

Investigating Structural Barriers to Community Participation: A Political Ecology Analysis of
Risk Reduction in Coastal Louisiana

By

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Jacob E. Lipsman

Ph.D. Candidate

M.A., University of Kansas, 2014

B.S., Tulane University, 2010

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Philosophy.

Chair: Eric A. Hanley

Robert J. Antonio

Paul Stock

Ebenezer Obadare

J. Christopher Brown

Date Defended: April 8, 2020

The dissertation committee for Jacob E. Lipsman certifies that this is
the approved version of the following dissertation:

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Chair: Eric A. Hanley

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ABSTRACT

Louisiana's Coastal Master Plan for a Sustainable Coast is an ambitious policy suite directed at reducing coastal risk and building resilient communities in the midst of a coastal erosion crisis that threatens the ecological and economic future of the state. The plan aims to reduce risk coast-wide through a variety of projects aimed at building land, structural protections, and nonstructural risk reduction projects. The plan has nearly universal support at the institutional level, and projects are currently underway.

This dissertation investigates the master plan from a political ecology perspective and asks key questions about how power relations influence the plan and its implementation. This study focuses on two key areas of political ecology: the macro level sociopolitical processes that influence local ecological governance decisions, and who has the authority to make and enforce these decisions. Specifically, this dissertation interrogates the plan's approach to risk, vulnerability, and resilience; the extent to which local knowledge has been incorporated into the coastal planning process; and the barriers to grassroots mobilization for groups who oppose elements of the master plan. This study represents a uniquely sociological approach to political ecology through its consistent focus on the ways in which power operates through institutions in the coastal zone. The findings of this study show that on multiple dimensions, the State's coastal planning process, while ambitious, has significant shortcomings in its ability to deliver risk reduction at the community level in a way that promotes environmentally just outcomes for vulnerable groups.

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INTRODUCTION

Louisiana's Comprehensive Master Plan for a Sustainable Coast is an ambitious policy suite designed to build land and reduce risk to communities and infrastructure throughout Louisiana's coastal zone. The plan is Louisiana's response to a coastal erosion crisis that has seen over 4,877 square kilometers of land loss since 1932 (Couvillion et al. 2016:347). Continued disaggregation of wetlands, at increasing rates, is likely to continue without significant intervention (347).

This dissertation utilizes a political ecology framework to critically analyze the coastal master plan from the perspective of the vulnerable coastal communities it strives to protect. In three substantive chapters, this project identifies key environmental justice issues that stem from the plan's development and execution. First, this project investigates the way that the coastal master plan addresses issues of risk and resilience and argues that the State's unwillingness to attribute risk to the energy industry threatens to reproduce power relations that create vulnerability for coastal communities. Second, this project analyzes the extent to which the State utilizes local knowledge in the master plan's development and finds that many coastal residents perceive exclusion from the planning process based on their lack of technical knowledge. Finally, this project examines grassroots mobilization against certain elements of the plan and finds that the coalition between the State, the energy industry, and the national environmental sector form a bureaucratic apparatus that hinders resistance to the plan. This project incorporates key elements of sociological and social-ecological theory including power, ideology, political economy, ecological democracy, mobilization, and weaves a narrative of a coastal restoration plan that, despite its best intents, has shortcomings directly tied to its positionality within neoliberalism.

This project is not an effort to make normative declarations about the process of coastal restoration or individual parts of the plan. Louisiana’s coastal erosion crisis is an urgent issue and the master plan represents a real attempt by the State to become a global leader in water management as coastal systems experience greater risk globally. This project aims to perform a critical analysis of the planning process that keeps vulnerable communities at the center. This project will contribute to social-ecological literature in political ecology and environmental justice by providing a case study of the ways in which neoliberalism constrains local ecological governance decisions.

LOUISIANA’S COASTAL EROSION CRISIS AND MASTER PLAN

Louisiana lost 4,877 square kilometers of land between 1932 and 2010 (Couvillion et al. 2016:347). This erosion is the result of several human factors in including the construction of flood control structures and channelization of wetlands for both maritime navigation and oil and gas exploration and production (Khalil, Freeman, and Raynie 2018:17, 18). This wetland loss has already created significant hardship for vulnerable groups and is likely reach catastrophic conditions for coastal communities without significant intervention. The Coastal Protection and Restoration Authority (CPRA) estimates the state could lose 2250 square miles of land by 2067, resulting in \$12 billion in annual flood damages (Hemmerling, Barra, and Bond 2020:115).

Following Hurricanes Katrina and Rita in 2005, the State of Louisiana established the CPRA, a state agency responsible for creating and executing a centralized master plan to address coastal erosion (CPRA 2017a¹:44). The first master plan was ratified in 2007, and it is updated and ratified every five years (every six years following the 2017 iteration). The coastal master plan contains several project types designed to “build or maintain land and reduce risk to (our)

¹ 2017 Coastal Master Plan: Main Document

communities” (CPRA 2017a:ES-2), including infrastructure projects, structural protections, and nonstructural risk reduction projects. The plan is designed to be executed over fifty years at a cost of \$50 billion—although new estimates of up to \$92 billion have been floated (CPRA 2017a:82; Marshall 2016).

The master plan has eight project types: structural protection, nonstructural protection, ridge restoration, shoreline protection, barrier island restoration, marsh creation, sediment diversions, and hydrologic restoration (CPRA 2017a:90). The master plan states that the 120 recommended projects in the 2017 iteration will “build or maintain more than 800 square miles of land and reduce expected damage by \$8.3 billion annually by year (fifty), or by more than \$150 billion over the next (fifty) years” (CPRA 2017a:ES-14). The combination of project types and time scales for different projects represents a diverse and integrative approach to coastal restoration.

Sediment Diversions

In general, the coastal master plan’s goals are popular, as are most of its project types (EDF 2018). The state government and the public each recognize the importance of coastal restoration to the future of Louisiana’s economy and communities. Sediment diversions, however, are one project type that have become immensely controversial among the coastal population due to potential impacts on the fishing industry.

Sediment diversions are one of the plan’s major responses to land loss resulting from flood control structures. River levees prevent the Mississippi River from depositing sediment into surrounding marsh, a natural process that is critical to the river’s ability to build and maintain wetlands. Proposed sediment diversions would be installed at strategic points in the river to channel sediment from the river into surrounding marsh in order to build land. The first

two diversion projects scheduled in the southeast coastal zone, the Mid-Barataria and Mid-Breton Sediment Diversions, have been added to the Federal Infrastructure Projects Permitting Dashboard and are expected to cost nearly a billion and half a billion dollars respectively (Schleifstein 2019a; CPRA 2017a:119).

While the State argues that diversions are the best course to build land, residents throughout the coastal zone argue that the increased fresh water from the Mississippi River will alter the salinity of the estuary and create hardship for fisheries, particularly oyster and shrimp harvests. Sediment diversions have been at the center of political controversy as the State moves forward in spite of local opposition. The State has engaged in outreach efforts including meetings, office hours, and public forums throughout the coastal zone, but many coastal residents argue that these meetings represent lip service at best. Chapters two and three of this project center on this controversy by investigating the involvement of locals in the decision to use sediment diversions and the extent to which locals have been able to mobilize on this issue.

The Energy Industry and Funding the Coastal Master Plan

The energy industry plays two roles in the master plan—an asset to be protected by restoration projects, and potential funding source. One metric for determining the value of particular projects is the extent to which it provides support for oil and gas activities and communities (CPRA 2017a:80).

The energy industry has undoubtedly served as a major engine of Louisiana's economy, and Louisiana's energy production plays a large role in the overall United States economy (Laska et al. 2005:100; Advocate Staff 2018). At the same time, energy production in Louisiana's coastal zone has resulted in land loss that actively contributes to the coastal erosion crisis at the heart of this dissertation (Day et al. 2019). Furthermore, many of the funding

mechanisms for the master plan stem directly from legislative measures ensuring oil and gas royalties contribute to coastal restoration (e.g. the Gulf of Mexico Energy Security Act, or GOMESA), or legal settlements resulting from the BP Deepwater Horizon oil spill that occurred in 2010 (CPRA 2017a:126). These funding sources raise questions about the viability of a coastal master plan that relies so significantly on sources of ecological harm as major funding mechanisms. Nevertheless, coastal restoration does not occur in a political vacuum, and this project focuses on understanding the influence that neoliberalism has on the specific goals and priorities of the coastal master plan. Chapter one of this project focuses specifically on the influence of neoliberalism on the CPRA's discourse around risk and resilience.

THEORETICAL PARADIGM

Political ecology is an optimal paradigm for investigating the positionality of local environmental governance within the context of macro level sociopolitical processes (Robbins 2012). Governance processes that emphasize proximate causes of harm are likely to view local environmental issues within a local vacuum; contrarily, local environmental issues, in reality, are frequently connected to global market processes (13). Sociopolitical processes at the macro level not only cause harm but have significant implications for how governing bodies address that harm. Political ecology allows the researcher to investigate who has power to make ecological decisions around land use and resource management at the local level (Martinez-Alier et al. 2010).

In coastal Louisiana, land loss has both proximate causes and global influences, but the coastal master plan focuses almost exclusively on the former. Flood control structures have restricted sediment flow from the Mississippi River into surrounding marsh, limiting the river's natural ability to combat land loss. The process of leveeing the river has connections to the larger

economy in terms of maintaining maritime activities on the river, but the levees are largely rooted in flood control for local communities following the historic flood of 1927. The scale of this problem matches the scale of governance on this issue; the State can, with federal permitting, implement sediment diversions, in combination with other project types in the plan, as a direct response to coastal land loss caused by flood control structures.

Political ecology asks questions about the interests and actors at various scales that influence local ecological governance decisions (Martinez-Alier et al. 2010). These questions reveal the extent to which governance structures operating within neoliberal systems utilize market forces in their decision-making. There is some debate as to precisely what share of coastal erosion is attributable directly to oil and gas activity, but it is clear that this activity is a significant factor (Day et al. 2000; Turner and McClenachan 2018; Day et al. 2019). Given the economic history of oil and gas in the coastal zone and the close bureaucratic relationship between the industry and the State (Austin 2006), it is necessary to ask whether these relationships are a motivating factor in the risk discourse in the master plan. This study asks questions about why the CPRA frames flood control as a major factor of coastal land loss, but attributes little to none of the risk faced by coastal communities to energy production.

Power, Ideology, and Local Knowledge

The ways in which ideology operates to protect powerful interests is an important part of this investigation. Energy production has played a significant role in coastal land loss, increasing risk for coastal communities. This matter is absent from the coastal master plan; perhaps counterintuitively, it is also virtually absent in mainstream public discourse on coastal restoration. The historical status of the energy industry in the state of Louisiana impacts governance structures as well as the public's attitudes toward energy production. Scholars have

investigated the role of ideology in maintaining power relations within social-ecological systems, often focusing on mining companies in Central Appalachia (Gaventa 1980; Bell 2016; Lewin 2019). This study applies a similar framework to investigate the positionality of oil and gas in coastal Louisiana.

An ecological governance apparatus operating within the bounds of neoliberalism is forced to make choices about how to promote ecological outcomes without sacrificing economic productivity. Neoliberalism is first and foremost a project of class dominance, prioritizing economic growth above all else (Harvey 2007). Economic growth and ecological security are fundamentally at odds with one another (Foster 1999), making all ecological governance decisions within a neoliberal paradigm inherently political. When operating in a neoliberal context, governing bodies must choose between pursuit of economic growth and ecological security. This paradox comes into even greater focus when investigating the role of a particular industry in the production of environmental risk, as is the case in this study of coastal Louisiana.

Ideology serves as a powerful tool for discursively reconciling the contradiction between growth and ecological security. Powerful actors use ideology to leverage culturally resonant symbols in service of asymmetrical power relations (Thompson 1990:56, 7). This process serves a dual purpose—to maintain relations of domination through capital and the State, and to convince the public that the private interests of those in power are also in the interest of public good (Gouldner 1976:219). Ideology obscures the possibility for alternative power relations in which the interests of the working class become the driving force of policy. In the case of coastal Louisiana, the energy industry occupies a powerful position in the economy and enjoys a strong coalition with the State that serves to maintain power relations. This coalition leverages culturally resonant symbols, specifically the economic history of the energy industry in

Louisiana and throughout the Gulf of Mexico, to maintain public support despite harmful ecological outcomes. As neoliberalism requires the State to support industry over ecology, ideology is a tool that, when wielded effectively, maintains public support for policy that prioritizes growth, even as the public faces increased ecological risk.

Ideology, Mobilization, and Local Knowledge

The previous sections focused on the ways in which political ecology allows us to view local ecological governance in the context of larger sociopolitical processes. Another major component of political ecology that guides this project is questions about who gets to make and enforce ecological governance decisions. Once it becomes clear what macro level forces are influencing governance decisions, the motivations of actors at the local level become more transparent.

Questions about who has the power to make and enforce ecological governance decisions prompt two critical points of analysis in this project: to what extent are locals involved in decision-making about coastal restoration, and to what extent are opponents of sediment diversions able to mobilize and assert their political will on the coastal planning process. Ideology again plays a key role in each of these areas in two ways. First, the general consensus about the importance of oil and gas in the region ensure that the conversation centers on other sources of ecological risk, particularly flood control structures and sediment diversions. Second, the sheer institutional weight of the State and energy industry suppresses efforts at mobilization (Lukes 2005:40).

Social movement literature tends to focus on active political grievances, but this project contributes to an equally important category of literature that investigates why, in instances of exploitation and environmental injustice, mobilization does not emerge. Gaventa (1980), Bell

(2016), and Lewin (2019) each ask this question about local communities in Central Appalachia who face exploitative relationships with mining companies, and this study utilizes principles from this literature in its analysis.

Lukes (2005) articulates a theory of power that incorporates indirect forms of power that operate through ideology, institutional legitimacy, and structural arrangements of social institutions. Power exercised through these channels manifests indirectly by suppressing grievances before they force a decision-point the political sphere (Lukes 2005). Indirect expressions of power can hinder resistance by creating an impression among the public that grievances are either futile or do not exist.

Ecological Democracy and Environmental Justice

This project avoids normative characterizations about specific elements of the coastal master plan—sediment diversions, in particular. However, there are normative implications for a coastal planning process that reflects a neoliberal framework. This project reveals questions pertaining to whether a master plan that avoids challenging problematic power relations can legitimately reduce risk for vulnerable communities whose vulnerability stems at least in part from those power relations. Specifically, this project asks questions about the viability of ecological democracy in a political apparatus that fails to incorporate local citizens and local knowledge.

The coastal master plan utilizes a “unified coastal restoration” framework that prioritizes land-building at the scale of the total coast over the needs of individual communities (Hemmerling et al. 2020:125). The plan acknowledges the likelihood of “winners and losers” resulting from the particular restoration strategies that will be employed (133). While each successive iteration of the plan has involved greater outreach, the plan still does not adequately account for social disparities and power dynamics that exist in the coastal zone (133). The plan

focuses on establishing distributive justice through a focus on broad coastal benefits. However, by focusing solely on numerical models and not engaging with historical power dynamics in the coastal zone, the State may exacerbate injustice in its effort to restore the coast (127).

Substantial literature has argued that inclusion of local knowledge in natural resource management promotes positive ecological outcomes at the local level (Corburn 2003; Cash et al. 2006; Miller and Erickson 2006; Berkes 2009). This project shows, however, that in a variety of ways, Louisiana's approach to coastal restoration is not inclusive of local people or local knowledge. Furthermore, the State's minimal focus on the energy industry and ideological exclusion of resistance to certain elements of the plan promote a coastal master plan that, even if successful in building land, reproduces the very power relations that, at least in part, produced the coastal erosion crisis. This raises serious questions about whether the coastal master plan promotes environmental justice throughout the coastal zone, regardless of the land-building outcomes.

This dissertation produces a narrative that incorporates these themes—power, ideology, mobilization, ecological democracy, and environmental justice—into a three-part political ecology analysis of Louisiana's coastal restoration planning process. The following section outlines the methods that were used to conduct the data collection and analysis. The final section details the organization of the dissertation and the specific research questions and findings of each chapter.

METHODS

This dissertation utilizes multiple methods to perform a political ecology analysis of Louisiana's coastal master plan and the political process around its development and implementation. The author conducted forty semi-structured interviews in southeast Louisiana and engaged in field

research by attending various coastal restoration themed meetings between 2016 and 2019. Additionally, the author conducted document analysis of the coastal master plan itself, specifically investigating the extent to which the master plan attributes risk to the oil and gas industry.

Interview Data

The data in this dissertation come from forty semi-structured interviews in Louisiana's southeast coastal zone. Interview subjects were determined partially through snowball sampling and partially through targeted search. Subjects lived and/or worked in parishes in Louisiana's southeast coastal zone—specifically, Plaquemines, St. Bernard, Jefferson, Orleans, and East Baton Rouge parishes. The sample is diverse in its representation of the political field involved in coastal restoration. Subjects occupied a variety of occupations including coastal scientists and engineers, commercial and recreational fishermen and fishing guides, and a variety of other occupations throughout coastal parishes. Coastal erosion and restoration are highly resonant issues throughout coastal parishes due to the economic impact of industries potentially affected by both land loss and land-building strategies. As a result, this study sought a broad sample of people who wanted to speak about their perspective on this issue. All names that appear in this dissertation are pseudonyms.

