



Coastal Restoration as Contested Terrain: Climate Change and the Political Economy of Risk Reduction in Louisiana

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Although many studies have examined the effects of structural factors and institutional interests on risk estimation practices, little is known about the political dynamics surrounding divergent responses to risk reduction measures. This article examines the political economy of risk reduction, using a case study of Louisiana's coastal restoration planning and decision-making process. Specifically, the article draws on documentary evidence, long-term ethnographic field observations, and semistructured interviews to investigate the proliferation of risk conflicts and disputes surrounding the 2012 Louisiana Comprehensive Master Plan for a Sustainable Coast, the latest long-term risk-reduction plan to slow coastal erosion and achieve a sustainable coast. As I point out, coastal restoration in Louisiana is contested terrain where a variety of contentious groups struggle to influence and control debates over climate change risk and coastal erosion risk reduction. By examining the proliferation of contested risk definitions and risk reduction strategies in Louisiana, I aim to provide new insight into the organizational and institutional forces that shape positions on risk, the political-economic forces that create and allocate risk, and the social construction of community identity and culture through risk debates.

KEY WORDS: climate change; coastal restoration; decision-making; Louisiana; organizations and institutions; risk.

INTRODUCTION

Coastal communities are especially vulnerable to risks resulting from climate change including sea-level rise, extreme events (hurricanes, floods, and heat extremes), and changes in energy use and water availability. According to the National Research Council (NRC), although the exact details cannot be predicted with certainty, there is a clear scientific understanding that climate change poses serious risks to human society and many of the physical and ecological systems upon which society depends. The specific impacts of concern, and the relative likelihood of those impacts, will vary significantly from place to place and over time (National Research Council 2011, 2012). Over the century, scientists expect climate change to cause accelerated sea-level rise with elevated tidal inundation, increased storm and flood frequency and intensity, extensive erosion, rising water tables, and increased saltwater intrusion (Blum and Roberts 2009; Fenster and Dolan 1996; Gonzalez and Törnqvist 2006; Karl, Melillo, and Peterson 2009; Stern 2007). As observed by the United States Global Change Research Program (USGCRP), the impacts and costliness of weather disasters—resulting from floods, drought, and other events such as tropical cyclones—will increase in significance as what are

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considered “rare” events become more common and intense due to climate change (Karl et al. 2009). “The scope, severity, and pace of future climate change impacts are difficult to predict,” according to the White House Council on Environmental Quality (2010:6), but “coastal areas will need to prepare for rising sea levels and increased flooding.” Adding to the challenge of responding to these impacts, climate-related changes will not act in isolation but rather interact with and likely exacerbate the impacts of other nonclimatic stressors such as urbanization, habitat destruction, and pollution.

This article contributes to sociological research on the social construction of climate-change risk by examining the impact of political-economic factors on the formulation and implementation of risk-reduction strategies, using a case study of Louisiana’s coastal restoration planning and decision-making process. Southern Louisiana has long been known by researchers and scientists as a region undergoing rapid transformation due to anthropogenic modifications of climate, hydrology, and ecology (Scavia et al. 2002; Törnqvist and Meffert 2012). Since the 1930s, southern Louisiana has lost 1,880 square miles of land, and hydrologists predict that the region will lose another 1,750 miles in the next 50 years under current scenarios. Seas along the entire U.S. coastline are poised to rise between 1.5 and 4.5 feet over this century, while the coastline along southeast Louisiana is on its own expected to experience a water-level increase of 4 to 5 feet (Barras, Bernier, and Morton 2008).

Southern Louisiana constitutes a highly cited example of a region experiencing the leading edge of climate-related stresses that are widely anticipated to affect coastal regions worldwide (González and Törnqvist 2006; Nicholls et al. 2007; Wilbanks et al. 2007). The combined impacts of sea-level rise and coastal erosion could result in the loss of tens of thousands of acres of wetlands and create a cascade or domino effect in which wetlands losses contribute to loss of real estate value, loss of wetland-based fish and wildlife habitat, and loss of employment opportunities. Climate change and coastal wetlands loss could also contribute to escalating costs of insurance and disaster relief; the disruption and relocation of communities; outmigration of Louisiana citizens; and increased costs to establish and maintain infrastructure, including infrastructure critical to energy production.

In this article, I build on the insights of political economy to examine the impact of state actions and policy in the generation of disputes and conflicts over risk-reduction strategies like coastal restoration. At least four disciplines—sociology, political science, geography, and economics—claim political economy as a substantive area, with each defining it somewhat differently. For this article, I focus on sociological approaches to understanding the linkages among state actions (policies and sociolegal regulations) and economic activity in the social construction and production of risk. I first provide a theoretical overview of critical scholarship on the political economy of risk. Next, I examine the historical development of coastal erosion in Louisiana and identify the major wetlands restoration efforts that have been implemented in recent decades. I then describe the basic features of the 2012 Louisiana Comprehensive Master Plan for a Sustainable Coast, the latest long-term risk reduction plan to slow coastal erosion and achieve a sustainable coast. Various elements of the 50-year, \$50-billion plan include the restoration of coastal barrier

islands, river diversions to build new wetlands, levee and floodwall building, ridge restoration, and marsh creation.

