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LIVING ON THE EDGE:

OYSTERS, LIFE, AND PROPERTY ON LOUISIANA'S COASTAL FRONTIER

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Dedication

For Mario, who is gone after so long being "*still here*,"
and
for O, who has just arrived.

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Acknowledgments

Although dissertations are required to be single-authored, mine owes its existence to many people whose names don't appear on the title page. Each person I worked with in the field, whose words and actions animate the following pages, co-wrote this with me. This work would not have been possible without gifts of time from those at countless organizations across Louisiana, from large-scale oyster farmers, deckhands, and occasional fishermen, and from the Indigenous and Black communities who welcomed me into homes, churches, and harbors. My family kept me oriented in Louisiana and Mississippi; in particular, my mom helped me understand the long histories of environmental injustice across the Deep South just as much as any interlocutor, and I am grateful for her insights, guidance, and confidence in me.

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Introduction

When we got to the dock, things were in full swing: oyster boats coming in carrying divers still in their wet suits, unloading heavy burlap sacks full of oysters they'd harvested by hand onto a small conveyer belt. The aging white oysterman who owns the dock told me that when you fish oysters by hand, you can feel the shape of the coastline back ten years or more, following its changes over time by feeling for the presence of shells: that when you touch an oyster shell, you are feeling where the shore used to be.[1]

Water resists containment and control; despite contemporary human efforts to impose on its form, water swells and surges, carving out new spatial relations through movement. The content of water likewise escapes human intervention, and the different substances it carries carve out distinct meanings and expectations in the places generated by its flow. When saltwater encroaches on low-lying agricultural plains, for example, it makes growing crops impossible; when freshwater floods the banks of a river, it leaves a trail of mud and silt that might eventually accrue into land. When freshwater flows into saltwater, it alters the ecosystem and kills some aquatic species even as it nourishes others. Each of these processes not only alters the physical landscape, it also opens the possibility of redistributing social power and relationships to place. Because of these disruptive physical and social potentials, water management is a central feature of approaches to climate adaptation and infrastructural projects in coastal regions around the world. In the United States, these approaches take place in areas that already racialized spaces, across legal and cartographic geographies that produce and reproduce social difference. Following Katherine McKittrick's insight that "racialized geographies are…indications of the

[1] Throughout the dissertation, I've italicized direct quotes from my field notes to indicate their source, as opposed to secondary sources and citations. To indicate direct speech as recorded in field notes or transcribed from interviews, I use quotation marks.

ways in which space and place contribute to…dehumanization [and] fragmentation," (2006: 3) I ask: as coastlines and rivers are remade in the aftermath and expectation of climate change, how are racial ideologies built into the emergent landscape? In other words, who is this landscape being built for right now, and who is it for in the future?

This dissertation is an investigation into the racial politics and temporalities that inhere in efforts to control water in the Mississippi River Delta region of Louisiana, and in the moments when these efforts are foiled by the river's generative and destructive power. I elucidate these efforts by focusing on a particular ecological formation that emerges in the places where saltwater, freshwater, land, and human intervention meet: the oyster reef. These offshore accumulations of oyster life and death are sustained by a delicate arrangement of water depth and temperature, proximity to land, and the presence of nutrients, salt, and toxins in surrounding flows. They are also cultivated and maintained by people and thus are subject to claims of property and access that resemble racialized agricultural regimes on shore in Louisiana. Oyster reefs—and efforts to maintain them—represent broader processes of power and ownership. These processes intensify when saltwater or freshwater moves into new places or deposits silt and mud in others, altering the value of the landscape for oyster farmers, residents, and state and local officials tasked with managing coastal restoration, in both economic and cultural terms.

Efforts at water management in southern Louisiana manifest at a variety of temporal, spatial, and administrative scales: the Army Corps of Engineers—a federal agency—has jurisdiction over the levees on either side of the Mississippi River and over all navigational waterways and flood control infrastructures deemed necessary for international trade. The state's Coastal Protection and Restoration Authority (CPRA) administers a variety of projects aimed at addressing the deleterious effects of shoreline erosion, sea level rise, subsidence, and storms.

These projects mostly revolve around building and augmenting wetlands in a process dubbed "coastal restoration," which consists of initiatives such as building oyster reefs, piping sediment from one location to another in order to build land, constructing barrier islands, and—most famously—a proposal to re-route sections of the Mississippi River in order to restore wetlands (see below). Despite the name "coastal restoration" and being primarily funded through settlements with British Petroleum, these efforts do not attempt to mitigate the toxic side-effects of a century of fossil fuel extraction and refining, including both the largest and longest running oil disasters in United States history.[2] Instead, restoration and water management in Louisiana intervene on the shape of the shoreline, maintaining and building out coastal lands in the Mississippi River Delta.

In the United States, and especially in the southern United States, these lands have been the site of racialized hierarchy and the dehumanization of Black life in support of intense resource extraction for hundreds of years. When the river moves—under its own volition or because of human intervention—it has the potential to reproduce ideas about race and power, and to produce new ones. This dissertation follows the mobile shoreline of the Mississippi River delta as well as the ideas about race and power that manifest in response to its changes in course. I dwell in shallow nearshore waterways, showing how racialized regimes of labor and property—and resistance to them—shape visions of the future environment in coastal areas that are rapidly transforming under conditions of climate change. The dissertation attends to the power dynamics that undergird coastal lives and livelihoods, showing how those with power seek to stabilize their claims when the constitution of water and land are radically and constantly transforming.

[2] The two largest oil disasters in United States history are the explosive, deepwater BP Oil Spill in 2010 and the slow, offshore Taylor Oil Spill from 2004 – present (efforts to contain it are underway as of December 2021).

