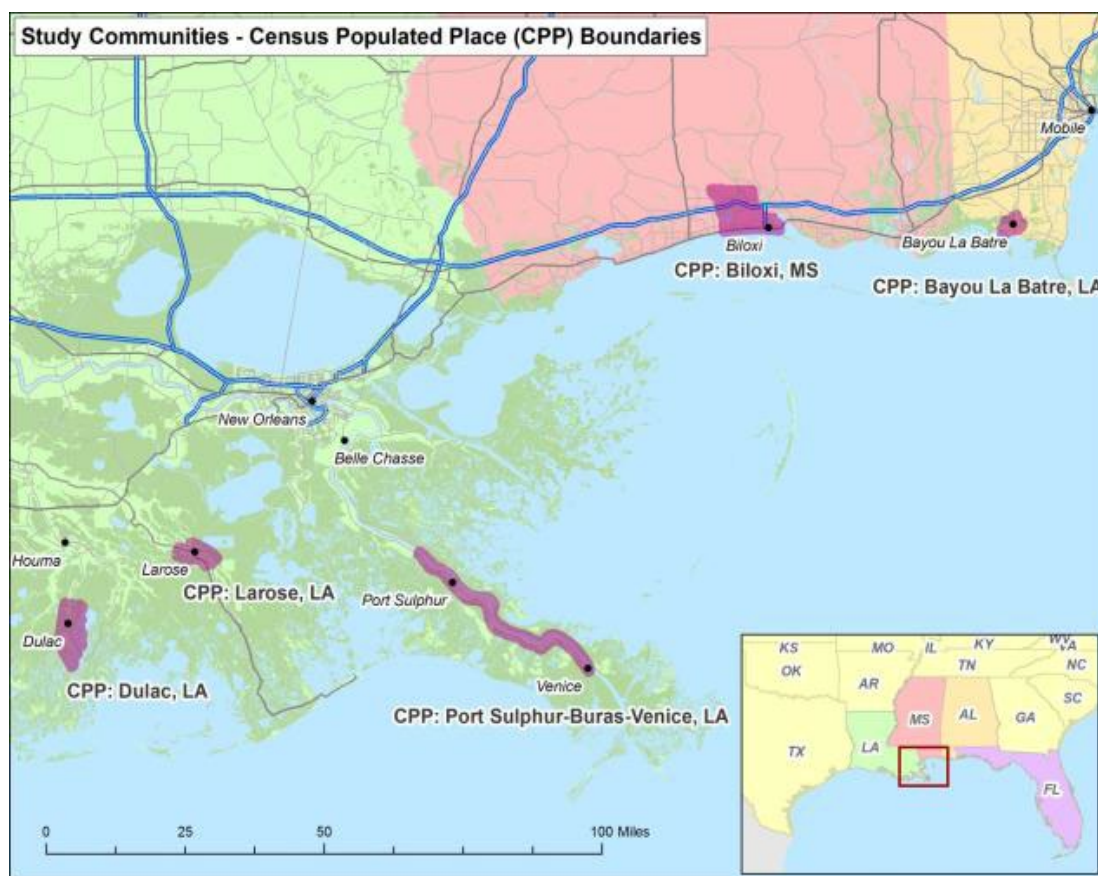


Social Impacts of the *Deepwater Horizon* Oil Spill on Coastal Communities along the US Gulf of Mexico



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Julie Luchetta	Biloxi and Harrison County, Mississippi
Victoria M. Phaneuf	Pointe-A-La-Hache, Empire, Port Sulphur, and Plaquemines Parish, Louisiana
Diane E. Austin	Larose, Cut Off, and Lafourche Parish, Louisiana
Jessica R. Simms	Dulac and Terrebonne Parish, Louisiana
Diane E. Austin	Summary and Discussion

1. Introduction

The *Deepwater Horizon* disaster officially began on April 20, 2010 with the blowout of the Macondo well in the US Gulf of Mexico, and officially ended on August 3, 2010 when BP successfully sealed the well in concrete. Between those dates, the disaster killed 11 men, physically injured 17 more, and released an estimated 4.9 million barrels of crude oil into the Gulf of Mexico just over 40 miles off the Louisiana coast. The explosion of the *Deepwater Horizon* drilling rig was the result of decisions about technology and processes made in the years and months leading up to that event, and the effects of the disaster continued long past the sealing of the well. This report culminates the study of the mid-range social effects of the *Deepwater Horizon* disaster, covering the period from 2013 through early 2016. It follows the two-volume report, *Offshore Oil and the Deepwater Horizon: Social Effects on Gulf Coast Communities* (Austin, Dosemagen, et. al. 2014, Austin, Marks, et. al. 2014), which covered the two-year period from April 2010 through April 2012. In this report, the blowout and subsequent events are referred to as the *Deepwater Horizon* disaster, the BP disaster, and the BP oil spill, the latter being how many Gulf Coast residents and media outlets frequently referred to them.

The *Deepwater Horizon* disaster had widespread environmental, health, economic, and social effects on individuals, households, communities, and the entire Gulf Coast region. Lives were lost, ecosystems were coated in oil, and livelihoods were disrupted. The immediate visible effects occurred offshore in the Gulf where fires burned and oil gushed from the Macondo well. The oil reached shore by early June 2010, and by 2011 it had affected more than 1,000 miles of coastline. At the end of 2013, an estimated 4.6 million pounds of oily material had been removed from the Gulf Coast shoreline. At that time, though most cleanup was being conducted on an as-needed basis, dedicated crews were still in place along 55 miles of Louisiana's coastal marshes (Elliott 2013). In April 2014, four years after the spill, cleanup and research had been halted in most places along the Gulf but continued in a few locations in northernmost Barataria Bay and on beaches on Grand Isle, Elmer's Island, and the Caminada Headland below Port Fourchon where weathered oil was still coming ashore (Schleifstein 2014). By the end of 2015 and at the conclusion of the research upon which this report is based, little visible evidence of the oil remained, but coastal communities continued to experience the effects of the disaster.

1.1 Phase One Findings

At the time of the rig explosion in April 2010, researchers from the Bureau of Applied Research in Anthropology (BARA) at the University of Arizona were finalizing a study of fabrication and shipbuilding along the Gulf of Mexico (Austin and Woodson 2014; McGuire, Austin, and Woodson 2014), and were gathering data for a study of the history of the deepwater era, which began offshore in the Gulf of Mexico in the 1970s. Working with what began as the US Minerals Management Service (MMS) and evolved to be the Bureau of Ocean Energy Management (BOEM), the researchers developed a study plan and carried out the first phase of ethnographic research to capture the social effects of the evolving disaster on Gulf Coast communities.

Social effects extend beyond the impacts on individuals and accrue when many people experience a disaster or event simultaneously. Though some of the effects of the BP disaster were immediately obvious and readily documented, others emerged more slowly as the nature and scope of the disaster continued to unfold (Austin, Dosemagen, et. al. 2014; Austin, Marks, et. al. 2014). When the disaster began, the region within which it occurred was still recovering from recent, severe hurricanes and flooding, and was dealing with ongoing challenges facing the seafood industry, coastal land loss and subsidence, and the recession that began at the end of 2007. The new disaster was laid upon those prior experiences, exacerbating some effects and creating a new set of actors, resources, and responses.

The phase one study concluded that the *Deepwater Horizon* disaster caused widespread disruption of livelihoods across the major economic sectors of seafood, oil and gas, tourism, and shipbuilding, and along their commodity chains, resulting in further disruptive effects. People in the region have a tradition of entrepreneurship, combining jobs and economic ventures in the fishing, oil and gas, and/or tourism industries to make a living. Historically, workers and businesses providing services to these industries developed flexible livelihood strategies and moved among these industries as necessary to survive economic downturns, hurricane events, and other challenges. The disaster negatively affected all these industries at once, leaving people and businesses suddenly out of work and with no viable economic alternatives. While some people and businesses were able to get help or file for reparations soon after the disaster began, some became caught in lengthy claims processes and others, especially those who had already been out of work or had not yet recovered from Hurricanes Katrina and Rita, were unable to qualify for any compensation. The vagaries of the compensation process and uneven outcomes for people who filed claims led to intrafamilial and intracommunity tensions. The sociocultural effects of the disaster also were not uniform across individuals, households, or communities. Consequently, those already at the bottom of the economic and social ladder, who ended up losing what little they had, became the least likely to receive compensation. The disaster therefore exacerbated social and economic inequality.

At the community-level, the nature and extent of the effects were influenced by many factors, including: whether or not the oil came onshore nearby; the social and political dynamics in the community; the mix of industries upon which people and businesses in the community depended; the role of community members in the cleanup; the community's connections to regional, state, and national resources; and the community's experience with the 2005 and 2008 hurricanes. Differential effects led to conflict and divisiveness within and between households and communities and proved disempowering to local governments and non-governmental organizations. The effects were exacerbated by very high levels of uncertainty associated with the causes, nature, and extent of the disaster; levels and effects of exposure to oil and dispersants, both immediate and long-term, and where and how to obtain reliable information.

1.2 Phase Two

This report documents findings of phase two of the study of the social effects of the *Deepwater Horizon* disaster, extending the research beyond the first two years after the well blew out and focusing on the period from January 2013 through December 2015. The effects of the disaster will continue beyond this period, especially as much of the money associated with the disaster had yet to reach the people or communities at the time this study was completed. Some of those anticipated effects are discussed in this report.

Because social effects generate more social effects, they persist long after the triggering event or onset of a disaster, so it is not surprising that many of the effects documented in the phase one study were still evident in phase two. However, between April 2012 and December 2015, communities along the Gulf of Mexico experienced several additional disasters and major events, some whose effects were exacerbated by the lingering effects of the *Deepwater Horizon* disaster. For example, slow-moving Hurricane Isaac struck southeastern Louisiana on August 29, 2012, sat over Barataria Bay for more than 60 hours, and brought up oil with a chemical fingerprint that matched oil from the Macondo well, and scattered tar balls from the spill as far east as the Alabama-Florida state line (Smith 2013).

Events during the study period also include a major downturn in the oil and gas industry; sputtering national recovery from the economic recession; and ongoing claims processes, lawsuits, and settlements. In some ways, these events affected all people and communities in the region. However, as with the *Deepwater Horizon*, the nature and extent of the effects depended on economic and demographic profiles, experience with prior disasters, and many other factors. Except in such instances where the oil was visible

and could be linked to the Macondo well, it became difficult for residents and leaders, as well as researchers, to isolate the effects of the BP disaster. Rather than attempting to segregate the effects of these different events, this report examines the ongoing effects of the *Deepwater Horizon* disaster in this broader context.

1.2.1 Methodology

To track and understand the mid-range effects of the *Deepwater Horizon* disaster, the data upon which this report relies were gathered in two periods. Because the social effects were in some ways less prevalent and, in others, more pervasive between 2013 and 2015, the goal of the phase two study was to tease out the ways the disaster continued to affect the people and communities of the Gulf of Mexico region. BARA researchers gathered data using ethnographic methods.

The phase one study was focused in five study areas in southern Louisiana, Mississippi, and Alabama, with data collected from surrounding areas and external sources as needed to explain what was happening in the targeted study areas (see Figure 1.1). For phase two, to capture both the widespread and place-specific impacts of the disaster, researchers returned to the five case study communities and the areas surrounding them. The diversity in study communities continued to provide opportunities to look at the effects of multiple factors, from population and economic variables to pre-spill effects of Hurricane Katrina and post-spill recurrence of oil.

Ten ethnographers, supported by two community researchers, conducted the phase two study in one to three month periods between January and November, 2013, and between June and October, 2015, with most of the 2015 fieldwork occurring between June and August. The 2013 fieldwork was funded by the BOEM as part of the study, “Social Impacts of the *Deepwater Horizon* Oil Spill on Coastal Communities along the US Gulf of Mexico.” In 2014, BARA was able to secure additional resources to support the 2015 fieldwork.

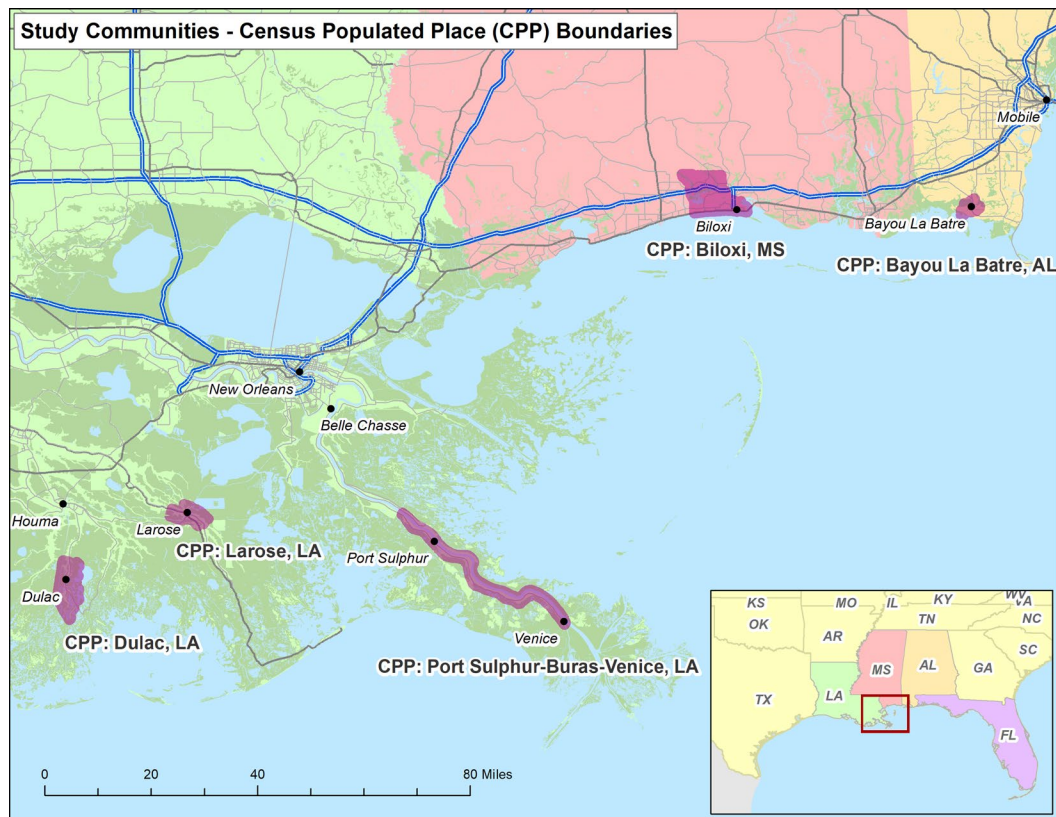


Figure 1.1. Map of study communities.

Source: Ben McMahan (Rogers, Marks, and Austin 2014:12).

During the phase two study, the short-term ethnographic research was supplemented by long interviews with formal and informal community leaders and others who could describe and reflect on the disaster and its effects. Although in phase one drop-in (unscheduled) interviews were particularly helpful for tracking the ongoing effects of the disaster, the researchers discontinued that approach in phase two because business owners, public officials, and other observers were unable to separate the effects of the BP disaster from those of other events. The researchers initially planned to conduct more household level interviews but changed strategies due to the limited time available, the challenges many people were having disentangling the effects, and high levels of burnout among residents of small communities who felt they had told their stories many times and seen few, if any, positive changes as a result.

During the 2015 fieldwork season, researchers used the five-year anniversary of the Macondo well blowout and the ten-year anniversary of Hurricanes Katrina and Rita to encourage residents and community leaders to participate in interviews and reflect on the ten-year period from 2005 to 2014. This approach generated many long and thoughtful responses and provided insights into both short-term and enduring effects, as well as the disaster-specific and cumulative impacts. These interviews are cited in the text with the interview number and year. Also during this period, though five years had passed since the Macondo well exploded in the Gulf, activity related to that disaster continued, so researchers documented the ongoing social effects of that activity. Therefore, in addition to the interviews, researchers attended meetings and events, both those directly related to the disaster such as claims and anniversary commemorations, and those related to the indirect effects, such as meetings about projects that were expected to be developed with money from the claims processes and settlements. These efforts were documented in fieldnotes, cited in the text with the researcher last name “Fieldnotes” and date. The

researchers also reviewed documents, including news reports, industry and government publications, and court documents. In phase two, news coverage was much less frequent than in phase one, though occasions such as trials and anniversary events led to an uptick in media reports just before and during the events.

1.2.2 Report Organization

This report is organized around the five study areas. To set the stage for the rest of the report, the remainder of this chapter summarizes key disaster-related events that were taking place as well as broader conditions affecting the region, and particularly its key industries, during the study period. In the next five chapters, for each study area, the authors provide information summarizing the history and key characteristics of the focal community through the end of the phase one study in 2012. They also discuss major events and circumstances affecting the study area during phase two. Within each chapter, the authors then introduce two or three impacts of the *Deepwater Horizon* disaster that were evident in the study area and describe how they had manifested there. To avoid redundancy, each impact is presented in detail only once in the report. In the primary discussion, the author notes whether the nature and extent of the effects were similar in other communities; where they were not, the differences are explained in brief sections accompanying that discussion entitled, “A Comparative Look at...”. The report concludes with a brief summary and discussion.

1.3 Ongoing Spill-Related Events and Processes

Throughout the study period, the *Deepwater Horizon* continued to be experienced as a series of events and processes, starting with the explosion of the rig and the deaths, injuries, and discharge of oil that occurred immediately, and continuing through the cleanup, investigations, claims processes, lawsuits, legal changes, and, eventually, settlements. The workers who were killed and seriously injured in the explosion came from across the Gulf Coast. None were from the study communities, so, despite the ongoing impacts on the families, friends, and close co-workers of those men, in the data collected for this study, their deaths received no more than an occasional media story or mention during a conversation. In general, attention to the disaster was significantly attenuated and many people were no longer experiencing its direct effects during this time. Some individuals and organizations, however, remained occupied by financial payments to individuals, businesses, and governments; federal legislation related to the disaster; and ongoing research about the effects of the disaster. Discrete events such as announcements of legal settlements served to remind others that it was not over. A Louisiana reporter who had covered the spill since it began observed three years later, “Generally, people are not thinking about the spill, unless it's in the news, then it jerks their memories, and they are thinking about it again. There are so many other things to worry about, this is just one thing.... but the bayou towns are definitely tied to the fishing industry, and there is more talk down there” (BMC400 2013).

The most pervasive ongoing disaster-related activity revolved around money coming into the region from financial payments via legal settlements and claims processes, and funds tied to federal legislation, as discussed below. Some lawsuits and claims processes were ongoing during the study period, punctuated by periodic news of settlements. For the five coastal states, federal legislation directed monies to the region and established the terms under which payments associated with the BP disaster would reach the Gulf Coast. Finally, research and funding for research continued throughout the study period. All of these are discussed in the following three sections.

1.3.1 Financial Payments

1.3.1.1 Economic and Property Damages of Individuals and Businesses

BP started paying individual claims shortly after the *Deepwater Horizon* disaster began, but the claims process was still ongoing during the study period. Initially, the company faced a huge number of lawsuits from individuals and businesses who suffered economic and property damages. In August 2010 all of the lawsuits were consolidated before Judge Carl Barbier in the United States District Court for the Eastern District of Louisiana in litigation called *In re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico on April 20, 2010*. A Plaintiffs' Steering Committee (PSC) was established, and after a year of negotiations the PSC and BP reached agreement on two settlements, one for economic and property damage claims and the other for medical claims.

The Deepwater Horizon Economic and Property Damages Settlement Agreement received preliminary approval by Judge Barbier on May 2, 2012, and the agreement was granted final approval by the Court in December 2012. The agreement was more than 1,100 pages in length, with 500 pages of added policy rules, and covered claims for economic and property damage in the following areas: (1) Seafood Compensation Program; (2) Economic Damage; (3) Loss of Subsistence; (4) Vessels of Opportunity (VOO) Charter Payment; (5) Vessel Physical Damage; (6) Coastal Real Property Damage; (7) Wetlands Real Property Damage; and (8) Real Property Sales Damage (Deepwater Horizon Claims Administration n.d.a).

In June 2012, court-appointed Claims Administrator Patrick Juneau established a Court-Supervised Settlement Program (CSSP, also known as the *Deepwater Horizon Economic Claims Center*) to review and pay qualified claims made by individuals and businesses. The CSSP replaced the Gulf Coast Claims Facility (GCCF), which had taken over payments from BP in August 2010, after an independent audit established over 7,000 claimants were wrongfully denied or underpaid (Yost 2011; Associated Press 2012). When the CSSP was created, all outstanding claims and non-expired offers were protected and all pending claims submissions were transferred to the new program.

In March 2013, BP challenged the district court and claims administrator's interpretations of the Settlement Agreement, arguing that the agreement required that claimants would have to be able to match their variable expenses with revenues in producing their claims. A series of rulings and appeals followed; payments were halted in October 2013 by a court injunction. In May 2014, the Fifth Circuit Court of Appeals voted to deny BP's appeal, so some payments resumed. BP turned to the US Supreme Court, but in December 2014 was denied a hearing there. At that time, claim applications resumed and were accepted until June 8, 2015. With no further legal recourse, BP estimated it would pay \$7.8 billion (Reckdahl 2015).

As the original agreement was written, and the courts upheld, eligible businesses located in most coastal regions of the states along the Gulf Coast would automatically meet the legal requirements demonstrating causation if they suffered any loss after the oil spill, whether they could connect that loss to the spill or not. All other businesses would only have to show a "dip" in revenues in any three month period in 2010 after the spill (May-December) as compared to the same three month period in either 2009, an average of 2007-2009, or an average of 2007-2008 (Deepwater Horizon Claims Administration n.d.b). The payments made by BP per month from June 2012 through November 2015 are shown in Figure 1.2. As shown, a large number of payments, and a large amount of money, were distributed between October 2012 and September 2013. The number of payments dropped in October 2013 and then began rising after May 2014 and rose through June 2015, while the amount of money paid fell off more steeply but climbed steadily as well during this period.

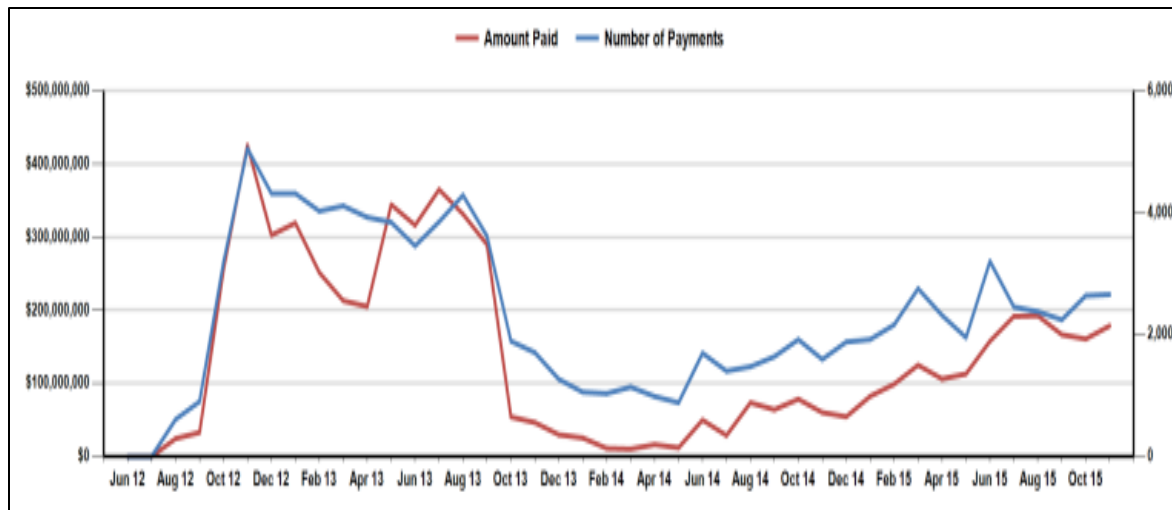


Figure 1.2. Payments made by BP by month.

Source: Juneau 2015a

As of December 2015, the Claims Administrators' Office (CAO) had received 381,959 different claims requests from a total of 261,302 individuals, filed mainly from the five coastal states most affected by the spill (Table 1.1).

Table 1.1. Number of claims filed from 2010–2015

State	Unique claimants with form submitted	# of forms submitted	% of total
Alabama	46,920	63,061	16.5
Florida	76,645	104,646	27.4
Louisiana	75,954	117,796	30.8
Mississippi	35,417	44,667	11.7
Texas	11,183	19,497	5.1
Other	15,183	32,292	8.5
Total	261,302	381,959	100.0

Source: Juneau 2015a.

The largest number of claims was filed to recover Business Economic Loss (BEL) and represented 132,774 filings, or 34.8% of all claims. The number of Subsistence Claims and Individual Economic Loss (IEL) claims came second and third, with combined figures of less than half those of the BEL claims (Table 1.2). As of December 2015, BP had made 105,474 payments in the amount of \$6,369,897,106 to 78,851 individuals. BEL claims were paid upwards of \$3.7 billion, while IEL received \$73 million.

Table 1.2. Types of claims filed

Claim Type	Unique claimants with form submitted	Claims submitted	% of total claims	No. of payments made	Amount paid	Unique claimants paid
Seafood Compensation	10,543	24,950	6.5	12,328	\$1,587,483,108	5,007
Individual Economic Loss	58,589	60,757	15.9	6,098	\$73,982,708	6,098
Individual Periodic Vendor	382	388	0.1	8	\$77,085	8
Business Economic Loss	93,603	132,774	34.8	24,952	\$3,739,894,579	23,156

Claim Type	Unique claimants with form submitted	Claims submitted	% of total claims	No. of payments made	Amount paid	Unique claimants paid
Start-up Business Economic Loss	6,110	7,656	2.0	807	\$126,522,459	760
Failed Business Economic Loss	4,688	5,534	1.4	34	\$2,931,582	34
Coastal Real Property	28,621	42,076	11.0	28,058	\$155,157,106	22,051
Wetlands Real Property	4,482	26,569	7.0	6,645	\$180,609,417	1,727
Real Property Sales	1,608	3,065	0.8	848	\$40,196,817	750
Subsistence	67,206	67,676	17.7	14,136	\$115,702,823	14,136
VOO Charter Payment	6,293	8,961	2.3	7,018	\$279,011,223	5344
Vessel Physical Damage	1,307	1,553	0.4	789	\$12,164,270	736
Total	261,302	381,959	100.0	105,474	\$6,369,897,106	78,851

Source: Juneau 2015a.

As of December 2015, the CAO had issued 11,872 Post-Reconsideration Eligibility and Denial Notices, which established whether or not claimants' appeals would be considered. Of the 381,959 claims submitted, 28,944 were determined to be eligible for appeal by BP. BP had filed 7,302 appeals, resulting in a 25.2% appeal rate. Of both BP and Claimants' appeals, 8,839 had been resolved by December 2015 (Table 1.3). Figure 1.3 shows that the number of appeals peaked in August 2013 and then again in November 2014.

Table 1.3. Appeals to claims

Type of appeals	BP appeals	Claimants appeals	Incompleteness appeals
Appeals Filed	7,302	2,613	4,386
Appeal Resolved	6,850	1,989	2,688
Pending Appeals	452	624	1,698

Source: Juneau 2015a

In addition, the Fifth Circuit ruling allowed further claims to be recognized and filed. Within those parameters, the Seafood Supplemental Distribution Settlement Agreement, which was created as part of the Economic and Property Damages Settlement Agreement, required BP to finance a Seafood Compensation Program Settlement Fund for \$2.3 billion. Specific classes covered by the Seafood Compensation Program include Commercial Fishermen, Seafood Boat Captains, and all other Seafood Crew, Oyster Leaseholders, and Seafood Vessel owners. Members of these groups were covered for economic losses relating to economic damage caused by the spill, and crew members, vessel owners, commercial fishermen, vessel lessees and boat captains were all authorized to bring claims (US District Court Eastern District of Louisiana. 2012a). In addition, oyster leaseholders could bring claims for loss of interest and income and blue crab fishers could file claims for damage to crab traps. In contrast to the filing deadline of June 2015 for the Economic and Property Damages Agreement, the deadline for filing claims under the Seafood Compensation Program was January 22, 2013. As of November 30, 2015, the Settlement Program had issued 4,632 Seafood Supplemental Distribution Eligibility Notices worth \$459,796,645 (CSSP. December 31, 2015).

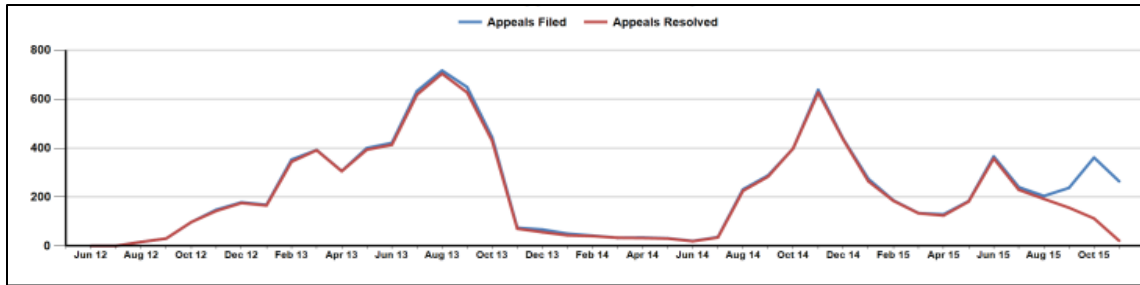


Figure 1.3. Appeals resolutions by month.

Source: Juneau 2015a.

The number of claims filed by Claim Assistant Center (CAC) dwindled in 2014 and 2015, as illustrated in Figures 1.4, 1.5 and 1.6. Many centers closed between those two years, while many saw the number of claims submitted drop significantly, reflecting some combination of people's inability to gather the required paperwork as time passed, people's belief that the possibility that their claim would be paid would not be worth the effort it would take to file it, and a lack of people whose claims had not already been filed.

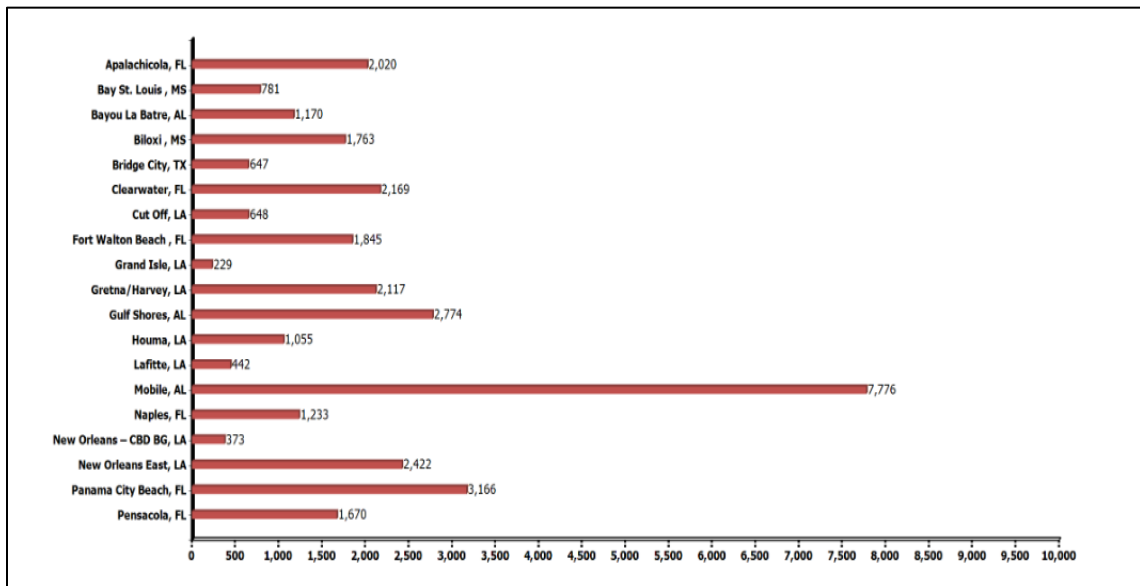


Figure 1.4. Total number of claims filed by Claim Assistant Center reported September 12, 2013.

Source: Juneau 2013

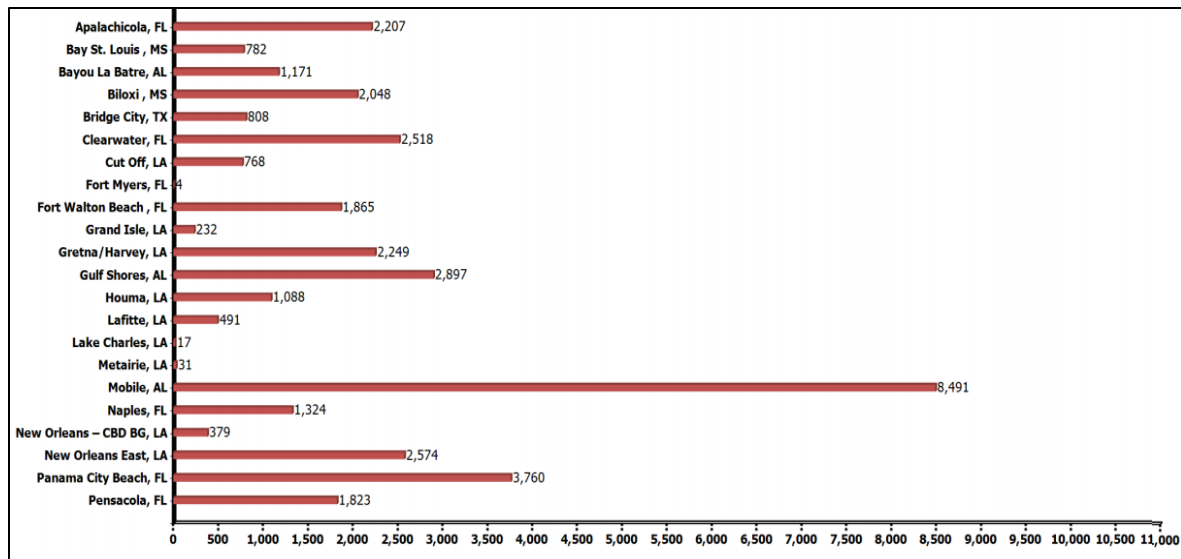


Figure 1.5. Total number of claims filed by Claim Assistant Center, reported September 1, 2014.
Source: Juneau 2014

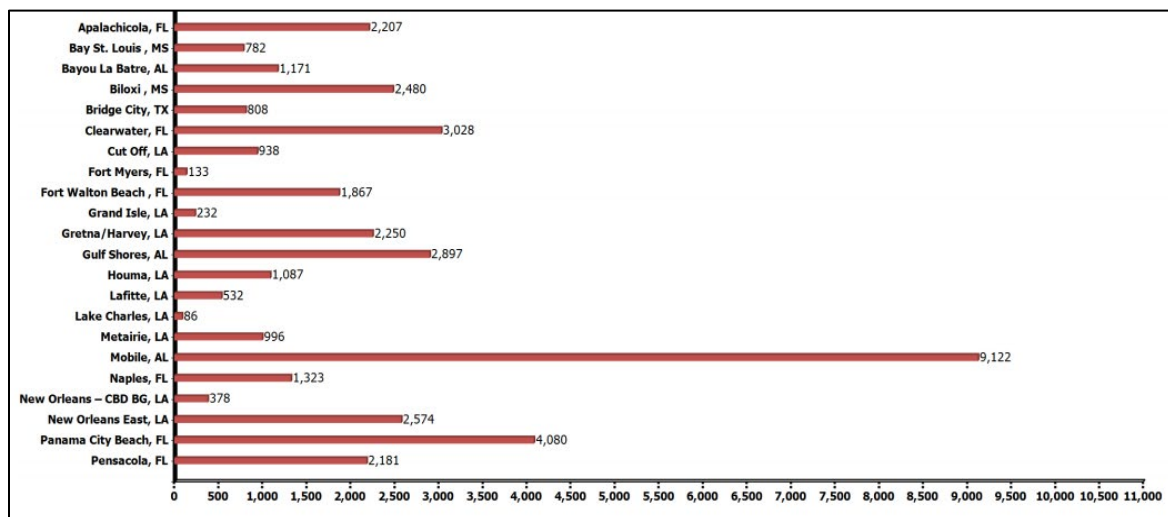


Figure 1.6. Total number of claims filed by Claim Assistant Center, reported September 1, 2015.
Source: Juneau 2015b

Additional information about the process for filing claims of economic and property damage and how it was experienced in the study communities is provided in Chapters 2 through 6 of this report. A detailed discussion can be found in Chapter 3 on Biloxi and Harrison County, Mississippi.

1.3.1.2. Medical Benefits

BP and the PSC established the Medical Benefits Settlement Agreement in 2012, setting aside at least \$130 million for a class of 200,000 cleanup workers from the *Deepwater Horizon* disaster. The Medical Benefits agreement was granted final approval on January 11, 2013. Under the settlement, the class included workers who were involved in cleaning up the spill over two years following the explosion of the *Deepwater Horizon* rig, as well as individuals who lived on either specified Gulf Coast beachfront areas or in specified Gulf Coast wetlands areas for a 60-day period after the spill (US District Court Eastern District of Louisiana. 2012b).

Conflict over the Medical Benefits agreement arose in large part from the concern that the claimants did not constitute a single class, given the range of already manifest and expected health conditions resulting from exposure to the oil and various chemicals used in the cleanup, and that the \$36,950 maximum compensatory payment would be inadequate for those individuals with the most serious health effects. On February 11, 2014, the US Court of Appeals for the Fifth Circuit dismissed all pending appeals, establishing that as the effective date of the settlement “clear[ing] the way for the oil company to begin paying for [...] medical treatments” (Greene 2014). Medical class members had until February 12, 2015 to file claims. Matt Garretson, a lawyer from Cincinnati, Ohio, was appointed to oversee payments.

Filing of medical claims began shortly after the February 2014 effective date, but the slow rate of payments raised concerns. For example, in the first 11 months, while 12,000 health-related claims were submitted to Garretson, only \$331,589 was paid out, amounting to less than 6% of the submitted claims. Claims officials attributed much of the delay in issuing payments to deficiencies in the documents that were submitted. However, around 20,000 claimants had been disqualified early in the process by an interpretation of the settlement terms that required them to pursue individual cases against BP rather than participate in the class action settlement. Garretson also implemented a policy, which the court later adopted, that limited chronic payments to individuals who had their chronic condition diagnosed by April 2012. During the first 10 months of the program, Garretson was paid more than \$2 million (Hammer 2015). The number of filings increased significantly in early 2015, just before the February deadline, with more than 25,000 new claims filed that year. In all, 37,594 medical claims were filed, 2,881, or about 8%, of which were denied by the claims administrator (Garretson 2015; Larino 2015). Even with the settlement of medical claims, questions about the health impacts of the spill remained throughout the study period, adding to tension within communities and exacerbating mental health effects linked to the uncertainties surrounding the spill.

1.3.1.3. Criminal and Civil Charges and Penalties

In November 2012, BP agreed to plead guilty to 14 criminal charges, including felony manslaughter, environmental crimes, and obstruction of Congress. In January 2013, Judge Sarah S. Vance, of the Federal District Court in New Orleans, approved an agreement between BP and the US Department of Justice wherein BP would pay \$4 billion over five years (Krauss 2013). The fine was the largest criminal payment in US history at that time. Where, how, and by whom the money would be spent was the focus of much discussion during the phase two study period. In April 2013, a southern Louisiana reporter noted, “Lots of people are looking forward and grasping at the golden prize, trying to get the money that's coming in for the restoration work” (BMC400 2013).

As part of the criminal plea agreements with BP and Transocean, the National Fish and Wildlife Foundation (NFWF) established the Gulf Environmental Benefit Fund to fund projects to remedy harm and eliminate or reduce future harm to natural resources of the Gulf Coast that were impacted by the spill. The NFWF was created by Congress in 1984 to work with both the public and private sectors to protect

and restore US fish, wildlife, plants, and habitats. The agreements directed \$2.544 billion to the NFWF, which indicated it would work with the Gulf States to identify projects to receive funding. As of early 2016, NFWF had supported 75 projects worth nearly \$500 million from its Gulf Environmental Benefit Fund (NFWF n.d.).

Another part of the criminal plea agreement directed \$100,000,000 to the National American Wetlands Conservation Act Fund for wetlands restoration and conservation benefiting migratory bird species and other wildlife affected by the oil spill. The fund is administered by the US Fish and Wildlife Service's Division of Bird Habitat Conservation through competitive grants which require at least a 1-to-1 partner match. The 2012-2013 North American Wetlands Conservation Act Biennial Report highlighted bird habitat conservation grants across North America, but did not distinguish projects specifically associated with the BP funds (NAWCC 2014).

Settlement of the civil charges took longer. On July 2, 2015, BP announced its plan to settle local, state, and federal claims arising from the Clean Water Act violations, Natural Resource Damage Assessments (NRDAs), and economic and other losses related to the *Deepwater Horizon* disaster over a period of 18 years. The final agreements included a Consent Decree with the United States and Gulf states covering the civil penalty and natural resource damages, a settlement agreement with five Gulf states covering state and local claims for economic and property losses, and release agreements with local government entities. Federal Judge Carl Barbier issued his final order approving the \$20 billion settlement in April 2016.

The NRDA process and ongoing actions related to the BP disaster are overseen by NRDA Trustees from five Federal agencies (Department of Commerce represented by the National Oceanic and Atmospheric Administration (NOAA), Department of the Interior, Department of Defense, Environmental Protection Agency, and Department of Agriculture) and the five Gulf States. On April 20, 2011, one year after the disaster began but before the NRDA was completed, the Trustees reached an agreement with BP to begin restoration planning and implementation on up to \$1 billion in restoration projects. The NRDA Trustees had completed four planning phases and environmental assessments by the time of the settlement; in September 2015 they announced they had approved ten projects in the fourth phase. The following month, the Trustees announced a fifth phase of proposals with an open public comment period closing December 31, 2015. On October 5, 2015, the Trustees released a draft restoration plan, Programmatic Damage Assessment and Restoration Plan (PDARP) and Programmatic Environmental Impact Statement (PEIS) to allocate funds from the settlement for restoration over the subsequent 15 years. The plan was finalized in February 2016 (NRDA Trustees 2016).

1.3.2 Federal Legislation

The *Deepwater Horizon* disaster also spurred new federal legislation, beginning with the July 2012 passage of the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (RESTORE Act). The Act established the Gulf Coast Restoration Trust Fund to receive 80% of the civil penalties paid under the Federal Water Pollution Control Act in connection with the oil spill to fund programs, projects, and activities that restore and protect the environment and economy of the Gulf Coast region (Gulf of Mexico Alliance n.d.). In August 2014, the US Treasury Department issued rules outlining how the grant programs established under the Act would be administered; the Final Rule was published in the Federal Register in December 2015 and went into effect February 12, 2016.

The RESTORE Act also established the Gulf Coast Ecosystem Restoration Council, comprised of the Governors of the five Gulf Coast States and Cabinet-level officials from six federal agencies, to receive 30% of the RESTORE Act Trust Funds. The Council completed a comprehensive plan in August 2013 (Gulf Coast Ecosystem Restoration Council 2013), approved an Initial Funded Priorities List and

regulations for determining spill impacts and allocating funds among the Gulf States in December 2015, and created fact sheets and additional information to make available on its website (RestoreTheGulf.org).

