perhaps just as importantly, regulations did little good if they were not effectively implemented. Conflicting interests, controversies involving the scope of regulations, and fiscal constraints continued to affect the protection and preservation of Louisiana's wetlands well into the years that followed the "environmental decade" of the 1970s. As a result, policies related to the management and protection of wetlands continued to be piecemeal.

Finally, multiple-use planning and management still tended to favor economic and social growth over stringent environmental protections.[108] Federal policies continued to support the

[107] Hays, *Beauty, Health, and Permanence*, 168-170. Hays argued that the protection-development dynamic that could be seen in the CZMA was a reflection of broader trends in land-use planning in non-urban areas. Issues of zoning or land-use management had been seen as a primarily city-based necessity, but during the 1960s and 1970s, Americans became more concerned about the loss of open spaces and began to advocate for increased planning in the countryside. At the same time, industrial development required large spaces of land, and coastal zones were prime spots for commercial uses. The CZMA attempted to reconcile both urges – protection and development – and reflected the mindset that environmental spaces could be have multiple uses.

[108] For more on how land-use policies could be complicated by development and property rights, see Chapter 5 in Rome's *The Bulldozer in the Countryside* where he addressed the propensity of housing developers to build in spaces such as wetlands or on hillsides despite the risks associated with flooding or soil erosion. In Chapter 7, he discussed the efforts to pass a national land-use policy to discourage those sorts of risky developments and why such initiatives failed to become law. Rome argued that while Americans began to think of land as a public resource during the 1970s, sentiments to protect property rights and the rights of industry to use the land for commercial benefits remained strong. When governments did pass land-use legislation, those measures had to be more specific

engineering of the Mississippi River, the conversion of wetlands to dry lands for agriculture or urban sprawl, and the development of oil and gas production in Louisiana's coastal zone. The state also supported and benefitted from those policies as well, and even after a decade of significant environmental legislation, the basic calculus in Louisiana's coastal zone had not substantially changed – economic and social developments that made use of the state's natural resources often took precedence over environmental protection. Laws such as the SLCMRA that were implemented during the 1970s did have positive effects, but additional measures were eventually going to be necessary. As the state transitioned into a new decade, scientists and public officials recognized that simply regulating the use of wetlands would not be sufficient to address the crisis of coastal erosion. Louisiana was going to need to adopt strategies of restoring what had already been lost, but the development of a coastal restoration program would take place in the same context of bureaucratic and economic circumstances that had contributed to loss of the state's wetlands for decades.

than the broader land-use policies seen in Congress in the early 1970s. Because of the complexities in trying to balance land-use planning against the long-term treatment of property rights in American history, policymakers had greater success in regulating pollution than land use. Pollution was thought to be a problem that could be solved by the use of technology, whereas planning for the orderly use of land had the potential of alienating the rights of property owners.

CHAPTER 4: POLICY DEVELOPMENTS IN THE 1980s

"New Orleans' Final Frontier for Future Growth"

In 1986, a subsidiary of Merrill Lynch and Co., two national environmental groups, and members of Louisiana's congressional delegation pieced together a plan that would create the Bayou Sauvage National Wildlife Refuge "within twenty minutes of the Central Business District" in New Orleans.[1] South Point Inc., had acquired approximately twenty-four thousand acres of marsh in the eastern portion of the "Crescent City" in 1985 as part of a debt settlement. Developers had long seen the tract as "New Orleans' final frontier for future growth" and hoped to transform the wetlands into dry lands suitable for housing and commercial properties. However, environmental groups were staunchly opposed to developing the area, and South Point decided that donating most of its land for a wildlife refuge made more financial sense than potentially litigating construction projects for years to come.[2] After several months of uncertainty about whether the deal would go through, President Ronald Reagan gave final approval for the proposal when he signed the Emergency Wetlands Resources Act (EWRA) in November 1986.[3]

The EWRA contained other provisions related to wetlands, but the creation of Bayou Sauvage National Wildlife Refuge ensured that over eighteen thousand acres of marsh would be protected from commercial and industrial development in New Orleans. Sitting between Interstate 10 and Lake Pontchartrain, the Bayou Sauvage wetlands served as a habitat for a

[1] "Wildlife Refuge for N.O.?" *Times-Picayune/States-Item,* August 5, 1986, sec. A, AHN.
[2] James O'Byrne, "Refuge is Hailed as Possible Trendsetter in U.S.," *Times-Picayune/States-Item,* August 3, 1986, sec. B, AHN; James O'Byrne, "Major Wildlife Refuge Proposed for East N.O.," *Times-Picayune/States-Item,* July 29, 1986, sec. A, AHN. South Point was hoping to get a tax write-off for donating the property the national wildlife refuge program.
[3] James O'Byrne, "Sauvage Refuge Bill Signed," *Times-Picayune/States-Item*, November 11, 1986, sec. A, AHN.

variety of animals, fish, and plants and also provided a run-off basin for storm-related flooding.[4] In a report prepared by the U.S. House of Representatives' Committee on Merchant Marine and Fisheries, the members characterized the area as "particularly valuable," especially because such a sizeable tract of wetlands was located so close to a major American city.[5] Only a few other metropolitan areas in the country could boast of an urban refuge, and none were as large as Bayou Sauvage would be.[6] Educational and recreational opportunities would be a boon to residents and tourists from surrounding areas. Further, the refuge would preclude commercial or residential expansion in most of the undeveloped marshlands to the east of New Orleans. The expense of draining wetlands for subdivisions or shopping malls had served to block development through the mid-1980s, as did the limitations imposed by Section 404 of the Clean Water Act.[7] Still, the potential for construction and growth remained while the land stayed in private hands. By making the area into a national wildlife refuge, public officials agreed to preserve the wetlands as an important ecological habitat.

Environmental groups and local observers hailed the authorization of Bayou Sauvage as a major victory in 1986, but the proposal languished for nearly four years before becoming a reality. Funding set aside for the purchase was diverted in 1988 during a particularly bad fire season in the western U.S. After the money was restored, soil testing indicated high levels of mercury might be present in the marshes, and federal officials balked at going through with the

[4] O'Byrne, "Refuge is Hailed as Possible Trendsetter in U.S."; "Wetlands Progress East and West," *Time-Picayune/States-Item*, August 12, 1986, sec. A, AHN. The exact number of acres that would be donated fluctuated during discussions about the deal. In the final proposal, about eighteen thousand acres of land were set aside for Bayou Sauvage. The Conservation Fund, a national environmental organization, would buy another five thousand acres from South Point, Inc., that could be used for commercial development.
[5] U.S. Congress, House of Representatives, Comm. on Merchant Marine and Fisheries, Bayou Sauvage Urban National Wildlife Refuge, H.R. No. 99-857, at 3 (1986).
[6] O'Byrne, "Refuge is Hailed as Possible Trendsetter in U.S."; James O'Byrne, "Urban Wilderness," *Times-Picayune/States-Item*, November 16, 1986, sec. C, AHN.
[7] James O'Byrne, "Urban Wilderness,"; "Refuge Dream Becomes Reality," *Times-Picayune*, May 1, 1990, sec. B, NB LA (9005010143).

sale due to the potential risks of a costly clean-up. When secondary testing revealed there was no need for concern, a leaky levee discovered along the bayou's eastern boundary further delayed the purchase of the land from South Point. Louisiana Representative John Breaux was able to secure funding from the federal government to help pay for most of the repair costs for the levee.[8] The sale of the tract finally went through in May 1990 in what the *Times-Picayune* called a "tangible victory" in a period "where there is much talking and writing about saving Louisiana's and the nation's shrinking wetlands."[9]

The saga of Bayou Sauvage offers a window into how wetland policies developed in the state of Louisiana and the nation during the 1980s. Establishing a national wildlife refuge near New Orleans generated support because of ongoing attitudinal shifts about the value of wetlands and also because government policies had made reclamation less desirable. Carrying through with the plan was more complicated than anticipated, and in many ways Bayou Sauvage was an exception to the "business as usual" mindset that continued to characterize the management of Louisiana's coast in the 1980s. Despite some positive steps toward protecting the state's wetlands during the decade, policies often remained piecemeal and inefficient administration continued. Sufficient funding for protection measures was another critical issue and was evident even in the creation of Bayou Sauvage. When the proposal became threatened by a poorly maintained levee, the state largely relied on federal dollars to fix the problem. In fact, the need for federal intervention became increasingly clear over the course of the 1980s. Public officials in the state realized that conservation or preservation efforts were not sufficient to halt coastal

[8] James O'Byrne, "N.O. Wildlife Refuge Back on Track," *Times-Picayune*, January 14, 1990, sec. B, LA NB (9001140402); James O'Byrne, "N.O. Refuge Finally Free of Bureaucratic Swamp," *Times-Picayune*, April 28, 1990, sec. A, NB LA (9004280133).
[9] "Refuge Dream Becomes a Reality," *Times-Picayune*, May 1, 1990, sec. B, NB LA (9005010143).

erosion. Louisiana was also going to need a large-scale restoration program to help combat the rapid subsidence of its wetlands.

This chapter examines policy developments during the 1980s and discusses how state and federal officials improved protection for Louisiana's wetlands in specific cases. However, long-standing issues related to bureaucratic disorganization, fiscal problems, and resistance to land-use planning also persisted throughout the decade. Additionally, Reagan sought to reduce the amount of government regulation and was generally less friendly toward environmental priorities than previous presidents. As a result of these factors, policymakers failed to produce comprehensive programs to conserve and restore Louisiana's wetlands. Further, the creation of new policies and the implementation of existing regulations were often undermined by ongoing budget turmoil in Louisiana.

The Reagan Revolution, the Environment, and Wetlands

When Ronald Reagan assumed the presidency in 1981, he brought a new outlook on how government should function. That perspective often carried over into specific policy prescriptions such as those related to environmental protections. Reagan subscribed to an approach called the New Federalism, which was an idea that had its origins in the Nixon administration. For both presidents, the New Federalism involved changing the power relationship between state and federal governments. With Nixon, states would assume more control over areas like regulatory enforcement as was seen in laws such as the Coastal Zone Management Act. Reagan's implementation of the New Federalism continued the same policy, but during his two terms states were left with fewer resources to carry out expanding responsibilities. For Reagan, reducing the amount of money spent on enforcing regulations was a key policy goal. In fact, decreasing the amount of regulation in general was one of the main

tenets of Reagan's approach to governance. He and those in his administration touted their preferences to allow the "free market" find solutions to problems such as pollution.[10]

That philosophy manifested itself in appointments and new or revised environmental policies during Reagan's terms in office. In 1981, in its first report for the Reagan administration, the President's Council on Environmental Quality criticized the environmental legislation of the 1970s as being too rigid and said the time had come to re-evaluate the burdens placed on businesses and individuals by legislative and administrative policies.[11] "Whenever possible, the achievement of environmental goals and the protection of environmental standards should be left to free market mechanisms."[12] Reagan also placed controversial figures at the head of two of the country's most prominent resource agencies – the Department of Interior and the EPA. Both James Watt and Anne Burford were outspoken critics of environmental regulation and subscribed to the administration's stance that economic development was incompatible with environmental protection. Morale at the EPA declined significantly under Burford's leadership, as did the size of the agency's staff. Her replacement, William Ruckelshaus, had been the EPA's first director under Richard Nixon and had a solid reputation among environmentalists. However, lack of support from the White House caused Ruckelshaus to resign in protest after less than two years, which further reduced the agency's ability to properly enforce the policies for which it was responsible.[13]

Despite Reagan's anti-regulatory positions and controversial appointments to agencies such as the EPA, public opinion remained favorable toward a strong government role in

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[10] Byron W. Daynes and Glen Sussman. *White House Politics and the Environment: Franklin D. Roosevelt to George W. Bush* (College Station, TX: Texas A&M University Press, 2010), 174-176.
[11] Council on Environmental Quality, *Environmental Quality, 1981: The Twelfth Annual Report of the Council on Environmental Quality* (Washington, D.C, 1981), 11-14. http://www.slideshare.net/whitehouse/august-1981-the-12th-annual-report-of-the-council-on-environmental-quality
[12] Ibid., 17.
[13] Daynes and Sussman, *White House Politics and the Environment*, 179-184.

environmental protections throughout his presidency.[14] When regulations seemed to pose minimal risk to economic development or when congressional pressure was too substantial to resist, Reagan did support protective legislation such as the Safe Drinking Water Act of 1986.[15] In other instances, Reagan enacted environmental regulations in an effort to promote greater fiscal conservatism. One example of such an approach had a direct impact on Louisiana's coast in the early part of the decade. In April 1981, Senator John Chafee of Rhode Island introduced the Coastal Barrier Resources Act (CBRA), which prevented the federal government from providing assistance to construction projects on undeveloped portions of barrier islands.[16]

When Chafee introduced the CBRA, about two-hundred and fifty barrier islands stretched along the Atlantic and Gulf coasts, and those areas had seen several decades of intense property development. In 1950, about ninety thousand acres of the nation's barrier islands had been developed for residential purposes. Thirty years later, that total had climbed to 280,000 acres. The federal government had supported some of the expansion by contributing to disaster relief or subsidizing flood insurance on the islands. Barrier islands such as Louisiana's Isle Dernier were especially vulnerable to wind or wave action and served as a "first line of defense" for the shorelines of coastal states during powerful storms. Erosion problems on the nation's barrier islands were widespread, and deteriorating conditions posed a risk specifically to Louisiana's coastal wetlands.[17]

Reagan signed the CBRA in 1982 and barred almost all federal spending for 650 miles of coastline along the Atlantic Ocean and Gulf of Mexico. The president said the law was

[14] Philip Shabecoff, *A Fierce Green Fire: The American Environmental Movement* (Washington, D.C.: Island Press, 2003), 223-224.
[15] Daynes and Sussman, *White House Politics and the Environment*, 177-180.
[16] Council on Environmental Quality, *Environmental Quality, 1981: The Twelfth Annual Report*, 162-163.
[17] Ibid.

"precisely the sort of imaginative environmental legislation this administration encourages" and that the CBRA would "enhance both wise natural resource conservation and fiscal responsibility."[18] Supporters of the law estimated that the federal government could save as much as $500 million per year, and the act also had the benefit of easing the pressure to develop such sensitive areas. By paying for flood insurance subsidies, infrastructure, and disaster relief on the nation's barrier islands, the federal government had contributed to environmental degradation. In that sense, the CBRA offered a limited correction to policies that had often been at cross-purposes – infrastructure investment for property development and environmental protection.[19]

However, there was an exception to the ban on federal spending for Louisiana's barrier islands. Representatives John Breaux and Billy Tauzin placed a measure in the legislation that ensured the state continued to receive aid for projects that combatted coastal erosion – as long as those projects did not encourage development. The two representatives convinced their fellow legislators to agree to the provision by arguing that Louisiana's problem was not over-development. Instead, the deteriorating islands put the state's wetlands in greater jeopardy by exposing them to increased wind and wave action.[20] The move by Breaux and Tauzin had ecological benefits for Louisiana by ensuring the state could receive federal money for projects to reinforce its deteriorating islands, but local officials were not concerned solely about the environmental problems associated with erosion. The state's three-mile boundary for keeping one hundred percent of oil and gas taxes was tied to the shorelines of its barrier islands. If the

[18] "Coastal Barrier Aid Ban is Signed by President," *Times-Picayune/States-Item*, October 19, 1982, sec. 1, AHN.
[19] "Coastal Barrier Aid Ban is Signed by President,"; Greg Hager, "Bill Bars Barrier Islands Aid," *Times-Picayune/States-Item*, September 17, 1982, sec. 1, AHN; Council on Environmental Quality, *Environmental Quality: The Thirteenth Annual Report of the Council of Environmental Quality* (Washington, D.C.: U.S. Government Printing Office, 1982), 6, http://www.slideshare.net/whitehouse/august-1982-the-thirteenth-annual-report-of-the-council-on-environmental-quality.
[20] George Hager, "Bill Bars Barrier Islands Aid."

islands eroded, then the three-mile marker moved inward and Louisiana lost revenues from mineral production.[21]

In January 1981, Representative Robert Livingston said that stabilizing Louisiana's barrier islands to ensure the state kept "millions of dollars in oil and gas revenues" was necessary because those "revenues provide public services vital to all citizens." He went on to note that the state could not "permit the passage of any legislation which would forbid the state to actively preserve the islands."[22] Concerns about the relationship between the state's barrier islands and its mineral revenues continued while Congress debated the CBRA. About one week before the president signed the law, Governor Treen and members of the legislature agreed to invest money in several coastal erosion projects, some of which would include barrier island stabilization. State officials were concerned "that if the barrier islands disappear and the coast erodes farther inland, it could have a serious effect on the state's offshore oil and gas rights."[23]

Proposals for environmental protection at the national level continued after the passage of the CBRA, and in some cases, the bills were modeled after the barrier islands act by combining fiscal conservatism with protecting sensitive ecosystems. In 1983, the Department of the Interior submitted legislation that was touted by the Reagan administration to increase protection for wetlands and the wildlife that used them as habitats. The Protect Our Wetlands and Ducks Resources Act (POWDR) mimicked the tactic used by CBRA and would have prevented federal subsidies to programs that encouraged drainage or development in wetlands.[24] However, the bill

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[21] George Hager, "La. Asks CZM for Barrier Islands," *Times-Picayune/States-Item*, March 29, 1980, sec. 5, AHN; Kathleen Frick, "Barrier Island Plans Controversial," *Times-Picayune/States-Item*, August 4, 1980, sec. 1, AHN.
[22] Robert Livingston, "Preserving Barrier Islands," *Times-Picayune*, January 25, 1981, sec. 1, AHN.
[23] Charles Hargroder, "Panel Oks Treen's Coastal Erosion Plans," *Times-Picayune/States-Item*, October 27, 1982, sec. 1, AHN.
[24] Council on Environmental Quality, *Environmental Quality 1983: The Fourteenth Annual Report of the Council of Environmental Quality* (Washington, D.C.: U.S. Government Printing Office, 1983), 162-163, http://www.slideshare.net/whitehouse/august-1983-the-fourteenth-anual-report-of-the-council-on-environmental-quality

contained some serious issues that made POWDR more symbolic than practical for safeguarding wetlands. Protection under the act first required a national survey to identify "environmentally significant" wetlands, which would have likely taken decades to complete. Another major flaw in the act was that there were a considerable number of exceptions to the ban on federal funding. For example, projects approved by the Army Corps of Engineers could still get federal dollars as could agriculture activities – weaknesses that likely contributed to the bill's failure.[25]

Environmental protection did not become completely outsourced to the "free market" during the early years of the Reagan administration, but neither did the president and his supporters pursue the sorts of regulations that had been sought in the 1970s. The Reagan administration wanted to see fewer regulatory schemes, even if stronger regulations might have helped preserve sensitive ecosystems such as Louisiana's wetlands. Still, as the decade continued, Reagan's support for reducing the amount of aid given to states for regulation enforcement came just as Louisiana's officials began to emphasize that the state needed more federal assistance to combat coastal erosion.

Louisiana Begins to Manage the Coastal Wetlands

Despite some of the shifts taking place at the federal level in regard to environmental policies, there were steps taken to protect Louisiana's wetlands during the early 1980s. After the National Oceanic and Atmospheric Administration approved Louisiana's coastal master plan in September 1980, the state became eligible for additional funds to administer its management plan.[26] Approval of the CMP also ensured that Louisiana continued to receive revenues as part of the Coastal Energy Impact Program. During the first year of the plan's administration, the state

[25] Bob Marshall, "Who Should Pay to Ensure Wetland Habitat for Waterfowl?" Outdoors, *Times-Picayune/States-Item*, April 17, 1983, sec. 6, AHN.
[26] The CMP submitted to federal officials for approval was based on the State and Local Coastal Resources Management Act of 1978 discussed in Chapter 3.

received almost $9 million in funding, with about $7 million of that going to coastal parishes to improve local infrastructure.[27]

Beyond guaranteeing revenues for administration, the CMP established a method of balancing conservation and economic development in the state's coastal wetlands via the Coastal Use Permit. The CMP also ensured that federal projects that took place in Louisiana's wetlands had to be consistent with the state's management plan, thus giving more control to the state in how it managed its resources.[28] Parish governments had the option of establishing their own management plans to oversee development in their local jurisdictions.[29] A number of parishes did so, including Jefferson, Lafourche, and Orleans. Though the SLCRMA and the CMP gave Louisiana mechanisms for controlling activities in the wetlands, the permit system could only prevent possible *future* damage. Further, not all activities that took place in the coastal zone required a CUP, so actions related to agriculture or aquaculture did not necessarily require a permit and could be done without any kind of government approval.[30]

To counter erosion caused by past activities and offset erosion that resulted from CUP exemptions, officials in the state began to stress the need for a restoration plan. In summer 1980, the drainage of wetlands in Jefferson Parish led to debate among residents about the wisdom of allowing development in such sensitive areas. The chairman of the Jefferson Parish Coastal Management Commission, John Uhl, argued that the loss of several thousand acres was a problem, but only a small one in comparison to what was happening in Barataria Basin. Uhl said that the real issue was that the entire area was sinking into the Gulf Mexico. The Mississippi

[27] "La. Coastal Program is Approved," *Times-Picayune/States-Item*, September 25, 1980, sec. 1, AHN; "La.'s Plan to Manage Coastal Zone is Approved," *Times-Picayune/States-Item*, September 30, 1980, sec. 1, AHN.
[28] Office of Coastal Zone Management (NOAA) and the Coastal Management Section (Louisiana DNR), *Louisiana Coastal Resources Program: Final Environmental Impact Statement*, 16-17.
[29] Ibid., 78.
[30] Ibid., 84.

River was no longer depositing enough sediment to keep up with the erosive effects of wave action and salt water intrusion. He believed the best approach to save the area was to "let the Mississippi River out into the basin" with a series of control structures that could direct the process of land building in a systematic way. Without a long-range restoration plan, Uhl stated, "the marsh is doomed."[31]

There was considerable agreement among Louisiana's public officials that the state should be doing more to ensure the sustainability of its wetlands. Experts had increased their estimates of Louisiana's land loss from sixteen square miles in the early 1970s to as much as forty-seven square miles per year. In response to the ongoing losses, Governor Treen signed a bill into law that created the Coastal Environment Protection Trust Fund (CEPTF) in late 1981. The fund was established specifically to combat coastal erosion and was given $35 million out of the state's Enhanced Mineral Trust Fund. Fifteen anti-erosion projects had already been approved by the state legislature, but almost all of them lacked funding. The CEPTF was meant to provide financing for state projects, state-federal collaborations, and studies related to coastal erosion.[32]

The year after state officials established the CEPTF, a task force formed that consisted of representatives from the Louisiana Coastal Commission, the Department of Natural Resources, the Department of Wildlife and Fisheries (DWF), and the Department of Public Works. Designated as the Coastal Protection Task Force (CPTF), the group recommended six projects and one study to be implemented over the course of the next twenty-four to forty-four months. Two of the projects were joint state-federal endeavors, while the remaining four were

[31] Tom Frazer, "Barataria Basin Sinking," *Times-Picayune/States-Item*, July 5, 1980, sec. 1, AHN.
[32] Fen Montaigne, "Coastal-protection Fund Bill is Signed by Treen," *Times-Picayune/States-Item*, November 24, 1981, sec. 1, AHN.

demonstration projects to test the feasibility of pursuing larger projects at a later date. Projects included freshwater diversions and beach or barrier island nourishment, and all were designed to encourage land growth.[33] The CPTF report estimated that the six projects would cost the state $9.5 million dollars and included $700,000 for matching funds on the freshwater diversion projects with the Army Corps of Engineers.[34] In 1983, the state used another $5 million from the CEPTF for its remaining matching funds for the Caernarvon Freshwater Diversion (CFWD) project.[35] Despite some of the benefits that came out of the CEPTF, the program was questionable in its effectiveness and suffered from inadequate funding and poor management through the mid-1980s.[36]

Fiscal Challenges to Implementing Wetlands Policies

One of the factors that affected the CEPTF was ongoing budget turmoil. A drop in mineral revenues after 1982 caused repeated fiscal woes for the rest of the decade and limited the scope of projects that the state could take on, even for a problem as serious as coastal erosion.[37] When officials confronted the need to balance competing economic, social, and environmental interests, the issue of budget constraints simmered in the background. In April 1982, the state faced "dire financial straits," and Governor David Treen hoped to find a new way to pay for a broad range of public services.[38] He put forth the Coastal Wetlands Environmental Levy (CWEL) in an effort to make up for declining oil and gas revenues. Under the proposed bill, a

[33] Louisiana Department of Natural Resources, *Coastal Protection Task Force Report* (Baton Rouge, LA: Louisiana Department of Natural Resources, 1982), 2-19, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-tc224-l8-l684-1982/pdf/CZIC-tc224-l8-l684-1982.pdf
[34] Ibid., Table 1.
[35] Kathleen Osborne, "Use River Water to Feed Marshlands, State Says," *Times-Picayune/States-Item*, April 16, 1983, sec. 1, AHN.
[36] Bob Anderson, "Coastal Project Now in Jeopardy," *Advocate*, November 20, 1986, sec. B, NB LA.
[37] David Treen, "Louisiana Needs a New Source of Revenue: CWEL," *Times-Picayune*, February 20, 1988, sec. A, AHN; "State Revenue Reprieve," *Times-Picayune*, October 1, 1988, sec. A, AHN.
[38] Jack Wardlaw, "Treen Pleads for New State Money Source," *Times-Picayune/States-Item*, April 20, 1982, sec. 1, AHN.

tax would have been applied to all oil and natural gas moving through Louisiana's wetlands and not just the mineral resources that originated in the state's jurisdiction. Treen's administration estimated that the CWEL would bring $400 million in revenues annually, and the governor wanted to use those funds to pay for capital improvements such as highway construction.[39] He argued that trying to pay for public services by raising income taxes or sales taxes would place too much of a burden on individuals.[40]

The Louisiana Association of Business and Industry (LABI), the Public Affairs Research Council, and the oil and gas industry criticized the CWEL, which led to resistance in the legislature for supporting Treen's plan. Concerns ranged from the impact such a tax might have on oil and gas development to a lack of specifics on how exactly the money would be spent.[41] Additionally, legislators voiced opposition to the bill in the wake of an economic downturn and said that the state should not tax an industry that provided so many Louisianans with jobs.[42] Complicating matters further, former governor Edwin Edwards also opposed the CWEL and actively lobbied the legislature to block the tax.[43] Though the Ways and Means Committee in the House voted to send Treen's proposal to the floor in early June 1982, the legislation died on the chamber's floor several weeks later. The governor's legislative leaders gutted the bill just before the final vote and reduced the possible tax revenues from over $400 million to $12 million. Their

[39] Jack Wardlaw, "Treen Bares New Plan for First-use Tax," *Times-Picayune/States-Item,* April 16, 1982, AHN; James Gillis, "Oil, Economy, and Politics," *Times-Picayune/States-Item,* April 23, 1982, sec. 1, AHN.
[40] Jack Wardlaw, "Business Lobby Opposes Treen's Oil, Gas Tax," *Times-Picayune/States-Item,* May 7, 1982, sec. 1, AHN.
[41] Bill Lynch, "Treen's Plans on Mineral Tax Raise Concerns," *Times-Picayune/States-Item,* April 20, 1982, sec. 1, AHN; Bill Lynch, "Key Backer Attacks Treen over Tax Plan," *Times-Picayune/States-Item,* May 12, 1982, sec. 1, AHN; Wardlaw, "Business Lobby Opposes Treen's Oil, Gas Tax,"; Jack Wardlaw, "Safeguards Recommended for La. Oil Tax," *Times-Picayune/States-Item,* sec. 1, AHN.
[42] Jack Wardlaw, "Scaled Down Oil, Gas Tax Loses in House," *Times-Picayune/States-Item,* June 18, 1982, sec. 1, AHN.
[43] Gillis, "Oil, Economy, and Politics,"; Jack Wardlaw, "Treen, EWE Argue CWEL," *Times-Picayune/States-Item,* June 6, 1982, sec. 1, AHN.

efforts were still not enough to overcome the lobbying efforts of LABI, the oil and gas industry, and Democrats loyal to Edwards.[44]

The failure of the CWEL hinted at the sway that the oil industry held in Louisiana during the early 1980s. Between 1979 and 1981, mineral taxes brought in over $2 billion dollars of revenue, but political officials in Treen's administration warned that the surpluses of those years were not sustainable. The federal Government Accountability Office also criticized Louisiana for relying too heavily on mineral taxes to fund the state's budget, and a professor of economics at LSU warned that oil and gas revenues would likely begin to drop by the mid-1980s.[45] Indeed by 1988, oil and gas taxes contributed to only fifteen percent of the state's budget, a figure that was down from a peak of forty-three percent in 1982.[46] However, other public officials did not share the Treen administration's pessimism regarding the state's budget. Chairman of the House Appropriations Committee in the legislature, Kevin Reilly, asserted that with "luck and good management" Louisiana could be financially secure into the twenty-first century. One of the reasons that a potential drop in oil production did not alarm officials such as Reilly was that he believed Louisiana was highly competitive in the minerals industry.[47]

His position had some merit, particularly concerning the oil and gas infrastructure that existed in Louisiana. Specifically, the state had recently become home to the nation's only deep-water offshore oil terminal. In May 1981, the Louisiana Offshore Oil Port (LOOP) opened for business in the Gulf of Mexico, just south of Port Lafourche.[48] Owned and operated by several

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[44] Jack Gillis, "CWEL Leaps First Hurdle," *Times-Picayune/States-Item*, June 3, 1982, sec. 1, AHN; Jack Wardlaw, "Scaled Down Oil, Gas Tax Loses in House,"; Bill Lynch, "Defeat of Wetlands Levy is a Double Blow to Treen," *Times-Picayune/States-Item*, June 20, 1982, sec. 1, AHN.
[45] Jack Wardlaw, "Dwindling Oil Reserves Pose Slippery Problem," *Times-Picayune*, January 26, 1981, sec. 1, AHN.
[46] Andrew Smith, "State's Budget Officials Taking Oil Slide in Stride," *Times-Picayune*, October 7, 1988, AHN.
[47] Jack Wardlaw, "Dwindling Oil Reserves Pose Slippery Problem."
[48] John Hall, "Great Day is at Hand for Louisiana Superport," *Times-Picayune/States-Item*, May 3, 1981, sec. 1, AHN.

private oil companies, LOOP had been approved by the Louisiana legislature in the late 1970s. When construction began, there were concerns that another offshore oil terminal in Texas could provide competition, but the Seadock project fell through.[49] Louisiana officials advocated for the project, stating that the superport would bring in hundreds of jobs and millions of dollars in revenues. However, by the time the terminal began operations, the world was already experiencing a decline in oil prices. One year later, the facility was operating at one-quarter its maximum capacity and suffered operating losses of $40 million. In 1983, LOOP lowered its fees for tankers to unload oil at the terminal, but volatility in oil prices continued to affect LOOP's profitability into the late 1980s.[50]

As had been the case with opposition to the CWEL, Louisiana's reliance on the oil industry to support the state's budget and economy could be seen in official backing for LOOP. In 1972, the legislature passed Act 444, which established the Deep Draft Harbor and Terminal Authority to oversee operations once a deep-water oil port could be built. The authority was granted "exclusive and plenary authority to do any and all things necessary or proper" to "promote, plan, [and] finance," a deep draft terminal.[51] In 1978, the SLCRMA designated LOOP as one of its two "special management areas" that would be excluded from the normal authority of a coastal management plan. Instead, because of its "unique needs" and importance to the

[49] Kenneth Weiss, "License is Signed to Build Superport," *Times-Picayune*, August 2, 1977, sec. 1, AHN.
[50] John Hall, "Great Day is at Hand for Louisiana Superport,"; Mary Judice, "LOOP's Tariffs are Reduced," *Times-Picayune/States-Item*, December 11, 1982, sec. 2, AHN; John Hall, "Low Usage, High Costs Cause Big LOOP Loss," *Times-Picayune/States-Item*, January 30, 1983, sec. 7, AHN; Mary Judice, "La. Oil Port Has Too Many Customers," *Times-Picayune/States-Item*, sec. C, AHN.
[51] Louisiana Deep Draft Harbor and Terminal Authority, *Superport Environmental Protection Plan* (Baton Rouge, LA: Louisiana Deep Draft Harbor and Terminal Authority, 1974), 1-1, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-td195-p4-d43-1974/pdf/CZIC-td195-p4-d43-1974.pdf.

economy of Louisiana, the offshore oil terminal would operate under its own environmental management plan.[52]

The decision to give special preference to the oil industry did not mean that Louisiana's officials could ignore potential impacts on the state's wetlands.[53] Environmentalists were concerned about the impact of a deep-water terminal could have on the coastal wetlands, particularly if there was a major spill. There was also trepidation about the impact of secondary developments as facilities were built onshore to support LOOP's operations.[54] Act 444 required the terminal authority "to take all necessary steps to protect Louisiana's unique coastal environment from any short-term or long-term damage" that might result from the development of a superport.[55] In compliance with the law, a three-person commission developed an environmental protection plan (EPP), which became part of the overall legal framework for LOOP. One of the commissioners was Jack Van Lopik, who served as the director for LSU's Center for Wetlands Resources. Another member was Lyle St. Amant, who was assistant director of the state's Wildlife and Fisheries Commission. Along with a representative from the superport authority, the group's report attempted to address some of the major concerns related to secondary development by requiring that all onshore support facilities adhere to the EPP.[56] The plan also included provisions for monitoring equipment, training personnel, and an anti-pollution

[52] Office of Coastal Zone Management (NOAA) and Coastal Management Section (Louisiana DNR), *Louisiana Coastal Resources Program: Final Environmental Impact Statement*, 104-105.
[53] The other special management area included in the SCLRMA was Marsh Island Wildlife Refuge, which was discussed in Chapter 3. There were oil wells in the refuge that the legislature sought to keep open for development. Officials had to ensure that the refuge's environmental integrity was maintained as part of an agreement that the state made with the Russell Sage Foundation when the land was donated.
[54] Kenneth Weiss, "Coleman Cites Effects of Proposed Superport," *Times-Picayune*, December 19, 1976, sec. 1, AHN; Tom Abrams, "Environmentalists Question Deepwater Port Value," *Times-Picayune*, March 17, 1977, sec. 3, AHN.
[55] Louisiana Deep Draft Harbor and Terminal Authority, *Superport Environmental Protection Plan*, 1-1 – 1-2.
[56] Anita Schrodt, "Superport Planning Passes a Milestone," *Times-Picayune,* August 8, 1976, sec. 1, AHN; Louisiana Deep Draft Harbor and Terminal Authority, *Superport Environmental Protection Plan*, 4-28.

policy.[57] Though the EPP did not satisfy all concerns related to the potential impacts to the environment, the plan did provide the terminal authority with the legal means necessary to seek monetary compensation from superport operators to repair environmental damages.[58] When LOOP began operations in 1981, the facility did so under the scope of an EPP that was meant to protect Louisiana's wetlands while also allowing for economic development in a state that depended heavily on the oil industry.[59]

Challenges with Classifying Wetlands and Effective Implementation

Issues such as the budget crises of the 1980s and LOOP influenced Louisiana's ongoing attempts to deal with coastal erosion. Other factors affected policymaking as well, at both the state and national levels. At a basic level of management, federal officials remained uncertain about the topography of wetlands in the United States and how those landscapes were changing. By the mid-1980s, there was still no comprehensive database on the country's coastal wetlands, and a lack of wide-ranging maps impeded federal officials' ability to identify trends over long periods of time and relay those trends to policymakers.[60] The U.S. Fish and Wildlife Service had been mapping wetlands through the use of aerial photography since 1974, but the National Wetlands Inventory (NWI) was only partially complete after a decade of work. Inconsistent data or diverse methods for determining which areas should be documented as wetlands complicated mapping the nation's wetlands. The NWI had pulled information from twenty-three different sources, which covered 242 coastal counties in twenty-two states. While the service's efforts had produced some useful information by the mid-1980s, much of what the FWS had collected did

[57] Louisiana, Deep Draft Harbor and Terminal Authority, *Superport Environmental Protection Plan*, 6-8 – 6-9.
[58] Ibid., 1-1 – 1-2.
[59] As of this writing, LOOP has not experienced any major oil spills since it began operations in 1981.
[60] Charles Alexander and Don Fields, *An Inventory of Coastal Wetlands of the United States of America*, (Silver Spring, MD: National Oceanographic and Atmospheric Administration, 1986), 1, John Breaux Papers, Box 270, Folder 22, Hill Memorial Library, Baton Rouge, LA.

not help policymakers at the state level. Whatever trends the NWI had identified in its decade of operation were mostly helpful for analyzing information on a national scale.[61]

In addition to insufficient mapping data, there were also lingering questions about classifying wetlands and determining jurisdictional scopes. Throughout the 1980s, federal agencies debated how to define and delineate wetlands – an issue that had carried over from disputes in the 1970s. How an agency chose to quantify wetlands and where the borders were relative to uplands impacted the implementation of laws such as the Clean Water Act. Delineating and defining wetlands also affected the approval of permits, particularly at the federal level. The agencies that were primarily responsible for identifying wetlands included: the Army Corps of Engineers, the EPA, the FWS, and the Soil Conservation Service.[62] Of those four, the FWS used the most expansive definition of what constituted wetlands. By the end of the decade, the agencies would sign a joint agreement about how to define wetlands – an agreement based on the identification of three features: soil, hydrology, and vegetation.[63] However, considerable confusion existed prior to that agreement among government officials, and ordinary citizens often had an even less clear vision about what lands could be considered "wetlands."