Following proprietary claims to nearshore waterways and changeable coastal lands led me to work with people who cultivate and harvest oysters from privately leased waterways in the liminal places that bridge land and sea. Louisiana's significant oyster fishery stands to radically transform under both long-term conditions of climate change and short-term plans for wetland restoration. Sensitive to these different temporal scales and curious about the extension of property claims over water, I centered my research around the figure of the oyster reef lease—an unusual property form that connects various claims to coastal lands and waterways such as nearshore oil and gas leases, pipeline canals, and state-owned lands. Tracking emergent technologies of claim-making among lawyers, restoration specialists, and oyster fishermen from a variety of backgrounds, I show how those with power seek to stabilize their claims through a range of strategies that bolster a racialized and violent idea of ownership.

Writing about memory, power, and the Mississippi River, Toni Morrison once argued, "[F]looding…is remembering. Remembering where [the river] used to be. All water has a perfect memory and is forever trying to get back to where it was" (1995: 99). Here, the "flood" isn't only comprised of water. It represents the author's historical imagination, an impulse that carries Morrison through sense impressions of past places, feelings, and times; these are the intergenerational memories and experiences she draws from in order to elaborate the worlds of enslaved people in her novels. In this sense, Morrison's Mississippi River isn't literally "trying to get back to where it was," that is to say, to a historical pathway. Instead, it is trying to get back to where it was insofar as where it was is a feeling of being that cannot be curtailed, a memory of unbridled movement. As Morrison notes in this passage, the river has been altered to make room for development, leveed and dredged to make its path predictable, to protect investments in plantations, ports, and cities that were built up along its route.

The Mississippi River is relatively young and mobile: left to its own devices, it has carved a new path towards the Gulf of Mexico every 1,000 to 1,500 years. With a watershed comprising most of the United States, the river collects nearly half a continent's worth of silt and clay as it flows from Minnesota to the Gulf of Mexico. As it meanders, the Mississippi slowly deposits this material throughout its course. In its lower delta, each path that the river has followed has resulted in an accumulation of sediment into ridges and plains that have shaped and marked the landscape. The southernmost section of the Mississippi runs through the southeast corner of Louisiana, where most of landscape is comprised of wetlands that slowly accrued from the flow of the river. Ever since European settlement and colonization, the landscape has also been marked by a series of impositions into the flow of the Mississippi River: its propensity to flood—or even jump course—compelled people to build networks of pumps, levees, and flood plains in an effort to protect plantations, ports, and other property interests that relied on controlled access to the river. The shifting path of the river created ridges where its banks once were; today, some of these ridges are still discernible in the topography of the neighborhoods in New Orleans that sit on the relatively high ground (Colten 2005). Each of the river's meanders formed slowly, allowing sediment to build up in such a way that the passage of years is evident in the shape of the coastline.

Understood in this way, the landscape around the river—formed both by the river itself and in opposition to the river's propensity to flood—might be read as a series of desire lines that intersect and often conflict. Desire lines mark the pathways that a person or an animal or a process takes so many times that a physical trace appears (c.f. Jacobs 1992, MacFarlane 2012). These traces might manifest as a tamped-down arc across an open field, a widening gap in the Mississippi River levee, or the silver reflection of a line of clear water trailing a boat that is

otherwise surrounded by mud and water hyacinth. They are indicators of human interactions with the environment. In the landscape of the lower Mississippi River Delta, they are material vestiges of repeated movement, investment, and modification that record the interplay between water, land, and power. This dissertation asks how differently scaled interventions on coastal geography and geology can be understood in relation to processes of racialization and relationships of power. From the carefully mapped and managed shape of the shoreline to the purposeful cultivation of subaquatic oyster reefs, I interrogate the social relationships that underwrite the emergence of coastal landscape forms.

When you touch an oyster shell, you are feeling where the shore used to be.

Oyster reefs themselves might be imagined as a kind of desire line: the slow, material accrual of a particular set of relationships between water, land, and human intervention. In shallow estuaries, part freshwater and part saltwater, oyster reefs are places formed in collaboration between people and place; they are cultivated in places that fishermen judge to be generative of osterine life and health. Oysters depend upon a certain set of relationships: between water, shore, people, particulates, animals, and plants—and between the temperature, depth, and salinity of water as well as a hard sea floor. This intricate set of conditions is what makes the formation of an oyster reef possible. As these conditions change—as the intensity of human labor increases, as the quality or depth of the water shifts-—the viability of the oyster reef changes as well (c.f. Kirby 2018). Thus, the location and health of oyster reefs can be understood as a residue of structures of property, labor, and race, even as these reefs hold such structures in place.

This is what Gerald, a white oyster farmer whom I spoke with throughout my fieldwork, meant when he said he could feel the past shoreline by following a trail of oysters: their lively presence maps the conjuncture of fresh and saltwater, depth, and human cultivation, all of which he interpreted with a shorthand: “the shore.” By following Gerald, I locate the oyster reef as a point of articulation between water, land, and people—and as the problem-space for the dissertation. Oyster reefs are sentinels of both environmental change and of shifting human attitudes towards nearshore spaces: their health and liveliness attest to a specific array of ecological conditions, and their decline points to a shift in environmental factors. As a result, they are often objects of cultivation and protection within coastal environmental management schemes across the world. In the United States, oyster reefs have alternately been imagined as commons and as property (McCay 1998); as such, they are also objects of investment and abandonment by private enterprise or state authorities. In Louisiana, oyster reefs also crystallize fears and hopes from state-sponsored environmental restoration projects planned for the coast: as I will describe in the section on ethnographic context below, a newly “restored” coast would alter the conditions that have allowed contemporary oyster reefs to thrive.