Interviews lasted roughly one hour on average. Interviews covered a range of topics relating to economic and environmental attitudes in general and specifically related to coastal issues in Louisiana. Subjects were asked specific questions about the master plan and sediment diversions. Subjects were asked about their perception of the extent to which coastal residents were incorporated into the master plan, and what could be achieved through the inclusion of local knowledge. Subjects were asked questions about the extent to which they had witnessed or

participated in political mobilization around the coastal master plan. Subjects who occupied positions with visibility on the plan's development were asked questions about their involvement in the plan and questions about how they perceived the process of the plan's development in relation to the previously discussed topics. Chapters two and three of this dissertation contain details about the specific interview questions that yielded the data that supports the arguments of each chapter.

Interviews were transcribed verbatim. All coding was completed heuristically (i.e. without the use of "autocoding" features) by the author using NVivo qualitative software. The data was initially coded deductively into broad categories for organizational purposes before being inductively coded to illuminate discursive patterns within the data. This inductive coding phase revealed the emergent patterns that were ultimately used to support the findings and conclusions of this study. This form of research is highly interactive and data-driven, allowing for participant voices, rather than preconceived notions of the researcher, to determine the direction and ultimate theoretical application of the study. This method is optimal for qualitative research that aims to elevate voices from excluded groups, as in the present study (Charmaz 2006). For specific details about the interview questions and specific coding techniques that informed the data in each individual chapter, see the Methods section located in that chapter.

Document Analysis

The author performed a document analysis on the coastal master plan documents specifically geared toward analyzing the extent to which the plan attributed ecological or economic risk to oil

and gas activities and any projects proposed to address that share of risk. This analysis was performed on the main coastal master plan document as well as all of the appendices².

The author used a deductive coding scheme targeting the use of specific phrases and concepts to identify the degree to which the state of Louisiana attributes coastal risk production to the oil and gas industry. All coding was done heuristically (i.e. without using “autocoding” features). Chapter one contains a more detailed account of the document analysis component of the dissertation methodology.

PROJECT ORGANIZATION

The dissertation presented here comprises three substantive chapters, each contributing a unique finding that adds to the overall political ecology analysis. Taken together, these three chapters ask and provide answers to key questions regarding the positionality of Louisiana’s coastal restoration program within neoliberalism and who has the power to make and enforce ecological governance decisions in Louisiana’s coastal zone.

Chapter one takes a holistic approach to the coastal master plan and provides a framework for the remaining substantive chapters. The first chapter focuses on defining the terms of a sociological approach to political ecology. In this chapter, the author uses document analysis to assess the extent to which risk is attributed to the oil and gas industry in the coastal master plan. Given the extant literature on oil and gas activity and land loss, the plan’s conspicuous omission of the connection between energy production and coastal erosion reveals a discursive logic around coastal planning within a neoliberal context. Certain projects in the master plan stem directly from particular sources of land loss (e.g. sediment diversions to combat

² Appendices A–G. Appendix C “Introduction” only; Appendix C is primarily dedicated to descriptions of ecological modeling.

land loss resulting from flood control structures). The lack of risk attribution to the energy industry reveals a planning process unwilling or unable to hold the industry accountable for its share of damage through projects targeting oil and gas canals.

The author argues in this chapter that neoliberal constraints on ecological regulation prevent the State from approaching coastal restoration in a way that challenges the role of oil and gas in the Louisiana economy. Within this framework, the State can build additional protection for vulnerable communities (e.g. new levees, barrier island restoration, marsh creation, etc.), but ultimately is not directly engaging with all sources of risk production (e.g. by more strongly regulating oil and gas activities). The State is attempting to resolve the coastal restoration crisis without challenging the structural arrangements that contributed to its creation. This approach will ultimately reproduce these problematic power relations and undermine the State's ability to reduce risk for its most vulnerable coastal communities in the long term. The chapter's focus on the State's positionality within neoliberalism clarifies the sociopolitical influences on coastal restoration strategies and raises questions of who has the power to make governance decisions, and whose interests are being served by those decisions. This is a uniquely sociological approach to political ecology because it keeps structural formations and relations of power at the center of the analysis.

Chapters two and three focus on the controversy around sediment diversions, the primary political conflict stemming from the master plan. Whereas chapter one focuses on the positionality of the coastal restoration process within neoliberalism, chapters two and three focus on who has the power to make decisions on coastal restoration, and to what extent excluded groups have the ability to carve out spaces in which they can exercise power over restoration decisions.

Chapter two explores the extent to which coastal residents who possess local knowledge were included in the process of shaping the master plan. The author uses interview data to argue that there is a perception among coastal communities that local knowledge was essentially being ignored by the CPRA. While the State held scoping meetings and other informational events to provide information to the public about sediment diversions, the process around how public comments were used is opaque. Coastal residents claimed a variety of reasons for their lack of inclusion including their lack of institutional knowledge and education, a corrupt political process, and an unwillingness to hear from citizens who would voice opposition to diversions.

The chapter does not make normative claims as to whether the State's diversion plan or the public opposition to diversions represent the "correct" approach to coastal restoration. However, a broad literature argues that including local knowledge in management of natural resources and ecosystems provide the best ecological outcomes in local environmental conflict (Corburn 2003; Cash et al. 2006; Miller and Erickson 2006; Berkes 2009). Therefore, there are real environmental justice implications to the State's approach to local knowledge in coastal planning.

The case study presented here is consistent with previous literature on local inclusion in coastal restoration in Louisiana (Colten 2017; Hemmerling et al. 2020), but this study is unique in its focus on the first-hand perspectives of locals experiencing that exclusion. The State, as the entity holding political power in the process, acts as the gatekeeper to coastal restoration decision-making power. The very perception of exclusion is significant, as the literature has shown that trust among local knowledge holders is critical for genuine incorporation into governance processes (Wynne 1996; Usher 2000). The author argues that it is therefore the State's responsibility to engage in a genuinely inclusive coastal restoration process in which

coastal communities have access to the decision-making processes that impact their own environment.

Chapter three asks questions about organized resistance to sediment diversions within coastal communities, and the extent to which mobilizing agents have achieved success on this issue. Power and ideology play a significant role in this investigation. Using Lukes' (2005) radical perspective of power, this chapter explores the ways in which the State, through coalitions with the energy industry, scientific establishment, and national environmental sector, is able to exercise power indirectly to prevent grievances against sediment diversions from meaningfully impacting the political sphere.

The chapter uses interview data to investigate political opportunity and the extent to which mobilization on the diversion issue has occurred. Political opportunity is a largely constructed phenomenon in which perception of political opportunity can act as a self-fulfilling prophecy (Gamson and Meyer 1996). This study finds that the sheer institutional weight of the bureaucratic coalition around sediment diversions has created a pessimism among diversion opponents that in itself has hindered mobilization.

Consistent with the findings of chapter one, this chapter finds that the public remains supportive, or at least accepting, of the role of oil and gas in the coastal zone and is not demanding accountability for the energy industry from the CPRA. Ideology operates in service of relations of power, in this case obscuring the role of oil and gas in coastal erosion and preventing a conversation about this source of land loss from occurring in the political sphere. The result is that main political controversy around the master plan is the sediment diversion issue. Through indirect expressions of power, the State has been able to shield the oil and gas industry from accountability and prevent the public from effectively resisting sediment

diversions. The ability for Louisiana's restoration coalition to wield power over ecological governance has made clear who has the power to make decisions in the sphere of local environmental politics.

This dissertation contributes to social-ecological scholarship by providing a case study of local natural resource management in the context of a growing coastal erosion crisis—a form of ecological degradation that will expand across the globe as climate change worsens and sea levels continue to rise (Wright, Syvitski, and Nichols 2018). This project is uniquely sociological political ecology analysis because it maintains a distinct focus on the structural and institutional arrangements in Louisiana's coastal zone that define the coastal restoration process. Each chapter centers on power relations and the ways in which neoliberalism constrains social institutions' ability to represent the interests of vulnerable coastal communities.

CHAPTER ONE: Investigating the Political Ecology of Risk and Resilience in Louisiana's Coastal Restoration Process

Louisiana's Comprehensive Master Plan for a Sustainable Coast is an ambitious policy approach to the state's most pressing environmental problem, a coastal erosion crisis that saw a net loss of 4877 square kilometers of wetlands between 1932 and 2010 (Couvillion et al. 2016:347). The fifty-year, fifty-billion dollar suite of coastal restoration projects aims to build land while reducing risk to communities and vital infrastructure in the coastal zone. The 2017 iteration of the master plan emphasizes "a keener focus on communities and flood resilience" and "(reducing) risk to our communities" (CPRA 2017a:ES-16, ES-2).

This study utilizes principles of political ecology to critically analyze the concepts of risk and resilience and investigate the way these categories are applied to frontline communities in Louisiana's coastal zone in the context of coastal restoration. Prior sociological investigation has shown equity issues in the process around determining the master plan's priorities and that Louisiana's coastal restoration process is a contested terrain involving a variety of interests and actors (Lipsman 2019; Gotham 2016a). This study uses a political ecology approach to contextualize local coastal restoration politics within larger sociopolitical processes and to investigate the ways these connections impact political decisions about restoration strategies at the local level.

Specifically, this study investigates the extent to which Louisiana's coastal master plan attributes risk to the oil and gas industry. The precise extent to which the energy industry is responsible for coastal erosion is a matter of discussion, but there is no debate that oil and gas channelization has been a major contributing factor in coastal land loss (Day et al. 2000; Day et al. 2019). Despite this fact, the coastal master plan contains no requirements that the oil and gas

industry backfill canals using existing spoil bank material despite its relatively low cost (Turner and McClenachan 2018:3). This study expands upon this finding by contextualizing the coastal restoration process within the sociopolitical order of neoliberalism.

This study asks critical questions about the impact of neoliberalism on the specific risk discourse within Louisiana's coastal master plan. Most critically, to what extent does the plan specifically attribute the risk faced by coastal communities to oil and gas activity in the coastal zone? Given the master plan's explicit purpose of reducing risk to communities, the extent to which the plan specifically holds industry accountable for that risk is revelatory of the State's ideological approach to coastal restoration. The status of the oil and gas industry has major economic implications for Louisiana, both for the state and communities. However, approaching coastal restoration without redressing the role of major contributor to coastal land loss will ultimately reproduce a problematic structural arrangement that continues to create risk for vulnerable coastal communities.

This chapter argues that the historical coalition between the State and energy industry influences the coastal restoration process in a way that places increased risk on vulnerable groups while limiting accountability for industries that have historically contributed to ecological degradation, even as they serve an important economic function for the state. The master plan's focus on community resilience places the onus of risk reduction on local communities without problematizing the sociopolitical forces that are largely responsible for these groups' vulnerability in the first place. Without critically accounting for the role of oil and gas in coastal erosion, efforts to decrease risk to coastal communities will ultimately fail to keep pace with ecological problems associated with increasing energy production. This study provides a critical case study in how neoliberalism influences local ecological governance decisions. By studying

Louisiana's land loss crisis through the political ecology lens, this study demonstrates the impact of macro level sociopolitical processes on environmental justice at the local level.

The purpose of this dissertation is not to make normative claims about the master plan as a whole or the importance of coastal restoration in general. The coastal erosion crisis is a critical issue facing Louisiana, and the State is clearly embracing its potential for a leadership role in coastal management, an issue that will become more critical globally as the effects of climate change grow and expand (Wright et al. 2018). This chapter critically analyzes the process that has produced the master plan and explores the ways in which power relations and economic interests have influenced the State's decision-making on this issue.

REVIEW OF LITERATURE

This study utilizes principles of political ecology to establish a paradigm for viewing coastal restoration in Louisiana as a process embedded in larger political and economic systems.

Political ecology is a disparate field with interdisciplinary dimensions. This study focuses on specific elements of political ecology that establish its theoretical foundations within a sociological investigation of the political processes underlying coastal restoration. In particular, this review focuses on the embeddedness of local social-ecological conflicts within neoliberalism, and the impact that this embeddedness has on the distribution of risk among vulnerable communities. This review then critically evaluates the concept of resilience and explores the effect that a focus on resilience has on existing power relations and vulnerable groups.

Political Ecology and the Construction of Socio-Environments

Political ecology offers a theoretical paradigm for understanding ecological issues as part of power-laden social processes. Political ecology focuses on the "production of socio-

environments and their co-constitution by many kinds of human and non-human actors” (Robbins 2012:5). This perspective expands the view of an ecological system from one focusing on proximate causes of ecological degradation to one that positions those proximate causes within larger sociopolitical processes (Robbins 2015).

Political ecology is an effective lens for a sociological study of state-level environmental policy because it enables a focus on winners and losers at varying scales (Robbins 2012). While apolitical approaches to ecology may view conservation or adaptation efforts at the state level uncritically, political ecology uses a structural perspective to identify broader impacts on the social-ecological system that may occur even within environmental projects that are successful in a normative sense. Coastal zone management is a specific example of an ecological system in which a social-ecological lens is beneficial for gaining a view of the interrelationships between natural and social systems (Lloyd, Peel, and Duck 2013).

Political ecology analysis of local environmental problems allows researchers to investigate political processes around local environmental issues as inherently power-laden while also drilling down to the ways in which macro level processes translate into local level impacts. This perspective asks questions about who has the power to make and enforce decisions around conservation, land use, and resource extraction (Martinez-Alier et al. 2010:154). Ecological systems, therefore, must be considered to include the political and economic interests that impact their management. In this sense, ecological risk arises from within social-ecological systems rather than from an external “nature” and has profoundly social dimensions (Mustafa 2005).

The Energy Industry and Louisiana’s Working Coast

Political ecology analysis reveals the ways in which sociopolitical processes at the scale of capital influence local environmental conflict (Robbins 2012). Given the ongoing role of

extractive industries in the global market, analysis of local scale impacts resulting from these industries must be considered. In the case of oil and gas in Louisiana, the economic and ecological impacts of these industries are critical components of the logic around coastal restoration.

Energy and economy. The oil and gas industry is a significant factor in Louisiana's economy and is deeply embedded with the state's historical management of the local environment (Laska et al. 2005; Austin 2006). Louisiana ranks ninth nationally in crude oil production, a figure which rises to second when accounting for federal offshore production serviced through Louisiana ports (EIA 2020; Scott 2018:2). The state ranks fourth in natural gas production (EIA 2020). Louisiana's seventeen petroleum refineries account for almost twenty percent of petroleum refining capacity in the United States (EIA 2020).

The large presence of oil and gas in Louisiana has a significant impact on the Louisiana economy and on Louisiana residents. The oil and gas industries (extraction, mining, refining, and pipeline) directly employed 44,580 workers in Louisiana and paid \$4.3 billion in wages in 2017 (Scott 2018:7). This wage figure rises to \$34.2 billion in Louisiana income when accounting for value added through support activities for the oil and gas industry (18). According to the US Bureau of Economic Analysis, the energy industry in Louisiana had major impacts on employment; for every energy industry job created, 3.4 additional jobs were created in supporting industries (30). In total, the energy industry, directly or indirectly, produced as much as \$72.8 billion in sales, \$19.2 billion in household earnings, and 262,520 jobs in 2015 (29). Tax benefits for the state are also significant; over \$2 billion in state tax revenue and over \$1.2 billion in local government tax revenue were generated directly or indirectly by the energy industry in Louisiana (47).

Energy and ecology. The economic benefits of oil and gas in Louisiana are coupled with ecological degradation resulting from oil and gas activities. While much of the public discourse around coastal erosion centers on flood control structures (another significant driver of land loss, to be sure), oil and gas channelization has been argued to be an equal if not greater cause of wetland loss (Turner and McClenachan 2018:6). Between 1930 and 2010, over 16,000 km of canals were dredged “for drainage and navigation, but mostly for activities associated with the exploration, production, and transport of oil and gas” (Day et al. 2019:1). While there is some dispute over precisely the extent to which oil and gas bears responsibility for wetland loss, it is clear that oil and gas activity is a significant driver of this coastal change (Day et al. 2000).

Apolitical ecologies may view the juxtaposition of the economic and ecological dimensions of oil and gas activity uncritically. Political ecology, however, provides a paradigm to investigate the logic of this ecological degradation that is being allowed to occur out in the open with relatively little resistance. Despite academic literature exposing the ecological harm created by oil and gas, backfilling canals using existing spoil bank material is not included in the coastal master plan despite its relatively low cost (Turner and McClenachan 2018:3). Given the economic impact of the energy industry on the state of Louisiana, this paper investigates ecological degradation from oil and gas as a byproduct of the industry’s position within the neoliberal order, a structural arrangement that necessitates ecological risk for the sake of economic productivity (Harvey 2007). By engaging the coastal erosion issue without critically accounting for the privileged position of oil and gas activity within neoliberalism, the State will inevitably “miss the forest for the trees” by focusing solely on proximate causes of land loss (e.g. flood control structures) rather than larger sociopolitical processes (e.g. the importance of maintaining high oil and gas productivity in a global market dependent upon fossil fuels).