A major portion of the RESTORE Act Trust Funds are dedicated to the five Gulf States, with each state receiving 7% of the funds and then the states receiving an additional share of another 30% of the funds based on the formula established by the Council, which takes into account both damage and the state's population. Each state established a governing body to oversee the administration of the state's funds (see Table 1.4).

Additional information about the RESTORE Act and its implementation in the study communities is provided in Chapters 2 through 6 of this report.

Table 1.4. Restore Act governing bodies of the five Gulf states

	Name of Governing Body	Designated Center of Excellence	Additional Information
Alabama	Alabama Gulf Coast Recovery Council (AGCRC)	Marine Environmental Sciences Consortium (Dauphin Island Sea Lab)	10-member council made up of state and local officials
Florida	Florida Department of Environmental Protection (FDEP)	Florida Institute of Oceanography (FIO)	
Louisiana	Louisiana Coastal Protection and Restoration Authority (CPRA)	The Water Institute of the Gulf (TWIG)	Responsible for developing Coastal Master Plan every five years (1st published in 2012)
Mississippi	Mississippi Department of Environmental Quality (MDEQ)	Mississippi Based RESTORE Act Center of Excellence (MBRACE)	Responsible for GoCoast 2020 Plan
Texas	Texas RESTORE Advisory Board (TxRAB)	Consortia led by the University of Houston: Subsea Systems Institute; and Texas A&M University at Corpus Christi: Texas OneGulf	Responsible for Restore the Texas Coast Plan

Source: Gulf of Mexico Alliance n.d.

1.3.3 Research

A significant source of ongoing effects related to the oil disaster was the research and research funding related to it. Investigations into the causes and effects of the *Deepwater Horizon* disaster continued throughout the study period, funded in large part by BP. The political, legal, and economic ramifications of research on the effects of the spill, along with the presence of researchers in the study areas, kept the spotlight on various research efforts. However, getting access to the data that were collected, and figuring out what it meant, proved to be challenging. In April 2013, for example, a southern Louisiana reporter noted:

The spill science—the information about the spill impacts—is hard to get access to. So much of the work is done behind closed doors, so we are fighting to get the information. Some of the science is still up in the air. The immediate effects were relatively easy to discuss, the social effects are more up in the air.... In the immediate aftermath, everyone was so concerned, but the science takes so long ... people wanted the results "then", and now everything is so locked up in NRDA, it's hard for us to get information, even harder for the public. In general, people want comprehensive results, and answers, and that's not happening (BMC400 2013).

Over the course of the study period, people in the study area gained greater access to data as the lawsuits were settled, but the volume of data being gathered and published was daunting.

Directly as a result of the BP disaster, research was funded through various mechanisms and for various purposes, including specific federal requirements under the Oil Pollution Act and RESTORE Act, contributions from BP outside of specific legal obligations, grants from federal agencies, and obligations arising from the legal settlement between BP and the US federal government. Some data collection began almost immediately after the Macondo well blowout and continued for a few years while some programs were established to provide funding that would extend over decades. Because much of it was intended to answer questions about environmental, health, and other impacts of the disaster, and people living and working in the Gulf of Mexico region during and after the spill began were recruited to participate in studies, the research proved a source of social impacts.

The following seven major research efforts, presented in chronological order according to when they were initiated, illustrate the nature and extent of the research, both in time and space:

- (1) Just over a month following the Macondo well blowout, on May 24, BP created a \$500 million research program, the Gulf of Mexico Research Initiative (GOMRI), to create a broad, independent research program to be conducted at research institutions primarily in the US Gulf Coast States and administered by a new, independent board over a ten-year period. In November 2015, GOMRI awarded \$38 million in response to its fifth request for proposals.
- (2) Starting soon after the disaster began, BP provided grants directly to researchers to fund studies.
- (3) BP paid for studies conducted through the NRDA process required under the Oil Pollution Act.
- (4) Shortly after the disaster began, the National Institute for Environmental Health Sciences (NIEHS), within the National Institutes of Health (NIH), initiated the Gulf Long Term Follow-Up (GuLF) study; in September 2010 the NIH funds were supplemented with \$10 million of BP funding. No results had been released by the end of December 2015, but the study website included tables summarizing demographic, employment, and clean-up tasks reported by the study participants.
- (5) NIEHS established a five-year, \$25.2 million Deepwater Horizon Research Consortia program, which created community-university partnerships aimed at addressing the health effects stemming from the oil spill. The program's final meeting was held March 7-8, 2016, in Mobile, AL.
- (6) With \$500 million from its legal settlement, the US federal government directed the National Academies of Sciences, Engineering, and Medicine to establish a 30-year research program to support research and development, education and training, and environmental monitoring focused on the human health, environmental protection, and oil system safety in the Gulf of Mexico. In 2014, an appointed Advisory Group released Gulf Research Program: A Strategic Vision, to establish the Program's foundation and introduce its mission, goals, and objectives. Twelve exploratory grants were awarded in September 2015. On December 10, 2015, the Gulf Research Program announced the nine recipients who would receive \$4.4 million in Data Synthesis Grant.
- (7) As required by the RESTORE Act, 2.5% of the Clean Water Act fines from the spill will support research grants funded through the Gulf Coast states' Centers of Excellence (see Table 1.4 above), and another 2.5% of the fines will be dedicated to the Gulf Coast Ecosystem Restoration Science, Observations, Monitoring and Technology Program (the NOAA RESTORE Act Science Program). In 2015, NOAA developed the NOAA RESTORE Act Science Program Science Plan to present the agency's intent, purpose, and rationale for carrying out the program (NOAA 2015).

Though significant efforts were made to establish transparent processes through which research was funded in order to address concerns that researchers who found negative effects would be silenced, the number of programs, researchers, and studies was overwhelming to many, contributing to distrust of any research findings. On some topics, the sheer volume of data generated by different researchers from different labs and institutions, using different methods, made it difficult even for scientists to draw

conclusions. Coming out of a session at one of many science conferences that took place in the region during the study period, one fisheries scientist shrugged in frustration and commented that the four presenters she had just heard reported on the same topic but used different methods and reached different conclusions, leaving her no better informed than when she went into the session (Austin Fieldnotes January 22, 2013). A reporter for New Orleans' Times-Picayune who had provided extensive coverage of the oil spill, noted in a 2014 article how researchers were pointing to different peer-reviewed studies to reach opposite conclusions about whether the spill had impacted fish populations off the Alabama coast, noting that the study that found no evidence of impacts had been sponsored in part by a direct grant from BP (Schleifstein 2014).

On other topics, especially human health, fewer studies were funded, in part because of the significant challenges researchers faced in developing sound research designs that could link human health outcomes to the spill. For studies that were funded, problems included getting individuals to participate, locating study participants for repeat testing, making inappropriate assumptions that the effects of oil and dispersants, including Corexit, entering the Gulf food chain could be tracked through individual seafood consumption and result in measurable changes to human health, long delays in getting studies underway which made it impossible to get early baseline data against which to compare later findings, and more (Austin Fieldnotes January 21, 2013, January 22, 2013, January 28, 2014; Marks Fieldnotes April 4, 2012). Consequently, lack of data confirming health effects could reflect lack of appropriate research or the means to measure those effects rather than their absence.

When researchers were unable to find evidence of physical effects from oil or dispersants, they shifted their attention to mental health effects, which they assessed through surveys and interviews as well as through physical manifestations such as presence of elevated levels of cortisol attributed to stress. Still, those changes could not overcome problems with initial study designs such as lack of early or baseline data or problems recruiting study participants (Austin Fieldnotes January 21, 2013, January 22, 2013, January 28, 2014). Of the four university-led research initiatives funded by the NIEHS program, two found no significant links between the spill and health effects; one found increased symptoms of depression and domestic conflict among women surveyed who had been physically exposed to the spill or who had experienced economic impacts afterward and increased post-traumatic stress disorder among physically exposed women; and one found that people with strong social support, cohesive families, self-confidence in their problem solving skills, and an optimistic outlook had the best mental health (Guidry 2016).

Additional concerns were raised that although BP may not have been influencing what was studied, it was influencing the information that reached the public by amplifying some study results and ignoring others. Through its website, "The State of the Gulf," BP continued to post information throughout the study period. On March 16, 2015, BP released the Gulf of Mexico Environmental Recovery and Restoration report and press release, claiming that scientific data and studies were showing that the Gulf environment was "returning to its baseline condition" and that impacts from the spill largely occurred in the spring and summer of 2010 (BP 2015a). That same day, the *Deepwater Horizon* NRDA Trustees issued a statement that BP's conclusions were "inappropriate as well as premature," arguing specifically that, "Citing scientific studies conducted by experts from around the Gulf, as well as this council, BP misinterprets and misapplies data while ignoring published literature that doesn't support its claims and attempts to obscure our role as caretakers of the critical resources damaged by the spill" (NRDA Trustees 2015). Given the long period over which oil spill effects become manifest and the legal, economic, and political consequences of documentation of negative effects, decisions about who reports research results, which ones to report, and when to report them has raised concerns following previous oil spills. The sheer magnitude of the BP spill and the large amounts of funding dedicated to research heightened such

concerns. Additional information about anxieties related to the effects of the BP disaster and the data available for assessing it is provided in Chapters 2 through 6.

1.4 The Oil Spill in Context

The Great Recession began in late 2007, and its effects were being felt across the study areas during the phase one study. By 2013, though some areas were experiencing economic recovery, low seafood prices and a downturn in oil prices negatively affected many individuals, households, and businesses.

1.4.1 Coping with Multiple Disasters

Since the beginning of the 21st century, the Gulf Coast region has been marked by a series of disasters notable in their number and magnitude. Residents have sought to contend with those disasters, both when choosing to stay and electing to leave, in ways that have had acute and sweeping effects on their cultural and social landscapes. In the face of the intense social effects of the *Deepwater Horizon* oil spill and the earlier 2005 and 2008 hurricanes, both researchers and community members struggled to find ways to conceptualize the effects of coping with multiple disasters. For example, Shirley Laska and her colleagues (Bailey, Gramling, and Laska 2014) attempted to expand their understanding of coastal Louisiana residents' perceptions of how each disaster layers upon those that go before. The *Deepwater Horizon* disaster began at a time when residents were experiencing, or in recovery from, both chronic and acute problems including coastal land loss and subsidence, recurrent tropical storms, and economic downturns in commercial fishing and oil and gas production. Such problems threaten the ecosystems, people, and natural resource-based livelihoods of the region, and also the community fabric that holds all these together.

The Gulf Coast region has had a complex and intertwined history of hunting, fishing, raising livestock, farming, and oil and gas activities. Its dependence on a diversity of natural resource-based activities, which can vary seasonally, has reduced residents' susceptibility to overall losses associated with a specific activity (Bailey et al. 2014). However, the local economies depend primarily on industries that are controlled almost entirely outside of the region where they live (Austin, Marks, et al. 2014), which can place residents at the mercy of global economic instabilities. Combined with factors such as land loss, climate change, and sea-level rise, the resulting chaos can be debilitating.

In 1994, Freudenburg and Gramling described the "social multiplier" effect which renders the total impact of disasters to be larger than simply the sum of those disasters. Colten, Grismore, and Simms (2015: 403) note that Louisiana coastal communities face a "triple exposure" of technological hazards, climate change, and global economic uncertainties. The multiple hurricanes and oil spill have had widespread economic, cultural, political and social multi-scalar effects and exacerbated economic disparities as some individuals accepted the quick payment of \$25,000, others received millions of dollars, and others were still waiting at the end of the study period.

Residents across the study region spoke of their "resilience" in light of the disasters, noting that they and their community had not needed or taken outside help in the past, instead relying on strong, tight-knit social networks and a fierce attachment to the places they lived. One resident summed up this sentiment, "I think [the spill] proved what we already knew – that everybody down here is pretty resilient, pretty much able to bounce back from anything! But, that's just how it goes, with anything else" (BG004 2015). At the same time, though, others referred to the multiple disasters they had experienced and the challenges those disasters had brought, worrying about recovery and what the future would bring them. Residents commented on the cumulative effects of the disasters: "the more storms we have, and the more people get knocked around and lose their homes and their personal possessions it makes it harder for them to keep up" (BG006 2015).

After the oil spill began, the Vessels of Opportunity (VOO) program was proposed as a way for fishermen to work during the spill and recoup some of their economic losses – and some were successful in earning large amounts of money; however, others did not participate because of fears for their health (VP452 2013, VP498a and VP498b 2013). Those individuals, and others who did not work in the VOO program for other reasons, such as not being called to participate, reported lasting financial consequences. Some fishermen took quick payments or opted not to participate in the claims process because of the negative consequences associated with protracted procedures. Their actions and reactions were colored by years of dealing with post-hurricane bureaucracies. For example, during Katrina, one family involved in commercial fishing lost their boat and experienced significant damage to their house. They had only just repaired everything and returned to work in 2010 and were “in the prime of the income when the spill happened” (VP498b 2013). In addition to the strain on finances and decision-making, the couple reported greater stress in the household. Their son, in a separate interview, worried that his father had “lost his will to live and work and invest in the business. He got a few dollars from BP for the leases. He used it to pay off his debt and live until something changes” (VP567 2013). The son was also involved with the family business but settled his claims early for little money in part because he was worried about the additional stress the claims process was causing the family and did not see the possibility of getting a fair claim to be worth the health risks. This tension between staying in the process until reaching a settlement seen as just or fair and getting out due to the toll it was taking on the family’s health grew as time went on and some neighbors and co-workers received payments. Information about the lingering impacts of 21st century hurricanes and how they shaped response to the BP disaster are provided in the case study chapters, with particular attention to the effects of Hurricane Katrina in Chapter 2: Bayou La Batre and Mobile County, Alabama.

Probably the greatest ongoing disaster facing many Gulf Coast residents and leaders is the coastal land loss and subsidence that threatens the very existence of their communities; the threat is most widespread across southern Louisiana. The causes of the land loss are many, and even if all the money for restoration were to be spent trying to address it, the loss would continue for decades. In addition to the disappearance of substrate and coastal habitats, land loss has had significant effects on who can and cannot live in the region and has contributed to increased risks of flooding, higher insurance costs, and migration. Details about the problem and its effects are provided in the case study chapters, with the most extensive discussion in Chapter 6: Dulac and Terrebonne Parish, Louisiana.

1.4.2 The Seafood Industry

The Gulf Coast seafood industry has been important for its economic and cultural/historic significance to the people and the region for hundreds of years, though it began facing major challenges since the late 20th century (Marks et al. 2014). The financial benefits of the industry are not evenly distributed across the Gulf states; in 2011, for example, the industry generated the greatest sales impacts in Florida (\$14 billion), then in Texas (\$2.3 billion), Louisiana (\$1.8 billion), Alabama (\$500 million), and finally Mississippi (\$247 million) (NMFS 2014). These figures, combined with the fact that most of the oil went ashore in Louisiana, help explain the distribution of claims across the region (see Table 1.1 above). Key topics of concern for study participants between 2013 and 2015 were claims processes and financial reparations, health and abundance of key fish and aquatic species, perceptions of and data on seafood safety, availability and price of seafood, the loss of market share when Gulf seafood was unavailable and buyers turned to other sources, and habitat loss. General experiences with and concerns about the financial payments related to economic and property loss were discussed in Section 1.3.1.

The health and abundance of key fish and aquatic species remained the focus of residents, people in the seafood industry, and the media throughout the study period. Data were collected and shared by the various research efforts described in Section 1.3.3, and from state fish and wildlife and natural resource agencies. Seafood population changes varied by species and location, making it difficult to summarize what was happening. Efforts were made both locally and nationally to synthesize the data and inform the

public about the effects of the spill. In 2013, for example, Dan Swenson, a graphics reporter for the Times-Picayune, created a series of graphics designed to help summarize what had been learned about Louisiana's major inshore commercial fisheries by the end of 2012 (see Figure 1.7).

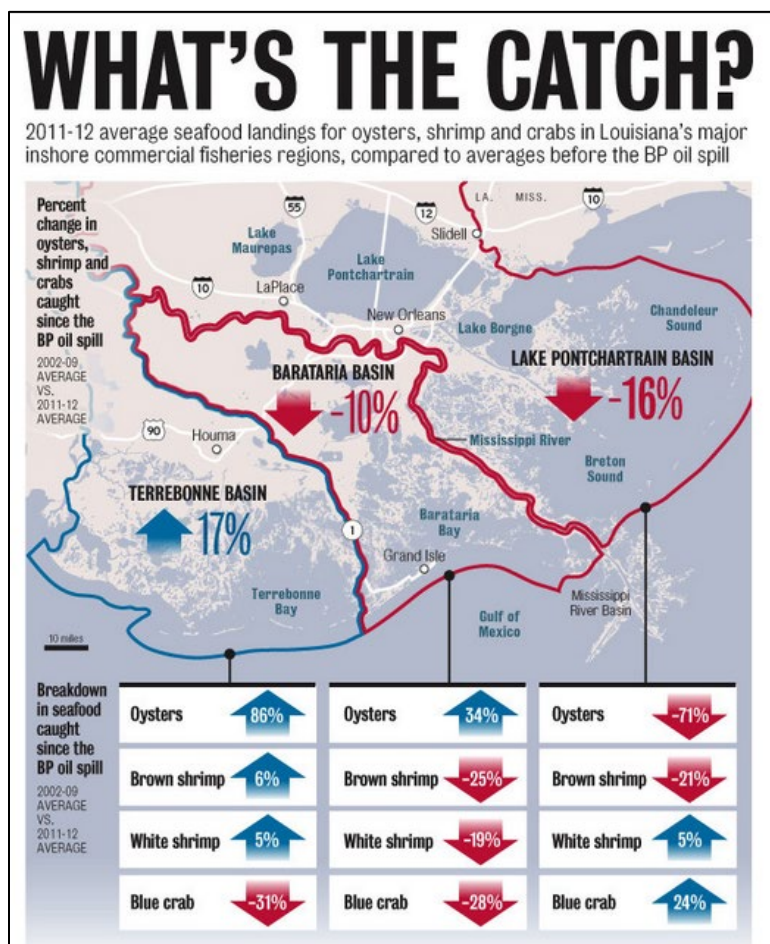


Figure 1.7. Graphic summarizing data on changes in seafood landings in three major Louisiana basins.

Source: Swenson 2013.

In another example, in 2014, Hannah Waters, a science writer with the Smithsonian Museum of Natural History, sought to address seven areas of concern, ranging from the amount and persistence of oil in the waters of the Gulf of Mexico and bodies of aquatic organisms to the effects of the oil and dispersants on those populations and on the health of people who eat seafood (Waters 2014). It is not possible to measure the effects of such efforts on local perceptions and understanding, but over time most residents who had stopped eating seafood immediately after the spill reported resuming consumption (see Chapters 2 through 6).

Across the Gulf, BP and the states funded seafood marketing boards to get out the word that Gulf seafood was safe to eat. Given the importance of individual and chartered recreational fishing to the region, there is considerable overlap between perceptions of seafood safety and tourism (Prakash 2014). Immediately following the spill, for example, Louisiana allocated \$30 million of the funds it received from BP to promote Louisiana tourism and an additional \$48 million for seafood safety and promotion (Times-Picayune Staff 2010). Then, in 2012, Louisiana legislators shifted control over the Louisiana Seafood Promotion and Marketing Board and its leadership, from the Department of Wildlife and Fisheries to the

Department of Culture, Recreation, and Tourism (McGaughy 2013). The Board had been created in 1984 to support the state's commercial fisheries industry. Reflecting long-standing concerns of commercial fishers that their needs were secondary to the recreational fishers, advocates for the shrimp industry observed that much of the promotion had been focused on New Orleans and little had trickled down to the bayou communities (PR506 2013).

The availability and price of seafood fluctuated throughout the study period, due to a variety of factors such as the number and concentration of fish and other seafood, fishing effort, and processing, all of which will be explored at greater length in the chapters in this report devoted to the case study communities. Details on seafood processing can be found in Chapter 2: Bayou La Batre and Mobile County, Alabama; information on oysters can be found in Chapter 4: Pointe-a-la-Hache, Empire, Port Sulphur, and Plaquemines Parish, Louisiana; and information on crabs can be found in Chapter 5: Larose, Cut Off, and Lafourche Parish, Louisiana.

With regard to shrimp, when examined over time, it is clear that, despite some fluctuations in the years during and immediately after the hurricanes of 2005 and 2008 and the *Deepwater Horizon* disaster, the overall trend in commercial shrimp landings across the Gulf is down (Figure 1.8).

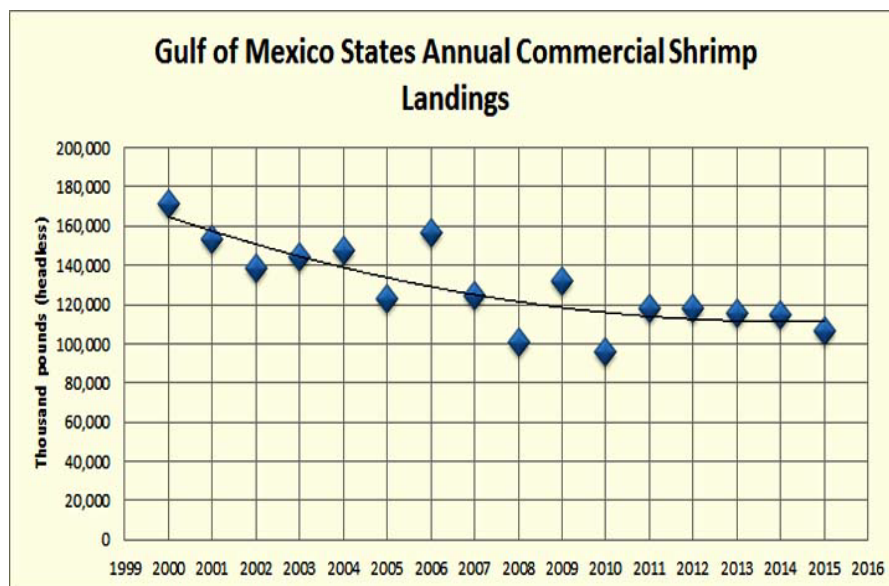


Figure 1.8. Gulf of Mexico annual commercial shrimp landings, 1999–2015.

Source: Mississippi State University Coastal Research and Extension Service n.d. Source of raw data: NOAA Fisheries Service, Southeast Fisheries Science Center.

The pattern held for individual states as well. In Louisiana, for example, commercial shrimp landings for all species combined (head-on weight) averaged 111.3 million pounds between 2000 and 2013 with a high of 145.4 million pounds in 2000. Total landings continued to exceed 100 million pounds through 2007 but dropped to 89.3 million pounds in 2008, the year of Hurricanes Gustav and Ike, due to disruptions in fishing activity and damage to infrastructure, and dropped to 74.6 million pounds, the lowest throughout the period, in 2010 following the *Deepwater Horizon* oil spill (Bourgeois et al. 2015). It is important to note that shrimp landings significantly increased in 2006 and 2009, the years immediately after major hurricanes. Dockside value also fluctuated during this period, with the high in 2000 and low in 2010 (Bourgeois et al. 2015). The number of commercial shrimping licenses issued in the State of Louisiana, by type of license, also varied during this time (see Figure 1.9). These details

illustrate the complexity of the shrimping industry, just one of many seafood industries active in the study area.

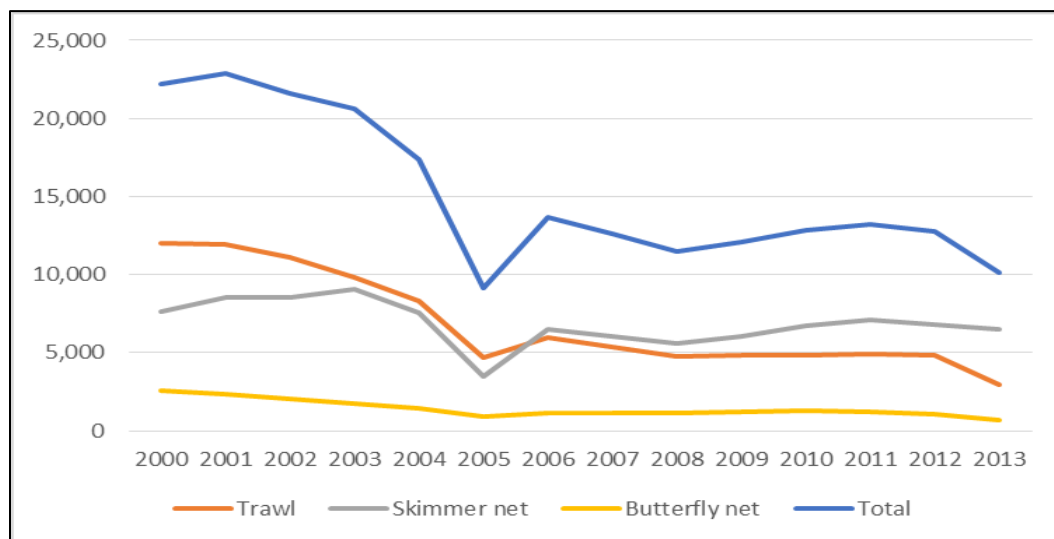


Figure 1.9. Commercial shrimp gear license sales in Louisiana, 2000–2013.

Source: Bourgeois et al. 2015, p. 27.

In addition to concerns about the direct effects of the oil and dispersants on aquatic populations, including seafood, residents, scientists, and community leaders expressed concern about the effects of the oil and the cleanup operations on coastal habitats (Austin, Marks, et. al 2014). Also, throughout the study period, the industry continued to experience changes not directly tied to the disaster but which exacerbated its effects. For example, concern over oiled turtles right after the spill led to greater attention to turtle deaths overall. In 2012, NOAA’s National Marine Fisheries Service (NMFS) began public hearings, required under the National Environmental Policy Act (NEPA), around rulemaking that would require Turtle Excluder Devices (TEDs) on skimmer nets for shrimp; TEDs had been required on other nets since the early 1980s. The Draft Environmental Impact Statement (DEIS) was published in May 2012, and public hearings were held throughout the summer. In November, NOAA withdrew the proposed rule, stating that the conservation benefits were small in comparison to the additional costs to fishermen who already were struggling; the vast majority of the shrimpers who would have been affected were in Louisiana (Alexander-Bloch 2012). Shrimping, crabbing, and harvesting oysters are important to the Gulf region for more than commerce—for many study participants and their neighbors, these have represented a way of life, one that has suffered due to the challenges of making a living, the exodus of young people from the industries and the area, and more. One seafood retailer argued that the spill challenged the romantic notion of these practices and made the hardships associated with a fishing lifestyle more apparent (PR506 2013). The oil industry, too, and its place in the identities of the people and the region, also suffered from the disaster and other events affecting that industry.

1.4.3 The Oil and Gas Industry

In 2014, Gulf of Mexico Federal offshore oil accounted for 17% of total US crude oil production, and natural gas accounted for 5% of total US dry production (USEIA 2016a). Significant differences govern shallow and deepwater activity. In general, shallow water activity, much of which is for natural gas, is dominated by relatively small, independent operators operating under narrow profit margins, while the deepwater areas are the province of majors and supermajors seeking to discover and produce huge fields of crude oil.

A leading industry in the Gulf region, the offshore oil and gas industry continued to influence conditions in the study area, particularly in communities with extensive oil and gas activity. Especially important during the study period were the ongoing effects of the slowdown in drilling in the Gulf attributed to the moratorium and suspension of drilling which took place from May to October 2010 and the implementation of new safety and environmental standards just after the Macondo well blowout, the downturn in oil prices which began in mid-2014 and continued throughout 2015, and the development and implementation of new industry regulations.

The moratorium and suspension of drilling, along with the implementation of new standards in 2010, were key effects of the Deepwater Horizon disaster on the offshore oil and gas industry (Austin 2014). Though the focus of the moratorium and suspension was deepwater drilling, their effects extended across the Gulf; oil production there declined after the Macondo blowout and remained low for three years before turning upward in 2014 (Koch 2015). At that time, though, deepwater drilling in the Gulf of Mexico returned to and exceeded pre-disaster levels (Figure 1.10). Before the blowout, just under two dozen rigs were drilling in deepwater, but by 2014, 63 of 83 rigs drilling in the Gulf of Mexico were in deepwater. Activity in the Gulf was somewhat correlated with oil prices (Figure 1.11), but deepwater projects are so costly to develop and take so long to get online that they are less vulnerable to price fluctuations than other oil and gas ventures. For example, Gulf of Mexico projects coming online from discoveries made even before the *Deepwater Horizon* disaster began helped boost output from offshore to what analysts expected would be a record high in 2017 (Penty 2016).

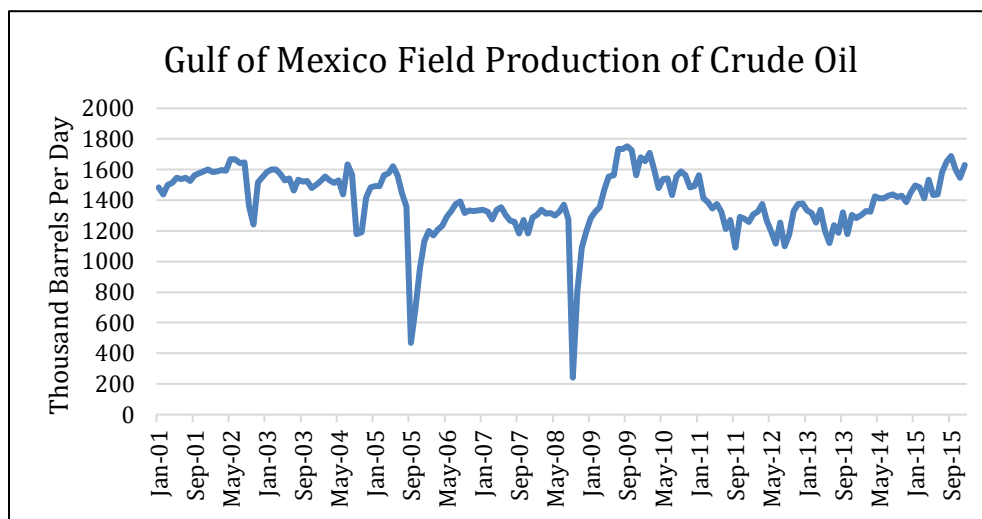


Figure 1.10. Gulf of Mexico field production of crude oil

Source: US Energy Information Administration 2016b.

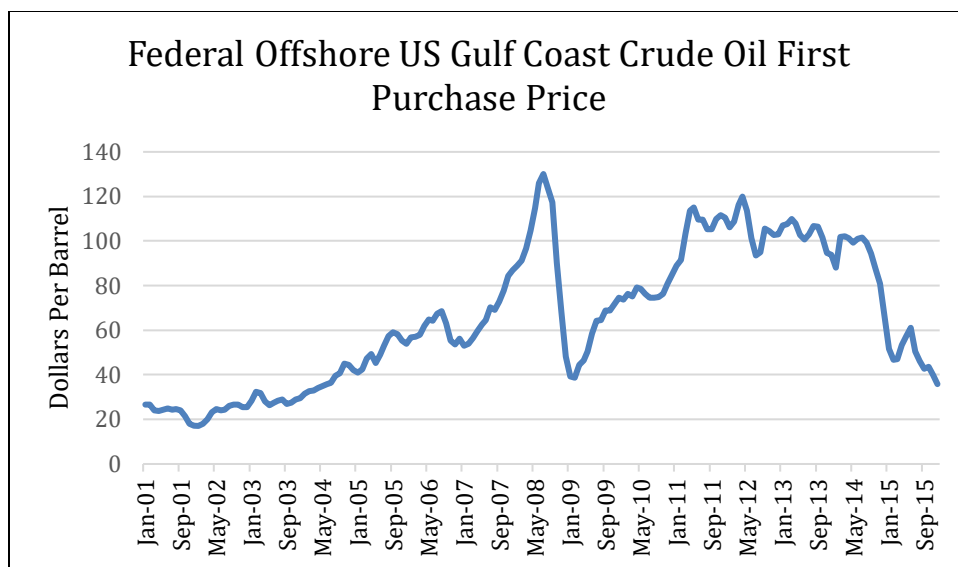


Figure 1.11. Federal offshore US Gulf Coast crude oil first purchase price.

Source: US Energy Information Administration 2016c.

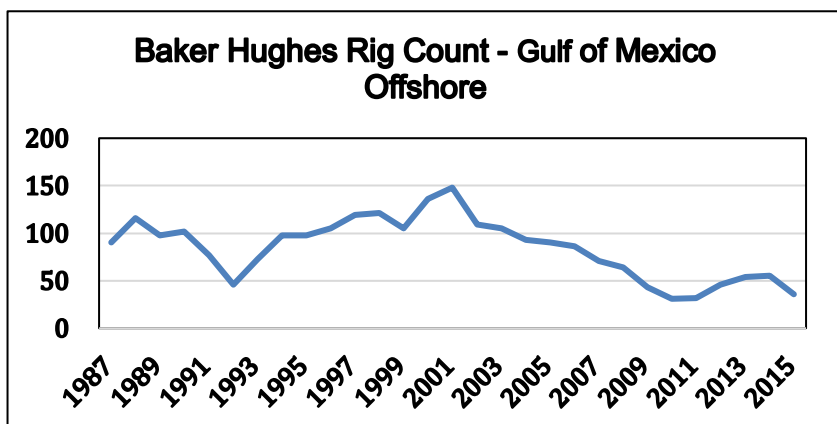
Despite the continued success of the deepwater projects, some oilfield drilling and oilfield service companies experienced significant losses during the drilling slowdown. As one offshore service company representative noted in 2015, “The moratorium had a big effect, don’t get me wrong. We had a revenue loss of \$30 million on this company. Even after the moratorium ended, they still didn’t issue any permits –the business was about half. There was three years with no permits. The regulatory aspects were painful, too” (JS019 2015).

Initially, oilfield service and drilling companies were excluded from the Economic and Property Damages Settlement when BP argued it was not liable for the companies’ financial damages because their losses occurred as a result of government action. In an attempt to recoup their losses, some of the companies sued BP, and BP and the plaintiffs’ attorneys had agreed to try seven test cases. Though Federal prosecutors argued that BP could not circumvent financial damage claims by blaming losses on the drilling moratorium (Eaton 2014), in March 2016, US District Judge Carl Barbier ruled against the plaintiffs and “found that under the Oil Pollution Act of 1990, a ‘responsible party’ is not liable for economic loss that results from the government’s actions in the aftermath of a spill” (Casaday 2016).

The *Deepwater Horizon* explosion also affected the cost of insurance and the amount of insurance that drilling companies and operators had to maintain to work in the Gulf as insurance companies began to look at the Gulf as a highly volatile area (JS022 2015).

The most observable difference in the study communities between the 2013 and 2015 fieldwork periods was the downturn in oil and gas prices that began in mid-2014 and began affecting the smaller, shallow water fields first. Industry analysts noted the low levels of activity in shallow water and especially how few shallow-water jackup rigs were working in the US Gulf of Mexico by 2016 (Beauboeuf 2016). The Baker Hughes rig count continued to show a drop, reporting an average cut of 18 oil rigs per week in 2015, the greatest annual decline since at least 1988 (DiSavino 2016; Figure 1.12).

Figure 1.12. Gulf of Mexico offshore rig count.



Source: Baker Hughes n.d. Gulf of Mexico Offshore calculated by summing Alabama, Florida, Louisiana, and Texas Offshore.

Especially important to the region, and especially in southern Louisiana, are the thousands of oilfield service companies stretching across the coastal communities. Although some companies were buffered, at least initially, because they were involved in deepwater projects, the effects were becoming widespread by 2015. Terry Childs (2016), writing for Rigzone in January, reviewed the prior year, “Oil prices plummeted to below \$40, and as a result, rig utilization declined throughout the year and day rates followed suit. Early contract terminations, particularly for floating rigs (semisubmersibles and drillships), have become more commonplace than at any other time in history, and delivery dates for rigs under construction continue to be delayed.” Day rates for jackups fell 20% over the year while for floating rigs they dropped 32.5% (Childs 2016). An offshore service company representative noted, “These low prices are worse than the moratorium” (JS019 2015). In response to the drop in drilling activity and exodus of people and rigs from the Gulf, some companies turned to plug and abandonment (P&A) to keep their employees working (Beauboeuf 2016). Many shipyards construct, repair, or service both fishing and oilfield vessels, and, given the ongoing challenges facing the seafood industry, they were particularly impacted by the drop in oil prices. According to one shipyard owner who had diversified to offer more services, “We had to drop our prices and go and get things at cheaper rates, so we bought that dirt barge before the market crashed in anticipation of working it... We got jobs for offshore, we’ve got plenty of jobs right now, but not very profitable jobs. We take a lot of risk, but we’re employing our people, we’re working it... We won’t know for another three or four months until all those numbers are in [whether we are making any profit], but we’re doing things just to stay busy and survive until the market gets better” (BG007 2015). Information about the effects of the oil and gas downturn can be found in Chapters 2 through 6, with the greatest detail provided in Chapter 5: Larose, Cut Off, and Lafourche Parish, Louisiana. Both Chapter 2 and Chapter 6 provide information about effects on shipbuilders and fabricators. The disaster also was the impetus for new Federal regulations aimed at strengthening safety and operational standards in the offshore oil and gas industry and issued by the BOEM, its sister agency the Bureau of Safety and Environmental Enforcement (BSEE), and the Environmental Protection Agency (EPA) (EnerKnol Research 2015). The much-anticipated final well control rule, which was first proposed in April 2015, was not released until April 2016 (BSEE 2016). Among other things, the rule established new minimum baseline requirements for the design, manufacture, repair, and maintenance of blowout

preventers (BOPs). Operators, industry groups, and analysts had expressed concerns about the proposed rule as soon as it was released, arguing that implementation could raise the cost of drilling, reduce exploration, lead to the loss of billions in state and federal tax revenues and cost hundreds of thousands of jobs (Wood Mackenzie 2016). Most of the requirements would not become effective until several months after the publication of the final rule, so this report does not address the effects of that rule. As shown in Table 1.5, the well control rule was one of five proposed by BSEE to improve offshore operations after the *Deepwater Horizon* explosion, most of which were updates to existing rules.

Table 1.5. Rules and regulations proposed by BSEE in response to the Macondo well blowout

Date	Rule and/or Regulation	Description
October 2010	Workplace Safety Rule	Mandates previously voluntary American Petroleum Institute-recommended practices for drilling in Federal waters
August 2012	Drilling Safety Rule	Addresses well bore integrity and well control equipment and procedures
April 2013	SEMS II Final Rule	Updates the 2010 Safety and Environmental Management Systems rule and supplements operators' SEMS programs
August 2013	Proposed Rule to Strengthen Offshore Safety and Best Practices	Updates existing regulations and implements best practices
April 2015	Proposed Well Control Rule	Updates existing regulations

Source: EnerKnol Research 2015. Raw data from the DOI and EnerKnol.

In addition to the BSEE regulations, the EPA announced rules related to some of the environmental impacts associated with the BP spill, including proposed amendments to the National Oil and Hazardous Substances Pollution Contingency Plan which deals with the use of dispersants and other chemical and biological substances to respond to oil spills in US waters (EnerKnol Research 2015).

1.5 Summary

Between 2013 and 2015, though many of the immediate effects of the *Deepwater Horizon* disaster were no longer visible, many of those effects (including financial strain from the moratorium on offshore drilling and commercial fishing closures and lost market share, concerns over the uneven distribution and use of settlement funds, uncertainty over seafood safety and health and environmental effects of the oil and dispersants, and social strain resulting from the variability of impacts within communities, all of which contributed to uncertainty and increased stress and anxiety) continued to linger in the homes, businesses, and communities of people in the coastal regions of Louisiana, Mississippi, and Alabama. In addition, ongoing events related to the disaster, from financial payments to research, created new effects during this period. All of these were experienced in the context of other ongoing economic, environmental, and social challenges. This report documents the effects from all sources as they were experienced in five coastal communities and the areas surrounding them: Bayou La Batre, Alabama; East Biloxi, Mississippi; central Plaquemines Parish, Louisiana; Larose and Cut Off, Louisiana; and Dulac, Louisiana.

Locals are fond of saying that the sun never sets on a Bayou-built boat. While some shipbuilders chose to specialize in serving one industry, many moved back and forth and some had additional businesses in other industries to accommodate downturns in a particular sector. Hurricane Katrina had only temporary effects, and many yards gained work in repair and recovery efforts (Phaneuf et al. 2014). In this report, shipbuilding refers to yards involved in both shipbuilding and repair, since many do both, simultaneously or in sequence.

Self-christened the “Seafood Capital of Alabama,” Bayou La Batre is a hub for seafood processing for the central Gulf of Mexico. In addition to commercial fishermen who catch oysters, shrimp, crabs, and finfish in local waters or across the Gulf of Mexico, processing plants buy seafood from coastal Alabama, Mississippi, and Louisiana (Phaneuf and Prakash 2014). In 2004, Hurricane Ivan destroyed much of Alabama’s oyster harvest and heavily damaged reefs, and in 2005, Hurricane Katrina caused substantial damage to boats, oyster grounds, and seafood processing plants, and destroyed the local business that disposed of the crab and shrimp waste produced during processing (Kramer 2011, Mitchell 2004). Plants, boats, and oyster reefs were rebuilt, but the local industry had not recovered by the start of the BP disaster in 2010. At that time, the processing plants were still reporting a lack of seafood product resulting from the destruction of docks and other commercial fishing infrastructure from Alabama through Louisiana during the 2005 hurricanes.

In 2011, the National Marine Fisheries Service (NMFS) reported that Alabama, Mississippi, and Louisiana had all reported significantly lower shrimp landings following the Macondo well blowout and release of oil; compared to the average annual shrimp landings of 2007-2009, Alabama and Mississippi reported less than half the volume in 2010 (NMFS 2011). The drop in total commercial fishery landings at Bayou La Batre was even more dramatic; from 21 million pounds in 2009 to 3.1 million pounds in 2010, though it was back up to 21.6 million pounds in 2011 (NMFS n.d.). Additionally, there were fewer active commercial fishermen.

At the time of the BP spill, the local oyster industry was also undergoing a transition. In Alabama, oysters are harvested primarily by tonging, a labor intensive, non-motorized method. In 2010, a commercial off-bottom oyster aquaculture farm opened in Portersville Bay adjacent to Bayou La Batre (Alabama Gulf Seafood 2012, VP623 2015). This exploration into alternative oyster aquaculture methods for the Gulf Coast was intended to supplement, not replace, traditional oyster production: the quantities produced are far smaller, but the oysters are more visually appealing, making them suitable for the half-shell market (VP623 2015).

Outside these industries, Bayou La Batre and Coden offered limited dining, retail, and medical facilities, with expanded options available a 30 to 45 minute drive away in the City of Mobile and Tillman’s Corner, both in south Mobile County. Before Hurricane Katrina, a developer and local business owners had plans to develop Bayou La Batre’s tourist industry with condominiums and ecotourism attractions. However, given the destruction of the hurricane, followed by the Great Recession, those projects were put on hold (Phaneuf and Prakash 2014). Some business owners cited the increasing cost of business licenses, taxes, and other city fees after the hurricane as problematic (Phaneuf et al. 2014).