As I point out, coastal restoration in Louisiana is contested terrain where a variety of contentious groups struggle to influence and control debates over climate-change risk and risk-reduction decision-making. By examining the proliferation of contested risk definitions and risk-reduction strategies in Louisiana, I aim to provide new insight into the social construction of risk and risk objects, the organizational and institutional forces that shape positions on risk, and the political-economic forces that create and allocate risk. In conclusion, I discuss how contestations over risk and risk-reduction practices illustrate the social construction of collective identity and community culture.

POLITICAL ECONOMY AND PRODUCTION OF RISK

Risk research has been an area of burgeoning growth and development over the past several decades with researchers focused on issues relating to conceptualization and theorization of risk, measures of risk impacts, explanations of risk perceptions, and policies relating to the management and reduction of risks. Risk is a situation or event in which something of human value (including humans themselves) has been put at stake and where the outcome is uncertain. This definition follows long-standing and oft-cited research scholarship (see, e.g., Rosa 1998; Tierney 1999, 2014:11). Risk implies a focus on probability and the possibility of people being exposed to danger, harm, and other adverse outcomes in the present or future.

In sociology, European theorists such as Ulrich Beck, Anthony Giddens, and Niklas Luhmann have theorized the development of Risk Society in which modern societies have become organized around environmental hazards created by modern agricultural and industrial production technologies (Beck 1992, 1995, 1996, 2006; Giddens 1990, 1991; Luhmann 1991). The features of Risk Society include the rise of an ethos of risk consciousness, the growth of a culture of risk avoidance, the proliferation of contested risk definitions, and an increased awareness of living in an environment of risk where uncertainty and insecurity become major catalysts for social transformation. U.S. sociological research on hazards and disasters has theorized and examined how risks are socially produced through various social-economic, cultural, political, and organizational activities (Brechin 2016; Clarke 1985, 1989; Clarke and Short 1993; Erikson 1976; Hess et al. 2016; Hewitt 1983; Mileti 1999; Vaughan 1989, 1997; Wisner et al. 2004; for an overview, see Tierney 2014). Sociologists do not assume that threats and harm do not exist. Rather, the sociological challenge is to explain how social actors, institutions, organizations, and groups construct meanings about risk and engage in actions to demarcate that which is risky and dangerous (Perrow 1984, 2011; Tierney 1999:220). Central to sociological studies of risk is the effort to investigate and explain the ways in which the very institutions assigned to regulate and reduce risks actually cause risks to expand through various technical procedures and organizational decision making (Auyero and Swistun 2008; Cable, Shriver, and Mix 2008).

Interest in the causes and consequences of political struggles and conflicts over risk definition and risk management practices has grown in the aftermath of the September 11, 2001 terrorist strike, Hurricane Katrina in 2005, and the post-2008 foreclosure crisis and global financial downturn (Aalbers 2011; Freudenburg et al. 2012; Gotham and Greenberg 2014). While many studies have examined how powerful institutions seek to impose risks upon subordinate groups (for an overview, see Tierney 2014), other studies have attempted to provide new frameworks and conceptual orientations to understand the proliferation of risk disputes and their connectedness with different social inequalities, cultural forms, and institutional practices. In an analysis of the politics of climate-change risk in Australia, Bulkeley (2001) argues that conflicts over risk are embedded within constructions and contestations over concepts of obligation and responsibility. In Australia, climate change provides a new arena in which previously marginalized groups interact with industry, government, and nongovernmental organizations (NGOs) in struggles to define and contest liability, obligations, and responsibility for climate-change risks. Olofsson and colleagues (2014) have argued for the conceptual importance of integrating risk theory and intersectionality theory to study how risk and various forms of inequality intersect and are mutually constitutive. Recently, Beamish (2015) has drawn attention to the different community reactions to the siting of biolabs in the United States, pointing out that responses can range from vocal public opposition to acceptance and embrace. He argues that divergent responses to risk conditions can be accounted for by the civic conventions, relations, and virtues specific to each locale. These insights take on new significance in the relation to state efforts to reduce risks in which state policies and regulatory practices become a complex terrain of social and political struggle over risk.

Over the last two decades, sociologists have developed a series of political-economy approaches to examine the connections among different economic activities and state policies in shaping sociospatial processes of risk construction and hazard vulnerability. For sociologists, the political economy of risk refers to how people struggle to control the institutions and organizations that construct and produce risks that affect people's lives (Cable et al. 2008; Renn 2008). The political economy of risk also includes efforts of nongovernmental actors—corporations and social movement organizations—to shape policies and behavior surrounding different types and levels of risk (Aalbers 2011; Guseva and Rona-Tas 2001; Stuart 2003). In Molotch (1976) and Logan and Molotch (2007[1987]), a “growth machine” made up of an array of real estate and banking interests dominates and controls the urban redevelopment process and attempts to conceal and displace the hazardous outcomes of real estate development that pose a threat to communities. Pro-growth strategies and real estate development outcomes are never risk-free. Rather, to quote Tierney (1999:224), “[g]overnments at all levels seek to foster growth, even if that growth is accompanied by higher levels of risk.”