Vulnerability and the Politics of Risk

Viewing coastal land loss through a sociopolitical lens reveals the neoliberal logic that privileges economic productivity from oil and gas. The corollary to this economic privilege is the inherent risk that stems from engaging in ecologically problematic activities for the sake of productivity. An explicit goal within the master plan is to reduce risk to communities (CPRA 2017a:ES-2); however, the political ecology framework demands that this risk reduction be viewed in relation to the potential losses in productivity that may result from a complete elimination of risk (e.g. by ceasing oil and gas activity in Louisiana's coastal zone). In order to maintain economic productivity, specific ecological decisions are made in the political sphere that impact the distribution of risk resulting from both coastal erosion and the State's coastal restoration strategies. In other words, discursive choices about where to attribute risk, and the coastal restoration strategies that flow from those choices, are necessarily impacted by the energy industry's position within the state's political apparatus.

Political ecology analysis of risk is useful for understanding "differential risk" that may emerge from particular approaches to managing ecosystems (Collins 2008:25). Crucially, risk is not limited to exposure to physical hazards, but rather it contains social vulnerability dimensions as well (Collins 2009:589). Vulnerability is indeed the susceptibility to harm; however, this susceptibility is mediated by social factors including socioeconomic status and access to resources (Wisner et al. 2004; Mustafa 2002). Discursive politics around vulnerability is therefore key to understanding risk management approaches. In a neoliberal setting, dominant discourses around the role of productive industry produce technocratic resource management regimes that operate according to this logic, marginalizing vulnerable groups (Mustafa 2005). Risk becomes defined exclusively in terms of natural hazards, externalizing the social

arrangements—for example, the presence of extractive industry—that increase risk for vulnerable groups at the local level. This strategy of discursively naturalizing risk allows the powerful to minimize their own responsibility in the production and maintenance of differential risk (Collins 2008:600). Political ecology therefore reveals the ways in which ecological decision-making on issues like coastal restoration is a profoundly ideological process when viewed through the prism of neoliberalism.

By defining risk as natural and masking the social, economic, and political dimensions of risk, the onus of risk reduction is shifted from the powerful to the vulnerable. However, if risk is truly to be minimized through ecological planning, the social and political dimensions inherent to vulnerability must remain at the center of the process (Collins 2009). Ecological harm creates greater impacts on more vulnerable groups precisely because of these social and economic dimensions (Harlan et al. 2015). While neoliberal logic demands that ecological protections facilitate continued economic production, this process can only increase risk by further degrading the environment without adequately addressing the social variables that increase vulnerability. Risk cannot be reduced solely through mitigation of natural hazards; it can only be reduced by proactively minimizing the vulnerability of groups who face the largest risk (Mustafa 2005:583). In contrast to the neoliberal approach to risk reduction (i.e. building barriers to keep floods out of communities), vulnerability can only be reduced by addressing the social and economic needs of the least powerful groups within a social-ecological system (i.e. removing elements of the social-ecological system that create floods in the first place) (Collins 2009:599).

The Problem with Resilience

The political ecology paradigm allows us to situate resource management processes like the one in Louisiana within the larger sociopolitical context of contemporary neoliberalism. Within this

logic, hazards become discursively naturalized, obscuring from view the power relations that contribute to vulnerability. The result of this discursive shift is a risk reduction paradigm in which communities become responsible for their own resilience. Put another way: the responsibility of risk reduction is passed from the powerful to the vulnerable.

Resilience as the ability for a system to return to equilibrium following a shock is concerned with a system's stability or elasticity to its previous conditions (MacKinnon and Derickson 2012:256). Indeed, Louisiana's coastal master plan has a strong emphasis on building resilient communities through coastal projects (CPRA 2017a:ES-16). Political ecology reveals the problematic nature of emphasizing resilience in social contexts defined by unequal power relations. Using a paradigm that accounts for power relations within a social-ecological system, resilience becomes a political concept that favors the system's ability to return to conditions that preceded the shock. In this sense, resilience is an inherently conservative concept. While the notion of resilience implies stability, the way this is defined when resilience is taken uncritically is stability within the conditions that produced vulnerability within the system. For this reason, Cutter (2016) astutely questions whose interests are being served by resilience. In the case of coastal Louisiana, if the master plan emphasizes resilience without attributing risk to the oil and gas industry, then the plan is essentially helping communities to return to an equilibrium defined by the very conditions that put them at risk.

Emphasis on resilience without critical examination of sociopolitical context will ultimately reproduce power relations that ensure vulnerable groups remain vulnerable to future shocks (MacKinnon and Derickson 2012). Like risk and vulnerability, resilience cannot be viewed in a vacuum without accounting for the political context in which it exists. Resilience efforts that do not address root causes of vulnerability and challenge the power relations that

produce that vulnerability cannot be reasonably expected to effectively reduce risk to vulnerable groups. Risk reduction efforts within social-ecological systems must keep vulnerability and vulnerable groups at the center and emphasize the formation of new power relations that redress the social and economic conditions that produce vulnerability (Collins 2009). In a setting like coastal Louisiana, this would involve recognizing and holding accountable industries who contribute to risk in order to build a genuinely resilient and sustainable coast for the future.

METHODS

This study utilizes document analysis to analyze the extent to which Louisiana attributes risk to the oil and gas industry in its coastal master plan. Multiple sources, both scholarly and journalistic, have identified that the 2017 master plan does not contain measures requiring the energy industry to backfill retired oil and gas canals (Turner and McClenachan 2018:3; Lux 2017). This study goes a step further to investigate not only whether the plan requires action on the part of the energy industry, but whether the State's discursive approach to risk reduction involves a critical examination of the role of oil and gas in coastal land loss and community risk.

This chapter uses document analysis to directly interrogate the extent to which the coastal master plan attributes risk to the energy industry. A deductive coding scheme targeted specific terminology within the plan. The researcher located each use of the words, "risk," "resilient," "vulnerable," and their variants (e.g. "resilience," "vulnerability," etc.) and determined whether the plan directly connected these concepts to the oil and gas industry. The researcher then performed the reverse operation, locating each use of the words, "oil," "gas," "energy," and "industry," and determined whether these entities were being connected to concepts of risk, resilience, or vulnerability. Coding was performed heuristically by the researcher (i.e. without

using “auto-coding”) using NVivo qualitative data analysis software. These operations were performed on the main document of the coastal master plan as well as Appendices A – G³.

The document analysis was set up to reveal the discursive logic of the coastal master plan. The plan’s stated goals include “a keener focus on communities and flood resilience” and “(reducing) risk to our communities” (CPRA 2017a:ES-16, ES-2). The plan contains a variety of project types designed to directly address sources of ecological and economic risk. Therefore, in order to understand the State’s strategy for achieving these goals, it is critical to understand specifically what risk is being addressed and what sources produce that risk. Given the complexity of ecosystems and social relations in the coastal zone, complete removal of risk is likely impossible, and the State acknowledges that restoration strategies are likely to produce “winners and losers” (Hemmerling et al. 2020:133). The State’s choices about where to attribute risk and how to reduce that risk, therefore, reveal priorities about what and whom to protect, and how to approach the future of extractive industry in the coastal zone.

FINDINGS

The results of this study show that the state of Louisiana’s official approach to combating risk in the coastal zone is not predicated on specifically addressing the portion of that risk that is historically attributable to oil and gas activity. Estimates of precisely the extent to which coastal land loss is the result of oil and gas activity vary, but there is no doubt that oil and gas channelization has had a significant impact (Day et al. 2019). There are no provisions in the coastal master plan requiring the energy industry to backfill retired canals (Lux 2017; Turner and McClenachan 2018:3), and the plan’s attribution of risk to the energy industry is minimal.

³ Appendix C: “Introduction” only; this appendix is dedicated to technical information about ecological modeling.

Risk, Land Loss, and the Energy Industry

The document analysis conducted in this study revealed that oil and gas activity was not explicitly tied to general community risk at any point in the master plan document or any of its appendices. Throughout the entirety of these documents, there are two specific instances in which the energy industry in general is directly tied to coastal land loss. The first example acknowledges that “dredging canals for energy exploration ... took a toll on the landscape, altering wetland hydrology and leading to land loss,” after stating the important role these activities play in the national economy (CPRA 2017a:ES-6). The second example points out that the Barataria Basin in southeast Louisiana experienced a land loss rate of 2.76% annually from 1956 – 1990 near the Bayou Dupont Marsh Creation Project “due to a combination of subsidence, dredging of oil and gas canals, and lack of freshwater and sediment input” (CPRA 2017a:36). In other cases, phrases such as “future human activities” and “other factors that contribute to land loss” are used to describe sources of current and future risk, but do not name the energy industry specifically (Groves, Panis, and Sanchez 2017⁴:2; CPRA 2017b⁵:27).

The BP Deepwater Horizon Oil Spill that occurred off of Louisiana’s coast in 2010 is discussed on several occasions throughout the documents as a source of environmental harm. However, the ecological damage stemming from this incident is discussed as an isolated event and not as part of a larger pattern of land loss or risk production by the energy industry in general. Damages resulting from legal settlements related to the BP oil spill are a major revenue stream for the State to fund projects in the coastal master plan.

⁴ 2017 Coastal Master Plan Appendix D: Planning Tool

⁵ 2017 Coastal Master Plan Appendix E: Flood Risk and Resilience Program Framework

Risk Assessment and Social Vulnerability

The coastal master plan does, at various points, lay out the major sources of land loss in the coastal zone. Noting that the coast lost over 1,800 square miles of land between 1932 and 2010, the plan identifies “climate change, sea level rise, subsidence, hurricanes, storm surges, flooding, disconnecting the Mississippi River from coastal marshes, and human impacts” as causes of land loss (CPRA 2017a:ES-2).

The plan uses a series of models to determine which projects have the greatest potential for risk reduction, given the constraints in place (e.g. funding issues, sediment availability, future uncertainties). The Integrated Compartment Model (ICM) “represents natural processes that drive coastal land and ecosystem change,” and attempts to predict the impact of restoration and risk reduction processes on future landscape and ecosystem conditions (CPRA 2017a:66). The plan then uses a series of risk assessment models to predict future flood depths “associated with different frequencies of inundation across the coast” (66). The Coastal Louisiana Risk Assessment Model (CLARA) is a quantitative simulation model that estimates future flood risk and resulting economic damage in order to identify potential structural and nonstructural risk reduction projects for inclusion in the coastal master plan (CPRA 2017b:10). The descriptions of these risk assessment models do not contain references to the role that the oil and gas industries play in ecological damage or economic risk to communities or infrastructure within the coastal zone.

One significant way in which the 2017 plan attempts to improve from its 2012 iteration is by including more social vulnerability criteria in its risk assessment (CPRA 2017b:9). Appendix E defines vulnerability using a series of physical, social, economic, and environmental factors (CPRA 2017b:xii). The plan uses a Social Vulnerability Index to quantify risk for communities

in the coastal zone based on factors including geographic location, inadequate protection of assets, socioeconomic and racial disparities, and others. Citizens interested in the Social Vulnerability component of the master plan can use the Master Plan Data Viewer to see an interactive geospatial representation of vulnerability throughout the coastal zone. The factors that can be viewed include economic status, rural population, age/dependent population, non-English speaking/immigrant population, natural resource dependent communities, nursing home residents, disabled/dependent populations, and Asian/natural resource dependent communities. While the plan correctly identifies these and other social factors as sources of vulnerability, the document refers to these in static terms and not within the context of sociohistorical power relations that influence inequality or land loss patterns in the coastal zone.

Oil and Gas in the Coastal Master Plan

Outside of the two previously discussed instances in which the plan directly attributes land loss to the energy industry, the overall tone of the plan toward oil and gas in general is positive. The plan consistently points to oil and gas as a benefit to the coastal economy and an asset that must be protected as part of the coastal restoration process.

The plan celebrates the working coast as a critical component of the state and national economies. The master plan points out that Louisiana's coast "supports infrastructure that supplies 90% of the nation's outer continental shelf oil and gas" and houses 88% of US offshore oil rigs (CPRA 2017a:26). This section also notes that Louisiana is the largest US producer of crude oil, second largest producer of natural gas, third largest producer of petroleum, and third leading state in natural gas refining. These assets are a major factor in risk assessment in the coastal master plan. While risk is rarely attributed to oil and gas activities throughout the plan, the concept of risk is discussed alongside oil and gas frequently, in the context of risk *to* oil and

gas. The CPRA’s planning tool, which evaluates proposed coastal restoration and risk reduction projects, considers in part the “effects *on*...the oil and gas industry (emphasis added)” (Groves et al. 2017:v). “Support for oil and gas *activities* and communities (emphasis added)” is listed as a metric used to determine whether projects meet the master plan’s diverse objectives and to represent the effects of projects (CPRA 2017a:80; Groves et al. 2017:15).

Resilience and the Coastal Master Plan

Increasing community resilience is a major component of the coastal master plan. The plan defines resilience in part as “the ability to recover or ‘bounce back’ from a shock” (CPRA 2017b:xii). Community resilience is “determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need” (CPRA 2017b:xii). The CPRA’s Flood Risk and Resilience Program, a major component of the CPRA’s stated goal of reducing storm surge based flooding risk, “refines the coastal flood risk vulnerability analysis, refines nonstructural project areas, prioritizes projects, and develops a process for parish implementation of nonstructural risk reduction projects” (CPRA 2017b:3).

The Flood Risk and Resilience Program helps to determine appropriate nonstructural risk reduction projects throughout the coastal zone. Nonstructural projects utilize mitigation measures including floodproofing non-residential structures, elevating residential structures where the mitigation standard is between three and fourteen feet, and voluntary acquisition of residential structures where the mitigation standard is above fourteen feet (CPRA 2017b:9). The purpose of these projects is to increase the resilience of communities by using these nonstructural measures in combination with structural protections to reduce flood risk to homes and businesses.

The master plan prioritizes creating resilient communities and specifically supporting oil and gas communities. The energy industry, however, is absent from the discussion of resilience

in terms of its role in creating risk and its potential to contribute to a more ecologically resilient coast. Given the definition of resilience used in the plan and the metrics used to measure risk and vulnerability, the absence of oil and gas from this discussion is consistent with the plan in general.

The following sections will analyze these results using a political ecology framework. The analysis will show that by focusing on resilience without attributing risk to powerful industries in the coastal zone, the plan operates according to a problematic logic that will ultimately undermine its ability to maximize risk reduction to coastal communities.

DISCUSSION

The first substantive page of Louisiana's coastal master plan identifies drivers of coastal land loss. The list includes several natural factors (e.g. climate change, subsidence, hurricanes), but does not directly implicate oil and gas activity in the coastal zone outside of a vague reference to "human impacts" (CPRA 2017a:ES-2). Coastal restoration strategies throughout the plan are consistent with this logic, which involves attributing risk and vulnerability to natural factors and ascribed social factors (e.g. racial disparities, socioeconomic status), but not to oil and gas activities or the active governance decisions that promote these activities. While the plan correctly identifies natural and social factors of risk and vulnerability, the omission of oil and gas from this equation reveals a coastal restoration process tethered to neoliberal principles.

Coastal Restoration and Neoliberalism

Political ecology is uniquely suited for critical analysis of Louisiana's coastal restoration program because it provides a toolkit to investigate the program's underlying logic. Political ecology asks questions about who has the power to make ecological governance decisions, what political and economic interests influence these decisions, and how vulnerable groups at various

scales will be impacted (Martinez-Alier et al. 2010). Political ecology recognizes that coastal restoration decisions are not being made in a local political vacuum but are subject to global market forces that demand continued economic productivity. In Louisiana, this means that coastal restoration decisions are necessarily influenced not only by how they will impact the coast ecologically, but also by how they will impact oil and gas activity in the coastal zone.

Political ecology allows us to see past proximate causes of ecological governance decisions and to see macro-level influences. In the case of coastal restoration in Louisiana, flood control structures—while a legitimate driver of land loss that deserves attention—are a proximate cause on which the plan is primarily focused. The logic of a plan that emphasizes flood control as the primary source of erosion is to focus on restoration strategies that address this specific driver of land loss. Sediment diversions, the plan’s direct response to land loss resulting from flood control structures, have become immensely controversial and dominate public discourse around the plan (Gotham 2016a; Lipsman 2019). Consequently, discussion of how a coastal master plan can address land loss resulting from energy production is absent from the plan and virtually non-existent within active political discourse, despite the evidence of ecological harm resulting from these activities (Day et al. 2019).

Using a political ecology framework, the motivation for attributing risk to natural causes and flood control structures is clear. The economic influence of oil and gas on both the state and its coastal communities is a major feature of Louisiana’s working coast (Austin 2006). Furthermore, Louisiana’s cultural connection to its “working coast” identity is tied in part to its role in the national economy via energy production (CPRA 2017a:ES-10, 26). The master plan’s deference to oil and gas reflects both the real economic influence of the energy industry on

coastal communities and the ideological influence of neoliberalism on governance decisions around environmental issues.

Power and Ideology in Ecological Governance

Ecological decision-making occurs within a sociopolitical framework dominated by neoliberal principles, ensuring that economic productivity remains a major part of any environmental political project. In Louisiana, the energy industry represents more than an economic entity; it is central to a set of power relations that underlie environmental discourse and constrain the State's political capacity for environmental regulation.