Southeastern Louisiana and Biomineral Politics

I conducted my fieldwork between 2018 and 2020 on the liminal edges of Louisiana's southeastern-most parishes, where the landscape was almost entirely formed by the route of the Mississippi River. These places were familiar to me, both because I carried out my master's research in the same region, and because I grew up nearby on the Gulf Coast of Mississippi. Thus, I introduce my field site not with a sense of arrival, but with one of return. Returns carry within them a sense of change: the memory of a place as it once was, juxtaposed against the

contemporary state of things. When returning, it is impossible to imagine that a place might be suspended in time, unchanging, or that the person returning might be the similarly immutable. Southern Louisiana is inescapably changing, and the impetus for this dissertation hinges on this fact: the landscape of southern Louisiana is emergent, and it generates predictions, hopes, and dreams that are revelatory of power in the contemporary moment. The dissertation shows that these desires, anticipations, and hopes are not value-neutral; when enacted by people with differential levels of power, they are violent, and they have violent histories.

I consider Plaquemines Parish here as an exemplary site of what in Chapter 3 I theorize as "biomineral politics." Biomineral politics references biopolitics—the management of life at the scale of population—and the process of biomineralization, a scientific term for the mode by which an oyster accrues its shell. When an oyster develops its shell, it is a process of collaboration between biology and geology that simultaneously builds attachment to place and contributes to the geologic form of the reef. I enter the idea of biopolitics via critiques that point out that biopower produces and reproduces racial hierarchies and via Valerie Olson's notion of "ecobiopolitics," which she theorizes as the management of life by managing the environment—life's milieu 2010). Building on these ideas, biomineral politics diagnoses landscape-level interventions that manage life by intervening on geology at multiple scales: on the route of the river, the accumulation of sediment, or by building and maintaining the structure of an oyster reef.

Plaquemines Parish is also one of the places I returned to in order to carry out dissertation research: in the three years I had been away, the parish's waterways had become less salty and its oysters more scarce, a new crevasse had appeared in the levee, environmental justice activists had successfully blocked the construction of a yet another coal export terminal, and a new

courthouse had been built, towering above the road on concrete stilts that have been ubiquitous to municipal buildings ever since Hurricane Katrina in 2005. The geology of this landscape has afforded biological and economic forms life that—in the past several hundred years—are associated with the unprecedented extraction of natural resources and Black life and labor. In other words, managing the geology of the landscape is a mode of managing life, and life's ecological surround. In the center of Plaquemines Parish, the Mississippi River has been leveed and dredged in order to maintain an international trade route. The land on either side of the river has been intensely developed for multiple forms of extraction because of its proximity to this trade route. These shores were once the site of plantation agriculture, cattle ranches, and citrus orchards and are now primarily comprised of small communities adjacent to coal terminals and oil refineries.

These are landscapes that emerge at the intersection of inequality, extractive industries, and water management projects—areas that Roane 2018) has described as "characteristically "racial) capitalist landscape[s] defined by a radical, racialized inequality mapped over uneven, delicate ecologies" 241). Ramshackle oil platforms, canals bearing signs for pipelines, elevated homes, low levees, and bare oak trees that have died from saltwater incursion are all common sights here. In Plaquemines Parish, the flow of water—and human attempts to manage this flow—have quite literally shaped the geology of the region: the parish is entirely comprised of land on either side of the Mississippi River, land that was built up by centuries of silt-depositing floods, and that has been diminished by centuries of efforts at flood control that deprived the landscape of silt. This dissertation considers the racialized effects of coastal geological interventions at multiple scales: conceptualizing the shoreline as a division between land and

water, damming or re-routing the river, reclaiming wetlands for agriculture, and cultivating oyster reefs. Plaquemines Parish is an exemplary site of each of these processes.

Plaquemines straddles the southernmost section of the Mississippi River, encompassing the scant land between federal levees and a network of disintegrating bayous east and west of the river. The river runs through the center of the parish like an artery, carrying water—and sediment and pollution—from twenty states to the Gulf of Mexico. On each side of the river, two levees bracket the dry land accessible by foot or by car: one is federally managed by the U.S. Army Corps of Engineers and keeps the river at bay. The other is maintained by local government and stands between high ground and less stable bayous that extend out towards the Gulf of Mexico in a fragmented network. The landscape on either side of the river is marked by aging petrochemical infrastructure and efforts to hold water in specific places to facilitate global trade.