In 2005, following Hurricane Katrina, Bayou La Batre initiated a recovery effort that included multiple large rebuilding projects. Over half the buildings in the city’s historic downtown were destroyed by the hurricane or deemed in need of destruction (Seacat 2007:29). To replace some of this housing and stem the tide of out-migration, the city received an Alternative Housing Pilot Program (AHPP) grant from the Federal Emergency Management Agency (FEMA) to build a new housing development; it was inhabited by 2010 (Phaneuf and Prakash 2014). Bayou La Batre also received a US Housing and Urban Development (HUD) Community Development Block Grant (CDBG) to build a new sewage treatment facility and demolish the existing facility, which had been the subject of a lawsuit over release of untreated effluent (Mitchell 2008). Residents and environmental organizations protested the specifics of

the proposed plant, fearing that the water quality on nearby fishing grounds would be threatened (Advocates for Environmental Human Rights and the Gulf States Human Rights Working Group 2010; Mitchell 2008). Despite the controversy, city officials pursued the plan and the Alabama Department of Environmental Quality (DEQ) approved the plant in 2008 (Mitchell 2008; TendersInfo 2008). The plant went online in 2012.

Following the BP oil spill in 2010, the study area saw relatively few direct physical impacts from oil but faced great economic challenges. Fishing closures across the northern Gulf throughout 2010 and into 2011 limited where local fishermen could fish and reduced the product available to processors, causing hardship to individuals and leading many businesses to limit hours or close temporarily or permanently. As fishing areas progressively re-opened and fishermen and processors returned, nationwide fears of contamination dramatically reduced sales and lowered prices, extending the spill's negative effects (Phaneuf and Prakash 2014). Though the seafood waste processing facility opened about a year after the disaster began, the closures of processors during and after the spill meant that it did not operate at capacity (Al.com 2010, Kramer 2011). BP put in place the Vessels of Opportunity (VOO) program to hire displaced fishermen to work cleaning up oil and provide them with an income. However, locals alleged that these jobs were unfairly awarded to outsiders or individuals with political connections, leading to an uneven distribution of income and increased mistrust in the community (Phaneuf and Prakash 2014).

During previous market downturns, some commercial fishermen and seafood processing employees had picked up work at shipyards to compensate for lost income (Phaneuf et al 2014). This was not an option following the oil spill because both seafood and shipbuilding were impacted. Shipbuilders who built for industries that were not affected found themselves in competition with all the area shipbuilders for jobs, though some found short-term contracts fabricating components to be used in the cleanup (Phaneuf and Prakash 2014). Shipbuilders responded with layoffs and limited hours for workers. Workers who were accustomed to weathering downturns in the shipbuilding industry by turning to fishing did not have that option.

Local retail stores and restaurants also felt trickle-down effects, since the residents and workers who were their clientele were out of work or had limited finances (Phaneuf and Prakash 2014). These businesses, in turn, cut hours, compounding the economic impacts. Some closed permanently, while others returned to pre-2010 levels by 2012.

As the disaster continued, social service providers, nonprofits, and BP offered or expanded their services, and outside nonprofits moved into the area. For example, a Business Support Center funded by a US Department of Labor grant opened in Bayou La Batre to assist locals whose livelihoods were affected by the spill (Sayre 2011). However, the emergency retraining programs it offered experienced difficulties serving clients because those in need, including some commercial fishermen and seafood processors, did not meet basic requirements for the programs, such as minimum levels of education or language competence, because these industries did not require these skills and therefore attracted those for whom formal education held no interest or immigrants and others with limited English proficiency (VP582 2015; Phaneuf and Prakash 2014). Environmental nonprofits reported an initial increase in funding and interest, while some social service providers noted that they lacked their usual donations (Phaneuf and Prakash 2014).

In 2012, the state created the Alabama Gulf Coast Recovery Council (AGCRC) to administer and award the funds from the civil penalties that the state would receive through the RESTORE Act (Alabama Gulf Coast Recovery Council 2015). Local officials and environmental NGOs anticipated that part of these funds would be spent on coastal restoration. Per state law, the council's 10 members include the Governor of Alabama, Director of the Alabama Port Authority, one representative each from Baldwin and Mobile counties, and mayors of Bayou La Batre, Dauphin Island, Fairhope, Gulf Shores, Mobile, and Orange Beach (Alabama Gulf Coast Recovery Council 2015).

2.2 Update Since 2012

In 2010, the population of Mobile County was 412,992, with 10,200 residents in the Bayou La Batre Census County Division (CCD) and 2,558 people living in Bayou La Batre itself (US Census Bureau 2010). Table 2.1 shows key demographic data for Bayou La Batre.

Table 2.1. Overall population & racial and ethnic composition in Bayou La Batre, 2010

Demographic Characteristics	Number (% of Total)
Total Population	2,558
White alone	1,543 (60.3%)
Black or African American alone	314 (12.3%)
Asian alone	583 (22.8%)
American Indian and Alaska Native alone	9 (0.4%)
Native Hawaiian and Other Pacific Islander alone	2 (0.1%)
Some Other Race	n/a
Two or More Races	n/a
Hispanic or Latino (of any race)	72 (2.8%)

Source: US Census Bureau 2010: Profile of General Population and Housing Characteristics.

Between January 1, 2013 and December 31, 2015, the Bayou La Batre area experienced numerous changes. An overarching concern among locals was the long-term impacts of the spill on the environment and the physical and mental health of residents. In terms of the environment, very few people interviewed reported that everything was back to normal. Most expressed worry that the oil and dispersants could have caused problems that were not yet apparent. The fear was that there were significant, unrecognized harms or that problems would arise in the future. In this community with deep ties to the seafood industry, these concerns were mirrored in locals' perceptions about the long-term fate of seafood populations and therefore the economic wellbeing of the area. Concerns with physical health of residents, VOO workers, and people who eat the seafood were expressed less frequently but in similar terms: it is too soon to know what the full impacts might be.

Mental health was the most consistently discussed worry in terms of the long-term wellbeing of the area and its residents. Participants commented on the increase in anxiety, tension, and social mistrust in the area, which they attributed to some combination of stress over the spill and its long-term impacts, the economic situation, and the perceived injustice of the VOO and claims processes, as detailed below. Citing University of Alabama Professor Steven Picou's corrosive community concept (see Picou et al. 2004), one elected official explained the deleterious effects of the claims process on the local community:

One gets 10,000 one got nothing. An also-ran got 50,000,000, a high liner got 200,000. This leads to trust issues. People don't trust, society breaks down. Business works because I trust you will pay me, when we see no trust, there is no economy. [...] This is an example of what happens, the damage the BP spill did. Not necessarily to the environment, oil on the beach which is what was said. But it affected the fabric of society, it created tremendous mental health issues which are undiagnosed. (VP604 2015)

He also noted that though the need for mental health services had increased by 2015, there was no corresponding growth in the availability of services in the local area (VP604 2015), and an NGO leader specified that while there were groups that came into the area following the spill to provide mental health services, they "didn't last" (VP590 2015; (see also "A Comparative Look at Health Services" in Section 4.3.3 of this report)). The closure of Alabama Psychiatric Services in February 2015 with less than two weeks' notice contributed to problems residents experienced attaining care in 2015, though many patients were successfully transitioned to new providers within a matter of weeks (Yurkanin 2015). Representatives of civil society organizations and local activists also reported that they or their colleagues experienced mental health problems including acute stress and anxiety resulting from their participation

in the spill response, even though their own livelihoods were not jeopardized. Many also noted that such problems often went unrecognized and untreated. Such problems were still of significant concern for some in 2015, while others reported the problems faded after their participation in the response ended (VP582 2015; VP590 2015; VP599 2015). Between 2013 and 2015, many respondents reported that the claims process, and sharply divided experiences with it, contributed to widespread stress and anxiety. Some perceived BP as having been very generous, even too generous. Some reported that the stress they had experienced had been resolved when they were treated fairly and settled their claims. Some felt forced to accept settlements they saw as unfair, and others continued with litigation in the hopes of a reasonable settlement: for these individuals, the difficulties continued. These differences resonated even within families. For example, a manager at a local business reported:

[T]hey wanted to give me 20,000 as a final, I said no, you owe me 50. I filed paperwork. I got in a group: 'We'll pay you someday.' In the same set, my wife had a 10,000 claim, they offered her 20,000, okay, she took it. That's a tremendous impact on the Gulf Coast, that's the crap they're pulling. (VP604 2015)

Others also noted that this type of explicit inequality in BP settlements, as in VOO earnings, has served to exacerbate, if not create, ongoing tensions in the local community and declines in mental health, as discussed above (VP582 2015; VP599 2015). Other families saw different kinds of disagreements. For example, in 2013 a seafood business owner reported that initially his family members were angry with him for settling a business claim, but by 2015, their opinion had changed: "Now my children are saying 'Daddy did the right thing'. People are still waiting on money, I'm 77, I wouldn't ever see it" (VP588 2015). The unknown timeline for pending settlements was, in itself, seen as a source of inequality and tensions for those who were weighing the possibility of receiving fair treatment against the potentially long-term stress and uncertainty of continued litigation. (see also "A Comparative Look at Experience with the Claims Process" in Section 3.3.2 of this report).

Economically, the Bayou La Batre area continued to experience challenges after 2012. A number of local stores closed between 2013 and 2015 and there was turnover and closures of restaurants, including two within six months in 2015 (VP592 2015). Outside the shipbuilding and seafood industries, which are discussed below, in 2015 community leaders reported that both locals and outsiders were reluctant to invest in new projects or businesses. They attributed this to the generally uncertain economic outlook of the area, fear of hurricanes, high fees assessed by city offices, and mistrust and uncertainty over ongoing political instability in the Bayou La Batre city government, as discussed below in the next section.

Between 2013 and 2015 community leaders and business owners expressed increased interest in diversifying the local economy to include tourist activities. In contrast to plans proposed before Hurricane Katrina, the new plans highlighted existing natural resources, including wetlands and rivers for kayaking and the development of birding areas. Community leaders expressed hopes that RESTORE Act money could be used on some of these projects, but the fate of new development was uncertain, in part because of the hindrances to investment discussed above.

Of relevance to employment for Bayou residents, the nearby City of Mobile has long offered training and job opportunities. In addition to multiple colleges and training programs, the Alabama Industrial Development Training (AIDT) and Southwest Alabama Workforce Development Council (SAWDC) focused on economic development through the creation of a trained workforce and, after 2012, expanded program diversity and the number of workers served after 2012 (AIDT 2015; SAWDC 2011; VP582 2015; VP644 2015; VP621a and VP621b 2015). In part because of the availability of training programs such as these, Mobile received investment by an aerospace company, Airbus, which opened a plant in September 2014 to manufacture A320 aircraft (Sharp 2014). During 2015, economic officials and economic development professionals anticipated that this plant and an associated training center would draw suppliers and contractors and be able to train a workforce to fill those positions (Dugan 2014;

Tomberlin 2013). The increased diversity to Mobile County's economy was generally seen as positive, and something that Bayou La Batre residents were hoping they would be able to access.

As noted above, shortly before the oil spill some local oyster harvesters had begun to adopt oyster aquaculture, where oysters are raised in cages suspended above the bay floor to protect them from predators and speed their growth, and an experimental, educational, and commercial oyster park had been developed. Beginning in 2013, individuals interested in trying out the process could take a class offered through the extension and, upon completion, elect to develop a plot in the oyster park if they paid their share of the permitting fees (VP595b 2015; VP623 2015). The program and park were developed in consultation among extension staff, a local industry association, and fishing industry leaders. Similarly, the local Alma-Bryant High School began a program, in 2014, to teach students how to practice oyster aquaculture for consumption or in service of coastal restoration, including education from hatchery to harvest. In the first year of the program, 283 students participated (USDA 2015). When asked if he thought the spill had any impact on the interest or attitude of locals towards off-bottom aquaculture, one man involved with the process reflected that before the spill there had been an interest among local fishermen and residents in new options for the oyster industry, but that the spill added both to this desire for new options and provided some people funds that they could invest in a new venture (VP623 2015). He went on to specify that, while aquaculture provides additional sources of revenue, it is still dependent on the quality of the environment, which is discussed below. Though marginal in terms of quantity produced when compared to the rest of the industry, these new programs and projects were seen as significant by oyster harvesters, industry representatives, seafood processors, and local elected officials in that they would provide individual fishermen and students, the local industry, and the community as a whole the opportunity to diversify their knowledge base and economic activity. Many saw such opportunities as an integral part of diversification and a strategy for creating a sustainable community. Growth in the industry since 2012 attested to its popularity: by 2015 a second, private aquaculture site had been developed in Portersville Bay and elected officials and industry members expressed interest in further developing this industry segment, potentially with RESTORE Act funds (FDA 2014; VP604 2015; VP623 2015).

In addition to changes in local industries, non-profit and service organizations experienced varied trajectories after 2012. A representative of an organization serving the Asian communities of the Bayou La Batre area noted that, during the summer of 2015, his constituents were using their services for help with the claims process, to promote educational achievement among students, and to combat high dropout and teen pregnancy rates among youth. Still, he worried that funds were being cut and if more were not found the office would need to close (VP624 2015). Another leader of a community organization also expressed difficulties finding both funding and volunteers, citing the general economic situation and increased health problems among locals who had previously volunteered that were identified as potentially resulting from the spill, including stress, stress-related diseases, respiratory problems, and general declines in health (VP599 2015). Organizations with an explicitly environmental focus saw a different trajectory post-BP. All reported continued increase in interest, funding, or participation for their activities. Representatives attributed this to increased attention to environmental issues nationwide, and specifically in Mobile County, due both to the BP spill and the proposed local development of petrochemical infrastructure in environmentally sensitive areas or adjacent to vulnerable communities (VP590 2015; VP593 2015; VP622 2015). For example, after protests and a legal battle in 2014, a pipeline transporting crude oil was installed across land owned by the water utility close to the reservoir and intake for the City of Mobile water supply (Berzon and Sider 2014). Though most study participants reported this increased attention to be positive, some noted that this had led national organizations to increase their interest in the area and set up new teams, duplicating services and threatening the sustainability of their organizations (Phaneuf Fieldnotes July 23, 2015; VP590 2015; VP622 2015). For example, one environmental organization representative reflected that these new services and people were "overstepping [boundaries,] causing confusion and usurping [local representatives'] credibility" (VP622

2015). (For more information on environmental restoration in Alabama, see “A Comparative Look at Coastal Restoration in Section 6.4.2 of this report). Both environmental and social service organizers in the area noted that by 2015 very few of those in leadership roles were in the same positions they had held during the spill (VP590 2015; VP624 2015). It was unclear to researchers how much of this was due to normal turnover and how much to burnout due to the stress of the BP oil disaster. All of these changes influenced the services and continuity of services available to local residents.

2.3 Scandals and Sewers: Lingering Impacts of Hurricane Katrina

The Bayou La Batre area offers an example of how intricate and far-reaching the connections between multiple disasters can be. Five years apart, Hurricane Katrina and the BP oil spill disaster both had significant, negative impacts on Bayou La Batre and Coden. This section details two links between these disasters: post-Katrina changes in local political representation that have impacted the area’s participation in the RESTORE Act process, and post-Katrina investments in infrastructure that threatened the already-weakened local oyster industry.

The responses of elected officials in Bayou La Batre to a post-Hurricane Katrina housing shortage contributed to a lack of stable political leadership in Bayou La Batre that continued until 2015. As described above, the city used a FEMA grant to build a housing development in northern Bayou La Batre to replace housing stock destroyed in Hurricane Katrina. In March 2013, Stan Wright, Bayou La Batre’s mayor, who had held the post since before the hurricane, was convicted of federal felony witness intimidation and retaliation charges associated with a Federal Bureau of Investigations (FBI) inquiry into the construction of this development (Kirby 2013). He was concurrently removed from office, but lawsuits associated with his wrongdoing in this matter persisted until May 2014 (Johnson 2014).

Wright’s removal from office left a leadership vacuum in city hall as a power struggle broke out between council members and outside factions all vying for the mayor’s seat. Councilmembers were unable to agree on whom to appoint to fill the remainder of the term, and the Governor of Alabama, who could also have appointed a candidate, declined to do so (Dumas 2013a). This standoff ended when a local business leader won a special election in September 2013 (Dumas 2013b; Johnson 2015). This individual’s 23-month tenure was tumultuous, including ongoing challenges from some council members (Johnson 2015). This situation was a frequent topic brought up by interviewees, and one local described the activities in the city government as an “all-out war” (VP603 2015). Others commented on the state of affairs as extremely unfortunate, an impediment to business and social development of the area. The new mayor resigned on July 27, 2015, citing responsibilities to his family and their health (Dungan 2015). On August 14, 2015 the City Council appointed one of its own members as mayor for the remainder of the term, despite reservations over her role as one of the leading obstructionists during the previous mayor’s term (Bayou La Batre 2016; Johnson 2015).

Though it is unclear what impact these developments will have on the city’s future political stability and economic development, study participants repeatedly cited the political instability as a major detriment to the city’s ability to attract or grow business, and to economic recovery as a whole. When asked about the future of the area, one local business owner responded:

Waffling. I don’t know, it all depends on if we get a local political climate that does anything to embrace the opportunities. Now there’s fighting and political turmoil. There are some entrepreneurs, but to do anything in the area, I wouldn’t want to invest money here. Until there’s a significant change in the mayor and city council in Bayou La Batre there is no opportunity to invest money here (VP592 2015).

Additionally, other residents noted that these shifts in political power could impact the city's ability to obtain RESTORE Act funding for local projects. The AGCRC process was already under criticism as lacking transparency and public involvement (VP590 2015; VP593 2015; VP595a 2015). As one employee of a regional environmental group noted, "We've pushed for citizens' advisory committee, a technical advisory committee, anything" (VP590 2015), but nothing had been created and the process through which decisions were made remained opaque. Additionally, local residents and elected officials expressed concerns that the lack of a mayor in Bayou La Batre for nearly six months of 2013, and the shifting power structure that followed, had given other areas whose representatives had longer and more stable tenures on the AGCRC an unfair advantage in the distribution of RESTORE Act funds, decisions on which were ongoing in 2015.

Another series of post-Katrina developments that continued to impact the economic wellbeing of Bayou La Batre centers on the city's wastewater. As mentioned above, the city built a new wastewater treatment plant with hurricane recovery funds that came online in 2012. In 2014, the City and the Utilities Board realized that while the old treatment plant had not been taken down as stipulated in the CDBG grant, they did not know who was responsible for the demolition, or even who owned the land. This confusion was due in part to the fact that the city had lost the original HUD grant application and paperwork. The documents were likely seized by the FBI as part of the investigation into the former Mayor Stan Wright and his associates (Johnson 2014).

By 2015, controversies around the plant continued. According to a Food and Drug Administration (FDA) study, should flows from the wastewater treatment facility reach capacity or lose efficiency, as its engineers expected, the area closed to oyster fishing would be expanded (FDA 2015). Due to the placement of the outfall, 11% of the most productive oyster grounds in Mobile Bay could be polluted and closed, including part of the area currently used for oyster aquaculture, despite pre-construction assurances on the part of the State of Alabama Conservation Department that this would not occur (Mitchell 2008; VP623 2015). Closure would threaten the livelihoods of both the oyster harvesters who use the aquaculture areas and those who use traditional methods in surrounding waters and further threaten an already weakened industry. This led one oyster industry representative (VP595a 2015) to ask of the agencies who made the decisions about the plant: "Whose environment are they protecting?" Though these are only two examples of the longitudinal impacts of Hurricane Katrina and the BP oil spill in the local context, they illustrate the multi-layered and cumulative nature of disaster impacts and suggest that continued study will be necessary to understand the impacts of the BP oil spill on the area.

A comparative look at political stability and its effects of response

Unlike Bayou La Batre, the political offices in Terrebonne Parish have been relatively stable, influencing how the Parish could participate in the BP settlement process. The Parish president during most of this study, Michel Claudet, was elected first in 2007 and re-elected in 2011. Interviewees generally expressed satisfaction with his work while in office; one resident said that Claudet had "brought residents out of darkness into a period ringed in hope" (BG024a 2015). Due to term limits, Claudet's final year in office was 2015. His successor, Gordon "Bubba" Dove, had been a Louisiana state representative from 2003 to 2015. Dove was term-limited out from that political seat. In 2013, as part of the Morganza-to-the-Gulf Flood Protection Project, the Houma Navigation Canal "Bubba Dove" Floodgate was constructed in Dulac, providing protection from storm surge for areas north of that community. Jerome "Zee" Zeringue took over for Dove as State Representative representing Terrebonne and a part of Lafourche parishes. Zeringue, the former chair of the Coastal Protection and Restoration Authority, followed on the coattails of Garrett Graves, who was elected Congressman. Graves served as CPRA Chair from its inception in 2008 until he took office in 2015. Before working his way from the Governor's Office of Coastal Activities to Chair of the CPRA, from 1999 to 2009 Zeringue was the director of the Terrebonne Levee and Conservation District. Reggie Dupre, former state senator for the Houma area, became his successor.

All of these men had, in some capacity, campaigned or worked for coastal restoration or protection. Most of them, including Graves, Zeringue, Dupre, and Claudet, were involved in BP settlement negotiations.

In Biloxi, a distrust of authorities and their ability to fairly distribute oil spill funds was often paired with recognition that BP's cash flow greatly helped the local economy address some of the issues left-over from Katrina. The city of Jackson receiving BP claims money was a recurrent topic East Biloxi residents' interviews, many rolling their eyes at the idea that the states' capital, 150 miles from the shore, could have truly been affected by the spill. But the city of Biloxi was often praised for manipulating the economic windfall that followed the Deepwater Horizon disaster in its favor, using funds from the claims process to rebuild roads, construct a stadium, and spruce up East Biloxi's development initiatives. As one head of a major social service non-profit explained, "In the end, I don't want to see another BP spill, but we probably ended [up] benefitting from it" (JL013 2015). Some saw BP money as a blessing for the community, others as a way to tempt corrupt officials in funneling funds towards projects that would not benefit the main victims of the spill. A social service non-profit worker adamantly condemned the local authorities' propensity to misuse public funds: "Seeing all this corruption and what's happening with the infrastructure, it's embarrassing. We've been voted most corrupt state in the last 25 years in a row, per capita. In terms of convicted officials, we're number 1" (JL028 2015). It is too early to assess the equity of oil spill funding distribution in the study area or the relative success of elected officials in negotiating for their electorate's needs in the settlement process, residents' impression of their politicians colored their understanding of the funding distribution process. This influenced their experience of the spill.

2.4 Seafood Processing: An Uncertain Future

Through 2015, local processors and the commercial fishermen on whom they depended for their livelihood reported challenges and opportunities. Though the total commercial fishery landings had returned to pre-spill levels, and in 2014 the value of those landings exceeded anything reported for the prior 10 years (Table 2.2 and Figure 2.2), as discussed above, study participants reported attrition in the numbers of both shrimpers and processors.

Table 2.2. Total commercial fishery landings and value for Bayou La Batre

Year	Quantity	Value
	(Million pounds)	(Million dollars)
2015	20.2	37.2
2014	20.8	58.1
2013	15.3	37.7
2012	20.8	37.5
2011	21.6	43.1
2010	3.1	4.7
2009	21	30
2008	19	36
2007	23	39
2006	28	41
2005	17.3	28.4
2004	19.1	28.4

Source: NMFS n.d.

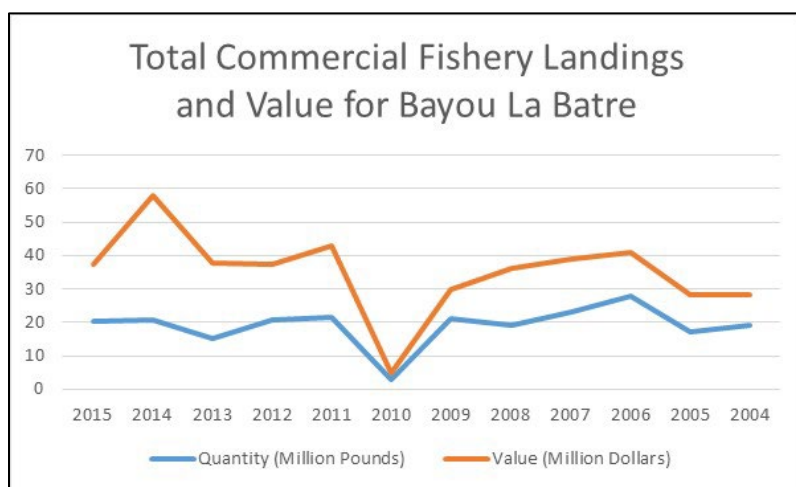


Figure 2.2. Total commercial fishery landings and value for Bayou La Batre

Source: NMFS n.d.

The sales impacts of seafood processing, as modeled by Posadas et al. (2013), had also rebounded by 2012 (Figure 2.3).

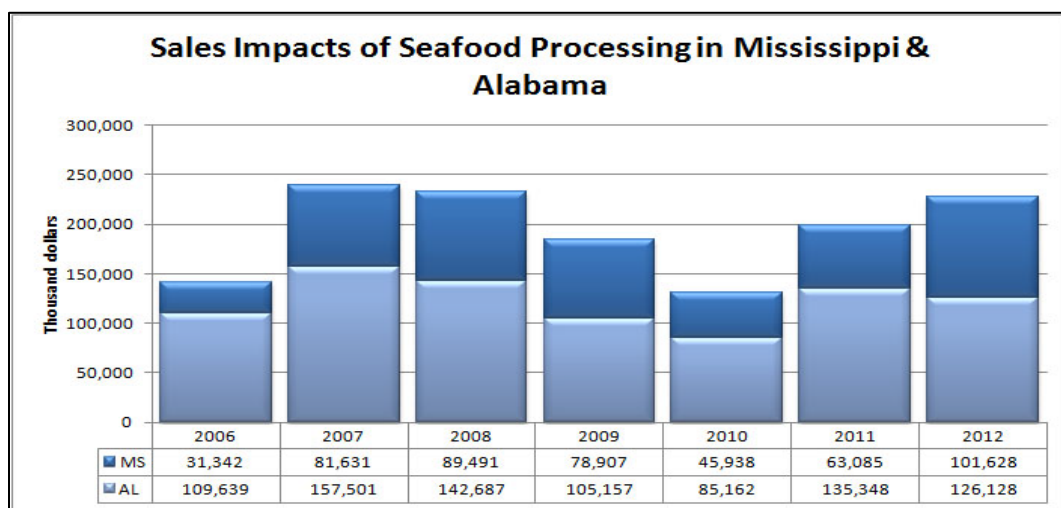


Figure 2.3. Sales impacts of seafood processing in Mississippi and Alabama

Source: Mississippi State University Coastal Research and Extension Service n.d. and Posadas, Posadas, and Buchanan 2013. Source of raw data: NOAA Fisheries Service.

Processors who sourced crabs and oysters from Louisiana reported greater difficulties in obtaining product in the same quantities than before the spill, due to both supply and an increase in crab fishermen marketing directly to clients (VP524a 2013; VP583a 2015; VP605 2015). This was often described as unsettling, in part because of the uncertainty attached (see also “A Comparative Look at the Effects of Uncertainty” in Section 5.4 of this report). As one processor noted: “People think, five years, we’re back to normal, but we don’t know where we’re at. We don’t know what normal is. It’s scary. If we knew we were back to normal we could make a schedule” (VP605 2015). However, processors reported that, even if they had seafood, they would have had trouble selling it because they had lost anywhere from 15 to 50% of their customers to imports. Though the shift to imports began prior to 2010, processors and

commercial shrimpers alike reported customer hesitance to eat Gulf of Mexico seafood as one factor in clients' switch to imports (VP446 2013; VP524a 2013; VP526b 2013; VP529 2013). They indicated that this hesitance had decreased by 2015 but was still higher than pre-BP spill levels (VP602 2015; VP605 2015).

Though all local processors had filed claims against BP, the reactions of those interviewed to both the size and the fairness of claims and settlement decisions differed. Some called the settlements "extremely unfair" (VP591 2015) and held out for what they considered a more just result, while others found them to be "very generous" (VP588 2015) and settled. Many also questioned why the processors were separated from other sectors of the commercial seafood industry in the claims process. Processors who faced continued financial challenges had remained open by altering their practices, shifting their sales to nearby markets or doing in-store demonstrations, for example.

Seafood processors also faced ongoing challenges disposing of seafood waste. In 2010, 23 businesses had joined to form the Gulf Coast Agricultural and Seafood Co-op to build a rendering plant designed to take the waste and turn it into fertilizer (AL.com 2010, Novogradac 2012). Funded by federal, state, and county grants and a loan, the plant was anticipated to create 20 to 25 jobs in Bayou La Batre and to save the industry money on waste disposal fees while creating a new product (AL.com 2010). The facility broke ground in 2010 and opened in March 2011 (AL.com 2010, Kramer 2011). The plant was designed to function with waste from 23 to 25 companies, but it only served six companies when it opened, and in 2015 only seven were in operation and contributing waste (VP446 2013; VP588 2015). This meant that although the Co-op was able to pay off its loan in 2013, by 2015 the plant was not operating at or near capacity and had yet to break even (Hagood 2013). Though the Co-op filed a claim against BP, one Co-op official commented that the outcome was far from certain because in 2015 their claim had not been settled: "They don't have a class of claimants for 'ruined business plan'" (VP588 2015). He anticipated that it would be a long time before the Co-op received a settlement, if one were to come at all.

In 2015, these combined issues led multiple processors to question the future of the industry in the Gulf region, or even in the United States as a whole. Others saw a bright future, predicting that customers would return to buying Gulf seafood as they became more aware of the health and ethical problems with imports (see also "Updates Since 2012" in Chapters 5 and 6 of this report). On the whole, uncertainty about sources of seafood, customer reluctance, prices, outstanding BP claims, and the local economy all created a climate of mixed expectations for the future.

2.5 Shipbuilding in the Bayou: "Hope and Expectation"

In 2013, during the first round of fieldwork for this study, shipbuilders in Bayou La Batre and Coden reported a primarily positive outlook on the future. As one yard owner noted: "everyone is doing well" (VP527 2013). Things were seen as returning to what locals considered normal industry fluctuations after the disruptions of the spill, fishing closures, and moratorium, as oil production in the Gulf ramped back up. The numbers of shipyards had dropped somewhat after the spill. Of the 12 in operation in 2009, and one that opened between 2009 and 2013, only 10 remained in 2013, and others were reorienting their businesses toward other industries (Phaneuf et al. 2014; Hocke 2014; VP600 2015). Those involved in repair complained that BP claims payouts and low shrimp prices had encouraged local commercial shrimpers to leave the industry, thus reducing their client base.

By 2015, the number of active yards had dropped to nine (Hocke 2016; VP592 2015; VP596 2015; VP598 2015; VP600 2015; VP604 2015). Their owners agreed that the decrease in oil prices limited clients from the offshore oil and gas industry and that fewer commercial shrimpers were working in the Gulf of Mexico. Beyond that, they were less clear about the industry's status and future, and this was true even for owners who had been in the business for decades.

Some anticipated a renaissance in shipbuilding, others saw the industry as on a downward slide. The following two quotes from long-term, established local businessmen who knew each other well, recorded within a week of each other, reflect the diversity of opinion:

I think [the local shipyards] have only built two [shrimp boats] since 2008 because it costs now over two million dollars; you can't finance a boat and catch enough shrimp to pay it off. The days of shrimp boats are long gone. It's a dying endeavor. There are no new boats and they're being sold out of the market (VP592 2015).

Years ago you could find a good used boat here. Now there are no boats for sale. Everyone is making money; you can't get one. I feel we will see a comeback, building fish and shrimp boats for the gulf coast (VP600 2015).

The future of the oil industry was also a cause for speculation. With uncertainty over future contracts for either the seafood or oil industry, shipyards were increasingly in competition for available government and blue or brown water transportation jobs.

Between 2013 and 2015 some local shipbuilders were also directly involved in the commercial fishing industry, a diversification strategy dating back decades. In order to compensate for fluctuations in oil, seafood, and other industries, some shipbuilders became personally involved in both shrimping and shipbuilding for oil as a way to hedge their bets.

The low price of oil is good in many respects. I own a 90' shrimp boat [that] takes 10 thousand gallons, so I love it! But the OSVs were our bread and butter, they dried up. For the obvious reasons. All that group of boats, tugs, offshore oil service dried up. We shifted to harbor tugs. [...] That's where we're at. The boat by the office we signed 7 weeks ago, we had been down to our last job. Now this is the last job – I need one more boat. Since November we laid off half our workforce, we're down to the cream of the crop, the longest, hardest, and most productive workers. That's who gets to stick around. Now it's painful to consider who to let go. [We are] in panic mode – get the bills paid. (VP598 2015).

The strategy of this business owner to diversify his holdings and business to take advantage of swings in oil and gas prices had worked in the past. Unfortunately, this did not protect him from the post-spill market where both shrimping and oil were down.

Though the shipbuilding industry has seen cycles of growth and decline, many viewed the decade from 2005 to 2015 as out of the ordinary. As one shipbuilder noted, "[I]t's not a normal way of life in the last 10 years" (VP600 2015). All local shipbuilders suffered significant losses after Hurricane Katrina, yet none closed. Some expanded with work repairing or replacing vessels damaged in the storm or received grants allowing them to rebuild with improved facilities or expanded capacity (Phaneuf et al. 2014; MARAD n.d.). Between Katrina and 2015, several yards closed, but others became involved in conducting restoration work in addition to their building and repair activities. Some owners also maintained second businesses, including in commercial seafood (Phaneuf et al. 2014). The varied foci, secondary endeavors, and post-Katrina strategies influenced their experiences during and after the BP oil spill.

Looking to the future beyond 2015, many shipbuilders commented that regulatory changes associated with emissions from diesel engines had begun impacting the inland towing industry and would create work for local shipbuilders. In 2014, changes to Environmental Protection Agency (EPA) regulations for US vessels, including high and medium-speed diesel engines of the kind used in workboats and the transportation industry, significantly reduced allowable emissions (Masor 2013). This change was not connected to the oil spill: it was one increment in a program the EPA initiated in 2008 to reduce pollution

from marine diesel engines (EPA 2008). Also in 2008, the International Maritime Organization (IMO), had scheduled emissions reductions that would go into effect in 2015, with stricter requirements to be imposed on vessels in North America on January 1, 2016, and a larger reduction to take place in 2020 (IMO n.d.). The US Coast Guard was expected to publish its updated Subchapter M regulations in 2015, but the publication was delayed past the end of the year (Rollins 2015). The regulations were intended to increase workplace safety (Coast Guard 2011). Though the regulations had not been released at the time of this study, industry experts expected they would require inland towing vessels to be Coast Guard inspected for the first time and to meet specified conditions or emissions standards, both of which would require significant investment on the part of operators (Coast Guard 2011; Rollins 2015; VP598 2015). In 2011, the Coast Guard anticipated that the regulations would impact 5,208 towing vessels owned by 1,059 companies across the US (Coast Guard 2011). Anticipation or implementation of these regulatory changes had already led to increased business for some shipbuilding companies as operators brought themselves into compliance (VP596 2015). Thinking about how these regulatory changes would influence shipbuilders in the Bayou La Batre area, industry members anticipated an extended demand that could carry the local businesses through the uncertainty in oil and seafood (VP598 2015). Others saw this as a temporary source of work for local yards (VP596 2015; VP600 2015) or only postponing an imminent crash (VP604 2015). One local shipbuilder summed up the uncertainty inherent in the economic outlook by saying that he anticipated a positive result because: “If I’m wrong I prefer to live in hope and expectation and not fear and expectation” (VP598 2015).

A comparative look at shipbuilding

Plaquemines Parish and nearby St. Bernard Parish reflect a contrasting situation. With a much smaller shipbuilding presence, boat builders and welders in both parishes reported very high levels of activity in both 2013 and 2015. This activity was associated with the repair and construction of commercial oyster boats; oyster harvesters also reported high levels of activity. In 2008, the last year for which comparative data were available, there were two businesses categorized as shipbuilders, boat builders, or ship repair in Plaquemines Parish and six in St. Bernard Parish, compared to 32 in Mobile County (US Census 2008). The businesses in the Plaquemines area were also relatively small, with the average in St. Bernard at a little over four employees per business (US Census 2008). Also engaged in shipbuilding and repair, but not represented in the statistics, were independent or small welding companies that worked partially or exclusively on boats (VP513 2013). As one welder who works exclusively for commercial fishermen said, “Me, I’m busy 7 days a week for the last 2 years. I haven’t taken a vacation in I don’t know how long, the only days off are when it rained” (VP513 2013). He went on to note that all of those clients were individuals re-investing BP settlement money in their business. Another business owner involved in boatbuilding and repair reported that local oyster harvesters received “plenty of money” from BP and “instead of giving it to Uncle Sam they decided to make new boats to replace their old boats” to the point where he was very busy and turning away or postponing clients (VP652 2015). The high level of activity of these businesses was tied specifically to receipt of BP settlement money by the local commercial fishermen, which buffered them from the fluctuations in the offshore oil and gas and shrimping industries.

2.6 Summary

Over the decade between late summer 2005 and 2015, Hurricane Katrina, the BP oil spill, and global economic processes impacted Bayou La Batre and Coden, especially shipbuilding and commercial seafood industries. Because the spill occurred when the area was still reeling from the 2005 hurricane, its mid-range impacts must be understood in that context. In response to the destruction of the hurricane, residents and businesses rebuilt or moved, population shifted north, and plans were put in place to rebuild key infrastructure. In the short term, the BP spill negatively impacted the seafood and shipbuilding industries, the two mainstays of the area’s economy, through the moratorium and suspension of drilling, fishing closures, and customer fears of seafood safety. By 2013 the shipbuilding industry appeared to

have rebounded. The commercial seafood industry continued to experience the effects of customer fears and reduced catches in some areas. Inconsistencies in VOO access (and therefore earnings), BP settlements, availability of seafood, and incursion of imports into markets led to disparities among local fishermen, processors, and related businesses. Relative to their positions before the spill, in 2015 some were better off, some were in the same position, some were struggling, and others had gone out of business. For example, only one quarter of the area seafood processors open in 2010 were open in 2015. These differences continued to influence individuals' and companies' abilities to respond to or anticipate new challenges through 2015, though all expressed uncertainty over the future of commercial fishing and processing in Bayou La Batre and Coden. By 2015 the shipbuilding industry, too, had entered a period of uncertainty, due to the lack of investment in commercial fishing and the offshore oil and gas industry, among other factors. This served to contribute to the general climate of uncertainty in the community.

In this context, individuals, businesses, and the community as a whole showed increased interest in diversification as an economic strategy. This was attributed to the subsequent shocks of Hurricane Katrina in 2005 and the *Deepwater Horizon* spill in 2010, particularly since the spill hit both of the community's main industries: seafood and shipbuilding. This orientation was evident though the development of local oyster aquaculture and the interest on the part of the City of Bayou La Batre and local citizens and entrepreneurs to grow the tourism industry. The success of these plans, however, remained unclear, due in part to political, economic, and environmental uncertainties.

At the level of the city, and area more generally, post-Katrina rebuilding efforts continued to have unintended consequences that instigated a period of instability and uncertainty which lasted through 2015. First, they contributed to a hostile and uncertain political climate. This served both as a disincentive to invest in the local area and to fragment participation in the RESTORE Act process. All of this limited the area's ability to recover from the short- and mid-range economic impacts of the BP spill and, depending on the outcome of the RESTORE Act negotiations, may have more lasting impacts. Second, development of infrastructure post-Katrina created a water quality problem that threatened a local oyster industry already struggling following the BP spill.

Mid-range impacts in Bayou La Batre and Coden from the BP oil spill disaster were both varied and difficult to untangle from other factors influencing the local community. Political instability was a cause for concern, as were the fluctuations in seafood and shipbuilding due to local, regional, and global processes, only some of which are tied to the spill. Positive futures remained possibilities for both key industries, attempts to diversify the local economy to make it more resilient to industry disruptions were underway, and economic investment and growth elsewhere in Mobile County was cause for optimism. The future of Bayou La Batre in general and the lasting impacts of the oil spill in particular remain unclear, but can but summed up in one word: uncertainty.

3. Biloxi and Harrison County, Mississippi

3.1 Introduction

Biloxi, Mississippi's human-made beachfront stretches along the southern shore of Mississippi between the cities of Gulfport and Ocean Springs, where newly rebuilt French Colonial mansions and hundred year-old oak trees are scattered along the coast. Eight miles offshore, barrier islands help protect the shoreline from wind and waves and provide sandy retreats for charter boats and local fishermen alike. Located east of Gulfport, and part of the Gulfport-Biloxi-Pascagoula Metropolitan Statistical Area, Biloxi lies within Harrison County, the second most populous county in Mississippi (see Figure 3.1). The county includes D'Iberville to the north of Biloxi as well as the coastal cities of Long Beach and Pass Christian to the west. In 2005, pre-Hurricane Katrina, the population of roughly 55,000 residents ranked Biloxi as the third largest city in the state behind Jackson and Gulfport (Census data 2001-2014), with 6,300 residents living in East Biloxi. In 2010, the population of Biloxi hovered around 44,000 residents and remained at that level in the following years. The city's make-up changed to include an influx of Hispanic workers prompted by the post-Katrina need for reconstruction and cleanup workers. As Robertson and Fausset (2015) noted in a New York Times special for the 10-year anniversary of Katrina, the storm also exacerbated social inequality: "The haves could pay rent on a temporary place while paying a mortgage on a destroyed home. They could use private funds to improve those homes while waiting for government rebuilding subsidies. And they could hire lawyers, as needed, to navigate the sea of paperwork." The have-nots had to navigate a system that required social and economic capital that they did not possess.

Seafood and shipbuilding grew side by side in Biloxi throughout the 19th century. A fishing town that attracted many seasonal workers at the turn of the 20th century, Biloxi established itself as a competitive force in the seafood world in the 1950s as local companies adopted industrialized canning techniques (Husley 2000). At the same time that changes were taking place in the worldwide seafood trade market in the late 1950s and early 1960s, Keesler Air Force Base, which had begun operations in 1941 at the western edge of the city of Biloxi, became one of the country's largest military training facilities, attracting and employing many military operators and technicians (USAF n.d.). By the 21st century, the Air Force Base, along with the University of Southern Mississippi, and the John C. Stennis Space Center in adjacent Hancock County, were attracting a wide range of specialized workers.

In the 1970s, Vietnamese refugees who were resettled to the region and adapted well to its semitropical climate and working conditions provided a new source of labor for the seafood industry (Carpenter 1992; Starr 1981; Prakash, Marks, and Austin 2014). Low interest loans following Hurricane Camille helped the fishing industry weather a depressed economy and sustain the shipbuilding industry. New regulations on oysters led some processors to shift toward shrimp in the 1980s, but by the 1990s shrimp processors began to experience the negative effects of an increase in imports on the US market (McLain and Prakash 2014).



Figure 3.1. Map showing Harrison County and Biloxi, Mississippi

Source: Ben McMahan.