The energy industry benefits from ideological discourse to maintain its political influence even as evidence shows it is the source of ecological harm in the coastal zone. The real economic influence of oil and gas on Louisiana's working coast cannot be denied or overstated, and the industry's historical status provides a discursive shield against political pressure.

Ideology is built on culturally resonant discourse and symbols, and to study ideology requires the question of whether these symbols are being leveraged in service of asymmetrical power relations (Thompson 1990:56, 7). A major project of ideology is to generate a false consciousness that casts private interest as public good—in the case of Louisiana's working coast, the idea that what is good for the energy industry is good for the public (Gouldner 1976:219). The normative argument can be made that this was true throughout the twentieth century. Considering the context of Louisiana's coastal erosion crisis and the ecological impacts of fossil fuel production within neoliberalism, the notion that fossil fuel industries are a public good for coastal Louisiana must be viewed critically moving forward.

Ideology operates subtly by creating the perception that the status quo is natural or even beneficial to the public (Lukes 2005:28). Bell (2016) and Gaventa (1980) each provide seminal

examples of extractive industry maintaining power through ideological discourse in central Appalachia. A similar dynamic exists in coastal Louisiana, with local respondents frequently arguing that coastal communities could not exist without oil and gas, even as they acknowledge the ecological problems associated with these industries (Lipsman n.p.).

Within this context, it is easy to recognize the logic by which Louisiana's coastal master plan operates. By obscuring the role of oil and gas production, the state is able to aggressively pursue solutions for proximate causes of land loss without disrupting the economic power relations that dominate the state's political apparatus. While substantial public controversy exists regarding the use of sediment diversions in the plan, political pressure to emphasize oil and gas is virtually absent. To emphasize the role of oil and gas in coastal land loss would be to threaten power relations that have had significant historical influence on the state and introduce real questions about Louisiana's economic future.

Resilience and Environmental Justice

In a normative sense, any effort to curb or reverse land loss and to protect communities and infrastructure, is a positive for the state. Louisiana's coastal master plan does this, and in many ways represents real, ambitious leadership in terms of how to deal with coastal flooding, a problem which will become more widespread as climate change and sea level rise continue to create environmental change (Wright et al. 2018). The present study recognizes the plan's potential for land-building and reduced exposure to natural hazards; however, a political ecology approach requires a critical examination of any attempt to reduce risk that does not directly challenge the power relations to which a significant portion of that risk should be attributed.

When viewed through the prism of neoliberalism, the plan's focus on resilience contains problematic contradictions. In the context of the master plan, resilience is "the ability to recover

or ‘bounce back’ from a shock” (CPRA 2017b:xii). In other words, a focus on resilience means an emphasis on returning to a state of equilibrium that existed prior to a shock, whether that shock is ecological (e.g. a hurricane) or social (e.g. a change in the local economy). In either case, the definition takes for granted that the conditions that existed prior to the shock were actually beneficial conditions for coastal communities, and that returning to those conditions is a desirable outcome. This is the problematic nature of ideology—it can obscure the possibility of alternative social relations in which the interests of the working class are prioritized over those of the powerful (Lukes 2005).

A focus on resilience without a critical audit of the power relations that dominate Louisiana’s working coast is destined to reinforce the power relations that contribute to the vulnerability of coastal communities. “Resilience” is a loaded concept that can be deployed politically as part of an ideological project and can be particularly problematic within a neoliberal framework (Lang 2010:21). If a master plan adheres to the logic of neoliberalism, and the public is not actively demanding accountability from powerful actors, then “resilience” in practice will inevitably function as a conservative project to maintain relations of domination, as described by MacKinnon and Derickson (2012). This conservative form of resilience emphasizes reducing exposure to natural hazards—in this case, through structural protection and nonstructural risk reduction processes.

A stated program objective of the master plan’s Flood Risk and Resilience Program is to “increase resilience for economically vulnerable populations” (CPRA 2017b:50). The CPRA must ask itself whether its goal is to increase “resilience” by shielding communities from natural hazards, or by building a working coast in which hazards are less frequent and prevalent. A form of resilience that is genuinely sustainable for coastal communities is one that focuses on reducing

the production of risk, not simply adding more protection from it. In the case of coastal Louisiana, this involves producing a master plan that challenges power relations by engaging with the ecological harm created by the oil and gas industry and making structural changes that reduce the ecological impact of these industries. Recognizing the future of sustainable energy production and making proactive efforts toward rebuilding Louisiana's working coast in a way that promotes new economic arrangements and power relations is a necessary component of a planning process focused on long term sustainability and risk reduction.

The results of this investigation have real environmental justice implications for both the process and outcomes of coastal restoration planning. The plan correctly identifies a number of social factors that lead to increased vulnerability in its Social Vulnerability Index. These factors include race, age, disability, primary language, and socioeconomic factors, among others (Hemmerling and Hijuelos 2017⁶). Environmental injustice persists in the inequitable risk distribution according to these factors in the coastal zone.

This finding is consistent with prior work that has identified justice issues with the State's approach to coastal restoration (Colten 2017; Hemmerling et al. 2020). From an environmental justice perspective, the State is correct to identify and prioritize these vulnerability indicators in its risk reduction efforts. However, when taken in the context of a plan tethered to a neoliberal logic that prioritizes economic productivity and existing power relations, inequitable distribution of risk and vulnerability are likely to persist even with increased physical protections.

CONCLUSION

The intent of this chapter is not to cast doubt on the symbiotic historical relationship between the energy industry and Louisiana's working coast. The desire of state agencies to seek ecological

⁶ 2017 Coastal Master Plan: Attachment C4-11.2: Social Vulnerability Index

security within the context of existing power relations, specifically by protecting oil and gas activities in the coastal zone, is consistent with decades of economic policy in the state. Environmental research, however, must account for increased awareness of the relationship between fossil fuel production and climate change.

Given the historical impact of the energy industry on coastal land loss, major policy initiatives like Louisiana's coastal master plan must attribute a share of risk and vulnerability to industry and propose solutions that address this share. Without this honest critique of local power relations, the State may be able to build a larger barrier between its most vulnerable communities and ecological risk, but it will not be able to thoroughly mitigate that risk or disrupt the pattern of unequal vulnerability in the long term. Political ecology analysis is a useful part of this critique because it exposes the connections between local level power relations and macro level sociopolitical processes. Given the relationship between capitalist production processes and ecological risk faced by vulnerable citizens (Harlan et al. 2015), ecological policy that operates according to neoliberal principles will inherently fail to serve the interests of working class coastal communities in the long term.

The findings of this chapter raise questions for future sociological and political ecological investigation of Louisiana's coastal restoration process. One major issue that requires further investigation is the political ecology of funding the coastal master plan. Damages resulting from the BP Deepwater Horizon Oil Spill are a major source of funding for the coastal master plan. Additionally, legislative measures that allocate funding are frequently reliant on oil and gas revenue—for example, the Gulf of Mexico Energy Security Act, or GOMESA (CPRA 2017a:128). Continued political ecology analysis should ask questions about how Louisiana can build a coastal master plan that challenges the status of the energy industry if the energy industry

remains a major source of funding. This funding paradox represents another instance of coastal planning occurring within a neoliberal framework in which problematic structural arrangements go unquestioned.

Future studies should also investigate the role of power relations on the agency of coastal communities and individual actors. Studies should investigate the role of local people and local knowledge in the development of the master plan and its priorities. Lipsman (2019) found that locals report being excluded from the planning process, but future studies can contribute in this area by using master plan documents, meeting records, and further interviews to expand this investigation. Furthermore, future research should investigate the impact of power relations on the prospects for mobilization within coastal communities to gain greater access to ecological governance structures.

Louisiana has been ambitious in seeking a leadership role in water management amidst its coastal erosion crisis—an issue that will become more widespread as environmental conditions change globally (Wright et al. 2018). The state should take the next step in global leadership by critically evaluating the role of fossil fuel production as its economic bedrock and seek restructured power relations that provide opportunities for communities to build a genuinely sustainable and resilient working coast.

CHAPTER TWO: Epistemic Conflict and Coastal Restoration: Exploring Pathways to Ecological Democracy in Southeast Louisiana

The previous chapter detailed the ways in which powerful interests operating within a neoliberal framework produce ecological risk while using ideology to shield themselves from accountability. In the case of coastal Louisiana, this has resulted in a master plan and public discourse around coastal restoration that contains almost no discussion of the ecological harm caused by the oil and gas industries. Instead, the master plan attributes a large share of ecological risk in the coastal zone to flood control structures and the corresponding solution is highly controversial.

The coastal master plan enjoys near unanimous support from scientists, policymakers, and citizens alike (EDF 2018), with one critical exception—the proposal to install massive sediment diversions along the banks of the Mississippi River at several points throughout the mid and lower delta. Proponents of this plan include scientists and policymakers who argue it is the best choice for long-term, organic land-building in basins adjacent to the river (CPRA 2017a). Opponents of the plan, most significantly the commercial fishing industry in coastal parishes, vehemently oppose the introduction of fresh river water that could severely threaten local fish, shrimp, and oyster harvests in local fisheries (Gotham 2016a). Even for many local stakeholders who support the idea of the master plan, sediment diversions are a non-starter. The Mid-Barataria Sediment Diversion (MBSD)—the first of seven planned diversions in the southeast coastal zone during the ten years following the 2017 iteration of the plan—will cost nearly \$1 billion (CPRA 2017a). Coastal residents argue that money could be used more efficiently, without harming fisheries, by building land immediately using dredged material.

In many ways, the controversy over sediment diversions is a conflict between the data-driven institutional approach of the State and the local, experiential knowledge systems that drive opposition within coastal parishes (Lipsman 2019). The sediment diversion controversy is one that requires political ecology analysis, particularly through an assessment of who has the power to make and enforce ecological governance decisions (Martinez-Alier et al. 2010) This study asks this question in the context of the epistemic logic by which ecological governance decisions are made.

The master plan utilizes a “unified coastal restoration” paradigm that prioritizes the long term benefits to the total coastal ecosystem over individual community outcomes (Hemmerling et al. 2020:125). The plan is intentionally science-based and numerically-driven, leading to an emphasis on technical knowledge and minimal incorporation of local or traditional knowledge (114). While this epistemic logic is potentially suited to deliver risk reduction at the scale of the entire coast, it is not suited to engage with social disparities or power imbalances that will result in uneven distribution of risk and benefits at local scales (133). This chapter focuses specifically on the ways in which the State’s prioritization of technical knowledge inhibits the development of co-management strategies that can facilitate the plan’s goals in a way that maximizes just outcomes at the community level.

This chapter investigates the development of the coastal master plan from the perspective of stakeholders who will be potentially impacted by the State’s decision to utilize sediment diversions as a centerpiece of its coastal restoration efforts. While coastal communities face potentially major economic impacts through losses for the commercial fishing industry, an analysis of the political process around sediment diversions reveals a perceived exclusion from the policy discourse among local stakeholders who have high levels of experience with the river

and gulf but less formal education. This chapter uses interview data to answer several key questions about the epistemic conflict between the institutional actors involved in coastal restoration and the coastal stakeholders who lack access. Specifically, to what extent is local or traditional knowledge incorporated into the coastal master planning process? How is “expertise” on coastal restoration issues defined, and how does this shape inclusion in ecological governance? What is the trust relationship between institutional actors and coastal stakeholders, and how does this impact the prospects for co-management of the estuary?

Epistemic authority has major implications on the political ecology of coastal Louisiana. The research presented here is innovative in its application of the political ecology framework to epistemic conflict and risk. Substantial literature suggests that resource co-management is a crucial process for facilitating positive ecological outcomes at the local level and that trust is a critical factor in bringing local knowledge holders into this process (Hamm 2017; Coleman and Stern 2018). This study analyzes the extent to which Louisiana’s coastal planning apparatus engages local knowledge in a way that can support the master plan’s goals of reducing risk and building resilient communities throughout the coastal zone.

REVIEW OF LITERATURE

Political Ecology of Risk

Epistemic conflict and ecological democracy are critical threads within the political ecology framework (Watts 2000). In coastal Louisiana, political contests between epistemic communities have tangible impacts on the distribution of ecological risk. The outcome of the sediment diversion issue is unlikely to appease all coastal stakeholders, and the State itself acknowledges the likelihood of “winners and losers” resulting from its approach to coastal restoration (Hemmerling et al. 2020:133). Installation of diversions without critical consideration of

localized interests will put extreme strain on local stakeholders' control over resources and livelihoods, two critical dimensions of political ecology (Watts 2000:257).

Democratic decision-making helps build ecological policy focused on equitable distribution of resources as well as risk. Recognition of local stakeholders' political agency—not just environmental knowledge—is an integral component of genuine ecological democracy (Brosius 2006). Agrawal and Gibson (1999) argue that communities are dynamic entities and that unique institutional arrangements at the community level must be considered in ecological decision-making. This political approach to local knowledge corrects misconceptions about its role in the scientific process. Local knowledge represents more than a static body of knowledge to incorporate into mainstream science; the value of local knowledge is in the political and epistemological interplay across scales that benefits ecological outcomes on complex environmental issues (Cash et al. 2006; Miller and Erickson 2006). This “interactional expertise” is a means for transcending the structural boundaries of mainstream scientific knowledge (Carolan 2006).

Interactional expertise is critical for fostering trust between institutional actors and local stakeholders. Amplification of particular forms of knowledge generates inequalities in terms of who is allowed to define the degree and scale of risk, and for whom that level of risk is deemed acceptable (Carolan 2006). The systematic nature of science creates problems of scale; risk reduction efforts at the state level may fail to account for variables experienced by separate publics at the micro level—a process that is playing out through the Louisiana's “unified coastal restoration” approach (Hemmerling et al. 2020). Local knowledge is critical to fill these knowledge gaps and facilitate co-management of the coastal system. (Berkes, Colding, and Folke 2000; Thornton and Scheer 2012).

Cross-scale interaction is critical for a risk accounting that prioritizes localized, subjective risk interpretations (Cash et al. 2006). Nevertheless, the scientific community enjoys “expert” status that legitimizes an epistemic approach that encourages technocratic risk management (Wynne 1996). Failure to incorporate dynamic local knowledge ultimately generates epistemic disputes and threatens to stunt the development of co-management strategies while exposing local publics to potentially catastrophic ecological conditions (Freudenburg 1992; Brosius 2006).

Mobilizing Local Knowledge

The advantage of incorporating local knowledge is multifaceted. The simplest benefit of utilizing local knowledge is the interactional expertise and procedural democracy that it generates (Corburn 2003; Carolan 2006). Mobilization of local knowledge contributes epistemologically by expanding the knowledge base used in decision-making (Corburn 2003). Corburn further argues that local knowledge democratizes the planning process, improves ecological outcomes, and generates a just distribution of resources and risk. Funtowicz and Ravetz (2003) argue the “extended peer community”—stakeholders at the local level who possess local knowledge—is the key to mobilizing this form of knowledge.

Lidskog (2008) acknowledges the risk associated with bringing lay people into the scientific process; nevertheless, the extended peer community serves an important supplementary function by introducing local culture and institutions into ecological governance (Nyong, Adesina, and Elasha 2007; Friedrichs 2011). Lack of trust between the scientific and lay communities inhibits outreach by the former and participation by the latter. The scientific process is inherently subjective and can only be understood through the cultural lens of a

particular community. Cultural work must be done to bridge the gap between communities at varying scales in order to achieve legitimate participation by local stakeholders (Wynne 1996).

Cultural considerations in dealing with complex ecological problems are necessary to engage local publics (Adger et al. 2013). These authors argue the scientific process works to protect economic assets and private property but fails to engage with the unique concerns of local communities, particularly the ways in which certain approaches impact local cultures and ways of life. This contributes to the dichotomy between perceived “insiders” and “outsiders,” reinforcing the perception that scientists do not engage or understand localized concerns. This challenge is significant as cultural perceptions of “expertise” necessarily determine which voices hold weight in policy discussions (Carolan 2006). As a result, lay people who attempt to raise cultural concerns as part of the scientific process are frequently shut out. Lauer et al. (2017) find that pathways to participation and legitimate decision-making power are critical for mobilizing local knowledge. The science and policy communities must go beyond “objective science” and engage with cultural discourses to facilitate trust and legitimately engage stakeholders at the local level (Owens 2000).

A Brief Review of Empirical Literature on Local Knowledge and Ecological Outcomes

Empirical work on local knowledge and environmental outcomes is diverse. Andrews et al. (2018) examined dam projects in Saskatchewan and found that exclusion of indigenous knowledge generates negative downstream impacts for indigenous communities and subjects them to increased risk. Moller et al. (2004) found that the combination of traditional and mainstream knowledge produced positive outcomes for wildlife management in New Zealand and Canada. Becker and Ghimire (2003) found similar positive results for forest conservation in Ecuador, as did Reyes-García et al. (2014) for home gardeners in the Iberian Peninsula.