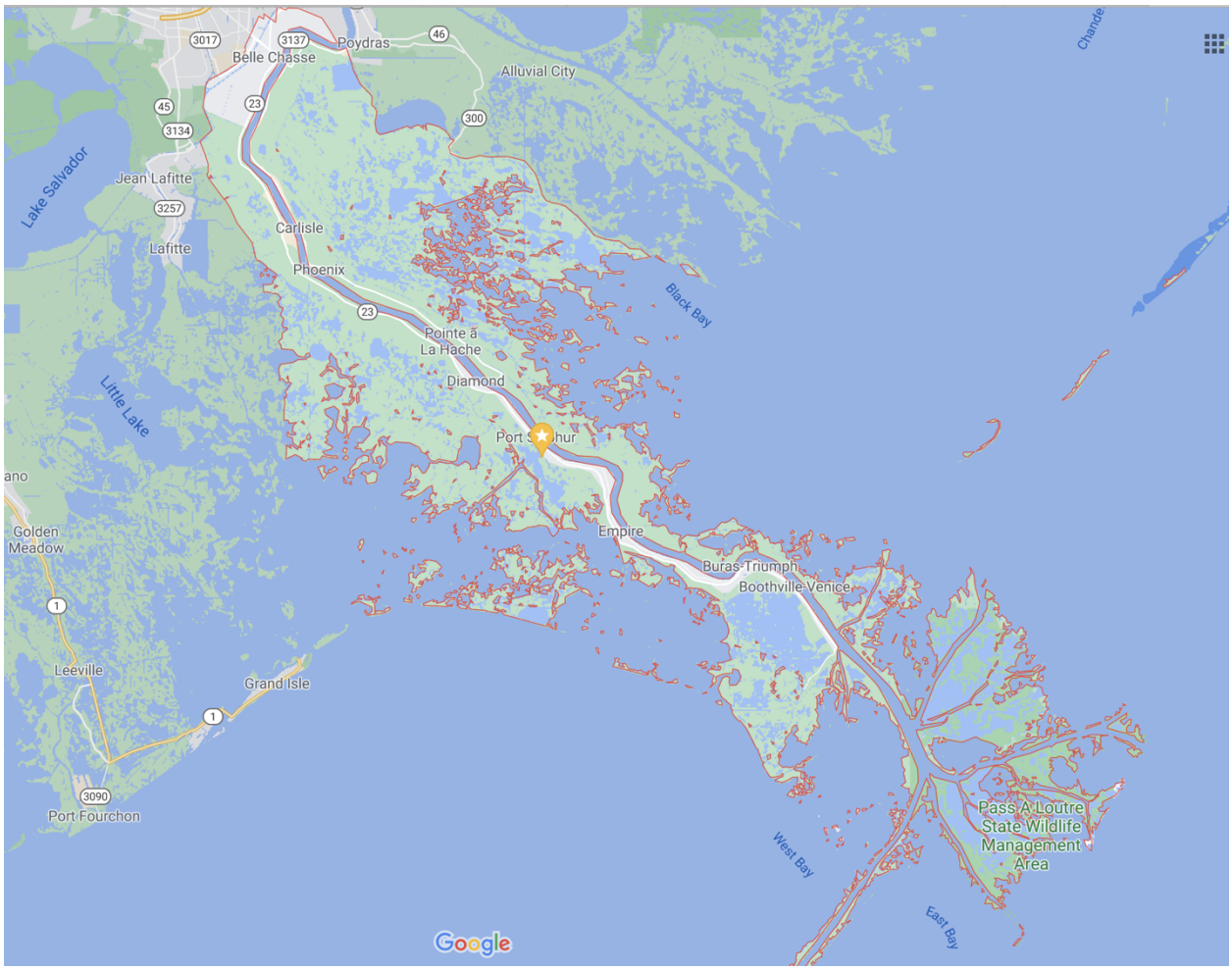

Figure 1: Plaquemines Parish is outlined in red here. The river is visible, bisecting its length.

In much of the parish, the land in between these two levees is less than a mile wide; in some places, it's narrower even than the span of the river. Parish jurisdiction may not extend over a broad swath of land, but its territory does encompass a large area of wetlands and waterways. From a marina on the east side of the river, it's easy to take a boat out to the lakes and bays between Louisiana and Mississippi—including one of the largest sections of public oyster reef in the state. These oyster reefs are maintained and policed by the state Department of Wildlife and Fisheries, and the private oyster reefs adjacent to them are patrolled by boats the parish Sherriff's Office. From a marina on the west side of the river, it's easy to get to Barataria

Bay, one of the most shrimp- and oyster-rich areas in Louisiana's nearshore waterways. Since the decline of the public oyster reefs east of the river, many people who live in historically Black communities in Plaquemines Parish are deckhands on oyster boats owned by someone else, and they have to commute from one side of the river to another in order to get to work each day.

Figure 2: Aerial image of the thin strips of land on either side of the MS River. River-front parcels of land—narrow and rectangular—end when they hit the back bayou levee.

This is a place where the divisions between water and land organize everyday life; where relationships are formed through and alongside the presence of the river. Yet, there are no bridges here; to get from one side of the river to the other, you have to pay a dollar to take your

car on the ferry. If you're on foot, it's free. People take the ferry to get to work, to go to Christmas concerts, to visit family, and to go to the doctor. When a ferry is out of service, you have to drive—or get a ride—to the next landing upriver, or to the bridge in New Orleans. From the ferry, the river looks wider than the land on either side of it. Anywhere in the parish, the water feels close. People set up lawn chairs on the levee to fish or watch cargo ships and oil tankers pass by. Even when you can't see the river, you can often see the levee: a low green swell holding the water at bay. At night, when even the levee is invisible, you can hear the low moan of fog horns and the creek of heavy metal hulls moving through the river.

This is a linear community: there are fewer than five routes—including roads and the river—that traverse the length of Plaquemines Parish. By car, each bank of the Parish is accessible by just one or two roads that parallel the river. On the west bank, a driver enters the parish by going through the small Belle Chasse Tunnel, which traverses underneath the Intracoastal Waterway, a federal navigational canal that runs parallel to the coastline from Boston, Massachusetts to Brownsville, Texas. It is surprising and unnerving to delve underground in a place where water seems to well up everywhere. It is even more disconcerting that the inside of the tunnel is always riddled with puddles. Emerging on the other side of the tunnel, the landscape is dominated by churches, an Air Force Reserve base, suburban developments, elevated homes that tower over the road, cattle ranches, and citrus farms. Across the river to the east, things are much less developed, having been built back much more sparsely after Hurricane Katrina. On the east side of the river, there are houses, churches, a community center, and two especially imposing municipal buildings that were built after Katrina and are held aloft on tall concrete stilts: a high school and the parish prison.

On both sides of the Mississippi, the river is always invisible from the road, marked by the rise of the grass-covered levee or by the large ships drifting above it. Back on the west bank, houses soon become less common, and a handful of oil derricks operate between the road and the river. Next, a large oil refinery operated by Philips 66 and its huge storage tanks loom between the road and the river. Further on—still between the river and the road—a sign marks the historic town of Ironton, a community founded by free people of color in the late nineteenth century. There are a few intersections in Ironton, small houses, and a park. Invisible from here, on the other side of the river, a large coal terminal fills the air with dust, which drifts with no regard for aquatic boundaries. The smaller sister to this site—another coal terminal on the west side of the river just south of Ironton—lurks a few miles ahead. Following a long pattern of development that prioritizes trade and capital, all of the coal, fertilizer, and petrochemical plants along the river are strategically placed so that the massive vessels that move up and down the river can be easily loaded and unloaded.