The city's tourism industry got a major boost in the 1990s after the Mississippi legislature legalized casinos in coastal counties. Biloxi had been a major tourist destination since the early 1920s when, in an attempt to lessen the city's reliance on the seafood industry, officials completed a 24-mile concrete waterfront to attract tourists (McLain and Prakash 2014). In August 1969, Hurricane Camille left Biloxi in ruins, but a major rebuilding effort restored the tourist establishments. Until the 1980s though, when

casinos were gradually brought closer to the beaches, gaming had been relegated to backroom operations and gambling ships operating offshore in international waters. In 1997, the state legislature legalized dockside paddle-wheelers, causing owners to quickly transform their boats into full-service casinos. As the casino industry expanded, Biloxi came to rely heavily on tourism dollars to sustain its local economy and revitalize the city's infrastructure. Hurricane Katrina dealt a severe blow to the casinos, lifting several from their pilings and carrying them several hundred feet into the city. The effect on the workforce was dramatic; before Katrina, casinos in Biloxi employed at least 8,000 workers (Mississippi Gaming Commission, Quarterly report, January 2005), but that number had dropped to just over 2,500 employed in the gambling and hospitality business the following year (Mississippi Gaming Commission, Quarterly report, January 2006). Following Katrina, lawmakers approved a measure to allow gambling onshore within 800 feet of the then-battered beachfront, and by 2012, the municipality of Biloxi reported about 9,000 people employed by casinos directly and lauded the gaming industry as a "vision of success" (City of Biloxi 2012).

As the two largest employers in Harrison County by the mid-2000s, the military and casinos brought both revenue and jobs to Harrison County and helped distinguish it from other parts of Mississippi which have been characterized, for decades, by high rates of poverty and chronic disease, along with low rates of child literacy and educational attainment (e.g., Kid Count 2015; McCarthy & Liu 2015; US Census 2015). Because neither of these industries were closely connected to the oil and gas or fishing industries nor reliant on activity taking place in the Gulf of Mexico, they also helped buffer the economic impact of the financial crisis of 2008 and the *Deepwater Horizon* spill of 2010 (McLain and Prakash 2014).

Though by 2012 the seafood industry was no longer a leading source of revenue in the region, it continued to have significant local effects and felt the impacts of both Hurricane Katrina and the *Deepwater Horizon* disaster. Figures 3.2 and 3.3 show estimated job and economic impacts of Mississippi's seafood industry between 2006 and 2012, illustrating that "the state seafood industry was very vulnerable to natural and technological disasters that occurred in August 2005 and April 2010" (Posadas 2014).

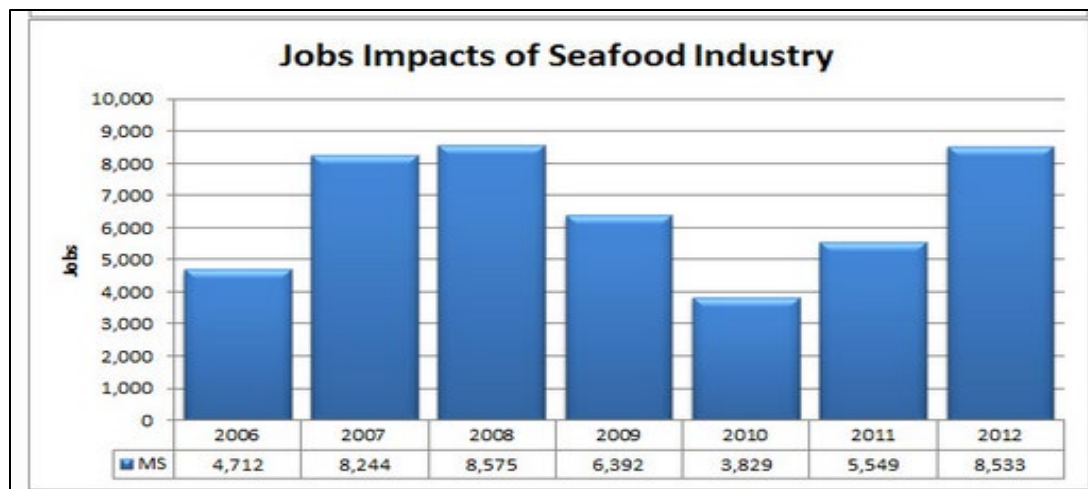


Figure 3.2. Jobs impacts of seafood industry in Mississippi

Source: Mississippi State University Coastal Research and Extension Center. n.d. Economic Impacts of the Mississippi Seafood Industry.

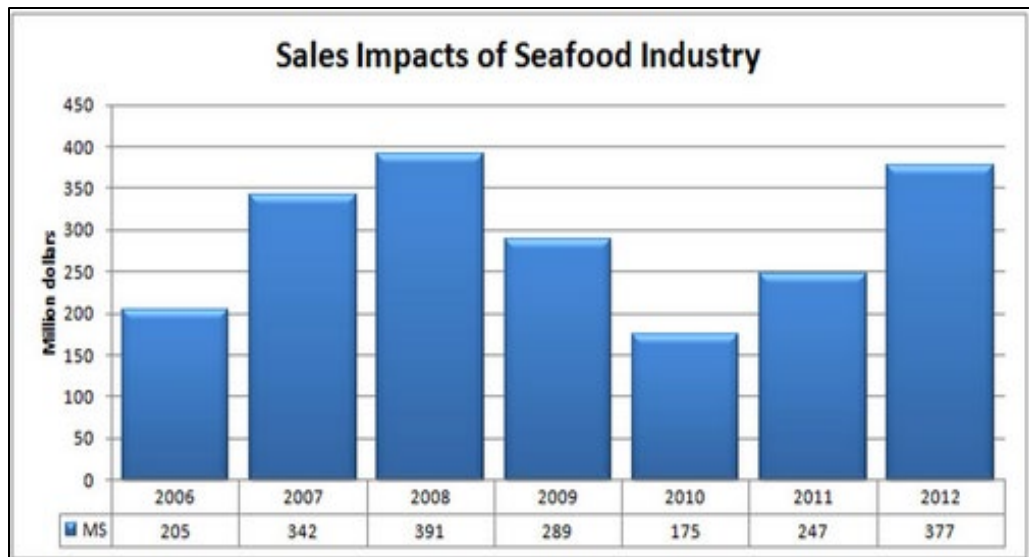


Figure 3.3. Sales impacts of seafood industry in Mississippi

Source: Mississippi State University Coastal Research and Extension Center. n.d. Economic Impacts of the Mississippi Seafood Industry.

Although Hurricane Katrina damaged all Biloxi, East Biloxi (located on the eastern peninsula between the Mississippi Sound and the Back Bay of Biloxi), was especially devastated. Point Cadet, the easternmost edge of the city, was almost completely destroyed by the storm. That, along with the flooding of East Biloxi, the lack of reconstruction efforts in the area, and the subsequent rise in home and flood insurance rates, led much of the population to relocate north toward the more affordable and higher grounded city of D'Iberville. Though some families raised their mobile homes on two-story high concrete pillars, the historic shotgun houses of the predominantly African American neighborhood were largely replaced by empty lots and overgrown lawns, and few new young families established themselves in the area (JL015 2015).

3.2 Update Since 2012

In 2015, 10 years after Hurricane Katrina and five years after the *Deepwater Horizon* disaster began, garish souvenir shops, barbecue joints, and seafood restaurants once again stood along Biloxi's beach. Coming from the west, visitors could drive on the scenic Highway 90 to East Biloxi, past the lighthouse, its plantation style Visitor Center, and the Ohr-O'Keefe museum, a modernist architectural tribute to the heroic efforts of the community in the wake of Hurricane Katrina. Along the way, large municipal signs pointed to the closest cluster of casinos—Hard Rock Café, Beau Rivage, and the Golden Nugget, among others. The new and renovated structures contrasted with the run-down wood-slatted houses that characterized the low-income residential neighborhoods set farther inland. Residents and leaders touted the success of businesses on the main roads of Biloxi in proximity to the gambling waterfront while small local business owners in the residential area of East Biloxi, farther from the economic glow of the casinos, reported feeling neglected by the municipality.

In 2010, the population of Harrison County was 187,105. Table 3.1 shows key demographic data for Biloxi and the zip code within which East Biloxi is located.

Table 3.1. Overall population and racial and ethnic composition in Biloxi, 2010

Demographic Characteristics	Biloxi	Biloxi–39530 zip code
Total Population	44,054	8,086
White alone	30,129 (68.4%)	3,930 (48.6%)
Black or African American alone	8,632 (19.6%)	2,638 (32.6%)
Asian alone	1,951 (4.4%)	759 (9.4%)
American Indian and Alaska Native alone	n/a	n/a
Native Hawaiian and Other Pacific Islander alone	n/a	n/a
Some Other Race	1,662 (3.8%)	518 (6.4%)
Two or More Races	1,351 (3.1%)	150 (1.9%)
Hispanic or Latino (of any race)	3,847 (8.7%)	929 (11.5%)

Source: US Census Bureau 2010: Profile of General Population and Housing Characteristics.

Though the population of East Biloxi had not increased by 2015, the city of Biloxi had plans to invigorate Point Cadet. The Maritime and Seafood Industry Museum had been inaugurated in August of 2014 overlooking the eastern waterfront. The multistory modern building contrasted sharply with the modest, ground floor hacienda that used to house the museum and overlooked mostly deserted grassy lots where few houses still remained.

The challenges facing East Biloxi when the BP disaster began continued to be in evidence through 2015, reflecting inadequate or failed recovery efforts. Along Division Street, the main street spanning the length of East Biloxi, many businesses held irregular hours and struggled to remain open in the summer of 2015. Street improvement efforts meant the street was stripped of its pavement along its entire length and the traffic was greatly reduced (VP586 2015). Some businesses and organizations in the area reported being affected by the construction and uncertain whether they could survive another year of declining traffic (JL034a 2015; JL038 2015). Thrift shops, a few dollar stores, and a Food Giant, all businesses that catered to low-income customers, were the only retailers who appeared able to survive in the neighborhood (VP585 2015). Even for them, the owner of a second-hand store reported, business was slow: “[P]eople are really struggling; it’s a hustle every day... for some, even 25 cents is too much” (Luchetta Fieldnotes July 2, 2015).

The apparent abandonment of East Biloxi contrasted with activity in other parts of the city; city officials touted the opening of 234 new businesses in 2012 as an indication of economic recovery two years after the spill (City of Biloxi 2013). The city had not officially reported the number of businesses that opened in Biloxi since that time, but in 2015, casinos were almost back to their pre-recession levels of revenue, and were lauded as buffers to the usual economic oscillations of the national economy (City of Biloxi 2016). The new MGM Stadium, named for the parent company of the Beau Rivage Resort & Casino, opened across the street from the casino in the summer of 2015. In addition to bonds issued by the city of Biloxi to pay for the stadium, in 2013 Mississippi Governor Phil Bryant allocated \$15 million to the project from an early BP grant the state had received as reparation for the spill (Kulo 2013).

Local governmental officials expressed confidence that casinos would continue to help rebound a troubled economy and that the tourism and conference industry should be the focus of revitalization efforts. In May 2015, the municipality of Biloxi reported that casinos had paid more than \$2 billion dollars in taxes since the opening of the city’s first casino, Isle of Capri, on Point Cadet in 1992. From 2012 to 2015, the city of Biloxi received an additional \$55 million from gaming taxes, while Biloxi’s public schools received \$20 million (City of Biloxi 2015).

The Margaritaville Casino opened on Point Cadet in 2012, the first new casino to be built in Biloxi since 2007. In September 2014, the gambling establishment had to close its doors and its 370 employees lost their jobs (Clarion Ledger 2014). Relatively small compared to its neighbors, the facility could not compete with the larger casino and hotel complexes. Only months later, in 2015, the Mississippi Gaming

Commission sanctioned a proposed 500-room hotel and casino called Biloxi Pointe that would be constructed on more than 37 acres of land on the Back Bay of East Biloxi. The Harrison Board of County Supervisors approved a tax abatement measure that would allow the construction of a \$20 million Back Bay loop that would connect, via a boardwalk, casinos from the southeastern side of the peninsula to the ones on the northeastern side of East Biloxi. The state committed \$5 million to the loop, which would be funded in part by Biloxi Pointe (WLOX 2015).

In the summer of 2015, the municipality of Biloxi announced a plan to team up with Gulfport to develop a high-speed fiber optic broadband network (Wilson 2015). The tax-funded utility would use \$20 million in funds from the city's BP settlement to invest in the economic development of the coastal region (Lee 2015).

Since 2012, though the overall population of Biloxi had not changed, the Hispanic population of East Biloxi had become more visible. Although not reflected in census data (possibly due to some of the workers' undocumented status and administrative invisibility) most interviewees reported that the Hispanic population in the county had increased (JL008 2015; JL010 2015); and many study participants remarked on the presence of Hispanics when talking about recent changes in the community. As mentioned previously, Hispanic workers came in after Hurricane Katrina to help rebuild the demolished landscape and patch roofs. Of the six Catholic churches in East Biloxi, three reported adding Spanish masses to their schedules while local NGOs reported that they struggled to provide translation services to Hispanic locals coming to them for assistance.

In overall numbers, Biloxi's Vietnamese population was reported as stable, but study participants of Vietnamese descent commented that fewer young people were staying in the area and following in the footsteps of their parents. When asked how that impacted the community, a social activist answered:

It's a void, a vacuum, of young leaders, they have no voice in the community. We're left with the oldest generation. There is no bridging of that gap. They don't come back and run for public office, they don't come back to improve the community as leaders (JL010 2015).

Beyond the fraying of an already isolated population, the perceived younger generation's exodus to bigger cities and away from the fishing industry was also seen as yet another threat to the region's seafood industry. As shown in Table 3.2 and Figure 3.4, the overall commercial seafood landings in Biloxi dropped precipitously in 2010, lower than after Hurricane Katrina, climbed a bit above 2009 levels in 2012, and then dropped off some in 2013 and 2014. Looking only at shrimp, Figure 3.5 shows that Mississippi's commercial shrimp landings declined significantly following Hurricane Katrina, plummeted in 2010 after the BP oil disaster, and, despite a slight increase in 2012, remained at about half pre-Katrina levels. In 2014, Joe Jewell, the director of Marine Services at the Mississippi Department of Marine Resources, reported: "To date, the number of shrimp licenses sold for the current season is 997, close to the annual average since Hurricane Katrina. Prior to Katrina however, the average number of shrimp licenses was nearly 1,800" (quoted in Lallo 2014). Jewell attributed the dramatic drop in shrimp licenses to rising fuel costs, loss of infrastructure, and lower shrimp prices due to cheap foreign imports flooding the market. Though he expressed optimism that conditions in the shrimp industry were improving, landings did not improve that year or the following.

Table 3.2. Total Commercial Fishery Landings and Value for Biloxi

Year	Quantity (million pounds)	Value (million \$)
2015	9.3	15
2014	10.1	28.4
2013	9.4	23.4
2012	13.8	25.2
2011	10.7	19.9
2010	6	13
2009	12.9	19.3
2008	24.5	18.6
2007	11.7	18.6
2006	9.6	12.8
2005	8.5	15.3
2004	16.3	26.2

Source: NMFS n.d.

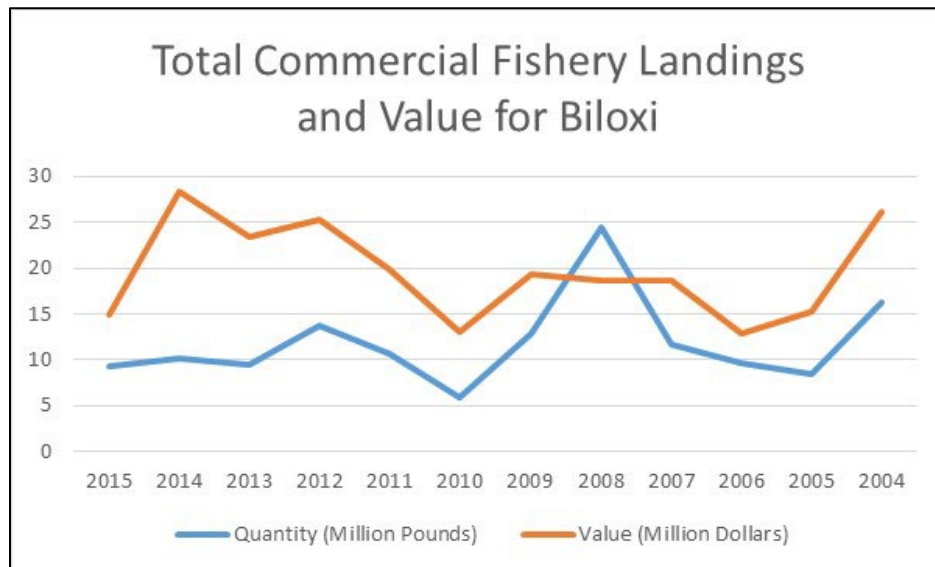


Figure 3.4. Total commercial fishery landings and value for Biloxi.



Source: NMFS n.d.

Figure 3.5. Mississippi annual commercial shrimp landings.

Source: Mississippi State University Coastal Research and Extension Service n.d. Source of raw data: NOAA Fisheries Service, Southeast Fisheries Science Center.

Likewise, ex-vessel prices, the post-season adjusted price per pound for the first purchase of the commercial harvest, of all commercial seafood landings in Mississippi showed a long-term decline with low points in 2006 and 2011, the years following the area's two major disasters (see Figure 3.6). In addition, seafood processing, and sales impacts of that sector, also declined after the hurricane and oil disaster, but they had begun rebounding in 2012 (see Figure 3.7). In sum, the ethnographic and landings data all reflect the clear impacts of both Hurricane Katrina and the *Deepwater Horizon* disaster.



Figure 3.6 Total commercial landings ex-vessel prices in Mississippi.

Source: Mississippi State University Coastal Research and Extension Service n.d.

Note: The imputed average ex-vessel prices (\$/lb) is derived from the total commercial landings value divided by total commercial landings. \$/lb2 is computed by dividing \$/lb1 by the consumer price index using the 2014 as base year.

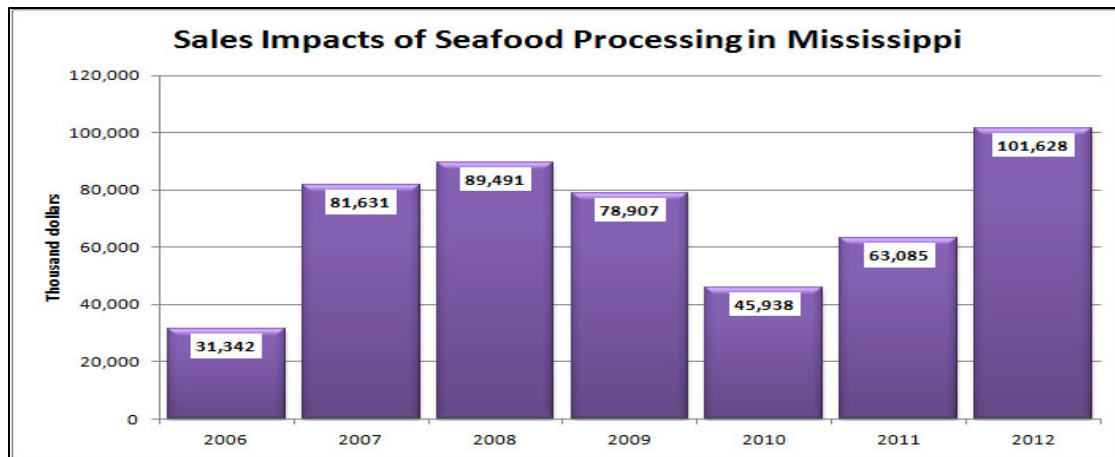


Figure 3.7. Sales impacts of seafood processing in Mississippi.

Source: Mississippi State University Coastal Research and Extension Service n.d and Posadas, Posadas, and Buchanan 2013. Source of raw data: NOAA Fisheries Service.

The environmental and health effects of the released BP oil were still disputed in the Biloxi study area in 2015. In 2010, the oil had reached the beaches of East Biloxi in the form of oil patties (WLOX 2010). In 2015, many study participants reported still finding tar balls in the sand along the Mississippi Coast. Others questioned the long-term impacts of the spill on the environment. As in other coastal communities, even among those who had stopped consuming seafood after the spill many people had returned to eating it. Some reported confidence not only in the seafood but also in the authorities responsible for monitoring it:

I still eat fish, shrimp, oysters, I never stopped. The Department of Marine Resources does a pretty good job monitoring everything that is brought up. I trust them. I may drop dead tomorrow but I am alive today, I love seafood and that's why I'm here (JL013 2015).

Both federal and state agencies had established extensive testing of Gulf seafood following the oil spill. For example, the Mississippi Seafood Safety Testing Program did biweekly testing of tissues from shrimp, oysters, crabs, and finfish from Mississippi marine waters from May through September 2010, and then monthly testing of those tissues from October 2010 through December 2014 (Burris 2016). An agency representative highlighted the challenge scientists faced in responding to citizens' concerns about seafood safety in the midst of a highly politically charged environment:

The main topic people are still talking about is whether the seafood is good to eat. That's the only thing people ask us, even after 20,000 samples have come back clean. We'll be defined by this disaster until the next one happens. We had schizophrenia from the early stages of the BP spill. On one hand, we're telling people 'we're fine, come spend your dollars,' and on the other hand were telling BP 'everything is terrible, pay us money' (JL017 2015).

Others continued to exercise caution, tying the oil with potential health effects and the uncertainty of the spill's full long-term effects. One social worker interviewed in East Biloxi noted, "Since BP, I don't eat any seafood anymore. I had cancer in the past, so just to make sure, I will wait another year to try it again" (JL034C 2015). Another business owner said he was not "a big seafood person, especially since the spill. It takes years to fully affect the seafood." He explained, "[W]e won't find out for a while, especially the oysters" (JL038 2015).

Cases of individuals being hospitalized after being infected by vibrio, a flesh-eating bacteria, were widely reported in the news, and the reports fueled broad speculations. A governmental affairs worker specializing in the shipyard industry commented on what she believed to be a noticeable increase in reports of vibrio:

The reality is that vibrio has increased. The bacteria, they feed on oil [mentions a study on the increase of vibrio]. The study shows that [where the oil] contaminated the sand, there is a 10 time increase of vibrio. In the tar balls, it's 100 times. Now you have a much bigger amount of microorganisms feeding off this oil. There is no other explanation for this increase in vibrio (JL026 2015).

Conversely, scientists and employees at the Department of Marine Resources overlooking Biloxi's Back Bay dismissed the perceived increase of vibrio cases and attributed the misperceptions to media focusing on isolated cases rather than scientific observations (JL036 2015). A marine biologist, whose personal research did not, in his opinion, link the spill to any cases of unnatural occurrences in the world of microorganisms, commented on why he thought vibrio had become such a topic of concern: "People are good at applying linear logic," he explained, "and without the tools to understand the science behind the issue, they look for the most straightforward explanation for it. The BP spill happened, people see that is was a big deal, and therefore, what happened afterwards is directly related [in their mind]" (JL011 2015).

A public affairs official discussed the rift between the scientific community and the public:

[The oil spill] was not anticipated. It was completely out of the blue. So early on people anticipated the environmental impacts would be worse. The problem with science is we don't produce results fast enough. We'll know in ten years, but by then people won't be interested anymore. It's important to be relevant now (JL017 2015).

The inability of local marine experts to communicate with the public with absolute certainty, and the public's skepticism over the authorities' transparency continued to generate social effects and contribute to what some argued was a strain on the community's well-being. Unquantified and diverse perspectives on health issues remained common topics of speculation in day-to-day conversations. Such uncertainty and anxiety were affecting some people's overall mental health and sense of security. The governmental affairs worker quoted earlier attributed heightened concern to the connection between people in Biloxi and the water:

We're water people. This manmade disaster, all this oil. Just psychologically, the psychological mechanism, we didn't have the coping mechanism. We're in tune with the water and its life season, it's the cycle of the coast (JL026 2015).

The confusion and contradictory narratives that permeated local conversations five years after the spill reflected the persistent uncertainty engendered by the disaster. Anxiety over the environment, the impact of the oil on the seafood quality, and associated livelihoods heightened the community's impatience with not knowing what would happen to the coast and how the oil had affected its people and ecosystems. The claims process, produced additional anxiety, as discussed in the next section.

3.3 The Claims Process: Economic and Property Damages

In Biloxi as elsewhere along the Gulf Coast, the oil spill's consequences, and who should be held accountable for those consequences, remained a divisive and uncomfortable topic of conversation in 2015. The problems were exacerbated by ongoing changes that occurred within the claims process administration (see also Chapter 1). In 2012, BP instigated a legal battle questioning the terms it

originally agreed to immediately after the spill. The subsequent reorganization of the claims process further muddled individuals' ability to understand and navigate it.

As described in Chapter 1, changes to the claims processes for Economic and Property Damages occurred through 2014, resulting in ongoing activity, discussion, and debate over the processes and their outcomes. A 26-page notice intended to assist potential claimants was posted on the Claims Center site on May 7, 2012 and updated on August 28 (US District Court Eastern District of Louisiana 2012). Attorneys and law firms took advantage of the confusion generated by the changes to argue to residents and business owners that they would be unable to navigate the complex processes without legal assistance. Through 2013, billboards advertising legal assistance dotted the coastal landscape, internet websites advertised legal services, and residents reported receiving notices and phone calls encouraging them to hire attorneys and file claims. Residents and business owners were even urged to seek assistance after deadlines had passed (Figure 3.8).



Figure 3.8. Online advertisement for legal services for filing claims.
Source: BPClaims.org n.d.

A significant source of local-level conflict about the claims process resulted from perceptions that undeserving individuals were receiving compensation (Marks 2014). Throughout the study period, BP continued to claim high levels of fraud and argued it would aggressively pursue fraudulent claims (BP 2015). Publicly available data repackaged by BP on its Fraud Tally website tracked the reported instances of fraud in the claims filed against the BP Claims Program, the GCCF, and the CSSP. These numbers only included the cases that led to criminal charges and convictions. As of June 24, 2015, there were 264 reported cases of fraud leading to criminal charges, and 187 fraud cases leading to criminal convictions. These cases resulted in \$26,859,283 worth of fraudulent claims (BP 2015).

The US Department of Justice also pursued individuals accused of fraudulent activity related to the oil spill. For example, on October 29, 2015, the DOJ unsealed an indictment against seven individuals who submitted false claims worth more than \$2 million on behalf of 40,000 individuals in Mississippi, Alabama, Louisiana, and other Gulf states without their consent. The individuals were also charged with stealing victims' identities and using their names, addresses, Social Security numbers and other personal information to create phony legal clients to use in spill-related litigation against BP (CBS/AP 2015).

3.3.1 Claims Process in East Biloxi

By September 2014, 2,192 Harrison County businesses and individuals had filed economic loss claims with CSSP. Claims for this second round started on June 4, 2012, were briefly put on hold during BP's Fifth Circuit appeal, and then resumed. In 2014, of the 2,192 Harrison County claims, 284 claimants had received \$83,000,000, or an average claim value of \$292,000. From those 2,192 claims, an additional \$640,000,000 was expected to be received by 2016 (Deepwater Horizon Claims Administration n.d., Young 2014). Businesses located in Zone A (coastal Alabama, Louisiana and Mississippi) automatically qualified for presumed economic damage or "causation." Any dip in revenue would automatically qualify individuals to file a claim (Pawlak 2013). The entirety of East Biloxi is located in Zone A.

The standard format and fairly straightforward one-size-fits-all paperwork of the GCCF in the first few months following the spill was replaced with a more complicated framework to navigate within the CSSP administration. In both iterations of the claims administration, disadvantaged populations, such as the homeless and low-income minorities, were ignored because they did not have the proper channels and social networks, let alone the required documentation, to access the claims platform (JL006 2015; JL008 2015; JL010 2015; JL016 2015; JL024 2015; JL026 2015).

The many changes that occurred in the administration of the claims process from 2012 to 2015 further complicated an already confusing process. People's ability to claim damages from the spill varied widely in the days and months after the event. The director of a local non-profit focusing on families and women described the chaos of navigating the ever-changing claims process in its early days:

Everyone was settling makeshift offices to get money, it was a mess. Some people were making false declarations, some people didn't have lawyers. There were no proper channels, just individual lawyers setting shop. Nobody was sure of anything. You'd go back a month later, and the office: gone, the people: gone, so that was a mess. It's very discouraging for people to put their faith in the system, in the local government, and people on the ground are not who they say they are. So you have to keep going back and forth to figure out if it's the right paperwork (JL006 2015).

Within the East Biloxi community, news of the \$43 billion settlement was not met with a lot of interest, perhaps in response to the distrust initiated by the early confusions of the claims process. A new website that was difficult to navigate and the constant news of the legal back-and-forth may have played a role in people's waning interest in the outcome of the settlement. "I don't think it's really on their radar," explained a social activist, "it doesn't help them economically. What we hear from the community is that it's no big deal" (JL010 2015). A retired fisherman qualified the news of the settlement as a 'joke,' not because he thought the money was insufficient, but because he did not trust the authorities to dispense it correctly (JL023 2015). A local pastor explained the lack of interest further:

JL: How about the BP settlement that was just announced, are people talking about it?

JL016: No, because they are not going to get any of it. At first, it was real free, real opened, free flowing, then it tightened up. So big gobs of money went to larger businesses who could pressure them. Some people got really good settlements deals, some really nice boats. But some people who deserved it got overlooked.

JL: Does that create a resentment?

JL016: People are resigned to it. Inequality is a way of life. Nobody cares, 'nobody represents me or my voice.' I think that's been owners of processing plants and owners of boats. The haves and the have-nots. There is a constant division (JL016 2015).

In an informal conversation, a lawyer still working on processing claimants' paperwork in the summer of 2015 commented that the clients he was working with were hopeful, but many others had to be turned down because the likelihood of getting paid five years after the disaster began was minimal:

People who used to make a \$1000 a month went to the pier and were handed \$20,000. Imagine that happening to you. That would change your life. People got indoctrinated by BP that if you show up, you'll get money. So some people think it can still happen (JL035 2015).

A social activist with close ties to the homeless community in East Biloxi recalled going to meetings in the first year after the spill where lawyers were distributing as many forms as possible and asking everyone to fill out any paperwork that they could. He commented that those lawyers were hoping a small percentage of those claims would qualify and result in a payout. He condemned those practices as unethical. The goal of those lawyers, he said, was not to pay people for what they had lost, but to get BP money in any way possible, regardless of deservedness (JL037 2015). During the study period, several individuals argued that lawyers and individuals who used BP as their "personal ATM machine" were opportunistic and contributed to the economic inequalities exacerbated by the disaster (JL037 2015).

After the initial cash flow of the year following the oil spill, many interviewed in East Biloxi expressed skepticism that late claims would ever be resolved. Those who settled early were able to put the disaster behind them (JL018 2015). Those who were unable to get their claims through, those who were still waiting to hear back from BP, or those whose appeals were rejected reported being unable to move away from the claims process and the money they believed was still owed to them (Luchetta Fieldnotes July 30, 2015).

In addition, by 2015, the public presence of BP's claims infrastructure that emerged after the oil spill had all but disappeared in Eastern Biloxi. Both attorneys' and claims offices had closed there and very few commercials or billboards advertising legal claims services remained. As an example of this shift, several residents mentioned a local TV show produced by the offices of attorneys Reeves and Mestayer. In the first years after the spill, most of each weekly show had been dedicated to questions about how to file BP claims. By 2015, callers rarely raised questions about settlement issues. The show had returned to its pre-*Deepwater Horizon* subjects.

In July 2015, the city of Biloxi accepted a \$4.9 million settlement from BP, part of a \$2.2 billion dollar payout to the State of Mississippi for the settlement of the civil charges against the company. Mayor Andrew Gilich stated that although his government believed that "Biloxi's total damages from lost taxes [were] greater than the amount of the settlement," an extended legal battle would not guarantee a better payment. In an effort to avoid several more years of litigation, the city accepted what it was offered (Associated Press 2015).

3.3.2 Differential Experience of the Claims Process

As the June 2015 filing deadline for the Economic and Property Damages Agreement approached and then passed, the claims process was the source of much discussion. For many in Biloxi, as elsewhere along the Gulf Coast, by that point the claims process represented a closed chapter in the region's history. As many study participants noted, if claimants had not received compensation in the months immediately following the spill, they were unlikely to file a successful claim four or five years later. Some residents laid the responsibility for unsuccessful claims squarely on the claimants' shoulders and extended little sympathy to people whose claims had not been settled by the summer of 2015. Some confided that they believed that claimants who had not received compensation were most likely grasping at straws if they still were waiting to hear back from BP. One head of an NGO, who like many others shared his opinion that the claims process was fair, commented:

I'll tell you this, the people who protest about the claims process didn't have valid claims to begin with, I guarantee you that. It was hard work, you had to file a lot of things, go online, but they wanted to expedite the process. If you could show in any way that your income was higher before the storm [sic],¹ than after, you would get paid, that is it. We had a lot of people coming into the newspaper and the Red Cross now, asking for help because BP didn't honor their claim, but really they didn't have one to begin with. They also received a lot of bad advice. [...] Some lawyers are still trying to get money by advertising that they'll get your claims processed, but really, if you haven't gotten your claim yet, you probably never will (JL013 2015).

Some people, who were only marginally affected by the spill and had moved on, were quick to dismiss the long-term impact of the oil. As one successful business owner explained: "After 60 days, once we didn't see oil-covered pelicans, we figured real fast how to move on. ... There were no losers in the process. A few people here and there and some small businesses might be complaining but, overall, I think [BP] did us good" (JL007 2015).

Because of suspicion of fraud, the second round of claims applications underwent greater scrutiny. A hospitality business owner on Highway I-90 in Biloxi explained:

When BP finally heard that there were false small claims being reported, they really tightened up the criteria. And small claims became harder to get. People were worn out, which was unfortunate. Big people could hire lawyers and were able to wait it out, but small people, they couldn't afford to wait. It took three years for me to get my money. And there are people who are still waiting for their claims in the mail (JL015 2015).

To prove loss of income, fishermen were asked to produce two years' worth of monthly breakdowns of income, which proved difficult in a cyclical, informal cash economy like the one in which many coastal residents still participated at the time the BP disaster began. The lack of a paper trail as well as an uneven ability to access attorney services meant that low-income claimants and non-English speakers were more likely to be left out. Language barriers and confusion over the initial filings continued to be a disadvantage, especially within the fishing community (VP585 2015; JL008 2015; JL010 2015; JL028 2015; JL032 2015; JL036 2015). A lawyer working to help settle claims, primarily for fishermen still in the process of filing, admitted that a big part of his job was to help clients who read at a fourth grade level navigate the paperwork (JL035 2015). Though efforts had been made in the years immediately following the spill to assist people in Mississippi and Alabama with filing and translation services (Phaneuf and Prakash 2014), these efforts did not reach everyone. A community organizer summed up obstacles faced by Vietnamese American fisherpersons in the claims process:

There were concerns about how the BP money was dispensed, industry restoration money, about the paperwork, it was Byzantine. Especially for a community like the Vietnamese or Lao, there was no access in their own language (VP585 2015).

Some family-owned small businesses, perhaps the most affected by the economic downturn, were not touched directly by the oil spill but were overlooked in the calculations of economic loss in the claims process. Introducing the concept of deserving and underserving economic sectors, many residents, whether or not they had filed claims, scoffed at the stories of certain businesses who had received compensation. Businesses that did not derive their income directly from the water were frequently denigrated as opportunistic and undeserving. Almost reaching the status of urban legend, the story of a liquor shop in Ocean Springs receiving \$100,000 of BP money was often related as yet another example

¹ It was not uncommon for people to conflate spill and storm when talking about effects.

of fraud (JL005 2015; JL028 2015). Similar stories were told elsewhere along the Mississippi coast, with bars often the highlighted recipients of the ill-deserved gains.

In many narratives, people were seen as fitting into one of three categories: those who deserved money and received it, those who did not deserve money but scammed the system in their favor, and those who were still waiting to receive a settlement and who would never get anything from BP, regardless of whether they deserved the money or not. A barbershop owner, who in 2010 had just recently been able to rebuild his shop that had been flooded by Katrina, explained the wide economic implications of the spill:

JL038: I wonder sometimes if it will ever be the same. It impacts some directly, others indirectly. It would be nice if we could get help in the area, get money to where we were before the spill. The first things to be affected in these moments, it's the services. When people aren't working, we're not working either.

JL: What kind of differences have you seen in your customers?

JL038: We didn't lose customers, but could see that they didn't come as often. [...] We had just recovered from [Katrina], and then BP occurred. With tourism, people were laid off, fishing is out. It is what it is, but it's too bad small businesses suffer the most (JL038 2015).

As elsewhere along the Gulf coast, these differential experiences with the claims process were layered upon the differential effects of the disaster. Not surprisingly, the individuals and businesses with the most resources – whether money to pay lawyers or social and political ties to people who could help – were better able to navigate the process (see also “A Comparative Look at Political Stability and its Effects on Response” in Section 2.3 of this report).

A comparative look at experience with the claims process

In areas with high levels of participation in the commercial fishing industry and engagement across sectors, such as Bayou La Batre and Plaquemines Parish, some residents were able to navigate the claims process strategically, somewhat mitigating the uncertainty. Many seafood businesses have a complex ownership structure, and many owners are involved in more than one business. McGuire (2006) explains the mechanics of this in detail for the Louisiana oyster industry: family members are employed by, and own, linked businesses that are vertically integrated from harvest, to processing, to the sale of the product. For example, multiple family members would own shares in one boat. Some of those family members would also own leases or the family seafood processing business, or be employed by the processing business of a third party, or varying combinations of all the above. In these cases, individual family members would have multiple claims for economic loss: one for each business in which they were involved. For these individuals, the claims process involved a level of administrative complexity higher than that experienced by those with less complicated economic activities. Though on the one hand this was cause for frustration at delays and inconsistencies, it also presented certain opportunities. For example, one man with multiple claims noted that he accepted one claim because “my vessels were treated fairly. I needed the money. ... But processing, I'll fight tooth and nail” because the offer was “terribly unfair” (VP529 2013). Here, as with others in similar situations, individuals had more leeway to strategize about which claims they would settle at what time in order to meet their current needs while not accepting payments that were perceived to be far too low.

3.4 Different Perceptions

The social impacts of the 2010 BP oil spill on onshore communities in the Gulf of Mexico continued to evolve throughout the study period and, as a result, proved difficult to parse out. Interviews with community members yielded a wide range of perceptions on the post-spill recovery process. The analysis

of these parallel narratives of recovery that existed in the Biloxi area five years after the *Deepwater Horizon* disaster began offers a glimpse of the range of experiences within the broader coastal community. Individuals from different backgrounds (economic sector, class, ethnicity) perceived the economic and cultural aftermath of the spill differently. The growth of the towns along the coast had been driven by the seafood, offshore drilling, and tourism. In the aftermath of the BP disaster, people disagreed on the state of these industries as well as the extent of the effects of the oil spill on their lives and communities.

Having endured many hurricanes and storms and adapted to the cyclical nature of the fishing and oil and gas economies, many Biloxi locals acknowledged their experience with living under conditions of uncertainty. At the same time, a wide range of residents maintained a strong attachment to the Gulf and expressed loyalty to coastal Mississippian culture, despite the harsh reality of the land and water that shaped it and the devastating consequences of storms like Katrina which, literally, had flattened much of the city. A city council member explained his commitment to the area:

The great thing about our community is our resilience. One of the things the former mayor Gerald would always say is that ‘Resilience and recovery is in our DNA.’ The way that I find the will to continue is by thinking about my parents and my grandparents. My parents, they weathered so much, and my grandparents, the same before them, so I owe it to my children to survive and continue. Our ancestors made it so we can as well (JL012a 2015).

In contrast to coastal residents’ adaptation to the unpredictability of storms and fishing, the *Deepwater Horizon* disaster profoundly disrupted their understanding of their future ability to move forward. One resident summed it up:

In 2005, people survived the worst disaster of their lives. And then 2008, people survived the worst recession of their lives. And then in 2010, the oil is a big W.T.F. It’s a big uncertainty. We just didn’t know how to respond to that. We knew what to do after the storm. We didn’t know about BP if we would find pelicans covered from head to toe in oil. We just didn’t know if people would come back, how long they’d be affected. With Katrina, your shit was destroyed, but we have a game plan, we knew what was ahead of us. 2010 was a big question mark for us (JL007 2015).

While, by 2015, this resident considered the uncertainty to have been resolved, others continued to express doubts, especially with regard to the oil and dispersants—thought to be lurking—in the Gulf of Mexico and their potential effects. Specific events reinforced these concerns. The opening of the shrimp season, for example, is dependent on the shrimp having reached a sufficient size. The May 2015 opening had been delayed indefinitely due to the late start in the shrimp breeding cycle. According to an individual working for a local non-profit organization, “With the oil spill, the damage on the water can’t be quantified, we can’t assess the impact, there is an uncertainty of the future” (JL010 2015). Some members of the shrimping community worried that the unusual cycles and delayed growth of the shrimp ushered the beginning of a widespread decline in sea life, which many attributed to the oil spill.

I hope the water will get better, I hope species will be able to repopulate soon. We have community meetings where we ask the people ‘What if it continues to go down? What if the water doesn’t come back?’ Dead air, it’s complete silence. Those are people who do not have transferable skills. There is a desperation in people’s tone of voice, because they don’t know and can’t imagine anything else, they don’t want to entertain the idea. They don’t know what they are going to do if it continues in a downward spiral (JL010 2015).

This resident described a fear of delayed and unpredictable impacts that had been brewing since the oil spill and that many others shared with him. Though the community’s response to Katrina felt familiar,

reminiscent of the days when residents prepared and weathered hurricanes such as Camille in 1969 and Audrey in 1957, the *Deepwater Horizon* disaster was without precedent and left many stunned and unclear how to respond to yet another large scale environmental disaster. Some residents, seeing no tangible impacts on their lives, moved on, while others reported that they expected that consequences of the spill were yet to be revealed. The non-profit representative summed it up: “The oil spill is long term; it’s unknown how long it’s going to last and the effects are uncertain. We don’t know what things will be like in 5, 10, 20 years” (JL010 2015).

An activist in the Vietnamese community emphasized that this uncertainty, which distinguished the spill from natural disasters like Katrina, affected people, and therefore their ability to recover, very differently:

BP disproportionately impacted fishermen. Katrina, everyone was impacted by Katrina at some level. Some more. East Biloxi was lower income, not politically engaged, they bear the brunt. It was not an equitable recovery. [After the spill], fishing, the older fishermen tried their best to keep fishing, it’s all they know (VP586 2015).

Time and time again, residents interviewed compared their experience of Katrina with that of the *Deepwater Horizon* disaster. The majority of Katrina’s damage was felt upon touchdown, while the oil spill impacts remain nebulous and its scope greatly debated. As the disaster continued, those whose livelihoods were directly tied to the Gulf were the ones most affected by the difficulty in navigating the claims process (JL002 2015). A public affairs official placed the effects in context:

How much your personal livelihood was affected depends on what industry you were in. Some people were really affected, other profited. ... You’ll hear stories of people who gamed the system, and got paid, or pretended to be from here when they weren’t. You can find so many people to talk to about these things. I think people need to talk, for therapeutic reasons (JL017 2015).