Phungpracha, Kansuntisukmongkon, and Panya (2016) found that traditional knowledge was critical for maintaining food security in poverty-stricken Northern Thailand. Nyong et al. (2007) examined the impact of indigenous participation in climate change mitigation in the African Sahel and found that including indigenous groups was beneficial because it produced a participatory model to create more inclusive climate adaptation and mitigation strategies. Lauer et al.'s (2017) work in western Montana showed local communities responded most effectively when they were given a legitimate stake in the decision-making process around social-ecological outcomes.

Trust and collaboration are critical components in explaining why local knowledge has positive impacts on local environmental outcomes. Thornton and Scheer (2012) argue that mainstream science should foster collaboration with local communities by including them in every stage of the research process. Coleman and Stern (2018) and Hamm (2017) each studied the role of trust in natural resource management and found that trust is critical for establishing collaborative management strategies. Drew (2005) explored the role of traditional knowledge in marine conservation in Kiribati, Micronesia, and Belize and found that western conservationists' acceptance of traditional knowledge facilitated mutual trust with indigenous communities and a shared responsibility for ecosystem conservation. Hychka and Druschke (2017) found similar results for urban aquatic restoration in Rhode Island. Gómez-Baggethun et al. (2012) examined the role of traditional knowledge in long-term resilience in southwest Spain, arguing that traditional knowledge facilitates a collaborative approach to social-ecological resilience—a critical necessity in the era of global ecological change.

The literature on local knowledge engages with specific methodological issues. Huntington (2000) argues that local knowledge is difficult to access because it often must be

collected orally. Collection of local knowledge is often a project in itself that must precede the incorporation of that knowledge into mainstream scientific knowledge. Complicating matters further, this type of data collection requires collaboration between social and physical scientists. Gómez-Baggethun and Reyes-García (2013) argue that modernity hinders the transmission of this knowledge and that the loss of traditional knowledge over time harms indigenous communities. Usher (2000) concurs that local knowledge can be difficult to quantify. Usher notes that willing participation is a critical aspect of the process that can be taken for granted; without willing intermediaries from the communities possessing traditional knowledge, there is no possibility for mainstream science to acquire it. These findings show the importance of pathways to participation in the decision-making process for local stakeholders.

Research on local knowledge in fishing and marine conservation, specifically that which focuses on Louisiana, is particularly salient to the present study. Parks et al. (2018) examined the aftermath of the BP Deepwater Horizon oil spill and found that fisherfolk experienced a more severe disruption to their daily lives than non-fisherfolk. The study found that community sentiment and collaboration were critical to recovery, indicating that a strong local identity is a major factor in resilience.

Close and Hall (2006) argue that geographic information systems (GIS) can be used to effectively integrate qualitative local knowledge into mainstream science. Bethel et al. (2011; 2014) applied this method to fisheries in southeast Louisiana. The researchers integrate traditional knowledge with GIS data to form a useable dataset that serves as a decision-making tool for local policymakers on coastal restoration issues. The “Sci-TEK” program developed by these researchers provides a tangible pathway for coastal communities to become involved in the decision-making process around coastal restoration in Louisiana. Sci-TEK represents a

qualitative change from traditional attempts to engage local knowledge. The program seeks local knowledge at its geographic source and allows locals to dictate the terms of the investigation. In contrast to CPRA meetings which are criticized as lip service to engaging locals, Sci-TEK provides an egalitarian, methodologically sound mechanism for engaging local stakeholders. Sci-TEK highlights both the importance and feasibility of utilizing local knowledge in restoration decisions. Sci-TEK incorporates local knowledge into decision-making and fosters trust that is critical to positive coastal restoration outcomes (Lauer et al. 2017; Coleman and Stern 2017; Hamm 2018).

Shortcomings of Louisiana's Approach

The literature on local knowledge, co-management, and the importance of proactive institutional efforts to gain local knowledge holders' trust, lead to the clear conclusion that Louisiana's approach to coastal restoration has shortcomings. This chapter explores these shortcomings from the perspective of communities at risk of ecological harm that may be exacerbated by the particular epistemic logic of coastal restoration efforts.

Each successive iteration of the master plan has involved greater public outreach including information campaigns, public meetings, and partnerships between the State and NGOs, but the decision-making process remains top-down and numerically-driven, reducing the State's ability to utilize local knowledge and account for community variables (Colten 2017; Hemmerling et al. 2020). This level of outreach does not meet the standard of a reflexive scientific process or legitimate cultural engagement that could build trust and provide the decision-stakes necessary to engage locals. Given the importance of trust in developing co-management strategies, it is critical that locals perceive inclusion in the coastal restoration process in order for it to maximize risk reduction to vulnerable communities. The data presented

in this chapter will show that the State has not worked effectively to build trust among local knowledge holders or incorporate them into its planning process.

METHODS⁷

The literature is clear that trust in social institutions and pathways to participation in the political process are key to engendering ecological democracy at the local level (Lauer et al. 2017). Given the difficulty of engaging local stakeholders and the importance of trust in this process, the perception among those stakeholders of the extent to which they are being included is uniquely important. Failure to establish trust among vulnerable populations will ultimately inhibit development of co-management processes around ecological policy.

The interview guide was designed to interrogate coastal residents' perceptions of the role of local knowledge in coastal planning and the level of inclusiveness in the political process around coastal restoration. The interviews probed numerous topics related to local knowledge, coastal planning, and management of the estuary. Subjects were asked about their attitudes toward the plan, specifically about sediment diversions, and the bases for these attitudes. Subjects were given the opportunity to discuss the project types that they would prioritize if given the opportunity. Subjects were asked whether locals had been included in the process of setting priorities within the master plan and what value local knowledge had provided or could provide to this process. The interviews probed the ways in which coastal erosion impacted subjects, and how subjects interacted with the major economic and political players in their communities (most frequently the State and the fishing industry), and about the quality of the trust relationships between all of these actors.

⁷ For a more detailed account of the sample and overall interview research design, see "Methods" section in the project Introduction.

This in-depth analysis focused on themes and patterns that elucidate the otherwise opaque political process around coastal restoration in southeast Louisiana. By understanding coastal residents' perceptions of the relationship between institutional actors and local stakeholders, it is possible to analyze engagement with local knowledge and therefore the extent of democratic management of the coastal system.

FINDINGS

The literature is clear that co-management of social-ecological systems facilitates complex solutions to challenging environmental problems and that mobilizing local knowledge benefits this process. The literature is also clear that pathways to participation and trust in social institutions among local stakeholders are keys to mobilizing local actors.

This chapter focuses on two key findings related to these ideas. The first is that many coastal residents feel excluded from the decision-making process around the coastal master plan—specifically on the sediment diversion issue—and argue that this exclusion occurs on the grounds that their experiential knowledge lacks legitimacy in comparison to the institutional knowledge of mainstream scientists. The second finding is that major trust issues exist between coastal residents and mainstream social institutions. Perceived exclusion and trust issues hinder local participation, potentially reducing the efficacy of restoration strategies and reduction of community risk.

Inductive coding and interpretation of the interview data yielded clear patterns of discourse that support the results discussed in the following two sections. This methodology is uniquely suited to elucidate these patterns and contextualize them within the social-ecological literature on local knowledge and co-management. The evidence presented in the following two sections represent dominant patterns of discourse within this case study.

Exclusion from Political Process

The overwhelming response from coastal parish residents was frustration at what they perceived to be a lack of inclusion in the decision-making process. Gerald, a charter captain and activist in St. Bernard parish, argued that the State “doesn’t take advantage of local people,” in its coastal planning process and that the State “goes through the motions” when it comes to public outreach. The “motions” Gerald references are scoping meetings, held in Plaquemines and Jefferson parish, that are required of the State as part of the National Environmental Policy Act (NEPA) permitting process. The meetings provided an opportunity to hear from the CPRA and the US Army Corps of Engineers (USACE) and to make comments on the public record about sediment diversions.

Outreach efforts like the scoping meetings were perceived by locals as the bare minimum required for acquiring a permit for sediment diversions, and a strong belief existed that public comments were not being considered. Residents generally argued the process was disingenuous at best. Miles, a commercial fisherman in St. Bernard parish, described the experience of making a comment at a public meeting:

It’s not even being considered. That’s the sad part of the whole thing. You go to the meeting, you speak, and that person over there is texting somebody. They aren’t even listening to you because they’ve got their mind made up already.

Epistemic differences played a significant role in the perceived exclusion from the political process. Coastal residents felt that their input was being excluded, at least in part, due to their lack of formal education. These residents exuded pride in their experiential, localized knowledge. Cal, a commercial fisherman in St. Bernard parish, argued, “you said education. I’ve got seven generations...in the fishing business. I’ve got a lifetime degree in the fishing business that you can’t learn in a college.” Miles felt he was being treated like a “dumb fisherman” and

that he was being ignored because he does not hold a master's or a doctorate degree. Said Miles: "I may not be educated, but I have knowledge."

Coastal residents were aware of the role they could play in the coastal restoration process. Multiple land-building alternatives—focused on preserving the marsh and protecting fisheries—were raised in interviews, most commonly dredging sediment (dredging projects do appear in the master plan, in combination with diversions). But even in a general sense, locals argued for the value of their knowledge. Bradley, an oysterman in Plaquemines parish and member of the Louisiana Oyster Task Force, argued that "scientists (and) academia miss a great opportunity to see the perspective of those who have actually witnessed the coast...and how it's changed." Alice, a retired Plaquemines parish employee and fourth-generation resident understood the value of locals as political agents: "Locals know better than anybody. You've got to get them to the table...it can't just be about you."

Trust in Social Institutions

Trust issues between coastal stakeholders and social institutions have hindered the political process around coastal planning and management, potentially disrupting positive outcomes for local fisheries. These trust issues flow in both directions and are rooted at least in part in epistemic differences. Coastal residents argued that their experiential knowledge uniquely positions them as experts on coastal management.

David, a seafood distributor in Jefferson parish, questioned why he should trust scientists: "Is it because he's got a Ph.D.? Where did he get it from? Show me anybody that ever fixed the coast...How did they become an expert if they never fixed (anything)?" Gerald argued that it "doesn't take a Ph.D. to see what's going on." Ferris, a commercial fisherman and former St. Bernard parish elected official, put it bluntly: "No, we don't trust them. Those guys ain't from

down here...(They're) from the middle of the country, where they ain't got to worry about coastal erosion."

Lack of experience among mainstream actors was one cause for distrust; accusations of corruption was another. Randall, a marina owner in St. Bernard parish, argued the reason the State was so focused on diversions was "to do projects they want to do...for their cronies to make money." This group accused the State of utilizing "politicized" science to earn support for diversions. Evan, a recreational charter captain, argued that "the (State) got the science they paid for. I wouldn't necessarily trust it." Bradley described why a lack of trust exists: "there (are) trust issues when people that live it have experienced scientists, academia, saying things that are not one hundred percent true or accurate, and they know it."

Trust issues flowed both ways in the conflict over sediment diversions, with supporters of the plan voicing a lack of trust in coastal stakeholders to take the best approach for Louisiana as a whole. These subjects argued that many in the coastal zone are more concerned with short-term economic gain than the long-term health of the estuary. Flynn, a small business owner in Plaquemines parish challenged the idea that local knowledge is beneficial in the coastal restoration process: "(the) locals aren't as educated about (the) wetlands as they should be." Flynn described opposition to diversions as "uneducated," "short-sighted," and "self-centered." Ronald, a charter captain in Plaquemines parish, called the anti-diversion science "propaganda." Forrest, a retired State scientist argued that "science is a dirty word" among coastal residents and that "if they hear you have a Ph.D., they're even more skeptical." These accusations of selfishness and ignorance to the scientific process inhibited trust in local knowledge among those who supported the State's approach to the diversion issue. These trust issues disincentivize local

participation and hinder the State's ability to maximize the health of the coastal ecosystem and its fisheries.

DISCUSSION

Coastal erosion is an issue that is currently affecting Louisiana, but one that will become more widespread as ocean acidification and sea level rise continue their current trajectories (Cooley and Doney 2009). The literature is clear that incorporating local knowledge benefits complex ecological solutions by facilitating cross-scale interaction and co-management (Corburn 2003; Cash et al. 2006; Miller and Erickson 2006; Berkes 2009). The findings of this study suggest that the State is missing an opportunity to engage local stakeholders and encourage a democratic process of multiscale decision-making.

This chapter presents two distinct findings. First, many coastal stakeholders—particularly those who oppose the State's plan to install sediment diversions in the Mississippi river—perceive exclusion from the political process on the grounds that their experiential knowledge is less legitimate than the institutional scientific knowledge held by “experts.” Second, trust issues inhibit meaningful progress toward effective co-management of southeast Louisiana fisheries.

The State argues that it utilizes local knowledge, but its process is opaque. The State's outreach efforts include meetings designed to educate citizens on the plan itself, the key organizations and actors involved (e.g. CPRA and USACE), and the processes in place to protect the fisheries (e.g. NEPA). Although these meetings offer opportunity for public comment, it is unclear how these comments are used in the planning process. What is clear is that coastal residents frequently feel they are being paid lip service or being ignored altogether.

The perception of exclusion is significant. The challenges of mobilizing local knowledge necessitate buy-in from those who possess that knowledge (Usher 2000). Simply taking

comments at public meetings without follow-up or conversational exchange (comments were provided via court reporter at scoping meetings) does nothing to address the inherent power imbalances that shape the political process around coastal planning. The meeting format—information about coastal projects was presented by CPRA representatives to an audience of coastal stakeholders—does not resemble the co-learning or knowledge co-production processes that are critical to fisheries co-management (Wiber et al. 2009; Trimble and Berkes 2013).

The State has provided information to coastal residents through meetings as well as information campaigns. The State has also acknowledged the risk to fisheries posed by diversions in particular, even initiating programs to support the oyster industry through a potentially significant transition period (Sneath 2018). In each of these cases, however, the State's process has ultimately been top-down and has not offered the pathways to decision power that are so crucial to mobilizing local knowledge (Lauer et al. 2017). The findings of this paper are consistent with prior work by Hemmerling et al. (2020) that argues that the State's "unified coastal restoration" strategy is not suited to incorporate local knowledge. These authors argue that this approach to restoration is likely to exacerbate injustice because it will divert more assets toward larger urban centers and away from coastal communities.

Developing a Participatory Approach to Coastal Restoration

As a critical element of coastal systems, fisheries depend upon effective coastal management and are uniquely impacted by coastal erosion (Wright and D'Elia 2018:212). Participatory research and adaptive co-management are critical processes that can facilitate democratic planning and positive ecological outcomes for fisheries at the local level as communities struggle to adapt. Local institutions, like those in southeast Louisiana, must take a reflexive approach and evaluate

the ways in which their fisheries management strategies facilitate or hinder these democratic processes.

Pathways to participation and decision power are important for overcoming trust issues that plague the deliberative process on coastal planning. Trust is a critical component of effective natural resource management and participatory research has been shown to facilitate trust and effective co-management (Hamm 2017; Coleman and Stern 2018). The state of Louisiana would benefit from a deliberative decision-making process that engages a wide range of stakeholders; this process would facilitate co-learning that maximizes different forms of knowledge. A more transparent process would also help to alleviate commonly held perceptions of a corrupt scientific process. Participatory research facilitates cross-scale institutional networking that would increase the involvement of coastal stakeholders in governance structures and encourage a democratic decision-making apparatus (Trimble and Berkes 2013:775). The State has recently launched a program that solicits the public for coastal restoration proposals (IDR 2018). This form of engagement, however, does not address power imbalances or create more transparency, as the State will ultimately make any final decisions on whether to utilize these proposals.

In fishing communities in particular, social and economic contexts are absolutely critical to effective policy and management (Wiber et al. 2009:177). Bethel et al.'s (2011; 2014) Sci-TEK is an empirical example of participatory research that addresses power imbalances by empowering locals to guide field studies and report their own experiential knowledge. Sci-TEK uses GIS technology to translate this local knowledge into useable datasets that can benefit the decision-making process around coastal management. To encourage local participation and democratic outcomes, the state of Louisiana should invest in participatory research like Sci-TEK

rather than top-down solicitations that do not acknowledge the State's power over coastal communities and provide no decision power to these stakeholders.

CONCLUSION

The story in this chapter is about a conflict between knowledge systems, and it is clear that this epistemic standoff has direct implications for who has access to decision-power in the coastal planning process. The outcome of this political conflict will affect the distribution of ecological risk in the region.

The findings of this study demonstrate without question the perception of exclusion on the part of local stakeholders and that epistemic differences are a main source of their distrust for the process. Given past research on the importance of inclusivity, local knowledge, and trust in positive outcomes on local environmental issues, this research sheds light on a conflict so fundamental that it precludes meaningful progress toward resolution. Epistemic exclusion by the scientific community will ultimately inhibit co-management and stunt the efficacy of coastal restoration strategies (Watts 2000; Corburn 2003).

Perceived inclusion is critical to the viability of meaningful political discourse, as process-control and decision-stakes have been shown to foster community involvement on local environmental issues (Lauer et al. 2017; Awung and Marchant 2018). The literature argues that local knowledge fills gaps in mainstream scientific knowledge and that cross-scale interaction is effective in reducing risk to local communities (Cash et al. 2006; Gagnon and Berteaux 2009). The knowledge that local stakeholders can provide to the coastal restoration process is likely to reduce risk; however, the CPRA will only gain access to this knowledge by legitimately incorporating those stakeholders who possess it into the political process. Bethel et al.'s (2014) Sci-TEK provides a tangible example of this process.