That fact manifested in legal battles over the interpretation of the Clean Water Act's Section 404 jurisdiction in regulating dredge and fill activities. The primary agency responsible for enforcing Section 404 is the Army Corps of Engineers. Until 1975, the Corps had applied Section 404 to traditionally navigable waterways. That year, the District Court for the District of Columbia ordered the Corps to expand its scope of authority to include the "waters of the United

[61] Alexander and Fields, *An Inventory of Coastal Wetlands of the United States of America*, 2-3.
[62] U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and the Soil Conservation Service (USDA), *Federal Manual for Identifying and Delineating Jurisdictional Wetlands: An Interagency Manual*, (Washington, D.C.: U.S. Government Printing Office, 1989), 1. https://www.fws.gov/northeast/ecologicalservices/pdf/wetlands/interagency%20wetland%20delineation%20manual%201989.pdf
[63] Ibid., 2-5; 2-21.

States." The ruling meant that the Corps was responsible for issuing permits for dredge and fill activities on traditionally navigable waterways, as well as adjacent bodies of water that influenced those waterways. Though its role has changed periodically over time, the EPA is also responsible for the application of Section 404. In the late 1970s and the early 1980s, the agency had oversight and veto authority for dredge or fill permits under Section 404.[64] From the beginning of the program, both the Corps and EPA had to contend with different understandings of what constituted "wetlands" and when they were subject to Section 404 authority. Those differences often resulted in tension between the two agencies. While the Corps wanted to maintain a more traditional understanding of the scope of its authority, the EPA wanted to expand the federal government's ability to regulate wetlands in the U.S.[65]

Between 1977 and 1982, the problems of definition and regulatory authority formed the basis of a court case that originated in Louisiana's Avoyelles Parish. During the 1960s and 1970s, the U.S. Department of Agriculture oversaw a program that encouraged farmers to take advantage of unused marginal lands for growing crops such as soybeans. In 1977, a landowner named Albert Prevot began clearing trees near Long Lake for the purpose of planting soybeans. Local hunters and fishers objected to his actions because of the impact it might have on nearby wildlife and rallied together under the banner of the Avoyelles Sportsmen's League (ASL). The Environmental Defense Fund (EDF) soon became involved in the controversy, and one of the lawyers for the EDF suggested using Section 404 of the Clean Water Act to prevent Prevot from clearing the rest of his land.[66]

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[64] U.S. Congress, Office of Technology Assessment, *Wetlands: Their Uses and Regulations* (Washington, D.C.: U.S. Government Printing Office, 1984), 10, http://govinfo.library.unt.edu/ota/Ota_4/DATA/1984/8433.PDF.
[65] Oliver Houck, "Rescuing Ophelia: *Avoyelles Sportsmen League* and the Bottomlands Hardwood Controversy," *Mississippi Law Journal* 81, no. 6, (2012): 1488-1490. http://mississippilawjournal.org/wp-content/uploads/2012/07/5-Houck_FINAL-Rev.pdf
[66] Ibid., 1485-1498.

The ASL filed for a temporary restraining order in November 1977 in the federal Western District of Louisiana in Alexandria. Both Prevot and the Corps maintained that the tract near Long Lake was not wetlands, noting that the area was completely dry that year. The defendant's lawyers also argued that even if the area was wetlands, Prevot was not conducting dredge or fill activities and therefore not subject to Section 404 regulations. Judge Nauman Scott was unconvinced by those arguments and ruled in favor of the temporary restraining order while the case proceeded through the adjudication process.[67] Over the next two years, Scott heard evidence from both sides about whether the Long Lake tract was comprised of wetlands and whether it fell under Section 404 regulations. The head of Louisiana's Department of Natural Resources weighed in on the case in March 1980 and criticized the EPA for "an unlawful extension of power…through a revision of the definition of wetlands."[68]

In March 1981, Judge Scott decided that ninety percent of the lands in question contained wetlands and ruled that "wetlands [were] not restricted to deep swamps and cypress swamp areas." Wetlands included areas that were inundated or saturated by water long enough to support certain types of vegetation. Scott also decided the area fell under Section 404 authority and ordered that no more land be cleared for farming unless the owners obtained the necessary permits from the Corps.[69] The ruling in *Avoyelles Sportsmen's League vs. Alexander* did what the EPA had hoped but what the Corps had dreaded. Judge Scott's ruling expanded the legal definition of wetlands, which in turn expanded the scope of Section 404 regulation. Prevot's lawyers appealed the decision, and the case continued on to the Fifth Circuit Appeals Court in New Orleans. In September 1983, the appeals court upheld most of Scott's ruling and stated the

[67] Ibid., 1500-1502.
[68] "Woodland Control to change?" *Times-Picayune*, March 1, 1980, sec. 1, AHN.
[69] "Wet Land is Wetlands, U.S. Judge Says – And That Rules out Soybean Farming," *Times-Picayune/States-Item*, March 14, 1981, sec. 1, AHN.

landowner needed a permit in order to finish clearing his lands. However, the three-judge panel reduced the amount of land that qualified as wetlands, disagreeing with Scott's interpretation of how long a given parcel of land needed to be flooded to constitute wetlands. The court deferred to the EPA's definition and declared that eighty percent of the tract actually qualified as wetlands.[70] Still, the opinion expanded the definition of what constituted "wetlands," and the *Avoyelles Sportsmen's League* case increased the federal government's authority to regulate dredge and fill activities. The case also touched on the lingering conflicts between environmental regulation and issues of land use. By classifying Prevot's lands as "wetlands" and upholding the Corps' permit ruling, the courts inserted the federal government into the decisions about how a person could make use of his property.

In 1986, the Supreme Court of the United States issued an opinion in *U.S. vs. Riverside Bayview Homes, Inc.*, that expanded the federal government's geographical jurisdiction over wetlands and made some modifications to the practices of land use across the nation. The case originated ten years before the ruling when a development company wanted to build a residential neighborhood in Lake St. Clair, Michigan. Riverside Bayview Homes, Inc., received approval from the town's council and began preparations to fill eighty acres of land, some of which were saturated by water and supported wildlife generally associated with wetlands. Citing its authority under Section 404, the Army Corps of Engineers sued the company for failing to obtain the necessary permits. In contrast to the *Avoyelles* case, there was not a question about whether the area constituted wetlands; the question was whether those wetlands fell under Section 404 jurisdiction.[71]

[70] "Permit Needed to Strip Wetlands, Judges Say," *Times-Picayune/States-Item*, September 27, 1983, sec. 5, AHN.
[71] "Federal Control over Wetlands is Strengthened," *Times-Picayune/States-Item*, December 5, 1985, sec. A, AHN; James Kilpatrick, "Striking a Judiciary Blow for America's Wetlands," *Times-Picayune/States-Item*, December 17, 1985, sec. A, AHN.

The courts initially ruled in favor of the Corps, stating that Riverside Bayview Homes needed to obtain the appropriate permits to continue its fill activities. However, a federal appeals court reversed the lower court's opinion and sided with the company. The conflicting rulings prompted the U.S. Supreme Court to take up the case and the high court issued its ruling on December 4, 1985. In a unanimous decision, the justices held that Riverside Bayview Homes' property fell under Section 404 jurisdiction and any fill activities that took place there required a permit from the Corps. The court determined that even though the wetlands were saturated by groundwater and not the nearby waters of Lake St. Clair, the area still interacted with adjacent navigable waters and that it was a reasonable interpretation of congressional intent to regulate the tract of land under Section 404. The ruling significantly expanded the Corps' regulatory authority and offered protection to millions of acres of wetlands that had previously been excluded from federal oversight.

While those two court cases expanded the federal government's ability to control activities that could damage wetlands, there were still considerable gaps in the wetlands regulation under Section 404. Agriculture, silviculture, and ranching activities were excluded as long as they were not outside the scope of normal practices. Additional exemptions occurred as the regulatory regime matured. Permit applications for dredge or fill activities at the state and federal level experienced long delays in the first years of regulation. To speed up application processing and alleviate complaints from businesses, the Corps developed nationwide permits and general permits to cover a range of activities that did not affect more than ten acres of wetlands. By 1985, processing time for permits had declined by half.[72] The Corps maintained

[72] Office of Ocean and Coastal Resource Management (NOAA), *Federal Coastal Programs Review* (Washington, D.C.: U.S. Government Printing Office, 1985), 39-41, https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u55-f43-1985/html/CZIC-ht392-u55-f43-1985.htm; Council on Environmental Quality, *Environmental Quality: The Seventeenth Annual Report of the Council of Environmental Quality* (Washington, D.C.: U.S. Government Printing

that its application of Section 404 was beneficial to wetlands without limiting development too harshly. Critics of the Corps charged that the agency did not do enough. Out of approximately 11,000 applications processed annually during the early 1980s, the number of permits denied by the Corps was about three percent. Less than one percent of applicants were required to develop Environmental Impact Statements.[73]

In Louisiana, there were also exemptions in the Coastal Use Permit system for agriculture, silviculture, and aquaculture, along with activities that were considered to have limited impact on the wetlands. In the early 1980s, administrators in the Office of Coastal Zone Management (OCZM) maintained the state's permit process had a good balance between protection and development. Seventy-five percent of permits were issued within two months, and an official with the FWS praised the OCZM as "doing a real good job" in protecting wetlands. However, the same official pointed out a fact that was endemic to Louisiana's political culture. The OCZM, like most government agencies in the state, was filled with appointees from the governor's office. While David Treen was supportive of wetlands protection, another governor might not be and could appoint officials who were less willing to use the CUP system to protect wetlands.[74]

The denial of permits continued to be relatively rare for federal and state officials throughout the 1980s, and the nation was still losing 450,000 acres of wetlands annually.[75] In 1987 and 1988, the Corps rejected nine out of 2,400 permit applications in Louisiana.[76] Loss

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Office, 1986), 98-99, http://www.slideshare.net/whitehouse/august-1986-the-seventeenth-annual-report-of-the-council-on-environmental-quality.

[73] U.S. Congress, Office of Technology Assessment, *Wetlands: Their Uses and Regulations*, 11-12.

[74] Tom Frazer, "Corps Planning to Give up Most Wetland Control," *Times-Picayune/States-Item*, August 19, 1982, sec. 1, AHN.

[75] Rick Raber, "EPA's Wetlands Plan Welcomed by La. Officials," *Times-Picayune*, January 20, 1989, sec. B, NB LA (8901200218).

[76] Rick Raber, "Army Corps Silent in Battle for wetlands," *Times-Picayune*, January 29, 1989, sec. A, NB LA (8901290199).

rates in Louisiana had leveled off but still remained high at an estimated forty square miles per year. An official with the Louisiana Geological Survey (LGS) said one of the reasons losses were not accelerating was because the most vulnerable areas had already washed away. Further, land loss was slowing down in some areas but speeding up in others, which meant that "leveling off" was an overall trend.[77] Scientists who studied Louisiana's erosion problem also cautioned that the slowdown had less to do with an effective regulatory scheme and more to do with reduced activity in the wetlands by the oil and gas industry.[78]

Wetlands and Policy Developments in the mid-1980s

The gaps in regulatory applications were serious problems for states such as Louisiana, but there were some positive developments in the mid-1980s. In 1985, Congress took action to correct some of the policies that had produced conflicting results in the management of wetlands. That year the Food Security Act (FSA) became law and was designed to increase the value of growth per unit of crop, reduce production costs, and make American commodities more competitive on the world market. The FSA also contained conservation policies to discourage draining wetlands for agricultural purposes. Known as the "swampbuster" provisions, the new policies served two purposes – control the amount of land in production and reduce the use of ecologically sensitive areas as cropland. Farmers who converted wetlands to cropland after December 1985 became ineligible to participate in other agricultural programs that subsidized their endeavors. The swampbuster provision applied to over five million acres of wetlands and addressed one of the chief weaknesses in the nation's wetland policy – the problem of

[77] Bob Anderson, "Coastal Erosion Worries Officials: Land Loss Appears to Level Off, but Problem Remains Threat to State's Future," *Advocate*, February 26, 1989, sec. B, John Breaux Papers, Box 271, Folder 22, Hill Memorial Library, Baton Rouge, LA.
[78] Bob Marshall, "State Lost Environmental Ground in the 1980s but Changes for the Better Are Predicted," Outdoors, *Advocate*, December 31, 1989, sec. C, NB LA (8912310350).

contradictory programs.[79] Agricultural conversion was the main reason wetlands had disappeared nationally, and the federal government had encouraged those conversions by subsidizing farmers who drained land. By reducing the amount of federal aid to farmers who grew crops on former wetlands, the national government corrected part of that long-term problem.[80]

A second important development that took place in the mid-1980s was the passage of the Emergency Wetlands Resources Act, which had contained the section that led to the establishment of the Bayou Sauvage refuge.[81] The law also encouraged states to use grants from the Land and Water Conservation Fund to purchase wetlands acreage for the purposes of preservation. The FWS administered other programs that led to the acquisition of wetlands for habitat purposes, but the EWRA was the first effort to specifically emphasize purchasing wetlands for the sake of preserving them as unique ecosystems.[82] Congress passed the EWRA in recognition that federal regulatory programs did not protect all wetlands in the United States and that there should be a mechanism in place to preserve areas that were rare, diverse, or in danger of being lost. The EWRA also required states to recognize that wetlands provided public benefits. After 1988, each state with wetlands would be required to submit a wetlands priority plan as part of its outdoor recreation planning to the Department of the Interior.[83] States without

[79] Council on Environmental Quality, *Environmental Quality: The Sixteenth Annual Report of the Council of Environmental Quality* (Washington, D.C.: U.S. Government Printing Office, 1985), 101-103, http://www.slideshare.net/whitehouse/august-1985-the-sixteenth-annual-report-of-the-council-on-envirnomental-quality.
[80] Council on Environmental Quality, *Environmental Quality: The Seventeenth Annual Report*, 82; Heimlach et al., *Wetlands and Agriculture: Private Interests and Public Benefits*, 18-20.
[81] U.S. Fish and Wildlife Service, *National Wetlands Priority Conservation Plan* (Washington, D.C.: U.S. Fish and Wildlife Service, 1989), 37, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-qh76-u85-1989/pdf/CZIC-qh76-u85-1989.pdf.
[82] Council on Environmental Quality, *Environmental Quality: The Seventeenth Annual Report*, 98-99.
[83] U.S. Fish and Wildlife Service, *National Wetlands Priority Conservation Plan*, 2-5.

approved plans would be ineligible to receive funding from the LWCF, a move that signaled congressional intent to encourage state protection of wetlands as unique habitats.[84]

Louisiana's Losses Continue

Even though laws such as the EWRA improved the preservation and protection of the nation's wetlands, Louisiana still continued to experience land loss as the state struggled with funding issues and policy implementation. In 1984, the Department of Natural Resources lobbied for a $41 million proposal to nourish Louisiana's deteriorating barrier islands. Sherwood Gagliano sharply criticized the agency's plan as being inadequate and ineffective. He asserted that the DNR's proposal did little to help the state's interior wetlands and was too limited in comparison to the scope of the problem. "Fifteen years ago, our situation was desperate. Today, it is at the catastrophic level…At best, we are faced with a salvage operation, and even that salvage operation is going to cost billions of dollars." The Louisiana Geological Survey, which was leading the development of a master restoration plan that relied on nourishing barrier islands, countered Gagliano by pointing out the plan was an initial step in addressing the state's land losses. There were other projects in the works, but barrier island restoration needed to take place first. Not only would the nourishment help the coastal ecosystem, the preservation of Louisiana's barrier islands would ensure that state's claims to oil and gas revenues did not erode away with the coastline.[85]

Still, Gagliano's criticisms proved to have considerable merit. The LGS plan added six projects to the ones initially proposed the Coastal Protection Task Force in 1982, for a total of

[84] Ibid., 29.
[85] Mark Schleifstein, "Erosion Expert: La. Needs Plan to Save Its Marshes from Ruin," *Times-Picayune States-Item*, November 10, 1984, sec. A, AHN.

twelve restoration or protection projects.[86] The first phase of the master plan was scheduled to last five years and focus on barrier island nourishment, as well as the freshwater diversion projects that had already been approved. Phase II of the master plan would include beach nourishment and the stabilization of dunes.[87] The level of funding needed to complete projects slated for 1985-1986 was almost $50 million. Another $30 million would be required to complete the first phase by the end of the decade – amounts that far exceeded the funds available in the CEPTF.[88] Though the legislature approved the LGS plan in 1985, the program experienced limited implementation because of funding issues and bureaucratic delays. Barrier island restoration was extremely expensive and the costs were not seen as worthwhile given the limited benefits to inland marsh restoration.[89] However, the state continued to base its restoration efforts on the LGS plan through 1988, though marsh management eventually became a more prominent feature.[90]

Other funding issues presented additional challenges to the protection of Louisiana's wetlands. While the state struggled to sort out its own financing issues regarding restoration projects, the Reagan administration pushed to reduce the amount of grant money that states received through the Coastal Zone Management Act. Officials contended that the grants had been to help states establish programs, but the costs of administering them should be borne by state governments. Louisianans such as John Breaux and Sherwood Gagliano did not want to see

[86] Louisiana Geological Survey and the Department of Natural Resources, *Proposed Coastal Protection Master Plan* Baton Rouge, LA: Louisiana Department of Natura Resources, 1986), 2-3, John Breaux Papers, Box 271, Folder 22, Hill Memorial Library, Baton Rouge, LA.
[87] Ibid., 8.
[88] Ibid., 22.
[89] David Chambers to the Louisiana Congressional Delegation, State Legislators, and Concerned Citizens, March 7, 1988, John Breaux Papers, Box 270, Folder 20, Hill Memorial Library, Baton Rouge, LA.
[90] James O'Byrne, "Coastline: No Help for a Sinking Ship," *Times-Picayune*, May 10, 1987, sec. A, AHN; U.S. Army Corps of Engineers, New Orleans District, *Crisis on Louisiana's Coast: America's Loss* (New Orleans, LA: U.S. Army Corps of Engineers, New Orleans District, 1988), 11, https://www.gpo.gov/fdsys/pkg/CZIC-qh541-5-m3-c75-1988/pdf/CZIC-qh541-5-m3-c75-1988.pdf.

the amount of federal aid coming into the state decline. Part of the funding for Louisiana's regulatory program for coastal activities came from the money provided by CZMA grants – in 1984, $1.5 million and in 1985, $2 million.[91] In July 1986, Gagliano argued that Louisiana could not save its wetlands by restricting development alone and reiterated that restoration efforts were necessary to replace the marshes that had already been destroyed. The coastal expert also stressed a point that was becoming increasingly emphasized by political officials such as Breaux – federal money was absolutely vital to save the state's wetlands. Louisiana was incapable of funding such a broad, long-term endeavor without national assistance.[92]

Breaux intended to bring federal dollars to Louisiana and introduced legislation in summer of 1986 for that purpose. His bill required the Secretary of the Interior to identify coastal wetlands that were in jeopardy of loss or serious degradation and then choose ten areas that were the most threatened. Within five years, the secretary would have to develop a plan to save those designated areas and work with the Army Corps of Engineers on implementation. The federal government would bear seventy-five percent of development and construction costs, while states were accountable for the remaining twenty-five percent. Breaux's goal was to reduce the amount of time that Corps projects normally took, as well as ensuring restoration efforts in Louisiana had greater funding. The federal government would pay up to $30 million per year for each project under the representative's proposal.[93]

When Breaux gave a speech on the House floor in support of his bill, he stressed that land losses in Louisiana could be directly attributed to federal policies such as those related to flood control and navigational improvements. He also pointed out that the presence of oil and gas

[91] Rick Raber, "Wetlands Bill OK'd by House Panel," *Times-Picayune/States-Item*, May 2, 1985, sec. A, AHN.
[92] Tom Frazer, "Restoring Wetlands Goal of Breaux Bill," *Times-Picayune/States-Item*, July 16, 1986, sec. B, AHN.
[93] Ibid.

pipelines had exacerbated salt water intrusion in the wetlands. Because the nation benefited from those activities, Breaux argued that the country had a responsibility to help restore an ecosystem that benefitted the United States as a whole.[94] His bill never made it out of the House, but Breaux re-introduced his plan in March 1987 after his election to the U.S. Senate.[95] Later that year, the junior senator proposed another piece of legislation to create permanent funding for coastal restoration projects. The Wetlands Enhancement and Turfgrass Research Fund would have provided states such as Louisiana with grants from a percentage of taxes taken out of the Highway Trust Fund. At the time, the state was getting about $2 million per year from the Department of the Interior that could be used for restoration projects. Breaux emphasized once again that the federal government's policies had helped create the state's severe wetlands erosion problem and that the nation had a responsibility to help repair some of the damage.[96]

Funding uncertainty mixed with bureaucratic mismanagement in Louisiana as the decade drew to a close. In 1988, workers at the LGS came under scrutiny over their handling of grant money that came out of the state's wetlands trust fund. Employees in the LGS were accused of using the funding to pay for personal research or trips to academic conferences that did not directly relate to state contracts for coastal erosion studies. Other concerns noted by the Department of Natural Resources included studies that had been ordered but never delivered to the appropriate authorities. The director of the LGS, Charles "Chip" Groat assured DNR officials that his staff had been conducting research to benefit Louisiana's land loss programs and that the requested studies had simply been misplaced.[97] However, the use of CEPTF revenues became a

[94] John Breaux, Extension of Remarks on Coastal Wetlands Recovery Act," July 15, 1986, 3-4, John Breaux Papers, Box 270, Folder 21, Hill Memorial Library, Baton Rouge, LA.
[95] Susan Feeney, "Plan to Save Wetlands Proposed," *Times-Picayune*, March 4, 1987, sec. B, AHN.
[96] Bill Cormier, "Breaux to press for trust, coastal erosion target of effort," *Advocate*, October 27, 1987, sec. B, NB LA (686345).
[97] Mike Dunne, "DNR, Agency Work under Investigation," *Advocate*, February 5, 1988, sec. B, NB LA (844865).

moot point the following month when the state's deficit crisis led the Roemer administration to eliminate the trust fund to help alleviate budgetary shortfalls.[98] The move left Louisiana without a specific method of paying for concerted coastal restoration efforts, even as the state's coast continued to erode.

A Stronger Foundation for Protection and Restoration?

In 1987, the Environmental Protection Agency along with the Conservation Foundation convened the National Wetlands Policy Forum (NWPF) to discuss the establishment of goals for the country in relation to wetlands.[99] Representatives from state and federal agencies, business interests, and conservation groups worked together on a report that was issued to Congress in 1988. The report criticized the nation's existing policies and laws as being "too cumbersome and the responsibilities too diffuse" to effectively protect the nation's wetlands. To enhance protection, the report encouraged legislators to add wetlands restoration and creation to the mission statements of civil works agencies such as the Army Corps of Engineers or the Soil Conservation Service. The NWPF also advocated for a national policy regarding wetlands restoration and the establishment of trust funds to help pay for such efforts. Forum members drew special attention to the problem of coastal erosion in Louisiana, a fact that was welcomed by public officials in the state. Governor Roemer said he hoped the increased attention would bring more federal funds to Louisiana for restoration projects.[100]

The NWPF's efforts to draw attention to the loss of wetlands became part of the presidential campaign in 1988. Drawing on the forum's discussions, George H.W. Bush embraced an approach to wetland management that came to be referred to as "no net loss."

[98] Zack Nauth, "Special State Funds Face Roemer's Ax," *Times-Picayune*, March 25, 1988, sec. A, AHN; Bob Anderson, "Second Trust Fund Wanted," *Advocate*, February 6, 1991, sec. B, NB LA (1475050).
[99] Lewis, *Wetlands Explained*, 15.
[100] "Group Urges More Aid for La. Wetlands," *Advocate*, November 16, 1988, sec. A, NB LA (902529).

Federal agencies such as the EPA also embraced "no net loss."[101] The idea behind "no net loss" was that the loss of wetlands could not be completely stopped. However, restoration and mitigation efforts could make up for lost lands and the result would be no overall losses for the country going forward. "No net loss" meant that public policies could still support development in or near wetlands as long as there were plans to ensure that other wetlands would be protected, restored, or created.[102]

On the surface, "no net loss" seemed like a positive policy goal, especially when public officials voiced support. The EPA's administrator said the policy would send a "clear message that wetlands protection [was] a top agency priority."[103] The reality of "no net loss" was more complicated because the precise meaning of "loss" could be interpreted differently. For example, "loss" could refer to loss of acreage or loss of function depending on who was interpreting the phrase.[104] Further, implementing a policy of "no net loss" brought up questions of where restrictions or restoration would take place. Would development in a state such as Louisiana have to limit economic or industrial development more than a state with far fewer wetlands? How would states and the federal government share the costs of implementing "no net loss"?[105] The answers to those questions remained unclear even as federal officials adopted "no net loss" upon Bush's election as a guiding principle for wetlands policy.

Despite the growing interest and ongoing efforts to solve the nation's problems of wetlands loss, the situation in Louisiana remained dire. In September 1988, the *Times-Picayune* lamented the lack of significant action taken to address coastal erosion and said Louisiana

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[101] Michael Weisskopf, "EPA plans 'No Net Loss' of Wetlands," *Washington Post*, November 19, 1988, sec. A, John, Breaux Papers, Box 270, Folder 22, Hill Memorial Library, Baton Rouge, LA.
[102] Heimlich et al, *Wetlands and Agriculture*, 30-31.
[103] Weisskopf, "EPA plans 'No Net Loss' of Wetlands."
[104] Lewis, *Wetlands Explained*, 16.
[105] "Discussion of Proposed National Goal of No Overall Net Loss of Wetlands," [ca. 1988-89], 1-2;7-8, John Breaux Papers, Box 271, Folder 22, Hill Memorial Library, Baton Rouge, LA.

needed to "draw the state's scattered coastal restoration programs together under one high-ranking official." The newspaper agreed with state Senator Ben Bagert of New Orleans who argued that the federal government was reluctant to get involved in Louisiana's coastal restoration efforts because of fragmented policies and the "maze of state agencies." Bagert said that "state officials must be able to tell the feds, 'Here's our policy. Here's our plan. Here's where we're going. Now help us get the money we need to save our coast.'"[106]

Bureaucratic disorganization was a major issue for Louisiana's restoration efforts at the end of the decade, and so was the continued lack of funding. In April 1989, the Roemer administration hoped to pass a tax reform package that included the establishment of a wetlands trust fund. Voters defeated the taxation changes, which also had the effect of rejecting the creation of a new trust fund. After the election, Bagert decided to tackle the funding issue separately and introduced legislation in May that contained a constitutional amendment to set up a trust fund on its own. Bagert crafted his proposal to help shield future funding from being dependent "on the personality of the governor" by giving the trust fund constitutional protection. The state senator's bill provided for the establishment of a wetlands preservation authority in order to reduce some of the administrative confusion associated with coastal management in the state.[107]

In July, both houses of Louisiana's legislature approved the constitutional amendment proposed by Bagert with no dissenting votes.[108] Known as the Coastal Wetlands and Restoration Act or Act 6, the legislation set up two new administrative offices – the Office of Coastal Activities in the Governor's Office and the Office of Coastal Restoration and Management in the

[106] "Bagert's Coastal Plan," *Times-Picayune,* September 28, 1988, sec. A, AHN.
[107] Curt Eysink, "Coalition Backs Wetlands Amendment," *Advocate,* May 14, 1989, sec. B, NB LA (1072280).
[108] Bill McMahon, "Voters Approve 5 Amendments," *Advocate,* October 8, 1989, sec. A, NB LA (1099268).

Department of Natural Resources. Another entity created by Act 6 was a commission comprised of state agencies to oversee the state's restoration plans. Finally, Act 6 established the Wetlands Conservation and Restoration Trust Fund (WCRTF), which would receive $5 million to $25 million annually and dedicate those funds to coastal restoration projects.[109] In October 1989, Louisiana voters approved Act 6 as a constitutional amendment by a margin of two-to-one.[110]

Act 6 was a critical step in Louisiana's efforts to combat coastal erosion. Proponents of the amendment saw the creation of a constitutionally protected source of funding as necessary to secure federal support for restoration works in the state.[111] Both public officials and environmental groups continued to stress that Louisiana was incapable of handling its erosion problems without federal assistance. An adviser to Governor Roemer estimated that the state might need as much as $1 billion dollars for restoration projects and said the WCRTF was a "sign of good faith" to national officials that Louisiana was serious about preserving and restoring its wetlands. Aside from committing to the Caernarvon Freshwater Diversion in Plaquemines Parish, the federal government had been reluctant to dedicate more substantial funds to restoration projects. Officials had been uncertain whether Louisiana would be able or willing to provide matching funds, but state politicians believed Act 6 would change that.[112] Environmental groups such as the Environmental Defense Fund concurred with that position and maintained that the federal government had a duty to help Louisiana fight the loss of its wetlands.[113] The money set aside for the WCRTF was important, especially since the allocations would be constitutionally protected and not subject to budget cuts as the previous trust fund had

[109] Theriot, *American Energy, Imperiled Coast*, 164-165.
[110] McMahon, "Voters Approve 5 Amendments."
[111] Ibid.
[112] "Officials Say State Needs Federal Help to Save Coastline," *Advocate*, October 11, 1989, sec. A, NB LA (1099700).
[113] James T.B. Tripp to Marcia Jones, August 2, 1989, John Breaux Papers, Box 271, Folder 22, Hill Memorial Library, Baton Rouge, LA.

been. Still, even the maximum allotment of $25 million per year was not going to be enough to address coastal land loss.

Conclusion

During the 1980s, state and federal efforts to address the deterioration of the nation's wetlands were affected by debates about the proper role of government in regulation, funding issues, disputes over the scope of regulatory jurisdiction, and weaknesses in enforcement. While there were some gains in expanding protection of wetlands, the piecemeal nature of policymaking failed to bring an end to the rapid erosion of Louisiana's coastline. Running as an undercurrent beneath the administrative and regulatory challenges of wetlands policymaking was the issue of land-use management. Laws such as the CBRA and the Farm Security Act of 1985 had used slightly different mechanisms to accomplish the same goal – influence land use without undermining the rights of property owners or economic development. In Louisiana, the Coastal Use Permit system had sought to achieve a similar result – regulate the use of the state's wetlands without stopping economic growth. The CUP program reflected the multiple-use management strategy and was a way to allow development while also trying to stem the loss of wetlands in the state.