The differential effects were experienced at the community level as well as the BP settlement concluded and the winners and losers were announced. In the days immediately following the news of the settlement, researchers discovered that many residents of East Biloxi had not heard of the \$18.7 billion future payment. When asked about their opinions on the announcement, many expressed their doubt that the settlement would affect them. One local small business owner said that media only talked to big businesses and never bothered to talk to ‘small people.’ He and others in the community did not feel that anything would change, and believed that they and their community would be ignored (Luchetta Fieldnotes July 2, 2015).

As the news spread that \$15 million of the BP settlement monies would be used to build the 6,000-seat baseball stadium had become a point of contention for many residents who questioned spending the funds on city projects rather than addressing the issues faced by the locals most directly affected by the spill (JL023 2015; JL024 2015; JL028 2015, New York Times Editorial Board 2015). A defeatist attitude and distrust in the authorities’ ability to distribute the settlement fairly seemed to be the only points of consensus among members of the East Biloxi community after hearing the news of the governmental settlement. “Mississippi is just going to piss it away,” one non-profit employee commented. “25% is going to lawyers, and what we do see will probably be spent in projects away from the coast, on stadiums, instead of services for low-income populations that suffer the most” (JL008 2015). Many others reiterated this sentiment, including this advocate for the Vietnamese fishing community who highlighted the vulnerability of the group isolated by their language:

Since BP there has been no effort to help the fishing community. They’re trying to [divert] the money to projects that are not on fishing. To promote tourism or projects that didn’t exist when BP happened. It’s terrible. The stadium is for a team called the Biloxi Shuckers – that means

people who work in an oyster processing plant. Here the oyster industry helped contribute to the economy, Cambodians, and Vietnamese. [Now they build] a stadium with the money from the BP disaster (VP586 2015).

Trading stories on neighbors' settlement payments and passing judgment on the perceived fairness of settlement claims reached, pending, or dismissed exacerbated social divisions and further highlighted the isolation of economically vulnerable communities. Five years after the spill, many residents and business owners had settled their claims with BP, but others had either been denied a settlement or were still waiting to hear about their applications. Economically advantaged residents were more likely to describe having moved on, while those facing financial insecurity, or who worked directly with people who were, perceived higher levels of economic precariousness and uncertainty.

The uncertainty following the spill and unequal settlement of claims further exacerbated social divides that had been widened by the upheaval following Hurricane Katrina. In addition, the legacy of the spill and the perception of its impact varied greatly within the community, with residents reporting divergent understandings of how and why some individuals have been able to move on, while others report still struggling from the cumulative effects of the past decade of hardship.

3.5 Summary

When the *Deepwater Horizon* disaster began in 2010, the Mississippi coast was struggling to regain its pre-Katrina economic status. Occurring after a particularly rough period of economic uncertainty following the devastation following Hurricane Katrina, the oil spill and its effects on the local economy and environment were still discussed in the community between 2012 and 2015. While some residents of Biloxi had moved on from the initial uncertainty of what the socioeconomic impacts of the spill might be and declared the impacts on their lives over, many others did not consider themselves recovered and still feared delayed and unforeseen impacts.

The claims process left some people with a sense of closure, while others reported increased feelings of discrimination and injustice. Residents who reported that the spill's impacts had ended tended to report that BP had fulfilled its responsibilities toward claimants. In contrast, many of those who reported in 2012 that they were waiting for pending claims remained in that state three years later. They reported an additional sense of stagnation and frustration.

In contrast with the rest of Biloxi, at the time of the study, East Biloxi remained economically stagnant with very few employment opportunities and virtually no housing development. Still, many residents cited their attachment to the community and its coastal life as a reason to stay in the otherwise depressed area. Though the BP oil disaster did not disrupt the local economy to the extent Hurricane Katrina did, it reinforced pre-existing social and economic divisions within the community.

4. Pointe-a-la- Hache, Empire, Port Sulphur, and Plaquemines Parish, Louisiana

4.1 Introduction

Plaquemines Parish is located at the extreme southeastern corner of Louisiana. Bisected by the Mississippi River, which creates the distinctive East and West banks, it is nearly surrounded by the Gulf of Mexico (Figure 4.1). The parish is predominantly rural with no incorporated communities. Residents include the descendants of French and Spanish colonists, Croatians, African Americans, Creoles of Color, Native Americans, Anglo-Americans, Italians, Hispanics, and Southeast Asians (Evans 1963, Ware 2014). While population centers were previously spread through the central and southern areas in the parish, increasing numbers of residents have moved north to Belle Chasse. This chapter focuses on Pointe-a-la-Hache and surrounding communities on the East Bank and Empire, Port Sulphur, and surrounding communities on the West Bank. In the decade between 2005 and 2015, both areas experienced significant population, infrastructure, and business loss due to hurricanes and economic changes (Ware 2014). Many locals live, work, or are in social networks across Plaquemines and St. Bernard parishes, so this chapter draws on ethnographic data from these and surrounding parishes as relevant to describe the mid-range impacts of the BP oil spill on these communities.

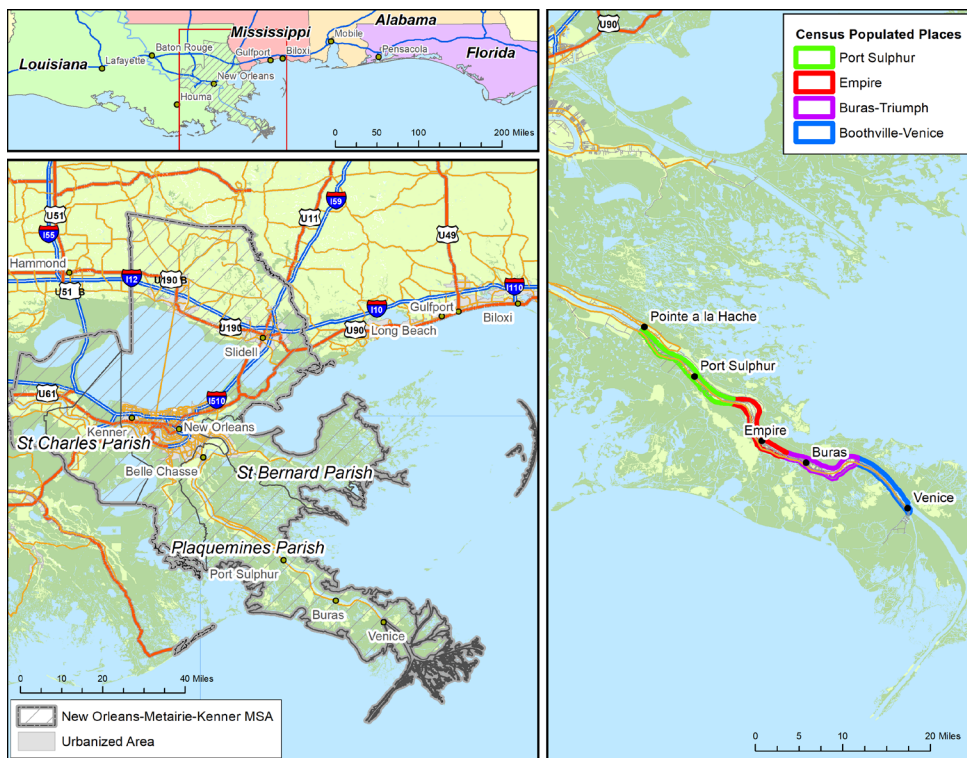


Figure 4.1. Map showing Plaquemines Parish and study communities

Source: Ben McMahan.

Economically, Plaquemines Parish depends on a mix of agriculture, commercial fishing, oil and gas, tourism, and Mississippi River transportation. Though perhaps best known for its citrus, as home of the self-proclaimed “Best Citrus in the Country,” the parish is financially dependent on the oil and gas industry. Culturally, especially for the African American fishing communities on the East Bank of the parish and the Croatian-American community, commercial and subsistence fishing is also central to local

identities and social networks. The oyster industry is especially prominent in the Plaquemines study area and is composed of a range of actors at different scales. This includes large producers with extensive leases spread across multiple areas, small producers with limited leases in one area who may also oyster the state grounds, boat owners and deckhands who oyster on state grounds and work as sharecroppers on others' leases, docks, processing houses, wholesalers, truckers, and buyers (Ware 2014; McGuire 2006). By the early 2000s, the largest Louisiana state oyster grounds were located in Breton Sound, just east of the parish. Though the Louisiana Department of Natural Resources limited harvests from the Sound, oysters could be harvested for sale by smaller operators without leases or as seed oysters to be planted on private leases and grown before sale (McGuire 2006, VP496c 2013).

Plaquemines Parish was in the path of four hurricanes between 2005 and 2012; Hurricane Katrina in 2005, Hurricanes Gustav and Ike in 2008, and Hurricane Isaac in 2012. Hurricane Katrina had devastating effects on sections of the parish, while leaving other areas virtually untouched. Belle Chasse, located further north, was spared significant flooding, while some of the smaller communities within the study area suffered considerable losses. With each hurricane, residents in the impacted areas reported seeing more of their neighbors leave; they either relocated to the northwest side of the parish or outside the parish entirely. Housing availability, particularly of long-term rentals, was diminished by storms and rebuilding assistance focused on owner-occupied housing (VP543 2013; VP608a and VP608b 2015; Ware 2014). Not all the pre-Katrina housing stock was rebuilt after that storm, and some was replaced with fishing camps or mobile homes, some intended as vacation rentals. Popular across southern Louisiana, camps vary widely in size and levels of comfort, from small, simple structures of one or two rooms to large, elevated, multi-room structures that are expensive to build and maintain. Residents' decisions about migration and reinvestment involved many factors, including hurricane protection, because significant portions of the parish are unprotected by levees, floodgates, and related infrastructure. Other infrastructure, such as the Port Sulphur Medical Center, was also damaged by Katrina; without medical facilities in the study area, residents had to find their way to Belle Chasse or Jefferson Parish for care (Ware 2014).

Hurricane Katrina posed significant challenges for the oyster industry. Houses, docks, boats, and processing houses were destroyed, and some reefs were damaged or silted over. The destruction of the local processing houses during Katrina led to a dearth of oyster shells. However, the destruction and subsequent reconstruction, provided a readily available source of cement that could be crushed and used as cultch, material upon which oyster larvae could adhere, (VP574 2013). After Katrina, state grants helped leaseholders to clean and cultch their lease areas thus providing an opportunity to increase the productivity of the reefs (LP493 2013; McGuire 2006; VP574 2015). As one oyster harvester reflected: "We went from fighting [to build the industry] to survival mode after Katrina. We never got out of that" (JS001 2015).

While the parish was still rebuilding from Katrina, the *Deepwater Horizon* oil spill disaster began in 2010. As the closest landmass to the Macondo well, Plaquemines marshes were the first to receive oil. Residents reported widespread concerns over the health of locals and commercial fishermen, concerns compounded by the lack of medical infrastructure in the parish (Ware 2014). Post-BP, some funds and services were brought into the area. A mobile crisis response unit offering services to children and families was dispatched to four locations in Plaquemines Parish in October 2010 (New Wave Staff 2010). Also, part of the \$6.7 million grant BP allocated to the State of Louisiana for mental health services made its way to Plaquemines Parish by way of Catholic Charities and local NGOs (Nolan 2010; Rogers and Austin 2014).

In the wake of the spill, Plaquemines Parish was one of the first areas to see an influx of outsiders, including responders, media, and activists. The media followed the parish president, a polarizing figure they dubbed the oil spill's "Face of Anger," who maintained a steady insistence that the government and

BP were covering up harms or failing to provide an appropriate response and continually called for additional services (Robertson 2010). Environmental activists and organizations made the parish their platform for calls for: increased attention to environmental health, data collection and reporting, and reduced offshore oil and gas exploitation, among other topics. Though this influx of people and media attention brought some initial financial benefits with sales of food, supplies, and housing, these were seen mostly on the western side of the parish, where most tourist services and response efforts were located, and were limited to the period during and immediately following the spill (Ware 2014). The rates BP and other responders paid for the limited rental housing that existed following the spill were far higher than many locals could afford, driving up rents and forcing some lower income people out of the area (VP608a 2015; Ware 2014).

Local industries faced various impacts resulting from the spill. The moratorium and suspension of offshore drilling negatively affected the offshore oil and gas industry based out of Boothville-Venice, causing slowdowns and layoffs. The tourist industry, including sport fishing, faced fishing closures and client cancellations. Tourism remained sparse in the months following the end of the spill, but was increasing by the end of 2010. Commercial fishing for oysters, shrimp, crab, and finfish declined. For commercial fishermen, prices spiked in the early days of the spill as customers sought to buy the last of the pre-oiled seafood stock. Soon, prices dropped as the oil spread, causing fishing closures and consumer fears of contamination. When areas reopened, prices remained very low because of continued fears of contamination (Ware 2014). The Vessels of Opportunity (VOO) program, where some out-of-work fishermen found employment to help clean oil or provided services for the response effort, helped mitigate losses. However, as elsewhere, these opportunities were not equally available. During fieldwork, residents reported that people with ties to the parish administration, including some from outside the parish, were employed by VOO at higher rates than African American or Asian American fishermen, small operators, and other locals without ties to the parish administration. The negative impacts of the spill were especially pronounced among African American oyster harvesters on the East Bank, including Pointe a la Hache, who reported being excluded from significant VOO participation and suffered a release of freshwater from the Caernarvon River Diversion; intended to push out oil, it also killed the oysters in that area. Across the parish, oyster harvesting was delayed a year; by the end of 2012 oyster harvests were recovering, but only in some areas on the West Bank. Local businesses that served those sectors also suffered as their clients lost income (Ware 2014).

Local residents and elected officials anticipated that fine and settlement money from the BP disaster would be used to implement Louisiana's Master Plan for Coastal Restoration (Master Plan), the document that guides Louisiana's work on coastal restoration (Ware 2014). Coastal restoration is addressed at greater length below. The current plan was released in 2012 (CPRA 2012). In the Plaquemines study area, this included ridge restoration, barrier island restoration, marsh creation, and sediment diversions that, in 2012, were planned, under construction, or completed (CPRA 2012; Plaquemines Parish 2013). The most controversial part of the plan was the six diversions that would affect Plaquemines and St. Bernard parishes (see Section 4.4). These diversions are intended to mimic the seasonal river floods that built land over time by depositing Mississippi River sediment in the marshes before those floods were controlled by levees. A concern among some locals, however, was that the diversions would wash away marsh instead of building it, as discussed below.

4.2 Update Since 2012

In 2010, Plaquemines Parish was home to 23,042 residents, with 12,679 living in the Belle Chasse CDP, 993 in Empire, 187 in Pointe a la Hache, and 1,760 in Port Sulphur (US Census 2010). Table 4.1 shows key demographic data for Empire, Pointe a la Hache, and Port Sulphur.

Table 4.1. Overall population and racial and ethnic composition in Plaquemines Parish study areas, 2010

Demographic Characteristics	Empire	Point a la Hache	Port Sulphur
Total Population	993	187	1,760
White alone	661 (66.6%)	16 (8.6%)	441 (25.1%)
Black or African American alone	212 (21.3%)	170 (90.9%)	1,136 (64.5%)
Asian alone	75 (7.6%)	n/a	n/a
American Indian and Alaska Native alone	n/a	1 (0.5%)	97 (5.5%)
Native Hawaiian and Other Pacific Islander alone	n/a	n/a	n/a
Some Other Race	24 (2.4%)	n/a	31 (1.8%)
Two or More Races	13 (1.3%)	n/a	29 (1.6%)
Hispanic or Latino (of any race)	25 (2.5%)	n/a	36 (2.0%)

Source: US Census Bureau 2010: Profile of General Population and Housing Characteristics.

Areas of Plaquemines Parish's long coast were heavily oiled following the 2010 blowout of the Macondo well about 41 miles offshore (Michel et al. 2013). While Mississippi, Alabama, and Florida halted official cleanup in 2013 (Hartogs 2013), parts of Plaquemines marshes were still oiled and cleanup was still ongoing five years later (Bayou Buzz 2015). By late 2015, some areas, such as Bay Jimmy, which prior to the spill had been recognized as a place where shrimp were abundant (PR506 2013), were reported to have no shrimp and be a place where Macondo well oil was still visible in the marshes (Schleifstein 2015). This visible reminder of the disaster contributed to the response of local residents. During the study period, residents, particularly in the study area, expressed concern with the impacts of this oil on the health of locals and of the commercial fishing industry. Both of these issues will be discussed below in more detail.

Given the amount of oil that washed into the area, the wellbeing of the ecosystem, especially the estuaries, was of general concern to most people. While some residents reported that areas where oil was no longer visible had returned to normal citing the natural occurrence of oil in the system and its ability to take care of it, others remained anxious about the presence of dispersants or sunken oil and what they might do to the health of the seafood and other wildlife. (See also Section 4.3). Some species appeared to be within the normal range of variation in population numbers, but the populations of other species were still low. For example, in 2010 local commercial fishermen believed that oyster populations in areas without oil would recover within three years of the blowout. However, by fall 2015, many areas close to the Gulf had either not seen a normally productive reproduction cycle or were reporting their first normal cycle (VP648 2015). Reasons for the delayed recovery were unclear, and commercial fishermen speculated that it was tied to oil, dispersants, fresh water, lack of wild oyster spat, or some combination of all of the above. The majority of the most heavily impacted areas were on the East Bank, which was home primarily to African American fishermen who relied on public grounds and generally had small leases. This is in contrast to the West Bank, which is home to fishermen with much more extensive leases (Ware 2014).

Like coastal restoration, hurricane protection remained a source of contention in Plaquemines Parish throughout the study period. Projects were in process to raise or extend levees, but as sections were completed, they left surrounding areas at greater risk because floodwaters would be diverted into adjacent areas, causing tensions and community divisions by creating winners and losers in future flood events (see also "A Comparative Look at Coastal Protection" in Section 5.2 of this report). Additionally, while

two floodwalls used for the first time during Hurricane Isaac in 2012 served to protect the communities above them, they did so by pushing storm surges back on the areas below them. In 2013, residents of Braithwaite, in the northeast of the parish, contended that their homes only flooded during Hurricane Isaac in 2012 because of the recently completed flood wall in St. Bernard Parish, just north of their community (VP408 2013; VP454 2013; VP555a and VP555b 2013; see Figure 4.2). Community leaders in that area fought to raise their levees, but suffered numerous setbacks, leading one local news outlet to label the project “cursed” (Perlstein 2014). Meanwhile, many of the residents displaced by Isaac were waiting to return until the levee situation was resolved, a process that, by summer 2015, some were expecting would take another three to four years (VP640a 2015). A second floodwall on the West Bank in the inhabited area between Belle Chasse and Jesuit Bend served to create friction and tension between residents with houses above and below the wall. One woman lived below the wall because “to live above it is very expensive. [... but,] a lot of people complain about the wall. It doesn’t benefit us in any way” (VP643 2015). Many residents right below the wall considered the placement of a seawall within a populated area to be both illogical and unfair.



Figure 4.2. Floodwall in Plaquemines Parish

Source: Victoria Phaneuf.

The claims process in Plaquemines Parish had been as contentious and uneven as elsewhere. The results were sufficiently variable that some locals called the process the “BP lottery” (JS001 2015). Residents and business owners evaluated BP’s response to range from generous to stingy. Some, already exhausted from fighting with insurance companies after Katrina, could not envision another protracted fight and settled early for less money than they believed they could and should have received. Others felt forced by their financial situation to settle for compensation that was far below their perceived loss. Some who could afford to wait handed everything to attorneys and tried to ignore the process as much as possible while others actively monitored the case and took pleasure in the idea that someday they would have their day in court against BP. Each approach had shortcomings. Between 2013 and 2015, individuals and business owners who had not received compensation considered themselves to be at a disadvantage against their competitors who already had their money and could invest in growing their businesses. Through 2015, parish residents relayed how the stress of the claims process continued to strain and break up marriages and relationships, lead to business failures, and create mental health challenges, as discussed below. Inequalities also stood out in the distribution of settlements to NGOs, churches, and other nonprofits: some were told that they were not eligible for claims, some were told they were eligible only for small amounts, some received significant payments, and others remained in litigation (VP429 2013; VP550 2013; VP618 2015; VP628 2015).

Of particular interest to fishing communities across the parish was the initial inability to submit claims for subsistence losses. This was seen as especially problematic for the East Bank, where subsistence fishing was more common than on the West Bank, and fishermen routinely gave away large portions of their catch through their social networks (Ware 2014). In 2012, a subsistence category was added to the claims options (see also Chapter 1). The application period closed during summer 2015 and, by the end of the year, no one interviewed for this study had heard back about their application.

In 2013 some elected officials expressed hope that the parish’s BP settlement would be concluded in “the next couple of months” (VP454 2013). However, the parish had not resolved its settlement by the end of 2015. BP made an offer in July of that year, but the parish government rejected it as “too small” in light of the damages and the money the parish had already spent on recovery (Schleifstein 2015). While the amount had not been released at the time of this study, parish officials reported it as less than the \$23 million the Orleans Parish School Board accepted as a settlement (Schleifstein 2015). Within the parish, the School Board accepted a \$10.5 million settlement and the Port of Plaquemines accepted a \$155,300 settlement (Myers 2015). Nearby, St. Bernard Parish accepted a \$9.3 million settlement and the town of Jean Lafitte, in Jefferson Parish, refused to settle (Myers 2015).

Plaquemines Parish experienced significant economic fluctuations between 2012 and 2015. Commercial fishing industry landings and value varied widely (see Table 4.2 and Figure 4.3). In 2014, 37.4% of parish revenue was expected to come directly from royalties on oil produced on parish land; local residents or businesses are involved with many aspects from exploration and exploitation to refining and transportation (Plaquemines Parish Government 2014). Starting in 2014, the falling price of oil led to significant budget shortfalls and the need to cut or raise rates on parish services. This, particularly, impacted those on fixed incomes and in areas of the parish that were already underserved including the study area. It also created additional delays and setbacks in construction of hurricane protection systems, as discussed above. Parish residents hoped that the final BP settlement might provide the ability to get the parish back on track.

Table 4.2. Total Commercial Fishery Landings and Value for Empire-Venice, LA

Year	Quantity (million pounds)	Value (million \$)
2015	379.2	379.2
2014	326.9	127.3
2013	421.9	82.5
2012	500.4	79.7
2011	531.5	99.2
2010	353.5	59.4
2009	411.8	67.1
2008	353.2	62.9
2007	323.1	73.5
2006	285.7	41.1
2005	170.8	39.4
2004	379	60.2

Source: NMFS n.d.

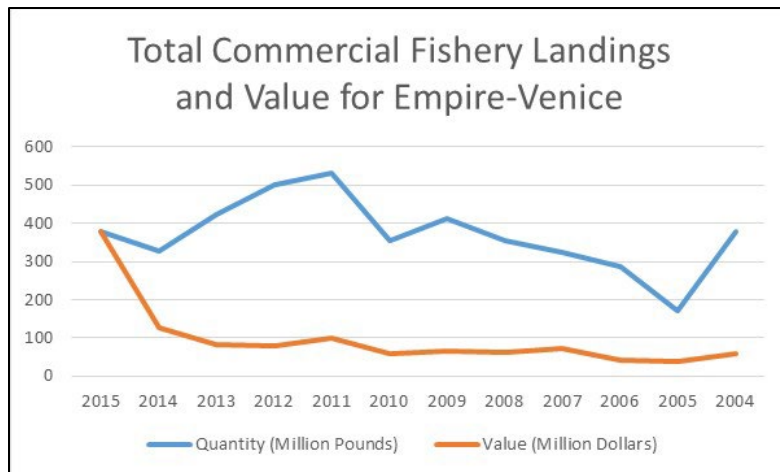


Figure 4.3. Total commercial fisher landings and value for Empire-Venice

Source: NMFS n.d.

Recovery and growth in Plaquemines Parish were complicated by the housing situation. Following the destruction caused by multiple hurricanes, most notably Katrina and Isaac, in some sections of the parish all or nearly all of the housing stock was destroyed. In Belle Chasse, which saw less destruction, housing prices rose as people tried to secure a place to live and settle in an area they considered safer from storms, or while they rebuilt elsewhere. Due to zoning in Belle Chasse that prioritized large lots and single family residences, and due to the significant local support for those ordinances, opportunities for the creation of affordable housing in the area were limited (VP633 2015). In addition to post-BP rent hikes, augmented building requirements, increased building and materials costs, and the rising cost of flood insurance, all contributed to a lack of affordable housing in the parish. One elected official noted his frustration with these changing regulations and federal bureaucracies, FEMA in particular, in trying to get his constituents help after Isaac. He reported that, in meetings with FEMA:

[W]e talk about levees and lack of temporary housing. Two days after they say, “ok, we’ll help”, then one week later, “no, you’re in a flood zone”. You knew we were in a flood zone before you came (VP454 2013)!

Many study participants cited housing as a reason that the parish had not attained its pre-Katrina population figures. Also, the southern part of the parish had begun experiencing a shift away from permanent housing to vacation camps for charter fishing clients, though this development was not as pronounced as in Terrebonne Parish (see Chapter 6). Between 2013 and 2015, infrastructure damaged by Hurricane Katrina was still being rebuilt. For example, Phoenix High School, which serves Head Start through twelfth grade, reopened in 2014 (Phoenix High School n.d., VP641a 2015). The Plaquemines Parish Detention Center was reopened in February 2015 (Galbraith 2015). Both of these institutions were expected to encourage local residents to return by offering jobs or services.

Another set of infrastructural changes was instigated when the Plaquemines Port, Harbor, and Terminal District was separated from the Parish government in 2013 to streamline port administration (VP630a and VP630b 2015). Between then and 2015, port officials pursued an aggressive agenda intended to ready the port to accommodate the anticipated increase in size and number of cargo ships that would accompany completion of the Panama Canal expansion in 2016. This included the acquisition of property and the development of plans to extend rail and improve road access to the area (Lipinsky 2013; VP630a and VP630b 2015; VP633 2015) and was part of a larger suite of infrastructure projects aimed at expanding land transportation to industry in the southern part of the parish, including a bypass road around Belle Chasse (Plaquemines Parish Gazette 2015; Shaw 2012). Additionally, the Louisiana International Deep

Water Gulf Transfer Terminal Authority announced in August 2015 plans to build a mega-port three miles off Plaquemines Parish that was expected to create 20,000 jobs, but raised fears from community leaders involved in economic development of increased competition amongst area ports (Mackel 2015; Thibodeaux 2015; WGNO 2015).

Residents of Plaquemines Parish expressed varying levels of interest in and support for industrial development. On the one hand, such development can create jobs and expand the tax base. In doing so, it raises the value of infrastructure and the likelihood that the area would be approved for additional federal funding for hurricane protection. On the other hand, development can bring health and environmental concerns. The need to balance these two points of view was expressed by one community leader in Braithwaite, during a public meeting over proposed industrial development:

We need industry on the East Bank because we need a reason to have government protect us with the levee. [...] Once the infrastructure exists, the corps has to maintain it. Not just any industry, but industry that will be safer. I have to go to sleep at night, [we] have to do something that will help your lifestyle (Phaneuf Fieldnotes February 5, 2013).

One highly contentious development was proposed near Myrtle Grove, a vacation and retirement community, and Irontown, an African American community, both in an area of the West Bank with hurricane protection. During 2013, RAM Terminals LLC applied for a permit to build a coal terminal. This development was stiffly opposed by local residents and environmentalists, who feared for their health, quality of life, and the local environment (Buchanan 2013, Hernandez 2014). One of the arguments against the terminal was its proposed location near a sediment diversion included in the state Master Plan intended to build marsh in Barataria Bay (Hernandez 2014). In 2014 a Louisiana district court overturned a key permit the terminal had received in 2013 on the grounds that the Louisiana Department of Natural Resources was in violation of the Louisiana State Constitution when it failed to consider other locations for the proposed project (Sanchez 2014). In 2015 RAM Terminals LLC reapplied for a permit, sparking a new wave of protests and public meetings (Shaw 2015; Wendland 2015).

Plaquemines Parish underwent a major leadership change following the November 2014 elections when Amos Cormier, Jr. replaced Billy Nungesser, who had been elected to the position in 2006 and reached his term limit in 2014 (Alford 2014). Eight of the nine parish council seats were up for election, none of which went to an incumbent candidate (WDSU 2014). The election was contentious. Locals cited fiscal irresponsibility on the part of the previous administration as contributing to the turnover (VP607a and 607b 2015; VP625 2015). Local residents and a news outlet also alleged that the oil and gas companies were “targeting the seats” of council members in retribution for lawsuits filed by the parish against the oil and gas industry (Alford 2014; VP631a 2015). In 2013, both Plaquemines and Jefferson parishes filed controversial lawsuits against dozens of oil, gas, and pipeline companies for damages to wetlands, including those caused by improperly disposed waste materials and dredging, demanding that the companies either repair the damages or pay the parishes to do so (Schleifstein 2013). Further complicating matters was the shortfall in the parish budget due to the fall in oil prices beginning in 2014.

4.3 Physical and Mental Health: Variation and Uncertainty

This study did not attempt to assess the impacts of the *Deepwater Horizon* disaster on the physical or mental health of people in the study areas. However, area residents and leaders frequently brought up these concerns. The National Institute for Environmental Health Sciences (NIEHS), with \$10 million in support from BP, conducted the Gulf Long Term Follow-Up (GuLF) study to investigate the health effects of the BP disaster on individuals who worked on, participated in training for, or signed up to work on the oil spill cleanup, but no results from that research were available during this study. According to the GuLF study website, “Between 2011 and 2013, about 33,000 participants joined the study by

completing a telephone interview, making it the largest study ever conducted on the health effects of an oil spill. Participants include adults ages 21 and over who helped with the oil spill cleanup, took training, signed up to work, or were sent to the Gulf to help in some way. More than 11,000 of the participants from the five Gulf coast states completed home examinations, which included additional questionnaires and collection of biological and environmental samples” (GuLF Study n.d). Two newsletters were available on the website, one issued in 2013 and one in 2015. In 2015, the section “Health During the Oil Spill” begins: “During the enrollment interview, we asked about symptoms you had around the time of the spill. These are common symptoms that people often experience, so it is too soon to say how much, if any, of this was directly linked to the oil spill” (GuLF Study 2015). Also, as noted in Chapter One, the Medical Claims Settlement was not approved by US District Court Eastern District of Louisiana until January 11, 2013, and its effective date was not until February 11, 2014, so BP did not start paying claims until after that date. The US District Court Eastern District of Louisiana (2012) directed the preparation of a 33-page notice intended to assist potential claimants. Health impacts are discussed here to illustrate how differential perceptions and experiences, as well as ongoing uncertainty, continued to result in social effects.

4.3.1 Facilities and Resources

The lack of adequate medical facilities was a key challenge facing residents, leaders, and outsiders trying to respond to the health effects associated with the disaster. While BP, Federal and State agencies, and nonprofits directed additional health resources to Plaquemines Parish in the immediate aftermath of the spill, by 2013 those resources had all but disappeared. The mobile unit was no longer servicing the parish (PS437 2013), other post-BP funds had been used up or were running out, and local service providers expressed concern about an overall lack of resources to treat health and mental health problems (LP484 2013; PS413 2013). One called this the “biggest effect” of the spill (LP484 2013). The challenges were compounded because Plaquemines Parish had no public transportation (outside river ferries), making it difficult for residents, particularly in the southern and eastern sections of the parish, to access care in surrounding parishes.

By the end of the study period in 2015, the situation had improved somewhat. In September 2014, the Plaquemines Parish Medical Center opened in Port Sulphur, the first medical center in the Parish since Hurricane Katrina (Farris 2014). At the state of the art facility, medical personnel could treat a wide variety of emergencies and illnesses or stabilize patients to be moved to larger facilities, and the medical center included space intended for specialists in numerous fields (Mattison 2014). The centralized location in the parish also facilitated patient travel. Funding for mental health, in contrast, decreased throughout the study period. As one provider noted, “the problem is the mental health money follows the basic needs money, so what we’ve seen in the last year and a half or so has been a lot of that funding has dried up and disappeared, but the problem is the level of need hasn’t shrunk” (BG003 2015). In 2014 and 2015, the decline in oil revenues meant less funding from the parish and state though demand for mental health services continued to increase through the summer of 2015 (BG003 2015). See Chapter 1 for a discussion of oil prices over the study period.

4.3.2 Physical Health

In 2013, residents in the southern part of the parish, fishermen, and VOO workers were most likely to express concern over health impacts. These individuals reported increased asthma, coughs, and other respiratory ailments as common complaints, attributing them to the air pollution associated with the BP disaster and, to a lesser extent, the aftermath of Hurricane Katrina. Parents and school officials in southern Plaquemines specifically noted a higher incidence of respiratory problems among children in 2013, along with an increase in rashes (PS413 2013; VP516a and VP516b 2013). Reflecting his perception of their continued frequency in the population in 2015, a resident living near Empire noted

that, unless he arrived at the drug store on the day of a delivery, medicines for respiratory ailments were sold out (VP631a 2015).

In both 2013 and 2015, residents also commonly cited increases in coronary diseases and cancers as recent developments, though less often than respiratory ailments. Participants attributed these health problems to different causes. For example, one man who worked VOO reported, with ire: “When they were burning oil after the spill I could smell it, feel it on my skin. Now I’m popping up with skin cancer. They say it’s the sun, yeah, and the contaminants I was exposed to” (VP559a 2013). Others were uncertain if these health problems resulted from BP, Katrina, or other causes (PS431a 2013; PS457 2013). Some singled out non-BP potential causes such as Post-Katrina stress (VP549 2013; VP629 2015), or noticed an increase in poor health in their social networks, but attributed that to normal aging patterns among their friends and family (VP650 2015).

Strikingly, of the study participants in Plaquemines Parish who discussed physical health impacts of the BP oil disaster, all asserted that there had been or could be physical health impacts. Though some noted that they had not seen changes in their own health or the health of the community over recent years, even they did not claim that there were no health impacts. For example, when asked if there had been any health changes in the area over the last decade this couple in Venice responded:

VP626b: Not with us. We hear people had health issues with BP. He worked cleanup, he had some impacts, hoarseness, rashes. He worked it, in the community we could smell the oil. Some people claim they are sick from it.

VP626a: We’re not saying they’re not, but we didn’t. We know that in Alaska people died. 5, 10 years....

VP626b: Long term, maybe.

VP626a: I’m not saying they’re not [sick] (2015).

Some residents specified that they had not personally known anyone who was sick because of the BP spill (PS420 2013; VP606b 2015). Some participants were uncertain if the illnesses they saw around them were the result of the disaster (PS439 2013; PS444 2013). Others qualified their statement even further, such as one participant from St. Bernard who said that while he did not know anyone with health impacts “that would be a subtle thing anyway,” thus implying that impacts, if they existed, would be easy to miss (PS432 2013). Many said it was too early to tell if there would be health impacts or stated simply that they did not know.

The noted reluctance of residents in this area to assert an absence of health impacts from the BP oil spill is emblematic of the disaster’s most pervasive impact: uncertainty. When asked about how the *Deepwater Horizon* spill influenced his community, a Venice resident first mentioned economic impacts, then continued:

It hasn’t adversely affected me that I know of—but you never know what respiratory things or what might show up down the road. But in the neighborhood—what’ll happen to the kids? We used to have green tree frogs by the thousands. Now we still don’t have them back. We had no mosquitoes for a year. Birds dying—a lot of other animals killed in the road, people said other animals wouldn’t eat them. It brings up questions about what happens to the skin and respiratory system and you see children—what will happen 20, 30 years from now? And we know there was stuff in the air. And they had trucks checking the air but we wouldn’t even know what [the results were or what they meant]. Nobody knows (PS450 2013).

In this comment, uncertainty is layered. The poorly understood fate of local fauna following the spill is used to legitimize worries about future health impacts on humans, particularly children. While response to the disaster included testing that could, theoretically, clarify the situation, the likelihood that this could bring answers was dismissed. This man's comment is representative of area concerns for the future. Respiratory illnesses, cancers, or other to-be-discovered problems were a common theme, both in anxieties about individuals' own health and that of the local children. Lack of results from the scientific testing was seen as compounding the uncertainty and surrounding these future unknown impacts. As another man from St. Bernard said: "Every question, like about seafood safety after the use of Corexit [dispersants], whether the oil in the wetlands is accelerating coastal erosion, has a lack of answers. And there are more questions that we're not even aware of yet" (LP483 2013). These unknowns did not allow for a definitive community narrative of the impact of the oil spill on locals' health. Additionally, many noted that these unknowns were more pernicious: they contributed to significant negative impacts on mental health.

4.3.3 Mental Health

The mental health of local residents following the oil spill was widely cited as a concern across the Plaquemines Parish area in 2013 and 2015. As one local noted succinctly: "We have mental scars" (LP480b 2013). Since 2012, mental health problems were reported to be on the increase. As a mental health provider reflected:

I guess that's the tricky part that I don't think people always understand about mental health as opposed to economic—Yes, immediately after a disaster, basic needs are an immediate concern, mental health isn't so much of a concern because people are just focusing on their basic needs. And as their basic needs abate then their mental health needs come on top of it, and I think that's what we've seen (BG003 2015).

This assessment is consistent with mental health literature on other disasters, specifically Hurricane Katrina, which saw mental health complaints increase after six months and level off after three years before falling (Kaiser Family Foundation 2007, 2008, 2010; Kutner 2010). One pastor working in the area in 2013 noted that he had seen more suicides in Plaquemines Parish than anywhere else in his career, citing BP as a contributing factor (PS446 2013), and a Vietnam Veteran and local resident reflected, "I never saw that kind of looks since I was in the refugee camp. Uncertainty, a long distance look like there's nothing on the other side... I look in my community and it brought me back. And to think that could happen in the US" (BG001 2015). Specific to the BP disaster, some attributed the perceived decline in mental health to stress surrounding the protracted claims process (VP440 2013; VP498b 2013; VP567 2013), over the loss of livelihood (VP437 2013; VP440 2013; VP498a; VP553 2013), or the slowness of the recovery (BG001 2015; LP484 2013). One human services provider in St. Bernard Parish also attributed some of the rise in mental health problems to an ongoing lack of basic resources, such as food for families (LP483 2013). Again, these assertions are consistent with the literature on mental health after disasters (Picou et al 2010; Kutner 2010).

In contrast to the discussion of physical health effects, where residents were reluctant to rule out existing or future effects, not all residents and leaders reported seeing significant mental health challenges following the BP disaster. Some perceived Katrina's extensive and long-range effects to have been so much worse for the community's mental health that they reported the spill was hardly noteworthy (VP503 2013). For others, employment levels were not associated with mental health, as asserted an economic development professional who worked but did not live in the area commented on mental health effects: "That had nothing to do with Katrina or the spill. What I saw. Not at all. It's a matter of what individuals want to work in, what qualifications they have, and how long they're willing to wait to do that. That's an everyday, work-related situation" (VP629 2015). Though few expressed this point of view, it illustrates

how broader perspectives on work and fitness colored reactions to possible mental health effects of either disaster.

Parents and school officials reported increases in stress, acting out, and mental health issues as continuing problems among schoolchildren in the southern parts of the parish (PS413 2013; PS428 2013; PS429a 2013; PS437 2013). They attributed the changes to a rise in economic stress in families after the spill and hurricanes and that continued through the study period. Social service providers, parish officials, and religious leaders also cited an increase in domestic violence and a possible increase in child abuse as reactions to financial strain on families, and they attributed sexual abuse, in particular, to a rise in multi-generational families living in cramped housing (BG003 2015; LP484 2013; PS429a 2013). The increase in multi-generational living arrangements, which resulted from lack of available housing and economic stress, was noted in Ware (2014) and continued through this study period.

Several study participants tied mental health problems to unemployment resulting from the spill. In 2013, an oyster harvester who was still waiting for the resource to return to normal and worrying about the direction of the industry and his business explained: “It’s rough to think about the future. It’s driven [another oyster harvester] to smoking too much – he smoked half my cigarettes! But what else do you do when you’re sitting around” (VP495c 2013). The wife and business partner of a commercial oyster harvester described her ongoing mental and physical health problems, attributing them to family and financial stress following Katrina and the BP oil spill:

[M]y husband, he’s on the couch every day for three months. All day. Not sleeping at night, he’s on the couch. All day, on the couch. He’s staring at the TV, not watching it. But he puts in so much investment, time and money, then every time he’s going to have a good year, there’s a disaster. Then you have the stress of the disaster, the storm, then there are money problems and then that brings on more problems. Then you eat because you’re stressed and you’re depressed (Phaneuf Fieldnotes April 3, 2013).

By 2013 her husband was off the couch and back to partial employment, but her mental and physical health problems continued. Though most fishing areas had reopened and oil and gas operations had resumed by 2013, not everyone had returned to work. One local businessman who was still unable to work and in litigation with BP in 2013 detailed his depression, attributing it in part to his forced idleness (VP440 2013). He noted that the medication he originally received from Catholic Charities had helped, but when the organization pulled out of the area he did not have money to refill the prescription because he was not working. The BP spill had become incorporated into the cycles of disaster, followed by short-term disaster relief, and then withdrawal of services.

By 2015, there were still a number of mental health resources available in Plaquemines Parish. Though none were permanently located in the study area and the Plaquemines Medical Center did not include any mental health providers, Plaquemines Community C.A.R.E. Centers had its office in Belle Chasse with rotating hours at locations throughout the parish. The Plaquemines Community C.A.R.E. Centers offer counseling to individuals, families, children, and groups, substance abuse and domestic violence programs, court appointed youth advocates, and assistance in accessing other care (Plaquemines C.A.R.E. n.d.). Outside the study area, there is a Plaquemines Parish Domestic Violence Assistance Office in Belle Chasse, a battered women’s shelter in St. Bernard, and there are several regional or statewide hotlines individuals in crisis can call for referrals to other services (Coastal Resource and Resiliency Center n.d.).

A comparative look at health services

Terrebonne Parish differs from Plaquemines with regard to the medical facilities. The Parish not only has three hospitals, but by the 21st century the healthcare industry had become one of its largest industries and employers. With regard to health issues related to the oil spill, if reported at all, the most common were

respiratory issues and stress. A number of residents noted that there were lingering mental health issues, such as anxiety and strain, particularly when it came to years of contending with the claims process and blockages surrounding an ability to earn a living as it pertained to seafood or oil and gas. A social service provider from the northern part of the parish whose organization had provided services to south Terrebonne residents noted in 2015: “Everybody thinks the oil disaster is over! They think it’s over, that people are doing just fine without it, but to be honest with you, people are NOT doing fine because of the oil disaster. Not only did it hurt their business, but it also hurt them physically and mentally. So the money that should be coming available to people, to non-profit organizations, is to help with the HEALTH issues that people are having – both physically and mentally, and we’re not seeing that at all” (BG013 2015). Yet, residents differed in their assessment of mental or physical health effects, with some residents expressing frustration that there was not enough being done to address health problems and others saying they had not heard or knew anyone with any health effects at all (BG007 2015). A few residents noted that the divorce rate had gone up (BG009 2015, BG027a 2015) and that some people began drinking alcohol more regularly because they had received claim money, but didn’t have a job anymore (BG015 2015). A Health and Human Service employee said that she noticed more people expressing their frustration approximately eight months after the spill began and people had been working for a while getting their claims processed versus in the months immediately after the disaster began. She also noted that frustration levels had stayed high into 2015.