The following study has implications for understanding the impact of political-economic factors on community conflicts and disputes surrounding the formulation and implementation of policies to mitigate or reduce risks. In contemporary scholarship, we rarely see studies that seek to understand the conflictual and contradictory nature of risk-reduction practices. Risks and risk-reduction measures are not

simply imposed top down by powerful actors and institutions on a passively accepting public. Nor are risks and risk-reduction measures resisted from bottom-up political mobilizations of people with a clear collective consciousness. Rather, just as actions to create and impose risks are partial, selective, and incomplete, collective responses to risk-reduction measures are nuanced, context dependent, and contingent. In the sections that follow, I examine how meanings of risk and strategies to reduce risk arise from the conflictual interaction of grassroots activism and decision making by state actors and agencies. I focus on the construction of coastal risk by state actors and their attendant efforts to deploy a series of coastal restoration measures to mitigate risks associated with subsidence and sea-level rise. I also consider how recreational and commercial fishers have engaged with coastal restoration measures, focusing on how their responses to risk conditions illustrate the social construction of risk knowledge, and the formation of collective identity and culture.

METHODS AND DATA SOURCES

This article is based on ongoing data collection involving documentary research (public documents, transcripts of meetings, newspaper articles, websites of coastal restoration organizations), ethnographic field observations, and 15 semistructured interviews carried out between 2010 and 2015 in Louisiana. Following guidelines discussed by Small (2008, 2009:226–228), I selected and analyzed my interview data using sequential interviewing. This approach considers each interview not as a sample of a population but as a case in its own right, an element of knowledge that informs future cases. Using snowball sampling, I proceeded sequentially in my interviewing such that each interview built upon the findings of previous interviews. In my interviews, I asked how and why questions about the implementation of various coastal restoration measures. I selected the initial respondents based on a search of newspaper articles and identification of leaders of various environmental organizations, commercial fishing businesses, and neighborhood coalitions. Importantly, I altered each new interview to include increasingly refined questions about the process of coastal erosion and coastal restoration, because every interview motivated me to reevaluate my understanding of the nature of climate-change risks and their perceived impacts among respondents.

I collected and analyzed interview data following the widely used steps and procedures outlined in Becker (1998), Charmaz (2006), and Lofland et al. (2006). This scholarship suggests that qualitative researchers focus their research on asking “process” questions to illuminate how people construct meaning about events and activities, and how social structure and local context shape action and decision making. Process questions lend themselves to the use of interpretive inquiry to seek out information about intentions, motivations, constraints, opportunities, and consequences of social action. I employed a flexible approach to each interview, treating it like a “guided conversation” as opposed to a fixed set of questions, permitting respondents to comment on topics related to their degree of awareness of climate change, coastal erosion, and coastal restoration plans and activities. Interviews also functioned as a community-input mechanism to help identify the social and cultural

processes that shape attitudes toward and discourses about climate change risks, coastal management challenges, and risk-reduction activities.

COASTAL EROSION IN LOUISIANA

Coastal erosion and wetlands loss in Louisiana have been documented for decades by scientists, ecologists, and hydrologists (Boesch 1982; British and Dunbar 1993; Craig, Turner, and Day 1979; Day and Templet 1989; Duffy and Clark 1989; Titus 1986; Turner and Cahoon 1987). In the early 1800s, estimates suggest that Louisiana had more than 16 million acres of wetlands, of which approximately 4.5 million acres were coastal wetlands. Today, the coastal area of the state is comprised of approximately 3.3 million acres of wetlands and marshes. Approximately 26% of Louisiana's coastal wetlands have been lost since the 1800s, and more than one million acres of coastal wetlands have been lost over the past 60 years. Louisiana contains 40% of the coastal wetlands located within the lower forty-eight states of the United States but has historically accounted for about 80% of total U.S. wetland losses (Boesch et al. 1994; Day et al. 2000; United States Geological Society 2015). For more than a decade, the nonprofit America's Wetland Foundation has been measuring coastal wetlands degradation using a sports analogy: "Louisiana loses a football field of land every hour to coastal erosion" (Hardman 2015). Scientists estimate that Hurricanes Katrina and Rita in 2005 may have caused another 200 square miles to disappear (Palaseanu-Lovejoy et al. 2013). Even moderate predictions of sea-level rise over the next 100 years, combined with the ongoing subsidence in southern Louisiana, leave many coastal communities and much of the inland coast inundated by 2100 (Bernier 2013). Figure 1 shows wetlands loss in southeastern Louisiana.

Scientists and researchers have identified three major drivers of coastal wetlands loss linked to the political economy of oil and gas extraction, shipping, and the port industry in southern Louisiana (Bagstad, Stapleton, and D'Agostino 2007; Day et al. 2007; Houck 1983). First, beginning in the early 1940s, state leaders began authorizing the building of a series of flood-control levees along the Lower Mississippi River, a process that confined the river to a single channel. Prior to the era of accelerated levee construction, the Mississippi River regularly overflowed its banks or changed course, a process that restored and rejuvenated the wetlands by reintroducing freshwater, sediment, and nutrients into approximately nine basins in the region: Pontchartrain, Breton Sound, Mississippi River Delta, Barataria, Terrebone, Atchafalaya Delta, Teche/Vermillon, Mermentau, and Calcasieu/Sabine. Importantly, the building of the levee system facilitated coastal erosion by halting natural wetlands accretion. Since the 1940s, decades of levee building have prevented overbank flooding and crevasse formation, so that most of the discharge of sediment has gone into the Gulf of Mexico rather than surrounding wetlands (Day et al. 2007).