Perhaps a mile down the road, across the street from the river levee, a large subdivision of middle-class homes on stilts hovers just beyond a flood wall at Myrtle Grove, a private community with its own marina that opens out onto the bays west of the river. After this, less is visible from the road. In about five miles, a sign marks the turn-off for Grand Bayou Indian Village, an Atakapa-Ishak/Chawasha tribal community west of the river that is mostly inaccessible from land and becoming more remote as wetlands continue to disintegrate. Across the river to the east, the parish jail hulks above the road on thirty-foot high concrete stilts, just down the road from the high school. A few miles beyond, there is a sign for the West Pointe-a-la-Hache ferry terminal—the last point to cross the river without a boat of your own. On the east side of the river, the road stops here, just north of a break in the levee called Mardi Gras Pass that

overtook an oil company's access road in 2012, and has continued to widen, erode at the edges, and deposit mud and sediment in the bayous beyond ever since.

The highway on the west side of the river continues, however. Downriver of West Pointe-a-la-Hache, the Woodland Plantation sits back from the road, surrounded by oak trees dripping with Spanish moss. These days, like many other former plantations in the Deep South, it's an event space and a bed and breakfast.[3] Further south still, the road crosses another canal, and soon there are signs announcing Port Sulphur, a former company town founded by the Freeport Sulphur Company in the 1930s. Port Sulphur boasts a small medical center and a YMCA. Continuing down the river will bring a driver past the towns of Empire, Buras, and Triumph, which are home to harbors that house oyster boats, shrimp boats, and ocean-going menhaden fishing vessels. The last town on the road is aptly named Venice; here, water is visible everywhere, and there are several expensive recreational fishing retreats, along with a handful of motels, restaurants, and bars that cater to offshore workers and vacationers.

In these coastal areas of southeast Louisiana, plantation agriculture, petrochemical plants, and swamps drained and fragmented to facilitate agricultural ventures and oil and gas exploration have facilitated staggering landscape transformation via sinking, rapidly disappearing wetlands. People who live in this disintegrating landscape are increasingly vulnerable to hurricanes and flood events. Yet, the state's efforts to rebuild wetlands and protect against flooding are deeply unequal, involving strategies that literally remove sediment from Black communities in order to protect the endurance of their White neighbors (Barra 2019). In

[3] It's common for plantation houses that are still standing to re-style themselves as museums or picturesque tourist destinations such as bed and breakfasts. These conversions hide the fact that lots of former plantation land surrounding the site of the house has been sold in large parcels to extractive industries that—like plantations themselves—demand river access and many acres of land (c.f. Blackbird forthcoming).

this place, geology is explicitly racialized in real time, a temporally intensified instantiation of a global set of sedimentary shifts and epistemological moves that hinge upon the exploitation of Black life and labor (Yusoff 2019).

In what ways do past geographies inflect the present and expectations of the future? The political implications of this question crystallize when read through Katherine McKittrick's analytic of "plantation futures" and Christina Sharpe's concept of "the wake" (2016). McKittrick and Sharpe focus on the violent logics upheld by the belief that the present is entirely shared or that the past is equally past for everyone, pointing out that slavery is not an event that can be neatly circumscribed to the past; it is not "over" in that sense. Instead, slavery endures in the present and unevenly constrains possible futures. As Sharpe defines it, the wake is "a past that is not past, a past that is with us still; a past that cannot and should not be pacified in its presentation" (2016: 62). Theorists of settler-colonial violence also emphasize that colonization is an ongoing process that continues to injure in the present (Smith 2008; Todd 2017.) In coastal Louisiana, human history has not only shaped the local environment. Through plantations, petrochemical pipelines, and the uneven arrangement of industry across the landscape, a history of racialized structures of power has imposed its spatiotemporal logics upon the lives of people, as well. These relationships of violence and injury must be considered as constitutive of local ecologies, because without human histories of violence, the landscape as it now exists would never have manifested.

Crucially for McKittrick and Sharpe, it's not just that the past can't be contained, but the future that shouldn't be predicated on false notions of pastness. Doing so places false constraints on what shape the future might take and suggests a false starting point for "progress." For example, McKittrick notes that containing slavery within the past sets the trajectory of modernity

as one that progresses away from racist violence when in fact plantation logics still organize spatial operations of power. McKittrick's theorization makes clear how spacetime is tied to systems of value and histories of violence in the United States. Pointing out that the rise of contemporary America depended upon the dehumanization of slaves and indigenous people, McKittrick notes that these communities were relegated to landscapes considered antithetical to life—such as plantations, reservations, or toxic dumps—in the act of foundational dispossession. The legacy of these spatial logics remains in the very landscape that restoration projects in southern Louisiana propose to save and also in the predictive epistemologies utilized to make projections about the future environment. For McKittrick, alternative futures are only possible by understanding that foundational violences extend into the present—and what kinds of lives and resistances have thrived in spite of and within them.

The Context: Restoration and the Coastal Frontier

> *Donald looked at me earnestly in the dim cabin of the oyster boat, partially illuminated in increasing dawn light, "If I had cancer or something—if I were going to die anyway—I would shoot Garret Graves."*[4]

Graves' name is a shibboleth for the idea of "coastal restoration" in Louisiana, a capacious phrase that includes all kinds of infrastructural, hydrological, social, and ecological projects being carried out in the southern region of the state. Despite its wide-ranging meaning, however, most people in southern Louisiana primarily associate "coastal restoration" with a singular project: installing monumental diversions in the southernmost section of the Mississippi

[4] Garret Graves is a congressman from Louisiana and was the inaugural chair of the Coastal Protection and Restoration Authority, under whose leadership the first Coastal Master Plan was written and (partially) funded.

River, which would be larger than any built before. A diversion is a human-made crevasse in the river levee designed for controlled operation; it can be turned off or on, and the rate of flow it releases can be adjusted. After hundreds of years of interventions aimed at impeding river floods, these diversions instead seek to induce controlled flooding across areas where wetlands are rapidly disappearing. The intention behind them is to harness the sediment carried by the river in order to accrue "new land"—wetlands—mimicking historical siltation processes that have built up the deltaic plain of the Mississippi River.