4.4 Coastal Restoration and the Oyster Industry: Restoration for What and Whom?

The oyster industry remains one of the major industries in Plaquemines Parish. As an immobile shellfish, oysters are impacted by oil spills and coastal restoration in different ways than other kinds of seafood. This section describes the interrelationships between the oyster industry and coastal restoration in the Plaquemines Parish area. Some of these restoration efforts were specific to oysters and directly tied to devastation caused by the BP oil spill. Others were part of the state of Louisiana’s plan to counter coastal land loss. Even though many of the plans associated with coastal restoration had been envisioned before the *Deepwater Horizon* disaster, during 2013-2015 it was expected that BP settlement money would be used to partially fund their implementation. For this reason, even when the harm to be remediated was not caused by BP, many locals expressed that they thought of coastal restoration as an impact of the oil spill disaster.

4.4.1 Rebuilding Damaged Oyster Grounds

Following the BP spill and continuing through the study period, some lease owners used the bedding cultch technique, where materials conducive to oyster larvae development are spread across productive areas, to encourage the growth of new oysters on their leases that were damaged by the spill. This process, however, is costly, involving the price of the material, the cost of transport from the dock to the oyster grounds, and wages for the crew, and there is always the risk that the spat might not catch (VP429 2013; VP437 2013; VP495a and VP495b 2013). Due to variable levels of oyster fertility, the outcomes were uneven. This process was not equally available to all lease owners. Though some could use their own financial resources to bed cultch, most lease owners used their BP settlements. Lease owners who were still waiting for their BP settlements and did not have significant financial reserves could not yet take advantage of this option to restore their leases (VP498a 2013).

The state reefs, too, had been damaged following the spill and faced steep challenges. The Louisiana Wildlife and Fisheries Department used state money to begin rebuilding those reefs with cultch material (LWFD 2011). The process generated disagreement and uncertainty. One oyster harvester commented on the challenge: “How do you redo the state bottom? You’d have to crush Mount Everest and put it out there. I don’t say it will never come back, but it’s not normal” (VP495c 2013). In Breton Sound, for

example, local oyster harvesters noted that the state put cultch in areas where the bottom was too soft, allowing the rocks to sink into the mud, or where the salinities were wrong, or at the wrong time of year, or cited other reasons that the projects would not work. In essence, they claimed, these projects were a waste of money that could have been avoided had the state consulted with industry members or, better, hired industry members to oversee and carry out the projects. However, when the state began hiring oyster harvesters, some were reluctant to take the jobs due to the limited amount of money paid and the financial risk involved. One oyster harvester observed:

They're paying so much a ton. You have to buy insurance. I say yes, nothing else to do. They're paying \$15,000 a trip. I'm doing it for nothing. \$5,700 for insurance, I have \$9,200 left, but with diesel and crew I'm losing money, but I want to do something and see if it helps. I shouldn't. If I damage something or something happens I could lose a lot of money (VP441 2013).

Were other work available, this individual would not have taken such a financially non-rewarding and risky job working for Wildlife and Fisheries in this capacity.

In addition to benefitting the oyster industry, reef rebuilding projects were promoted by scientists to slow coastal land loss and offer ecosystem services such as habitat creation and water filtration (Coen et al 2007; Ermgassen et al 2013; Walton and Rikard 2011). These projects were included in the Coastal Master Plan and explained as protecting marsh by reducing wave and storm surge heights and improving oyster propagation (CPRA 2012). Some oyster industry representatives wanted additional consideration for oyster restoration projects in the plans to restore the coast and argued for even greater attention to the creation of harvestable oyster reefs than was in the plan (Phaneuf Fieldnotes April 13, 2013 from the Louisiana Oyster Industry Convention; VP574 2013). As a commercial oyster harvester reflected:

In terms of coastal restoration, cultching puts one inch of material on the ground, above the level of subsidence. And then you add to that the oysters that adhere to the cultch. So, doing this is building ground. The survival rate of the seed oysters is 40-50%. [...] But even if the oyster dies, it makes more cultch material. Reefs are constantly growing (LP493 2013).

4.4.2 Sediment Diversions and Potential Harm to Oysters

In the aggregate, between 2013 and 2015 the oyster industry in Plaquemines and St. Bernard Parishes was in a cycle of investment, but industry representatives were concerned that some of the state's plans for coastal restoration, coupled with insufficient planning and management, would destroy their investment and produce other negative environmental impacts. Large-scale sediment diversions were the most contested of the state's restoration plans for the area. Discussions of the benefits and detriments of planned construction referenced environmental changes associated with existing diversions, including the Caernarvon Diversion, Davis Pond Diversion, Mardi Gras Pass, and the Bohemia Spillway. Proponents argued that the diversions were the best or only option for building land or slowing existing land loss, stating that they would mimic the processes through which the Louisiana delta was built, before the Mississippi River was dammed and leveed. Opponents contested that: the Mississippi no longer had enough sediment to build land as it had in the past; the existing diversions were not building land, but instead weakened the already fragile marsh, making it more vulnerable to land loss; and the diversions would introduce harmful pollutants, fertilizers, and invasive species into sensitive marsh habitat. These consequences, they argued, would disrupt sport and commercial fisheries and displace local residents. By the end of 2015 no comprehensive study had been published on the feasibility of the planned diversions, their potential benefits, and what negative impacts they might have.

Beyond the question of land creation or protection, it was widely acknowledged by local residents and business owners that the projects proposed in the 2012 Master Plan would have significant negative impacts on the lives and livelihoods of local residents, especially oyster harvesters. Still, residents and

leaders debated the nature and extent of the impacts, whether the negative impacts on the parish should prevent the plans from being carried out, and whether and what mitigation actions should be put in place if the plans were to be carried out. The comments reflected long-standing tensions between large, wealthy leaseholders, smaller operators, and locals not involved in the industry. One former parish official observed: “It’s hard to be sympathetic, [oyster harvesters] have millions of dollars. They have to relocate them, they’ve been moving in towards the levees. Relocation, they’ll be paid again” (VP480 2013). However, other residents and fishermen were quick to note that not all oyster harvesters fit this profile and expressed additional concerns. For example, one oyster harvester explained that this process was far more complicated than many presumed:

We’ve had erosion. You have oysters here close to the coast. Erosion wears away the land, it’s no longer viable. You move inland. The next level, erosion gets that, you move inland. You move as the conditions dictate. But that’s taken decades. But one of these projects will be built in 2-3 years. That’s no time to respond to the changes. You can’t go to an area that is too salty now before they start running the water and plant. You have to judge the conditions once the project comes online. All that takes time, but there is no time. If it takes 4 years for the oysters to get from spat size to market size, and they build the project in 2 years... it’s a problem. The state is well aware of these things. We’ve informed them, we’ve sued them, they understand. Their response is the smile of the Cheshire cat (VP495a 2013).

Here, the physicality of the changes that a diversion would bring to an area were cited as a detriment to the local economy, one for which the planners appeared to have no solution. Another local involved in an environmental stewardship and education organization expanded on this theme. While she did not approve of oyster harvesters making science-based claims, she did agree with their main point:

The state didn’t put human measures in place—saving coast at cost of the people. [The] state basically said we don’t care, [the] state says that these people are not voicing valid concerns, that these people are lying. But they aren’t. You are killing them because this is what they know, what they do (LP489 2013).

This was complicated by the fact that in 2002 Louisiana put in place a moratorium on new oyster leases to protect the state from future coastal-restoration lawsuits from oyster industry members, through the state was not liable for these damages (Alexander-Bloch 2015). The result of this was that as oyster leases were destroyed they could not be replaced with leases in viable areas elsewhere. During the study period state officials were negotiating a repeal of the moratorium, but new leases would only be viable four years after opening, a lengthy period of non-productivity that would have negative impacts on the workers and families supported by this industry.

In response to this situation, and continuing a tradition of local activism in the face of crises dating long before Katrina, local residents, commercial and sport fishermen, and business owners created the Save Louisiana Coalition in 2013. This organization intended to bring together diverse interests in the shared goal of restoring the coast without the use of diversions (VP502 2013; VP496a 2013; VP619 2015; Save Louisiana Coalition 2016). Since its creation, members have lobbied parish, state, and federal governments against the installation of sediment diversions and for alternative methods of restoring the coast, including sediment dredging and pumping, which they propose as more effective and less destructive.

Despite the efforts of this and other organizations, the future remains unclear. One activist and industry representative reflected that he still did not feel that oyster harvesters’ interests were listened to, “I don’t argue against it anymore. It’s futile. What I do is ask, what are you going to do about us?” (VP437 2013). This was a common sentiment, as were demands for more consultation and participation in the planning process at the local level. Discussions of restoration or recovery from the BP oil spill were often held in

the shadow of this potential future calamity. As one man put it: “You think BP was bad? This will be devastation” (VP496a 2013).

4.5 Summary

Plaquemines Parish’s position at the end of the Mississippi River, extending out into the Gulf of Mexico, has brought both challenge and opportunity. Over the decade between 2005 and 2015, locals saw Hurricane Katrina make landfall at Buras and experienced damage from Gustav and Ike in 2008, the BP oil spill disaster with fishing closures and the moratorium and suspension of drilling in 2010, Isaac in 2012, and the precipitous drop in oil prices in 2014 and 2015. Each event was unique in its areas and people impacted, and had specific results, but all took place in a landscape already marked by both significant land loss and human intervention in the form of canals, levees, and river diversions. All had significant and intertwined impacts on the parish, the extent of which are, in some ways, still unknown.

Over this decade the parish saw its population shrink and migrate and revenues drop. Locals and planners strove to bring in or bring back residents and businesses through the construction of new infrastructure for hurricane protection, coastal restoration, education, medical care, and transportation. Residents’ decisions to return, stay, or leave, however, were also based on considerations of economic future and the stability of local industries, the health of the environment and the people after the spill, and predictions of coastal land loss.

In 2015, numerous uncertainties remained about the spill’s effect on humans and the environment, as well as how and when they might manifest. This had significant impacts on the local seafood industry, particularly on the East Bank of the parish, where the future for oysters remained uncertain. Uneven distribution of BP settlements, ongoing through 2015, caused additional concern for those who had not received their settlement or continued to feel stress over having accepted a settlement they considered unfair. All of these layered uncertainties contributed to a decline in mental health over the study period, as reported by locals and providers focusing on the south and east of the Parish, including Empire, Port Sulphur, and Point a la Hache.

As residents and leaders looked toward the future, they expected the offshore oil and gas industry to continue to fluctuate with global trends. They also expected that expanded transportation infrastructure would follow the widening of the Panama Canal and drive new development in some sectors. They hoped that the return of key institutions such as schools and the medical center would entice more locals to move back. They also recognized, though, that this positive effect could be reduced with delays in implementation of certain hurricane protection and coastal restoration projects. Study participants knowledgeable about the fishing industry reported a far less certain future, dependent on the speed of future BP settlements, imports, and the implementation of coastal restoration projects either helpful or harmful to the fishing stocks. In particular, Mississippi River sediment diversions were heralded as either the salvation of the parish and nearby New Orleans from coastal land loss, or the nail in the coffin of fishing communities already struggling through multiple challenges.

5. Larose, Cut Off, and Lafourche Parish, Louisiana

5.1 Introduction

Larose and Cut Off, Louisiana lie at the center of Lafourche Parish, a long narrow parish flanking the banks of Bayou Lafourche (see Figure 5.1). The parish is located on the Lafourche delta, which is estimated to be about 1,700 to 700 years old and the most recently abandoned of several Mississippi River distributaries (Frazier 1967). The parish is divided geographically and politically, with flat agricultural lands and service industries defining the north, and wetlands, lakes, and bayous supporting maritime industries in the south. The parish has one incorporated city, Thibodaux, the parish seat, and three towns, Lockport, Golden Meadow, and Gheens. Larose and Cut Off are census-designated places within the Houma-Bayou Cane-Thibodaux Metropolitan Statistical Area. The vast majority (almost 85%) of the residents are white, with small percentages, in descending order, of Hispanics, African Americans, Native Americans, and Asians (Rogers, Marks, and Austin 2014). Relative to the other groups, the Hispanic population has seen the most significant increase, mirroring patterns in other areas of south Louisiana, where workers have been attracted to the commercial fishing and fabrication and shipbuilding for several decades (Prakash, Marks, and Austin 2014).

European settlement patterns dominate much of the parish, dictated in large part by the area's natural features; settlers were drawn to the high, arable land that formed the banks on either side of the bayou (Austin 2014). Because water encroachment and periodic flooding limited farming in the lower reaches, fishing, hunting, and trapping were the primary activities there. Throughout the latter part of the 20th century, shrimping was the most valuable seafood industry, followed by oyster farming. In 1980, the Parish had the largest fleet of steel-hulled shrimp vessels in Louisiana, featuring 90-foot steel hulled vessels that could accommodate four or five persons and stay out several weeks at a time (Ditto 1980).

Onshore oil and gas extraction began in the 1930s and soon after the parish became a primary staging and support area for offshore oil and gas exploration and development, with oil and gas industry-related work surpassing fishing by the 1970s. Within decades of its creation in 1960, Port Fourchon, a shallow draft port at the mouth of Bayou Lafourche on the Gulf of Mexico, dubbed "The Gulf's Energy Connection," had become the single largest oilfield support facility in the Gulf of Mexico. The port's rapid growth was closely tied to the development of deepwater prospects, and the port became a major employer for the region, as well as the jumping off point for people from all over going to work offshore.

Lafourche Parish has experienced many of the problems of its neighbors, including coastal land loss, hurricanes, and flooding. Early onshore oil and gas development spurred extensive canal dredging (Davis 1973) and contributed to subsidence and erosion. In the 1970s, though, the Louisiana state legislature established the South Lafourche Tidal Water Control Levee District, which was renamed the South Lafourche Levee District in 1978. With support from parish leaders, the state of Louisiana secured US federal funds to construct a 45-mile ring levee from Larose south to Golden Meadow to protect the bayou communities from storm surge from the Gulf of Mexico; Hurricane Juan in 1985 was the last hurricane to cause massive flooding in the area. In addition to defending homes and businesses from floodwaters, the hurricane protection levees reclaimed large tracts of low land, which were used for cattle ranching and, in the following decades, for commercial and residential development. As a result, the region has not experienced the loss of population observed in neighboring parishes.

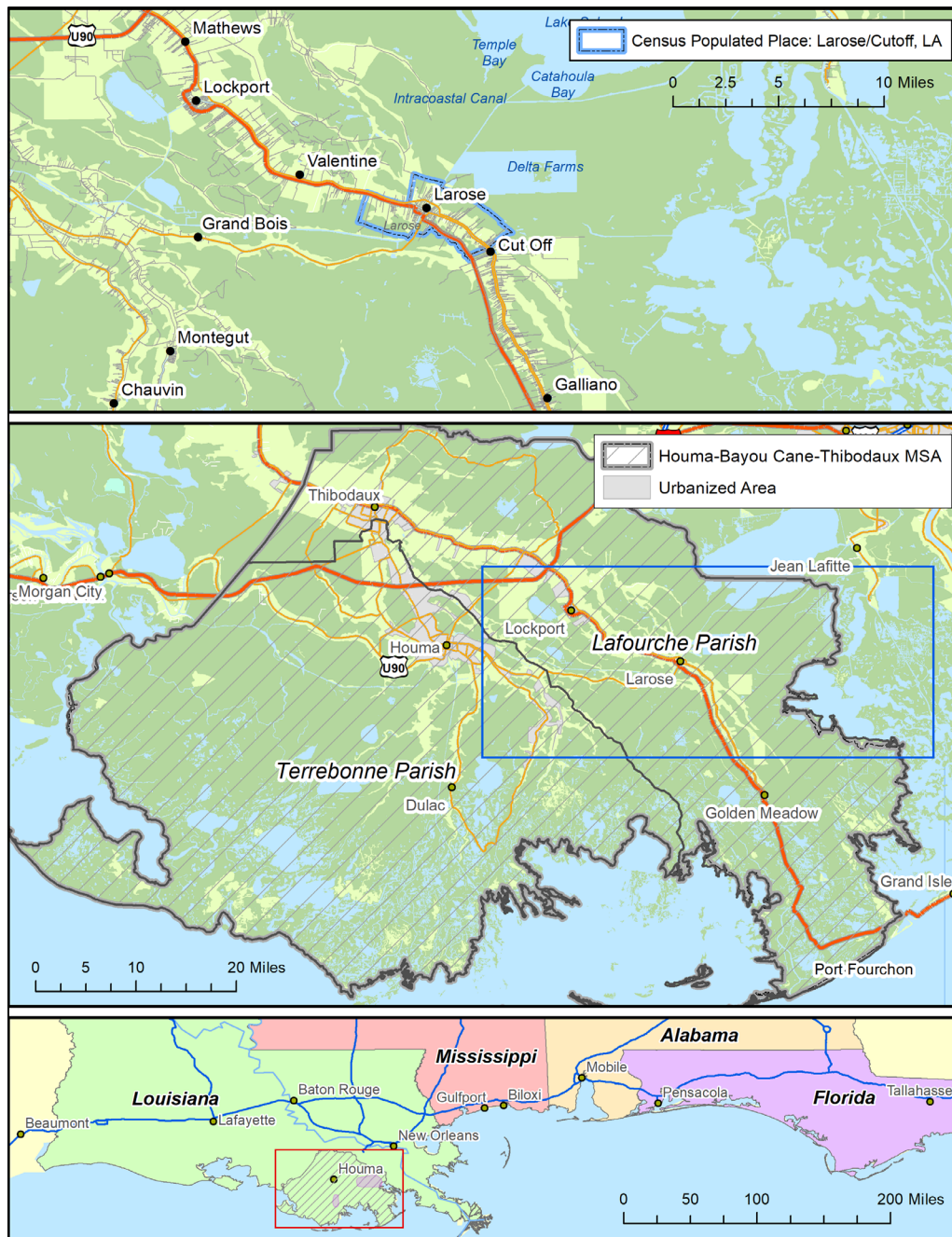


Figure 5.1. Map showing Lafourche Parish and Larose–Cut Off study community.
Source: Ben McMahan.

The development and deployment of 3-D seismic exploration in the 1990s spurred renewed attention to, and the reworking of, south Louisiana’s onshore oil and gas fields (Austin 2014). The Louisiana Delta Oil Company, for example, was established to explore for and produce oil at Larose and nearby Delta Farms. Between 2005 and 2011, the company drilled 18 wells, 15 of which were successfully completed (Louisiana Delta Oil Company n.d.).

Offshore, the shift to deepwater oil and gas exploration, drilling, and production, which could only be undertaken by supermajors, affected the region's shipbuilders and offshore service companies. For example, because many of the deepwater prospects are farther from shore than the shallow water fields, they must be serviced by larger vessels that can stay out longer and handle the rough seas. Such vessels are much more expensive and require deeper drafts, necessitating changes in ports and channels, and they could only be constructed and serviced at large facilities, resulting in a shift away from the smaller shipyards that once dotted Bayou Lafourche. Local mariners, too, experienced the effects of this change as the standard work schedule on deepwater vessels shifted from the 14 days on and 7 days off to 28 days on and 14 days off (VP635 2015).

Compared to their effects on surrounding regions, Hurricanes Katrina and Rita had relatively minor effects on central Lafourche; the levees had been raised shortly before the storms, so the damage was not as extensive as in other places (JS005 2015; JS013 2015). In the wake of the storms, many residents of Central Lafourche were awarded insurance payments, the region received some people who had been displaced from New Orleans, and there was an increase in construction, but the effects were not as dramatic as in areas such as Houma which attracted larger numbers of people. In fact, community leaders attested that the BP oil spill, and the moratorium on drilling that followed, had greater impacts than the 2005 hurricanes (JS013 2015). The storms did cause significant damage to oilfield infrastructure in the Gulf of Mexico, and served as a reminder of the region's vulnerability. For example, after 2005, Entergy spent at least \$200 million shoring up the area's infrastructure (JS017 2015). The reconstruction provided work for local companies and workers and had a net positive impact.

Initially, central Lafourche also was buffered from the negative effects of the economic downturn that began in late 2007 due to the region's heavy dependence on oil and gas and the post-Katrina infrastructure rebuilding that was taking place. The recession did lead banks to tighten up their lending practices, making it more difficult for companies to get loans for extended credit (JS017 2015). Consequently, as it wore on, the recession contributed to a slowdown in the oil and gas industry.

In early 2010, shipyards remained dominant on the landscape and as employers (South Louisiana Economic Council n.d.), and they were operating in the midst of cattle operations, oil and gas fields, commercial strip malls, and properties managed for hunting. Still, more residents were employed in transportation and mining (which includes oil and gas extraction) than any other industries, reflecting the large number of people working on offshore service vessels and on drilling rigs and platforms across the Gulf of Mexico and beyond. Located 30 miles inland from Port Fourchon, Cut Off and Larose provided housing and other forms of support for port employees and businesses (JS017 2015). When the *Deepwater Horizon* disaster began, individuals and small businesses involved in oil and gas, as well as those tied to fishing, were affected. Because of the fishing closures in the Gulf, people who continued fishing after the spill were pushed into inshore waters where conflicts between shrimpers and crabbers increased (BM661u 2012; Marks et al. 2014). In the short term, some service companies were able to supply equipment during the cleanup. For example, employees at Joe's Septic Contractor of Cut Off worked seven days a week to provide portable toilets (Yang 2010). Over the longer term, the slowdown in drilling in the Gulf reduced opportunities. At the same time, since the area was inland from the port and the Gulf of Mexico, it was not physically affected by the blowout and resulting release of oil, and many residents were buffered from the spill's immediate effects and continued recreating and fishing in inland waters (Austin 2014).

In short, the spill's effects differed from one individual, household, and company to another; some people did well and others did poorly with the outcomes influenced by the industry in which the individual or business participated, the size of the operation, the skill and effectiveness of legal representatives, if any, and more (PR501 2013; JS013 2015). Consequently, perceptions of fraud and misrepresentation in relation to the oil spill claims processes were still a common topic of conversation in 2015. According to a service provider in Cut Off, "I don't know if the abuse of the claims is high or low, but you heard about

it a lot. It was a big frustration, people knowing that others were abusing the system. For those people who are honest and hard-working, they are very sensitive when other people aren't being and/or acting correctly" (JS013 2015).

5.2 Update Since 2012

In 2010, the population of Lafourche Parish was 96,318. Table 5.1 shows key demographic data for Larose and Cut Off.

Table 5.1. Overall population and racial and ethnic composition in Larose and Cut Off, 2010

Demographic Characteristics	Larose	Cut Off
Total Population	7,400	5,976
White alone	6,129 (82.8%)	5,785 (84.3%)
Black or African American alone	373 (5.0%)	95 (1.6%)
Asian alone	157 (2.1%)	n/a
American Indian and Alaska Native alone	279 (3.8%)	277 (4.6%)
Native Hawaiian and Other Pacific Islander alone	n/a	n/a
Some Other Race	318 (4.3%)	292 (4.9%)
Two or More Races	279 (3.9%)	330 (5.6%)
Hispanic or Latino (of any race)	543 (7.5%)	445 (7.6%)

Source: US Census Bureau 2010: Profile of General Population and Housing Characteristics.

In 2015, community leaders in and around Larose-Cut Off continued to laud their levee system: "We have the only levee system that held for Katrina, Rita, Gustav, and Ike. We feel well protected. The levees have kept us here" (JS016 2015). Low property taxes, too, encouraged development in the area, though that advantage was being undermined by rapid increases in insurance costs (see also Section 6.4 of this report). According to one banker, "[S]torm and flood insurance in less than 10 years has gone from \$700 to \$5000 a year. [...] You have to weigh out the job opportunities and the cost of owning a home" (JS017 2015).

Overall, in the years between 2013 and 2015, central Lafourche underwent modest change. At the start of the study period, high oil and gas prices were driving growth, and new construction was up, with much residential construction devoted to large subdivisions and being performed by contractors who helped navigate permitting processes and contributed to high levels of employment (JS005 2015). The construction of new chain stores and hotels indicated expectations that the population would grow enough to warrant new investment. Study participants reported a notable increase in Hispanic residents and the stores, consumer goods, and church services tailored to their needs (JS034 2015; JS013 2015; JS016 2015). Some lifelong residents compared the increase in Hispanics to the changes that accompanied the arrival of large numbers of Vietnamese people in the 1960s and 1970s (JS016 2015; JS034 2015).

Lafourche Parish continued to receive and use BP funds for marketing and tourism and invested some funds in campaigns, promotions, and other strategies for attracting out-of-state tourists. On January 8, 2013, the Lafourche Parish Council passed a resolution accepting a grant from Patrick Juneau, the *Deepwater Horizon* Claims Administrator, for \$500,000 from the Gulf Tourism and Seafood Promotional Fund, to be used to promote the parish. At that same meeting, Parish President Charlotte Randolph, in her State of the Parish report, announced that the parish intended to use funds from the RESTORE Act on parish projects that had been included in Louisiana's 2012 Coastal Master Plan (Lafourche Parish 2013a).

In April 2013, Parish President Randolph was accused of violating state ethics laws for renting her camp to BP, but the Parish Council resolution requesting that she resign her seat because of this was thrown out without being considered (Lafourche Parish 2013b). Also in April, three years after the disaster began, many shrimpers who had stopped trawling immediately after the spill returned to work, some with bigger

boats they had purchased with money they earned working for BP. Others explained that they had never stopped shrimping because they had to make a living; though they had signed up to participate in the Vessels of Opportunity (VOO) program, they reported that they had not been called out. Several shrimpers and their families expressed that their decision to continue shrimping was not only to obtain food but also to maintain their livelihoods. The wife of a shrimper who for years had taken her vacation from her job to join her husband and sons on the shrimp boat explained, “It is an experience that is irreplaceable... People still go out because it is what they know and what they love” (PR501 2013). Though leaders and residents recognized the ongoing importance of both oil and fishing, they noted that oil and gas was responsible for the greater economic impact (JS017 2015).

What’s keeping people here is family and the shrimping and crabbing.... people are mostly in the oil and gas and marine industries. Or, they work for Port Fourchon, offshore, or a boat that supplies oil – anything to do with oil. There are lots of fishermen too. Those are the big industries. If the oil and gas and marine industries shut, there would be an exodus out of this area (JS005 2015).

The Louisiana Delta Oil Company continued to expand its onshore operations within the study area. On May 24, 2014, the company announced the drilling and completion of a new field development well in Delta Farms Field, marking the second of two wells that were successfully completed during the study period (Louisiana Delta Oil Company n.d.).

Between 2011 and 2013, activity at Port Fourchon, as measured in construction spending, more than doubled, and firms operating out of Port Fourchon were servicing an estimated 90% of the oil and gas exploration activity in the Gulf (Scott and Associates 2014). In 2015, Port Fourchon was supplying 20% of the US oil and attracting both national and international visitors and potential investors (JS016 2015). By mid-summer, as the price of oil continued to fall, service providers were observing that the downturn was proving to be the source of the most significant effects on the community in the decade (see Section 5.4 below).

Still, though few physical signs of the *Deepwater Horizon* disaster remained during the study period, it continued to affect both individuals and businesses within the study area and further south toward the Gulf. In 2013, for example, a seafood retailer in Golden Meadow expressed concern that the tourists and recreational fishermen had not returned to the southern parts of the parish (PR507a 2013). The wife of a shrimper noted that although her husband had filed claims and received payments for anticipated losses over a 6-year period, she had dissuaded him from upgrading his shrimp boat because of the ongoing uncertainty about the oil’s effects on the seafood as well as the fact that the price of shrimp was not keeping up with the price of fuel for the boat (PR501 2013). A Larose shrimper reflected that his decision to take the quick payment, although he had the necessary documentation for filing a claim, had been a mistake because he could have gotten by without that money; at the time, though he had just “wanted to get it over with” (PR504 2013). This individual reported that he had had to hire a lawyer to get his payment for working in the VOO program and wanted to avoid a similar outcome in the claims process. Also during the spring of 2013, though the deadline for filing claims under the Seafood Compensation Program had passed (see Chapter 1), some people were encouraging residents to file claims for subsistence losses; as one category in the Economic and Property Damages Agreement, the deadline for Subsistence claims had been set as June 2015. Indeed, well into 2015, social service providers noted the stress caused by ongoing worries about BP payments: “I think that all the money, whether it is just all the waiting for the money to come in or not getting enough, or getting it. All of this stuff is putting stress on marriages, especially waiting for the settlement” (JS007a 2015).

Concerns about financial settlements and whether and how to claim losses also affected community institutions and reflected residents' trust in them. Several local government entities in Lafourche Parish filed claims for damages associated with the *Deepwater Horizon* disaster. In addition, during the study period these entities continued to seek reimbursement for expenses related to the spill. For example, in June 2013, the Lafourche Parish Council reported the receipt of just over \$1 million to cover costs expended during the spill; over half the \$826,457 in oil spill costs had been spent on salaries and benefits and another \$155,000 on supplies (Lafourche Parish 2015c). At that time, parish officials continued to attend meetings to discuss how funds from the anticipated BP settlement could be used. In September, the Parish Council approved an agreement between the Lafourche Parish Government and Royal Engineers & Consultants, LLC for managing the parish's revenues from the disaster (Lafourche Parish 2013d).

Estimates of the money that the parish would receive from a settlement of its claims against BP ranged as high as \$100 million, with some Larose residents anticipating that the money would be used to increase the height of the ring levee and other restoration projects (JS013 2015). In 2006, the year following Hurricanes Katrina and Rita, Louisiana voters passed two coastal restoration-related amendments to the Louisiana Constitution. In 1974, amendments to the constitution established the Coastal Protection and Restoration Fund "to provide a dedicated, recurring source of revenues for the development and implementation of a program to protect and restore Louisiana's coastal area" (Louisiana R.S. 49:214.1 SUBPART B). The first of the 2006 amendments, passed by 82% of voters, committed all federal revenue coming to the state from Outer Continental Shelf oil and gas activities to be put towards coastal restoration, wetlands conservation, hurricane protection, and infrastructure directly affected by coastal wetland losses. The second amendment, approved by 79% of voters, dedicated 20% of the proceeds from the sale of the state's tobacco settlement to the Coastal Protection and Restoration Fund (Schleifstein 2015). These constitutional amendments offered encouragement to residents of Lafourche and other Louisiana communities.

Still, not all residents were as confident that their local and state leaders would use the money wisely. Already in 2013, for example, some residents were expressing concerns about how the government would use the anticipated coastal restoration monies. A librarian commented that she was discouraged by how much erosion had occurred along the coastline and that she felt the government was throwing money at projects such as barrier islands that were not producing results (PR501 2013). By then, an early influx of companies had arrived in anticipation of an increase in activity associated with coastal restoration. According to a government official, "It was anticipated that because of the oil spill there was a big influx of growers [who would provide plant material for restoration projects.] The growers anticipated that there'll be lots of money from BP" (JS034 2015).

Controversy over the Wisner land at Fourchon Beach continued through the study period. Edward Wisner, a philanthropist, donated 52,000 acres of coastland, including the land on which Port Fourchon was built, to New Orleans in 1914 (Batte 2014). As the expiration of the 100-year Wisner Donation Trust approached, his descendants battled with the city's mayor about the future of the trust, which funded grants through revenues generated by oil and gas royalties and leases from the Port and Chevron (Batte 2014; Berry 2015). In 2012, Lafourche Parish, through the Lafourche Beachfront Development Commission, began the process of taking a portion of Fourchon Beach owned by the Wisners and Caillouet Land Co. to provide public access to the beach. The beach had been closed to pedestrians since the *Deepwater Horizon* oil spill. The beach also lays atop pipes to the Louisiana Offshore Oil Port (LOOP), enhancing its importance (Berry 2015). The Wisner estate had filed a lawsuit against BP for damages and response costs (Austin 2014). Though the parish never succeeded in acquiring more of the beach, in 2014, contractors supplied 8 million cubic yards of sand as part of the Fourchon Beach restoration project, a collaboration among the Greater Lafourche Port Commission, Nicholls State University, Shell Oil Company, and the Wisner Foundation. The project was awarded the 2015 American Association of Port Authorities Environmental Enhancement Award. The organization noted particularly

the construction of beach and dune habitat, which provided essential storm surge protection to Port Fourchon (Nicholls State University 2015).

The June 2015 civil settlement resolved all local, state, and federal claims. On July 6, 2015, the South Lafourche Levee District passed a resolution accepting BP's offer to pay \$7,000,000 for the Levee District's economic losses and as full and final settlement of all claims against BP and others resulting from the Deepwater Horizon Oil Spill (South Lafourche Levee District 2015). On July 8, 2015, the Lafourche Parish government agreed to accept an \$8.1 million settlement from BP for the parish's economic losses stemming from the 2010 disaster (Lafourche Parish 2015). The parish government committed some of the funds for the second phase of the Caminada Headlands project, which was designed to protect a portion of Grand Isle; though Grand Isle is in Jefferson Parish, the only land access is through Lafourche, so the communities along the road benefit from tourists and others who visit the island. The parish also allocated settlement funds to other parish government entities, recreational districts and the assessor's office (JS017 2015). Port Fourchon received \$960,000 from the settlement and was considering using the funds to deepen the channel to the Gulf and enable the port to handle larger vessels and better meet the demands of the deepwater oil industry (JS017 2015).

A comparative look at coastal protection

Terrebonne Parish, like Lafourche, faces a distinctive situation of rapidly eroding and sinking land, which led interviewees to discuss the urgency of protection and restoration. Despite decades of conversations about and studies of constructing a levee in south Terrebonne, little progress has been made. As noted in the phase one report on the Deepwater Horizon disaster, "[C]hallenged by its huge size, the lack of high ground, and resistance from private property owners, the parish failed to construct a levee system" (Whalen and Austin 2014:242). During interviews, many residents of Terrebonne Parish cited the lack of hurricane protection as the cause of increased stress at the onset of hurricane season as they worried about "the next big one". Louisiana's 2012 Comprehensive Master Plan for a Sustainable Coast states that Terrebonne Parish has experienced some of the highest regional land loss in Louisiana, especially the eastern part of the parish, yet the only proposed project offering marsh creation is in the western portion of Terrebonne Parish, where few people reside.

5.3 Crabbing

Of the Gulf Coast fisheries, crabbing has the lowest entry costs, so it has attracted a considerable share of newcomers and commercial shrimpers, oyster harvesters, and fin fishers who fish for crabs in their off seasons (Marks et al. 2014). At the same time, crabbing is a significant commercial enterprise, generating approximately the same annual revenues, statewide, as oysters (Figure 5.2).

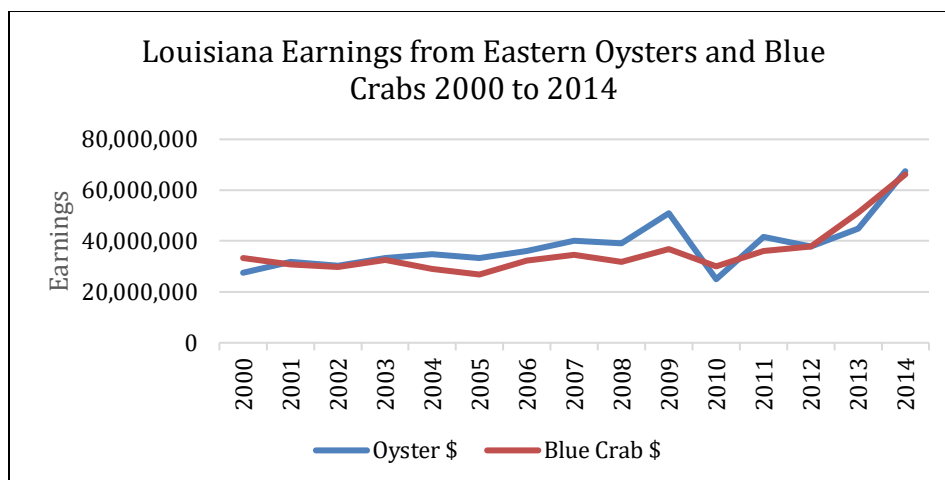


Figure 5.2. Louisiana earnings from oysters and crabs, 2000 to 2014.

Source: NMFS n.d.

Central Lafourche lies within the Barataria and Terrebonne Basins, two of Louisiana's top three crab-producing basins. The Terrebonne Basin comprises approximately 1,712,500 acres in south-central Louisiana and is bordered by Bayou Lafourche to the east, the Atchafalaya Basin floodway to the west, the Mississippi River to the north, and the Gulf of Mexico to the south. From 2000 to 2013, that basin led all basins in crab landings, averaging more than 12 million pounds annually (Bourgeois et al. 2014). However, a close look at the annual data reveals that landings averaged 13.6 million pounds annually from 2000 to 2009 but fell in 2010 and had not recovered by the end of the study period (Figure 5.3). Blue crab landings from the Barataria Basin, which ranked third during the study period, averaged 8.22 million pounds annually from 2000 to 2013 and ranged from a high of 10.89 million pounds in 2006 to a low of 4.94 million pounds in 2010, the year of the *Deepwater Horizon* oil spill. These findings support reports by crab processors and buyers that, although by 2011 they were seeing higher landings than immediately after the spill the volume still fell behind their 2009 total (Marks et al. 2014).

Though the 2005 and 2008 hurricanes affected some crab processors in the study area, the data indicate minimal effects on the crab landings in these two basins; in 2006 and 2009, the years following the storms, crab landings increased (Bourgeois et al. 2015). In contrast, because crabs lay their eggs in the spring, they were particularly susceptible to oil which entered the Terrebonne and Barataria basins in 2010 and subsequent years. These findings contrasted the landings from the Lake Pontchartrain Basin, which ranked second among all basins, averaging 11.75 million pounds annually but peaking at 17.02 million pounds in 2009 with the lowest landings reported in 2001 (6.37 million pounds) and 2005 (7 million pounds).

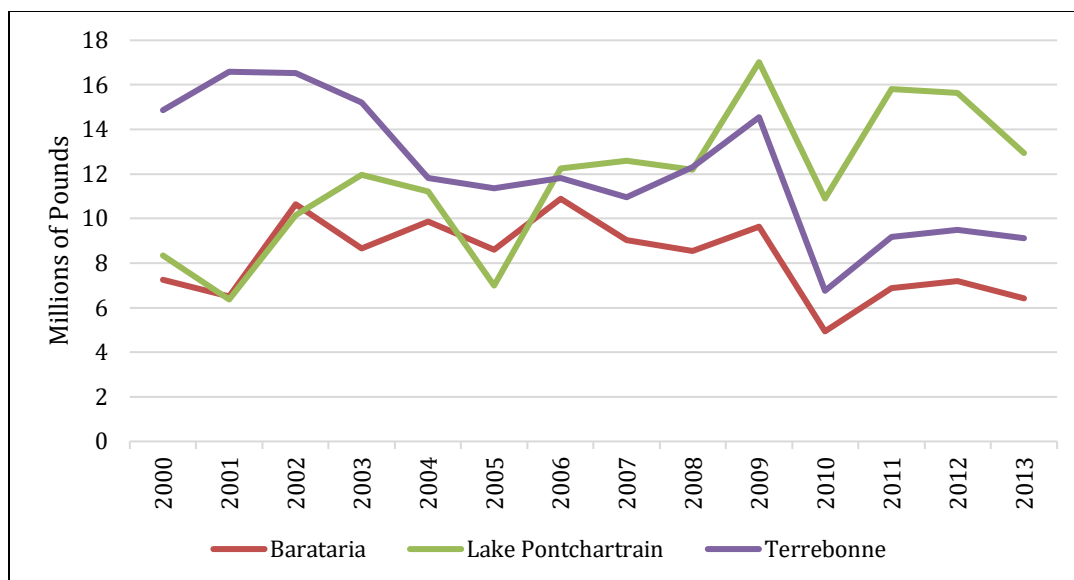


Figure 5.3. Louisiana blue crab landings by basin, 2000–2013.

Source: Bourgeois et al. 2014.

The drop in crab landings affected central Lafourche crabbers and processors. In April 2013, one crabber reported that prior to the spill he would fish 120 traps and would get a box and a half of crab every three to four days but at that time he was still not catching many crabs and was not seeing any baby crabs (PR507a 2013; also PR504 2013).

Concerns about the BP disaster’s effects on crabs continued to make the news into 2015 (see Kaplan-Levenson 2015). However, because of a lack of baseline data on landings from specific water bodies prior to the spill, scientists were hesitant to confirm where the drop in landings of crabs or oysters was due to the spill. In August 2015, a Lockport businessman reported that people still were not catching crabs like they usually did, making crabs more expensive than usual (VP635 2015) and making it difficult for crabbers to meet the needs of their long-time customers (Kaplan-Levenson 2015).

A comparative look at the effects of uncertainty

Unlike in many coastal towns in Louisiana, oil did not reach the shores of Biloxi. Many residents reported feeling reassured by the lack of visible oil early on, and quickly moving on with their lives when no distinctive changes in the community’s landscape could be directly attributed to the spill. The city’s economic reliance on the casino industry, and the less obvious environmental effects of the spill in Biloxi, meant that the city was not, in the eyes of many, directly affected by the spill. Nevertheless, the uncertainty of future impacts of the oil on the community’s environment and health weighed heavily on some residents’ minds. A sense of uncertainty was reported to contribute to stress and anxiety over the potential long-term effects of the spill, not only on the environment, but also on the well-being of residents whose livelihoods depended on seafood. Still, five years after the spill, residents either reported trusting that local seafood was good for consumption, or avoiding it in fear of unknown health impacts. Residents also continued to compare the effects of the oil spill to those of Hurricane Katrina. They reported feeling particularly despondent in the months immediately following the spill in the face of what felt like a relentless series of disasters befalling their community. As one resident explained, “With Katrina, we could assess the physical damage, we can forgive our net losses and move on, we can still go out fishing. But with the oil spill, the damage on the water can’t be quantified, we can’t assess the impact, there is an uncertainty of the future” (JL010 2015). Another wondered: “Is it Katrina? Then the oil spill?”

The economic recession? The whole country went through a lot, but nowhere has it been as bad as here” (JL013 2015).

5.4 Oil and Gas: Still an Economic Driver

At the time of the Macondo well blowout, Port Fourchon was servicing an estimated 90% of all deepwater activity in the Gulf of Mexico. The Port served as the Emergency Operations Center during the response efforts and housed the sheriff’s office, Federal Emergency Management Administration (FEMA), the National Guard and BP administrators. The drilling moratorium and slowdown affected individual port tenants, but the port worked with those tenants and lowered rents by 30% for one year so they could remain onsite, with the end result being that the facility continued to expand as prices of oil stayed high (Bayles 2011; JS016 2015; Austin 2014). In addition to adding more acres of land at the port, the Greater Lafourche Port Commission expanded the runway on the South Lafourche Leonard Miller Jr. Airport and supported the construction of the two-lane elevated highway project connecting the port to Golden Meadow.