Fundamental shifts in land use were rarer, though they could have a significant impact when pursued. The creation of the Bayou Sauvage National Wildlife Refuge was an instance when public and private entities agreed to disregard land-use practices that prioritized economic and residential growth over ecosystem protection. By establishing the refuge, the state and federal government ensured that future growth in New Orleans would not spill into the vital ecosystem of Bayou Sauvage. Yet the refuge was the exception to the rule of persistent expansion into natural spaces, and the limitation of activities through regulatory permit systems

had slowed losses rather than stopped them. In the absence of fundamentally altering widespread land-use practices or abandoning the strategy of multiple-use planning, officials and citizens alike recognized that Louisiana was going to need another strategy to save its shrinking coast. Throughout the 1980s, congressional leaders had shown increasing interest in helping protect the nation's wetlands, but there was lingering uncertainty about how much the federal government should get involved in Louisiana's coastal erosion problem. In late summer 1989, Congress voted down bills from Senators Breaux and Johnston that would have created a source of funding for restoration projects in Louisiana.[114] Implementing projects to restore the state's vanishing wetlands seemed out of reach without federal dollars. Help was on the way, but it would take some astute political maneuvering from Louisiana's congressional delegation to secure national assistance.

[114] John McKinney, "Senate Kills La. Wetlands Amendment," *Advocate*, August 4, 1989, sec. A, NB LA (1086712).

CHAPTER 5: POLICY DEVELOPMENTS IN THE 1990s

"A Part of the Yule Tradition in These Parts"

In 1987, a marine sciences professor at LSU convinced officials in St. Charles Parish to let him build "brush fences" near the Bonnet Carré spillway as a marsh restoration project. The fences were modeled on similar structures that John Day had seen in the Netherlands during a research trip there. Day and a group of state contractors sunk wooden posts into shallow marsh areas, strung fencing between the posts, and wove willow saplings into the wire mesh. The purpose of the project was for the "brush fences" to capture sediments flowing through the wetlands and allow mudflats to accumulate over time to encourage vegetation growth. Initially, Day's progress was slow and covered little ground because weaving the saplings was not particularly efficient. The following year an employee with Louisiana's Department of Natural Resources suggested that Day use old Christmas trees instead of willow saplings, an idea which yielded much greater success.[1] Over the next several years, the project of building "brush fences" with Christmas trees expanded from St. Charles into other parishes, including East Baton Rouge, St. Bernard, Jefferson, and Orleans.[2] Supported by grants from the state's Wetlands Conservation and Restoration Trust Fund, volunteers collaborated with local businesses, charities, and public officials to collect and transport discarded Christmas trees to various sites along the coast.[3] The program was extremely popular in Louisiana, and the *Times-Picayune* declared that conservation project was "rapidly becoming part of the Yule tradition in these parts."[4]

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[1] Mark Schleifstein, "Christmas Trees Can Revitalize Eroded Marsh," *Times-Picayune*, December 29, 1989, sec. B, NB LA (8912250103); Sandra Barbier, "Discarded Trees Help Rebuild State's Marshes," *Times-Picayune*, December 26, 1991, sec. B, NB LA (9112260104).
[2] "Parishes Solicit Christmas Trees for Marsh Aid," *Times-Picayune*, January 2, 1991, sec. B, NB LA (9101020089); Bob Anderson, "23,000 EBR Christmas trees donated for erosion fight, official says," *Advocate*, February 5, 1992, sec. C, NB LA (13247).
[3] "Christmas Trees Can Help Save Wetlands," *Times-Picayune*, December 12, 1991, sec. G, NB LA (9112120202).
[4] "Christmas Tree Fences Grow," *Times-Picayune*, December 13, 1992, sec. B, NB LA (9212140270).

By the late 1990s, eight thousand volunteers had gathered and disbursed almost one million Christmas trees to locations such as Hammock Lake in St. Mary Parish and Bayou Sauvage near New Orleans. Even the federal government contributed to the program when the White House sent seventy of its Christmas trees to Louisiana in 1997.[5] The Christmas tree fences worked by trapping sediments as water flowed through them and reducing wave action for areas behind the structures.[6] In 1998, officials in the DNR estimated that thirty-eight thousand feet of fencing had been built along Louisiana's marshy shoreline and that the project had benefited 250 acres of wetlands.[7] While the Christmas tree program received praise from public and private organizations, the creation or protection of several hundred acres of marsh was a "really and truly a drop in the bucket" compared to the amount of land that Louisiana was losing every year.[8] Still, officials believed that involving the citizens of the state in restoration efforts was a worthy goal and that the attention generated from adding White House Christmas trees to the program could raise awareness of Louisiana's plight. An increase in national interest could lead to greater financial assistance from the federal government, something that was desperately needed to fund a restoration program that was on par with the loss of wetlands.[9]

The Christmas Tree Fence Program was representative of wetlands policy developments that took place during the 1990s. Government officials and the public sought to reduce the erosion of wetlands while also rebuilding some of the marshy areas that had already sunk into the

[5] Bob Anderson, "White House Trees Join Marsh-restoration Fight – Christmas Castoffs a Saving Grace for Coast," *Advocate*, February 2, 1997, sec. B, NB LA (3070); "Christmas Trees get a Second Life," *Advocate*, December 30, 1999, sec. B, NB LA (9903086517); "New Life for Christmas Trees," *Times-Picayune*, January 8, 1997, sec. B, NB LA (9701080124).
[6] Mike Dunne, "Christmas Trees Helping Restore Land," *Advocate*, January 27, 1999, sec. B, NB LA (9903005593).
[7] Mark Schleifstein, "19 Parishes to Collect Christmas Trees – Plan has Fought Wetlands Erosion Since 1989," *Times-Picayune*, December 25, 1998, sec. B, NB LA (9812240430).
[8] Anderson, "White House Trees Join Marsh-restoration Fight,"; Aaron Wilkinson, "Christmas Trees Help Marshes," *Times-Picayune*, April, 8, 1999, sec. F, NB LA (9904070418).
[9] Bob Anderson, "Tree Project a Symbol with Serious Meaning," *Advocate*, February 5, 1997, sec. B, NB LA (2776).

Gulf of Mexico. Yet even with dedicated funds from the federal government flowing into Louisiana after 1990, the money was "really and truly a drop in the bucket" compared to what the state actually needed. Administrative disorder and piecemeal policymaking persisted, which continued to undermine conservation and restoration efforts. For much of the decade, when projects did receive funding, there was a lack of coordination to ensure that each proposal was part of a broader vision for coastal management. Additionally, many of the restoration efforts were small and often limited in their impacts. Like the Christmas tree fences, the projects did provide some benefits for the wetlands, but they were simply not enough to fundamentally alter the pattern of loss. This chapter traces the creation of Louisiana's first significant coastal restoration program in partnership with the federal government, as well as some of the other issues that affected policy developments – including the ongoing issue of land use in the coastal zone. Officials attempted to address funding problems and disjointed administration during the 1990s, but their efforts met with varying degrees of success as differences in opinion persisted about how much of the coast should be protected or restored.

The Breaux Act and Other Policy Developments

During the summer of 1990, Louisiana's Senators, John Breaux and J. Bennett Johnston, sponsored a bill that aimed to bring federal support to coastal restoration in Louisiana. The bill created a task force that would be comprised of state and federal officials, which would select restoration projects to help slow the loss of Louisiana's wetlands. Funding of the projects would be split between the federal government and Louisiana, at seventy-five percent and twenty-five percent respectively. There was also an option that allowed the state to reduce its cost-shore portion to fifteen percent if Louisiana developed a "no net loss" program to help manage the coastal wetlands. Both Breaux and Johnston considered the passage of the bill as an indication

that the federal government recognized it had a role to play in helping address Louisiana's wetlands losses. However, the bill did not specify how the task force or projects would be funded. To ensure the bill passed, Breaux had to remove a provision that would have assigned five percent of offshore oil and gas revenues to wetlands restoration. President Bush opposed the funding proposal because he maintained it would have reduced the amount of revenues going into the treasury and thereby increased the federal deficit.[10] Representatives from Mississippi and Michigan also objected to Breaux's plan to funnel nearly $75 million a year to Louisiana; they wanted some of the money for their own states.[11]

In order to get meaningful legislation for Louisiana, Breaux needed to get a dedicated funding source for wetlands restoration, in addition to getting a corresponding bill passed in the House. Over a month after the Senate approved his legislation, the House authorized $85 million for wetlands protection and restoration as part of a $3.6 billion water resources development bill. Under the House's amendment, Louisiana would get sixty-eight percent of the funding, while the rest of the money went to other states and waterfowl management programs. Louisiana's representatives had increased the amount of money in the overall program to ensure the state still got the same amount of funding that was authorized by the Senate version. Still, there was no dedicated source of funding for the wetlands program, which meant Congress would have to appropriate money every year – a fact which caused the Bush administration to continue its objections to the proposal.[12]

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[10] Joan McKinney, "U.S. Senate Passes Wetlands Legislation," *Advocate*, August 4, 1990, sec. A, NB LA (1301115); Rick Raber, "Senate OK's Breaux's Plan for Fighting Coastal Erosion," *Times-Picayune,* August 4, 1990, sec. A, NB LA (9008040193).
[11] Joan McKinney, "White House Opposes La. Wetlands Measures," *Advocate*, September 13, 1990, sec. A, NB LA (1308960).
[12] Joan McKinney, "Wetlands Plan Clears U.S. House; Major Obstacles Remain," *Advocate*, September 27, 1990, sec. A, NB LA (1311943).

The problem with funding Breaux's bill was an ongoing issue for wetland protection and restoration in Louisiana at both the state and federal level. During the 1980s, the state received about $2 million a year from the Department of Interior that could be used for coastal restoration projects, but there was no major source of dedicated funding.[13] The state's first wetland trust fund created during the Treen administration had suffered from administrative difficulties and been cut during the late 1980s due to budget constraints. Louisiana's voters had approved the creation of a new trust fund in 1989, one that would be constitutionally protected and not easily subjected to cuts if there were another budget crisis. Still, the maximum amount of funding that would go into the Wetlands Conservation and Restoration Trust Fund was $25 million per year.[14] Despite the state's initiatives to fund restoration with Act 6, federal officials were reluctant to commit money.

A lack of national exposure for the problem and Louisiana's unwillingness to adequately fund wetlands restoration both contributed to the reluctance. The reasons were clear when the state's situation was contrasted to that of the Florida Everglades. During the 1980s and 1990s, $3.2 billion in federal aid went to Florida to help the state restore and protect its southern wetlands. Comparatively, the nation sent about $600 million to Louisiana in the 1990s. Florida's political leaders had engaged in an aggressive campaign to get federal money for its wetland losses, but Louisiana had no national counterpart in the early 1990s.[15] Though Louisiana's

[13] "Breaux to Push Wetland Funding," *Times-Picayune*, October 27, 1987, sec. B, AHN.
[14] Coastal Management Division (Louisiana DNR) and Rodney E. Emmer & Associates, Inc., *Preliminary Assessment of the Louisiana Coastal Management Program* (Baton Rouge, LA: Louisiana Department of Natural Resources, 1991), 13, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-qh541-5-c65-p74-1991/pdf/CZIC-qh541-5-c65-p74-1991.pdf.
[15] R.H. Caffey and M. Schexnayder, *Coastal Louisiana and South Florida: A Comparative Wetland Inventory* (Narragansett, RI: National Sea Grant Library, 2003), 3-4. https://lacoast.gov/new/Data/Reports/ITS/Florida.pdf; Mike Dunne, "Babbit Likens State's Coastal Woes to Everglades Problems," *Advocate*, July 22, 1999, sec. A, NB LA (9903052452); Bill McMahon, "Coastline Plight in Spotlight; DNR to Sign $291,390 Contract with N.O. firm," *Advocate*, July 7, 1997, sec. A, NB LA (2512).

congressional delegation advocated strongly for federal aid to the state, efforts to get money from offshore oil revenues, Alaskan oil revenues, or general revenues had all failed. There was still the lingering sense that the state's wetlands losses were a Louisiana problem and not one that deserved national assistance.[16]

Senator Breaux was determined to get money for Louisiana's restoration program, and he saw an opportunity in fall 1990 to secure a dedicated source of funding for the state. When the Senate Finance Committee debated the merits of a $500 billion tax package aimed at deficit reduction, Breaux quietly lobbied members of the committee to include an amendment that would siphon off a portion of an increased gasoline tax for wetlands restoration. The majority of the money from the tax hike would go to Louisiana, with a smaller portion going to other states in need of restoration money. Agreeing to include such an amendment in a deficit reduction package was unusual for the committee, but Breaux convinced the other senators to do so. He characterized the move as "the most significant piece of legislation we've passed in regard to saving wetlands in Louisiana." According to the provisions of the amendment, the total amount of revenues from the tax would come to about $275 million over five years, assuming the House added a comparable measure to its version of the deficit bill. There was no guarantee that would happen, and there was also a chance that the amendment could be scrapped entirely when the two chambers reconciled the bill. However, Breaux reasoned that the measure would get little attention in a package priced at over $500 billion and said he was "very confident" that the increased gasoline tax would be in the final legislation.[17]

[16] Rick Raber, "Aid for Wetlands Slips into Tax Bill," *Times-Picayune*, October 14, 1990, sec. A, NB LA (9010140105).
[17] Raber, "Aid for Wetlands Slips into Tax Bill,"; Joan McKinney, "Low-profile La. Wetlands Provision Linked to Increase in Gasoline Taxes," *Advocate*, October 19, 1990, sec. A, NB LA (1316673).

The senator proved to be correct. Both the House and Senate approved the deficit reduction bill without much discussion of Breaux's amendment. Though the House version had lowered the gasoline tax from nine and a half cents per gallon to five cents, Louisiana would get about $35 million per year and another $15 million per year would go to restoration programs in other states. The funds to be used for Louisiana's wetlands restoration would come from money generated by placing a tax on gasoline for small motors such as lawnmowers or chainsaws. The guarantee of steady funding was a major victory for Louisiana, but there still needed to be a legal mechanism to direct how the money was spent. Breaux accomplished that by attaching his proposal for a wetlands task force and the authority to administer restoration funds to another bill dealing with the problem of zebra mussels in the Great Lakes.[18]

Signed by President Bush in November 1990, the Coastal Wetlands Planning, Protection and Restoration Act was more than a symbolic gesture in the effort to protect Louisiana's wetlands.[19] There had been talk of protecting or restoring Louisiana's wetlands for years, but the CWPPRA was the first time such talk had been placed into legislation at the federal level. Perhaps even more significantly, the funding was dedicated; the state would not have to ask Congress for money every fiscal year. Still, there were limits to the Breaux Act, both financially and politically. Though the money that would be provided by the CWPPRA and the state's own trust fund represented a considerable advancement, the estimate for a fully funded restoration program was several billion dollars in the early 1990s.[20] Louisiana officials hailed the Breaux

[18] Joan McKinney, "La. Wetlands Funding Locked into Budget Bill," *Advocate*, October 27, 1990, sec. A, NB LA (1318445); Rick Raber, "Bush Signs Bill to Aid Wetlands," November 30, 1990, *Times-Picayune*, sec. A, NB LA (9011300049); Bruce Alpert, "Bush Signs Bill That Will Help Louisiana's Disappearing Coast," *Advocate*, November 30, 1990, sec. B, NB LA (1325615).

[19] The CWPPRA is also referred to as the Breaux-Johnston Act in some cases, especially in newspaper sources from the mid-1990s.

[20] Louisiana Coastal Wetlands Conservation and Restoration Task Force, *Louisiana Coastal Wetlands Restoration Plan: Main Report and Environmental Impact Statement* (Baton Rouge, LA: Louisiana Coastal Wetlands Conservation and Restoration Task Force, 1993), ES-9, http://lacoast.gov/reports/cwcrp/1993/1993lcwrp-all.pdf.

Act as a sign the federal government cared about the state's disappearing wetlands, but the senator's success had relied considerably on his legislative savvy. Breaux recognized an opportunity to get funding through the Senate's complicated budget process and calculated that his colleagues in Congress would not oppose a relatively minor spending proposal in the context of a $500 billion deficit reduction package.[21] There did not appear to be widespread support in Congress or the executive branch to commit billions of dollars to coastal restoration in Louisiana, a fact which continued to influence the implementation of the state's wetlands restoration projects for years to come.

Despite its limitations, the Breaux Act established a financial and administrative basis for restoration projects to move forward in a more coherent fashion. One of the main functions of the act was to bring some order to the piecemeal and fractured administrative regime that had troubled wetlands policy in Louisiana since the 1970s. The CWPPRA created a task force that would be comprised of officials from the state of Louisiana and five federal agencies – the Army Corps of Engineers, the Environmental Protection Agency, the Department of the Interior, the Department of Agriculture, and the Department of Commerce. Each agency's secretary would appoint a representative to serve on the task force, and every year the group would select a certain number of restoration projects to be funded by the Breaux Act. The federal government would fund the Priority Project List (PPL) at seventy-five percent per project, while Louisiana would use money from its WCRTF to pay for the remaining twenty-five percent.[22] Additionally, the Breaux Act encouraged Louisiana to devise a conservation plan that included the goal of "no net loss" for wetlands related to future development along the coast. The two plans –

[21] Joan McKinney, "Low-profile La. Wetlands Provision Linked to Increase in Gasoline Taxes," *Advocate*, October 19, 1990, sec. A, NB LA (1316673)
[22] Louisiana Coastal Wetlands Conservation and Restoration Task Force, *Louisiana Coastal Wetlands Restoration Plan*, 2-3.

conservation to prevent future losses and restoration to address ongoing losses – were intended to be complementary with regulation and allow for more comprehensive management of the coast.[23]

There were other positive legislative actions in the early 1990s that contributed to the protection and management of coastal wetlands, both at the federal and state levels. Signed in November 1990, the Coastal Zone Reauthorization Act Amendments added new provisions to the Coastal Zone Management Act of 1972. In the twenty years since the CZMA had been in effect, the federal government had invested $700 million in coastal states by the way of grants for policy development and implementation. Congress decided to continue the CZMA program and also added two new features that were intended to help states protect their coasts, while still allowing for economic development. One of the amendments created a pollution control program similar to one contained in the Clean Water Act. The legislation targeted "nonpoint sources" of pollution, which included runoff from agricultural and forestry lands. Fertilizer or animal waste from farms or commercial forests could have a negative impact on wetlands when river waters made their way into sensitive estuaries. A second amendment in the CZMA re-authorization established a new grant program that encouraged states to address at least one of eight "issues of national importance" with new policies or regulations. The identified issues included wetland protection and restoration, reducing development in high-risk areas such as floodplains, and increasing public access to coastal resources.[24]

[23] Coastal Wetlands Planning, Protection and Restoration Act, 16 USC 3951 (1990).
[24] Office of Ocean and Coastal Resource Management (NOAA), *Biennial Report to the Congress on Coastal Zone Management*, vol. II (Washington D.C.: National Oceanographic and Atmospheric Agency, 1992), 1-3, CZIC Collection, https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u558b-v-2-fy1990-91-1992/pdf/CZIC-ht392-u558b-v-2-fy1990-91-1992.pdf.

At the state level, Louisiana passed two pieces of legislation in 1990 and 1991 to help address the continued erosion of coastal wetlands. The first was Act 1040, which required mandatory mitigation for any activity carried out under a permit on the coast. That meant if a developer unavoidably damaged wetlands on a project, he or she would be required to fund mitigation efforts in another area. A second law passed in 1991 mandated that non-contaminated dredged material be used by developers for restoration, enhancement, or creation of wetlands. Both laws were meant to counter the potential harm caused by development on the coast while continuing to allow multiple uses of the coast.[25]

As with the Breaux Act, there were limitations to each new law. Under Act 1040, mitigation was required for activities that took place in vegetative wetlands and were carried out under a coastal use permit. That meant that activities that caused losses in forested swamplands or activities that were exempt from the CUP system fell outside the scope of mandatory mitigation.[26] Likewise, developers had to use dredged materials for "beneficial use" only when their projects excavated more than 500,000 cubic yards of material.[27] The laws introduced more tools for Louisiana to manage or restore its wetlands, but like most wetlands legislation, there were gaps in protection. The laws also maintained a basic historical trend regarding land-use practices – development was still permissible in the state's wetlands. Regulations limited the scope of activities but did not fully stopping the alteration of the coast.

Toward More Comprehensive Management

In addition to establishing a restoration agenda for Louisiana's wetlands, the Breaux Act was also designed to facilitate a more comprehensive approach for coastal management – to

[25] Office of Ocean and Coastal Resource Management (NOAA), *Biennial Report*, vol. II, 45-46.
[26] Coastal Management Division (Louisiana DNR) and Rodney E. Emmer & Associates, Inc., *Preliminary Assessment of the Louisiana Coastal Management Program*, 14.
[27] Office of Ocean and Coastal Resource Management (NOAA), *Biennial Report*, vol. II, 46.

blend regulation and restoration into an overall strategy. The state took a step toward that goal with the publication of the Louisiana Coastal Wetlands Restoration Plan (LCWRP) in 1993. Authored by the Louisiana Coastal Wetlands Conservation and Restoration Task Force, the plan articulated two key objectives.[28] The first was "to sustain the ecological value and economic productivity" of Louisiana's wetlands, while the second was to "accomplish this by maintaining and improving critical wetland functions."[29] According to the task force, the state's wetlands were ecologically important because they functioned as habitats for fish, wildlife, and plants. The wetlands were considered economically productive because the natural resources found there had commercial value. The wetlands were also integral in protecting billions of dollars' worth of infrastructure investment, providing opportunities for recreational activities, and playing a role in the cultural heritage of the state.[30] Without a healthy wetlands ecosystem, the economic productivity of the region was threatened. However, the social and economic developments in the area were not going to be undone and trying to minimize damage had been the basis of the Coastal Use Permit program.[31]

That viewpoint was not new in discussions regarding the management of Louisiana's coastal zone, but the LCWRP departed from previous proposals with its commitment to support the "natural processes" of the wetlands. In essence, the task force envisioned that conservation and restoration projects would work with the deltaic system to build a sustainable coast. To accomplish that goal, the LCWRP recommended developing conservation projects to "keep what

[28] The Louisiana Coastal Wetlands Conservation and Restoration Task Force was the administrative body created by the Breaux Act for implementing the CWPPRA. This entity may be referred to as "the task force" or the "Breaux Act task force" in source material or by this author.
[29] Louisiana Coastal Wetlands Conservation and Restoration Task Force, *Louisiana Coastal Wetlands Restoration Plan*, 53.
[30] Ibid., 17-22.
[31] Coastal Management Division (Louisiana DNR) and Rodney E. Emmer & Associates, Inc., *Preliminary Assessment of the Louisiana Coastal Management Program*, 11.

we have" and restoration projects to "offset or reverse the remaining losses by wetland creation and shoreline restoration."[32] Water, sediments, and barrier islands all worked together to build wetlands, and projects should be geared to encouraging those natural features to create new land when possible. By dividing the state's coast into nine hydrologic basins across twenty parishes, the task force recognized that the strategies in one area might not work in other areas and that there needed to be some flexibility in setting priorities. The deltaic plain's loss of marshy swamps was a different scenario than the coastal erosion taking place on the Chenier Plain's mudflats. The LCWRP also recognized the need for short-term and long-term planning. Vegetation planting was something that could be done for immediate benefit, but building land on a large scale would require officials to plan for major projects such as freshwater diversions. The LCWRP included specific project recommendations as well as a broader vision for management, and the task force estimated that approximately 203,000 acres could be protected or restored over two decades.[33]

One year after the Breaux Act task force released its plan, the state of Louisiana came out with its own policy suggestions for coastal restoration and protection. In a letter dated August 10, 1994, Governor Edwin Edwards outlined the main goals for the state's "environmental-economic blueprint." Broadly speaking, he said Louisiana wanted to encourage a "sustainable coastal zone and an economic base for future generations."[34] More specifically, the state wanted to stop the net loss of wetlands on the coast by harnessing the natural processes that had originally built land

[32] Louisiana Coastal Wetlands Conservation and Restoration Task Force, *Louisiana Coastal Wetlands Restoration Plan*, 53.
[33] Ibid., 53-57.
[34] Edwin Edwards, Letter Address, August 10, 1994, in *An Environmental-Economic Blueprint for Restoring the Louisiana Coastal Zone*: *The State Plan* by Sherwood Gagliano (Baton Rouge, LA: Coastal Environments, Inc., 1994), preface, http://www.lacoastpost.com/BLUEPRINT%20PLAN-1994.pdf.

to preserve or create wetlands. Restoration projects were meant to complement the regulatory scheme in place since the late 1970s.[35]

The state blueprint was similar to the LCWRP in that each contained policies meant to stop losses with short-term projects, while also working toward land building as a long-term goal. Both also emphasized the importance of protecting economic development along with ecological sustainability. However, the two recommendations departed in terms of the time scale; the LCWRP looked at projects and restoration over a twenty-year period, whereas the state's blueprint extended its timescale to fifty years. Secondly, the two plans differed in which natural processes to emphasize, with the state advocating more heavily for freshwater diversions from the Mississippi River. Finally, the blueprint wanted to approach management from a "major natural system" standpoint instead of the hydrologic basins proposed by the LCWRP. Because of the differences between the plans from the task force and the state, the Office of Coastal Activities in the Governor's Office suggested that the two be consolidated into a single comprehensive plan.[36] Until that consolidation took place though, the LCWRP guided the Breaux Act task force in making decisions about which restoration projects to pursue.[37]

Policy Challenges in the 1990s – Classification and Compensation

After two decades of policy development, the state of Louisiana had pieced together a regulatory and restoration framework to address the loss of wetlands on the coast. By 1994, there seemed to be good reason for optimism that Louisiana was on its way to slowing down the rate of wetlands losses. Yet there were still significant challenges to contend with, including

[35] Gagliano, *An Environmental-Economic Blueprint*, 6-1.
[36] Ibid., 6-1 – 6-5.
[37] Office of Coastal Restoration and Management (Louisiana DNR), *Louisiana Coastal Wetlands Conservation Plan* (Baton Rouge, LA: Louisiana Department of Natural Resources, 1997), 1, http://dnr.louisiana.gov/assets/OCM/permits/CWCP.PDF.

continued disagreements about the delineation of wetlands and addressing competing interests on the coast. To clear up ongoing discrepancies in classifying and mapping wetlands, the Corps, the EPA, the U.S. Fish and Wildlife Service, and the Soil Conservation Service published an interagency manual for defining and delineating wetlands in 1989.[38] The manual contained some new proposals for determining which landscapes constituted wetlands. The expanded criteria for assessing wetlands meant that some areas which previously been outside the scope of Section 404 would be brought under the regulatory authority of the Corps.[39]

Farmers, landowners, and oil and gas representatives complained to the Bush administration that the new manual would bring "millions of acres under first time federal regulation" and that could mean that land was "off-limits to development."[40] In summer 1991, Bush proposed revisions to the 1989 manual to ease the potential restrictions on private landowners and businesses. His proposals were widely condemned by groups such as the Environmental Defense Fund. Jim Tripp, who served as the EDF's general counsel, criticized the administration's recommendations in August 1991. "This wetlands destruction plan is a mockery of President Bush's campaign pledge of 'no-net-loss' of wetlands. The policy will remove a third of our nation's wetlands from federal protection and will put these precious resources in terminal condition." White House spokesman Marlin Fitzwater dismissed the idea that the new guidelines substantially reduced wetlands protection and said that the proposals simply rejected the premise that "every muddle puddle is a wetland." Officials in Louisiana were generally supportive of

[38] U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and the Soil Conservation Service (USDA), *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, 1-3.
[39] Lewis, *Wetlands Explained*, 25.
[40] Joan McKinney, "Wetlands Scientists Pressured, Then Ignored," *Advocate*, August 15, 1991, sec. A, NB LA (1512720).

Bush's proposals in 1991 because they believed the 1989 manual had limited the rights of landowners to develop their properties.[41]

Opponents of Bush's proposals countered assertions that the 1989 manual harmed property owners or that the permit process was too cumbersome. For example, in Louisiana, there were twenty general permits that covered minor activities in wetlands, which meant most landowners did not need to apply for an individual permit. When an individual permit was necessary, the Army Corps of Engineers in the New Orleans district approved far more than they denied. In 1990, only one percent of the 1,255 applications for individual permits was rejected. Long delays in processing times were also not a widespread problem. Between 1989 and 1990, three-fourths of permits were approved within one hundred and twenty days. Only two percent of permits took longer than a year to be evaluated and those were typically related to large projects.[42] While very few of the wetlands on Louisiana's coast would be affected by the administration's proposals, wetlands further inland were at risk of losing protection. Forested wetlands were not always inundated year round and might be excluded from regulatory oversight.[43]

Central to the debate surrounding the delineation of wetlands were the rights of property owners and how regulations could affect the use of private lands. Home builders, landowners, and business interests such as forestry groups tended to favor less strict regulations like those proposed by President Bush. In contrast, environmental groups tended to favor more robust regulations like those in the 1989 federal manual. Despite the aggressive lobbying by the state's

[41] Bruce Alpert, "Bush Wetlands Policy Opens up Development," *Times-Picayune*, August 10, 1991, sec. A, NB LA (9108100139); Lewis, *Wetlands Explained*, 24-26.
[42] Bob Marshall, "Bush Leaves Wetlands Out to Dry," *Times-Picayune*, August 18, 1991, sec. C, NB LA (9108180105).
[43] McKinney, "Wetlands Scientists Pressured, Then Ignored."

representatives for passage and support of the Breaux Act, members of the Louisiana congressional delegation wanted to see regulations that favored property owners and curbed the enforcement power of federal agencies when it came to policies overseeing wetlands. In fact, some members of Louisiana's delegation went further than the Bush administration in trying to reduce the amount of regulation that applied to wetlands.

In April 1991, Senator Breaux met with a homebuilders' association in St. Tammany Parish to discuss how regulations had affected economic development in southern Louisiana. Breaux criticized the use of the Clean Water Act to determine the course of land development and said that Congress never intended for the CWA to be a "land management tool." He also said that because the Corps of Engineers spent so much effort on "marginal wetlands," the agency did not have the time or resources to protect more vulnerable wetlands. The senator announced his plan to introduce legislation to create a new system of wetlands classification, one that would be aimed at reducing the scope of regulations carried out by federal agencies.[44]

The legislation that Breaux announced was intended to be a companion to the bill that had been introduced in the House of Representatives by Louisiana Democrats Billy Tauzin and Jimmy Hayes.[45] Hayes and Tauzin concurred with Breaux and said that federal bureaucrats had overstepped their authority by using the Clean Water Act to limit development in wetlands. The new classification system in both bills would continue protecting places that were thought of as "traditional" wetlands – zones such as swamps or marshes that were inundated most of the year. Areas that were only seasonally wet or rarely wet on an annual basis would be less likely to receive federal protection. Scientists and environmental groups were quick to point out that

[44] Sara Pagones, "Change Sought in Wetlands Rules," *Times-Picayune*, April 4, 1991, sec. A, NB LA (9104040181).
[45] Ibid.

wetlands were complex ecosystems and did not always look like the bayous of southern Louisiana, but that all wetlands played critical roles in habitat, water filtration, or storm protection.[46]

The classification system proposed by the Hayes-Tauzin bill and the Breaux bill created three categories of wetlands – A through C. Wetlands in Category A would receive the greatest amount of protection, while wetlands in Category C would not be subject to any federal regulations. There were also limits to how many wetlands could be included in Category A in a given area. In Louisiana, no more than twenty percent of a parish could be classified as Category A wetlands, and the Louisiana Farm Bureau said if the proposed legislation was enacted, over four million acres of new land would open up for crop cultivation. Environmental groups such as the Sierra Club in Louisiana said such a classification scheme was unnecessary as agricultural activities were already exempt from regulation and that the Hayes-Tauzin bill would be more beneficial to large land developers.[47] In October 1991, a representative from the Coalition to Restore Coastal Louisiana echoed those assessments on a trip to Washington D.C., and stated, "Wetlands have prime development potential because you can buy it cheap and sell it for a lot of money and then the builders, mortgage bankers and real estate interests get out. And when it goes under the water, it is the rest of us taxpayers who pay for the damage."[48]

The issue of wetlands classification simmered for the remainder of Bush's term, and in November 1992, the administration indicated it would take no further action on the matter. President Bush charged the National Academy of Sciences with evaluating the regulatory

[46] Rick Raber, "Wetlands Definition Spells Trouble for Congress," *Times-Picayune*, April 15, 1991, sec. A, NB LA (9104150074).
[47] Bob Anderson, "Wetlands Issues Key to Louisiana," *Advocate*, November 3, 1991, sec. B, NB LA (1526548).
[48] Bruce Alpert, "Coalition Vows Wetlands Battle," *Times-Picayune*, October 2, 1991, sec. A, NB LA (9110020185).

changes brought about by the 1989 manual and then report their recommendations to the next administration.[49] In April 1993, seven southern senators lobbied President Bill Clinton to ease restrictions and give greater leeway to farmers and property owners for development in "low-value" wetlands. That group, which included Senators Breaux and Johnston, pointed to a report issued several years earlier by the Lower Mississippi River Delta Development Commission in their appeal. Clinton had chaired the commission while he was governor of Arkansas, and the commission's members found that federal regulatory policies for wetlands presented "significant challenges" for agricultural, commercial, and industrial interests in the region. The senators urged Clinton to adopt the proposals in the commission's report as a "reasonable compromise" on the issue of wetlands regulations.[50] Some of the suggestions made by the commission were in-line with the bills that the Louisiana delegation had proposed in Congress – reduced regulations with only one agency's overseeing implementation, federal support to private property owners to encourage conservation, and a new classification system that emphasized the function and value of wetlands when determining which areas to protect.[51]

In May 1993, Clinton agreed to form a wetlands "working group" that would be comprised of nine federal agencies, including the EPA and the Department of Defense. The goal of the task force would be to devise recommendations for wetlands regulatory reform.[52] When the administration unveiled its proposals in August, there were mixed reactions in the "Pelican State." The Louisiana Farm Bureau praised the policy proposals for protecting farmers from

[49] Joan McKinney, "Both Sides Await Clinton Wetlands Agenda," *Advocate*, November 28, 1992, sec. B, NB LA (220).
[50] Bruce Alpert, "LA. Senators Ask Clinton for Help with Wetlands," *Times-Picayune*, May 5, 1993, sec. A, NB LA (9305050171).
[51] Lower Mississippi River Delta Development Commission, *Final Report: The Delta Initiatives* (Memphis, TN: Lower Mississippi River Delta Development Commission, 1990), 80-81, John Breaux Papers, Box 148, Folder 23, Hill Memorial Library, Baton Rouge, LA.
[52] "Clinton to Create Task Force to Change Wetlands Policy," *Times-Picayune*, May 6, 1993, sec. A, NB LA (9305060162).

suddenly losing the ability to develop their properties if those lands were declared to be wetlands, though some environmental groups were critical of giving the Soil Conservation Service authority over determining wetlands classification for farmlands. Mark Davis, who was head of the Coalition to Restore Coastal Louisiana, praised the wetlands working group and said, "The emphasis on restoring wetlands can only help us." Senators Breaux and Johnston also commended the policy proposals, with Breaux stating they were a "step in the right direction." However, Representative Billy Tauzin criticized the group's recommendations because they did not offer a new classification scheme and also commented that Congress needed to act to "set up a firm system of compensation to private landowners."[53]

Tauzin's criticisms touched on another controversial aspect of wetlands classification and delineation, which both he and Senator Breaux had attempted to address with earlier legislative proposals. Both the Hayes-Tauzin bill and the Breaux bill in 1991 had required that private property owners be compensated by the federal government if the owners' lands could not be developed due to regulations that protected wetlands.[54] Proponents of that suggestion reasoned when regulations limited development of property, that meant those lands were "taken." Drawing on the "just compensation" language of the Fifth Amendment, the Hayes-Tauzin and Breaux bills made compensation compulsory in circumstances of regulatory "takings." Issues of "takings" and land-use regulations were not new, but the White House rejected mandatory compensation. The administration insisted that compensation should not be automatically granted and that the courts should sort through each "takings" case on an individual basis.[55]

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[53] "Most Agree Wetlands Policy to Help La.," *Advocate*, August 25, 1993, sec. A, NB LA (706); Bruce Alpert, "Wetlands Policy Leaves Some Warm, Some Cold," *Times-Picayune*, August 25, 1993, sec. A, NB LA (9308250154).
[54] Anderson, "Wetlands issues key to Louisiana."
[55] Joan McKinney, "White House Unveils Policy on Wetlands," *Advocate*, August 25, 1993, sec. A, NB LA (664).