Second, from the 1930s on, oil and gas corporations carved up vast areas of the wetlands to extract oil, gas, and other resources, a process that allowed salt water from the Gulf of Mexico to intrude into the marshes and kill freshwater plant

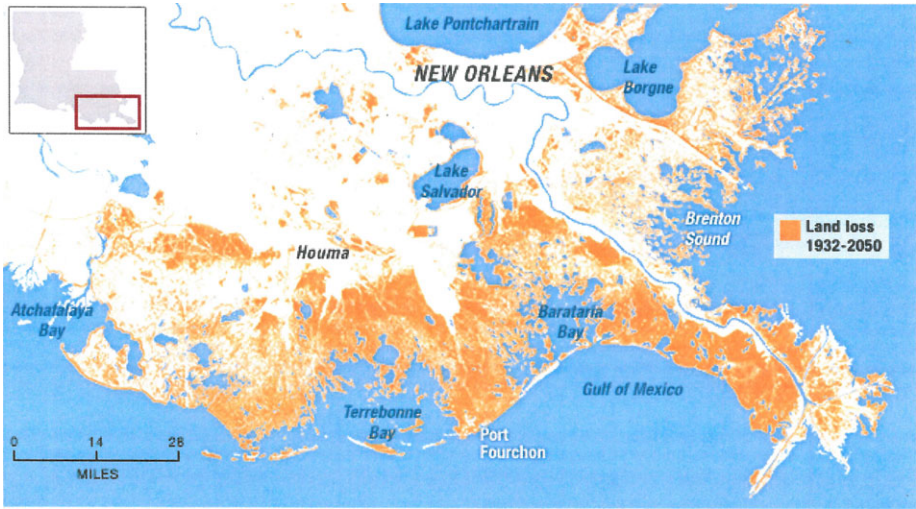


Fig. 1. Current and projected land loss in Louisiana, 1932–2050

Source: Louisiana Coastal Wetlands Planning Protection and Restoration Act Program.

Credit: Nelson Hsu/NPR. Map appears in National Public Radio (NPR). Debbie Elliott, “La. Looks to New Plan to Restore Fragile Coast,” September 28, 2010.

Retrieved May 18, 2015 (<http://www.npr.org/templates/story/story.php?storyId=130101851>).

communities (Chan and Zoback 2007; Houck 1983, 2006, 2015; Theriot 2014). Oil and gas exploration in the wetlands worked in tandem with inland and coastal dredging, land reclamation projects, the building of canals, and the construction of ports to contribute to widespread land loss. Over the decades, state and federal agencies dredged over 9,300 miles through the Mississippi River Delta for navigation, drainage, logging, and oil and gas development (Boesch et al. 1994). Neither the canals dredged nor the pipeline bulkheads built for the excavation of oil and gas were kept in good repair. Rather, many oil companies abandoned the spent or unproductive wells without blocking off or filling in the canals dredged to reach the wells, even though such action was required by state law (Hebert 1997:1168). These actions contributed to saltwater intrusion and the erosion process, causing direct losses of coastal saltwater marshes by conversion of the marshes to open water and bays.

Third, wetlands loss and deterioration in Louisiana is now being exacerbated by climate change–driven sea-level rise, a process that accentuates the negative impacts of leveeing, canal dredging, and channelization. Core samples, tide gauge readings, and, most recently, satellite measurements all document that over the past century the Global Mean Sea Level (GMSL) has risen by 4–8 inches (10–20 centimeters). However, the annual rate of rise over the past 20 years has been 0.13 inches (3.2 millimeters) a year, roughly twice the average speed of the preceding 80 years (Bindoff et al. 2007; Cazenave and Llovel 2010; Church and White 2006). Predictions by the Intergovernmental Panel on Climate Change (IPCC) of approximately 20–60 cm global sea-level rise by the end of this century (Meehl et al. 2007) are increasingly viewed as conservative due to the inadequate incorporation of

ice-sheet dynamics (e.g., Pfeffer, Harper, and O'Neel 2008; Vermeer and Rahmstorf 2009). In addition to these global projections, more specific information for the U.S. Gulf Coast has become available in recent years. González and Törnqvist (2006) show that the preindustrial millennium (600–1600 CE) witnessed a rate of sea-level rise of approximately 0.55 mm yr⁻¹ in coastal Louisiana, whereas the past century has seen rates of at least 2 mm yr⁻¹, roughly in line with the global average. In other words, a fourfold increase in the rate of sea-level rise has been one of several factors contributing to coastal-zone degradation in the region. Scientists predict that sea-level rise will further decrease the long-term viability of freshwater wetlands bordering newly created saltwater marshes which are in the process of becoming part of the Gulf of Mexico (Törnqvist and Hijma 2012).

Over the past several decades, governments at the federal, state, and local level have been involved in numerous wetland restoration and recovery efforts using a variety of funding instruments (Hebert 1997; Reed and Wilson 2004; Turner 2009; Twilley 2007). Legislators and residents began to call for wetland protection in the 1970s with passage of laws such as the Estuary Protection Act in 1970 and the Coastal Zone Management Act in 1972. Through the 1970s and 1980s, federal and state agencies developed projects for the restoration of wetlands and the U.S. Army Corps of Engineers took the lead in using dredged material to rebuild marshes. In addition, the state of Louisiana and the Natural Resources Conservation Service began sponsoring planting projects to reduce erosion in local areas. In response to increased recognition by scientists, businesses, and elected leaders of the need to reduce coastal land-loss rates and restore wetlands, the Louisiana legislature passed the Coastal Wetland Planning, Protection and Restoration Act (CWPPRA) in 1990 (CWPPRA 2015). The CWPPRA established the Coastal Wetlands Conservation Grant Program to supply matching grants for restoration projects and funds to assist states with wetland conservation programs under the North American Wetlands Conservation Act, passed in 1989. The CWPPRA designated that 70% of its authorized funds go to Louisiana restoration projects, 15% to the Coastal Wetlands Conservation Grant Program, and 15% to North American Wetlands Conservation Act projects.