In the wake of the *Deepwater Horizon* rig explosion, residents and community leaders across southern Louisiana argued that the moratorium and suspension of drilling caused the greatest negative impacts (Austin, Marks, et al. 2014; Austin, Dosemagen, et al. 2014). Industry leaders organized entities such as the Gulf Economic Survival Team (GEST) to host rallies, organize letter-writing campaigns, and lobby Washington officials to push to end the moratorium and speed up the issuance of offshore drilling permits (GEST n.d). Once drilling resumed in the Gulf, GEST turned its attention to serving as facilitator among operators, state governments, and the federal government, especially in attempts to influence the promulgation of new and revised rules associated with deepwater drilling (see Chapter 1).

As noted earlier, the Port Commission filed a claim for expenses associated with the BP spill but did not participate in any lawsuit filed against BP. An individual knowledgeable about port affairs explained, “This was a strategic move by this part of the community. We didn’t file a suit because we thought it would be hypocritical to do so. It’s not a smart business move for us to sue an oil company” (JS016 2015).

A major concern about the short-term effects of the BP disaster was the disproportionate impact on small and mid-sized businesses involved in the oil and gas industry (Austin 2014). During the period of high oil prices, between 2011 and 2014, small companies continued to suffer as they lacked the capital to invest in big projects and many were forced to consolidate or go out of business. According to a local banker,

It’s cost prohibitive for the smaller mom and pop companies to have to spend more on one vessel then they would have to spend in 40 or 50 years... [The consolidation] created more employment, but now people have to work for big companies. Before, when they might’ve worked for themselves, [now] they had to go to work for someone else. If you can’t beat ‘em, join ‘em. They were no longer self-employed, they just couldn’t keep up (JS017 2015).

However, for companies that once supplied many of the small and mid-size offshore service vessels to the oil and gas industry, the need for larger vessels negatively affected their economic viability and, along with the oil price downturn, contributed to their closures. Employees at these companies faced special challenges as well. When rigs were shut down after the spill began, service company employees lost their overtime pay and then saw their hourly wages cut. In 2013, some workers and their spouses reported that their wages had never been restored to pre-spill levels (LP405b 2013).

Despite increased attention to offshore safety and operations, two explosions rocked the region during the study period, serving as reminders of the risks associated with offshore oil and gas activities. In the first, on November 16, 2012, during construction on the Black Elk Energy West Delta 32 Block Platform, located in the Gulf of Mexico approximately 17 miles southeast of Grand Isle, an explosion killed three workers, injured several others, and resulted in the release of oil into the Gulf. In a November 19, 2015 indictment, Black Elk Energy Offshore Operations LLC, Grand Isle Shipyards Inc., Wood Group PSN Inc., and individuals from Groves, Texas, Cut Off, and Destrehan, Louisiana were charged with involuntary manslaughter, failing to follow proper safety practices under the Outer Continental Shelf Lands Act (OCSLA) and violating the Clean Water Act (DOJ 2015). This case had not gone to trial by the end of study period; the trial was set to begin January 17, 2017. On August 11, 2015, Black Elk filed for Chapter 11 bankruptcy.

Then, in July 23, 2013, as industry and government leaders were working to develop the new rules related to drilling, the Hercules 265 well blew out in the South Timbalier Area Block 220, around 55 miles off the coast of Louisiana. The well was being drilled by Hercules Offshore for Walter Oil & Gas. The blowout resulted in a two-day fire that consumed the jack-up drilling rig and led to the collapse of the deck and derrick; the crew was able to get off the rig with only minor injuries. A joint investigation by the Bureau of Safety and Environmental Enforcement (BSEE) and the US Coast Guard laid responsibility for the blowout on the drill crew and an inadequate blowout preventer and cited both Hercules Offshore and Walter Oil & Gas (Offshore Post 2015). Hercules Offshore filed for bankruptcy in August 2015.

The large local shipbuilders, Edison Chouest Offshore (ECO) and Bollinger Shipyards, began to merge their operations in 2014. First, in February, ECO acquired all the assets of Bee Mar LLC, a marine transport company based in Broussard, Louisiana and sister company of Bollinger Shipyards (Lipinski 2014). Then, in December, the Chouest family and a grandson of Donald Bollinger, the founder of the shipyards, acquired all the Bollinger assets and stock (Griggs 2014). No specific effects of the consolidation were apparent during the study period; local papers reported that, across all its facilities, ECO had laid off 2,000 employees, though where those people had been working was not given (Batte 2016). Community leaders and residents noted that many of the area's largest employers, including ECO's North American shipyard, Bollinger's Larose shipyard, and Thoma-Sea, had fired people, eliminated working weekends and overtime, or cut employees' shifts in half (see "A Comparative Look at Shipbuilding" in Section 2.5 of this report). An employee at a local church reported that people had begun moving out of state to find work (JS004 2015).

The most obvious influence on the study area and the broader Gulf Coast was the decline in oil prices that began in June 2014; the price of oil dropped 40% between July and December of that year and continued throughout the study period. In early 2015, economists and business analysts warned about the negative effects of low oil prices but argued that the region would not see a repeat of the 1980s downturn, which had torn communities, businesses, and households apart. For example, Batte (2015a) cited three major differences in the oil and gas industry and region between the 1980s and 2015: deepwater exploration and production; lots of available jobs to absorb unemployed workers; and company experience and contingency plans. Nevertheless, in 2015, Port Fourchon officials responded to tenants who were feeling negative effects of the low prices by reducing rental rates by 20% for one year, through March 2016 or the end of the first 60-day period when the price of oil would reach \$70 a barrel, whichever would come first (Batte 2015b).

People familiar with the oil and gas industry argued that the effects of the downturn were worse than the effects of the drilling moratorium following the spill and were especially visible in the reduction in shallow water activity and the negative impacts on small companies. According to one banker, “Prices didn’t free-fall until the end of 2014. Companies are out of the chalk lines. There is no real opportunity to grow companies and there are fewer opportunities for growth. There’s a paradigm shift as we move into deeper water” (JS017 2015).

In the summer of 2015, a port employee characterized the local effects:

There’ve been some layoffs in the area, but there’s not a massive switch yet. And companies usually tend to just shift around their personnel; at least the ones they want to keep. They lay off the people who aren’t local. When you work 7-and-7, 14-and-14, 28-and-28, you don’t necessarily have to live here. Maybe people who get laid off will go back. It’s not 100% impact on our community, but it is impacting the community (JS016 2015).

A local government employee told a somewhat different story, “And now shipbuilding is taking a 10% cut, too. What used to be six days a week went to five days and now it is at 4 and a half days a week. And that’s just with the ones who didn’t get laid off” (JS034 2015). Study participants and media outlets reported similar patterns of companies cutting salaries and benefits and laying off workers. A local social service provider had already begun to see significant local impacts and talked about people coming in expressing anger over their work, company management, and pending relocation, as well as issues with their children and relationships: “What’s going on with the oil industry right now, they have taken a big hit. It’s probably affected this area here more than the hurricanes and the oil spill... Not only did you hear that people lost their jobs, but also, sadly, their business. People aren’t spending money because there is so much uncertainty... We made it through those natural disasters, but we’re maybe in a rougher spot than the oil spill” (JS013 2015). Residents and community leaders shared stories of how people who had lost their jobs had turned to babysitting, cutting grass, and anything else they could do to get by (JS004 2015).

As in any downturn, some companies were able to expand. For example, in April 2015, BSEE approved a proposal by LLOG Exploration Offshore to drill a well in Mississippi Canyon Blocks 252 and 253, just east of the site of the plugged Macondo well (Reuters 2015). Overall, though, the economic conditions continued to worsen. By the end of 2015, several more employers who did business within the study area had announced layoffs. For example, Noble Drilling, based in Sugar Land, Texas but operating its crew change out of Galliano, announced it would lay off between 100 and 120 people as a result of stacking one of its rigs (Batte 2016). The effects of such layoffs accrue to area motels and restaurants that house and feed the workers as they await transport to the rigs.

At the community level, many argued that the Hispanic community had become more stable since the mid-2000s. Though the downturn in drilling and offshore service activity following the BP spill had caused some recent immigrants to leave the area, others had purchased homes and reported that their community members were more accepted within the area than they had been in the past, particularly by local churches. Nevertheless, one result of the downturn and resulting layoffs, along with a persistent anti-immigrant sentiment in the region, was renewed concern about discrimination. While US citizens and permanent residents could move or find new work in the area, undocumented workers faced greater challenges (JS004 2015).

5.5 Summary

The residents of Larose and Cut Off saw little or no oil come into their communities following the BP oil spill, but they nevertheless were affected by the disaster. Absent large seafood processors or tourist enterprises, the disaster's effects on the seafood and tourist industries in the communities in central Lafourche Parish were felt at the level of individuals and small businesses. By the end of 2015, many of these individuals and businesses had settled their claims against BP though some were still waiting or had given up. The outcomes of their claims were influenced by their role in the industry, the size of the operation in which they worked, the participation and effectiveness of legal representatives, and more.

Because their economies are heavily dependent on the offshore oil and gas industry, in Larose and Cut Off the moratorium, suspension, and resultant slowdown in drilling was one of the most immediate effects of the spill. By 2015, though, the disaster's effects on the individuals and businesses tied to the oil and gas industry were overshadowed by the expanding effects of the downturn in oil and gas prices which had begun in 2014. Some companies that had entered the downturn with little money in reserve and had held on to employees while waiting for drilling to return to pre-disaster levels were forced to reduce their operations further or even close. Shipyards that had benefitted from the post-spill slowdown when companies brought vessels in for repair and refurbishment saw their business decline as the downturn wore on and their customers cut back spending. In short, in the oil and gas and shipbuilding industries as well, the BP spill's effects differed across individuals, households, and companies.

In Larose and Cut Off, as elsewhere in coastal Louisiana, coastal land loss, coastal protection, and restoration drew attention throughout the study period. Though their effects were attenuated by the levee system that has limited flooding and attracted residential and commercial development to the region, rising insurance costs, which reflect future as well as present risks, were dampening growth. In the long term, ongoing land loss, subsidence, and sea level rise will combine to challenge the existing levees, and the communities will depend on their own investments as well as resources they can attract from infrastructure and restoration programs, some of which will be funded by BP settlements.

6. Dulac and Terrebonne Parish, Louisiana

6.1 Introduction

Terrebonne Parish takes its name from *terre bonne*, French for “good earth” or “good land”. The land here formed in the last 5,000 years via distributaries from the Mississippi River. The deposited sediment compacted, shaping land and forming massive deltas replete with extensive areas of biodiverse wetlands (Day et al. 2007) that are sensitive to erosion and land loss (CMP 2012). The region is surrounded by and interspersed with water: the Mississippi River to the east, the Atchafalaya River Basin to the west, and the Gulf of Mexico to the south, with innumerable bayous throughout. The Parish is divided between the north, dominated by industry, agriculture, and Houma, the largest city and parish seat, and the south, home to small, unincorporated communities supported primarily by commercial fishing, oil and gas, and recreational areas. South Terrebonne Parish is comprised of what are sometimes referred to as the “five fingers”: bayous Dularge, Grand Caillou, Noir, Petit Caillou, and Terrebonne, within which are nestled communities such as Dularge, Dulac, Chauvin, Montegut, and Pointe-aux-Chenes (see Figure 6.1). This report focuses on Dulac, supplemented by data from the neighboring communities. This region is very dynamic. Significant land loss in areas such as Dulac has contributed to population shifts as residents move north while areas such as Chauvin have experienced growth.

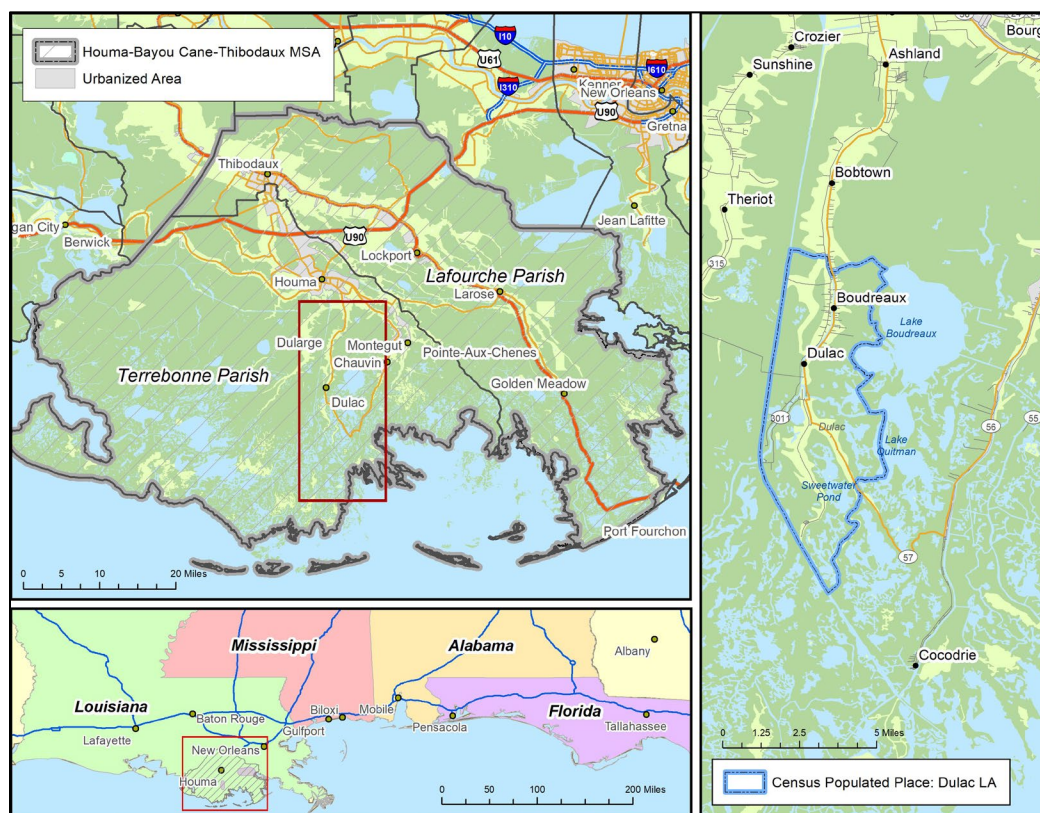


Figure 6.1. Map showing Terrebonne Parish and Dulac study community.

Source: Ben McMahan.

For thousands of years, people living in this region have subsisted off of the land and water. There are longstanding traditions of large families passing down key survival tactics, which by the late 1800s included lumberjacking, trapping, hunting, moss gathering, fishing, agriculture (predominantly sugarcane cultivation), the fur trade, seafood, and logging, supplemented by small farming ventures (Whalen and

Austin 2014). These enterprises and the robust character traits that were required for them, paved the way for commercial fishing, navigation, oil and gas and ancillary services. These industries have remained vital in the contemporary south Terrebonne economy and resident identity, affecting choices and actions related to migration, coastal restoration and protection, and interconnected demographic shifts.

The landscape of south Terrebonne is dotted with houses and mobile homes, many of which are elevated high above the water and land to avoid flooding, while others are built on concrete slabs. Most residents of the small bayou towns know one another; often their families have known each other and possibly lived in the same home on the same street for several generations. But, circumstances are changing. Coastal land loss is likely to worsen without large-scale preventive action (CPRA 2012); indeed, the National Oceanic and Atmospheric Administration (NOAA) has warned that by the year 2100 everything beyond the protective levees, which includes all of south Terrebonne Parish, will be underwater (Walsh et al. 2014). Factors such as rising insurance costs and an unwillingness or inability to repair and/or rebuild their homes after hurricanes has led to substantial population losses from Dulac and some of the other bayou communities (see Section 6.2). The hurricanes of 2005 and 2008 significantly reduced the availability of safe, secure, and affordable housing, and although circumstances improved as people returned and repaired their homes, affordable housing remained in short supply for years afterward (TPCG 2013).

The BP oil spill and aftermath had far-reaching effects on the social fabric of communities in south Terrebonne Parish (Austin, Marks, et al. 2014; Austin, Dosemagen, et al. 2014). With more than 19% of Terrebonne Parish residents living below the poverty level during the years immediately preceding and following the *Deepwater Horizon* disaster (US Census 2014), the after-effects of the spill – including BP payouts as well as interruptions in business patronage, oil and gas employment, tourism, and fishing seasons – exacerbated already high levels of economic disparity (Whalen and Austin 2014). Following the spill, many people involved in local seafood operations saw the demand for their products drop at the same time that oilfield activities were temporarily suspended (Austin et al. 2014). As a result, many residents who were already living paycheck to paycheck experienced greater economic strain (Austin et al. 2014). Some residents who received compensation from BP reported that they used those funds to pay off their mortgages or used the money to move to communities where they would face lower insurance premiums and fewer risks from storms (BG007 2015).

6.2 Update Since 2012

In 2010, the population of Terrebonne Parish was 111,860. Table 6.1 shows key demographic data for Dulac, Montegut, and Chauvin, the Census Designated Places in south Terrebonne Parish.

Table 6.1. Overall population and racial and ethnic composition in Dulac, Montegut, and Chauvin 2010

Demographic Characteristics	Number (% of Total)		
	Dulac	Montegut	Chauvin
Total population	1,463	1,540	2,912
White alone	709 (48.5%)	1,334 (86.6%)	2,662 (91.4%)
Black or African American alone	28 (1.9%)	16 (1.0%)	62 (2.1%)
Asian alone	11 (0.8%)	1 (0.4%)	31 (1.1%)
American Indian and Alaska Native alone	617 (42.2%)	140 (9.1%)	119 (4.1%)
Native Hawaiian and Other Pacific Islander alone	n/a	n/a	3 (0.1)
Some Other Race	n/a	16 (1.0%)	11 (0.4)
Two or More Races	86 (5.9%)	28 (1.8%)	24 (0.8%)
Hispanic or Latino (of any race)	62 (4.2%)	14 (0.9%)	31 (1.1%)

Source: US Census Bureau 2010: Profile of General Population and Housing Characteristics.

By mid-2015, south Terrebonne residents had been living with the effects of the Macondo well blowout for five years, and nearly all the residents who participated in this study described significant negative or positive changes, ranging from home foreclosures and increased oilfield regulations to having used settlement money to pay off home mortgages and fishing vessels.. While interviewees differed in their assessment of the nature and level of recovery from the BP oil disaster, they agreed that the events and related effects had in some way touched all residents, their social networks, and the biophysical environment in which they lived; one resident described having spent the intervening years playing “catch up” from one or more adverse effects of the disaster (BG006 2015).

Nevertheless, though both direct and indirect effects of the *Deepwater Horizon* disaster were still evident in 2015, as time passed they were not as prominent in the interviewees’ minds and comments as they had been in the years immediately following the blowout and spill. For many, especially in Dulac, the 2010 disaster had become overshadowed by ongoing coastal land loss and the global downturn in oil prices, each of which triggered outmigration, followed by the withdrawal of local services such as schools, restaurants, and stores. As noted below and elsewhere in this report (see Chapter 1.4.1 and Chapter 5.4), between June 2014 and December 2015, the price of oil fell more than 70%. Given the region’s heavy dependence on the extraction and production of oil and gas, the income and employment status of many parish residents suffered with the falling oil prices. This added to widespread concern over population loss, with some residents reporting that friends or neighbors were considering relocating in order to get a more stable job or access to services. Residents of Dulac and surrounding communities expressed particular concerns about the loss of young people. Multiple participants noted that they had raised their children in the area, but “they’re all moved out now” (BG007 2015; LF431 2013), many to Houma or communities farther north, such as Gray or Schriever.

Migrations away from the Louisiana coast are not a new phenomenon, as people have adapted to landscape changes by migrating northward for centuries. Historically, such migrations followed large, destructive hurricanes, with entire communities moving inland (Muth 2014, Colten 2011). As noted, this pattern is no longer tied only to storms; a number of interviewees described the progression of people moving inland or north, occurring in the period between 2012 and 2015, tying that movement to concerns over land loss and economic opportunity. Still, most migration was reported to be within the parish; Terrebonne Parish as a whole had 104,461 residents in 2010 (2010 US Census) and had grown to an estimated 113,328 residents in 2014 (2014 American Community Survey). Residents remaining in areas that experienced significant population loss expressed concerns over the lack of services and permanent housing, which for some was exacerbated by the shift to temporary camps or vacation houses in towns such as Cocodrie and Dulac even after the oil disaster (BG018a 2015). The camps are predominantly second homes, privately owned and largely occupied by out-of-towners on a temporary basis, especially on weekends and holidays.

The environmental and social conditions facing south Terrebonne Parish are neither uniform nor static, influenced also by the communities’ political and economic resources. For example, as Dulac is experiencing depopulation, Chauvin, about 8 miles northeast of Dulac as the crow flies but an 18-mile highway drive around the bayou, has seen its overall population grow. In the period from 2010 to 2014, its population increased from 2,912 to 3,220 people (2010 US Census; 2014 American Community Survey). One resident who was born and lives in Chauvin but who operates a business in Dulac, offered the following explanation of why these communities saw different demographic patterns between 2010 and 2014:

Bayou Dulac, it’s basically died. It’s died business-wise because of the hurricanes. People just got tired because the insurance doesn’t cover it anymore, and they’ve just chosen not to rebuild. The bayou that I live on, we’ve got three banks, we’ve got a Piggly Wiggly, we’ve got a Dollar

General, we've got a Family Dollar, we've got probably a dozen restaurants in Chauvin. Now keep in mind Chauvin fared a lot better for the storms because we had a small levee that we'd built 20 something years ago, and it basically stopped a lot of people from getting flooded (BG009 2015).

Following the *Deepwater Horizon* disaster south Terrebonne Parish residents returned to work where they could. In 2012, because of concerns of continued disproportionate economic and environmental effects on fishing communities in the aftermath of the disaster, local and state-level organizations and residents formed Gulf Organized Fisheries in Solidarity and Hope (GO FISH) to advocate for the rights of fishermen, to restore fisheries and to preserve fishing community culture. Nevertheless, throughout the study period, residents and others involved in the seafood industry there reported livelihood changes including: fishers taking employment on barges, a job that was once year-round, but has become seasonal; filing unemployment; trying crabbing due to minimal initial investment costs; or working at a big box store such as Wal-Mart (BG007 2015; BG014a 2015).

Commercial fishery landings from south Terrebonne did not show the dramatic drop of some areas but continued to fluctuate after the spill as they had before (Table 6.2 and Figure 6.2). Gulf fishers continued to contend with imports, though in 2015 a Montegut resident observed, "Last year the prices were pretty decent, and that was because we had shut down imports because they had some contamination. We had shut that down, the government shut it down for a while. So the prices stayed up there, stayed up there pretty good" (BG006 2015). Still, not all fishermen benefitted from the increase in the price and overall value of the catch or were back on their feet by 2015.

Table 6.2. Total commercial fishery landings and value for Dulac-Chauvin, LA

Year	Quantity (million pounds)	Value (million \$)
2015	30.5	45.4
2014	33.7	69.0
2013	37.1	63.6
2012	42.6	64.0
2011	43.3	62.5
2010	32.8	45.1
2009	42.4	50.9
2008	35.6	48.9
2007	23.5	35.5
2006	30.8	35.7
2005	42.6	54.6
2004	40.4	42.8

Source: NMFS n.d.

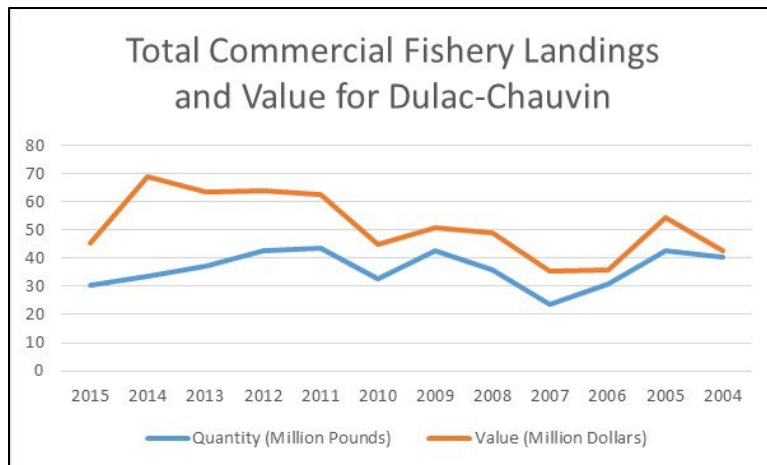


Figure 6.2. Total commercial fishery landings and value for Dulac-Chauvin.
Source: NMFS n.d.

Though many debated whether populations of shrimp, oysters, and fish had returned to the levels seen before the oil disaster, everyone agreed that crabs had not. Global and national perceptions of tainted Gulf seafood had largely improved, but locals reported that demand from buyers offering them reasonable prices were still not up to pre-spill levels by 2015. Shrimpers, oyster harvesters, and processors offered possible explanations, emphasizing that when their market networks were interrupted due to closed fishing areas and with perceived dangers of Gulf seafood consumption, their clients had gone to other distributors and that many of them never returned (LP418 2013; LP433b 2013). After explaining this chain of events, a shrimp processing plant owner added:

We never did get back [lost customers], and some of that was because they were scared of using shrimp from Louisiana for a while and then, once they got used to using a different processor, they were satisfied with what they was getting... [following the spill] we lost a big portion of our business that we had for years and years (BG008 2015).

People working in the oilfield, too, faced challenges. The drop in crude oil prices, from the April 30, 2010 New York Mercantile Exchange listing at \$86.15 a barrel to the December 31, 2015 price of \$37.04 (FedPrimeRate.com 2016) represented more than a 100% decrease, with much of that drop beginning mid-year in 2014. In 2015, this downward spiral was a frequent topic of conversation as well as source of worry for many residents of south Terrebonne Parish. As one resident succinctly summed it up, “it’s a complex game this oil industry, price per barrel thing” (BG010 2015).

The falling prices had tremendous implications for residents and their families who had come to depend on the oil and gas industry for its contributions to state and parish budgets and their household incomes. In addition to helping fund the state’s Coastal Protection and Restoration Authority (CPRA), the agency tasked with developing, executing, and enforcing coastal protection and restoration, in 2014 oil and gas activity generated 13% of Terrebonne Parish’s property tax collections and was directly responsible for approximately 6,070 jobs (not including ancillary services, which account for many more) as well as contributing \$558 million in income and taxes (Houma-Terrebonne Chamber of Commerce 2014). In the words of the Houma-Terrebonne Chamber of Commerce (2014: 1) the industry “drives the economy of Louisiana and unquestionably drives the economy of Terrebonne Parish.” Throughout the study period, residents reported that the “oilfield is thousands of jobs here. What you need to put in your study is ‘do more drilling’” (BM678d 2013).

Loren Scott, a retired Louisiana State University economist, highlighted the role of the oil and gas sector in Terrebonne Parish, reporting “there is no other place in the state of Louisiana [and] very few in the United States of America that has closer contact with the oil and gas industry than this one” (Wilson 2014). With oil prices dropping so quickly and dramatically within four years of the blowout, residents reported friends and family members were concerned about their ability to make a living and continue to provide for their families in the ways they had in the past.

Upon being asked how the downturn impacted residents, one study participant, a librarian, responded, “the oil bust, so you know, a lot of people, especially men, they’ve been losing their jobs left and right... [because] recently the price of oil has just plummeted. So then everybody’s scrambling” (BG004 2015). Another remarked, “I’ve got a lot of family members that are in the oilfields and not only are they losing money, they’re losing jobs. It’s really horrible” (BG009 2015). A small business owner in Houma reflected on the cumulative impacts his community had faced, “Sometimes we think we’re leaving. It’s very emotional. And [we feel] anger. Because this is our home!” (JS002b 2015). Job losses numbering in the thousands began making waves throughout the state and delaying new industry-related investments, further exacerbating state and parish budget woes (Thompson 2015).

Only one named hurricane, Isaac, arrived in south Terrebonne Parish between the Macondo well blowout and the end of the study period; it made landfall on August 29, 2012 near the mouth of the Mississippi River, exactly seven years to the day after Hurricane Katrina struck in 2005. As a Category 1 storm, Isaac caused minimal structural damage, mostly from extensive storm surge and inland flooding. When asked about Isaac’s effects, residents confirmed that Isaac wrought damages and there were some related losses, but nothing in comparison to the 2005 and 2008 hurricanes. Nevertheless, some residents experienced anxiety: “Isaac didn’t really flood our house, but still, we were a nervous wreck” (LF414 2013).

There are no statistics available on how many homes in the study area were marred, but parish-wide, Hurricane Isaac damaged approximately 1,700 homes (Associated Press 2012), with most of the flooding centered in the southern portion of the parish (Wilson 2012a). This compares to Hurricane Rita, which damaged an estimated 10,000 homes parish-wide (Gommel 2015). Most insurance claims for Isaac were water damage, related to leaking windows or roofs (Wilson 2012b). Damage and residents’ reactions varied. A couple from Grand Caillou explained that Isaac peeled up the back end of their roof and noted that if the next storm were to take down their house they would move to Florida (BMC408 2013). One Dulac resident whose elevated home had flooded not from the bottom, but from the top, recalled how the wind tore off her roof and rain inundated her home so she lost everything inside anyway (BG005 2015). Fortunately, her homeowner’s insurance covered those losses at the time, though, at the time of her interview, she had let both her homeowner’s and business insurance lapse due to their high costs, leaving her vulnerable in future storms.

Hurricane Isaac also remobilized oil residues from the Macondo well, as predicted by scientists and residents. Though the hurricane also buried some oil more deeply, studies conducted by chemists at Louisiana State University for state wildlife officials confirmed that some of the oil, tarballs, and mats that washed ashore following the storm matched the biological fingerprint of oil from the Macondo well, though (Associated Press 2012). This involved reportedly more than 565,000 pounds of oiled material (Adelson 2012) and more than three weeks after Hurricane Isaac 12 miles of beach in Lafourche Parish were closed for cleanup (Marshall 2012).

It is not unusual for stress levels to rise each year in south Terrebonne Parish when hurricane season begins, but the reappearance of oil in 2012 contributed to anxiety about future storms throughout the study period (BG013 2015), especially the fate of “all that oil from the bottom of the Gulf that was spilled” (BG005 2015). Even in 2015, a restaurant owner in south Terrebonne Parish explained, “[Since] the oil spill, ... we never really had a bad hurricane yet here in south Louisiana so that’s what everybody’s waiting on! To see what’s gonna happen when that hurricane comes!” (BG005 2015).

Beyond adding worry to hurricane season, uncertainty and anxiety reflected a lasting consequence of the *Deepwater Horizon* disaster for many residents. One community organizer succinctly explained: “[b]ecause it’s *so* unknown. You know?” (BG013 2015). A shrimp expounded:

It’s the fear of the uncertain. You don’t know what’s gonna happen, you have no idea which direction this is gonna go. Something that you’ve done *all* your life, you’ve shrimped all your life, and you don’t even know if this oil’s gonna wipe the species that you’re targeting, you don’t know if it’s gonna wipe it out? That’s a scary place. (BG009 2015)

Such overarching feelings of uncertainty and insecurity five years after the disaster began were not uncommon (Cherry et al. 2015). Residents and business owners expressed ongoing concerns about their own physical and mental health as well as potential or unknown environmental threats. The community organizer continued, insisting that the effects of the disaster were ongoing: “People are *not* doing fine because of the oil disaster. Not only did it [the oil spill] hurt their business, but it also hurt them physically and mentally” (BG013 2015). A number of residents mentioned still seeing oil wash up on the beaches and the unknown effects from the dispersants (BG015 2015; BG028 2015; JS002b 2015). As they had in the early months and years of the disaster, many contrasted hurricane recovery where “we know what to do” (JS026 2015) with what they had observed and experienced since the *Deepwater Horizon* blowout where, as one city official simply stated, “[W]e don’t know what the long-term effects are” (JS032 2015).

Residents who had yet to see compensation from their BP claims also suffered uncertainty (see also Chapter 3: Differential Concerns of the Claims Process). A significant number had not received any compensation, despite submitting claims for economic loss years before (BG009 2015, BG021 2015, BG008 2015, BG016 2015). Explanations for the delay varied greatly: some cited administrative errors (BG009 2015, BG021 2015), others noted that they or their spouse were still calling their lawyers monthly to check on their unresolved claim (BG021 2015), and several simply laughed when asked if they thought they would ever see a check from the claims process. The lack of resolution exacerbated stress and prevented individuals from feeling recovered from the spill. It also served as an ongoing reminder of the inequities associated with the disaster.

Residents received funding from BP, either as compensation for losses or through the Vessels of Opportunity (VOO) cleanup program, at different times and used those funds in varied ways, creating diverse impacts. Before the disaster, the seafood industry experienced financial difficulties due to imports, high fuel costs, and other related problems (Austin et al. 2014). It is impossible to definitively state the overall effect of BP money on the wellbeing of the shrimping or seafood industry. Some interviewees claimed that BP monies invested by the fishers, shrimpers, and oyster harvesters in equipment upgrades enabled their businesses to survive and expand. For example, some used their claims money to keep their bait shops and fishing-related businesses buoyant (LF409 2013). Several study participants, including the owner of a shrimp processing plant, argued that what “kept [the shrimping industry] together for the last 10 years is just the extra monies. Without that you’d see it in worse shape than it is today” (BG008 2015). However, these funds also contributed to local inequality as individuals who received compensation and were able to strengthen their businesses were better positioned to deal with future difficulties. One resident noted that the disparity made “it tough for guys [like me] that can’t compete with all the up-to-date and updated equipment they invested in with all that [BP] money” (BMC425 2013).

Beyond the seafood industry, some residents felt cheated and frustrated when compensation was distributed unevenly. Protesting that she was continually asked to resubmit documents or asked the same questions in the claims process, one resident proclaimed that, “They [BP] can exhaust me, but I still got a lot more to go. I’ve got Hodgkin’s disease that’s caused by stress that they done put on me. And I’m not giving up until they put me in my grave” (BG027b 2015).

Another source of economic frustration not caused by BP came from increased flood insurance premiums after Hurricane Katrina. The National Flood Insurance Program (NFIP) was implemented in the US in 1968, following Hurricane Betsy's landfall on the Gulf Coast in 1965 and was generally solvent until 2005 when Hurricane Katrina claims pushed the program into a deficit. Since then, the program has borrowed billions of dollars from the Federal Treasury and, as of December 31, 2014, the Federal Emergency Management Agency (FEMA), which manages the program, owed the Treasury \$23 billion, up from \$20 billion as of November 2012 (GAO 2015). Shortly after the *Deepwater Horizon* disaster began, NFIP announced that the agency would bill BP for any claims paid for properties affected by floodwaters mixed with oil from the spill (Donelon 2010). Whether due to this claim or to the added threat of oil remobilizing during hurricane season, Louisiana Insurance Commissioner James J. Donelon reported an uptick in new policies in the months following the blowout (Donelon 2010).

Shortly after the *Deepwater Horizon*, as a result of the NFIP deficit, the Biggert-Waters Flood Insurance Reform Act of 2012 (Biggert-Waters Act) was passed by Congress and signed by President Obama in 2012. The law extended the NFIP for five years, while also requiring significant program reform to facilitate repaying the program's loans and preventing future excessive borrowing; this included phasing out almost all reduced insurance premiums, including those with subsidized rates (FEMA 2013). The passage of this act created apprehension and anxiety for south Terrebonne Parish residents, who saw extraordinary increases in their premiums and feared continued increases (JS002b 2015; JS031 2015). One resident related, "[the] premiums are unbelievable. I know a lady in Cocodrie that pays over \$30,000 a year in flood insurance for her shrimp business. That's just unheard of" (BG009 2015). Toward the end of his interview, an oil and gas service company executive in Houma, observed:

Katrina has had a huge effect on flood insurance. It's ridiculous and so expensive. None of the major companies write it anymore. The people of this region, they know how to handle hurricanes. But, my insurance has gone from \$1200 a year to \$7000 a year. It's ridiculous. And there's a lot of people here who are just going without flood insurance because they can't afford it (JS019 2015).

Fortunately for parish residents, the Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) was enacted on March 21, 2014. Then-Parish President Michel Claudet loudly supported HFIAA (JS011 2015; JS031 2015). HFIAA restored some, but not all, insurance premium subsidies and reduced premium rate increases mandated by the Biggert-Waters Act. One resident who was involved in the HFIAA legislative process reflected: "Biggert-Waters, if that had gone through, Terrebonne would be gone. No one could live here. Only the richest people [would] live here" (JS026 2015). The increasing cost of living along the coast, contributed to the exodus of residents from the lower bayou communities, as discussed in the next section. Nevertheless, some were undeterred, like the Dularge shrimper who reflected:

The things that are important are not things that you take out your pocket, and they're not things that you have or not things that you can buy, but when you pass through all these hurricanes the way that we have? And have lost everything twice, this house flooded with three feet of water, twice. Once, five days after I moved into it. The next time it was all fixed, but we lost it all, and you realize that, in the end that really doesn't mean a whole lot. It's ok that you – you can lose that sofa, you can lose that TV, it's ok. The most important things are here and here (pointing to head and heart) and that's it. When you're content in those places, you're a rich person (BG021 2015).

As discussed in this section, according to many study participants, the 2010 *Deepwater Horizon* disaster continued to have wide-ranging effects in south Terrebonne Parish by the end of 2015. Throughout the study period, southern Terrebonne Parish residents and leaders unequivocally reconfirmed these impacts. The effects of the spill were often described as encapsulated in an inescapable uncertainty. The following

sections explore the more specific and recent effects of the oil spill disaster in the context of broader events in two topical areas: (1) housing, demographic shifts and human migration from 2013 to 2015; and (2) coastal land loss, protection, and restoration.

6.3 Demographic Shifts, Migration and Housing

South Terrebonne residents described demographic shifts, migration, and changes in housing availability, linking these phenomena to the BP disaster, hurricanes, land loss, economic shifts, and increased cost of living, as discussed above. As residents left the area, some houses were converted into seasonal camps, contributing to rising housing costs and limiting housing availability. With loss of full-time residents, some schools and businesses closed and services moved northward. These shifts were particularly visible in the out-migration of the younger residents from communities such as Dulac, though overall population in the region was restored, in part, by an increase in Spanish-speaking residents. Collectively, these shifts served to alter the character of many south Terrebonne communities.

6.3.1 Migration

A major demographic shift noted by many south Terrebonne residents and leaders was the out migration of young people. The parish as a whole did not experience a decline in population. This can be attributed in part to residents in the lower bayous moving north and inland into Houma, an incorporated city, and into areas such as Chauvin which are protected by levees, rather than leaving the parish altogether. However, communities such as Dulac, in the southern portions of the parish, experienced population losses and youth outmigration between 2013 and 2015. These changes produced profound social effects on those who left and stayed, alike. Most interviewees referred to the northern migration of youth from the lower bayous, many citing newspaper articles and other reports. For example, the Parish's Vision 2030: Terrebonne's Plan for Its Future, published in 2013, predicted that the population of south Terrebonne would grow older within the next several decades (TPCG 2013). In 2010, the median age of a resident in Dulac, for example, was 34.1 (2010 US Census). Four years later, in 2014, the median age was 46.3 (2014 American Community Survey). Though some of this shift may be due to differences in the decadal Census and the ongoing Survey, the data support the interviewees' narrative that younger people are leaving Dulac. Of the young people leaving southern Terrebonne Parish, the primary drivers were reported to be rising housing costs, safety concerns, and educational or employment opportunity.

Since 2012, home prices and new construction in south Terrebonne and greater Terrebonne Parish had been escalating, making it especially challenging for young people to buy homes. Rental rates had also risen since 2012, pricing many residents either out of the market or placing them among the 89% of very low-income households and 74% of low-income households residing in units considered unaffordable (Houma Terrebonne Housing Authority Annual Plan for Fiscal Year 2015). In areas such as Dulac, this is tied, in part, to the increase in camps and vacation rentals, as discussed in the next section.

Combined with housing challenges were concerns over safety and economic opportunity. One community activist, echoing interviewees in communities across the Louisiana coast, attributed much of southern Terrebonne's outmigration to women's concerns for their family's safety combined with a lack of economic opportunity:

The younger people are more likely to leave, but you know I think it's because of the family, like the wife and them, having a young wife and kids, because their wives probably want them to have more, better security. Because the fishing industry doesn't hold. They don't have too much security, family security (BG013 2015).

Though men, too, are concerned for their families, this sentiment that women were driving household decisions was expressed by many interviewees. And, though the downturn in oil prices and the growing

number of layoffs in that industry had the potential to turn residents back to commercial fishing, study participants also reported that it could spur people to migrate up the bayou into Houma, where jobs were more plentiful in the medical industry or education. One Dulac resident in her late 70s, who had spent the majority of her life in southern Terrebonne, remarked: “[M]ost of the younger people, if they’re able to get a job, don’t stay down there” (BG014a 2015). In this context, some interviewees feared the *Deepwater Horizon* disaster’s wide-ranging and uncertain effects would further dissuade children of commercial fishers from following in their parents’ footsteps and thus encourage them to leave southern Terrebonne. Such changes contributed to uncertainties about the future of the coastal communities and the local commercial fishing industry.

The demographic shift was manifest in southern Terrebonne communities in the closure or northward migration of services. In 2013, Terrebonne Parish closed two elementary schools in the southern part of the parish: Boudreaux Canal Elementary in Chauvin, which had taken in students when Little Caillou Elementary School closed in 2007, and Dularge Elementary. School officials cited budget cuts and their status as “small-sized schools” (Olivier 2013); residents noted there were not “enough kids” (BG020a 2015). One Houma resident explained that “the Boudreaux Canal School closed down because there were no kids attending it. It’s like ants, moving to higher ground” (LF415 2013). Another noted that “As new generations come in, they’re moving further up to be where things are – the stores and such” (JS032 2015). In August 2014, Grand Caillou Middle School, for students in grades 5 through 8, opened in Houma, ten miles north of the school’s former Dulac location. Several local stores and businesses in the area also closed or moved north during the study period. This trend appears to be self-reinforcing: as services become less available in the southern part of the parish, residents move north to be near them, leading to additional closures, which spur further migration.

Though out-migration from rural areas reflects national trends, not all areas of lower Terrebonne Parish saw the same effects. Chauvin’s population grew, but the median age of its residents declined between the 2010 US Census and 2014 American Community Survey while Montegut’s population and the median age of its residents declined between those two events. This bears out the experiences of many interviewees, who described the migration as primarily within the parish because of a continued desire to remain as close to the area as possible. A city employee quipped, “[W]e are a very family oriented community. We don’t move far from mama” (JS023 2015). A resident who moved north from Dulac to Houma explained, “I wanted to move to Houma, to safer grounds, but still close enough to be able to visit anytime I wanted” (BG013 2015).