These new diversions would be installed at points where high levels of sediment are being transported by the river, leading to increased sediment deposits in areas where wetlands are disappearing, hypothetically resulting in the slow accrual of new land. However, diversions would also radically shift existent near-shore ecosystems, bringing cold, fresh river water into warm, salty areas of the Gulf of Mexico. New wetlands generated by diverting the river are touted by the state to be an investment in shoreline protection: wetlands provide a buffer from hurricanes for communities further inland. Once installed, however, they would immediately alter the hydrology of the surrounding marshes and waterways.

For people who live or own property in coastal areas, these diversions represent a specter of instability: no one knows who will own or have access to newly generated wetlands, or what rights the public will have in places that are newly submerged. For instance, the state technically gains jurisdiction in places where wetlands have eroded into open water, but this transfer in ownership is contentious.[5] One thing, however, is certain: people who fish for subsistence or for profit have no rights over the water column; when diversions alter the constitution of nearshore

[5] While I conducted fieldwork, the state of Louisiana convened a legislative task force in order to begin to answer these questions. The Public Recreation and Access Task Force produced a set of recommendations, some of which will now be incorporated into law (see Chapter 2).

waters, fishermen will have no recourse. Oyster farmers like Donald who hold leases from the state to cultivate oysters on the seafloor will likely not receive compensation if their reefs suffer when the diversions deliver a shock of cold, fresh river water.[6] From Donald's perspective, the state has given him and his family a raw deal: it leased out areas to his family that they have cultivated for decades, only to—potentially—render those areas valueless.

As I describe in Chapter 2, Donald and his family have a long memory and a lot to lose—more than just money or the promise of future profit. They are part of the Isleño community in southeastern Louisiana, a group that only relatively recently gained access to racialized privileges associated with whiteness. One of these paths to white privilege emerged through a shift in interaction with the landscape: from hunting, trapping, and fishing in swamplands that were once treated as a kind of commons, to reliance on a racially ordered property regime. I argue that for this family, losing control over the landscape is a question of power that threatens an order of racial domination that has come to benefit them. Donald's vitriolic assertion when telling me about the way plans for restoration threaten his family's history as oyster farmers—"*I would shoot Garrett Graves"*—shows how oyster reefs crystallize questions about power, race, and the temporality of environmental change in Louisiana.

Oyster farmers like Donald are in the thick of uncertainties about where freshwater will flow and what ecologies will result, and they are also in the midst of conversations about who and what these new wetlands will be for. What version of the "coast" will restoring these wetlands generate? What version will they protect? While Louisiana's coastal landscape has undeniably been shaped by human use and settlement since well before European colonists arrived (Colten 2006), the wetlands conjured by plans for restoration are notably uninhabited.

[6] C.f. Avenal 2004

Indeed, visions of restored wetlands occupy a strangely empty spacetime that seeks to restore a version of Louisiana's past that may have never existed. This imaginary functions as a kind of *terra nullius*, ostensibly opening pathways for new modes of extraction, with no residents to stand in the way. Yet, these spaces do not solely exist in the future imaginary of the state. Novel coastal lands and waterways are continuously appearing as the Mississippi River pushes back against its containment.[7] Individuals who live and work on the coast harness a vision of these emergent landscape features as seemingly empty, claimable space as well: as I argue, they treat these areas as a newly generated "coastal frontier," rather than as a landscape restored to a former state.

Restoration ecology is distinct from the fields of conservation or preservation. Rather than attempting to support the survival of a species or an ecosystem (conservation) or maintain a species or ecosystem in its present state (preservation), "restoration" looks to the past to identify and re-cultivate desirable assemblages of life in the future. Yet, decisions about which ecosystems are worthy of resurrection often hinge on contemporary frameworks of economic value. In Louisiana, privileging wetland restoration over other forms of environmental recovery indicates the state's interest in protecting petrochemical infrastructures and the architectural integrity of the region's largest cities. While regenerating Louisiana's wetlands is projected to "restore" a coast that has been ravaged by hurricanes and erosion, this effort obscures the environmental harms that have been side-effects of the petrochemical industry. The state's rhetoric seems to pose restoration as a cure-all—or at least as a cure to the most pressing environmental problems facing the state—while overshadowing longstanding environmental justice efforts that address the racialized impacts of industrial toxicity and land loss. Louisiana's

[7] C.f. Mardi Gras Pass, the Fort St. Philip crevasse, and Neptune Pass, and others.

official plans for “coastal restoration” may be a response to planetary processes of climate change and sea-level rise, but these plans largely exnominate the phrase “climate change,” and also seem to overlook localized environmental harms that disproportionately impact poor communities of color. What does the privileging of wetland erosion over other forms of environmental harm suggest about the frameworks of value underpinning visions of the future environment?

Sediment and a “Disappearing” Coast

Although the word “coast” calls to mind beaches and surf, Louisiana’s is comprised of bayous and marshes edged with a brackish mix of the salty Gulf of Mexico and silt-laden freshwater from the Mississippi River. This murky geography was generated by the direction of the river's course as it continuously deposited mud and sediment that built up into a broad-reaching network of wetlands as it flowed, flooded, and shifted direction. Now, however, time's passage is linked to the material destruction of space rather than its production. Because of artificial levee construction throughout the Mississippi’s watershed, sediment has ceased to flow into wetlands in the southernmost reaches of Louisiana, exacerbating processes of land loss (Blum & Roberts 2012). Indeed, the sediment load of the river decreased to 170 million metric tons from 1987 to 2006, a difference that can be accounted for by major engineering projects through the entire Mississippi River watershed (Alexander et al. 2012: 20). Plans to restore Louisiana’s “coast” seek to shape what has always been an unstable landscape, strategically producing land in areas where it is currently disappearing.