All projects that protect and restore wetlands with CWPPRA funding required nonfederal matching contributions, which came from states and private sources, either as cash or in-kind services. The CWPPRA required a partnership between five federal agencies and the state of Louisiana: the Environmental Protection Agency; the Department of Interior, represented by the U.S. Fish and Wildlife Service; the Department of Agriculture, represented by the Natural Resources Conservation Service; the Department of Commerce, represented by the National Marine Fisheries Service; and the Defense Department, represented by the Army Corps of Engineers. Each agency shepherded projects through a yearlong selection process that weighed public comments and preliminary scientific and industry studies to determine the most feasible projects (Raynie and Visser 2002). Estimates suggest that from 1990 to 2010, money from the CWPPRA's annual budget of \$84.5 million (FY13) went to fund 148 restoration projects that helped create more than 110,000 acres of shoreline or wetlands, and protect 320,000 acres (Schleifstein 2010). Nevertheless, of the projects authorized, the scale of these projects and the funding

available for the program (more than \$1 billion since 1990) did not result in a net gain of wetlands (Peyronin et al. 2013:2).

Following Hurricanes Katrina and Rita in 2005, state leaders formed the Coastal Protection and Restoration Authority (CPRA) to develop, implement, and oversee a comprehensive coastal restoration plan. The 2007 Master Plan, developed under the direction of the Louisiana Legislature, was the first effort to emphasize coordinated storm risk-reduction and coastal restoration planning. Before the hurricanes of 2005, planning and decision making for coastal restoration remained largely separate from that for storm protection (Day et al. 2007). The Louisiana Legislature tasked the CPRA to update the master plan every five years. For the first update in 2012, the master plan designated two major goals: (1) *Protection* using a “combination of restoration, nonstructural, and targeted structural measures to provide increased flood protection for all communities,” and (2) *Restoration* using “an integrated and synergistic approach to ensure a sustainable and resilient coastal landscape” (CPRA 2012:30).

More specific objectives included reduce economic losses from storm surge-based flooding to residential, public, industrial, and commercial infrastructure; promote a sustainable coastal ecosystem by harnessing the natural processes of the system; provide habitats suitable to support an array of commercial and recreational activities coast-wide; sustain the unique heritage of coastal Louisiana by protecting historic properties and traditional living cultures and their ties and relationships to the natural environment; and promote a viable working coast to support regionally and nationally important businesses and industries. Decision makers chose 109 restoration and protection projects to serve as the foundation of the 50-year restoration and risk-reduction program. The 2012 Louisiana Coastal Master Plan anticipates \$50 billion in investments on the Louisiana Gulf Coast over the next 50 years with funding from the federal government and penalties from the Deepwater Horizon Oil Spill (CPRA 2012).

RESTORATION CONFLICTS AND RESISTANCE FROM FISHING COMMUNITIES

Over the last decade, as comprehensive coastal restoration and hurricane/flood protection planning has moved forward, a variety of contending groups have emerged to challenge dominant meanings of restoration linked to the reliance on river diversions as a source of new wetlands. According to restoration planners, river diversions are supposed to mimic the original way the Mississippi River built Louisiana’s coastal wetlands before levees and other human-made structures disrupted its transport of Midwest sediment into shallow water along the coast of the Gulf of Mexico. According to the CPRA Master Plan, river diversions will be designed to take advantage of sediment-rich river water to slowly rebuild wetlands in open water areas, and to nourish existing and new wetlands. The master plan attempts to create land areas where the landscape is in need of such improvements, including alongside coastal communities in need of more wetlands to buffer the effects of hurricane storm surges. State officials argue that diversions offer the best

hope of building and sustaining large amounts of land over time. Without the use of diversions in the state's coastal restoration arsenal, scientists have warned Louisiana would not be able to maintain healthy wetlands ecosystems. According to Kimberly Davis Reyher (2015:3), executive director of the Coalition to Restore Coastal Louisiana:

With so much at stake, the people of Louisiana deserve factual solutions. . . . Reconnecting the river to the marsh is more than a romantic idea. It is a science-based, critical and necessary course of action. [The Mississippi River] built our coast by depositing sediment to build this delta. Now that the river is constrained by a system of levees, much of the mud flows out into the Gulf of Mexico, and coastal wetlands are starving, sinking, receding and dying. Sediment diversions create controlled pathways for the river to again deliver sediments and nutrients into marshes. . . . The bottom line is this: Sediment diversions are our most powerful tool for coastal restoration. Without sediment diversions, our wetlands will be lost.