6.3.2 Camps and Part-Time Residents

In the midst of overall population declines, several south Terrebonne Parish communities reported an increase in the number of part-time, mostly white, residents. They come from Louisiana’s large urban centers and other states to occupy camps, the local term for vacation houses used for hunting, fishing, or excursions to rural communities. Some camps are modest, but many are expansive, elevated structures, with water access and raised boat storage. A local pastor noted, “[These are] very nice, well equipped and updated camps, like the ones in Florida. They are not basic camps, but luxury camps” (JS028 2015). One full-time resident noted with pride that she was “raised on the bayou...when life was so simple back then,” in contrast to the “huge camps down there, million dollar camps in Dulac, which is so unheard of, you know, million dollar camps where people can come there and live on vacation land” (BG013 2015). In places such as Cocodrie, Dularge, and Dulac, locals commented that permanent residents who were moving away were increasingly selling their land and homes to people who live in Baton Rouge or New Orleans to turn them into camps. Some camp owners advertised their properties on short-term online rental sites such as airbnb or VRBO.

Camps owned by non-permanent residents dominate the housing in some areas, such as Cocodrie, alongside Grand Caillou Road north of Dulac, and in nearby subdivisions. Some coastal researchers have called this the “gentrification of the coast by recreational fishers” (Bailey et al. 2014). The replacement of permanent homes with expensive camps was leading to significant changes in the landscape and the services available as some of the camp neighborhoods are segregated from other housing and have their own markets and other amenities.

Nevertheless, in 2015, residents who lived near the camps generally expressed gratitude and open-armed attitudes toward their new neighbors, noting that they filled voids left at church services and in local restaurants when permanent residents moved away. The owner and operator of a marina in Dulac summed it up: “There’s a lot of tourists around here, you know, a lot of out of town people. And they tend to spend a little more money than the locals do, which is good” (BG018b 2015). When they spend more money than locals at the bait shop, a local marina, a restaurant, or the Dulac Food Store for a burger and “morning biscuits,” the “camp people” increase the likelihood of survival of the businesses that cater not only to them but also to the permanent residents who own those establishments (BG018a 2015; BG022a 2015; BG022b 2015). Given the ongoing decline in permanent residents in some study area communities, those businesses depended on non-permanent residents for part of their income.

6.3.4 Increase in Spanish Speakers

Though not captured in the Census or American Community Survey, another significant demographic change reported in lower Terrebonne Parish is an increase in Spanish speakers. Interviewees commented specifically on the significant numbers of residents who had emigrated from Mexico and Latin America. Interviewees active with Latino groups reported that Latinos began arriving to work for the oil and shipbuilding industries before the BP disaster, though the trend had begun to subside by 2015 with the plunge in oil prices. While reliable statistics on the numbers or motivations of migrants are lacking, many residents pointed to various indicators of an increased Latino population in south Terrebonne, including: expanded Latino food offerings in local grocery stores, new Mexican restaurants, and a general consensus that Spanish was spoken more often in stores, at church, in community centers, and elsewhere.

Specialists, from librarians to mental health workers, noted an increase in demand for Spanish language services. A librarian, for example, recounted that the library branch in Dulac had seen an uptick in requests for books written in Spanish for both adults and children, noting that “The Hispanic community has really grown a lot” (BG004 2015). Two mental health workers affirmed that their organizations had sought out and hired more Spanish-speaking caseworkers to address the growing population between 2012 and 2015 (JS025 2015, JS027 2015). They both noted that additional hires were needed to fully address the mental health assistance needs of Spanish-speaking families from the bayou communities. One of these individuals, who had lived in Houma and served in multiple mental healthcare capacities for 25 years, tied the recent requests for mental health help to the stress and frustration that Latino families had navigating the BP claims process (JS025 2015). The other, who had grown up in a bayou community, reported that numbers “increased from just a handful of Spanish speaking families to many more” since she began working with her organization in 2013 (JS027 2015).

Community leaders also observed that the makeup of the Spanish-speaking population had changed, becoming more permanent. A resident who ran a Houma-based nonprofit commented: “Hispanic workers who came here after the spill put down roots” (LP478a 2013). Churches, too, acknowledged the change as they developed strategies to meet the needs of their Latino members. A Catholic priest relayed that his church created the position of Hispanic Services Coordinator in 2010 and that, since 2013 when he changed positions in the church, he had focused on helping himself and his staff learn Spanish. He was also actively seeking funding to expand the repertoire of classes and activities taught in his church by Spanish speakers for Spanish speakers (JS028 2015).

6.2 Coastal Land Loss and Restoration and/or Protection

6.2.1 Land Loss, BP, and the Master Plan

The survival of south Terrebonne Parish communities will require livable land. Residents spoke frequently and at length about the *Deepwater Horizon* disaster's direct and indirect role in coastal land loss and restoration, hurricane and storm surge protection, the multi-billion dollar Morganza to the Gulf hurricane protection system and what the future might hold for them. Many had seen dramatic land loss in their lifetimes. Dulac residents described having "seen the bayou move in and take part of the highway," reminding the researcher, "we are surrounded by five bayous" (BG019 2015). Another recounted having visited a piece of land in southern Terrebonne Parish in the summer of 2015 to go fishing and hardly recognizing the same place when he returned two weeks later, so much land had gone (JS014 2015).

The many causes of coastal land loss are tied to global natural and human-induced environmental changes as well as specific uses of Louisiana's coast, and efforts to prevent or reverse land loss were begun long before 2010; as noted in Chapter 5.2, in 1974 the Louisiana Constitution established the Coastal Protection and Restoration Fund to provide revenues for protecting and restoring Louisiana's coastal area. In the complex coastal system, the spill was recognized as another potential contributor to coastal land loss as it "resulted in the accumulation of crude oil on an estimated 15.6 % of Louisiana's marsh shoreline" (Able et al. 2014). Coastal scientists documented that the Macondo oil that washed ashore accelerated land loss by disrupting root systems (JS035 2015), suffocating vegetation crucial for holding the delicate land together (Elliott 2016), and eroding the shoreline (McClenachan, et al. 2013).

The CPRA released the Comprehensive Master Plan for a Sustainable Coast in 2012. The second iteration of the document and the product of planning begun before 2010, the Plan detailed diverse proposed projects for Terrebonne Parish, including marsh restoration, hydrologic diversions, levees, and lock gates. The Plan was controversial for not offering equal levels of protection and restoration to all areas of the parish and for protecting some areas at a cost to others. For example, one resident recounted her frustrating experience at a 2013 CPRA meeting when asking about a sediment diversion's effect on shrimping, fishing and oystering industries and recalled that she was told, "you either lose your land, or you lose your livelihood" (LF410 2013). Some saw the Plan as incomplete; it was also costly: statewide it called for \$50 billion, more than was available, to complete the proposed projects. A financial evaluation by the Tulane Institute on Water Resources Law & Policy demonstrated that, after adjusting for inflation, the plan would cost closer to \$91 billion (Tulane Institute 2016). As required by state law, the Plan is updated every five years; residents and leaders expected the 2017 update would carry a much higher price tag. Residents and leaders anticipated that BP funds would be used for restoration, increasing the likelihood that the plan would be realized. This engendered hope in its proponents and disillusionment in its opponents. As in Plaquemines Parish, the anticipated connection between BP reparations and planned coastal restoration projects, meant that by the study period the disaster's impacts included coastal restoration.

6.2.2 Morganza to the Gulf

Morganza to the Gulf is an immense flood control project planned for implementation. Described by Congressman Scalise (R) as "20 years of facing bureaucratic red tape" (Alpert 2014a), the project began with a Congressionally-approved reconnaissance study in 1992 (Bouillon et al. 2008; Schleifstein 2013) and by 2015 had become a massive storm surge protection project, with plans to include 98 miles of earthen levees, 22 floodgates on navigable waterways, 23 environmental water control structures, a lock complex in the Houma Navigation Canal, an adjoining floodgate measuring 250 feet wide, a dam closure, nine road gates, and fronting protection for four existing pump stations levees (Corps 2013; see Figure 6.3). It was billed as one of the largest structural engineering projects ever planned in the state of Louisiana.

Rapid land loss prompted parish and state authorities to spend \$366 million to begin interim construction on the hurricane protection system, Morganza to the Gulf, while waiting for federal funding (Schwartz 2015). A portion of that money was raised through taxes that parish voters approved in 2001 and again in 2012 (Leblanc 2015). Congress approved the project in 2014, the next step in acquiring the federal funding needed to finish what the Army Corps estimated as a \$10.3 billion effort (Alpert 2014b). However, funds were not forthcoming and at the end of the study period in 2015, local authorities continued piecemeal construction without federal funding in hopes that they would be reimbursed with federal funds or with a portion of the BP settlement.

Many locals shared their hopes and concerns about the project during this study, particularly in light of possible “BP money” allocations. Many, including this shipyard operator, were skeptical that the project would be realized: “[W]e’ve been waiting for years to get that other levee, the Morganza levee. You know that’s never gonna happen” (BG007 2015). Some suggested that project could contribute to residents returning to the area: “ [If that levee] protects (the area) people might start coming back” (BG005 2015). Though, according to a retired professor, it might instill a false sense of security: “People think they’re secure when they’re not [behind a levee] so it’s a death trap. So, I’d rather a stable coast that doesn’t flood due to its elevation or distance from the coast” (BG011 2015). Finally, others were pessimistic because southern Terrebonne Parish residents outside the levees would not benefit, “It’s not gonna do anything for the people living on the coast that are the first lines of defense for any disaster that comes along” (BG013 2015), and increased flooding outside the levee would worsen the impacts of future storms for those communities. As the fieldwork ended in 2015, the plans and possibilities surrounding Morganza to the Gulf contributed to the uncertainty and instability that characterizes the lives of many south Terrebonne residents.

A comparative look at living along the Gulf Coast

The very permanent changes in climate and shifting land access have motivated many discussions about the future of living in coastal Louisiana. Some Louisianans met concerns over an eroding land mass with plans to move and rebuild elsewhere. These conversations and decisions differ starkly from those that were reported in Biloxi. Biloxi, and especially East Biloxi which was completely razed by Hurricane Katrina, has a particular relationship to storms given their cyclical nature and the relative infrequency of major ones making landfall there. Following Hurricane Betsy in 1965 and Hurricane Katrina 40 years later, many Biloxi residents were confronted with rebuilding their lives from scratch, and both the storms and the rebuilding had become part of the community narrative. Biloxi residents anticipated seeing environmental devastation at least once in their lifetime and also expected that locals would always come back, would always rebuild, and would always be loyal to the area. Accordingly, residents of the area were accustomed to thinking about their future within a short to mid-term cycle – the in-between storms – but did not discuss adapting to long lasting changes in their environment.

6.2.3 The BP Settlement and Allocations

In July 2015, during fieldwork for this study, BP was ordered to pay up to \$18.7 billion in penalties to the US government and five Gulf Coast states: a majority going towards Clean Water Act fines and natural resource damages, and about \$5 billion to the five states. When questioned about their thoughts on the large sums of money set to be distributed to their local parish or to the state of Louisiana, many people were not aware of the finalization, seemed nonplussed at the figures, or did not feel that the concluding settlement would specifically assist their communities. Few residents were optimistic about the settlement, with many even doubting that the resources received by the state government would be put to beneficial and efficient use. Asked what she believed the state would do with settlement money slated for restoration, one participant said that she was “so discouraged with the state as a whole” and the future (PR501 2013), adding that, if communities saw any of the money, it would be so eroded that they would

probably have to fight tooth and nail in order for their suggestions and concerns to be heard (Robles Fieldnotes April 4, 2013). Another woman shrugged off the billions and offered her thoughts: “For the bayou communities, I see a dying area, only because I know we did get the billions of dollars of recovery and restoration money, [so] they’re going to not worry about anybody on the other side of the Morganza to the Gulf” (BG013 2015). A number of other residents made similar comments about bayou communities being forgotten or left behind in coastal restoration and protection, settlement money, insurance subsidies, and federal assistance in general.

In October 2015, after the fieldwork for this study was complete, the Federal government’s civil claims under the Clean Water Act, natural resources damage claims under the Oil Pollution Act, and varying economic damages of Louisiana, Alabama, Mississippi, Florida, Texas, and local governments were settled in court for \$20 billion (see also Chapter 1). This was the largest settlement from one individual entity in the Department of Justice’s history (DOJ 2015). Attorney General Loretta Lynch noted, “[B]uilding on prior actions against BP and its subsidiaries by the Department of Justice, this historic resolution is a strong and fitting response to the worst environmental disaster in American history” (DOJ 2015). Terrebonne Parish government agencies were allocated more than \$21.5 million for economic losses. The Terrebonne Parish School Board and Terrebonne Parish each received the highest amounts at \$9.5 million apiece. There were no stipulations as to how to use the money, according to the lawyer who represented the parish (Burns 2015).

Louisiana, which suffered the most physical damage from the spill, was slated to receive the largest share of the settlement money among the Gulf States. Joni Tuck, Grants Administrator of the Greater Lafourche Port Commission in Lafourche Parish, claimed that this funding “is the best opportunity to put a down payment on our coast’s future that we’re ever going to get” (Elliott 2016). Yet, estimates of the total funding to be received could cover only a fraction of the costs estimated by the CPRA Master Plan.

A total of \$7.2 billion of oil spill fines and settlement money were awarded to the state of Louisiana as per the consent decree agreement in principle between BP and the US Department of Justice and were to be directed towards Master Plan projects in Louisiana (Schleifstein 2015). A large portion of these will be allocated over a fifteen-year period. While there are several restoration and protection projects that are “probable” in Terrebonne Parish, because the 2017 Master Plan had not yet been released at the time of this study, the list of projects had not been finalized (Schleifstein 2015). At the end of 2015, three projects had been fully funded in Terrebonne Parish: a water-control structure intended to increase freshwater flow through the Falgout Canal, located about six miles northwest of Dulac; the Lost Lake project, in the far west of the Parish, which would add a series of 423 concrete pyramid-style structures designed to stabilize the shoreline; and the first phase of the Carencro Bayou freshwater introduction project slated to restore freshwater and sediment to more than 1,500 acres of marsh in western Terrebonne (Magill 2015).

When discussing coastal restoration in general, many residents expressed their skepticism of the projects to be chosen to help protect and/or restore their parish; they argued that not enough was being done. One resident, when asked how he felt about the state and parish’s efforts on restoration and protection laughed and quipped, “it’s all just a money racket” (BG020a) and another resident proclaimed in disbelief, “[W]e put a man on the moon! You trying to tell me we can’t build a levee to defend our homes?” (BG006 2015). Consistently, residents noted the importance of barrier islands as key protection from storms and erosion and were baffled that more attention was not being paid to this area of protection and restoration (BG011 2015; BG015 2015; BG017a 2015; BG018a 2015; BG024a 2015).

A comparative look at coastal restoration

In Alabama, coastal restoration was taking place in different ways and on a different scale than in Louisiana. To begin, Alabama has only about 60 miles of coastline on the Gulf of Mexico. Though the length of a coast is notoriously difficult to measure, by whatever metric used, Alabama has a much shorter coast than Louisiana. The state also has had less time to plan its coastal restoration projects. Alabama's Gulf Coast Recovery Council (GCRC), the entity responsible for distribution of RESTORE Act funds in Alabama (see Chapter One of this report), was created in 2012 (Alabama Gulf Coast Recovery Council n.d.). As of October 2014, 94 projects had been submitted for consideration, totaling \$611 million (Tynes 2014). These included beach restoration projects; educational facilities, exhibitions, and boardwalks; watershed protection; upgrading wastewater treatment facilities; oyster restoration; habitat preservation; and artificial reef creation (Tynes 2014). By November 2015, the National Fish and Wildlife Foundation (NFWF) had approved over \$28.8 million for seven restoration projects including monitoring, watershed management, habitat acquisition and enhancement, and reef enhancement (NFWF 2015). During the same period, \$220 million was awarded to seven projects in Louisiana (NFWF 2015). In Alabama, private and public organizations also had restoration efforts and plans underway by late 2015. These included the 100/1000 Project, where a coalition of four environmental NGOs had begun to build 100 miles of oyster reef and plant 1,000 acres of seagrass (The Nature Conservancy n.d.). On the whole, despite complaints over the degree of control over the process held by the Governor's office (Sharp 2015) and controversy over particular proposed projects and the transparency and representativeness of the GCRC (Pillion 2014, VP590 2015, VP593 2015, VP604 2015, see also Chapter Two of this report), public discussion and dissent over the process and the proposed uses for the money was minor compared with the ongoing debates in Louisiana.

6.4 Summary

As demonstrated in this chapter, the mid-range effects of the *Deepwater Horizon* disaster in southern Terrebonne Parish occurred in a context marked by Hurricanes Katrina and Rita in 2005, Ike and Gustav in 2008 and Isaac in 2012 as well as significant downturns in oil and seafood, two key industries, and increasing concerns about community viability in the face of land loss. Residents were deciding whether to migrate or stay and bear increasing costs to live in a community with fewer full-time residents and fewer services but that offers the life they love. New part-time and Hispanic residents brought new resources and energy, but concerns about viability remained. Some expressed hope that protection measures such as large-scale levees would save their communities; others doubted these projects would be completed.

In this context, the BP spill was consistently cited as adding uncertainty in terms of the eventual impacts of the oil on the environment and sea life, the inequity of the settlement distribution and its impacts on the community, and the future uses of settlement funds, particularly with regard to coastal restoration. Impacts from the spill were reported as adding to other stressors or worries, including the struggling fishing industry, an uncertain oil industry, and increased levels of stress and anxiety with the onset of each hurricane season. All of these, exacerbated by the disaster, were reported as contributing to outmigration. Some noted the beneficial effects of settlements, or "BP money", while others had not yet seen "a penny" (BG021 2015) and were still trying to recover. Many hoped that BP settlements would fund coastal restoration and storm protection projects, though that was also cause for skepticism. In short, the impacts of the spill were to make an uncertain situation more precarious.

7. Summary and Discussion

This report documents findings of phase two of the study of the social effects of the *Deepwater Horizon* disaster on coastal communities of Louisiana, Mississippi, and Alabama, focusing on the period from January 2013 through December 2015. Because social effects generate more social effects, they persist long after the triggering event or onset of a disaster, so it is not surprising that many of the effects documented in the phase one study (Austin, Dosemagen, et al. 2014; Austin, Marks, et al. 2014) were still evident in phase two. Furthermore, between April 2012 and December 2015, Gulf coast communities experienced several additional disasters and major events, some whose impacts were exacerbated by the lingering effects of the *Deepwater Horizon* disaster. These included hurricanes which brought oil from the Macondo well onshore, a major downturn in the oil and gas industry, uneven recovery from the economic recession that began in late 2007, and ongoing claims processes, lawsuits, and settlements. While those events had widespread effects on people and communities across the Gulf region, the nature and extent of their impacts depended on economic and demographic profiles, experience with prior disasters, and many other factors. Except where the oil was visible and could be linked to the Macondo well, residents and leaders, as well as researchers, had trouble isolating the effects of the BP disaster. Rather than attempting to segregate the effects of these different events, this report describes the ongoing effects of the *Deepwater Horizon* disaster in their context. It relies on ethnographic data to explore the dynamic and non-linear processes and relationships that create and amplify these effects.

The effects of the *Deepwater Horizon* disaster during the study period were cumulative, layered upon storms, ongoing environmental change, an economic downturn, a significant decline in the price of oil, a struggling seafood industry, and shifting demographics in coastal communities. The Gulf Coast region has had a complex history of dependence on a diversity of natural resources and its people have constructed livelihoods from hunting, fishing, trapping, logging, raising livestock, farming, and oil and gas activities. Yet, because the local economies depend to a significant degree on industries that are controlled or influenced from outside the region, residents are susceptible to global economic instabilities. These, combined with factors such as land loss, climate change, sea-level rise, and the communities' abilities to leverage resources to cope with these factors, have challenged residents and leaders as they seek to sustain their homes and communities.

The effects of the *Deepwater Horizon* disaster were also differential across time and space. While debates continue about the nature, extent, and timespan of the disaster's impacts on the economy, marine and estuarine ecosystems, and human health, as described in this report, the social effects of the disaster persisted in all study communities throughout the study period. Across those communities, neither the duration nor severity of socioeconomic impacts from the spill were determined simply by the continued presence of oil. Instead, those effects were conditioned by prior events and responses. Consequently, because each community has a unique combination of demographic, economic, and sociocultural factors, the effects in each place were different. Since whenever these effects occur, they occur as consequences and expressions of these unique factors and their combinations, attempts to identify socioeconomic effects by quantitative measures of the effects of any single variable across communities, such as population change, per capita income, or changes in livelihood strategies, will almost certainly render all effects invisible.

Several examples illustrate the complexities. In East Biloxi, a community that had literally been wiped off the beach by Hurricane Katrina, outside investors took the opportunity to build casinos and large tourist enterprises. In addition to materially changing the place, these additions made it harder to see, physically or in statistics, what was happening to the people who lived there and were still connected to the seafood industry. Likewise, in Larose, the commercial seafood industry has been dwarfed by the oil and gas and service companies operating there, including several large shipyards. There, oil and gas-related employers tried to hang on to workers in the aftermath of the spill and suspension of drilling, but they then suffered

with the oil and gas downturn. In Bayou La Batre, shipbuilding and seafood have a more symbiotic relationship, each capitalizing on the others' presence. The economic woes of Larose and Bayou La Batre were alternately exacerbated and buffered by the shipyards.

In another example, Larose, inside a ring levee, benefitted from new housing construction, while Dulac though inside the levee system proposed for south Terrebonne Parish, and central Plaquemines Parish, beyond the reach of levees and sea walls, did not. Biloxi, Bayou La Batre, and the communities of central Plaquemines Parish, all seriously damaged by Katrina, saw new housing development move north, away from the coast. Dulac, in Southern Terrebonne Parish, which has remnants of fishing, seafood processing, and the oil and gas service industry, illustrates how the oil disaster intensified the downward spiral of coastal land loss, frequent storms, declining population, and loss of amenities such as schools and grocery stores..

Such differential impacts of the disaster, coupled with reports from outsiders who did not understand or portray this diversity of impacts, created additional social effects as residents and leaders seeking assistance tried to respond to reports that attempted to paint the entire region with one brush and declared the effects to be over. Even the physical impacts of the spill, such as ongoing oiling along the shoreline of Plaquemines Parish five years after the *Deepwater Horizon* rig exploded, were largely ignored as attention shifted to other events and concerns.

Underlying and exacerbating the social effects of the disaster was pervasive uncertainty about the environmental, biophysical, and health effects of oil and dispersants as well as the political, legal, and economic consequences of the disaster and proposed restoration efforts. This was heightened by the persistent uncertainty regarding factors such as hurricanes, the speed and manifestation of climate change, and the pace and extent of coastal land loss. It was also intensified by questions about coastal protection and investment and the future of the region's oil and gas, seafood, and tourism industries.

Contributing to the chaos, research, and research funding, became a significant source of ongoing effects related to the oil disaster, and will continue as such well into the future (the National Academies of Sciences, Engineering, and Medicine program to support research and development, education and training, and environmental monitoring in the Gulf of Mexico has a 30-year lifespan). The political, legal, and economic ramifications of the results of the research, along with the presence of researchers in the study areas, kept the spotlight on the people and topics involved. Topics under investigation broadened beyond the causes and effects of the *Deepwater Horizon* disaster to the fate of oil in the Gulf and the many factors – from ocean currents to microorganisms – that influence that fate. On some topics, the sheer number of programs, studies, and researchers, and the large volume of data generated by different researchers from different labs and institutions using different methods, made it difficult even for scientists to draw conclusions. On other topics of great concern to coastal residents, such as human health effects from the spill, the lack of well-designed studies or baseline data, as well as inadequate means to measure such effects, meant that few questions could be answered. The unevenness of impacts and uncertainty about the future aggravated this situation, as study results that did not match residents' personal experiences elicited a range of responses, from disdain to distrust, confusion, or – less often – an explanation based in thorough understanding of the scientific process. These circumstances, along with additional concerns that BP was influencing the information that reached the public by amplifying some study results and ignoring others, contributed to distrust of any research findings.

In sum, across the study region, persistent social effects stemmed from cumulative and differential impacts of the disaster and from continuing uncertainty. Though the study concluded in early 2016, debates about the ongoing presence and effects of the Macondo oil, along with discussions and decisions regarding how to spend settlement monies associated with the disaster, much of which had yet to reach the people or communities, ensure that the effects of the disaster will continue into the future. In addition, despite the challenges it is facing, the oil and gas industry continues to play a major economic,

social, political, and cultural role in the region. In the wake of the downturn, companies will undergo new rounds of reorganization, downsizing, and layoffs, affecting individuals, households, and communities. Coastal erosion, too, continues. Even with the money from the legal settlements and federal legislation, state programs, exemplified by the Louisiana Coastal Master Plans, will receive only a fraction of the funding needed to implement projects designed to address – though not stop – the loss of wetlands, inland freshwater bodies, and land. Here, too, local and state differences in legal mechanisms, such as the Louisiana constitutional amendments that require certain monies to be used for coastal restoration and protection, will influence what is possible. Whether, in the long run, the resources generated by the disaster ultimately result in positive outcomes within the region—economically, environmentally, or socially—remains to be seen.

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- JS001. 2015. Personal communication. Commercial seafood and oil spill impacts. Discussion with Diane Austin and Victoria Phaneuf. Commercial fisherman and industry representative. Arabi, LA. June 08.
- LP480b. 2013. Personal communication. Local economy and oil spill impacts. Discussion with Lauren Penney. Industry association official. Belle Chasse, LA. October 28.
- LP483. 2013. Personal communication. Civil society and oil spill impacts. Discussion with Lauren Penney. Nonprofit director. Arabi, LA. October 30.
- LP484. 2013. Personal communication. Economic development and oil spill impacts. Discussion with Lauren Penney. Parish official. Belle Chasse, LA. November 01.
- LP489. 2013. Personal communication. Education, civil society, and oil spill impacts. Discussion with Lauren Penney. Nonprofit outreach specialist. Belle Chasse, LA. November 06.
- LP493. 2013. Personal communication. Commercial seafood and oil spill impacts. Discussion with Lauren Penney. Commercial oyster harvester. Empire, LA. November 12.
- PR506. 2013. Personal communication. Louisiana seafood, livelihoods, and oil spill impacts. Discussion with Pedro Robles. Shrimp association board member, Galliano, LA. April 09.
- PS413. 2013. Personal communication. Civil society, community health, and oil spill impacts. Discussion with Priya Singh. Social service provider. Belle Chasse, LA. April 18.
- PS420. 2013. Personal communication. Commerce and oil spill impacts. Discussion with Priya Singh and Monique Verdin. Retail manager. Saint Bernard, LA. April 23.
- PS428. 2013. Personal communication. Education and oil spill impacts. Discussion with Priya Singh. School official. Port Sulfur, LA. May 07.
- PS429a. 2013. Personal communication. Churches and oil spill impacts. Discussion with Priya Singh. Religious leader. Buras, LA. April 12.
- PS431a. 2013. Personal communication. Local community and oil spill impacts. Discussion with Priya Singh and Monique Verdin. Refinery employee. St. Bernard, LA. May 10.
- PS432. 2013. Personal communication. Commerce and oil spill impacts. Discussion with Priya Singh and Monique Verdin. Retail manager. St. Bernard, LA. May 10.
- PS437. 2013. Personal communication. Education and oil spill impacts. Discussion with Priya Singh. School official. Boothville, LA. May 13.
- PS439. 2013. Personal communication. Local community and oil spill impacts. Discussion with Priya Singh. Local resident. Belle Chasse, LA. May 14.
- PS444. 2013. Personal communication. Local community, youth, and oil spill impacts. Discussion with Priya Singh. Offshore oil employee. Belle Chasse, LA. May 17.
- PS446. 2013. Personal communication. Rebuilding after Katrina, home insurance, mental health, and seafood. Discussion with Priya Singh. Religious leader. Belle Chase, LA. May 20.
- PS450. 2013. Personal communication. Churches and oil spill impacts. Discussion with Priya Singh. Religious leader. Venice, LA. May 21.

- PS457. 2013. Personal communication. Commerce and oil spill impacts. Discussion with Priya Singh. Retail manager. Buras, LA. May 24.
- VP408. 2013. Personal communication. Local community and oil spill impacts. Discussion with Victoria Phaneuf. Local resident. Meraux, LA. January 29.
- VP429. 2013. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Commercial fisherman and industry representative. Baton Rouge, LA. March 04.
- VP437. 2013. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Oyster processor. Baton Rouge, LA. March 07.
- VP440. 2013. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf and Cheryl Hogan. Commercial oyster fisherman. Chalmette, LA. March 08.
- VP441. 2013. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Commercial oyster fisherman. Belle Chasse, LA. March 09.
- VP452. 2013. Personal communication. BP clean up, BP claims, coastal restoration, and environmental impacts of the spill. Discussion with Victoria Phaneuf. Business owner. Bayou La Batre, AL. March 14.
- VP454. 2013. Personal communication. Governance and oil spill impacts. Discussion with Victoria Phaneuf and Cheryl Hogan. Elected official. Davant, LA. March 15.
- VP480. 2013. Personal communication. Money received and used after Katrina and the BP spill, and coastal restoration. Discussion with Victoria Phaneuf and Diane Austin. Retired elected official. Belle Chasse, LA. April 09.
- VP495a, VP495b, and VP495c. 2013. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Commercial oyster fishermen. Shell Beach, LA. May 13.
- VP496a and VP496c. 2013. Personal communication. Commerce and oil spill impacts. Discussion with Victoria Phaneuf. Marina owner. St. Bernard Parish, LA. May 13.
- VP498a and VP498b. 2013. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Commercial oyster fisherman and wife. Belle Chasse, LA. May 15.
- VP502. 2013. Personal communication. BP claims, fishing, and the mental and economic impacts of the BP spill. Discussion with Victoria Phaneuf. Fishing website owner. Algiers, LA. May 16.
- VP503. 2013. Personal communication. Commerce, education, and oil spill impacts. Discussion with Victoria Phaneuf. Bartender. Buras, LA. May 17.
- VP516a and VP516b. 2013. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Local residents. Buras, LA. May 17.
- VP549. 2013. Personal communication. Commerce and oil spill impacts. Phone Conversation with Victoria Phaneuf. Retail manager. Picayune, MS. June 11.
- VP550. 2013. Personal communication. Parish governance and oil spill impacts. Discussion with Victoria Phaneuf. Retired commercial shrimper and industry representative. Lafitte, LA. June 12.

- VP553. 2013. Personal communication. Commercial seafood, ecological restoration, and oil spill impacts. Discussion with Victoria Phaneuf. Offshore oil and gas employee and CBO member. New Orleans, LA. June 13.
- VP555a and VP555b. 2013. Personal communication. Commercial seafood, ecological restoration, and oil spill impacts. Discussion with Victoria Phaneuf. Local residents and CBO members. New Orleans, LA. June 13.
- VP559a. 2015. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Commercial fisherman. Chalmette, LA. June 20.
- VP567. 2013. Personal communication. Commercial seafood, ecological restoration, and oil spill impacts. Discussion with Victoria Phaneuf. Boat captain and commercial oyster harvester. Gretna, LA. June 29.
- VP574. 2013. Personal communication. Commercial seafood, ecological restoration, and oil spill impacts. Discussion with Victoria Phaneuf and Monique Verdin. Commercial oyster harvester and industry representative. Hopedale, LA. July 11.
- VP606b. 2015. Personal communication. Workforce development and oil spill impacts. Discussion with Victoria Phaneuf. Workforce development employee. Belle Chasse, LA. July 08.
- VP607a and VP607b. 2015. Personal communication. Parish governance and oil spill impacts. Discussion with Victoria Phaneuf. Workforce development employees. Belle Chasse, LA. July 09.
- VP618. 2015. Personal communication. Civil society and oil spill impacts. Discussion with Victoria Phaneuf. Religious leader. Belle Chasse, LA. June 20.
- VP619. 2015. Personal communication. Effects of the BP spill and coastal erosion on the fishing and seafood industry. Discussion with Victoria Phaneuf. Local NGO employee. Chalmette, LA. July 21.
- VP625. 2015. Personal communication. Parish governance and oil spill impacts. Discussion with Victoria Phaneuf. Elected official. Port Sulfur, LA. July 27.
- VP626a and VP626b. 2015. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Commercial shrimper and wife, industry representatives. Venice, LA. July 27.
- VP628. 2015. Personal communication. Civil society, the environment, and oil spill impacts. Discussion with Victoria Phaneuf. NGO employee. Belle Chasse, LA. July 29.
- VP629. 2015. Personal communication. Parish services, local community, and oil spill impacts. Discussion with Victoria Phaneuf. Parish employee. Belle Chasse, LA. July 29.
- VP630a and VP630b. 2015. Personal communication. Economic development, ports, and oil spill impacts. Discussion with Victoria Phaneuf. Government agency managers. Belle Chasse, LA. July 29.
- VP631a. 2015. Personal communication. Local economy, governance, and oil spill impacts. Discussion with Victoria Phaneuf. Service industry manager. Buras, LA. July 30.
- VP633. 2015. Personal communication. Economic development and oil spill impacts. Discussion with Victoria Phaneuf. Business owner and industry representative. Belle Chasse, LA. July 31.
- VP640a. 2015. Personal communication. Commerce and oil spill impacts. Discussion with Victoria Phaneuf. Retail employee. Braithwaite, LA. August 05.

- VP641a. 2015. Personal communication. Commerce and oil spill impacts. Discussion with Victoria Phaneuf. Retail manager. Pointe-a-la-Hache, LA. August 05.
- VP643. 2015. Personal communication. Commerce and oil spill impacts. Discussion with Victoria Phaneuf. Retail manager. Myrtle Grove, LA. August 05.
- VP648. 2015. Personal communication. Commerce and oil spill impacts. Discussion with Victoria Phaneuf. Belle Chasse, LA. October 12.
- VP650. 2015. Personal communication. Commercial seafood and oil spill impacts. Discussion with Victoria Phaneuf. Local business owner. Port Sulfur, LA. October 16.

Chapter 5

- BM661u. 2012. Personal communication. Oil spill impacts on commercial fisheries. Commercial fishermen's conference attended by Brian Marks. Crabber. Westwego, LA. August 4.
- JS004. 2015. Personal communication. Post-Katrina migration, the Hispanic community, and social services. Discussion with Jessica Simms. Church employee. Cut Off, LA. July 03.
- JS005. 2015. Personal communication. BP claims, fishing, and the moratorium. Discussion with Jessica Simms. Business owner. Cut Off, LA. July 03.
- JS007a. 2015. Personal communication. Mental health impacts of the oil spill. Discussion with Jessica Simms. Health and social services employee. Cut Off, LA. July 08.
- JS013. 2015. Personal communication. Mental, social, and economic impacts of the BP spill. Discussion with Jessica Simms. NGO employee. Cut Off, LA. July 13.
- JS016. 2015. Personal communication. Impacts of the BP spill on oil and gas workers, and the Latino community. Discussion with Jessica Simms. Ports and harbors employee. Cut Off, LA. July 15.
- JS017. 2015. Personal communication. Coastal erosion and the impacts of the BP spill on the oil and gas industry. Discussion with Jessica Simms. Banker. Cut Off, LA. July 15.
- JS034. 2015. Personal communication. Migration and coastal restoration. Discussion with Jessica Simms. Government employee. Galliano, LA. July 29.
- LP405b. 2013. Personal communication. Economic and environmental impacts of the BP spill, seafood, and coastal erosion. Discussion with Lauren Penney. Retail employee. Houma, LA. June 19.
- PR501. 2013. Personal communication. Shrimping, VOO, and coastal erosion. Discussion with Pedro Robles. Librarian. Galliano, LA. April 04.
- PR504. 2013. Personal communication. Shrimping, VOO, and coastal restoration. Discussion with Pedro Robles. Shrimper. Larose, LA. April 08.
- PR507a. 2013. Personal communication. Fishing, VOO, BP claims, and the environmental impact of the oil spill. Discussion with Pedro Robles. Business owner. Golden Meadow, LA. April, 10.
- VP635. 2015. Personal communication. Deepwater, BP claims, coastal erosion. Discussion with Victoria Phaneuf. Business owner. Lockport, LA. August 03.

Chapter 6

- BG004. 2015. Personal communication. Perspective on implications of oil downturn, perspective on migration of Latinos in lower bayou communities, and Terrebonne Parish. Discussion with Bethany Garfield. Librarian. Dulac, LA. June 26
- BG005. 2015. Personal communication. Perspective on losses from Hurricane Isaac, whereabouts and possibilities of implications of BP oil, and levees to be built. Discussion with Bethany Garfield. Restaurant owner. Dulac, LA. June 26.
- BG006. 2015. Personal communication. Perspective on losses from Hurricane Isaac, whereabouts and possibilities of implications of BP oil, and levees to be built. Discussion with Bethany Garfield. Shipyard Inspector. Montegut, LA. June 26.
- BG007. 2015. Personal communication. Perspective on uses of BP claims money and Morganza to the Gulf. Discussion with Bethany Garfield. Shipyard executive. Dulac, LA. July 01.
- BG008. 2015. Personal communication. Perspective on BP economic compensation, Discussion with Bethany Garfield. Owner of a shrimp processing plant. Dulac, LA. July 01.
- BG009. 2015. Personal communication. Perspective on changing livelihoods, BP economic claims, flood insurance, Discussion with Bethany Garfield. Owner of a seafood company. Dulac, LA. July 01.
- BG010. 2015. Personal communication. Perspective on changing oil prices. Discussion with Bethany Garfield. Nonprofit director and activist. Des Allemands, LA. July 07.
- BG011. 2015. Personal communication. Perspective on coastal restoration and protection. Discussion with Bethany Garfield. Retired professor. Dulac, LA. July 07.
- BG013. 2015. Personal communication. Perspective on migration, coastal restoration and protection, housing issues. Discussion with Bethany Garfield. Community activist. Schriever, LA. July 10.
- BG014a. 2015. Personal communication. Perspective on migration. Discussion with Bethany Garfield. Religious leader. Houma, LA. July 10.
- BG015. 2015. Personal communication. Perspective on migration, coastal restoration and protection, housing issues. Discussion with Bethany Garfield. Community activist. Schriever, LA. July 10.
- BG016. 2015. Personal communication. Perspective on BP economic claims. Discussion with Bethany Garfield. Business owner and government officer. Houma, LA. July 15.
- BG017a. 2015. Personal Communication. Perspective on coastal restoration and protection. Discussion with Bethany Garfield. Marina owner. Dulac, LA. July 15.
- BG018a and BG018b. 2015. Personal communication. Perspectives on bayou tourism and coastal restoration and protection Discussion with Bethany Garfield. Marina owners. Dulac, LA. July 15.
- BG019. 2015. Personal communication. Perspective on coastal restoration and protection. Discussion with Bethany Garfield. Nonprofit director. Dulac, LA. July 17.
- BG020a. 2015. Personal communication. Perspective on migration, coastal restoration and protection. Inn owner. South Terrebonne Parish, LA. July 17.
- BG021. 2015. Personal communication. Perspective on BP economic claims. Discussion with Bethany Garfield. Shrimper. Dularge, LA. July 18.
- BG022a and BG022b. 2015. Personal Communication. Perspective on bayou tourism. Discussion with Bethany Garfield. Church employees. Dulac, LA. July 22.

- BG024a. 2015. Personal communication. Perspective on coastal restoration and protection. Discussion with Bethany Garfield. Retired teacher. Dulac, LA. July 22.
- BG027b. 2015. Personal communication. Perspective on mental health effects. Discussion with Bethany Garfield. Small business owner. Chauvin, LA. July 23.
- BMC408. 2013. Personal communication. Perspective on effects of Hurricane Isaac. Discussion with Ben McMahan. Boat captain. Dulac/Grand Caillou, LA. April 30.
- BM678d. 2013. Personal communication. Seafood, the moratorium, and BP claims. Discussion with Brian Marks. Offshore service company employee. Theriot, LA. July 16.
- BMC425. 2010. Personal communication. Perspective on BP economic compensation. Discussion with Ben McMahan. Seafood wholesaler. Dulac, LA. May 10.
- JS002b. 2015. Personal communication. Perspective on migrations. Discussion with Jessica Simms. Small business owner. Houma, LA. June 15.
- JS011. 2015. Personal communication. Perspective on local political office holders. Discussion with Jessica Simms. Nonprofit director. Houma, LA. July 10.
- JS014. 2015. Personal communication. Perspective on coastal restoration and protection. Discussion with Jessica Simms. Librarian. Houma, LA. July 13.
- JS019. 2015. Personal communication. Perspective on flood insurance. Discussion with Jessica Simms. An oil and gas service company representative. Houma, LA. July 17.
- JS020. 2015. Personal communication. Perspective on coastal restoration and protection. Discussion with Jessica Simms. Church employee. Houma, LA. July 17.
- JS023. 2015. Personal communication. Perspective on migrations. Discussion with Jessica Simms. Workforce development employee. Houma, LA. July 20.
- JS025. 2015. Personal communication. Perspective on demographic changes. Discussion with Jessica Simms. Health and human services employee. Houma, LA. July 23.
- JS026. 2015. Personal communication. Perspective on differences between hurricanes and Deepwater Horizon disaster, flood insurance, and moratorium. Discussion with Jessica Simms. Workforce development employee. Houma, LA. July 20.
- JS027. 2015. Personal communication. Perspective on demographic changes. Discussion with Jessica Simms. Mental health worker. Thibodaux, LA. July 24.
- JS028. 2015. Personal communication. Perspectives on demographic and housing changes. Discussion with Jessica Simms. Church employee. Houma, LA. July 23.
- JS031. 2015. Personal communication. Perspective on local political office holders. Discussion with Jessica Simms. City planner. Houma, LA. July 27.
- JS032. 2015. Personal communication. Perspectives on flood insurance and migrations. Discussion with Jessica Simms. City official. Houma, LA. July 29.
- JS035. 2015. Personal communication. Perspective on coastal restoration and protection. Discussion with Jessica Simms. Tourism-related employee. Grey, LA. July 29.
- LF409. 2013. Personal communication. Perspective on BP economic claims. Discussion with Lindsey Feldman. Marina manager. Cocodrie, LA. June 03.

- LF410. 2013. Personal communication. Perspective on coastal restoration and protection. Discussion with Lindsey Feldman. Artist. Bourg, LA. June 01.
- LF414. 2013. Personal communication. Perspective on effects of Hurricane Isaac. Discussion with Lindsey Feldman. Librarian. Montegut, LA. June 05.
- LF415. 2013. Personal communication. Perspective on migrations. Discussion with Lindsey Feldman. Nonprofit director. Houma, LA. June 07.
- LP418. 2013. Personal communication. Perspective on seafood. Discussion with Lauren Penney. Shrimper. Offshore oil worker. Theriot, LA. June 27.
- LP433b. 2013. Personal communication. Perspective on seafood. Discussion with Lauren Penney. Former crabber. Chauvin, LA. July 10.
- LP478a. 2013. Personal communication. Perspective on demographic changes. Discussion with Lauren Penney. Nonprofit director. Houma, LA. October 24.
- VP590. 2015. Personal communication. Civil society, environment, and oil spill impacts. Discussion with Victoria Phaneuf. NGO organizer. Mobile, AL. June 23.
- VP593. 2015. Personal communication. Civil society, environment, and oil spill impacts. Discussion with Victoria Phaneuf. NGO organizer. Mobile, AL. June 24.
- VP604. 2015. Personal communication. Community governance and oil spill impacts. Discussion with Victoria Phaneuf. Elected official. Bayou La Batre, AL. July 01.