Even as processes of sedimentation have shaped the coast, southern Louisiana has long been the object of environmental interventions by humans. In the late seventeenth century,

Bienville planned New Orleans to sit on the natural levee of the Mississippi River near the Metairie and Gentilly ridges, between Lake Pontchartrain and the Mississippi River (Colten 2006: 4). Indeed, the high land that leads to Bayou St. John had been used as a portage for boat travel before European settlers arrived and was explicitly noted by Iberville (as pointed out by his unnamed native guide) as a reason for New Orleans' location (Dawdy 2008: 78). Despite its elevation relative to nearby low-lying areas, however, this landscape frequently flooded. As a result, starting in the eighteenth century, French colonizers put a series of artificial levees into place to protect the city (Colten 2006: 4). A system of private levees was installed outside the city as well, with the aim of protecting plantations from floods (Colten 2014: 57). The ultimate placement of various levees over time, and the history of political maneuvering around levees, show that water management in Louisiana has a long history of being caught up in systems of racialized inequality and urban/rural conflict.

This low, watery landscape is especially vulnerable to the planetary effects of climate change, particularly sea-level rise and increased storm intensity. As a result, since 2007 plans have been underway to counteract this erosion through "coastal restoration," an effort funded primarily with money from BP's settlement for the 2010 Deepwater Horizon oil disaster. In efforts such as the state's official plan for rebuilding the coast, "restoration" refers primarily to wetland restoration, a regeneration of land that will ostensibly be accomplished by installing controlled diversions of the Mississippi River. The idea that wetland restoration is a worthwhile pursuit in Louisiana is historically specific: the U.S. Army Corps of Engineers New Orleans District began drafting plans for wetland restoration in the 1970s, after wetlands had been conceptualized as a generator of "ecosystem services" and therefore worth saving as sources of economic value in their own right. Three decades later, restoration in Louisiana is

predicted to help the state recover from and prepare for a wide range of environmental disasters. Coastal restoration renders commensurate toxic contamination, oil spills, climate change, river engineering, and erosion.

The idea that time's passage ought to result in the creation and maintenance of places—that if left in its natural state the river would have reliably if slowly, continued to build land as it meandered toward the Gulf—forms the foundation of contemporary restoration projects in the region. In a context where the material production of space has been linked to the passage of time, the reversal of this maxim—that the passage of time results in the unpredictable destruction of space—has prompted the state's investment in managing the river as an object of restoration. However, diverting the course of the Mississippi isn't only an intervention aimed at managing the geologic processes of sedimentation carried out by the river; doing so also attempts to regenerate self-sustaining biological communities of life that form and maintain wetlands. For example, marsh grass and other plants help hold new soil in place.

Restoration projects in southern Louisiana seek to repair spatiotemporal rupture by recuperating a connection between *geos* and *bios* (Povinelli 2016), one that intervenes on geologic processes—by diverting the flow of the river and regenerating land—in order to support the maintenance of particular biotic communities. Louisiana's restoration projects seem to be attempting to locally re-instantiate the planetary geontological order of things that facilitated the flourishing of contemporary life. In Louisiana, the generativity of past ecosystems was supported through the spatiotemporal aspects of geological processes, a relationship that informs human desires present-day landscapes.

Wetlands as a specific site of restoration and land regneration have a history in Louisiana dating back at least forty-five years, marked by the 1973 publication of the first report on

wetland restoration and management for south-central Louisiana (Mississippi River Delta). In 1990, the federal Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) was adopted, identifying and securing funds towards wetlands in need of restoration across the United States. Following CWPPRA and the rise of the ecosystems services model, wetland mitigation banking emerged as a way for developers to offset the potential environmental impacts of corporate projects, relying on the economic benefit promised by artificially constructed wetlands. Like these "banks," all of CWPPRA's funds and projects are administered through the US Army Corps of Engineers, a situation which effectively made the Corps responsible for all major environmental restoration projects until the founding of the Coastal Protection and Restoration Authority in 2005 (see below).

Toxicity and a "Working Coast"

Wetland erosion in Louisiana is often framed as a threat to industry, a move that naturalizes industrial infrastructure and makes it an object of ecological restoration. Wetlands as they currently exist support a seafood industry that provides about 30% of the domestic seafood catch in the United States; they hold a vast infrastructure of pipelines and refineries supporting about 25% of US oil and gas production; and they protect ports that handle about 20% of water-borne shipping in the United States (Blum & Roberts 2012). Louisiana's Comprehensive Master Plan for a Sustainable Coast proposes to restore this "working coast" and protect industrial infrastructure, commercial fisheries, oil and gas interests, and international waterways, as well as habitat, wildlife, coastal communities, and cultural traditions. In other words, some forms of "life" conceptualized by the Master Plan are constituted through modes of economic reproduction that destroy human and more-than-human life. Even habitat, wildlife, and human

communities are accounted for in economic terms: coastal restoration is considered "feasible" because of an ecosystem services approach that interprets natural features of the region as economic "assets." These assets are evaluated using economic logics to justify investment in their restoration and maintenance.

The Master Plan is written and updated every five years by the Coastal Protection and Restoration Authority, which was formed through the consolidation of many state agencies after Hurricanes Katrina and Rita in 2005. The first iteration of the CPRA's Master Plan was published by the new agency just two years later in 2007. Unlike CWPRA, which was funded through a Congressional Act, the CPRA was partially funded by disaster relief money in the aftermath of Hurricane Katrina, Hurricane Rita, and the BP oil spill. The Plan is an ambitious document, and in another time, it is unlikely that many of its ideas would be implemented in a fiscally conservative and impoverished state like Louisiana. However, a huge amount of funding has recently been earmarked for coastal restoration through BP's $18.732 billion settlement with the US Department of Justice, $5.5 billion of which are Clean Water Act penalties set to flow through the RESTORE Act, or the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (Associated Press 2016). Louisiana is slated to receive the highest proportion of this funding by far; money from the settlement will make up the most significant source of funding for the Master Plan.