Yet, small commercial fishing interests have challenged the CPRA's restoration strategy, especially the reliance on river diversions, and condemned the planning process as exclusionary and antidemocratic. Many fishers, while adamant that they support coastal restoration, have argued that the ability of river diversions to create land is not scientifically proven and will not be as successful as other alternatives. Fishers also contend that they will be unfairly harmed by the disruption in the fisheries that will occur when the diversions are operating. The state would be more successful in restoring the coast by dredging sediment from the Mississippi River and from offshore locations, and by transporting the sediment by pipeline to areas where new wetlands would be established, according to some fishers. Fishers contend that river diversions represent a direct threat to their long-standing cultural heritage and way of life that has endured for generations in southern Louisiana. In 2013 and 2015, the coastal parishes of Plaquemines and St. Bernard passed separate resolutions urging that the state halt diversion projects until studies could be done to show that the projects would not kill oyster, shrimp, and crab beds and disrupt the commercial and recreational fishing industry (Alexander-Bloch 2013).

At a heated public meeting in June 2013, St. Bernard Parish and Plaquemines Parish fishers assailed state officials and coastal scientists on the subject of Mississippi River diversions. While the fishers who jammed the meeting were scheduled to get one hour to comment, their session lasted three hours, often with the hundreds in the audience clapping and raising their red "Fully United! STOP Diversions!" placards with confrontational comments (Alexander-Bloch 2013). As reported by the *New Orleans Times-Picayune* newspaper, there was a great deal of yelling by fishers, screaming about what they alleged was misinformation by state officials. Many gave impassioned speeches about how they feared their livelihoods and culture would be lost because of the sediment diversions proposed by the CPRA. According to one fisher:

It is going to kill our fisheries. This is not only going to kill me. I am 71 years old. I am going to die soon. But what about my grandchildren?

John Tesvich, chair of the Louisiana Oyster Task Force, remarked that the diversions would be "putting thousands of people out of business." "You are going to have another Trail of Tears, like you did with the Indians," Tesvich warned.

Former St. Bernard Parish president Junior Rodriguez pointed out that he saw “nothing but death and destruction for St. Bernard and Plaquemines” from the proposed diversions, and he asked that the scientists and state officials listen to the fishers. As Rodriguez pleaded at the June 2013 public meeting:

You see these folks? They don't have the education you got. . . . But, you know what they got? They got common sense. They are from the school of hard knocks. These people are the users of the coastal zone. These people know it.

At the end of the meeting at 11:00 p.m., CPRA Chair Garret Graves, often the target of the fishers' condemnations, commented on the driving force of the master plan: the risk of land loss.

We have a crisis. We can all sit here and say we would like things to stay just the way they are . . . but that is not going to happen. We are in crisis but we have to learn how to work together. But if we are going to have a dialogue then we need to talk and that doesn't mean throwing out F bombs, throwing out threats.

John Barry, a CPRA member, suggested “the reality is, if we don't do stuff then the entire coast is going to disappear” (Alexander-Bloch 2013).

Ethnographic field observations and interviews suggest that not all fishers are opposed to diversions and not all share critical understandings regarding the causes and consequences of coastal erosion. Rather, like the residents of Flammable interviewed by Auyero and Swistun (2008), fishers in Louisiana express feelings of confusion and deep uncertainty. Indeed, some fishers oppose the CPRA's plans while others are enthusiastic and welcome them. In the quote below, one person remarks how he supports the state's diversion plans and questions the accuracy of the gloomy predictions made by others. As this charter boat captain told me:

The fish already are disappearing and it's because the wetlands have disappeared. . . . The fishing companies can see that there's nothing left to save. So, I don't see how diversions are going to ruin anything.

In addition, others have directed their ire toward mainstream environmental groups such as the National Wildlife Federation and Environmental Defense Fund for supporting the state's diversions but not advocating for the interests of small commercial and recreational fishers, especially those hurt by the Deepwater Horizon oil spill in 2010. As one charter boat captain put it:

Where's the National Wildlife Federation? Where's the Environmental Defense Fund? Where's the other environmental organizations? They could take pictures with oiled birds on the island, but when it comes to doing something to save these birds, they're sitting back. (Alexander-Bloch 2013)

For some fishermen, environmentalists and environmental groups are part of the problem because they tend to support river diversions to rebuild wetlands. Fishermen lament that they have been attacked by environmentalists for opposing river diversions. As one person mentioned to me:

We have proven over and over again that we are also environmentalists. We want to preserve our heritage and culture and pass healthy fisheries on to the next generation.

Fishers have not been the only ones to contest the state government's strategy of using river diversions to rebuild land and restore the coast. Concerns have been

raised by scientists and planners over the designs of the diversions, unstudied socioeconomic impacts, undefined indicators and measures of diversion success, and who will pay for restoration. At the annual meeting of the Association of Levee Boards of Louisiana in December 2013, Brigadier General Duke DeLuca of the Army Corps of Engineers told attendees that the CPRA Master Plan's reliance on diversions as the major source of new wetlands is an untested strategy. There is "no silver bullet" for the coast, remarked DeLuca, especially in the context of accelerated sea-level rise from the effects of global warming. "You're hanging a lot on diversions. . . . It could be true. I want to know that it's true. But what if it's not?" (Schleifstein 2013).