The fact that the conflict is occurring on the epistemic level makes legitimate access for local stakeholders more difficult. Without agreement on a set of facts (e.g. what the likely ecological and economic outcomes of diversions will be), a genuinely democratic approach to coastal restoration will remain elusive. Each side is aware that epistemic authority in this conflict will engender political power. Given the urgency of coastal erosion and the pragmatic approach with which the CPRA must operate, it is critical that the CPRA and the State of Louisiana engage in genuine outreach to correct the perceived exclusion among local stakeholders. A lack of meaningful outreach and engagement has significant environmental justice implications as vulnerable groups are already feeling ecological effects of coastal erosion (Hemmerling et al. 2020).

Ultimately, this research has significant implications for Louisiana's coastal planning process as well as theoretical implications for future studies of local environmental politics. Despite the State's clear intent to proceed with diversions, the projects remain a non-starter for many residents including those who support the other project types. The discourse is currently centered around two projects, but the plan calls for eight large sediment diversions in the southeast coastal zone—seven of which are scheduled to be implemented in years 1-10 following the 2017 plan, pending funding (CPRA 2017a:118). The following chapter examines the conflict over sediment diversions from a contentious politics perspective, specifically focusing on the interests and actors that control coastal restoration politics and to what extent mobilization against sediment diversions has occurred.

Master plan projects are currently underway, but sediment diversions remain highly controversial. Future large-scale projects will either come from inclusion and compromise between sides or through unilateral decision-making that enlarges the social fracture between

communities in the coastal zone. While sediment diversions might ultimately be the course of action, proceeding in a manner that is exclusive of critical local knowledge risks normalizing technocratic ecological governance that fails to account for the unique risk experienced by coastal communities.

CHAPTER THREE: Non-Decision Power and Political Opportunity: Exposing Structural Barriers to Participation in Louisiana's Coastal Restoration Conflict

Coastal communities that are highly dependent upon stable ecological conditions (e.g., resource harvesters) are at increased risk of socioeconomic hardship resulting from large-scale projects (Hemmerling et al. 2020). Despite widespread concern over potential changes to fisheries, a feeling of exclusion from the coastal planning process persists among this group (Lipsman 2019), an argument that was developed in the previous chapter. There has been an effort within this community to mount a resistance to the State's plan to utilize sediment diversions. Despite significant attitudinal opposition, organized mobilization has generally not been effective in terms of disrupting political momentum for diversions.

This chapter investigates research questions stemming from this lack of impact on coastal planning by diversion opponents. To what extent has mobilization been attempted? How have these mobilizing efforts been structured, and what entities have been driving these efforts? Why has the strong attitudinal opposition to diversions not produced effective mobilization against diversion projects? What are the structural barriers to effective mobilization on this issue? The coastal master plan may ultimately build land and reduce total risk to Louisiana's coast; however, a state-level analysis of the normative success of the plan may exclude the experiences of vulnerable groups in the coastal zone. This paper uses interview data to answer these questions from the perspective of coastal residents whose economic and environmental risk burdens are directly impacted by the State's coastal restoration decisions.

This chapter utilizes a radical conception of power to analyze the ways in which structural relationships between communities and institutions in coastal Louisiana perpetuate power imbalances through non-decision-making—the extent to which status quo-oriented groups

influence community values and political institutions to limit the scope of actual decision-making to “safe” issues (Bachrach and Baratz 1962:952). A multidimensional approach to power reveals subtle ways that institutional configuration can limit mobilization by suppressing the perception of political opportunity among aggrieved groups (Lukes 2005). This paper argues that the institutional weight of the coalition between the State, energy industry, and national environmental sector has the effect of limiting mobilization among aggrieved groups in the coastal zone, preventing anti-diversion activism from forcing a decision in the political sphere.

This case study contributes to an important category of sociological inquiry that investigates the experience of risk and prospects for mobilization among groups whose geographic and economic position within a social-ecological system makes them vulnerable to impacts of environmental change. While most studies of political mobilization focus on sustained collective action, it is equally critical to ask why, in instances of environmental injustice, effective resistance frequently does not emerge (Bell 2016). This study contributes to this important but under-analyzed category of sociological research by investigating the ways in which the structural arrangement of powerful institutions in coastal Louisiana minimizes political opportunity and dampens the potential for mobilization.

Sediment Diversion Controversy

The coastal master plan is focused on reduction of risk coast-wide and may yet achieve that goal. A local scale analysis of that risk reduction, however, reveals conflict and power struggle over the plan’s inclusion of sediment diversions as a centerpiece of restoration (Gotham 2016a; Lipsman 2019). While the CPRA argues that large-scale sediment diversions are necessary to build land, many residents of coastal communities worry that the influx of fresh water from the river will impact fisheries and create economic hardship for coastal communities.

The scientific logic of the coastal master plan contributes to State support for diversions. The CPRA's plan is rooted in numerical models designed to "optimize project selection and location," with the goal of widely distributed benefits among the coastal population (Hemmerling et al. 2020:114). The coastal master plan uses a unified coastal restoration approach that prioritizes the total coastal ecosystem over viewpoints of individual communities (125). Ecological considerations outweigh social ones in the scientific logic of the plan, leading scientists toward a reliance on diversions for their potential long-term ecological benefits. This is evidenced by the CPRA's plan to proceed with large-scale diversions without a social impact assessment in 2015 (Colten 2017:707).

Attitudinal opposition to diversions is common among coastal residents (Riegel 2019). Causes of direct opposition includes economic concerns (diminished fisheries production due to salinity changes that will alter species distribution) as well as physical concerns (flood risk). Many coastal residents perceive exclusion from the planning process even as they argue that they will face increased risk resulting from diversions (Lipsman 2019). This opposition has resulted in resistance from local elites, with coastal parishes Plaquemines and St. Bernard issuing official resolutions urging the State to halt progress on diversions pending an analysis of potential fisheries impacts (Gotham 2016a:796).

Groups have emerged at the grassroots level, most visibly the Save Louisiana Coalition, with the explicit purpose of mobilizing the community against diversions. Leaders from industry groups such as the Louisiana Oystermen Association and the Louisiana Shrimp Association have voiced strong concern about the potential impacts of diversions on the fisheries including increased oyster mortality and changes to shrimp migration (Hasselle 2017; Wright 2019). Though not specifically anti-diversions, Southeast Louisiana Voices of Impacted Communities

and Environments (VOICE) is an example of a coalition of local, community-based organizations who support the master plan but have urged the CPRA to clarify its plans to engage the public on diversions and to create a plan to involve historically disenfranchised groups in the planning process. The 2017 planning process increased public outreach, but the decision-making remains largely top-down and does not effectively account for social disparities or power imbalances (Hemmerling et al. 2020).

Despite the range of dissenting voices and attitudes, mobilization among grassroots groups who rely on continued involvement by local people (e.g. Save Louisiana Coalition) has been difficult to sustain and has had limited impact on the State's pursuit of diversions. Opponents of diversions who attend CPRA meetings to voice their concern report feeling excluded by CPRA representatives and argue that their communities' interests are being ignored in the determination of the master plan's priorities (Lipsman 2019). Even as the CPRA routinely hears negative feedback from coastal communities, the State appears set to proceed with a diversion on each side of the river in Plaquemines parish. The Mid-Barataria and Mid-Breton Sediment Diversions have each been assigned to the Federal Infrastructure Projects Permitting Dashboard, effectively expediting the permitting process in hopes of beginning construction earlier than originally thought possible (Schleifstein 2019a).

Political Economy and Coastal Restoration

A political economy analysis of risk in coastal Louisiana reveals a coastal planning process fraught with power imbalances and conflict between coastal communities and the institutions charged with their protection (Gotham 2016a). The bureaucratic apparatus around coastal restoration extends outward from the CPRA through structural linkages with the energy industry and the environmental sector (Gotham 2016a:797; Gotham 2016b:213). Furthermore, the CPRA

has partnerships with nongovernmental organizations who largely support the entire master plan (Colten 2017:706). NGOs sat on the Master Plan framework development team and hosted informational open houses with the CPRA ahead of the official comment period for the 2017 plan (Hemmerling et al. 2020:131).

This structural arrangement constitutes a coalition of the most powerful entities involved in coastal restoration, functionally limiting space for dissenting voices and alternative restoration strategies. This exercise of power—establishing a broad coalition that effectively limits space for grievances to be heard in the public sphere—avoids direct conflict and generates a wide perception of a unified approach to the master plan as a whole. This perception functions to limit perceived political opportunity for excluded groups, which can have real impacts on political mobilization (Gamson and Meyer 1996).

The energy industry. Louisiana's historical relationship with the oil and gas industry is a major component of coastal politics. The mainstream discourse around diversions argues that they are critical for land-building. The corollary to this argument is that the separation of the river from the delta, caused by river levees, is the largest factor in coastal land loss, and that diversions would help to reverse or at least stem this process. While conflict erupts in CPRA meetings over the future of diversion proposals, the role of oil and gas in coastal erosion goes relatively underdiscussed among coastal stakeholders.

Oil and gas channelization has been argued to be an equally significant, if not more significant, driver of wetland loss in the coastal zone than flood control structures (Houck 2015; Turner and McClenachan 2018), yet it receives much less attention in the coastal planning process. With 33,705 km of spoil bank in the Louisiana coastal zone, Turner and McClenachan (2018:6) argue that backfilling oil and gas canals can restore wetlands and prevent future wetland

loss at a significantly reduced cost without the uncertainty of diversions (7). Whereas \$5.1 billion has been earmarked for sediment diversions in the 2017 master plan (3), the cost of backfilling all oil and gas canals in the Louisiana coastal zone is estimated at \$335 million (1). Backfilling projects do not appear in the 2017 iteration of the master plan (Lux 2017).

The ideology of Louisiana's "working coast" and the relationship between the State and the oil and gas industry raises questions about the relatively minimal pressure the industry is facing in the coastal restoration process. The industry has enormous implications for both the national and state economies as well as employment throughout the state (Laska et al. 2005). The relationship between the State and the industry is economically significant but also has distinct cultural elements, with little momentum to move away from oil and gas despite recognition of the ecological consequences among the public and local leaders (Austin 2006; Colten 2017). Lawsuits filed by parishes seeking to hold oil and gas accountable for harm to the wetlands have been controversial (Bridges 2018).

This investigation of the structural relationship between the energy industry and coastal communities in Louisiana has precedent in sociological work on power and resistance in the context of environmental and economic risk. Gaventa's (1980) work on power and powerlessness in Central Appalachia illustrates the mechanisms by which power relations can inherently limit mobilization even in the absence of visible, direct political conflict. Gaventa's (1980), Bell's (2016), and Lewin's (2019) work on coal production in Central Appalachia each have parallels to coastal Louisiana in the relationship between the oil and gas industry and the general public. While the industry is a significant producer of environmental risk to Louisiana's eroding coast, it has also been a historical source of economic opportunity and security for coastal communities and is bound up in the cultural identity of the region (Austin 2006; Colten

2017:708). This multifaceted relationship obscures the role of oil and gas in generating coastal erosion, shifting public discourse to other restoration strategies.

The environmental sector. The environmental community's position in coastal restoration discourse adds another layer to the bureaucratic apparatus around the master plan. National environmental groups in particular have played a proactive role in the diversion issue. Professional environmental organizations tend to align more closely with State interests and therefore occupy a more prominent space in policymaking, limiting space for grassroots groups whose ideas and demands can be perceived as more radical or critical (Buday 2017).

In 2016, the National Fish and Wildlife Foundation awarded the state of Louisiana \$245 million to begin engineering and design for the Mid-Barataria and Mid-Breton sediment diversions (Clipp et al. 2017⁸:19). Restore the Mississippi River Delta, a “coalition of national and local conservation groups committed to coastal Louisiana restoration” has officially endorsed the large-scale diversions in the plan as a critical component of coastal restoration (EDF 2019). This coalition includes Environmental Defense Fund, the National Wildlife Federation, National Audubon Society, Coalition to Restore Coastal Louisiana (also a member of VOICE), and Lake Pontchartrain Basin Foundation.

These highly influential actors—the State, the energy industry, and the national environmental sector—form a powerful coalition that has proven difficult for excluded groups to penetrate. The following section will outline the theoretical paradigm for this chapter, in which a multidimensional relationship among the State, industry, and coastal communities produces power relations that limit political opportunity and inhibit mobilization against sediment diversions.

⁸ 2017 Coastal Master Plan: Appendix B: People and the Landscape

THEORY

The structural linkages between major actors in coastal restoration—specifically the State, industry, and national environmental sector—constitute an insular bureaucratic apparatus with minimal space for outside influence in decision-making. This study utilizes Lukes’ (2005) model of multidimensional power to frame the ways in which elites are able to leverage non-decision making to limit political opportunity for groups whose interests are not aligned with the CPRA on the diversion issue.

The first subsection will address the concept of political opportunity structure and its role in mobilizing collective action among excluded interest groups. This subsection will specifically highlight the socially constructed nature of political opportunity and the relationship between perceived political opportunity and real mobilization (McAdam 1996). The following subsection will outline a multidimensional view of power and the subtle ways in which structural arrangements are leveraged to control access to political channels (Bachrach and Baratz 1962; Lukes 2005). Ultimately, this review will provide a roadmap to analyze the ways in which multidimensional power, exercised over time by insular bureaucratic structures, can limit the perception of political opportunity among excluded groups and inhibit real mobilization.

Political Opportunity Structure and Mobilization

Political opportunity structure is a critical factor in enabling or constraining collective action on a political grievance. Opportunity structures “include aspects of a regime that offer challengers both openings to advance their claims and threats and constraints that caution them against making these claims” (Tilly and Tarrow 2015:49). Political opportunity structure is a major predictor of the potential success of collective action (McAdam 1996). Perspectives on the nature of political opportunity range from those highlighting specific constellations of institutional

factors (Della Porta 1996) to dynamic statist perspectives (Tarrow 1996), and models that emphasize the agency of social movements in actively generating political opportunity (Gamson and Meyer 1996; McCarthy, Smith, and Zald 1996). In each perspective, the relative openness of institutions to political change is described as predictive of movement success.

Perspectives that view political opportunity as socially constructed and interpreted are particularly relevant to the present study. Gamson and Meyer (1996) argue that belief in political opportunity is a major predictor of real political opportunity. Political opportunity, therefore, can be a self-fulfilling prophecy, relying on groups' ability to generate a perception of political opportunity within its base through framing and other collective action repertoires.

Framing political opportunity

The openness of political opportunity structure in a particular setting is “subject to ... interpretation and can thus be framed by movement actors” (Benford and Snow 2000:631). Although there are structural dimensions to political opportunity, discursive processes are critical for articulating opportunity and motivating action among a base.

Of critical importance to the present study is the corollary to these framing dynamics—that while movement leaders attempt to frame their grievance in way that is culturally resonant, powerful actors work to suppress collective action framing and squash political opportunity by limiting access to channels that can be leveraged by movement leaders (Benford and Snow 2000). Operating from a position of power, institutional forces are frequently able to curb momentum of movement actors. The following section will investigate the ways in which power can be used to dissuade groups from raising grievances altogether. Put another way: this section will explore the ways in which power can be wielded toward limiting political opportunity by subtly framing potential grievances as politically unattainable.

Multidimensional Model of Political Power

Traditional models of power, ranging from functionalist (pluralism) to Weberian and neo-Marxist models (competitive elitism, neo-pluralism) (Dahl 1956; Schumpeter 1976; Lindblom 1977; Held 2006) operationalize power as an individual or group's ability to carry out decisions that infringe on the interests of another party. Bachrach and Baratz (1962) problematized this conception of power by arguing that the mobilization of bias against outside grievances constitutes an exercise of power not through decision-making but through reinforcement of social and cultural barriers that prevent particular issues and groups from gaining access. Elite actors are able to frame the scope of politics in a way that limits access for actors to articulate grievances. In this way, power is not being exercised through decisions, but through a process of eliminating decision-making altogether on particular issues.

The non-decision processes of Bachrach and Baratz emphasize social and cultural norms that prevent grievances from being made public. Lukes' analysis is sociological in its recognition that non-decision power is exercised through institutions—in other words, that the structural arrangement of the political sphere can deter mobilization.

Bell (2016), Lewin (2019), and Gaventa (1980) each recognize that coal producers in Central Appalachia have been able to maintain exploitative relationships with vulnerable communities through indirect forms of power. Auyero and Swistun (2009) analyzed the ways in which institutional actors in a toxic community in Argentina prevented residents from fully perceiving and acting upon the severity of their situation. These studies show precedent for case studies of non-mobilization in instances of environmental injustice. In each case, indirect forms of power protect decision-makers from direct conflict with aggrieved groups. The present study

aims to add to this literature by investigating the structural factors for non-mobilization in the midst of Louisiana's coastal erosion crisis.