Despite the fact that Clinton's wetlands proposals were seen as acceptable by a wide range of groups, the issue of property rights and regulatory authority did not dissipate – even among those who had been generally supportive of Clinton's policy proposal. In October 1993, Senator Breaux and Representatives Hayes and Tauzin spoke at the annual meeting of the National Wetlands Coalition (NWC) in Washington, D.C.[56] The NWC was a conglomeration of agricultural, landowner, and land developer interests that had lobbied the Bush administration to reject the 1989 federal wetlands delineation manual.[57] In his prepared remarks for the conference, Senator Breaux emphasized that private land owners needed greater protection and flexibility in wetlands regulations. He also suggested that the federal government should "relinquish the role of co-regulator and primary enforcer" and allow states to assume the lead in regulating wetlands.[58]

Breaux's assertion that Louisiana should have more regulatory control even as he supported the federal government paying for the majority of restoration projects might have seemed contradictory. Yet the senator had contended in the past that federal policies were responsible for significantly contributing to coastal erosion in Louisiana. Breaux and other congressional representatives from Louisiana saw the use of federal funds to repair the damage caused by engineering the Mississippi River or running gas pipelines from the Outer Continental Shelf through the state's wetlands as fair.[59] In that context, assuming the state could better manage its wetlands than the federal government could have made sense, but one would also

[56] Agenda for the Annual Meeting of the National Wetlands Coalition in Washington, D.C., October 14, 1993, John Breaux Papers, Box 148, Folder 23, John Breaux Papers, Hill Memorial Library, Baton Rouge, LA.
[57] McKinney, "Both Sides Await Clinton Wetlands Agenda."
[58] Memorandum: Talking Points for National Wetlands Coalition Speech, October 8, 1993, John Breaux Papers, Box 148, Folder 23, Hill Memorial Library, Baton Rouge, LA.
[59] Breaux, Extension of Remarks on the Coastal Wetlands Recovery Act, 3; "Breaux to Push for Wetlands Fund," *Times-Picayune*, October 27, 1987, sec. B, AHN; Joan McKinney, "Low-profile La. Wetlands Provision Linked to Increase in Gasoline Taxes," *Advocate*, October 19, 1990, sec. A, NB LA (1316673).

have to ignore that Louisiana had requested flood protection measures and benefitted economically from the offshore oil industry. Additionally, despite the positive steps the state took with Act 6 in 1989, the ability of agencies to effectively monitor, regulate, and manage the coastal wetlands was questionable. For example, the DNR was not aware of the impact that about half of the activities had on the coast as the department had no monitoring system in place.[60]

Over the next several years, the support for fewer regulations and greater property rights gained steam in Congress. In 1994, Representative Tauzin introduced the "Private Property Owners Bill of Rights" which again stressed that overly broad regulations violated the "takings clause" in the Constitution and that land owners should be automatically compensated. Under Tauzin's proposed legislation, if a regulation reduced the value of a piece of land by fifty percent, then the owner would be entitled to compensation. Fifty-seven co-sponsors signed onto Tauzin's bill, including three other representatives from Louisiana. Proponents for mandatory compensation claimed to support regulations as long as the rights of property owners were considered, but the automatic payments were really a way of deterring regulation enforcement. The federal government could not afford to compensate every landowner when the value of his or her property was reduced by regulation. Such a policy would make regulatory programs too expensive and not practically possible.[61]

Tauzin's idea to require widespread compensation was tied to an anti-regulation, anti-environment trend in the United States known as the Wise Use Movement.[62] Broadly speaking,

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[60] Louisiana Department of Natural Resources, *Preliminary Assessment of the Louisiana Coastal Management Program*, 11.
[61] John McQuaid, "Owner's Rights Sacred, Bill Says – Tauzin Top Gun in Land-use Duel," *Times-Picayune*, April 3, 1994, sec. B, NB LA (9404040080); Dick Wright, "Farmers and Property Rights – Landowners Want Compensation for Federal Regulation," *Advocate*, March 5, 1995, sec. F, NB LA (3084).
[62] Wright, "Farmers and Property Rights."

the Wise Use Movement had developed during the 1980s and advocated that the rights of individual property owners trumped the federal government's mandate to regulate the use of land. Though environmentalists tried to portray Wise Use proponents as fronts for corporate interests, there was legitimate grassroots support at the local level and in Congress by the early 1990s.[63] In March 1995, Wise Use advocates achieved a moderate victory when the House of Representatives passed a bill that called for automatic compensation to landowners when the value of their properties was reduced by more than twenty percent. If the value of land was reduced by more than fifty percent, the federal government would be required to buy the property outright. Two-hundred and seventy-seven representatives voted yes on the measure, including five members from Louisiana's delegation. Tauzin said that the legislation did not preclude regulation, but rather it ensured that property owners would be compensated appropriately if they lost the use of their lands.[64]

Groups such as the NWC, the National Council for Environmental Balance, and the Louisiana Farm Bureau Federation supported the legislation.[65] When speaking to a forum hosted by a group of realtors and homebuilders in May 1995, six of Louisiana's gubernatorial candidates also vowed to protect the rights of property owners against federal regulations.[66] In contrast, environmental organizations strongly opposed the Wise Use Movement in general and the "takings" compensation bill specifically. A representative for the Louisiana chapter of the Sierra Club criticized political supporters of the bill in March 1995, saying that the Wise Use Movement was trying to portray itself as a defender of "hardworking Americans" but instead "its

[63] Wellock, *Preserving the Nation*, 238-241.
[64] Joan McKinney, "Property Rights Measure OK'd," *Advocate*, March 4, 1995, sec. A, NB LA (3207).
[65] Wright, "Farmers and Property Rights."
[66] Marsha Shuler, "Candidates Favor Property Rights," *Advocate*, May 27, 1995, sec. C, NB LA (431).

membership list reads like a who's who of the oil and gas, timber, ranching and mining companies."[67]

In Louisiana, landowner perceptions about "takings" through regulation and compensation appear to have been mixed. In 1996, Paul Corneil of Louisiana State University conducted a survey of property owners who held between one hundred and 2,500 acres of lands that were classified as wetlands. The two most popular concerns among landowners were the protection of property rights and the threat of coastal erosion. Despite the role regulations had played in the reduction of wetlands losses, owners did not have a favorable view of the regulatory programs administered by state or federal agencies. Neither did they perceive the regulations themselves in a positive light. Two-thirds of the respondents agreed that current wetland regulation policies approached the threshold for the "taking" of their properties. Still, the majority of survey participants said they had no intention of selling their lands in the near future, and the landowners also indicated they preferred tax breaks over outright purchase of their properties.[68]

One of the reasons why respondents might have preferred to hold onto their lands was potentially related to why some property owners also fought state-sponsored coastal restoration projects on their lands. Survey participants indicated that while they perceived oil and gas activities to do the most harm to the wetlands, mineral production was also the most likely source of revenue to be generated on their properties.[69] Even though coastal restoration might have protected owners from future losses, they were reluctant to allow the state to engage in re-

[67] Dick Wright, "Farmers and Property Rights – Sierra Club: Movement is Corporate Front," *Advocate*, March 5, 1995, sec. D, NB LA (3088).
[68] Paul D. Coreil, "Landowners' Perceptions Related to Wetland Regulatory Policy in Coastal Louisiana," *8th Triennial National Wildlife and Fisheries Extension Specialists Conference*, paper 10 (1996): 52-58, http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1009&context=ewfsc8.
[69] Ibid., 58-59.

creating new lands. Instead, property owners wanted to initiate restoration projects on their own. The reason for that was once a parcel of wetland turned to open water, the state assumed ownership of lands underneath the water. If the landowner paid to have their former lands restored, he or she could then reclaim the surface and mineral rights to those lands. However, if the state paid for a project that restored eroded lands, the previous owners could only reclaim the surface rights. That made some landowners reluctant to support state-sponsored restoration projects because they feared losing out on the potential of oil and gas revenues.[70]

To address the loss of mineral rights on eroded lands, the Louisiana legislature passed a bill that put a constitutional amendment up for vote in the 1995 election. Amendment 9 allowed the state to surrender its mineral rights on waterbottom lands, which would mean former property owners could reclaim both surface and mineral rights. The Department of Natural Resources had pushed for the amendment over the objections of the State Land Office. Citing the loss of millions of dollars in oil and gas revenue, the SLO argued the amendment was a mistake and that it benefitted private property owners while the taxpayers funded the bill for coastal restoration.[71] The Coalition to Restore Coastal Louisiana joined with the DNR to support the amendment and said that allowing property owners to reclaim mineral rights was necessary to encourage forward momentum on restoration projects.[72] Whether voters agreed with the CRCL or wanted to ensure that the rights of landowners were protected was unclear, but the amendment passed with sixty-one percent of over one million ballots cast on the measure.[73]

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[70] Carl Redman, "Two Proposals Concern Environmentalists," *Advocate*, October 12, 1995, sec. A, NB LA (2182).
[71] Jack Wardlaw, "15 Proposed Amendments Tie the Record," *Times-Picayune*, October 9, 1995, sec. A, NB LA (9510090093); Bob Anderson, "Balancing Wetlands and Mineral Rights," *Advocate*, October 19, 1995, sec. B, NB LA (1298).
[72] Carl Redman, "Two Proposals Concern Environmentalists,"; Mark Davis, letter to the editor, *Advocate*, October 14, 1995, sec. B, NB LA (1863).
[73] "Statewide Constitutional Amendments," *Times-Picayune*, October 23, 1995, sec. A, NB LA (9510230052).

"Takings" compensation and the prominence of property rights continued to be an issue in national politics for another year, though the matter had perhaps become more show than substance. In 1996, the Senate took up a companion bill for the compensation package passed in the House the previous year. Supporters of the Omnibus Property Rights Act continued to argue that any regulation of how a property owner used his or her land amounted to a "taking" and deserved compensation. Though Louisiana's House delegation had supported "takings" compensation, Senator Johnston voiced opposition to the measure and said that automatic compensation for "a valid public welfare regulation" had no "place in our laws or history." Johnston characterized the proposed act as a distraction and insisted that Congress should focus on regulatory reforms that protected both the environment and landowners. He said the Senate should not be pursuing measures that shut down regulations altogether. Senate Majority Leader Robert Dole indicated he planned to bring the measure to the floor for a vote in spring 1996, but the bill ultimately failed to go anywhere.[74]

Though "takings" compensation never became federal law, the issue highlighted how contentious and complicated the implementation of wetlands policy could be – nationally and in Louisiana. The state and federal government regulated the use and treatment of wetlands because those areas had been deemed to have value for the public welfare. Complementary to regulation was the push to increase the funding of restoration projects to reduce future losses and create new wetlands. However, since private individuals owned the majority of wetlands in Louisiana, the state's politicians and citizens had to confront how to ensure the sustainability of the wetlands ecosystem while also protecting the rights of landowners. That tension was connected

[74] Bruce Alpert, "Dole Backs Landowner Compensation Bill," *Times-Picayune*, April 30, 1996, sec. A, NB LA (9604300026); Joan McKinney, "Johnston Leaves 'Takings,'" *Advocate*, May 12, 1996, sec. B, NB LA (2119); Joan McKinney, "Congress Startling on Environment," *Advocate*, August 18, 1996, NB LA (1506).

to the multiple-use management strategy – how to balance the interests of one user group with the interests of another, while seeking to maintain conditions that allowed all coastal users continued access to the many resources of Louisiana's southern wetlands. In practice though, some users received a greater number of benefits from the coast's resources than other users. The respondents to Paul Coreil's survey saw oil and gas interests as having more influence on the coast than they did, though businesses and citizens had long been recognized as users too.

As restoration efforts began to increase with the passage of the Breaux Act, coastal restoration itself became a "user" of the coast and the benefits of a restoration project had to be weighed against the drawbacks. That had happened in 1995 when the State Land Office argued that Amendment 9 was disadvantageous to the state's finances. In contrast, the Department of Natural Resources maintained the legislation was necessary for coastal restoration projects to proceed. There were also times when coastal restoration projects caused short-term harm to other users of the coast. For example, when the Davis Pond freshwater diversion threatened the productivity of oyster beds in St. Charles Parish, the state and federal government had to find a way to assist the oyster harvesters. Congress responded by passing legislation that allocated $7.5 million help relocate the beds to another area.[75] Yet the policy of providing monetary compensation to users of the coast that were negatively impacted by regulation or restoration remained an unsettled area of policy in the 1990s, at least for restoration efforts in Louisiana.

Policy Challenges in the 1990s – Money Troubles

While the state and nation debated classification and compensation in relation to wetlands policies, the Breaux Act task force proceeded to fulfill its mandate to support restoration on the coast. One of the requirements in the CWPPRA was for the task force to compile a Priority

[75] Louisiana Coastal Wetlands Planning, Protection, and Restoration Act Task Force, "Congress Funds Oyster Program," *WaterMarks*, Fall 1996, 9, https://lacoast.gov/new/Data/WaterMarks/watermarks_1996_fall.pdf.

Project List on an annual basis. Meetings held in 1991-1992 helped decide on the hydrological basin approach for the Louisiana Coastal Wetlands Restoration Plan and also influenced the selection of restoration projects. The projects were intended to create new wetlands or enhance existing ones by introducing sediments, freshwater, or fortifying barrier islands to help protect inland marshes. In the early years of the Breaux Act, each project on the PPL tended to be a small-scale activity aimed at reducing erosion in local areas. Between 1991 and 1993, the task force selected forty-eight projects to benefit 46,000 acres of wetlands at the cost of $123 million.[76]

However, actually implementing the projects became another matter. By March 1993, construction had yet to begin on any of the PPL activities. Part of the reason for the delay related to cost-sharing arrangements between the Department of Natural Resources and the Army Corps of Engineers. All coastal restoration projects required a federal and non-federal sponsor to contribute funding, but the DNR had hesitated to sign a formal arrangement with the Corps on cost-sharing measures for the Breaux Act projects. Both agencies accused the other of deliberately delaying the process. The DNR stated that the agency was reluctant to commit funds to the restoration efforts unless there was an agreement that allowed the state to influence project designs and costs. In contrast, the Corps said it was willing to meet with the DNR to discuss an agreement but had found the director of the DNR to be uncooperative. Eventually, Senators Breaux and Johnston stepped in to bring both agencies together to sort out a cost-sharing agreement that satisfied each party.[77]

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[76] Louisiana Coastal Wetlands Conservation and Restoration Task Force, *Louisiana Coastal Wetlands Restoration Plan*, 3-5; 44-52.

[77] Bob Anderson, "DNR Cited for Delay of Project," *Advocate*, March 2, 1993, sec. B, NB LA (3673); Mark Schleifstein, "Agents Work Out Cost-sharing for Wetlands Plans," *Times-Picayune*, March 6, 1993, sec. B, NB LA (9303060080).

After decades of planning, funding issues, and bureaucratic delays, there finally seemed to be momentum for coastal restoration efforts in Louisiana. A little over a year after the DNR and Corps finally reached a cost-sharing agreement, the task force completed its first project in West Hackberry, Cameron Parish. The state and federal government had also initiated construction on five more projects, as well as having approved fifteen additional projects for implementation.[78] Yet progress soon became threatened when the state ran into financial issues in 1994. The DNR used funds from the Wetlands Conservation and Restoration Trust Fund to pay for the state's portion of project costs, which was set at twenty-five percent per project. Act 6 in 1989 had guaranteed the WCRTF would receive $5 million annually, but for more money to be moved into the account, oil and gas revenues had to surpass $600 million. When oil prices slumped in the early 1990s, only the first $5 million went into the trust fund and the state could not pay for its share of restoration projects beyond that. Since Louisiana could not contribute more than $5 million, the state received a smaller portion of the money allocated to it for Breaux Act activities.[79]

The problem of funding issues continued into the next year, and the Department of Natural Resources stopped all state-sponsored coastal restoration projects in September 1995 to generate enough cash to qualify for Breaux Act money. Having already turned down $22 million in 1994, the DNR did not want to risk losing additional funds for coastal restoration projects. The state needed at least $10 million per year in matching funds to receive the full $30 million allocated under the Breaux Act. Officials in the DNR had suggested selling facilities or doing "in-kind" transactions to help the state qualify for full funding, but the department's

[78] Bob Anderson, "Coastal Wetlands Restoration Efforts Are Moving Ahead," *Advocate*, October 31, 1994, sec. B, NB LA (22).
[79] Bob Anderson, "Louisiana Losing $22 Million in Coastal Restoration Funds," *Advocate*, December 17, 1994, sec. B, NB LA (1305).

undersecretary said the state really needed to change how money was allocated to the Wetlands Conservation and Restoration Trust Fund.[80]

Lowering the threshold for how much oil and gas revenues needed to be generated in order to adequately fund the WCRTF was a difficult task and did not take place until 1999.[81] Yet the state was able to resume sufficient matching fund payments before then because oil and gas prices rebounded in 1996.[82] The state's funding problems in 1994 and 1995 were more than the result of a temporary slump in oil and gas prices though. Rather, the issues with meeting its cost-share requirements happened because Louisiana was so heavily dependent on mineral resources for funding. While oil and gas revenues were no longer the major source of income for the government that they had been in previous decades, the state still relied on the oil and gas industry to help pay for coastal restoration projects – even when such projects were necessary in part because of the oil and gas industry's activities in the wetlands.[83] Further, political officials made plans for projects on the assumption that oil and gas prices would remain high – a mistake in budgeting practices that had dogged Governors Treen, Roemer, and Edwards throughout the 1980s and 1990s.

The state was not just dependent on oil and gas revenues to help fund coastal restoration; in fact, Louisiana was even more reliant on the federal government. In 1997, the state completed a conservation plan that outlined how the state would achieve "no net loss" as the result of future

[80] Bob Anderson, "DNR Stops All Coastal Projects," *Advocate*, September 25, 1995, sec. B, NB LA (731); "Wetlands Work Delay Recommended," *Advocate*, December 1, 1995, sec. B, NB LA (3019).
[81] Mike Dunne, "Other Sources of Funds for Coast Sought – Federal Legislation Could Provide Additional Dollars," *Advocate*, November 11, 1999, sec. G, NB LA (9903076238).
[82] Bob Anderson, "La.'s Wetlands Restoration Funds Rising: Higher Oil, Gas Revenues Pump Millions into Projects," *Advocate*, May 4, 1997, sec. B, NB LA (3247); Chris Gray, "Keeping Federal Money for Wetlands Aid is Critical – Breaux Bill Worth Millions," *Times-Picayune*, April 28, 1997, sec. A, NB LA (9704280056).
[83] Angela Simoneaux, "Edwards Vows to Help Oil Industry Withstand Changes in Regulation," *Advocate*, July 15, 1994, sec. B, NB LA (1709); Caroline Lane, "General Government," in *State of Louisiana: State of the State 1996* (Baton Rouge, LA: Louisiana Office of Planning and Budget, 1996), 101-102.

developments in the wetlands. Once Louisiana had an acceptable plan approved, the state only had to pay fifteen percent of project costs as opposed to twenty-five percent.[84] The conservation plan recommended no new laws or regulations to help prevent losses, but the report did introduce policy suggestions for monitoring primary and secondary losses and provided more structure to the state's mandatory mitigation program.[85] Gathering more data on secondary losses – those losses that occurred after the direct removal of wetlands – was particularly important since there was a lack of information on the extent of the problem.[86]

A New Vision for Louisiana's Coast

In April 1998, the Breaux Act task force authorized one of the largest restoration projects yet for the Isles Dernieres, a chain of barrier islands off the coast of Terrebonne Parish. The project was centered on nourishing ten miles of beach shoreline spread across three islands in the chain, each of which had been damaged by Hurricane Andrew in 1992. Once completed, the restored barrier islands were expected to help create 685 acres of marsh and protect an additional 11,000 acres of wetlands. Priced at $26 million, the Isles Dernieres restoration effort represented a new approach for Breaux Act projects in terms of scale and cost.[87]

During the first few years of operation, the CWPPRA had funded small, localized projects that primarily benefitted the immediate vicinity. Those smaller projects had been successful, but they were not going to stop wetlands loss on a large scale over a long period of

[84] Anderson, "La.'s Wetlands Restoration Funds Rising,"; Bob Anderson, "La. Plan Asks EPA for Change: State's Funding Share of Projects Would Drop," *Advocate*, June 10, 1997, sec. B, NB LA (2234); Office of Coastal Restoration and Management (Louisiana DNR), *Louisiana Coastal Wetlands Conservation Plan*, 4-5.
[85] Office of Coastal Restoration and Management (Louisiana DNR), *Louisiana Coastal Wetlands Conservation Plan*, 41.
[86] Ibid., 19.
[87] Mike Dunne, "Officials Dedicate $26 Million Project," *Advocate*, April 14, 1998, sec. B, NB LA (2753362); Chris Gray, "Coastal Comeback – Barrier Isles to be Rescued," *Times-Picayune*, April 14, 1998, sec. B, NB LA (9804140015).

time.[88] Groups such as the Coalition to Restore Coastal Louisiana and members of the Department of Natural Resources began to advocate for bigger projects that could address losses across the entire coast in 1995. In September of that year, the Breaux Act task force agreed that large-scale projects such as freshwater diversions and barrier island restoration should receive priority status on the annual lists. Going forward, the task force would dedicate two-thirds of its yearly project funding to large-scale projects and the remainder for small-scale projects.[89]

The shift to prioritizing large-scale projects was an important step toward more effective restoration projects, but a change in strategy alone was not going to be sufficient. There needed to be a financial commitment to restoration on par with the scope of wetlands loss, and the maximum amount of money that could be provided by the Breaux Act and the Wetlands Conservation and Restoration Trust Fund was not going to be a sufficient.[90] The state and federal government also needed a single vision for Louisiana's coast, with clear ideas about what would constitute a successful program and how best to efficiently administer that program. In the mid-1990s, there were still dozens of agencies that had authority in and around the wetlands without a unifying vision to guide their activities. Bureaucratic disagreements and multiple plans, reports, and suggestions for restoration created confusion.[91] Finally, individual coastal restoration projects needed to be parts of a whole – though there were regional differences in Louisiana's

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[88] Louisiana Coastal Wetlands Conservation and Restoration Task Force, "Funding Shifts to Large-Scale Projects," *WaterMarks*, Spring 1996, 1-2, https://lacoast.gov/new/Data/WaterMarks/watermarks_1996_spring.pdf.
[89] Bob Anderson, "Coastal Restoration Changes Opposed," *Advocate*, September 21, 1995, sec. A, NB LA (1292); Bob Anderson, "Plan Laid for Large-scale Coastal Wetlands Project," *Advocate*, September 22, 1995, sec. B, NB LA (1104).
[90] Louisiana Coastal Wetlands Conservation and Restoration Task Force, *Louisiana Coastal Wetlands Restoration Plan*, ES-9; Bob Anderson, "$30 Million for Wetlands May be Lost," *Advocate*, March 11, 1996, sec. B, NB LA (2311).
[91] Mark Schleifstein, "Sinking Treasure," *Times-Picayune*, March 26, 1996, sec. A, NB LA (9603280026); Louisiana Coastal Wetlands Conservation and Restoration Task Force and Louisiana Wetlands Conservation and Restoration Authority, *Coast 2050: Toward a Sustainable Louisiana Coast* (Baton Rouge, LA: Louisiana Department of Natural Resources, 1998), 2; Louisiana Coastal Wetlands Conservation and Restoration Task Force "State, Federal, and Local Officials Unveil Coast 2050 Initiative," *WaterMarks*, Winter 1998, 2, https://lacoast.gov/new/Data/WaterMarks/watermarks_1998-winter.pdf.

wetlands, the entire coast was an ecosystem. Both Louisiana and the federal government's approach was still piecemeal, even after several years of project development under the Breaux Act. If the state and federal government continued with current policies, the estimates were that only twenty-two percent of future losses could be avoided.[92]

In 1997, political officials in Louisiana's government and representatives from federal agencies initiated a series of meetings to address those problems. The Breaux Act task force and the state's Wetlands Authority in the Governor's Office led the process of developing a unifying strategy. Representatives from agencies such as the National Marine Fisheries Service and the Louisiana Department of Environmental Quality assisted on what would become the *Coast 2050* initiative. The goal was to build a consensus about what Louisiana's coast should look like in the year 2050, ensure cooperation among the variety of agencies involved in coastal management, and determine how to administer a unified restoration plan.[93] The *Coast 2050* initiative would not be a report that contained multiple project suggestions but instead, would outline broad strategies for a single vision on how to approach wetlands restoration in southern Louisiana. Over the course of eighteen months, public officials met with concerned citizens sixty-five times to determine what coastal users wanted to see in a restoration plan.[94] The *Coast 2050* task force also made sure that the best available science guided their decision-making about future restoration policies. Finally, as had been the case in virtually every proposal and plan preceding

[92] Mark Schleifstein, "Sinking Treasure,"; Mark Schleifstein, "Early Warning Went Unheeded," *Times-Picayune*, March 26, 1996, sec. A, NB LA (9603260424); Bob Anderson, "Coastal Protection Efforts Insignificant," *Advocate*, February 23, 1997, sec. B, NB LA (660); Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority, *Coast 2050*, 48.
[93] Jerald Horst, "Study to Focus on State's Coastline," *Times-Picayune*, June 26, 1997, sec. F, NB LA (9706250288); Jerald Horst, "Envision the Coast of 2050 at Forum," *Times-Picayune*, July 10, 1997, sec. D, NB LA (9707090272); Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority, *Coast 2050*, 8-10.
[94] Louisiana Coastal Wetlands Conservation and Restoration Task Force, "One Vision, One Voice: Coastal Louisianans Support Coast 2050," *WaterMarks*, Spring 1999, 3-4, https://lacoast.gov/new/Data/WaterMarks/watermarks_1999-spring.pdf.

the *Coast 2050* report, the task force asserted that the restoration plan must cater to multiple-use management.[95]

Coast 2050 built on previous plans and decades of research but also included elements that had been poorly incorporated or neglected altogether. There was still an emphasis on balancing wetlands protection with economic development, as well as the recognition that there were multiple interests invested in using Louisiana's coast for a variety of purposes.[96] Agencies agreed that there was no way to return Louisiana's coast back to the way it had been prior to the 1930s, but there was a consensus that a smaller, sustainable wetlands ecosystem was possible. The state's 1994 environmental blueprint had stated that there was no going back, and the *Coast 2050* task force concurred.[97] Restoration efforts under *Coast 2050* would work with natural processes and emphasize returning functionality along with productivity. That meant projects should encourage accumulation of sediments, a balanced gradient from salt to fresh water, and links between the various areas in the coastal ecosystem to promote biological diversity. The southern coast would be organized into four separate regions, and each region would be managed to address problems specific to that area. However, efforts in the individual management areas would also contribute to coast-wide restoration efforts. Projects would be selected to help rebuild the *coastal* wetlands, not just wetlands in localized spaces.[98]

The vision of *Coast 2050* echoed sentiments from the broader environmental movement of the twentieth century and several decades of recommendations for coastal restoration from

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[95] Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority, *Coast 2050*, 7-8.
[96] Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority, *Coast 2050*, 51; Mike Dunne, "Balance Sought in Louisiana's Coastal Use Plan," *Advocate*, September 14, 1998, sec. A (2771783).
[97] Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority, *Coast 2050*, 1-2; Gagliano, *An Environmental-Economic Blueprint*, 18.
[98] Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority, *Coast 2050*, 79-81.

experts such as Sherwood Gagliano. Efficient use of resources, ensuring that resources were available for future generations, and managing resources with policies that regulated use and minimized damage were central to *Coast 2050*, but those were not necessarily new principles. Rather, the "newness" of *Coast 2050* was that the plan outlined how to finally do what experts had been calling for since the mid-1970s – treat the coastal wetlands as a large system with multiple moving parts that required coordinated ecological and administrative management. One indication that government officials and concerned citizens had finally accepted that a broad plan and coast-wide management were necessary was the price tag of the *Coast 2050* initiative - $14 billion over thirty years.[99]

The official response to the *Coast 2050* report was largely positive in Louisiana. All twenty coastal parishes formally endorsed the plan, and Governor Mike Foster also voiced his support for the adoption of *Coast 2050* as a unified coastal management strategy.[100] There was also some tentative encouragement offered by the Clinton administration for *Coast 2050*. Interior Secretary Bruce Babbitt commended the state for its work and said that Louisiana's efforts were an important step in generating the same amount of national attention afforded to the Florida Everglades.[101] The Army Corps of Engineers also praised *Coast 2050* and suggested that the Water Resource Development Act could be a useful mechanism for approving large-scale projects such as sediment diversions or barrier island nourishment.[102] Environmental

[99] Ibid., 144.
[100] Sylvia Schon, "Coast 2050 Plan Nears Completion," *Daily Star* (Hammond, LA), September 4, 1998; Louisiana Coastal Wetlands Conservation and Restoration Task Force, "One Vision, One Voice," 3.
[101] Mark Schleifstein, "Babbitt Commends La. for Bringing Coastal Wetlands into the Limelight," *Times-Picayune*, July 22, 1999, sec. A, NB LA (9907210496).
[102] Mike Dunne, "Restoration Plan Would Cost $14 Billion over 30 Years," *Advocate*, November 9, 1999, sec. A, NB LA (9903076244).

organizations such as the Coalition to Restore Coastal Louisiana acknowledged their support for *Coast 2050* as well and saw the plan as a "road map" for the state's future.[103]

Yet, despite the acclaim, there was still the issue of who was going to pay the billions of dollars necessary to implement the coast-wide restoration and management plan envisioned by *Coast 2050*. While the Breaux Act was renewed in 1999 and Louisiana adjusted how the Wetlands Conservation and Restoration Trust Fund received oil and gas revenues, those two money sources were not going to be sufficient.[104] At $14 billion over thirty years, that equated to roughly $460 million per year. Funding from the Breaux Act and WCRTF would only cover around ten percent of the estimated costs. Governor Mike Foster argued that the nation should contribute significantly to coastal restoration efforts because Louisiana's wetlands had been "sacrificed" for the good of the country, but the CRCL saw that attitude as a mistake. The federal government had contributed billions of more dollars to wetlands restoration in California and Florida, but that was in part because each state had a fifty percent cost-share arrangement with the federal government.[105] Louisiana and the federal government were going to have to find new sources of funding to pay for a plan on the scale and scope of the one envisioned by *Coast 2050*.

Conclusion

At the beginning of the 1990s, there was reason to be optimistic about Louisiana's policies and planning to tackle coastal erosion. The state had established a regulatory framework

[103] Coalition to Restore Coastal Louisiana, *No Time to Lose: Facing the Future of Louisiana and the Crisis of Coastal Land Loss* (Baton Rouge, LA: Coalition to Restore Coastal Louisiana, 1999), 52, http://www.bcwaternews.com/Original_Content/2006/gulf/no_time_to_lose.pdf.
[104] Bruce Alpert and Bill Washington, "On the Hill: News from the Louisiana Delegation in the Nation's Capital," *Times-Picayune*, October 17, 1999, sec. A, NB LA (9910160533); Louisiana Coastal Wetlands Conservation and Restoration Task Force, "Governor Signs Funding Law," *WaterMarks*, Fall 1999, 8, https://lacoast.gov/new/Data/WaterMarks/watermarks_1999-fall.pdf.
[105] Mark Schleifstein, "Offshore Oil States Deserve Lion's Share, LA. Argues – Foster Says Wetlands Sacrificed to Fuel Nation," *Times-Picayune*, May 4, 1999, sec. A, NB LA (9905030176); Mike Dunne, "The Vanishing State – Problems Plague Efforts at Coastal Restoration in La.," *Advocate*, November 7, 1999, sec. K, NB LA (9903075935).

to minimize damage in the wetlands and had created a constitutionally protected trust fund to pay for coastal restoration projects. There was also an increase in the attention, funding, and assistance provided by the federal government to Louisiana to help the state deal with the loss of coastal wetlands. As the decade progressed, there were other positive steps in moving the state and national government toward policies that further decreased erosion rates, while increasing the protection for existing wetlands, land creation, and more coordinated management practices.