The debate over coastal restoration is illustrative of the social construction of community identity and culture. As the above points indicate, opponents of river diversions use both "catastrophizing" claims to emphasize the severity and potential harmful consequences of the diversions and "victimizing" claims to highlight the plight of vulnerable and "at risk" fishing communities against a powerful CPRA and its accomplices at the state and federal levels (e.g., Army Corps of Engineers, National Oceanic and Atmospheric Administration [NOAA], and the U.S. Fish and Wildlife Service). Representatives from the Louisiana Shrimp Association, Oyster Task Force, Association of Family Fisherman, United Commercial Fisherman's Association, charter captains, commercial crabbers, marina owners, land owners, and recreational fisherman emphasize the threat river diversions pose to the "stability of communities," the "quality of life," and "the future of Louisiana." The protection and promotion of their cultural space is source of collective identity and political mobilization for fishing communities in the path of river diversions.

FISHING COMMUNITIES AS DEFENDED NEIGHBORHOODS

In his classic study of a poor multiethnic Chicago neighborhood, Gerald Suttles (1972) found that people's identification with place could manifest itself in a variety of ways in response to perceived threats including urban renewal displacement and neighborhood racial transition. Suttles (1972:21–35) referred to this type of community as the "defended neighborhood" and argued that "members are joined in a common plight whether or not they like it" (37). Similarly, Herbert Gans's (1982) *Urban Villagers* examined efforts by groups of working-class residents living in Boston's West End to halt large-scale demolition targeted for their area. When threatened with the impending destruction of the West End, these "urban villagers" came to recognize their common territorial interest in the preservation and stability of the area as a whole. The West End became, in effect, a defended neighborhood where people felt a strong sense of place attachment and solidarity. Other studies have documented instances of place identification and community mobilization when residential life is disrupted by expressway building (Gotham 1999), disaster-induced displacement (Gotham and Greenberg 2014), oil spills (Molotch, Freudenburg, and Paulsen 2000), and punitive police practices (Wright 1997). As Logan and Molotch (2007[1987]:102) have recognized,

“residential place has meaning and significance for people and they act, sometimes passionately, on that meaning.”

Over the last several years or so, fishing communities have not only united to protest river diversions but have also struggled to preserve their culture and community in response to the devastating impacts of other disasters including Hurricanes Katrina and Rita in 2005, Hurricane Gustav in 2008, the Deepwater Horizon Oil Spill in 2010, and Hurricane Isaac in 2012. Using Suttles’s concept, fishing communities are akin to defended neighborhoods, groups of otherwise unconnected residents who recognize their common plight and mobilize to defend a shared cultural heritage. A 2010 report from the University of New Orleans’s Center for Hazards Assessment, Response, and Technology (CHART) found that residents of three fishing communities were extremely resilient because of how quickly they rebounded from past trauma (Laska et al. 2010). The four-year study noted that despite the lack of sophisticated public infrastructure, the communities had strong bonding and bridging ties that provided useful social networks to access external resources for aid. In responding to the study, Jean Laffite Mayor Tim Kerner said that “the people here bounce back faster and stronger than some other areas. If you look, we’ve been through six disasters in six years, and if you drive through Jean Laffite, Crown Point, and Barataria, it doesn’t look like we’ve had one” (Powell 2012). In the interviews below, several residents reflect on the establishment of new coalitions of grassroots organizations that have formed in the last 10 years in response to the various disasters that have affected the fishing communities.

Gulf fishing communities like us were devastated by the BP oil spill. It destroyed our fishing subsistence way of life. It devastated our small family-owned businesses. But we were resilient. We banded together. All of us. Fishermen, oystermen, shrimpers, crabbers. We all came together from across the Gulf. Fishing is a way of life and fishing is the source of community.

There are diverse cultures and families living in these fishing communities in Louisiana. . . . [W]e formed unique multicultural organizations. We united by a determination and passion to restore our livelihoods and fishing culture. But it was not just to save fishing but to save our culturally diverse communities. Fishing and culture go hand-in-hand. We are close-knit mix of ethnicities. We are African, Cajun, Cambodian, Creole, European, Thai, and Vietnamese families.

I guess that we formed coalitions to fight for ourselves because we felt we had a stake in maintaining and preserving the environment which is part of us. Though we were almost destroyed we have overcome the odds. . . . We are a unified front advocating for communities. We are not isolated individuals.

In the above interviews, residents advocate for the “rights” of fishing communities, the importance of “restoring” fisheries, and the importance of “preserving” fishing community culture. Residents’ narratives of their fishing communities reveal a strong sense of place attachment where residents construct and frame “community,” “diversity,” and “multiculturalism” as sources of rich cultural bonds that are worthy of protecting.

The mobilization of fishing communities reveals the centrality of place attachment not only as a focal point of meaning making and collective identity construction, but as an active process of defending space against powerful environmental threats to community life.

In the process of mobilizing against putative threats to community—hurricanes, flooding, river diversions, and the Deepwater Horizon Oil Spill in 2010—recreational fishermen, small fishing businesses, and wetlands communities have created new associational bonds in practical forms. The Gulf Organized Fisheries in Solidarity and Hope (GO FISH), for example, is a multiethnic grassroots coalition founded by the Association of Family Fishermen, Louisiana Bayoukeepers, Louisiana Oystermen Association, Point-Au-Chien Indian Tribe, United Commercial Fishermen, and the United Vietnamese–American Fisherfolks. The associational bonds are horizontally organized among grassroots organizations and vertically organized with Catholic Charities Archdiocese of New Orleans, Greater New Orleans Disaster Recovery Partnership (GNO DRP), and the Mary Queen of Vietnam Community Development Corporation (MQVN CDC). Thus, the “defense” of community and culture represents a significant social creation of new associations, connections, and links with local and extralocal organizations. Residential propinquity and shared historical experience of wetlands ecology have formed the basis of fishing communities’ claims that communities have a political “right” to preserve their culture and heritage.