Non-Decision Power and Political Opportunity

A multidimensional view of power has significant implications for marginalized groups' ability to leverage and capitalize on political opportunity. The State can ultimately frame away many grievances, never allowing them to reach the public sphere. In other words, the State can leverage non-decision power to limit the perception of political opportunity and squash mobilization before it gains momentum.

Gaventa (1980) discusses the mechanisms by which multidimensional power can limit resistance among potentially aggrieved groups. Gaventa stresses the mutually constitutive relationship between power and powerlessness—that the relationship between the powerful and the powerless functions to reinforce this distinction and preclude effective challenges. Non-decision power can emerge from “adaptive response to continual defeat,” in which groups lacking institutional access develop an apathetic approach to the prospect of raising yet another grievance after a lack of success in the political arena over time (Gaventa 1980:16). The sheer weight of institutions can have an exclusionary effect on groups who lack access (Lukes 2005:40).

Marginalized groups may withhold grievances based on an interpretation of their own powerlessness, effectively ceding power and accepting what risk may flow from that non-decision. In the language of social movement theorists, one manifestation of non-decision power is the ability of the powerful to limit the perception of political opportunity to the extent that the aggrieved will refrain from acting on grievances altogether. Once achieved, the powerful have successfully defined mobilization as politically infeasible and precluded direct conflict.

Based on this interpretation of power, a conception of political opportunity that thoroughly accounts for multiple dimensions of power is necessary to more accurately analyze the ebbs and flows of political opportunity structure. Arguments within the social movement literature about agency and political opportunity by definition focus on direct expressions of power, given their focus on active grievances. Gamson and Meyer's (1996) emphasis on the discursive elements of political opportunity, most critically the aggrieved perceiving its existence, creates space to investigate the ways in which indirect forms of power can be used in subtle ways to limit political opportunity and mobilization.

METHODS⁹

The literature is clear that political opportunity is largely a constructed device that is in part dependent upon the perception of the aggrieved group (Gamson and Meyer 1996). This chapter utilizes this conception of political opportunity structure to investigate opportunities for mobilization on the sediment diversion issue from the perspective of actors at the local scale.

Subjects were asked a variety of open-ended questions designed to elicit commentary on Louisiana's coastal planning process including their own roles. These questions addressed the roles of various actors and institutions and the openness of political opportunity to influence the coastal planning process. Interviews addressed broad issues around the master plan including their perception of the State's specific restoration goals, the inclusivity of the planning process, the main interests being served by the plan, and the extent to which the State is open to modifications and alternative restoration proposals.

⁹ For a more detailed account of the sample and overall interview research design, see "Methods" section in the project Introduction.

Subjects were asked specifically about their own attitudes toward sediment diversions and their understanding of the impact diversions would have on particular segments of the coastal population and the state in general. Subjects commented on the extent to which local knowledge was being included in the planning process and the role that coastal stakeholders outside of the institutional planning apparatus could play in maximizing coastal restoration. In addition to questions about the State's role in coastal planning, questions about the role of the energy industry and the environmental sector in the coastal planning process were part of the interviews. Considering all of these factors, subjects were asked about their experience with resistance to, or mobilization against, sediment diversions, the extent and structure of mobilization, and what factors impact mobilization on this issue.

FINDINGS

Attitudinal opposition to sediment diversions in southeast Louisiana has prompted elite responses and contentious moments but has not produced sustained mobilization that legitimately challenges the State's ability to proceed with its planned projects. The findings of this study show that there are structural limitations to political opportunity for groups seeking to prevent the State from proceeding with diversions. In contrast to a pluralistic view of power in which the State directly addresses institutional challenges, the structural relations in the coastal restoration field constitute a multidimensional power structure that functions largely through non-decision power.

Given the relationship between perceived political opportunity and real mobilization, this study performs a deep analysis of the opposition to diversions and the structural impediments to mobilization, from the perspective of coastal stakeholders potentially impacted by diversions.

Using interview data, this study interrogates the ways in which multidimensional power is experienced and the impact this power has on prospects for mobilization.

Oil and Gas Accountability

The State, local industry, and national environmental sector form a bureaucratic coalition that leaves little space for external grievances. The institutional support for diversions is essentially universal at this scale and stems from the commonly held idea that the separation of the Mississippi river from surrounding marsh is the major cause of coastal erosion that must be reversed by reconnecting the river to its delta. This idea is supported by the scientific community who are operating according to a unified coastal restoration approach that prioritizes long term ecosystem health over the needs of individual communities in the short term (Hemmerling et al. 2020). Lost in this discussion, at times, is the extent to which oil and gas bears responsibility for this erosion, and, by extension, responsibility for correcting the damage to the wetlands.

Underlying the State's focus on diversions is an unwillingness to pursue oil and gas accountability as a major avenue for coastal restoration. The coastal master plan does identify two specific instances of oil and gas channelization as a cause of land loss (CPRA 2017a:ES-2, 36, see Chapter One of this dissertation), but while funds from the 2010 BP Deepwater Horizon Oil Spill settlement are earmarked for master plan projects including diversions (CPRA 2017a:131), along with oil and gas funds via the Gulf of Mexico Energy Security Act (GOMESA), the coastal master plan itself requires little of the oil and gas industry in terms of proactive restoration efforts such as backfilling retired canals.

From the community's perspective, acknowledgment of the industry's role in coastal erosion is common but generally stops short of placing a high burden on the industry's role in restoration. The political economy issues for coastal communities are clear; the nuanced

relationship between the industry and these communities creates a tenuous partnership that results in ecological sacrifice for economic security, even as support for coastal restoration is high.

The rhetoric in this study around oil and gas reflected a largely ambivalent attitude toward the role of industry in the community and in coastal restoration. Subjects frequently, within a single response, weighed the land loss impacts caused by oil and gas with the role of oil and gas revenue in propping up the local economy. Evan, a recreational charter captain in St. Bernard parish, talked about fishing at the base of an oil rig and argued that “the fishermen are side-by-side with (the oil and gas industry).” More commonly, respondents began by noting the environmental harm before hedging with a comment on the inevitability of oil and gas. Bradley, an oysterman in Plaquemines parish, argued that while “there’s some culpability that’s been assessed to the oil and gas industry...we’re not the same state if we push oil and gas away.”

Institutional actors recognize this attitude toward oil and gas among locals. Clyde, a scientist at a major southeast Louisiana university, argued that “the oil companies played a big, big role and there’s still just no interest in trying to bring them into the process to help pay for this.” Jack, an environmental lawyer from Orleans parish, commented that “there (are) people you know and love that are dependent on it. And so it’s always been a bit of a...acceptance and disapproval.” Reece, an environmental advocate born and raised in Plaquemines parish, told firsthand of seeing industry impacts in the wetlands before stating that:

The community as a whole, except for maybe a few dozen people that were willing to speak out on it, are looking the other way. They’re not making them pony up for the damage. We privatized the profits of that industry and subsidized the risk...and now the poor people down there are screwed.

It must be noted that a number of respondents did voice disapproval of the oil and gas industry and supported holding companies accountable in ways ranging from incorporation of oil

and gas into coastal planning to lawsuits holding industry accountable for coastal damages. Dozens of lawsuits have been filed by Louisiana parishes against oil and gas companies alleging failure to rectify damages associated with oil and gas exploration, and the first such case was recently settled (Schleifstein 2019b; Bridges 2019). However, these lawsuits have been contentious over public fear of losing oil and gas investment in coastal parishes (Bridges 2018). Even as local elites have engaged oil and gas in this way, the public remains ambivalent. Legislative interventions such as GOMESA and the RESTORE Act have earmarked energy industry funding for restoration, but questions remain about the viability of relying on funding from polluting industries to protect the environment.

Coastal Restoration Coalition and Sediment Diversions

Universal commitment to coastal restoration, in combination with public ambivalence toward oil and gas, necessitates a strong focus on other drivers of land loss, namely the separation of the Mississippi River from the delta via flood control structures. The master plan calls for sediment diversions to be installed to “reconnect the river to its coastal plain” which the CPRA argues will create more resilient communities, protect the region’s maritime activities, and increase future economic opportunities for the region (CPRA 2017a:131). Ambivalence about the role of oil and gas in coastal land loss has pushed sediment diversions to the forefront of restoration efforts.

Resistance to diversion projects has occurred but has been largely elite driven and not organized. This resistance has led to contentious moments but has not produced sustained mobilization that legitimately threatens the viability of diversion projects. Opponents of diversions perceive a structural coalition built to marshal the diversions through the political process and toward fruition. Among respondents who voiced a desire to hold oil and gas accountable, a common discursive thread was a belief that oil and gas companies silently

supported diversion projects to draw public attention away from their own role in coastal erosion. Forrest, a State employee with direct knowledge of the master planning process, argued that energy companies are on a “narrow path” because if they talk openly about their support for coastal restoration projects, the public may demand they restore the canals that have been left. Wendell, a retired Sewerage and Water Board employee, argued that “the diversion will help out the oil and gas industries because it’s going to fill in all the canals they left in this area.” The belief among this group is that the energy industry’s approach to the diversion issue is tacit support without significant public comment.

The national environmental community represents another layer of institutional support for diversions. National environmental groups tend to be less adversarial toward the State and industry, which results in marginalization of more radical goals of grassroots groups (Buday 2017). The national environmental sector in coastal Louisiana is linked to both the State and the energy industry in its restoration activities. Reed, a local environmental advocate in Orleans parish whose focus is on advocating for coastal communities, commented on the structural connection between the State and large environmental groups:

I think that (some environmental) groups tend to work more closely with the State decision-makers. And as a result, they...aren’t as willing to take an adversarial approach to those decision-makers in some cases...They’re kind of like laser-focused on (diversions).

Gordon, a coastal scientist at major research university in southeast Louisiana, described the pressure on environmental groups to maintain a voice in restoration. Gordon describes the CPRA as “a force,” arguing that the State has “co-opted the voice of a couple NGO groups because they want to be at the table having an influence.” Jerry, a member of the Louisiana Oyster Task Force, argued that the national environmental groups’ support for diversions is a

major reason for the mainstream public support for diversions outside of coastal communities (EDF 2018), in more populated areas such as New Orleans and Baton Rouge:

They're actively promoting it. And they have great slogans, marketing terms like 'we have to connect the river to its delta.' 'It's America's wetlands.' And all these things are catchy things. We can't compete against that. And people start believing it, like advertising. It works.

The national environmental community's connections to oil and gas is another area that subjects identified as structurally problematic. Clyde argued that "the various NGOs who are prime supporters of the master plan...have been receiving quite a bit of support from the oil and gas industries." Keith, a retired engineer who spent much of his career in the environmental sector in Plaquemines parish, commented on the "environmental groups that (are) funded by oil companies that (are) supporting diversions and the whole coastal master plan." Jerry argued that the environmental groups "are in cahoots with the oil (companies)."

The extent to which oil and gas companies are linked to environmental groups varies on a case by case basis, particularly at the local level. The constituent organizations within the Restore the Mississippi River Delta coalition are split on their willingness to partner with energy companies. At the national level, however, The National Fish and Wildlife Foundation, which has provided significant funding for diversions projects, does acknowledge corporate partnerships with a variety of energy companies. The perception that these types of partnerships broadly impact the politics around diversion projects has the effect of dampening resistance among diversion opponents as they experience the massive institutional weight of a coalition involving the State, the oil and gas industry, and the national environmental sector.

Political Opportunity, Defeatism, and Non-Mobilization

The institutional weight of the coastal restoration sector has functioned to suppress political opportunity for concerned coastal communities to mobilize on the diversion issue. The corollary

to the structural emphasis on diversions is a structural exclusion of alternative restoration strategies. Even as the master plan includes less controversial project types alongside diversions, many coastal stakeholders argue that the estuary impacts from diversions will render overall restoration efforts moot for local populations who will be impacted economically. Among fishing communities in particular, respondents argued that their own interests are a lower priority for the State than the interests of oil and gas or navigation. Jerry argued this point directly:

I've claimed from the beginning that seafood is not on the same level of importance as oil and gas. It's not on the same level of importance as the navigation industry...And the seafood side is just a collateral damage thing...All we ask is that seafood is an important factor for our coastal parish.

This pervasive belief that seafood, and coastal communities in general, are low priority interests in the State's restoration process contributes to the belief that political opportunity for change is minimal. When asked directly about community activism, many of the same respondents who expressed fiery opposition to the diversions expressed a defeatist, and at times apathetic, position on actual mobilization. These statements were reflective of the lower political status of coastal interests and a pattern of continual defeat in matters concerning the State. Ferris, a commercial fisherman and former St. Bernard parish council member, summarized public opinion toward the State in his community: "the mentality is that they're going to do whatever the hell they want to do." Cal, another commercial fisherman from St. Bernard parish, echoed Ferris:

We're still fighting; don't get me wrong. I'm not going to give up. But I've seen it...time after time. (They're) going to do what the hell they want to do anyway. Money talks, bullshit walks.

Cal's perspective highlights the disconnect between attitudes and mobilization—that a small group of movement actors are working with limited grassroots support from the community. Gus, a commercial fisherman in St. Bernard parish, commented: "As far as the coast

community, it's sad. There are about twenty of us that do everything. And we start dying off, these people are going to be screwed."

Numerous subjects commented on what they perceived as apathy at the grassroots level, resulting from this pattern of continual defeat. Bradley commented that "(politically), people on certain issues feel winded. When you have five arguments, and you lose all five, then you know it's an uphill battle. I think that's where the community is." Patrick, a coastal restoration consultant in Jefferson parish, commented:

It's a hard way of life to begin with. They go out there for days and nights working out there. They don't have time to sit there and go to Baton Rouge for these meetings, and sit there and listen, because if they do, they get three minutes, five minutes to be able to speak...I think they're just waiting for the axe to fall at this point.

Cal and Jerry each expressed similar concern about the future of the seafood industry if the estuary experiences significant biophysical change. Cal lamented that, "a lot of people give up. But we've got to look for the next generation coming up...I don't see my grandson doing this." Jerry argues that the industry is changing in response to the State's actions:

They leave the state, okay? And so that's what I'm encouraging my kids to do. It's time to get out of here. If they don't want us here, then it's time to get out of here. But I'm not going to go down without a fight.

While Jerry made it clear that he is up for the challenge, he recognized what he perceives as the future of the industry and the attitude created by structural issues facing his fellow harvesters: "That's what I think. But on the other side, people are pretty numb to things nowadays." This attitude reflects an "adaptive response to continual defeat" (Gaventa 1980:16) and reinforces the dominant position of the mainstream restoration coalition in determining restoration priorities.

DISCUSSION

The struggle among anti-diversion activists to leverage attitudes into sustained mobilization reflects a multidimensional power structure in which institutional arrangements limit political opportunity for resistance. Instances of direct conflict between the State and anti-diversion actors have occurred at public coastal restoration meetings, as anti-diversion groups attempt to mobilize the public to make comments on the record. Transcripts of public hearings and public comments submitted to the CPRA are publicly available (CPRA 2017c¹⁰; CPRA 2017d¹¹; CPRA 2017e¹²; CPRA 2017f¹³). When asked to describe resistance to diversions, subjects in this study most frequently cited these public meetings and comments.

The CPRA has increased its outreach efforts with each iteration of the plan. The 2017 planning process included a more diverse array of focus groups, partnerships with NGOs, publication of planning materials in a variety of languages, and a wider geographic range of informational meetings. Nevertheless, the State's science-based modeling is ill-equipped to engage with social disparities and power imbalances that impact outcomes for vulnerable coastal communities (Hemmerling et al. 2020:132). The State has generally monopolized decision power on this issue and has not provided space for resistant groups to influence the master plan's emphasis on diversions.

It is important to note that this paper does not intend to cast coastal residents as fully powerless or lacking agency altogether. Power is complex, intersectional, and cannot be broadly reduced simply to class lines (Scott 2010). In cases of ecological conflict, however, coalitions

¹⁰ 2017 Coastal Master Plan: Attachment G1: Public Hearing Transcripts

¹¹ 2017 Coastal Master Plan: Attachment G2-A: Public Comments

¹² 2017 Coastal Master Plan: Attachment G2-B: Public Comments

¹³ 2017 Coastal Master Plan: Attachment G2-C: Public Comments

between States and industries, whose mutual interests lie in profit seeking, can result in exclusion of groups who hold less power (Ashwood 2018). In the present study, the institutional weight of this coalition reinforces a sense of powerlessness on this particular issue among aggrieved groups, effectively diminishing political opportunity for these groups to mobilize against diversions. The presence of national environmental groups, which are generally more aligned with the State and industry, further marginalizes community actors attempting grassroots mobilization (Buday 2017).

The Energy Industry, Ideology, and Accountability

The evidence presented in this chapter reveals a nuanced relationship between coastal communities and the energy industry, in which there is a recognition of ecological harm but an acceptance of the role of oil and gas in Louisiana's "working coast." Despite the evidence that oil and gas channelization is a major cause of coastal erosion (Turner and McClenachan 2018), neither the coastal master plan nor the rhetoric of participants in this study emphasize oil and gas accountability in the restoration process. Lukes (2005:28) argues that power can be exercised to deter grievances by "shaping (people's) perceptions...in such a way that they accept their role in the existing order of things." Subjects' commentary on the positive aspects of having oil and gas in their communities despite the ecological risk frequently went so far as to say local communities could not exist without oil and gas and emphasized the symbiotic historical relationship between coastal communities, the local environment, and the energy industry.