Yet for all the progress, there were still significant issues in implementing a coastal restoration plan that was equivalent to the scope of the problem facing Louisiana. The rates of loss were estimated at twenty-five to thirty-five square miles per year. Seventy percent of the state's population lived in the coastal zone, with 1.2 million people in the New Orleans metro area alone. Navigation channels, oil and gas infrastructure, and the levee system were all at risk if losses continued without substantial action, and the day-to-day risks did not factor in the consequences of a major hurricane hitting southern Louisiana.[106] The state had struggled to pay for its share of restoration projects and even when the legislature adjusted the funding mechanism for the wetlands trust fund, Louisiana was still dependent on high oil and gas prices to pay for its share of restoration. Further, there was no clear indication that the federal government was going to contribute billions of dollars to help implement *Coast 2050.* In the early 2000s, the George W. Bush administration instructed the Army Corps of Engineers to develop a plan that cost much less than $14 billion estimated by *Coast 2050*.[107] Not until one of the costliest hurricanes in the nation's history led to the flooding of a major American city would

[106] Coalition to Restore Coastal Louisiana, *No Time to Lose*, 1; 38-39.
[107] Committee on the Restoration and Protection of Coastal Louisiana (National Resource Council), *Drawing Louisiana's New Map: Addressing Land Loss in Coastal Louisiana* (Washington, D.C.: National Academies Press, 2006), 22, http://www.nap.edu/catalog/11476/drawing-louisianas-new-map-addressing-land-loss-in-coastal-louisiana.

the state and nation commit to supporting a plan that was on par with the scale of the crisis on Louisiana's coast.

CHAPTER 6: POLICY DEVELOPMENTS IN THE 2000s

"A Self-Inflicted Wound"

In December 2000, a jury in Plaquemines Parish awarded five oyster harvesters $48 million in a lawsuit against the state of Louisiana. According to the plaintiffs, the Caernarvon Freshwater Diversion had destroyed over three thousand acres of oyster beds in Breton Sound and "rendered their leases worthless."[1] The state and federal government had built the diversion to address the loss of wetlands in southern Louisiana, and the structure had been in operation since 1991. If the settlement terms for the case were extended to other oystermen whose leases had allegedly been damaged by the diversion, the state could be forced to pay over $1 billion. Officials were alarmed by such a prospect and protested the price-per-acre formula used to determine the award amounts. Secretary Jack Caldwell of the Department of Natural Resources stated "it's unrealistic to expect the taxpayers of Louisiana to pay $21,345 for every acre of oyster leases." He also asserted that the verdict threatened the opening of another freshwater diversion located in St. Charles Parish. The state's attorney for *Avenal, et al. v. the State of Louisiana* criticized the judgement as well and argued the entire future of coastal restoration was in jeopardy if the decision was upheld upon appeal. "Basically, the state can't afford to go forward with coastal restoration if this is what's going to happen."[2]

As the case moved through the court system over the next four years, uncertainty about the verdict and the state's anti-erosion programs lingered. During that time, at least a dozen coastal restoration projects were put on hold, and the Department of Wildlife and Fisheries

[1] Karen Turni, "Oyster Fishers Nab Victory – State Stands to Lose $700 Million in Suit," *Times-Picayune*, December 16, 2000, NB LA (365926640).
[2] Brian Thevenot, "Impact of Oyster Ruling Weighed – Big Judgement Called Threat to Diversion," *Times-Picayune*, December 26, 2000, NB LA (365925461); Cain Burdeau, "Agency: La. Spends $2.1 Million to Fight Oyster Suit," *Advocate*, July 20, 2005, sec. B, NB LA (0503541919).

issued a moratorium on new oyster leases.[3] Finally, in October 2004, Louisiana's Supreme Court reversed rulings by the lower courts and relieved the state of having to pay settlements to any oyster fishers whose leases might have been damaged by Caernarvon.[4] The decision was good news for coastal restoration, but the circumstances that had led to *Avenal* were partially the result of poor planning by the state government. The Department of Natural Resources had wanted to issue a moratorium on leases in Breton Sound, while the Department of Wildlife and Fisheries argued that the state should continue the leasing program. Despite warnings from the Army Corps of Engineers in the mid-1980s that the diversion could negatively impact oyster leases, officials in the DNR relented when the DWF agreed to insert indemnity clauses into new leases or lease renewals to protect the state against legal action.[5] Yet the "hold harmless" language failed to stop the lawsuit, and the Coalition to Restore Coastal Louisiana referred to *Avenal* as "a self-inflicted wound."[6]

The technicalities of the indemnity clauses mattered for the specifics of the case, but there was a deeper issue at work in *Avenal*. A lack of comprehensive planning for Louisiana's coast had contributed significantly to the broad circumstances of the lawsuit. Despite the Breaux Act and the widely praised *Coast 2050* initiative, insufficient management and problem resolution persisted. Indeed, three state agencies noted the weakness in the proposal when they published a white paper on oyster leasing in 2001. The report stated that "*Coast 2050* does

[3] Jeffrey Meitrodt and Aaron Kuriloff, "Murky Waters," *Times-Picayune*, May 25, 2003, NB LA, (419185808); Louisiana Legislative Auditor, "Louisiana Oyster Lease Practices: Louisiana Wildlife and Fisheries Commission," (Baton Rouge, LA, 2015), 8, https://www.lla.la.gov/reports_data/.
[4] Justice Jeffrey Victory, writing for the majority, Albert J. Avenal Jr., et al. v. State of Louisiana and the Department of Natural Resources, no. 03-C-3521 (La. SC, 2004): 35. http://www.lasc.org/opinions/2004/03c3521.opn.pdf
[5] Jeffrey Meitrodt and Aaron Kuriloff, "Grounds to sue," *Times-Picayune*, May 11, 2003, NB LA, (419160816). Robert Viguerie, "Public Trust Doctrine Affirmed," *National Wetlands Newsletter*, vol. 27, no. 4, July-August 2005, 6; Jeffrey Meitrodt and Aaron Kuriloff, "Law of the Sea," *Times-Picayune*, May 18, 2003, NB LA (419170025).
[6] Thevenot, "Impact of Oyster Ruling Weighed."

not…produce a picture of the future of the coast which is adequate for planning such activities as oyster production."[7] Even the most comprehensive management proposal put forth by public officials still failed to consider how restoration projects could affect and be affected by the multiple users of the coast. The public and government officials acknowledged the importance of the wetlands to Louisiana's socio-economic development, but that recognition had not yet translated into a well-funded, comprehensive plan of action. The "self-inflicted wound" of *Avenal* demonstrated the weaknesses in Louisiana's coastal management, but another more devastating event would confront the state and the nation when Hurricane Katrina made landfall in 2005. As vital as wetlands were for buffering storm surge and wave action, incorporating hurricane protection planning into wetlands policy and coastal conservation had not happened. This chapter traces major policy decisions that took place during the first decade of the twenty-first century in regard to managing the state's coast and wetlands and also examines the significance of the 2005 hurricane season. Hurricanes Katrina and Rita changed the calculus in southern Louisiana, but long-standing issues of funding, administration, and conflicting interests in how to use the lands and waters of the state continued to challenge policymaking and policy implementation.

Funding Issues Continue

While the Breaux Act had produced tangible benefits for the state's wetlands, there was a growing consensus among Louisiana officials that the program was simply too small to properly address the large-scale problem of wetlands losses.[8] Bigger projects that could have wider impacts were going to need more funding, and politicians from the "Pelican State" sought

[7] Louisiana Department of Natural Resources, Louisiana Department of Wildlife and Fisheries, and the Governor's Office of Coastal Affairs, "Oyster White Paper," (Baton Rouge, LA, 2001), 2-3.
[8] Mike Dunne, "State Vows New Focus in Coastal Projects," *Advocate*, January 5, 2000, sec. B, NB LA (0003088012).

additional sources of revenues. Starting in the late 1990s, officials began advocating for the passage of a law that would give Louisiana a share of money generated from the offshore oil drilling located in federal waters. Governor Mike Foster declared that the state was entitled to some of the revenues generated by Outer Continental Shelf production because of the impact that it had on the state's wetlands and infrastructure. "Our state has borne the brunt of 90 percent of the federal offshore mineral development, and it is time to provide relief."[9]

Senator Mary Landrieu concurred with those sentiments and took the lead among the state's congressional delegates in advocating for passage of the Conservation and Reinvestment Act (CARA) in 1999. Under the legislation supported by Landrieu, half of all OCS income would remain with the federal government. The other half would be divided among coastal states, the Land and Water Conservation Fund, and programs dedicated to wildlife education or conservation. Support for CARA seemed robust, especially in the House of Representatives. Three hundred and fifteen members of the House had signed on as co-sponsors for the bill, and President Bill Clinton indicated he favored some form of revenue sharing with coastal states. Yet, the future of CARA was less certain in the Senate. Property-rights proponents feared increasing LWCF funding could set off a land-grab in the western U.S., and environmental groups lamented the potential for states to support an expansion of drilling in order to boost the amount of revenues they received.[10]

Backers of CARA made changes to the legislation in an effort to appease critics by adding provisions that limited incentives for increased drilling and also restricted the amount of

[9] Mike Dunne, "Foster Says It's Time La. Got Share of OCS Funds," *Advocate*, May 11, 1999, sec. B, NB LA (9903035255).
[10] Bruce Alpert, "Opposition Stalls Oil Revenue-sharing Bill – But La. Lawmakers Are Making Progress," *Times-Picayune*, August 8, 1999, sec. A, NB LA (9908070148); *Conservation and Reinvestment Act: Hearing on S. 25, S. 2123, S. 2181 Before the Committee on Environment and Public Works*, 106th Cong., 3 (2000) (statement of Louisiana Senator Mary Landrieu), https://www.gpo.gov/fdsys/pkg/CHRG-106shrg68424/pdf/CHRG-106shrg68424.pdf.

land that could be purchased through the LWCF.[11] Additionally, legislators included specific measures to ensure that OCS revenues would not be used for projects that contributed to further environmental damage in states such as Louisiana. Section 104 of the bill mandated that CARA revenues could only be spent on activities related to improving the quality of air, water, wetlands, estuaries, or other coastal resources, as well as activities authorized by the Coastal Zone Management Act of 1972 or Clean Water Act.[12] Spending on infrastructure was restricted, and states had to develop management plans for how they would distribute their funds. Environmental groups such as the Sierra Club dropped their objections to CARA due to the revisions, and over three hundred representatives voted for the bill in May 2000.[13]

When the Senate took up its version of CARA, there was hope among the proposal's proponents that the upper chamber would also vote in favor of passage. Senate Majority Leader Trent Lott of Mississippi announced his support for the bill in mid-May 2000, citing several of the reasons used by Louisiana's senators – offshore oil drilling had placed a strain on Gulf Coast states and the revenues from CARA could help pay for wetlands restoration projects. Senators from Alabama, California, Florida, and Louisiana joined Lott in praising the legislation as well.[14] Despite that backing, the act soon become tied up in procedural motions. Property-rights activists pressured their allies in the Senate to block the bill from making it to a vote on the floor.[15] Groups such as the American Land Rights Association charged that CARA was a "frontal assault on private property rights" and little more than "pork money for Louisiana and Alaska."[16]

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[11] Joan McKinney, "Coast-states Royalties Face Fray," *Advocate*, May 11, 2000, sec. A, NB LA (0003115443).
[12] Conservation and Reinvestment Act, H.R. 10, 106th Cong. (2000).
[13] Joan McKinney, "Coastal Restoration Act Still Uncertain," *Advocate*, May 14, 2000, sec. B, NB LA (0003116288); "Environmentalists Mostly Like CARA," *Advocate*, May 28, 2000, sec. B, NB LA (0003119453).
[14] Joan McKinney, "Senators Renew Push for CARA," *Advocate*, May 19, 2000, sec. A, NB LA (0003117286).
[15] Bruce Alpert, "Committee Passes Landrieu's Bill on Offshore Royalties," *Times-Picayune*, July 26, 2000, sec. A, NB LA (0007260012).
[16] *Conservation and Reinvestment Act: Hearing on S. 25, S. 2123, S. 2181,* at 121-122, (letter from Executive Director of American Land Rights Association, Chuck Cushman)

Senators from several western states asserted that CARA would allow the federal government to increase its ownership of land or force new regulations on private owners. "The greatest American legacy is the right to own private property," claimed Montana Senator Conrad Burns. "The general concept of CARA is wrong…The federal government now controls one-third of the land of this nation…Government ownership of land has not been that successful."[17]

Despite the broad backing from Congress, the White House, and every governor in the country, support for CARA was not sufficient to overcome the objections of the property-rights activists. By October 2000, the act was essentially dead as opponents continued to use procedural methods to keep the Senate from voting on it.[18] One year later, Louisiana's congressional delegation tried again to get CARA passed, but their efforts fell short. Instead, Congress passed the Coastal Impact Assistance Program (CIAP) in October 2001. Nicknamed "CARA-lite," the bill granted a one-time appropriation of $150 million to be divided among seven states. Louisiana's share of the money was about $28 million dollars and was to be used for "coastal impact projects."[19] Louisiana officials were disappointed by the small scale of CIAP, and Landrieu continued to push for legislation that would authorize OCS revenue-sharing on a permanent basis. In 2003, she attached an amendment to an energy bill for that purpose, and in 2004, she introduced the American Outdoors Act. The proposed law would have provided $1.2 billion in funding to coastal states for the purposes of coastal restoration.[20]

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[17] Joan McKinney, "Revenue Bill in Tough Fight," *Advocate*, July 20, 2000, sec. A, NB LA (0003129718).
[18] Bruce Alpert, "La. Sees Big Coastal Bill Washed Away – CARA Fails in Senate Despite Wide Support," *Times-Picayune*, October 8, 2000, NB LA (338833061**).**
[19] Joan McKinney, "Coastal Funding Reduced," *Advocate*, October 28, 2000, sec. B, NB LA (0003151605).
[20] Bruce Alpert, "Federal Conservation Programs Likely to Suffer More Cutbacks – Coastal Restoration Projects in La. at Risk," *Times-Picayune*, July 10, 2003, NB LA (419263021); "Landrieu Offers Old Plan with New Name in Fight Against Coastal Erosion," *American Press,* (Lake Charles, LA), June 25, 2004, sec. A, NB LA (119C5642F0C91320).

Each of those efforts failed, though Senator Breaux managed to rally support in Congress for a renewal of the CWPPRA.[21] However, securing a permanent funding source aside from the Breaux Act proved to be out of reach for Louisiana legislators. Even support from the Army Corps of Engineers for an ecosystem restoration plan did little to move congressional members. After the introduction of *Coast 2050* in 1998, the Corps issued a reconnaissance report on the proposal under the auspices of the Louisiana Coastal Area (LCA) program. The Corps' analysis of *Coast 2050* acknowledged that the limited scale of CWPPRA projects was insufficient and that more significant investments would be beneficial.[22] The Corps concluded that the approach taken by *Coast 2050* was more comprehensive and better suited for preserving and restoring Louisiana's wetlands over the long run. Agency officials stated that additional studies would need to be conducted to determine specifics, but the initial assessment of *Coast 2050* was that the plan was in-line with federal priorities for coastal restoration in Louisiana.[23]

Drawing upon that supposition, the Corps began conducting public meetings in 2000 to gather input about which large-scale projects the agency should consider evaluating. The Corps was looking into three possibilities that involved barrier island restoration, marsh creation, and a Mississippi River diversion.[24] Corps officials were not necessarily proposing the immediate implementation of those projects, but rather, the agency was looking into a variety of alternatives that might abate coastal erosion. Agency representatives imagined that the Corps would conduct

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[21] Bruce Alpert, "Breaux Revives Wetlands Program – Clinton Expected to Sign Bill into Law," *Times-Picayune*, October 20, 2000, NB LA (365945896).
[22] U.S. Army Corps of Engineers, *Section 905 (B) (WRDA 86) Analysis, Louisiana Coastal Area – Louisiana, Ecosystem Restoration* (New Orleans, LA: U.S. Army Corps of Engineers, New Orleans District, 1999), 13. Congress authorized the Corps to study the "advisability of improvements or modifications to existing improvements in the coastal area of Louisiana" in 1967. The Corps issued multiple reports and studies over several decades under the authorization of the 1967 resolutions, including a report in 1989 about improving hurricane protection (1).
[23] U.S. Army Corps of Engineers, *Section 905 (B) (WRDA 86) Analysis*, 11; 16-18.
[24] Mike Dunne, "U.S. Army Corps of Engineers Gets Feasibility Input," *Advocate*, June 11, 2000, sec. B, NB LA (0003122252).

a series of "feasibility studies" over the next decade to determine what was workable and would tailor those studies at projects that fit into the *Coast 2050* vision. By 2002, the Corps realized that studying individual projects was not the best option, and officials began pursuing their own plans for a comprehensive coastal restoration plan – one that would still complement the state's vision and could serve as a blueprint for future activities.[25]

Public meetings continued in 2003, and a project manager for the Corps said that the agency and the Louisiana Department of Natural Resources hoped to submit a plan for congressional approval in a water resources development bill the following year.[26] A preliminary draft of the restoration plan was supposed to be made available to the public in October 2003 and included seven sets of projects that could be implemented to combat coastal erosion. However, the federal Office of Management and Budget (OMB) and the president's Council on Environmental Quality asked the Corps to postpone release of the plan. Officials were concerned the high costs of the proposal, which were estimated to be somewhere between $4.3 and $14.7 billion. The OMB also questioned whether the suggested projects would be effective in addressing coastal erosion problems.[27]

By spring 2004, the Bush administration instructed the Corps to scale down the LCA restoration proposal from a thirty-year timeframe to one that could be enacted over ten years. The OMB also told the Corps that the cost of the proposal had to be substantially reduced. In response, USACE officials drafted a "near-term plan" that consisted of five projects, which

[25] U.S. Army Corps of Engineers, *Louisiana Coastal Area, Louisiana: Ecosystem Restoration Study*, vol. I (New Orleans, LA: U.S. Army Corps of Engineers, New Orleans District, 2004), MR 1-2 – MR 1-3, http://www.mvn.usace.army.mil/Portals/56/docs/LCA/Main%20Report.pdf?ver=2016-07-01-095948-907; Mike Dunne, "Meetings to be Held on Wetlands-restoration Program Plan," *Advocate*, April 14, 2002, sec. B, NB LA (0203261648).
[26] Amy Wold, "Coastal Restoration Officials Seek Public Input on Project," *Advocate*, February 3, 2003, sec. B, NB LA (0303320986).
[27] Mark Schleifstein, "Coastal Restoration Panel Wants Bush to Release Study – Danger for La. in Continued Delay," *Times-Picayune*, December 20, 2003, NB LA (419567340).

would cost no more than $2 billion and be implemented in areas with the most urgent needs.[28] In summer 2004, the Bush administration announced tentative approval for the LCA near-term plan, but officials had already informed Senators Breaux and Landrieu that the proposal would be competing with other projects for federal dollars.[29]

Louisiana's politicians believed the LCA near-term plan was not substantial enough and should only be the beginning of a state-federal restoration effort. The Chief of Engineers for the New Orleans District, Colonel Peter Rowan, acknowledged that perspective in summer 2004 when he stated, "Clearly, we have heard the state in their message that they view this as the first installment…the key is to start the process, to begin to put work on the ground that moves critical areas towards restoration."[30] However, congressional approval of the LCA proposals and, more importantly, appropriations to fund the LCA plan remained elusive. Congress stripped funding for coastal erosion from an energy bill and declined to pass a water resources bill, which meant the only major source of restoration funding going to Louisiana was still coming from the Breaux Act.[31]

Certainly the lack of funding was a major issue in implementing coastal restoration projects, but the LCA near-term plan had other weaknesses. The projects did not address erosion in the Chenier Plain; most of the work would be done around the New Orleans area.[32] Further,

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[28] *Louisiana Coastal Area – Addressing Decades of Coastal Erosion*: *Hearing before the Subcommittee on Water Resources and Environment*, 108th Cong., 15-16 (2004) (statement of Louisiana Department of Natural Resources Secretary Scott Angelle); U.S. Army Corps of Engineers, *Louisiana Coastal Area*, vol. I, MR 4-6; Mark Schleifstein, "Corps Seeks Help to Scale down Plan – Public Hearings Set on Coastal Restoration," *Times-Picayune*, April 10, 2004, NB LA (419771650).

[29] Mark Schleifstein, "Coastal Aid Pitch to Feds Falls Flat – White House Officials Balk at Pledging Cash," *Times-Picayune*, May 1, 2004, NB LA (419808328); Bruce Alpert and Mark Schleifstein, "Bush Backs Plan to Restore La. Coast – Some Demos Blast Timing of Decision," *Times-Picayune*, July 7, 2004, NB LA (419924398).

[30] Mark Schleifstein, "Steps toward Restoration – President Bush has Pledged to Support a nearly $2 Billion Plan to Restore Louisiana's Coast," *Times-Picayune*, July 18, 2004, NB LA (419943361).

[31] Michelle Millhollon, "Coastal Deal Signed – Blanco, Corps Agree on Joint Strategy," *Advocate*, February 1, 2005, NB LA (0503494373).

[32] Mark Schleifstein, "Louisiana Officials Alarmed by Coastal Erosion – It's Later than Feds Think, They Warn," *Times-Picayune*, January 26, 2005, NB LA (420294111).

when the National Research Council (NRC) reviewed the LCA near-term plan, the committee in charge of the evaluation process found that the proposals laid out were still "too modest an effort" – even as the foundation for long-term restoration.[33] In particular, suggestions for stabilizing the shoreline of the Mississippi River Gulf Outlet (MRGO) were considered too poorly planned to be a worthwhile pursuit. The NRC questioned the Corps' intentions to repair the outlet instead of closing it. Both the Louisiana legislature and the authors of *Coast 2050* had called for decommissioning the shipping corridor because of the damage MRGO had done to the wetlands in St. Bernard Parish.[34]

Other critiques included a lack of zoning and land-use strategies to complement coastal restoration and the absence of a "new map" to guide overall planning. The NRC maintained that state and federal officials needed to decide which areas could be saved and which would have to be abandoned to the Gulf of Mexico; there could be no restoration plan that brought back the Louisiana coast to early twentieth century conditions.[35] Important decisions about land and water use needed to be made and clearly communicated to the public. Though the LCA near-term plan was important in that the Corps seemed to understand the need for federally-backed restoration efforts, recognition alone was not going to save Louisiana's wetlands. The stunted development of the LCA near-term plan and ambivalent commitments from Congress and the White House for adequate funding were simply more of the same for coastal restoration: a lack of action on par with the size of the problem.[36]

[33] Committee on the Restoration and Protection of Coastal Louisiana, (National Research Council), *Drawing Louisiana's New Map*, 2; 85.
[34] Ibid., 118
[35] Ibid., 162-165.
[36] The near-term LCA was finally authorized when Congress passed the Water Resources Development Act of 2007. Authorization for the near-term plan is in Title VII of the law.

Some progress was made in funding Louisiana's coastal restoration efforts by early August 2005 when Congress approved the passage of another Coastal Impact Assistance Plan for states that contributed to oil development in the Outer Continental Shelf. Nearly $1 billion in expected revenues would be split among six states, with Louisiana getting a share of $540 million. The funds would be distributed starting in 2007 and could only be used for projects related to coastal erosion.[37] Attached to the Energy Security Act of 2005, the new CIAP required that states use revenues for "projects or activities" related to coastal restoration, wildlife protection, the development of conservation management plans, or paying for the costs associated with implementing any of those programs. Further, the legislation limited the amount of funding that could be used for infrastructure repairs and administrative costs to no more than twenty-three percent per year.[38]

Officials in Louisiana had mixed reactions to the new CIAP funds. Any money that could be used for coastal restoration was welcomed, but Gregory Stone from the LSU Coastal Studies Institute commented, "The $540 million doesn't go very far given the magnitude of the problem. You take what you can get, but if it's not sustained, it's a problem. Chronic problems need sustained funding."[39] Securing the CIAP funds was a victory, given the resistance to committing to a large offshore revenue-sharing scheme just five years earlier. Still, the CIAP monies were slated to last only for a few years, and Louisiana's coastal restoration efforts needed the "sustained funding" mentioned by Stone. Based on the length of time that had gone by between the Breaux Act's passage and the CIAP in 2005, Louisianans had reason to believe securing a

[37] Bruce Alpert, "Congress Close to Allocating Money for Coast – La. Senators Work to Ensure $540 million Budget Isn't Cut," *Times-Picayune*, July 25, 2005, NB LA (420675724); Pam Radtke Russel, "State Will Receive Millions in Oil and Gas Revenues – Hurricanes Reduce Amount Allocated for Coastal Restoration," *Times-Picayune*, April 17, 2007, NB LA (422350672).
[38] Energy Security Act, Pub. L. 109-58 (2005).
[39] Gerard Shields, "If Only We Can Keep Funds from Eroding," *Advocate*, July 31, 2005, sec. B, NB LA (0503544714).

consistent source of revenues could take many more years. However, just a few weeks after Congress passed the Energy Security Act of 2005, one of the most devastating hurricanes in the nation's history ravaged southeastern Louisiana. A few weeks later, another powerful hurricane hit the southwestern portion of the state. Hurricanes Katrina and Rita set a chain of events into motion that would have a profound impact on coastal restoration in Louisiana.

"Devastating Damage Expected"[40]

On August 23, 2005, a tropical depression developed southeast of the Bahamas. Within two days, the cyclone became a category one hurricane before making landfall in southern Florida. Katrina weakened slightly onshore, but once the storm moved into the Gulf of Mexico, it quickly regained hurricane status. Between August 26-28, Katrina reached its maximum strength as a category five hurricane while located 170 miles southeast of the mouth of the Mississippi River. According to the National Hurricane Center, Katrina was an "extremely intense and exceptionally large" storm. Winds with hurricane strength extended ninety miles from the eye, and winds with tropical storm strength went up to two hundred miles from the center. As the system moved closer to land, its wind strength decreased though the size of the hurricane remained "exceptionally large." When Katrina's eyewall made landfall close the Louisiana-Mississippi border on the morning of August 29, the hurricane ranked as a category three.[41]

The storm's strongest winds were measured in Popularville, Mississippi at 135 miles per hour. Instruments on Grand Isle, Louisiana recorded sustained winds of 87 miles per hour. Rain gauges in Big Branch, Louisiana recorded 14.92 inches of precipitation, while instruments in

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[40] David L. Johnson, "Urgent Weather Message, 10:11 AM, August 28, 2005," in *Service Assessment: Hurricane Katrina, August 23-31, 2005* (Silver Spring, MD: National Weather Service, 2006), Figure 10, 18, http://www.nws.noaa.gov/om/assessments/pdfs/Katrina.pdf

[41] Richard Knabb, Jamie Rhome, and Daniel Brown, *Tropical Cyclone Report: Hurricane Katrina, August 23-30, 2005* (Miami, FL: National Hurricane Center, 2005; Updated in 2006 and 2011), 1-3, http://www.nhc.noaa.gov/data/tcr/AL122005_Katrina.pdf; Johnson, *Service Assessment: Hurricane Katrina*, 7.

Perrine, Florida recorded 16.33 inches of rain. A total of sixty-two tornadoes from Louisiana to Pennsylvania were associated with Katrina.[42] Perhaps the most damaging aspect of the storm came from the surges generated by the enormous size of the system and the fact that landfall occurred at high tide.[43] Katrina sent surges up to six miles inland in some areas of Mississippi, with the greatest heights reaching anywhere from twenty-four to twenty-eight feet. In Louisiana, surges in St. Tammany, Plaquemines, Orleans, and St. Bernard Parishes ranged from ten to nineteen feet.[44]

New Orleans, which had been under a mandatory evacuation order for the storm, seemingly dodged the worst of the Katrina's wrath. The city experienced winds the equivalent of a category one or category two hurricane.[45] However, as the storm passed out of the New Orleans vicinity, residents who remained in the area became aware of a serious problem. Flood waters were flowing into neighborhood streets, much of which resulted from catastrophic failures in the levee system that was designed to protect the city. By September 1, approximately eighty percent of the New Orleans metropolitan area was under water, with about two-thirds of the water having come from breaches in the levee system.[46] In total, about fifty ruptures occurred across one hundred and sixty-nine miles of the New Orleans hurricane protection system, including breaks in both levees and floodwalls.[47] Removing all of the flood waters from the city took forty-three days.[48]

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[42] Johnson, *Service Assessment: Hurricane Katrina*, 7.
[43] Hurricane Katrina External Review Panel, *The New Orleans Hurricane Protection System: What Went Wrong and Why* (Reston, VA: American Society of Civil Engineers, 2007), 14, http://ascelibrary.org/doi/pdf/10.1061/9780784408933.
[44] Knabb, Rhome, and Brown, *Tropical Cyclone Report: Hurricane Katrina*, 8-9.
[45] Ibid., 8.
[46] Hurricane Katrina External Review Panel, *The New Orleans Hurricane Protection System*, 26-31.
[47] Ibid., 25.
[48] Knabb, Rhome, and Brown, *Tropical Cyclone Report: Hurricane Katrina*, 9.

The process of draining water from New Orleans became complicated by the landfall of Hurricane Rita on September 24, 2005. Rita came onshore near the Louisiana-Texas border, packing winds of 120 miles per hour and carried a storm surge that reached up to twenty feet in some places. Though the three parishes most directly affected by Rita had smaller populations than the New Orleans metro area, the region contained a significant portion of the state's oil and gas infrastructure. Two refineries, twenty-two petrochemical plants, and one of the nation's busiest deep-water ports were located near the city of Lake Charles.[49] In comparison to Katrina's death toll of approximately 1,500 people in Louisiana, only one person was thought to have died as a result of Hurricane Rita. Insured losses from Rita were estimated to be around $10 billion, while the costs for Katrina were over ten times as much.[50]

Both storms caused significant amounts of damage, and Katrina was particularly devastating for the numbers of lives that were lost. However, hurricanes striking the Gulf Coast was not unusual, and New Orleans in particular had long been susceptible to storms. According to the National Weather Service, "the mean return period for a major hurricane in the New Orleans area is nineteen years, one of the most frequent along the U.S. Gulf and Atlantic coastline."[51] The state of Louisiana evacuated about 1.5 million people before Katrina made landfall, but 150,000 to 200,000 residents remained in the New Orleans vicinity.[52] In the wake of

[49] Michael M. Kurth and Daryl V. Burckel, *The Rita Report: A Summary of the Social and Economic Impact and Recovery of Southwest Louisiana One Year after Hurricane Rita* (Baton Rouge, LA: Louisiana Recovery Authority, 2006), 1; 6-10, http://www.nola.com/katrina/pdf/091806_lra_ritareport.pdf.
[50] Kurth and Burckel, *The Rita* Report, 8; Knabb, Rhome, and Brown, *Tropical Cyclone Report: Hurricane Katrina*, 13. Getting a definitive total for the number of deaths related the storms is complicated – some deaths were included in the 1,577 from Louisiana that were probably not directly related to the storm but took place around the same time. Damage estimates were arrived by doubling the number of insured claims to get an idea of how many uninsured claims there were.
[51] Johnson, *Service Assessment: Hurricane Katrina*, 16.
[52] Lynn Goldman and Christine Coussens, *Environmental Public Health Impacts of Disaster: Hurricane Katrina, Workshop Summary* (Washington, D.C.: National Academies Press, 2007), 16, http://www.nap.edu/download/11840#.

the storm, those who were still in the area had to wait for days to be rescued off rooftops or moved from rapidly deteriorating conditions at the Superdome. As the flood waters rose, Hurricane Katrina became more of a human-made disaster than a natural one.[53]

In the months following the storm, numerous entities conducted multiple investigations about the disastrous response to Katrina. Those inquiries revealed a fatally flawed levee system and institutional failures at every level of government. Among the variety of issues identified by investigation teams, the importance of one specific matter became increasingly clear – the loss of coastal wetlands had contributed to the risks to life and property in southern Louisiana, especially when considering the impacts of storm surge. The loss of wetlands reduced a natural barrier that storms had to traverse before moving into populated areas, and the storms themselves had worsened the situation. Between Katrina and Rita, approximately one hundred and eighteen square miles of wetlands were destroyed.[54]

Shelter from the Storm

The relationship between hurricane protection and coastal restoration was not unknown in 2005, but neither the state nor the federal government had any specific policies in place to treat each as being related to the other. As coastal restoration in Louisiana became more popular during the 1980s, "officials recognized that wetland work and flood protection [were] related," but according to Secretary of Natural Resources, Scott Angelle, "we had a structure that treated them separately." Angelle, who served as the head of the DNR from 2004 to 2012, was referring to a change in the state's Constitution during the 1970s that had the effect of decentralizing flood

[53] Select Bipartisan Comm. to Investigate the Preparation for and Response to Hurricane Katrina, H.R. Rep. No. 109-377, *A Failure of Initiative: Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina* (Washington, D.C.: U.S. Government Printing Office, 2006), 1-7 https://www.gpo.gov/fdsys/pkg/CRPT-109hrpt377/pdf/CRPT-109hrpt377.pdf.
[54] Independent Levee Investigation Team, *Investigation of the Performance of the New Orleans Flood Protection System in Hurricane Katrina on August 29, 2005,* vol. 1 (Berkeley, CA: University of California at Berkeley, 2006), 2-8; 2-21 – 2-23, http://www.ce.berkeley.edu/projects/neworleans/report/VOL_1.pdf.

control efforts.[55] Yet the problem of organization was not limited to Louisiana. The primary agency responsible for building hurricane protection systems in the southeastern part of the state was the Army Corps of Engineers, but the federal government and local entities often needed to coordinate their activities with one another to complete projects. Poor communication and planning among the various agencies had stymied effective system-wide management for decades before Katrina made landfall, and the Corps' involvement in hurricane protection in southern Louisiana evolved over the course of multiple decades.