Through 2015, public debate still rages as to whether fishing communities and oyster leases east of the Mississippi River in southern Louisiana have been hurt more by the oil from the 2010 Deepwater Horizon accident or by the freshwater that state officials unleashed through river diversions to try to keep oil off the coast. River diversions are a lightning rod of controversy. Some scientists and residents want several large diversions so that the state can build significant amounts of coastal land. Others believe that the state should use other strategies besides diversions. Still others support the idea of diversions but fear that if diversions are put in the wrong place or operated in the wrong way, the projects will harm important industries such as oyster farming. While scientists view diversions as a risk-reduction strategy, commercial and recreational fishers see it as a risk-generating activity that threatens their businesses and lives and could portend forced displacement and cultural ruin. Others believe that coastal restoration in any form will not be successful in protecting or preserving Louisiana’s culture heritage because residents are increasingly being displaced because they cannot afford the high costs of insurance in the region. According to one interviewee, “Louisiana communities face the growing threat of unaffordable insurance. If we cannot afford insurance, we will not be able to live here and our communities will not be able to deliver basic public services.” As another person put it, “coastal risks affect the cost of insurance. Coastal erosion could undermine the confidence of lenders and insurers. They may not want to underwrite in an area that is sinking even if those coastal communities have a viable future in other ways.”

CONCLUSION

This article has used the insights of political economy to reveal the centrality of state activities in shaping debates and controversies over constructions of risk and risk amelioration. In the sociological literature on risk, societal factors influence risk

definitions, estimations and assessments of risk, and risk management practices (Tierney 2014). Thus, attempts to deploy different risk-reduction strategies in southern Louisiana touches on the cultural nerve centers of communities in the region. River diversions, like other coastal restoration activities, are political in the sense that they are centrally concerned with the production and distribution of societal benefits and risks. River diversions are also cultural in the sense that coastal restoration activities forcefully impinge on deeply shared social meanings, collective identities, and quality of life issues. Adger and colleagues (2011:2) have noted that “localized material and symbolic values have hitherto remained undervalued in the standard political and welfare economic calculus of climate change policy and science.” Climate change policy underemphasizes, or more often ignores completely, the symbolic and psychological aspects of settlements, places, and risks to them. In contrast, my focus on place highlights the local material and symbolic contexts in which people create their lives, and through which those lives derive meaning. As this case study of Louisiana shows, debates over coastal erosion and coastal restoration are not just about risk per se but represent struggles over access to cultural and material resources including the power of local people to define and defend cultural forms.

The findings of this article resonate with recent sociological critiques of the term *natural environment* as it suggests a social reality that is fixed and consensual rather than socially constructed, conflictual, and contested. Scholars have long argued that nature is a “terrain of power” (Moore, Kosek, and Pandian 2003:1), an ideological battleground (Haraway 1991), and a construction linked to the political and economic interests of powerful actors, organizations, and corporations. An analogous process is taking place in Louisiana with respect to “coastal restoration,” a term that conjures up a variety of contradictory, opposing, and disputed meanings.

As a risk management institution, the CPRA is inadvertently caught in a dilemma of managing and reducing climate change risks and restoring the coast through river diversions while local fishers fear that the river diversions will endanger their families and communities. In this dilemma, the CPRA’s planners and scientists use probabilistic reasoning to justify and legitimize their risk-reduction activities (river diversions) while fishers define themselves as the risk bearer, using perceptions of threat as justification for rejecting the CPRA’s plans and actions. Thus, the debate over coastal restoration in Louisiana illustrates how CPRA concerns about slowing down wetlands loss with river diversions, and fishing community concerns about threats to culture and heritage are in one sense counterparts in risk perception, and yet in another sense are expressions of community identity, culture, and heritage.

Finally, this article contributes to sociological understanding of how human activity and institutional change continually alter the kinds of threats and risks faced by communities and individuals. For years, researchers have considered risk as objective, fixed, and measurable. Such a conception runs counter to sociological approaches that recognize risks as social constructs that operate at the level of political discourse as well as political action (Clarke 1990; Perrow 1984, 2011; Tierney 2014). Just as politics and institutional practices influence the construction of risks,

public and private actors can intentionally redefine risks to serve political and economic interests. As I have pointed out, risk-reduction strategies and plans generate conflict because they open doors of political opportunity for powerful interests and competing groups to redefine the “natural environment” and assert ownership and control over political and economic resources. Like all risk-reduction strategies, river diversions are founded upon a set of social and cultural constructs that seek to reduce exposure to some risks (sea-level rise and hurricane damage) but may increase exposure to other risks (e.g., socioeconomic threats to fishing communities). Thus, coastal restoration is illustrative of battles over the control of risk-related knowledge and social-environmental space. These battles are group conflicts that reflect the contextual embeddedness of risk-reduction strategies defined by the historical legacies of past investments in the natural and built environments, political-economic regulatory practices, and political struggles.

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