The way ideology operates upon marginalized groups is a critical mechanism of power. Support for industries even in the face of the harm created by those industries represents an ideological co-optation of political attitudes around coastal issues in these communities. Ideology-construction around the importance of a polluting industry to the economic and cultural

history of a region can be a powerful barrier to grassroots mobilization (Bell 2016). This process is carried out in combination by States and industries who share mutual interest (Ashwood 2018).

This is not a dismissal of the real and critical economic role that oil and gas has played in coastal Louisiana. However, even as the energy industry has played a significant role in the region's economic history (Austin 2006), this role is being leveraged in the coastal restoration arena to shield the industry from blame and accountability. This is the insidious nature of ideology; it is built on culturally resonant discourse and symbols whose meaning “serve to establish and sustain relations of domination” (Thompson 1990:56). While it is true that oil and gas has played a critical role in the maintenance of Louisiana's working coast, the way that this fact is leveraged politically by elites—and understood within the public—is an expression of ideological power.

Thompson's discussion of ideology clarifies the discursive mechanisms of Lukes' radical view of power. Despite the public awareness of the ecological harm posed by these industries, plans to reverse this harm focus on restoration strategies that do not center on oil and gas. The energy industry maintains a privileged political position that keeps the politics of coastal restoration squarely on the sediment diversion issue and out of the purview of oil and gas.

The State, Sediment Diversions, and Continual Defeat

In the absence of pressure on the energy industry to restore the coast, aggrieved groups have attempted to mobilize primarily against the CPRA's sediment diversion projects. Attitudinal resistance to these projects is strong and widespread throughout coastal communities (Riegel 2019), but mobilization efforts have not been successful in disrupting progress.

The “sheer weight” of institutions can reinforce powerlessness among historically excluded groups (Lukes 2005:40). The weight of a coastal restoration coalition comprising the State and its science community, the oil and gas industry, and the national environmental sector has the political effect of suppressing potential grievances. It is inaccurate to say that the State has avoided the diversion issue altogether; however, a distinction between elite action and grassroots mobilization is necessary and brings multidimensional power into focus.

While local elites have resisted the diversions through legislative resolutions and political engagement at public meetings, many of these same local elites identified a lack of grassroots participation when asked to describe overall community involvement in this political issue. The generally defeatist attitude discussed here represents a schism between community elites and the general public that reflects an “adaptive response to continual defeat” among the public (Gaventa 1980:16). While community leaders work actively against diversions, their rhetoric in the interviews was pessimistic, and their descriptions of the general public’s involvement was bleak.

In the social movement context, the insular nature of the restoration coalition has the effect of dampening the efficacy of motivational framing. Gamson and Meyer (1996) argue that perception of political opportunity within an aggrieved group is a major factor in actual political opportunity, while McAdam (1996) stresses the role of political opportunity in the success of collective action. These authors put the onus on potential movement leaders—community elites, in this case—to frame the grievance in a way that motivates potential movement participants. In the case of the diversion issue, even as community elites work to engage the State and to motivate public participation, the subjects in this study argue that the public’s experience of continual defeat has impeded mobilization at the grassroots level.

The State's response has rarely been direct engagement with opposition, yet it has maintained power through the "mobilization of bias" against anti-diversion groups. The State has leveraged its institutional legitimacy and its bureaucratic connections with the environmental sector and energy industry, each of which also have strong institutional legitimacy with the general public at the state level. Through its own political, economic, and environmental legitimacy, this institutional coalition has maintained the dominant political position on the diversion issue, allowing it to disrupt potential mobilization, maintain state-wide support for diversions (EDF 2018), and avoid having to settle a direct dispute over the issue in the political arena.

The evidence in this chapter does not signal compliance among coastal communities, but it does illustrate the difficulty of challenging the State on the diversion issue in a meaningful way. The pessimism that emerged in interviews is rooted in continual defeat—in the idea that, in Cal's words, the State would ultimately "do what the hell they want to do anyway." This attitude is a reflection of non-decision power and a key mechanism in the maintenance of power relations, according to Lukes. Defeatist attitudes toward mobilization may not be the result of a direct expression of State power; however, these attitudes represent a more subtle coercion of the public. By deterring participation in the diversion issue among its opponents, the State has manipulated the political landscape around the diversion issue in such a way that it cannot legitimately be challenged on this issue in the political arena.

CONCLUSION

This study highlights the ways in which the structural arrangement among institutional actors in Louisiana's coastal restoration sector form an insular bureaucratic coalition that is resistant to outside influence. Using Lukes' radical perspective of power, this study argues that institutions

involved in coastal restoration have leveraged non-decision power to minimize political opportunity for mobilization against the State's planned sediment diversion projects.

The purpose of this study is not to make a normative claim about the potential effectiveness, or scientific soundness, of sediment diversions. Rather, the purpose of this study is to investigate the political process around these controversial projects and situate this discourse within theories of power and contentious politics. While the State argues that diversions represent the greatest benefit for Louisiana in terms of land building, this claim fails to critically account for differential outcomes at the local level stemming from social disparities (Hemmerling et al. 2020), whether or not diversions are successful at building land. Local knowledge has been shown to benefit ecological outcomes in local contexts (Brosius 2006; Cash et al. 2006), and this knowledge can only be acquired through genuine outreach and inclusion by institutional actors (Wiber et al. 2009). Despite these potential benefits, coastal residents have reported exclusion from the coastal restoration process, in their view, due to their lack of institutional knowledge (Lipsman 2019).

This study highlights the actual political mechanisms through which this perceived exclusion operates, providing opportunity to improve social justice outcomes through the incorporation of local knowledge holders. It cannot be argued that locals have been literally excluded from discussion about diversions; however, to suggest that locals have been effectively integrated into the planning process through the CPRA's outreach efforts is disingenuous (Hemmerling et al. 2020). Lukes offers a framework to analyze how locals can be simultaneously engaged on the diversion issue and excluded politically through the non-decision power of social institutions.

The diversion issue is an ongoing situation, and it appears that diversion projects are set to proceed through the permitting process. Future sociological research should continue to focus on the ways in which the institutional arrangement of the coastal zone influences the balance of power between political and economic elites and the communities that stand to be impacted by ecological governance decisions.

One specific area for further research on this issue will be an investigation of potential legal challenges, should they arise. A second area will be an investigation of the ways in which the framing of potential collective action changes among diversion opponents as it becomes clearer that diversions will in fact be the State's course of action. As diversions begin to appear inevitable, sociologists can investigate whether anti-diversion framing shifts from a focus on stopping the diversions to a focus on securing local involvement in the decision-making around the operation of diversions in the future. This may be the outcome that presents the greatest decision power for coastal stakeholders on the diversion issue, should anti-diversion activists successfully mobilize around this framing.

CONCLUSION

This dissertation has presented, in three substantive chapters, a political ecology analysis of the coastal restoration process in Louisiana. First, the author argued that Louisiana's historical relationship with the energy industry has produced problematic power relations that constrain the State's ability to effectively reduce ecological risk to vulnerable communities. Second, the author argues that these power relations result in a political process that is not inclusive of coastal residents and local knowledge. This lack of inclusivity interferes with democratic management of the coastal ecosystem, potentially undermining ecological outcomes. Third, the author argues that the bureaucratic coalition around coastal restoration is extremely difficult to penetrate. As a result, opponents of certain elements of the State's coastal master plan have not been effective at mobilizing resistance that legitimately challenges the coastal restoration process.

This dissertation centers on two key theoretical elements of political ecology. The first is the need to view local ecological governance through the prism of larger sociopolitical processes in which it is embedded (Robbins 2012). Local governance does not occur in a vacuum, and importantly, neither do ecological problems. Political ecology emphasizes the need to look past proximate issues and focus on macro level structural influences on both ecological harm and ecological governance decision-making. In the case of southeast Louisiana, this requires an understanding of, and willingness to engage with, the ecologically problematic relationship between the State and the energy industry. Chapter one of this dissertation reveals a lack of willingness or ability by the State to engage this issue, which is consistent with ecological governance in a neoliberal world.

The second major theoretical element of political ecology that influences this dissertation is the issue of who gets to make and enforce ecological governance decisions (Martinez-Alier et

al. 2010). This project focuses largely on the extent to which local residents are able to influence decisions that impact their own environment. Chapter two focuses on the extent to which local people and local knowledge have been incorporated into the institutional ecological governance apparatus. Chapter three investigates the prospects for extra-institutional resistance, specifically grassroots mobilization. In both cases, locals have not had success at preventing or delaying the master plan's use of sediment diversions—engineering projects that are viewed by many coastal residents as potentially catastrophic for fisheries and the communities who depend upon them economically.

This dissertation represents a uniquely sociological approach to political ecology. The project centers on themes of political ecology but maintains a focus on power and institutions. The coalition between the State, the scientific community, the energy industry, and the national environmental sector represent a powerful bureaucratic structure that is able to wield power over ecological governance through institutional legitimacy and ideology. This project ultimately argues that while the state of Louisiana is admirable for taking a leadership role in coastal management science and policy, it must critically evaluate the power relations that constrain its policy choices for its coastal restoration process to reach its potential.

MAJOR PROJECT OUTCOMES

The analysis in this project is aimed specifically at the political process around coastal restoration. This project does not strive for normative claims about the importance of coastal restoration or the economic impacts of sediment diversions. This project also does not deny the historical influence of the oil and gas industry on the Louisiana economy and the viability of coastal communities. This dissertation investigates the coastal planning process itself and its impact on vulnerable coastal communities.

Louisiana genuinely deserves credit for taking ambitious steps to lead from the front on coastal issues, and other locales may potentially benefit from Louisiana's example as coastal flooding becomes an increasingly global issue. However, even as Louisiana takes bold steps to resolve its coastal erosion crisis, the political ecology analysis presented in this dissertation highlights problematic elements with the political process that threaten the State's ability to maximize outcomes for the coast and its vulnerable communities.

Louisiana has developed a community of scientific perspectives aimed directly at coastal erosion. In this sense, the state rightfully claims its status as a global leader in coastal science and water management. Louisiana looks forward to exporting its scientific expertise in coastal ecosystems to other areas who could benefit, and the goal of building an industry of jobs in water management is an example of sustainable economic progress.

If Louisiana existed in a vacuum, these developments would signal unequivocal optimism around coastal management; however, a political ecology perspective reveals the ways in which these efforts may be constrained by their positionality within neoliberalism. Louisiana is working to have a transformative, global impact on coastal science and policy, but it is missing a critical dimension of this effort. For Louisiana to truly emerge as a global leader, the transformative work must not only be scientific but political. Louisiana should demonstrate true ecological leadership by not only developing groundbreaking science to reduce extant risk, but by challenging the very power relations that continue to produce that risk. This is the bold framework that Louisiana can export globally: a paradigm in which the needs of vulnerable coastal communities come before the interests of those who hold power.

Ideology and the Future of Oil and Gas

One important theme permeated the data collected in this project—that both the State and the public felt oil and gas had to be part of Louisiana’s future for the state to remain economically productive and to continue providing opportunity for its citizens. Interview subjects acknowledged the ecological harm created by these industries but were generally hesitant to call for a restructuring of the local economy. This is, to some extent, problematic for this study, which calls for greater democratic management of the coastal zone. Finding the line between effective, science-based policy and technocratic management is a significant challenge when the ideological power of extractive industry is a factor in public opinion.

It is understandable, given the historical role of oil and gas in the Louisiana economy, why the state would build a coastal restoration master plan that aims for the best of both worlds—to build land while maintaining energy production. However, the absolute unsustainability of neoliberalism, and fossil fuel production in particular, is an overriding factor in the discussion of the future of oil and gas in Louisiana’s economy. A fossil fuel economy is problematic both globally (e.g. by contributing to climate change) and locally (e.g. by contributing to Louisiana’s land loss crisis).

The prospect of building a master plan that has some amount of risk reduction while maintaining oil and gas production appears scientifically possible. Even so, fossil fuels cannot be part of a political transformation that seeks to maximize risk reduction for vulnerable groups in the coastal zone. This requires a policy commitment to maximizing outcomes for vulnerable communities, a goal which can only be achieved by targeting and redressing all sources of coastal land loss, including energy production.

PROJECT SHORTCOMINGS

The politics of coastal restoration in Louisiana is a massive research area with virtually infinite storylines, theoretical angles, empirical questions, and methodological approaches to explore.

This section highlights key areas that the author chose not to focus on in this dissertation but that deserve attention in future sociological investigation.

One methodological note should be acknowledged: the sampling method in this project led to an interview sample that was disproportionately (though not entirely) white and male. This study investigates structural inequality broadly on the dimension of institutional access, but additional dimensions of inequality deserve attention including gender, race, and particularly the impact of coastal restoration decisions on indigenous communities. Future research should focus on these dimensions, particularly in light of Hemmerling et al.'s (2020) finding that the coastal planning process fails to achieve procedural and contextual justice for a variety of excluded groups. For indigenous groups in particular, the exchange of traditional knowledge comes with unique risks for which the State must account in its public outreach and participatory governance efforts (Williams and Hardison 2013). This project makes a significant contribution to literature on institutional power and barriers to mobilization; future work should expand on these findings by engaging the experiences of more diverse groups in the coastal zone.

Race is a variable of exposure to coastal risk that should be emphasized in future scholarship. It is particularly important to focus on the impact of coastal erosion and restoration on indigenous groups in the coastal zone. Louisiana's coastal erosion crisis has already produced the United States' first officially designated "climate refugees," as the residents of Isle de Jean Charles have seen 98 percent of their land disappear since 1955 (Roberts 2019). Louisiana closed an \$11.7 million dollar purchase of a 515-acre tract of land near Thibodeaux for members of the

island to rebuild their community (Roberts 2019). The island's residents are mostly members of the Biloxi-Chitimacha-Choctaw tribe, but members of other tribes reside on the island as well. Many residents are resistant to the State's plan due to cultural connection to the island as well as provisions of the plan that are seen as problematic (Dermansky 2019).

The \$11.7 million is part of a larger \$48 million federal grant designated for assisting indigenous groups whose communities are threatened by climate change. Other local indigenous groups are anxiously watching the Isle de Jean Charles situation to better understand their own situation should they need assistance from this program. Empirical situations like this one deserve analytical depth that could not be provided in this dissertation. Future sociological work on situations like this can substantially broaden the discussion of environmental justice in the coastal zone.

Gender is another dimension that is always present in sociological analysis. The methodology of this study resulted in a sample that was disproportionately men. Future work could utilize more of a gender focus and specifically prioritize a more even sample among men and women. Furthermore, future research could utilize survey methods to produce generalizable findings, which would necessitate a more selective demographic approach. While this study emphasized inequality along lines of social class, other dimensions of inequality are present and deserve attention in future research.

From an empirical perspective, issues remain for future study. First, funding of the master plan is an issue that was briefly addressed in this dissertation but deserves further attention. The master plan will cost between \$50 and \$92 billion (or more), and the majority of this money is not yet secured or earmarked. Much of what is secure is tied directly to the oil and gas industry either through royalties or disaster settlements (e.g. BP Deepwater Horizon). There are

significant questions about whether it is appropriate or viable to tie a coastal restoration plan—particularly one that challenges power relations that hold oil and gas as untouchable—to funding structures that require productivity from these industries. The funding apparatus for the master plan is complex and deserves much more attention in future sociological work.

Second, continued monitoring of the questions addressed directly in this dissertation is required. The coastal restoration process is ongoing. Some questions addressed here will be answered, and new ones will be raised. Once sediment diversions are installed, how will coastal communities react? Issues around migration and mobilization must be revisited. It will be critical to monitor the actual economic impacts of these structures and to watch the political discourse around them. This dissertation avoids normative judgments about sediment diversions because they have never been used on this scale, so any claims about their impact are purely scientific projection. Once there is real data associated with diversions, new questions will arise, and the questions posed in this dissertation can be revisited. The arguments found in this project retain their value through their focus on the process, but new information will necessitate sociological investigation of the real economic and social impacts of the coastal master plan's signature projects.

This dissertation makes substantial contributions in several key areas of sociological literature. The case study presented in this project makes theoretical contributions to literatures exploring the ways in which power and ideology influence political processes around local environmental issues, including democratic processes and grassroots mobilization. This project contributes to social-ecological literature in the ways it analyzes the particular impacts of ecological formations on social life in the coastal zone, particularly in terms of risk, resilience, and vulnerability.

Finally, this study contributes to political ecology literature by answering questions about how politics of coastal restoration in Louisiana is constrained its positionality within neoliberalism, and who has the power to make and enforce ecological decisions in the coastal zone. This project represents a uniquely sociological approach to political ecology through its focus the ways in which power and ideology function through social institutions.

Louisiana has an opportunity to act as a global leader in management of coastal systems. In order to maximize this effort, the State's transformational leadership must be not only scientific but political. By targeting and redressing all sources of coastal erosion, including the energy industry, the State can lead a just transition to a system of ecological governance that prioritizes the needs of its most vulnerable communities.

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