Even before the Corps' involvement in hurricane protection projects in southern Louisiana, the citizens of the state had extensive experience with tropical cyclones and were well aware of the damage that the storms could cause. Since 1759, one hundred and seventy-two hurricanes have struck southern Louisiana, and thirty-eight of those caused flooding in the New Orleans area. Hurricanes had the potential to cause greater losses of life and more damage to property as people began to move out from the core of the "Crescent City" in the early twentieth century. Two particularly powerful storms in 1915 and 1947 increased concerns about flooding, especially near Lake Pontchartrain. After the 1947 hurricane, the Army Corps of Engineers raised the height of levees along southern portions of the lake and extended them into Jefferson Parish. Less than twenty years later, Hurricane Betsy crossed Grand Isle with winds of 160 miles per hour and caused $1 billion in damages, while also killing over eighty people.[56]

After the destruction caused by Betsy, Congress directed $250 million toward strengthening the hurricane protection system around New Orleans.[57] Federal officials reasoned

[55] Amy Wold, "Scientist Pitches Flood Board – Too Many Groups, Interests Doomed Levees, Professor Says," *Advocate*, November 21, 2005, sec. B, NB LA (MERLIN_1255773).
[56] Independent Levee Investigation Team, *Investigation of the Performance of the New Orleans Flood Protection System*, 4-9 – 4-11.
[57] Ibid., 4-12.

that the city's large population and shipping infrastructure warranted public funding. The Flood Control Act of 1965 authorized the Lake Pontchartrain and Vicinity Hurricane Protection Project (LPVHPP) to better safeguard 502,000 acres of "developed and developable land" from "hurricane-induced flooding" in areas close to the tidal basin of the lake.[58] Within a decade, the costs for the project grew four times, though mostly due to inflation. Additionally, the schedule for completion had been extended from 1978 to 1991 because of engineering challenges. When the Corps constructed a floodwall or levee, the agency often had to wait several years for embankments to settle before adding new layers. Procuring rights-of-way also slowed construction; local entities were responsible for securing them and there were frequent objections by landowners that delayed acquisition.[59]

Finally, the issue of cost-sharing presented another potential challenge. The General Accounting Office (GAO) expressed concerns that local governments would be unable to pay the thirty percent of construction costs required by federal-state agreements.[60] When the GAO evaluated the Corps' performance on the LPVHPP in 1976, there was little indication that the USACE had considered the state's coastal wetlands as part of the hurricane protection system. In fact, one of the proposed projects – a levee in St. Charles Parish – was scrapped by the Corps because of objections from environmentalists. According to the GAO, "the justification (benefit)

[58] U.S. Comptroller General, *Report to the Congress: Cost, Schedule, and Performance Problems of the Lake Pontchartrain and Vicinity, Louisiana, Hurricane Protection Project* (Washington, D.C.: U.S. General Accounting Office, 1976), 8, http://archive.gao.gov/f0402/098185.pdf; U.S. Government Accountability Office, *Army Corps of Engineers Lake Pontchartrain and Vicinity Hurricane Protection Project: Statement of Anu Mittal Before the Subcommittee On Energy and Water Development* (Washington, D.C.: U.S. Government Accountability Office, 2005), 1, http://www.gao.gov/new.items/d051050t.pdf. The LPVHPP is one of three hurricane protection systems in southeastern Louisiana and includes areas in Orleans, Jefferson, St. Bernard, and St. Charles Parishes. The other two systems are the West Bank project and the New Orleans to Venice project (U.S. Army Corps of Engineers, *Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System: Draft Final Report of the Interagency Performance Evaluation Task* Force, 16).
[59] U.S. Comptroller General, *Report to the Congress: Cost, Schedule, and Performance Problems*, 8; 15-16.
[60] Ibid., 14.

for this feature was almost exclusively land enhancement, which would convert about 25,000 acres of open aquatic marsh to urbanization for long-term human occupation."[61]

By the early 1980s, ongoing technical and political delays threatened to push the completion date for the LPVHPP to 2008. The Corps' original plan to construct barrier features to block storm surges from entering Lake Pontchartrain had been hampered due to environmental objections and issues with securing rights-of-way. Instead, the Corps intended to pursue a plan that would allow storm surges to enter Lake Pontchartrain but then contain the water with levees and floodwalls. However, before fully implementing the "high-level plan," officials in the Corps said several studies needed to be conducted to determine the costs and potential environmental impacts. Tension between local and federal officials further contributed to the delay because they could not agree on the decisions regarding the floodwalls for the three main drainage canals in New Orleans. The Corps believed the height of the floodwalls was insufficient to protect against storm surge, and the agency also maintained that the pumping stations which drained water into Lake Pontchartrain would be inadequate against hurricane-induced flooding. To achieve the project's stated level of protection for the city, state and federal officials would have to negotiate a mutual agreement.[62]

The GAO criticized the Corps for not including the cost estimates for the canal improvements in budget requests to Congress, but the agency said that reliable financial evaluations could not be made until plans were fully settled. Parish officials complained that the Corps had not made the LPVHPP a priority, but the GAO still questioned whether local

[61] Ibid., 21.
[62] U.S. General Accounting Office, *Report to the Secretary of the Army: Improved Planning Needed by the Corps of Engineers to Resolve Environmental, Technical, and Financial Issues on the Lake Pontchartrain Hurricane Protection Project* (Gaithersburg, MD: U.S. General Accounting Office, 1982), 1-5, http://www.gao.gov/assets/140/138422.pdf.

jurisdictions could pay for a project that kept ballooning in expenses. In 1982, there were some estimates that put construction totals at $924 million, and the non-federal share of that would be thirty percent.[63] Even with the growth in costs, the Corps began to pursue the "high level plan" in the mid-1980s because it was the most economically viable by that time. Construction continued for several more decades, and when Hurricane Katrina struck in 2005, about one hundred and twenty-five miles of the LPVHPP levees had been built. Completion rates for the entire project varied, but anywhere from sixty to ninety percent of the planned structures had been finished.[64]

"I Don't Think Anyone Anticipated the Breach of the Levees."[65]

Investigations about what went wrong during and after the hurricane focused on two broad areas: storm preparation and response by local, state, and federal agencies and the hurricane protection system around New Orleans. Reports compiled by Congress, the Army Corps of Engineers, the American Society of Civil Engineers, and the National Science Foundation found that there were long-standing, systemic issues within government agencies regarding communication, leadership, organization, staffing, and planning. There were also fundamental flaws in the hurricane protection system, including levee designs, construction, and maintenance. Institutional weaknesses contributed to the problems with the protection system.[66]

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[63] Ibid., 5-7.

[64] U.S. Government Accountability Office, *Army Corps of Engineers Lake Pontchartrain and Vicinity Hurricane Protection Project: Statement of Anu Mittal*, 7.

[65] From an interview conducted by Diane Sawyer with President George W. Bush on *Good Morning America*, September 1, 2005.

[66] A full examination of the institutional problems that contributed to the poor preparation and response to Hurricane Katrina is outside the scope of this study, but the executive summary in the U.S. Senate's report, *Hurricane Katrina: A Nation Still Unprepared*, gives a good overview. Issues included chronic staffing and funding problems at FEMA and the Louisiana Office of Homeland Security and Emergency Preparedness, poor communication among all agencies before, during, and after the storm, insufficient inspection routines for the levees, and inadequate training for how to activate the resources necessary for responding to a national emergency. For details about engineering problems regarding the levees, the American Society of Civil Engineers provides an overview in Chapter 7 of *The New Orleans Hurricane Protection System: What Went Wrong and Why*. Issues included overestimating the strength of soil foundations, ineffective pumping stations, water seepage, subsurface erosion, and no means for providing a "second line of defense" in the event of the primary levees failing.

When President Bush told Diane Sawyer in an interview on September 1, 2005, that no one had anticipated the breach of the levees, he was partially correct – no one had anticipated potential failures because "none of the relevant government agencies had a plan for responding to a levee breach."[67]

However, the lack of planning for levee failures did not stem from a lack of knowledge. There had been concerns about the performance of the LPVHPP for decades.[68] In 1981, a consulting firm informed officials that the 17th Street Canal "would fail in high water" if the Corps did not raise the levees beyond the proposed heights. One year later, the same consultants stated that "computations indicate the possibility of a blow-out during extreme high water in the [17th Street] canal." In 1988, the Corps issued a report that showed a field test meant to assess the strength of soil conditions similar to those in New Orleans had resulted in failure of the floodwall when water levels reached eight feet. Additionally, throughout the late 1980s and early 1990s, a number of "design memorandums" were issued by the Corps of Engineers that expressed continuing concerns about soil stability. Yet little appeared to be done. In 1998, a contractor hired to do construction work on the 17th Street Canal complained to the Corps that the company's activities had been significantly complicated by "a lack of structural integrity" and "the weakness of soils." The Corps review board for contracts rejected the company's assertions as having no basis.[69]

Flooding from Hurricane Georges in New Orleans in 1998 prompted the state of Louisiana and FEMA to enter discussions about developing a master response plan for a major

[67] Comm. on Homeland Security and Governmental Affairs, S. Rep. 109-322, *Hurricane Katrina: A Nation Still Unprepared* (Washington, D.C.: U.S. Governing Printing Office, 2006), 15, https://www.congress.gov/109/crpt/srpt322/CRPT-109srpt322.pdf.
[68] Independent Levee Investigation Team, *Investigation of the Performance of the New Orleans Flood Protection System*, 12-7 -12-8.
[69] Ibid., F-3 – F-6.

hurricane. Studies and tentative planning continued through 2003, and in 2004, fifty agencies assembled in Baton Rouge to conduct a series of workshops over the course of about a week. The "Hurricane Pam" exercise envisioned a storm with 120 mile-per-hour winds that dropped twenty inches of rain in the New Orleans area. Planners assumed up to one million people would need to be evacuated, many of them without access to transportation. One official stated even if all agencies performed according to plan, "residents need to know they'll be on their own for several days in a situation like this."[70] Other conditions of "Hurricane Pam" projected thirty million cubic yards of debris and the need for one thousand shelters to be open for at least one hundred days during recovery operations.[71] Curiously, the training exercise did not consider a scenario in which the levees breached.[72]

The Army Corps of Engineers did not account for the possibility of levee failures either. In its assessment of the hurricane protection system, a special committee for the American Society for Civil Engineers (ASCE) noted that all major systems should include a "margin of error" in design plans. The organization stated that the LPVHPP plans essentially ignored the possibility of failure when designing levees and floodwalls. Nearly every part of the protection system had to perform perfectly at all times in order to function properly. Perhaps an even more fundamental problem was that the "system" was a "system" in name only. The ASCE committee noted that the project had been constructed over the course of forty years, experienced several planning revisions, and was built in a piecemeal fashion with differing design specifications for

[70] "Exercise Simulate Severe Hurricane – Officials Prepare for Major Storm," *Advocate*, July 25, 2004, NB LA (0403447163).
[71] Comm. on Homeland Security and Governmental Affairs, S. Rep. 109-322, *Hurricane Katrina: A Nation Still Unprepared*, 109; Mark Schleifstein, "In Case of Emergency – Officials Hope Eight Days of Intense Training for a Catastrophic Hurricane Will Aid Recovery Efforts if the Real Thing Ever Hits," *Times-Picayune*, July 20, 2004, NB LA (419946092).
[72] Innovative Emergency Management, Inc., *Southeast Louisiana Catastrophic Hurricane Plan* (Baton Rouge, LA: IEM, Inc., 2005), 5, http://online.wsj.com/public/resources/documents/hurplan0918.pdf.

various structural parts. Incorrect data contributed to flawed results as well, particularly when considering the issue of subsidence. Land sinking over time was not fully accounted for by the Corps, and in some cases, levee walls were three feet below what they were supposed to be. Lines of authority were unclear, and there was no system-wide oversight in place to ensure cooperation among the various entities responsible for building and maintaining the levees.[73] Though officials did not anticipate the failure of the levees in Hurricane Katrina, there was ample evidence that they should have planned for potential breaches.

There were also some warnings that coastal erosion could impact hurricane protection structures along the coast. In 2002, John McQuaid and Mark Schleifstein published a special report in the *Times-Picayune* that laid out a case for why the city faced significant risks from a hurricane. In the "Washing Away" series, the two journalists detailed how flood control measures, levee construction, and oil and gas infrastructure had exacerbated the natural subsidence of southeastern Louisiana. Flooding from weather events such as hurricanes would only grow worse due to the combination of sinking land and rising sea levels. Further, the loss of wetlands amplified flooding in urban and non-urban areas because there were fewer marshes to slow wind and wave action as storms moved onshore. An official for the South Lafourche Levee District commented, "There's no doubt about it. The biggest factor in hurricane risk is land loss. The Gulf of Mexico is, in effect, probably twenty miles closer to us than it was in 1965 when Hurricane Betsy hit."[74]

The Army Corps of Engineers maintained that "chance of the New Orleans-area levees being overtopped [was] remote," but the assertion was based on modeling data that had been assembled forty years earlier. Agency officials indicated they intended to do more studies, based

[73] Hurricane Katrina External Review Panel, *The New Orleans Hurricane Protection System*, 50; 63-68.
[74] John McQuaid and Mark Schleifstein, "In Harm's Way," *Times-Picayune*, June 23, 2002, NB LA (392835678).

on newer information and computer models. Suggestions for remedies to the vulnerability of New Orleans included "higher levees, a massive coastal-restoration program, and even a huge wall" across the Crescent City.[75] That same year, an editorial in the *Times-Picayune* noted "that the elaborate levee-water control projects built…to help keep water at bay have contributed to the erosion of the protective buffer of wetlands provided by nature."[76]

Despite the lack of connectivity in official policymaking, coastal restoration and hurricane protection shared a number of similarities that speak to some of the broader problems in managing Louisiana's coast. In both cases, state and federal officials cobbled together different projects to protect human lives, private property, and public infrastructure in piecemeal fashions – and only when prompted to do so in the aftermath of catastrophe. Hurricane Betsy led to the LPVHPP, and the loss of wetlands totaling fifty square miles per year prompted the state to form a regulatory scheme in the late 1970s. The policies did not follow a broad vision of coastal management, but rather responded to specific problems in specific locations without considering Louisiana's coast holistically.

Additionally, policies for hurricane protection and coastal erosion were pursued as reactions to undefined risks with unclear goals of what constituted success. The basis for hurricane protection in New Orleans was the "standard project hurricane," a theoretical storm that was supposed to be akin to a fast-moving category three. However, the criteria for the SPH was initially under-designed and subsequent revisions were not incorporated into engineering considerations.[77] For coastal erosion, a "sustainable coast" became the benchmark for restoration projects after *Coast 2050*, but there was not a plan to put that vision into effect. Further, there

[75] Ibid.
[76] "Working with Nature," *Times-Picayune*, June 28, 2002, NB LA (392849714).
[77] U.S. Comptroller General, *Report to the Congress: Cost, Schedule, and Performance Problems*, 2; Hurricane Katrina External Review Panel, *The New Orleans Hurricane Protection System*, 65-66.

was no clear consensus about which parts of the coastal wetlands would be saved – a problem which prompted the National Science Foundation to instruct the USACE to develop a "new map" for Louisiana. In neither case did public officials pursue policies that would have limited development in flood-prone areas, and in some instances, concerns about property rights impacted both hurricane protection and coastal restoration projects.[78] Finally, each issue required political and financial cooperation between the state and federal government to achieve results, a fact that was often complicated by the lack of clear authority and oversight.

Master Plans

On September 8, 2005, an editorial in the Baton Rouge *Advocate* connected the loss of wetlands to the damage of the storm. "With diminished wetlands to mute the fury of Katrina, and erosion-related subsidence in New Orleans, the Crescent City is now a wasteland." The newspaper also noted that national interest in coastal erosion in Louisiana had been lacking, but with the hurricane, "America and the world have gotten a gruesome lesson in the consequences of coastal erosion."[79] Environmentalists from the Natural Wildlife Federation and the Environmental Defense group echoed those sentiments the following month. Representatives from the two organizations encouraged Louisiana and the federal government to set aside money for coastal restoration, along with funds to help clean up and repair the damage left by Katrina.[80]

Before the end of the year, President Bush signed a relief bill that directed $29 billion to Louisiana for hurricane recovery efforts.[81] In Louisiana, state officials took action to address some of the long-standing administrative issues with coastal restoration by bringing many of the

[78] Committee on the Restoration and Protection of Coastal Louisiana (National Research Council), *Drawing Louisiana's New* Map, 162-165.
[79] "Storm Highlights Coastal Erosion," *Advocate*, September 8, 2005, sec. B, NB LA (0503555135).
[80] Gerard Shields, "Storm an Opening for Wetlands," *Advocate*, October 30, 2005, sec. B, NB LA (0503568941).
[81] Bruce Alpert, "Bush Signs Bill Providing Levee Aid – Hurricane Recovery Help is $29 Billion," *Times-Picayune*, December 31, 2005, NB LA (421020141).

disparate coastal activities under the scope of a single agency. Governor Blanco signed Act 8 into law in November 2005 to create the Louisiana Coastal Protection and Restoration Authority (CPRA), an entity that replaced the Wetlands Restoration and Conservation Authority. The new body was directed to coordinate "the efforts of local, state, and federal agencies to achieve long-term comprehensive coastal restoration and hurricane protection." Act 8 charged the CPRA with creating a "master plan that presents a conceptual vision of a sustainable coast based on the best available science and engineering." Projects related to the Breaux Act, the LCA near-term plan, and funds from the CIAP would be organized "toward a common goal."[82]

Legislators held that "the state must have a single agency with authority to articulate a clear statement of priorities," and that "without this authority, the safety of citizens, the viability of state and local economies, and the long-term recovery from disasters such as Hurricanes Katrina and Rita remain in jeopardy." Though the new authority gained control over two of the most important activities on the coast, the efforts at consolidation were not complete. The Department of Natural Resources would implement the activities related to restoration and conservation, while still overseeing the state's Coastal Management Plan and Coastal Use Permit program. Meanwhile, the Department of Transportation and Development would be responsible for "carrying out the elements of the plan relative to hurricane protection." Act 8 directed the secretaries of each department and the Governor's Executive Assistant for Coastal Activities to form a task force to develop the master plan, but implementation of those plans was still divided between two separate agencies.[83]

[82] Louisiana Coastal Protection and Restoration Authority, *Integrated Ecosystem Restoration and Hurricane Protection* (2007), 1-2.
[83] Louisiana Act No. 8 (Senate Bill No. 71, House Bill No. 141) (1st extraordinary session, 2005).

Thirty-one of thirty-seven senators voted in favor of Act 8 while ninety-three of ninety-eight representatives said yes. Governor Blanco and her administration pushed heavily for the bill as well, but reactions to the legislation's passage were mixed – particularly regarding the organization of levee boards. An opponent of Act 8, Senator Craig Romero of New Iberia, questioned if the CPRA would actually accomplish anything substantive. "The bill does nothing to eliminate…all these little levee situations." Romero's criticism was in reference to a post-Katrina proposal that would have consolidated the levee boards into a single regional entity, staffed with experts who had no political ties and possessed knowledge about flood control. Inefficient management and poor training had been identified as two issues that contributed to the shoddy maintenance of the levees around metropolitan New Orleans. The U.S. Senate's report on Katrina cited an instance in which officials spent only four hours inspecting one hundred miles of levees and noted there was no manual available to provide guidance for adequate inspections. [84]

Sponsored by state Senator Walter Boasso of St. Bernard Parish, the levee-reform bill passed in the senate in November, but the legislation failed to gain traction in the House. In December 2005, a grassroots organization called Citizens for 1 Greater New Orleans gathered 46,000 signatures for a petition that called on the state government to reform the levee districts.[85] However, residents living in the West Bank hurricane protection vicinity did not want to see a regional levee board, and debate over the issue dragged on into the next year. The federal government also applied pressure to Louisiana's politicians by making $12 million for a levee-

[84] Will Sentell, "Bill to Consolidate Coastal Work, Hurricane Protection Clears Panel," *Advocate*, November 17, 2005, sec. A, NB LA (MERLIN_1243787); Comm. on Homeland Security and Governmental Affairs, S. Rep. 109-322, *Hurricane Katrina: A Nation Still Unprepared*, 135-137.
[85] Bruce Eggler, "Drive to Unify Levee Boards Revs Up – 46,000 Sign Petition, Citizens Group Says," *Times-Picayune*, December 15, 2005, NB LA (420979148).

improvement study contingent on the state reforming its management. After months of political maneuvering and a compromise that created two levee boards in southeastern Louisiana, eight out of ten voters approved a constitutional amendment in fall 2006 to revamp levee oversight. In addition to the new boards, assets not related to levee maintenance were transferred to another state agency and committee appointments were to be given to qualified professionals who had knowledge in fields related to flood control or engineering. Voters also said yes to the constitutional amendment that replaced the Wetlands Conservation and Restoration Trust Fund with the Coastal Protection and Restoration Fund, as well as approving a measure that directed all potential income from an OCS revenue-sharing scheme into wetlands conservation, coastal restoration, and hurricane protection.[86]

The revenue-sharing amendment was passed in anticipation of Congress authorizing the Gulf of Mexico Energy Security Act (GOMESA) in 2006. In contrast to the Breaux Act or the 2005 CIAP, GOMESA was designed to provide a much larger scale of funding over a longer period of time. Support for the new revenue-sharing scheme was tied to concerns about the damage caused by Katrina.[87] The proposal directed that 37.5% of revenues from a specific set of new lease tracts on the OCS be split among Alabama, Louisiana, Mississippi, and Texas until 2016. Afterward, 37.5% of revenues from all new OCS leases would be divided among the four states. Louisiana's share was estimated to be about $20 million per year for the first decade and then approximately $650 million per year starting in 2017. Though GOMESA promised another important source of funding for restoration in Louisiana, coastal advocates warned even that

[86] Will Sentell, "Levee Plan on Course to Pass – House Sends Plan to Friendly Senate," *Advocate*, February 17, 2006, sec. A, NB LA (MERLIN_1517120); Frank Donze, "Voteres [sic] Merge Levee Boards – Support Strongest Where Effect Greatest," *Times-Picayune*, October 1, 2006, NB LA (421820457); "Election Results – Constitutional Amendments," *Times-Picayune*, October 2, 2006, NB LA (421841974).
[87] Bill Walsh, "State Takes Long Road to Share Oil Revenue – Louisiana Rejected Truman's 1949 Offer," *Times-Picayune*, December 10, 2006, NB LA (422008867).

large amount of money was insufficient for the scope of the problem. Mark Davis of the CRCL praised the new revenue from GOMESA and said it was "hugely important, but it's also hugely important to know that it's only a down payment."[88]

An increase in reliable funding was a positive step for coastal restoration; the money from CIAP and GOMESA could allow Louisiana to implement some restoration projects in a more timely fashion because the state would not have to wait for Congress to authorize funding. Indeed, the state had already compiled a list of approximately one hundred projects that could be implemented with CIAP funds when Congress approved GOMESA. Larger projects such freshwater diversions would still require a federal partnership, but smaller-scale activities could be pursued by the state on its own.[89]

Improved flexibility for the state was important, and yet the source of funds for the CIAP and GOMESA was coming from one of the very causes of coastal erosion in Louisiana – oil and gas drilling. Though OCS production did not necessarily impact the state in the same manner that onshore activities did, the pipelines that transported much of OCS petroleum cut through the coastal wetlands. There was also the matter of secondary development; as oil and gas production increased offshore, facilities in southern Louisiana grew to support OCS activities. The state had been using oil and gas revenues to pay for government services for decades, and now the state would be using oil and gas revenues to pay for coastal restoration – which was partly caused by the petroleum industry. Katrina had prompted a shift in how the state and nation looked at coastal restoration and hurricane protection in Louisiana, but the continued reliance on oil and gas industry called into question just how fundamental that shift was.

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[88] Gulf of Mexico Energy Security Act, Pub. L. 109-432 (2006); Gerard Shields, "Advocates Praise Royalties – More Effort Urged on Coast," *Advocate*, December 14, 2006, sec. A, NB LA (MERLIN_2220895).
[89] Bob Marshall, "Cutting Red Tape – Lengthy Approval Process Holds Back Coastal Restoration in Louisiana," *Times-Picayune*, April 22, 2007, NB LA (422365761).

Even as officials celebrated the passage of GOMESA, Louisiana still needed a plan order to coordinate coastal restoration and hurricane protection. The state legislature had charged the CPRA with developing a master plan, and the committee worked throughout 2006 to accomplish that goal. A preliminary draft released in November included a tentative vision for merging coastal restoration and hurricane protection and proposed some recommendations that had been previously seen as politically toxic. One such idea was closing the Mississippi Gulf River Outlet. The state had requested that the Corps close the MRGO before the 2005 hurricane season, though the federal agency had been reluctant. A small number of shippers still used the channel, but after Katrina, decommissioning the MRGO seemed more feasible. There were concerns that the navigation corridor had acted as a "super highway" for storm surge, and officials in St. Bernard Parish welcomed the closure.[90]

Other proposals in the initial draft report brought criticism for the heavy emphasis on levees to provide hurricane protection. Indeed, levees had contributed to coastal erosion and then failed to perform adequately during Katrina due to improper designs and maintenance. Rather than depend too heavily on human-made structures, some coastal advocates envisioned another approach. John Lopez, a former member of the Corps of Engineers who had joined the Lake Pontchartrain Basin Foundation, offered a different framework for hurricane protection and coastal restoration in early 2006. His proposal was called the Multiple Lines of Defense Strategy (MLODS) and recommended enhancing eleven types of "defense lines" to mitigate impacts from hurricanes and coastal erosion. Most of the "lines" fell into two basic categories: artificial features such as levees and pump stations and natural features such as barrier islands and

[90] Comm. on Homeland Security and Governmental Affairs, S. Rep. 109-322, *Hurricane Katrina: A Nation Still Unprepared*, 124-125; Mark Schleifstein, "State Maps Plan for Coastal Projects – Billions of Dollars of Levees, Dikes Urged," *Times-Picayune*, November 9, 2006, NB LA (421925371).

marshes. The MLODS also called for improving evacuation routes and encouraging property owners to elevate their houses to avoid flood waters.[91]

Beyond suggesting that coastal restoration and hurricane protection projects be tailored to the MLODS, Lopez advised that the state should use the natural ridges of southern Louisiana to guide economic development – a clear call for land-use planning to protect lives and properties. Because areas such as Bayou Lafourche were already high ground, they could be better protected with levees since the elevation complemented human-made structures. Further, Lopez recommended focusing restoration efforts in places that still had substantial amounts of wetlands; areas that had already sustained heavy losses should probably be left out of planning. To coordinate projects, Lopez suggested that the state develop a map to guide efforts and communicate with citizens what the goals of restoration and protection would be. The MLODS differed from the Corps' LCA near-term plan and the Breaux Act by emphasizing flood protection over vegetation restoration and shunned the incremental approach of piecemeal projects. In essence, the MLODS sought to protect human life and property from flooding and hurricanes by using natural features to support human-made ones.[92]

After the criticism that the CPRA received from its initial draft release in 2006, the committee revised the master plan to rely less on levees for hurricane protection and pursue something closer to the MLODS.[93] The master plan put forth by the CPRA in 2007 divided the

[91] Mark Schleifstein, "Coastal Proposal is a Two-for-one Idea – Hurricane Protection, Restoration Combined," *Times-Picayune*, January 10, 2006, NB LA (421052229); Schleifstein, "State maps plan for coastal project,"; John Lopez, "*The Multiple Lines of Defense Strategy to Sustain Coastal Louisiana*," in Appendix A, *Comprehensive Recommendations Supporting the Use of Multiple Lines of Defense Strategy to Sustain Coastal Louisiana, 2008 Report*, New Orleans, LA: Lake Pontchartrain Basin Foundation, 2008), 226-231, http://www.saveourlake.org/PDF-documents/MLODSreportFINAL-12-7-08with-comments.pdf.
[92] Lopez, "The Multiple Lines of Defense Strategy to Sustain Coastal Louisiana," 226; 240-241.
[93] Louisiana Coastal Protection and Restoration Authority, *Integrated Ecosystem Restoration and Hurricane Protection* (2007), 18-19; Multiple Lines of Defense Assessment Team, *Comprehensive Recommendations Supporting the Use of Multiple Lines of Defense*, 15.

coast into five planning regions and set a "one hundred year horizon" for assessing risks and proposing solutions. Four objectives were identified to reflect the broad vision of the plan, including the reduction of damage from storms and promoting a "sustainable coastal ecosystem by harnessing the processes of the natural system."[94] The master plan also outlined the types of projects that the state and federal government should pursue to achieve objectives. Freshwater diversions, marsh restoration, barrier shoreline stabilization, and salinity control in navigation channels were suggested as the types of activities that should be pursued for restoration. For hurricane protection, the master plan stated structural features had to complement the natural features of the coastal ecosystem and that non-structural methods of storm reduction should also be pursued. Home elevation, more stringent building codes, and better evacuation policies, were recommended.[95]

Much of the 2007 master plan was visionary rather than a list of specific projects to pursue, and in that sense the document resembled the *Coast 2050* report. There were some specific suggestions such as closing MRGO or building the Morganza to the Gulf levee system.[96] Overall, the CPRA's first master plan, which was accepted by the state legislature in March 2007, was a blueprint for the future.[97] To implement more specific actions, the CPRA would release annual reports with more targeted suggestions.[98] All ongoing projects – including ones funded by CIAP, the Breaux Act, and the LCA – needed to be consistent with the state's master

[94] Ibid., 36-39.
[95] Ibid., 39-73.
[96] Ibid., 55; 82-83.
[97] Mark Schleifstein, "Harnessing the River – Environmental Groups Offer Their Own Vision to Protect Louisiana," *Times-Picayune*, October 14, 2007, NB LA (422823566).
[98] Louisiana Coastal Restoration and Protection Authority, *Fiscal Year 2008 Annual Plan: Ecosystem Restoration and Hurricane Protection in Louisiana* (Baton Rouge, LA: Louisiana Coastal Restoration and Protection Authority, 2007), 3, http://coastal.la.gov/resources/library/reports/.

plan.[99] Hurricane protection systems, coastal restoration, and to some extent, decisions about navigation channels would become integrated into the master plan. Many of the activities on the coast that impacted wetlands would no longer be considered separately from the ecosystem in which they took place.

The 2007 master plan was not a radically innovative idea, but integrating restoration with hurricane protection was a new step. Further, there seemed to be an increased commitment to funding a plan that treated both activities as related after Hurricane Katrina. However, reception of the master plan was mixed. A review panel criticized the state over the "breakneck pace" at which the CPRA's Integrated Planning Team "attempted to craft solutions for a complex and all-important task." Other observers took issue with some of the proposals in the plan that were based on questionable scientific evidence. One example included plans to use "leaky levees" to allow fresh water and sediments to move into marshes that were contained inside a levee system. Another hotly contested idea was a proposed system of levees in Terrebonne Parish, dubbed the "Great Wall of Louisiana." Coastal expert and researcher Paul Kemp of LSU said, "The one thing we've learned – and Katrina taught us again – is that earthen levees do not work…the most economical and sustainable storm defense in the long term is to build wetlands – and levees kill wetlands."[100]

State officials contended that the urgency behind the CPRA's rush to finish a master plan was to influence the coastal restoration and levee plans being drafted by the Army Corps of Engineers. There was no specific cost estimate included in the 2007 plan, but the director of the

[99] Louisiana Coastal Restoration and Protection Authority, *Fiscal Year 2009 Annual Plan: Ecosystem Restoration and Hurricane Protection in Coastal Louisiana* (Baton Rouge, LA: Louisiana Coastal Restoration and Protection Authority, 2008), 8-9, http://coastal.la.gov/resources/library/reports/.
[100] Bob Marshall and Mark Schleifstein, "Panels Blast Coastal Master Plan – Rush to Finish Hurting Quality, Critics Say," *Times-Picayune*, March 19, 2007, NB LA (422272385).

CPRA noted that some calculations put the totals between $50 billion and $55 billion. Even with the funds provided by programs such as the Breaux Act or GOMESA, Louisiana would be incapable of paying for coastal restoration and hurricane protection without federal assistance. The state's efforts to influence its federal partners did have some limited success. Karen Durham-Aguilera, who served as director for the Corps' long-term study, used the state's master plan "as a springboard for the way to go forward."[101] Indeed, when the Corps published its final technical report in 2009, the agency's plan to provide for hurricane protection and coastal restoration included some of the same features contained in the state's 2007 master plan. The Corps intended to use structural and non-structural methods for improving hurricane protection systems, but the report did not select a specific plan for congressional authorization. Decisions about which coastal restoration measures to pursue required "additional analysis and refinement."[102]

While the Corps suggested some new alternatives such as the buyout of risky properties, the Louisiana Coastal Protection and Restoration (LACPR) study was not all the different from the CPRA's proposal. However, if state officials were hoping the Army Corps of Engineers would draft a more detailed plan based on the efforts of the CPRA, they were likely to be disappointed. Though the Corps was supposed to have developed a long-term comprehensive hurricane and restoration plan with the LACPR, the National Research Council found that the agency had not accomplished its goal. The peer review panel from the NRC stated "the lack of advice on initial high-priority steps and projects, represent substantial shortcomings" and that

[101] Marshall and Schleifstein, "Panels Blast Coastal Master Plan,"; Mark Schleifstein, "Big Plans – In a Few Years, Our Existing Levees Should Protect Us from a Category 3 Storm," *Times-Picayune*, July 29, 2007, NB LA (422621614).
[102] U.S. Army Corps of Engineers, *Louisiana Coastal Protection and Restoration (LACPR): Final Technical Report* (New Orleans, LA: U.S. Army Corps of Engineers, New Orleans District, 2009), 100; 102-126, http://www.mvn.usace.army.mil/Portals/56/docs/environmental/LaCPR/LACPRFinalTechnicalReportJune2009.pdf.

there appeared to be "only limited efforts to synchronize" activities between the CPRA and the Corps.[103] The state and the federal government had moved closer to agreeing to a more comprehensive master plan for hurricane protection and coastal restoration, but as the decade drew to a close, there was still much to be done. In the meantime, Louisiana's wetlands continued to sink into the Gulf of Mexico.

Conclusion

For coastal restoration policies, the first decade of the twenty-first century brought significant changes but also more of the same – bureaucratic inefficiency, conflicts between different interests along the coast, and struggles to secure an amount of funding adequate to the scale of the crisis. Hurricanes Katrina and Rita changed the calculus among state and federal officials in terms of more integrated planning and also prompted the federal government to agree to a revenue-sharing scheme that was similar to one originally proposed during the Truman administration. As important as the decision to combine hurricane protection and coastal restoration was, the proposals by the state and then the Army Corps of Engineers were not as fully comprehensive as was often portrayed by officials. For example, suggestions to manage agricultural runoff or ground water use were not incorporated into the plans and perhaps the broadest reforms necessary remained elusive – those related to land-use planning and barring development in areas that are prone to hazards such as flooding.

Fundamentally, the erosion of Louisiana's wetlands has been tied to decisions about how humans have used the lands and waters of the United States. In addition to trying to manipulate nature to accommodate human settlement, governments have also subsidized risk-taking with

[103] Committee on the Review of the Louisiana Coastal Protection and Restoration (LACPR) Program, *Final Report from the NRC Committee on the Review of the Louisiana Coastal Protection and Restoration (LACPR) Program*, (Washington, D.C.: National Academies Press, 2009), 12, http://www.nap.edu/download/12708.

policies such as the National Flood Insurance Program. In December 2012, there were 5,555,915 policies in the NFIP program across 21,881 communities in the United States. Properties that were located behind "accredited" levee systems were immune from the requirements to purchase flood insurance or land-use regulations to control where people built structures.[104] Over eighteen million people lived in "special flood hazard areas" located along the nation's coasts or rivers, which meant those areas had a one percent chance to experience a one hundred year flood on an annual basis.[105] Government policies have contributed to the construction of homes and businesses in harm's way because risk has essentially been subsidized by American taxpayers. As one example of that phenomenon, "repetitive loss" claims for properties insured by the NFIP have accounted for thirty percent of annual payouts during the program's forty year history despite being only one percent of all policies. After Hurricane Katrina, the NFIP had to take out a loan from the U.S. Treasury to help cover claims that totaled over $16 billion.[106]

While state and federal officials vowed to learn from the mistakes made before the 2005 hurricane season, there was ample evidence that a truly comprehensive management and restoration plan was still out of reach by the end of the decade. The 2007 master plan was based on modifying the landscape to better simulate the natural deltaic processes but was not meant to significantly restructure the ways humans used the land and water of southern Louisiana. One of the primary objectives for the 2007 plan was to "reduce economic losses from storm based

[104] Committee on Levees and the National Flood Insurance Program, *Levees and the National Flood Insurance Program: Improving Policies and Practices* (Washington, D.C.: National Academies Press, 2013), 1-2, http://www.nap.edu/download/18309. To achieve "accredited" status under the NFIP requirements, levee systems have to provide protection from the "one percent annual chance flood event." From Box 1-1 (12) of the same report, the "one hundred year flood" is considered the "base" flood for determining protection levels. If a home with a thirty-year mortgage is located in such an area, there is a twenty-six percent chance that the home will flood at some point during that time span.

[105] Committee on Levees and the National Flood Insurance Program, *Levees and the National Flood Insurance Program*, 13, Table 1-1.

[106] Christine A. Klein and Sandra B. Zellmer, *Mississippi River Tragedies: A Century of Unnatural Disasters*, (New York City: New York University Press, 2014) 189-190.

flooding to residential, public, industrial, and commercial infrastructure," which highlighted the continued importance of protecting the coast to ensure economic growth and viability.[107] If a storm as catastrophic as Hurricane Katrina could not spur policymakers into rethinking how humans used the land in fundamental ways, one might have been forgiven for wondering how many more crises were going to be necessary to save what was left of Louisiana's wetlands.

[107] Louisiana Coastal Restoration and Protection Authority, *Integrated Ecosystem Restoration and Hurricane Protection* (2007), 36-39.

EPILOGUE

Following the devastation of Hurricane Katrina, the state of Louisiana revamped the administration of its coastal zone management. The 2007 master plan laid out a broad vision for how the state's coastal management should proceed and detailed "which actions will sustain Louisiana's coastal ecosystem, safeguard coastal populations, and protect vital economic and cultural resources."[1] Governor Bobby Jindal further improved bureaucratic consistency in 2008 when he issued an executive order that directed "all state agencies to administer their activities, to the maximum extent possible, in accordance with the 2007 Coastal Master Plan's recommendations."[2] The streamlined administration and unified vision of coastal restoration generated some positive results. Within five years, the CPRA had overseen projects related to building or improving one hundred and fifty-nine miles of levees, constructed thirty-two miles of barrier islands or berms, placed one hundred and fifty projects in design or construction, and benefitted over nineteen thousand acres of wetlands.[3] By 2014, forty-five miles of barrier islands or berms had been built and coastal restoration and protection programs had benefitted 26,241 acres of land.[4] As of 2015, the state planned to monitor or maintain two hundred and thirty projects, while overseeing the design and construction of seventy-nine more.[5] The rate of losses

[1] Coastal Protection and Restoration Authority of Louisiana, *Integrated Ecosystem Restoration and Hurricane Protection* (2007), 2.
[2] Coastal Protection and Restoration Authority of Louisiana, *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (2012), xi.
[3] Coastal Protection and Restoration Authority of Louisiana, *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (2012), 25. In this sense, "benefit" means that wetlands that were vulnerable to erosion were protected or strengthened as a result of the project.
[4] Coastal Protection and Restoration Authority of Louisiana, *Integrated Ecosystem Restoration and Hurricane Protection in Coastal Louisiana: Fiscal Year 2016 Annual Plan*, (Baton Rouge, LA: Coastal Protection and Restoration Authority, 2015), 1, http://cims.coastal.louisiana.gov/RecordDetail.aspx?Root=0&sid=11477.
[5] Ibid., 31-32.

was down significantly from its height in the 1970s, but the state was still losing approximately sixteen square miles of land per year.[6]

Damage from the *Deepwater Horizon* spill further complicated the problems of coastal erosion and restoration efforts starting in April 2010.[7] For nearly three months after the initial blowout, over three million barrels of oil spewed from the Macondo Well before British Petroleum (BP) was able to plug the leak. The size and scope of the disaster was unprecedented in American history. Officials estimated that the uncontrolled release of oil was "equivalent to the Exxon Valdez spill reoccurring in the same location every week for twelve weeks."[8] The Natural Resource Damage Assessment of the spill concluded that oil washed up on 1,300 miles of shoreline from Texas to Florida, affected the survival and reproduction of marine organisms, and injured marsh vegetation and wildlife on coastal shores.[9]

The event also worsened Louisiana's coastal erosion problems, particularly on its barrier islands.[10] Before the Macondo blowout, Cat Island sat just offshore from Plaquemines Parish and consisted of two strips of land that had long served as nesting grounds for thousands of birds. Wave action and hurricanes had whittled away at the barrier island, with their impacts worsened by a lack of replenishing sediment. In 1930, Cat Island-West was three hundred and sixty acres, but by 2010, the island was just four acres in size. Cat Island-East was slightly larger at five

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[6] Amy Wold, "Washed Away – Locations in Plaquemines Parish Disappear From Latest NOAA Charts," *Advocate*, April 28, 2013, sec. 1, NB LA (MERLIN_20653679).
[7] Ernest Zebrowski and Mariah Zebrowski Leach provide a good summary of the Deepwater Horizon oil spill in Chapter 1 of their book, *Hydrocarbon Hucksters: Lessons from Louisiana on Oil, Politics, and Environmental Justice* (Jackson, MS: University of Mississippi Press, 2014). The 2016 report from the Deepwater Horizon Natural Resource Damage Assessment Trustees also provides a good summary of what happened and the impacts associated with the spill (see below for full citation).
[8] Deepwater Horizon Natural Resource Damage Assessment Trustees, *Deepwater Horizon Oil Spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement* (Silver Spring, MD: National Oceanographic and Atmospheric Agency, 2016), 2-8 – 2-9, http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/Chapter-2_Incident-Overview_508.pdf.
[9] Ibid., 1-14 – 1-15;
[10] Julie Kumari Drapkin, "Barrier Islands Washing Away after Taking on Oil from BP Spill – Damage May be Accelerating the Rate of Erosion, Some Say," *Times-Picayune*, April 20, 2014, sec. A, NB LA (427737809).

acres. Within a few years after the BP spill, the eastern portion of the island was only about one hundred yards long and thirty yards wide. Oil from the blowout had washed onto the barrier island, killing the marshes and trees that had held the land together. Without the living vegetation to keep the soil in place, remaining bits of the island washed into the Gulf of Mexico and thousands of birds lost their nesting spot. Officials in Plaquemines Parish had a plan to repair the island, but finding the $8 million necessary to fund the project proved difficult. Restoring Cat Island was not part of Louisiana's master plan and the state could not allocate any fiscal resources for the construction project.[11] By 2015, Cat Island was little more than "two tiny strips of sand and shell, with a few skeletal remains of mangrove trees."[12]

While the BP disaster had devastating environmental consequences, the event resulted in a massive windfall to Louisiana's coastal restoration funding. In 2015, state and federal officials reached an agreement with BP for the company to pay an $8.8 billion settlement to help fund restoration projects designed to repair damages from the spill. Because Louisiana's environment suffered the worst effects from the oil, the state received $5 billion plus another $787 million collected from penalties levied under the Clean Water Act. Payments were scheduled to begin in 2017 and would be spread across sixteen years.[13] Another major source of funding will start flowing to the state in 2017 as well. By the terms established in the Gulf of Mexico Energy Security Act, the state is scheduled to start receiving a greater share of royalties from offshore drilling. Both of these funding sources have been targeted by the CPRA to help pay for the

[11] Amy Wold, "Bird Nesting Habitat Fades Away – Effort Under way to Restore Cat Island; Parish Searches for Funding," *Advocate*, November 26, 2012, sec. 1, NB LA (MERLIN_18147487).
[12] Mark Schleifstein, "Sticking Around – Coalition Points to Shrinking Island as Evidence of Oil's Lingering Effects," *Times-Picayune*, April 5, 2015, sec. A, NB LA (MERLIN_22369061).
[13] Amy Wold, "Officials Narrow List of Coastal Projects – BP Settlement to be Paid over 16 Years," *Advocate*, August 20, 2015, sec. 2, NB LA (MERLIN_25781275).

estimated $50 billion cost of the 2012 master plan.[14] Combined with other monetary sources such as the Breaux Act or the state's own coastal trust fund, the prospects of paying for the master plan appear to be substantially improved when compared to previous decades of anemic funding.

However, there are potentially some serious issues with how the CPRA estimated the total cost of the master plan and how the state would pay for it. First, the budget was based on revenues that authority members believed would have a "good chance of coming to the state from various state and federal sources between [2012] and 2061." In other words, the funds were not guaranteed.[15] Further, the sources themselves present potential problems. Only a few of the revenue streams are recurring; the BP settlement money will be spread out over the course of multiple years, but after 2033, those funds run out. The Coastal Impact Assistance Program has been a major source of funding for Louisiana's restoration, but all allocations from that source will be spent by 2017. Money from the state's trust fund and GOMESA are currently the only major revenue funds that are expected to exist through 2061, the final year of the master plan's time frame.[16]

When all sources of revenue that have been identified by the CPRA are added together, their estimated totals come to $20.167 billion. The projected final cost of the 2012 master plan is $91.693 billion, which means that over seventy-seven percent of funding still needs to be found.[17] Worse, the CPRA designed the plan so that the bulk of money would be spent in the

[14] Mark Davis, Harry Vorhoff, and Dean Boyer, *Financing the Future: Turning Coastal Restoration and Protection Plans into Realities – How Much is Currently Funded? (*New Orleans, LA: Tulane Institute on Water Resources Law and Policy, 2015), 2; 5-12, http://media.wix.com/ugd/32079b_300fb856888a4891bcd4e1f226e431d8.pdf.
[15] Louisiana Coastal Protection and Restoration Authority, *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (2012), 93.
[16] Ibid., 5-13.
[17] Louisiana Coastal Protection and Restoration Authority, *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (2012), 19. The difference between the CPRA's $50 billion estimate and the $91 billion cited here is primarily due to inflation over the next fifty years.

first several decades, and the state needs to expend $1.3 billion per year until 2032 to meet that goal. Yet spending has consistently fallen short of that requirement since 2012; annual projections have fluctuated between $492.1 million and $729.62 million.[18] The continued shortage of funds is concerning, but perhaps even more worrisome is that a sizeable chunk of expected revenues are set to come from the *Deepwater Horizon* catastrophe. A report published in 2015 by the Tulane Institute on Water Resources Law and Policy commented, "the fact that implementing the 2012 Coastal Master Plan depends to a significant degree on dollars generated by disasters is a major red flag. Calamity is not a viable financing tool."[19]

The state's master plan suffers from other issues, some of which call into question just how "comprehensive" Louisiana's restoration agenda truly is. Operation and maintenance costs for completed restoration projects are only budgeted until 2062, but many of those structures will continue to exist past that date. Additionally, "levee rehabilitation" is not included in the CPRA's annual analyses. Once the Army Corps of Engineers completes a levee, the agency cedes responsibility for repairs and maintenance to local levee districts. Municipal drainage is also a critical component of flood protection from hurricanes and those systems are maintained and funded by local entities as well. Both of these programs require funding and residents may not be eager to raise taxes on themselves. Voters in the Lake Borgne Levee District rejected millage increases twice in 2015 despite the fact that the money was needed for levee repairs.[20] Nor does the master plan include strategies to deal with groundwater use or land-use planning as part of coastal zone management.

[18] Louisiana Coastal Protection and Restoration Authority, *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (2012), 4.
[19] Ibid., 3.
[20] Ibid., 15-18.

Considering these recent events and the forty years of policymaking in regard to Louisiana's coastal zone, several lessons can be gleaned that can be useful to the public and political representatives. First, Louisiana's general political and economic climate have a substantial impact on the wetlands and efforts to save them. The state has long encouraged activities that contributed to coastal erosion and undoing those policies has been exceedingly difficult. Oil and gas revenues paid for the expansion of government services during the twentieth century, and the state is still relying on them to pay for restoration. Setting aside the damage that the industry has caused in the wetlands, relying on mineral revenues has not always been fiscally wise. When the price of oil slumps on the world market, Louisiana loses flexibility in its budgeting. The oil crash of the 1980s hampered David Treen, Edwin Edwards, and Buddy Roemer. Another dip in prices stalled several Breaux Act projects during the mid-1990s.

Recently, the state has faced yet another budget crisis, which has again highlighted the need for stable, consistent revenue sources. Due to the decline in oil prices, the coastal trust fund will receive approximately $17 million in 2016 compared to previous annual contributions of $25 million. More alarming is that during a special session to address a $750 million budget shortfall in the upcoming fiscal year, legislators introduced seven pieces of legislation that sought to eliminate or reduce the amount of funding the state puts into its coastal trust fund. As the state continues to wrestle with funding issues, the BP settlement money that begins to arrive in 2017 could be a "tempting target for legislators looking to fill budget holes."[21]

A decline in oil prices is only one part of the state's budget problems. Over the last eight years, politicians in Baton Rouge have approved multiple tax credits and exemptions, redirected money from trust funds to pay for general operating expenses, and repealed the Stelly Plan

[21] "Seven Bills up in Current Legislative Session Seek to Move Funds Away From Coastal Restoration Work, Official Says," *Advocate*, March 16, 2016, Web Edition, NB LA (dcf03395ac1013cfc92a85a70cdfbe8c37f773e).

income tax increases. The result was a $1.6 billion gap by 2015.[22] General budget problems become coastal restoration problems. To create a stable, reliable source of funding for the master plan, Louisiana's officials will need to address the "big picture" of the state's entire budgetary structure. If the government cannot consistently generate enough funding to pay for basic bureaucratic functions, then coastal restoration projects will be – at best – routinely underfunded. At worst, they will not be funded at all.

A second lesson that can be learned is that the loss of Louisiana's wetlands are unquestionably a national problem. Certainly disruptions to energy supplies will impact people across the country, but it is not solely the impacts of coastal erosion that make the disappearance of swamps and marshes an American issue. The loss of wetlands has resulted from engineering the Mississippi River for flood control not just in Louisiana, but in states as far north as Minnesota.[23] Dams on the Missouri River built after World War II caused a significant decline in sediment loads carried by the Mississippi.[24] Other structures have also impeded the flow of sediments to the wetlands. A study published in 2012 noted as much as forty-four percent of the annual sediment load failed to move past the Old River Control Structure during the time period between 2008 and 2010.[25] Further, not all of the water and sediments that arrived in southern Louisiana have had beneficial effects. The "dead zone" that appears in the Gulf of Mexico every

[22] Public Affairs Research Council of Louisiana, *Research Brief: PAR Guide to the State Budget Crisis: How We Got Here – The Jindal Record – The Real Priorities* (Baton Rouge, LA: Public Affairs Research Council of Louisiana, 2015), 1-3, http://parlouisiana.org/wp-content/uploads/2016/02/PAR_Guide_to_State.pdf.
[23] Klein and Zellmer, *Mississippi River Tragedies*, 29-33.
[24] R. Eugene Turner, "Notes for the Expert Panel, 10 AM, Tuesday, 28 October, 2014, Baton Rouge" at Louisiana State University (Baton Rouge, LA, 2014), 5, http://biotech.law.lsu.edu/blog/Turner-2014-Oct-28-diversion-meeting-notes.pdf.
[25] Mead A. Allison et al., "A Water and Sediment Budget for the Lower Mississippi–Atchafalaya River in Flood Years 2008–2010: Implications for Sediment Discharge to the Oceans and Coastal Restoration in Louisiana," *Journal of Hydrology* 432-433 (2012): 84-97, ScienceDirect, EBSCOhost, http://libezp.lib.lsu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edselp&AN=S0022169412001205&site=eds-live&scope=site&profile=eds-main.

summer results from upstream runoff that contains significant amounts of nitrogen and phosphorus. The nutrients lower oxygen levels, worsen water quality, and kill marine species in the area.[26] Though the 2012 master plan proposes several measures to deal with the annual hypoxia events, the strategies depend on building large structures to redirect water or relying on upriver states to voluntarily alter farming practices. Those approaches have not been effective. In August 2015, scientists estimated that the "dead zone" in the Gulf of Mexico was 5,052 square miles which was far larger than the target size of 1,930 square miles.[27]

Louisiana cannot legislate or regulate what happens in the rivers of Minnesota or on the farms of the mid-West. Even if the next master plan incorporated land-use planning and all funding needs were fully met, factors outside the state would still continue to impact what happens in the swamps and marshes of southern Louisiana. Negotiating agreements among the many states that comprise the river's drainage basin seems daunting and rightfully so. Administrative or legislative action that compels compliance will likely be necessary, and that means the federal government will need to take the lead on that matter. Nature does not much care where Louisiana ends and Arkansas begins, and the borders between states are essentially *political* boundaries. The federal government has the statutory and constitutional authority to ensure multiple states cooperate with interstate policies. Still, agencies such as the Corps of Engineers, which contributed to the loss of Louisiana's wetlands, will need to work closely with all states to ensure that local interests are fully considered. Likewise, residents within each state must realize that activities undertaken to improve their lives and protect their properties have

[26] Louisiana Coastal Protection and Restoration Authority, *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (2012), 169-170.
[27] Mark Schleifstein, "Voluntary Plan to Reduce Fertilizers not enough to Shrink Gulf's 'Dead Zone,' New Study Says," *Times-Picayune*, February 3, 2015, http://www.nola.com/environment/index.ssf/2015/02/voluntary_fertilizer_reduction.html.

effects that ripple throughout the nation. To save Louisiana's wetlands, political representatives and the public are going to have to think bigger than the comprehensive plan currently in place.[28]

Finally, studying the policy progression of the last four decades, we can assert that the loss of Louisiana's wetlands is not an environmental or ecological issue with political and socio-economic consequences. Instead, coastal erosion is primarily a problem born in political and socio-economic choices that have adversely impacted the environment. To achieve a sustainable coast for future generations, Louisianans and Americans will need to make different political, economic, and social decisions. We will not engineer our way into a healthy ecosystem of wetlands if we do not also fundamentally alter how we use the land, the water, and associated resources. Drawing on what Aldo Leopold wrote in *A Sand County Almanac*, Americans will eventually need to accept that we are citizens *and* stewards of the land we live on, not merely its users. The vitality of Louisiana's wetlands, as well as our own, depends on us learning this lesson.

History can serve as a useful guide in such an endeavor. By examining significant events over a long period of time, we can trace how political, economic, and social choices contributed to coastal erosion and how they also worked to combat the loss of the state's swamps and marshes. Historical analysis contextualizes those choices and gives us insight into the decision-making process that produced specific policies for the management of Louisiana's wetlands. If we can develop a clear understanding of how and why we made certain choices, we are better positioned to pursue a different path in the future. Other authors have provided a strong

[28] The 2017 master plan will be released for public review in January 2017. The guidelines for project submissions recommended including new projects that will incorporate non-structural strategies such as property acquisition and housing elevation to reduce flooding risks. The guidelines also suggest that the 2017 master plan address "future uncertainty challenges, such as climate change." Louisiana Coastal Protection and Restoration Authority, "2017 Coastal Master Plan Project Development Program" (Baton Rouge, LA: Coastal Protection and Restoration Authority, 2014), 1, http://coastal.la.gov/wp-content/uploads/2014/09/2017-Coastal-Master-Plan-Project-Development-Program.pdf.

foundation for the history of coastal erosion and various responses to the crisis, and this study has built on their efforts.

However, this dissertation provides a new perspective by looking at the loss of Louisiana's wetlands through the lens of policymaking. This approach provides several advantages for the citizens and public officials who hope to rebuild the state's coast. First, this study puts together a basic chronological narrative of how legislation and regulation progressed over the course of multiple decades. While other authors have addressed laws or regulatory practices in relation to their own works, there has not been a comprehensive examination of policy decisions from the earliest initiatives in the 1970s through the major changes that followed Hurricane Katrina. This study corrects that deficiency while also explaining the context in which policy choices were made. Knowing how policies such as the engineering the Mississippi River contributed to the loss of wetlands is important, but so is recognizing the negative impact that Louisiana's bureaucratic disorganization had on anti-erosion efforts. Even the most advanced coastal management plan in the world will do little good if the government cannot effectively administer – and pay – for its implementation. By laying out the evolution of policymaking and examining problems that have persisted in undermining an effective management program, government officials and the public have a more detailed map to build toward a "sustainable coast."

This dissertation also makes a contribution to the field of history by demonstrating that environmental history is a crucial component for understanding events of past. The political, economic, and social circumstances that historians examine are often related to environmental conditions, especially in a place like southern Louisiana where control of the environment has a tremendous impact on the lives and livelihoods of the coast's inhabitants. Much ink has been

devoted to explaining the nature of the state's politics or the dire consequences of ignoring coastal erosion, but these things are not unrelated and never have been. Louisiana's political climate influenced choices about environmental resources and in turn, environmental resources affected the decisions that politicians could make. Earl Long did not have to raise taxes to pay for the expansion of government services because of the wealth generated by oil and gas revenues. Yet the extraction of oil and gas has had a detrimental impact on Louisiana's wetlands, and the loss of marshes subsequently places the infrastructure of oil and gas extraction at risk.

Environmental history should not be treated as an addendum to other fields of historical analysis. Rather, the topic should have greater prominence in the professional works, teaching, and discussions undertaken by historians. Our understanding of the environment and humanity's prerogative in manipulating nature has changed over time, but the consistent influence of environmental factors is too often an unacknowledged factor in the works of historians. This dissertation is specifically a policy history of the response to coastal erosion in Louisiana but more broadly serves as an examination of how politics, socio-economic decisions, and the environment are related to one another and how their interactions help shape the communities that Americans build.

BIBLIOGRAPHY

Archives and Collections

Coastal Zone Information Center Collection (U.S. Government Publishing Office, Washington, D.C.)
John Breaux Papers (Hill Memorial Library, Baton Rouge, LA)
Louisiana Waterways Management Collection (LSU Libraries, Baton Rouge, LA)

Newsletters, Newspapers, and Newspaper Collections

Advocate (Baton Rouge, LA)
American Press (Lake Charles, LA)
Daily Star (Hammond, LA)
Louisiana Coastal Law
National Wetlands Newsletter
Times-Picayune (*Times-Picayune/States-Item*, 1981-1987, New Orleans, LA)
Wall Street Journal
Washington Post
Watermarks

America's Historical Newspapers
NewsBank Louisiana News Sources

Government Documents and Organizational Reports

Agenda for the Annual Meeting of the National Wetlands Coalition in Washington, D.C., October 14, 1993, John Breaux Papers, Box 148, Folder 23, John Breaux Papers, Hill Memorial Library, Baton Rouge, LA.

Biological Services Program (U.S. FWS), *Classification of Wetlands and Deepwater Habitats in the United States*. Washington, D.C.: U.S. Governing Printing Office, 1979. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-gb624-c6-1979/pdf/CZIC-gb624-c6-1979.pdf.

Bosselman, Fred and David Callies. *The Quiet Revolution in Land Use Control*. Washington, D.C.: U.S. Government Printing Office, 1971. http://files.eric.ed.gov/fulltext/ED067272.pdf.

Breaux, John. Extension of Remarks on Coastal Wetlands Recovery Act, July 15, 1986. John Breaux Papers, Box 270, Folder 21. Hill Memorial Library, Baton Rouge, LA.

Bringol, Melinda and Glen Daigre, "Economic Development." In *State of the State 1996*. Baton Rouge, LA: The Office of Planning and Budget, 1996.

Caffey, R.H. and M. Schexnayder. *Coastal Louisiana and South Florida: A Comparative Wetland Inventory*. Narragansett, RI: National Sea Grant Library, 2003. https://lacoast.gov/new/Data/Reports/ITS/Florida.pdf.

Coalition to Restore Coastal Louisiana. *No Time to Lose: Facing the Future of Louisiana and the Crisis of Coastal Land Loss*. Baton Rouge, LA: Coalition to Restore Coastal Louisiana, 2000. http://www.bcwaternews.com/Original_Content/2006/gulf/no_time_to_lose.pdf

Coastal Environments, Inc. *Environmental Considerations Interstate I-410*. Baton Rouge, LA: Coastal Environments, Inc., 1973.

Coastal Management Division (Louisiana DNR) and Rodney E. Emmer & Associates, Inc. *Preliminary Assessment of the Louisiana Coastal Management Program*. Baton Rouge, LA: Louisiana Department of Natural Resources, 1991. https://www.gpo.gov/fdsys/pkg/CZIC-qh541-5-c65-p74-1991/pdf/CZIC-qh541-5-c65-p74-1991.pdf.

Committee on Levees and the National Flood Insurance Program. *Levees and the National Flood Insurance Program: Improving Policies and Practices*. Washington, D.C.: National Academies Press, 2013. http://www.nap.edu/download/18309.

Committee on Homeland Security and Governmental Affairs. S. Rep. 109-322, *Hurricane Katrina: A Nation Still Unprepared*. Washington, D.C.: U.S. Governing Printing Office, 2006. https://www.congress.gov/109/crpt/srpt322/CRPT-109srpt322.pdf.

Committee on Merchant Marine and Fisheries, Bayou Sauvage Urban National Wildlife Refuge, H.R. No. 99-857, 1986.

Committee on the Restoration and Protection of Coastal Louisiana (National Research Council). *Drawing Louisiana's New Map: Addressing Land Loss in Coastal Louisiana*. Washington, D.C.: National Academies Press, 2006. http://www.nap.edu/catalog/11476.html.

Committee on the Review of the Louisiana Coastal Protection and Restoration (LACPR) Program. *Final Report from the NRC Committee on the Review of the Louisiana Coastal Protection and Restoration (LACPR) Program*. Washington, D.C.: National Academies Press, 2009. http://www.nap.edu/download/12708.

Conservation and Reinvestment Act: Hearing on S. 25, S. 2123, S. 2181 Before the Committee on Environment and Public Works. 106th Cong., 2000. https://www.gpo.gov/fdsys/pkg/CHRG-106shrg68424/pdf/CHRG-106shrg68424.pdf.

Council on Environmental Quality. *Environmental Quality: The First Annual Report of the Council on Environmental Quality Together with the President's Message to Congress*. Washington, D.C.: U.S. Government Printing Office, 1970. http://www.slideshare.net/whitehouse/august-1970-environmental-quality-the-first-annual-report-of.

Council on Environmental Quality, *Environmental Quality: The Sixth Annual Report of the Council of Environmental Quality*. Washington, D.C.: U.S. Government Printing Office, 1975. http://www.slideshare.net/whitehouse/august-1975-the-sixth-anual-report-of-the-council-on-environmental-quality.

Council on Environmental Quality, *Environmental Quality: The Tenth Annual Report of the Council on Environmental Quality*. Washington, D.C.: U.S. Government Printing Office, 1979. http://www.slideshare.net/whitehouse/august-1979-the-tenth-annual-report-of-the-council-on-environmental-quality.

Council on Environmental Quality, *Environmental Quality: The Eleventh Annual Report of the Council of Environmental Quality*. Washington, D.C.: U.S. Government Printing Office, 1980. http://www.slideshare.net/whitehouse/august-1980-the-eleventh-annual-report-of-the-council-on-env

Council on Environmental Quality. *Environmental Quality, 1981: The Twelfth Annual Report of the Council on Environmental Quality.* Washington, D.C.: U.S. Government Printing Office, 1981. http://www.slideshare.net/whitehouse/august-1981-the-12th-annual-report-of-the-council-on-environmental-quality.

Council on Environmental Quality. *Environmental Quality: The Thirteenth Annual Report of the Council of Environmental Quality.* Washington, D.C.: U.S. Government Printing Office, 1982. http://www.slideshare.net/whitehouse/august-1982-the-thirteenth-annual-report-of-the-council-on-environmental-quality.

Council on Environmental Quality, *Environmental Quality 1983: The Fourteenth Annual Report of the Council of Environmental Quality*. Washington, D.C.: U.S. Government Printing Office, 1983. http://www.slideshare.net/whitehouse/august-1983-the-fourteenth-anual-report-of-the-council-on-environmental-quality.

Council on Environmental Quality. *Environmental Quality: The Sixteenth Annual Report of the Council of Environmental Quality*. Washington, D.C.: U.S. Government Printing Office, 1985. http://www.slideshare.net/whitehouse/august-1985-the-sixteenth-annual-report-of-the-council-on-envirnomental-quality.

Council on Environmental Quality. *Environmental Quality: The Seventeenth Annual Report of the Council of Environmental Quality*. Washington, D.C.: U.S. Government Printing Office, 1986. http://www.slideshare.net/whitehouse/august-1986-the-seventeenth-annual-report-of-the-council-on-environmental-quality.

Council on Environmental Quality. *Environmental Quality: Twenty-Fifth Anniversary Report.* Washington, D.C.: U.S. Government Printing Office, 1995. https://ceq.doe.gov/nepa/reports/1994-95/25th_ann.pdf;

Couvillion, Brady, John A. Barras, Gregory D. Steyer, William Sleavin, Michelle Fischer, Holly Beck, Nadine Trahan, Brad Griffin, and David Heckman. *Land Area Change in Coastal*

Louisiana from 1932 to 2010. Denver, CO: U.S. Geological Survey, 2011. http://pubs.usgs.gov/sim/3164/downloads/SIM3164_Pamphlet.pdf.

Davis, Mark, Harry Vorhoff, and Dean Boyer. *Financing the Future: Turning Coastal Restoration and Protection Plans into Realities – How Much is Currently Funded?* New Orleans, LA: Tulane Institute on Water Resources Law and Policy, 2015. http://media.wix.com/ugd/32079b_300fb856888a4891bcd4e1f226e431d8.pdf

Deep Draft Harbor and Terminal Authority, *Superport Environmental Protection Plan.* Baton Rouge, LA: Deep Draft Harbor and Terminal Authority, 1974. National Oceanographic and Atmospheric Administration Central Library, Silver Spring, MD. https://www.gpo.gov/fdsys/pkg/CZIC-td195-p4-d43-1974/pdf/CZIC-td195-p4-d43-1974.pdf.

Deepwater Horizon Natural Resource Damage Assessment Trustees. *Deepwater Horizon Oil Spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement*. Silver Spring, MD: National Oceanographic and Atmospheric Administration, 2016. http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/Chapter-2_Incident-Overview_508.pdf

"Discussion of Proposed National Goal of No Overall Net Loss of Wetlands." ca. 1988-1989. John Breaux Papers, Box 271, Folder 22. Hill Memorial Library, Baton Rouge, LA.

Federal Highway Administration and Louisiana Department of Highways. *Final Environmental Statement for State Project No. 700-07-72/Federal Aid Project No. I-410-4(28) 217, Interstate Route 410*. Baton Rouge, LA: Louisiana Department of Highways, 1971.

Federal Highway Administration and the Louisiana Office of Highways. *Draft Supplement to the Final Environmental Impact Statement for State Project No. 700-07-72 and Federal Aid Project I-410-4(67)217, Interstate Route 410.* Fort Worth, TX: Federal Highway Administration, 1977.

Gagliano, Sherwood. *An Environmental-Economic Blueprint for Restoring the Louisiana Coastal Zone*: *The State Plan*. Baton Rouge, LA: Coastal Environments, Inc., 1994. http://www.lacoastpost.com/BLUEPRINT%20PLAN-1994.pdf.

Goldman, Lynn and Christine Coussens. *Environmental Public Health Impacts of Disaster: Hurricane Katrina, Workshop Summary*. Washington, D.C.: National Academies Press, 2007. http://www.nap.edu/download/11840#.

Heimlich, Ralph, Keith Weibe, Roger Claassen, Dwight Gadsby, and Robert House. *Wetlands and Agriculture: Private Interests and Public Benefits*, Agricultural Economic Report no. 765. Washington, D.C.: Economic Research Service, 1998. http://www.ers.usda.gov/media/929243/aer765_002.pdf.

Hobor, George, Allison Plyer, and Ben Horowitz. *The Coastal Index: April 2014*. New Orleans, LA: The Data Center, 2014. https://s3.amazonaws.com/gnocdc/reports/TheDataCenter_TheCoastalIndex.pdf.

Horwitz, Elinor Lander. *Our Nation's Wetlands: An Interagency Taskforce Report*. Washington, D.C.: U.S. Government Printing Office, 1978. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-gb621-h67-1978/pdf/CZIC-gb621-h67-1978.pdf.

House Legislative Services. *State and Local Government: An Overview, 2000-2004 Term.* Baton Rouge, LA: Louisiana House of Representatives, House Legislative Services, 1999.

Hurricane Katrina External Review Panel. *The New Orleans Hurricane Protection System: What Went Wrong and Why*. Reston, VA: American Society of Civil Engineers, 2007. http://ascelibrary.org/doi/pdf/10.1061/9780784408933.

Innovative Emergency Management, Inc. *Southeast Louisiana Catastrophic Hurricane Plan*. Baton Rouge, LA: IEM, Inc., 2005. http://online.wsj.com/public/resources/documents/hurplan0918.pdf.

Independent Levee Investigation Team. *Investigation of the Performance of the New Orleans Flood Protection System in Hurricane Katrina on August 29, 2005*, vol. 1. Berkeley, CA: University of California at Berkeley, 2006.

Johnson, David L. "Urgent Weather Message, 10:11 AM, August 28, 2005." In *Service Assessment: Hurricane Katrina, August 23-31, 2005*. Silver Spring, MD: National Weather Service, 2006. http://www.nws.noaa.gov/om/assessments/pdfs/Katrina.pdf

Knabb, Richard Jamie Rhome, and Daniel Brown. *Tropical Cyclone Report: Hurricane Katrina, August 23-30, 2005.* Miami, FL: National Hurricane Center, 2005; Updated in 2006 and 2011. http://www.nhc.noaa.gov/data/tcr/AL122005_Katrina.pdf; Johnson,

Kurth, Michael M. and Daryl V. Burckel. *The Rita Report: A Summary of the Social and Economic Impact and Recovery of Southwest Louisiana One Year after Hurricane Rita*. Baton Rouge, LA: Louisiana Recovery Authority, 2006. http://www.nola.com/katrina/pdf/091806_lra_ritareport.pdf.

Lane, Caroline. "General Government." In *State of Louisiana: State of the State 1996*. Baton Rouge, LA: Louisiana Office of Planning and Budget, 1996.

Lindstedt, Diane M., Lori L. Nunn, Joseph C. Holmes, Jr., and Elizabeth Willis. *History of Oil and Gas Development in Coastal Louisiana.* Baton Rouge, LA: Louisiana Geological Survey, 1991.

Lopez, John. "The Multiple Lines of Defense Strategy to Sustain Coastal Louisiana." In Appendix A, *Comprehensive Recommendations Supporting the Use of Multiple Lines of Defense Strategy to Sustain Coastal Louisiana, 2008 Report.* New Orleans, LA: Lake Pontchartrain Basin Foundation, 2008. http://www.saveourlake.org/PDF-documents/MLODSreportFINAL-12-7-08with-comments.pdf.

Louisiana Advisory Commission on Coastal and Marine Resources. *Louisiana Government and the Coastal Zone-1972*. Baton Rouge, LA: Louisiana Advisory Commission on Coastal and Marine Resources, 1972.

Louisiana Advisory Commission on Coastal and Marine Resources. *Louisiana Wetlands Prospectus: Conclusions, Recommendations, and Proposals of the Louisiana Advisory Commission on Coastal and Marine Resources*. Baton Rouge, LA: Louisiana Advisory Commission on Coastal and Marine Resources, 1973.

Louisiana Advisory Commission on Coastal and Marine Resources. *Wetlands '73: Toward Coastal Zone Management in Louisiana*. Baton Rouge, LA: Louisiana Advisory Commission on Coastal and Marine Resources, 1973.

Louisiana Coastal Area – Addressing Decades of Coastal Erosion: *Hearing before the Subcommittee on Water Resources and Environment*, 108th Cong. (2004).

Louisiana Coastal Protection and Restoration Authority. "2017 Coastal Master Plan Project Development Program." Baton Rouge, LA: Coastal Protection and Restoration Authority, 2014. http://coastal.la.gov/wp-content/uploads/2014/09/2017-Coastal-Master-Plan-Project-Development-Program.pdf.

Louisiana Coastal Protection and Restoration Authority. *Louisiana's Comprehensive Master Plan for a Sustainable Coast*. Baton Rouge, LA: Louisiana Coastal Restoration and Protection Authority, 2012. http://sonris-www.dnr.state.la.us/dnrservices/redirectUrl.jsp?dID=4379731.

Louisiana Coastal Restoration and Protection Authority. *Fiscal Year 2008 Annual Plan: Ecosystem Restoration and Hurricane Protection in Louisiana*. Baton Rouge, LA: Louisiana Coastal Restoration and Protection Authority, 2007. http://coastal.la.gov/resources/library/reports/.

Louisiana Coastal Restoration and Protection Authority, *Fiscal Year 2009 Annual Plan: Ecosystem Restoration and Hurricane Protection in Coastal Louisiana*. Baton Rouge, LA: Louisiana Coastal Restoration and Protection Authority, 2008. http://coastal.la.gov/resources/library/reports/.

Louisiana Coastal Protection and Restoration Authority. *Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast.* Baton Rouge, LA: Louisiana Coastal Restoration and Protection Authority, 2007. http://sonris-www.dnr.state.la.us/dnrservices/redirectUrl.jsp?dID=4063376

Louisiana Coastal Protection and Restoration Authority. *Integrated Ecosystem Restoration and Hurricane Protection in Coastal Louisiana: Fiscal Year 2016 Annual Plan*. Baton Rouge, LA: Coastal Protection and Restoration Authority, 2015. http://cims.coastal.louisiana.gov/RecordDetail.aspx?Root=0&sid=11477

Louisiana Coastal Protection and Restoration Authority. “Louisiana Coastal Facts.” Baton Rouge, LA: Coastal Protection and Restoration Authority, 2011. http://www.americaswetland.com/photos/article/Coastal_facts_sheet_03_27_2012.pdf

Louisiana Coastal Wetlands Conservation and Restoration Task Force. *Louisiana Coastal Wetlands Restoration Plan: Main Report and Environmental Impact Statement*. Baton Rouge, LA: Louisiana Coastal Wetlands Conservation and Restoration Task Force, 1993. http://lacoast.gov/reports/cwcrp/1993/1993lcwrp-all.pdf.

Louisiana Coastal Wetlands and Restoration Task Force and Louisiana Wetlands Conservation and Restoration Authority. *Coast 2050: Toward a Sustainable Coastal Louisiana*. Baton Rouge, LA: Louisiana Department of Natural Resources, 1998.

Louisiana Department of Employment Security. *Louisiana Income and Employment, 1960-1969*. Baton Rouge, LA: Louisiana Department of Employment Security, 1971.

Louisiana Department of Natural Resources, *Coastal Protection Task Force Report*. Baton Rouge, LA: Louisiana Department of Natural Resources, 1982. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-tc224-l8-l684-1982/pdf/CZIC-tc224-l8-l684-1982.pdf

Louisiana Department of Natural Resources, Louisiana Department of Wildlife and Fisheries, and the Governor’s Office of Coastal Affairs. “Oyster White Paper.” Baton Rouge, LA, 2001.

Louisiana Geological Survey and the Department of Natural Resources. *Proposed Coastal Protection Master Plan*. Baton Rouge, LA: Louisiana Department of Natura Resources, 1986. John Breaux Papers, Box 271, Folder 22, Hill Memorial Library, Baton Rouge, LA.

Louisiana-Mississippi Gulf Coast Ecosystem Restoration Working Group. *Roadmap for Restoring Ecosystem Resiliency and Sustainability*. Washington, D.C.: Council on Environmental Quality, 2010. https://www.whitehouse.gov/sites/default/files/microsites/ceq/100303-gulf-coast-roadmap.pdf.

Louisiana State Office of Planning. *Louisiana State of the State 1978: An Economic and Social Report to the Governor*. Baton Rouge, LA: Louisiana State Planning Office, 1979.

Lower Mississippi River Delta Development Commission. *Final Report: The Delta Initiatives.* Memphis, TN: Lower Mississippi River Delta Development Commission, 1990. John Breaux Papers, Box 148, Folder 23. Hill Memorial Library, Baton Rouge, LA.

Marmillion + Company. *America’s WETLAND: Progress Report, 2002-2009*. New Orleans, LA: Marmillion + Company for America’s WETLAND Foundation, 2009. http://www.americaswetland.com/photos/article/102408_aw-reportFinal.pdf

Memorandum: Talking Points for National Wetlands Coalition Speech, October 8, 1993. John Breaux Papers, Box 148, Folder 23. Hill Memorial Library, Baton Rouge, LA.

Multiple Lines of Defense Assessment Team. *Comprehensive Recommendations Supporting the Use of the Multiple Lines of Defense Strategy to Sustain Coastal Louisiana, 2008 Report*. New Orleans, LA: Lake Pontchartrain Basin Foundation, 2008. http://www.saveourlake.org/PDF-documents/MLODSreportFINAL-12-7-08with-comments.pdf.

New Orleans City Planning Commission. *Coastal Zone Management Plan, 1975*, vol. II. New Orleans, LA: City Planning Commission, 1975. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-ht168-n35-n4-1975-v-2/pdf/CZIC-ht168-n35-n4-1975-v-2.pdf.

New Orleans City Planning Commission. *Coastal Zone Management Plan, 1975*, vol. III. New Orleans, LA: New Orleans City Planning Commission, 1975. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-ht168-n35-n4-1975-v-3/pdf/CZIC-ht168-n35-n4-1975-v-3.pdf.

Office of Coastal Restoration and Management (Louisiana DNR). *Louisiana Coastal Wetlands Conservation Plan*. Baton Rouge, LA: Louisiana Department of Natural Resources, 1997. http://dnr.louisiana.gov/assets/OCM/permits/CWCP.PDF.

Office of Ocean and Coastal Resource Management (NOAA), *Biennial Report to the Congress on Coastal Zone Management* vol. II. Washington D.C.: National Oceanographic and Atmospheric Agency. 1992. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u558b-v-2-fy1990-91-1992/pdf/CZIC-ht392-u558b-v-2-fy1990-91-1992.pdf.

Office of Ocean and Coastal Resource Management (NOAA). *Federal Coastal Programs Review*. Washington, D.C.: U.S. Government Printing Office, 1985. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u55-f43-1985/html/CZIC-ht392-u55-f43-1985.htm.

Office of Coastal Zone Management (NOAA). *Report to the Congress on Coastal Zone Management, July 1974 through June 1975*. Washington, D.C.: U.S. Government Printing Office, 1976. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u55-1976/pdf/CZIC-ht392-u55-1976.pdf.

Office of Coastal Zone Management (NOAA) and Coastal Management Section (Louisiana DNR). *Louisiana Coastal Resources Program: Final Environmental Impact Statement* (Baton Rouge, LA: Louisiana Department of Natural Resources, 1980. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-ht393-l8-f53-1980/pdf/CZIC-ht393-l8-f53-1980.pdf.

Office of Coastal Zone Management (NOAA), *State Coastal Zone Management Activities, 1975-1976.* Washington, D.C.: U.S. Government Printing Office, 1976. Coastal Zone Information

Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-ht392-u558-1976/pdf/CZIC-ht392-u558-1976.pdf.

Penney, Lauren. "In the Wake of War: World War II and the Offshore Oil and Gas Industry," *History of the Offshore Oil and Gas Industry in Southern Louisiana, Papers on the Evolving Offshore Industry*, vol. I. New Orleans, LA: Minerals Management Service, 2008. https://www.data.boem.gov/PI/PDFImages/ESPIS/4/4530.pdf.

Public Affairs Research Council of Louisiana. *Voter's Guide to the Amendments,* PAR Guide no. 3, Baton Rouge, LA: Public Affairs Research Council of Louisiana, 1952.

Public Affairs Research Council of Louisiana. "Analysis of Kerr-Mills Act in LA.," *PAR Analysis*, no. 109. Baton Rouge, LA: Public Affairs Research Council of Louisiana, February 1963.

Public Affairs Research Council of Louisiana. "Public Bonds for Private Industry," *PAR Analysis*, no. 120. Baton Rouge, LA: Public Affairs Research Council of Louisiana, Inc., September 1964.

Public Affairs Research Council of Louisiana. "Powers of the Governor and Gubernatorial Succession." *PAR Analysis*, no. 127. Baton Rouge, LA: Public Affairs Research Council of Louisiana, April 1965.

Public Affairs Research Council of Louisiana. *Constitution '74: PAR's Voter's Guide to the 1974 Proposed Constitution*. Baton Rouge, LA: Public Affairs Research Council, 1974.

Public Affairs Research Council of Louisiana. "PAR Guide to the State Budget Crisis: How We Got Here – the Jindal Record – The Real Priorities." *PAR Research Brief*. Baton Rouge, LA: Public Affairs Research Council of Louisiana, April 2015. http://www.parlouisiana.com/studiesreportsbydate.cfm.

Public Affairs Research Council of Louisiana. *PAR Guide to the 2015 Constitutional Amendments: An Independent, Non-Partisan Review*, no. 336. Baton Rouge, LA: Public Affairs Research Council of Louisiana, September 2015. http://www.parlouisiana.com/studiesreportsbydate.cfm.

President's Water Resources Council. *Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans For Use and Development of Water and Related Land Resources*, Senate Document No. 97. Washington, D.C.: U.S. Government Printing Office, 1962. http://planning.usace.army.mil/toolbox/library/Guidance/PoliciesStandardsProceduresWResources1962wSupp1_1964.pdf.

Priest, Tyler. "Technology and Strategy of Petroleum Exploration in Coastal and Offshore Gulf of Mexico." *History of the Offshore Oil and Gas Industry in Southern Louisiana, Papers on the Evolving Offshore Industry*, vol. I. New Orleans, LA: Minerals Management Service, 2008. https://www.data.boem.gov/PI/PDFImages/ESPIS/4/4530.pdf.

Priest, Tyler. “Claiming the Coastal Sea: The Battles for the ‘Tidelands,’ 1937-1953.” *History of the Offshore Oil and Gas Industry in Southern Louisiana, Papers on the Evolving Offshore Industry*, vol. I. New Orleans, LA: Minerals Management Service, 2008. https://www.data.boem.gov/PI/PDFImages/ESPIS/4/4530.pdf.

Texas Water Development Board. The Texas Water Plan: Summary. Austin, TX: Texas Water Development Board, 1968. http://www.twdb.texas.gov/publications/State_Water_Plan/1968/1968_Water_Plan.pdf

Turner, R. Eugene. “Notes for the Expert Panel, 10 AM, Tuesday, 28 October, 2014, Baton Rouge” at Louisiana State University. (Baton Rouge, LA, 2014). http://biotech.law.lsu.edu/blog/Turner-2014-Oct-28-diversion-meeting-notes.pdf

U.S. Army Corps of Engineers, U.S Environmental Protection Agency, U.S. Fish and Wildlife Service, and the Soil Conservation Service (USDA), *Federal Manual for Identifying and Delineating Jurisdictional Wetlands: An Interagency Manual*. Washington, D.C.: U.S. Government Printing Office, 1989. https://www.fws.gov/northeast/ecologicalservices/pdf/wetlands/interagency%20wetland%20deli neation%20manual%201989.pdf.

U.S. Army Corps of Engineers. *Louisiana Coastal Area, Louisiana: Ecosystem Restoration Study* vol. I. New Orleans, LA: U.S. Army Corps of Engineers, New Orleans District, 2004. http://www.mvn.usace.army.mil/Portals/56/docs/LCA/Main%20Report.pdf?ver=2016-07-01-095948-907

U.S. Army Corps of Engineers. *Louisiana Coastal Protection and Restoration (LACPR): Final Technical Report*. New Orleans, LA: U.S. Army Corps of Engineers, New Orleans District, 2009. http://www.mvn.usace.army.mil/Portals/56/docs/environmental/LaCPR/LACPRFinalTechnicalR eportJune2009.pdf.

U.S. Army Corps of Engineers. *Section 905 (B) (WRDA 86) Analysis, Louisiana Coastal Area – Louisiana, Ecosystem Restoration*. New Orleans, LA: U.S. Army Corps of Engineers, New Orleans District, 1999.

U.S. Census Bureau. *Statistical Abstract of the United States, 1950*. Washington, D.C.: U.S. Government Printing Office, 1950. http://www2.census.gov/library/publications/1950/compendia/statab/71ed/1950-01.pdf

U.S. Census Bureau. *1970 Census of Population: Characteristics of the Population – Louisiana*, vol. I, part 20. Washington, D.C.: U.S. Government Printing Office, 1973. https://www.census.gov/prod/www/decennial.html

U.S. Census Bureau. *Statistical Abstract of the United States: 2012*. Washington, D.C.: Department of Commerce, U.S. Census Bureau, 2012. http://www2.census.gov/library/publications/2011/compendia/statab/131ed/2012-statab.pdf.

U.S. Congress. House of Representatives. Comm. on Merchant Marine and Fisheries, Bayou Sauvage Urban National Wildlife Refuge. H.R. No. 99-857, 1986.
U.S. Congress. House of Representatives. Commission on Marine Science, Engineering and Resources. *Our Nation and the Sea: A Plan for National Action*, H.R. Doc. No. 91-92, (1969). https://archive.org/details/ournationseaplan00unit

U.S. Congress. House of Representatives. *Swamp Lands in Louisiana Report no. 816*, 13th Cong., 1st sess., August 8, 1848. LSU Louisiana Waterways Management Collection, Baton Rouge, LA, http://cdm16313.contentdm.oclc.org/cdm/singleitem/collection/p16313coll35/id/57/rec/1.

U.S. Congress. Senate. Committee on Environment and Public Works. *Conservation and Reinvestment Act: Hearing Before the Committee on Environment and Public* Works. 106th Cong., 2nd sess., May 24, 2000. https://www.gpo.gov/fdsys/pkg/CHRG-106shrg68424/pdf/CHRG-106shrg68424.pdf

U.S. Department of the Interior. *The Impact of Federal Programs on Wetlands: A Report to Congress by the Secretary of the Interior*, vol. II. Washington, D.C.: U.S. Fish and Wildlife Service, 1994.

U.S. Fish and Wildlife Service. *National Wetlands Priority Conservation Plan* (Washington, D.C.: U.S. Fish and Wildlife Service, 1989. Coastal Zone Information Center Collection, U.S. Government Publishing Office, Washington, D.C. https://www.gpo.gov/fdsys/pkg/CZIC-qh76-u85-1989/pdf/CZIC-qh76-u85-1989.pdf.

U.S. Government Accountability Office. *Army Corps of Engineers Lake Pontchartrain and Vicinity Hurricane Protection Project: Statement of Anu Mittal Before the Subcommittee on Energy and Water Development*. Washington, D.C.: U.S. Government Accountability Office, 2005. http://www.gao.gov/new.items/d051050t.pdf.

U.S. General Accounting Office. *Report to the Secretary of the Army: Improved Planning Needed by the Corps of Engineers to Resolve Environmental, Technical, and Financial Issues on the Lake Pontchartrain Hurricane Protection Project*. Gaithersburg, MD: U.S. General Accounting Office, 1982. http://www.gao.gov/assets/140/138422.pdf.

U.S. Congress. Office of Technology Assessment. *Wetlands: Their Uses and Regulations.* Washington, D.C.: U.S. Government Printing Office, 1984. http://govinfo.library.unt.edu/ota/Ota_4/DATA/1984/8433.PDF

Books and Journal Articles

Adeoloa, Francis. "Environmental Injustice in the State of Louisiana?: Hazardous Wastes and Environmental Illness in the Cancer Corridor." *Race, Gender, & Class* 6, no. 1 (1998): 83-106. http://www.jstor.org/stable/41658850

Allen, Barbara. “The Making of Cancer Alley: A Historical View of Louisiana’s Chemical Corridor.” In *Southern United States: An Environmental History*, 235-247. Santa Barbara, CA: ABC-CLIO, 2006.

Allen, Barbara. *Uneasy Alchemy: Citizens and Experts in Louisiana’s Chemical Corridor Disputes.* Cambridge, MA: The MIT Press, 2003.

Allison, Mead A., Charles R. Demas, Bruce A. Ebersole, Barbara A. Kleiss, Charles D. Little, Ehab A. Meselhe, Nancy J. Powell, Thad C. Pratt, and Brian M. Vosburg. "A Water and Sediment Budget for the Lower Mississippi–Atchafalaya River in Flood Years 2008–2010: Implications for Sediment Discharge to the Oceans and Coastal Restoration in Louisiana." *Journal of Hydrology* 432-433 (April 2012): 84-97. http://libezp.lib.lsu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edselp&AN=S0022169412001205&site=eds-live&scope=site&profile=eds-main

Barry, John M. *Rising Tide: The Great Mississippi Flood of 1927 and how it Changed America.* New York: Simon & Schuster Paperbacks, 1997.

Bridges, Tyler. *Bad Bet on the Bayou: The Rise of Gambling and the Fall of Governor Edwin Edwards.* New York: Farrar, Straus, and Giroux, 2001.

Bullard, Robert D. *Dumping in Dixie: Race, Class, and Environmental Quality.* Boulder, CO: Westview Press, Inc., 1990.

Camillo, Charles and Matthew Pearcy. *Upon Their Shoulders: A History of the Mississippi River Commission from Its Inception through the Advent of the Modern Mississippi River and Tributaries Project*. Vicksburg, MS: Mississippi River Commission, 2004.

Carleton, Mark. “Four Anti-Longites: A Tentative Assessment.” *Louisiana History: The Journal of the Louisiana Historical Association* 30, no. 3 (Summer 1989): 249-262. http://www.jstor.org/stable/4232738.

Carleton, Mark. “The Louisiana Constitution of 1974.” In *Louisiana Politics: Festival in a Labyrinth*, edited by James Bolner, 15-41. Baton Rouge, LA: Louisiana State University Press, 1982.

Carson, Rachel. *Silent Spring.* First Mariner Books Edition. Boston: Mariner Books, 2002.

Caulfield, Jr., Henry. “Environmental Management: Water and Related Land.” *Public Administration Review* 28, no. 4 (July-Aug 1968): 306-311. http://www.jstor.org/stable/973511

Colten, Craig. “Contesting Pollution in Dixie: The Case of Corney Creek.” *The Journal of Southern History* 72, no. 3, (August 2006): 605-634. http://www.jstor.org/stable/27649150.

Coreil, Paul D. “Landowners’ Perceptions Related to Wetland Regulatory Policy in Coastal Louisiana.” *8th Triennial National Wildlife and Fisheries Extension Specialists Conference*, paper 10 (1996): 52-60. http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1009&context=ewfsc8.

Cowdrey, Albert E. *This Land, This South: An Environmental History.* Lexington, KY: University of Kentucky Press, 1996.

Davis, Donald E. “Metropolis: Paradise Lost.” In *Southern United States: An Environmental History,* 159-182. Santa Barbara, CA: ABC-CLIO, 2006.

Daynes, Byron W. and Glen Sussman. *White House Politics and the Environment: Franklin D. Roosevelt to George W. Bush*. College Station, TX: Texas A&M University Press, 2010.

Dennis, John. *The Great Cypress Swamps*. Baton Rouge, LA: Louisiana State University Press, 1988.

Elazar, Daniel J. *American Federalism: A View from the States*. New York: Thomas Y. Crowell Company, 1972.

Freyfogle, Eric T. *The Land We Share: Private Property and the Common Good*. Washington, D.C.: Island Press/Shearwater Books, 2003.

Giblett, Rodney. *Postmodern Wetlands: Culture, History, Ecology*. Edinburgh, Scotland: Edinburgh University Press, 1996.

Grosser, Paul. “Political Parties.” In *Louisiana Politics: Festival in a Labyrinth,* edited by James Bolner, 255-283. Baton Rouge, LA: Louisiana State University Press, 1982.

Hallowell, Christopher. *Holding Back the Sea: The Struggle for America’s Natural Legacy on the Gulf Coast*. New York: HarpersCollins Publishers, 2001.

Hays, Samuel P. *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920*. Pittsburgh, PA: University of Pittsburgh Press, 1999. First published 1959 by Harvard University Press.

Hays, Samuel P. Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985. New York: Cambridge University Press, 1987.

Holbrook, Charles, and Mark Carleton. “The Bureaucracy.” In *Louisiana Politics: Festival in a Labyrinth,* edited by James Bolner, 123-142. Baton Rouge, LA: Louisiana State University Press, 1982.

Houck, Oliver. “Rescuing Ophelia: *Avoyelles Sportsmen League* and the Bottomlands Hardwood Controversy.” *Mississippi Law Journal* 81, no. 6, (2012): 1473-1526. http://mississippilawjournal.org/wp-content/uploads/2012/07/5-Houck_FINAL-Rev.pdf

Ivy Hair, William. *The Kingfish and his Realm: The Life and Times of Huey P. Long.* Baton Rouge, LA: Louisiana State University Press, 1991.

Jackson, Kenneth T. *Crabgrass Frontier: The Suburbanization of the United States*. New York: Oxford University Press, 1985.

Jeansonne, Glen. *Leander Perez: Boss of the Delta.* 2nd ed. Jackson, MS: University Press of Mississippi, 2006. First published 1977 by Louisiana State University Press.

Kleine, Christine A. and Sandra B. Zellmer. *Mississippi River Tragedies: A Century of Unnatural Disaster*. New York: New York University Press, 2014.

Kline, Benjamin. *First along the River: A Brief History of the U.S. Environmental Movement.* Lanham, MD: Rowman & Littlefield Publishers, Inc., 2011.

Kurtz, Michael L. "Chapter 16." In *Louisiana: A History*, edited by Bennett H. Wall, 373-389. Wheeling, IL: Harlan Davidson, Inc., 2008.

Kurtz, Michael L. and Morgan D. Peoples. *Earl K. Long: The Saga of Uncle Earl and Louisiana Politics.* Baton Rouge, LA: Louisiana State University Press, 1990.

Landy, Marc and Sidney M. Milkis. *American Government Balancing Democracy and Rights.* New York: Cambridge University Press, 2008.

Lasswell, Harold. *Politics: Who Gets What, When, and How*. New York: P. Smith, 1950.

Leopold, Aldo. *A Sand County Almanac and Sketches Here and There*. New York: Oxford University Press, 1949.

Lewis, Robert. "World War II Manufacturing and the Postwar Southern Economy." *The Journal of Southern History* 73, no. 4 (November 2007): 837-866. http://www.jstor.org/stable/27649570.

Lewis, Jr., William M. *Wetlands Explained: Wetland Science, Policy, and Politics in America.* New York: Oxford University Press, 2001.

Lindstedt, Diane M. "Renewable Resources at Stake: Barataria-Terrebonne Estuarine System in Southeast Louisiana." *Journal of Coastal Research*, Special Issue No. 44 (Spring 2005): 162-175. http://www.jstor.org/stable/25737055.

Maginnis, John. *The Last Hayride.* Baton Rouge, LA: Gris Press, 1984.

Maginnis, John. *The Politics of Reform, PAR: 50 Years of Changing Louisiana.* Baton Rouge, LA: Political Affairs Research Council, 2000.

McCowan, Charles. “The Evolution of Environmental Law in Louisiana.” *The Louisiana Law Review* 52, no. 4, (March 1992): 907-932. http://digitalcommons.law.lsu.edu/lalrev/vol52/iss4/5.

Miller, Blaine. “Louisiana’s Tidelands Controversy: The *United States vs. State of Louisiana* Maritime Boundary Cases.” *Louisiana History: The Journal of the Louisiana Historical Association* 38, no. 2 (Spring 1997): 203-221. http://www.jstor.org/stable/4233394.

Minchin, Timothy J. *Forging a Common Bond: Labor and Environmental Activism during the BASF Lockout.* Gainesville, FL: University of Florida Press, 2003.

Morrison, Christopher. *The Big Muddy: An Environmental History of the Mississippi and its Peoples from Hernando De Soto to Hurricane Katrina.* New York: Oxford University Press, 2012.

Murchison, Kenneth. “Enforcing Environmental Standards under State Law: The Louisiana Environmental Quality Act.” *Louisiana Law Review* 57, no. 2 (Winter 1997): 497-563. http://digitalcommons.law.lsu.edu/lalrev/vol57/iss2/5.

Parent, Wayne. *Inside the Carnival: Unmasking Louisiana Politics.* Baton Rouge, LA: Louisiana State University Press, 2004.

Pearcy, Matthew. “After the Flood: A History of the 1928 Flood Control Act.” *Journal of Illinois State Historical Society* 95, no. 2 (Summer 2002): 172-201. http://www.jstor.org/stable/40193521.

Pellegrin, Charles. “Louisiana Progressivism and the American Reform Experience: Administrative Reorganization in Louisiana, 1940-1948.” *Louisiana History: The Journal of the Louisiana Historical Association* 37, no. 2 (Spring 1996): 201-215. http://www.jstor.org/stable/4233291.

Ray, Bruce. “Section 404 of the Clean Water Act: An EPA Perspective.” *National Resources and Environment* 2, no. 3 (Winter 1987): 20-22; 49-51. http://www.jstor.org/stable/40923332.

Renwick, Ed. “The Governor.” In *Louisiana Politics: Festival in a Labyrinth*, edited by James Bolner, 75-88. Baton Rouge, LA: Louisiana State University Press, 1982.

Martin Reuss. *Designing the Bayous: The Control of the Atchafalaya River Basin, 1800-1995*. College Station, TX: Texas A&M University Press, 2004.

Rome, Adam. *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism*. Cambridge, UK: Cambridge University Press, 2001.

Rome, Adam. “Coming to Terms with Pollution: The Language of Environmental Reform.” *Environmental History* 1, no. 3 (July 1996): 6-28. http://www.jstor.org/stable/3985154.

Rothman, Hal K. *The Greening of a Nation?: Environmentalism in the United States since 1945.* Fort Worth, TX: Harcourt Brace College Publishers, 1998.

Rothman, Hal K. *Saving the Planet: The American Response to the Environment in the Twentieth Century* Chicago: Ivan R. Dee, 2001.

Sanson, Jerry. *Louisiana during World War II: Politics and Society, 1939-1945.* Baton Rouge, LA: Louisiana State University Press, 1999.

Sanson, Jerry. "'What he did and what he promised to do…' Huey Long and the Horizons of Louisiana's Politics." *Louisiana History: The Journal of the Louisiana Historical Association* 47, no. 3 (Summer 2006): 260-271. http://www.jstor.org/stable/4234200.

Shabecoff, Phillip. *A Fierce Green Fire: The American Environmental Movement*. Washington, D.C.: Island Press, 2003.

Short, C. Brant. *Ronald Reagan and the Public Lands: America's Conservation Debate, 1979-1984.* College Station, TX: Texas A&M University Press, 1989.

Stein, Jeffrey K. *America's Forested Wetlands: From Wasteland to Valued Resource.* Durham, North Carolina: Forest History Society, 2008.

Steinberg, Ted. *Acts of God: The Unnatural History of Natural Disaster in America*. New York: Oxford University Press, 2000.

Streever, Bill. *Saving Louisiana? The Battle for Coastal Wetlands*. Jackson, MS: University of Mississippi Press, 2001.

Taylor, William E. and Mark Gerath. "The Watershed Protection Approach: Is the Promise About To Be Realized?" *Natural Resources and Environment* 11, no. 2 (Fall 1996): 16-20. http://www.jstor.org/stable/40923630

Theriot, Jason. *American Energy, Imperiled Coast: Oil and Gas Development in Louisiana's Wetlands*. Baton Rouge, LA: Louisiana State University Press, 2014.

Theriot, Jason. "Cajun Country during World War II." *Louisiana History: The Journal of the Louisiana Historical Association*, 51, no. 2 (Spring 2010): 137-170. http://www.jstor.org/stable/25699394.

Tidwell, Mike. *Bayou Farewell: The Rich Life and Tragic Death of Louisiana's Cajun Coast*. New York: Pantheon Books, 2003.

Vileisis, Ann. *Discovering the Unknown Landscape: A History of America's Wetlands.* Washington, D.C.: Island Press, 1997.

Viosca, Percy. “Louisiana Wet Lands and the Value of the Wild Life and Fishery Resources.” *Ecology* 9, no. 2 (April 1928): 216-229. http://www.jstor.org/stable/1929355

Wellock, Thomas R. *Preserving the Nation: The Conservation and Environmental Movements, 1870-2000.* Wheeling, IL: Harlan Davidson, Inc., 2007.

White, Jr., Richard D. *Kingfish: The Reign of Huey P. Long.* New York: Random House, 2006.

Wright, William C., Ronna Cohen, and Jeffrey H. Heath. “Decentralizing Water Resource Planning and Management.” *Journal (American Water Works Association)* 74, no. 7 (July 1982): 334-345. http://www.jstor.org/stable/41271053.

Zebrowski, Ernest and Mariah Zebrowski Leach. *Hydrocarbon Hucksters: Lessons from Louisiana on Oil, Politics, and Environmental Justice. Jackson, MS: University of Mississippi Press*, 2014.

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