The Master Plan's emphasis on protecting infrastructure overshadows a history of environmental harms that have resulted from, or been exacerbated by, the industries that coastal restoration purports to protect. A recent history of successive injuries makes apparent the multiple spatiotemporal scales at which environmental disasters unfold in this region. In August 2005, the eye of Hurricane Katrina swept across Plaquemines Parish en route to western

Mississippi, wiping out coastal communities and putting pressure on aging infrastructural systems in New Orleans that led to the city's devastating flooding. Less than a month after Katrina hit, Hurricane Rita made landfall in Texas, its eastern edge driving a storm surge onto Louisiana's shores while winds exacerbated damage already incurred during Katrina. Despite their relatively quick impact, however, Katrina and Rita triggered slower infrastructural and governmental failures that led to hundreds of deaths, billions of dollars in property damage, and massive displacement across the Gulf Coast. These were particularly evident in and around New Orleans, where the hurricanes' impacts and Louisiana's response laid bare a history of systemic disinvestment that left the state unequipped to provide disaster response and support for recovery (Adams 2013; Sheppard 2013; Bullard & Wright 2010).

Five years later, the Macondo Well blow out—otherwise known as the 2010 BP oil disaster—expelled 4.9 million barrels of oil into the Gulf of Mexico (On Scene Coordinator 2011: 33). In the months after the spill, mechanical and chemical technologies were deployed in new combinations and scales to clean up oil that spewed deeper, faster, and longer than any spill in US history. Most infamous among these strategies was the application of chemical dispersants: local people were hired to spray chemical dispersants at the surface and in the depths near the source of the explosive leak. Often, these were fishermen who were out of work as a result of the spill. These dispersants were deployed with the aim of breaking the oil down into smaller particles that would presumably be metabolized by bacteria on the seafloor.[8] In a move

[8] Recent studies have shown, however, that much of the oil remains on the seafloor, at least in part because not all microbes actually thrive on it (Kleindienst, Paul, & Joye 2013). Nevertheless, one possible sign of oil being metabolized is that *Vibrio vulnificus*, a bacterium that does "eat" oil—and also human flesh—has been increasing in abundance, causing increasingly well-publicized and gruesome deaths across the Gulf South (Hafner 2018; Teague 2016).

that anticipated recent conversations about large-scale diversions of the Mississippi River as a (land) restoration technique, the Army Corps of Engineers directed the river to flow over the state's wetlands, attempting to flush oil out of vulnerable estuaries (Janasie 2013). The effects of the oil and chemical dispersants were widespread, ranging from fisheries and wildlife die-offs to respiratory disease in communities that live and work near the Gulf.

The aftermath of the BP oil spill has shaped the goals of the Master Plan, and not just by prompting the financial settlement set to fund the majority of the Plan's recommendations. As Bond (2012) has argued, the immediate response to the BP spill functioned to turn the Gulf of Mexico into a kind of laboratory, one that simultaneously made the oil spill "manageable" and seemed to contain the entire disaster, with the result that claims about the embodied effects of the spill were rendered illegible. Almost ten years later, the state's plans for restoration still fail to address the embodied effects of the oil spill, instead making it a priority to rebuild wetlands that will protect many communities from the intensified effects of storms and sea-level rise. Yet the Plan's focus on regenerating wetlands allows it to sidestep other longstanding instances of environmental harm.

Ethnographic analyses of southern Louisiana have often brought an environmental justice lens to bear on long-term patterns of slow violences such as toxicity and exposure (Allen 2003; Ottinger 2012). Slow violence names the gradual unfolding of environmental harms that result from processes like climate change and oil spills, yet are often invisible from within the temporal frames habitual to capital (Nixon 2013). These studies focus on the slow violence plaguing Louisiana's so-called "Cancer Alley," a chemical corridor between Baton Rouge and New Orleans abundant in oil refineries, chemical manufacturing, and other industrial plants. While petrochemical infrastructure is densest in Cancer Alley, oil refineries and piles of petroleum coke

also abound in the state's southernmost areas, such as Plaquemines Parish, which is where the Master Plan has proposed locating the mid-Barataria river diversion.

According to scientists, this placement is strategic because of the especially high amount of silt and sediment carried by the river at this location, and because of its proximity to the areas where wetlands are eroding at the fastest rate. However, the diversion's location in Plaquemines Parish also articulates with histories of racialized violence in the region, marking a separation between the historically poor and black half of the parish from the half that is wealthier and whiter. The placement of the diversion project re-inscribes racialized spatial logics that have been implied in the landscape for generations, since before the reign of one of Louisiana's most infamously racist politicians, twentieth-century segregationist (and Plaquemines Parish judge) Leander Perez. The placement of the diversions means that the legacies of racialized divisions in the landscape will be materially constitutive of the future environment imagined by restoration projects.

Within the context of slow violence, climate change, and acute environmental disasters like hurricanes, looking to restoration plans and projects can reveal desires for particular futurities and ecologies, and the history of restoration science in the United States can help elucidate the logics of coastal restoration in southern Louisiana. Restoration ecology seeks to revive a past that privileges particular qualities of the environment, qualities that are articulated as having been valuable at particular moments in the history of specific people. Ideas about what the environment once was and should become are also based on a measure of the present: restoration ecology often calls for a kind of environment that can maintain the demands of contemporary human life. Thus, aspects of the environment that once laid the conditions for contemporary existence are those that restoration ecology seeks to revive.

Freshwater and a Restored Coast

In the United States, restoration science has historically been characterized by the desire to recreate "wilderness," which Hall (2005) points out is quite a different motivation from the rhetoric surrounding restoration science in Europe, which usually aims to reconstitute "pastoral" landscapes, with the aim of returning to a particular moment in past relationships between humans and nature. Restoration is an approach distinct from both conservation and preservation, and the language in SER's [society for ecological restoration] mission statement makes clear that the difference hinges on tense: restoration science "re-establishes" a relationship that has already been lost in the present. It looks to the past to design a hopeful future. Conservation and preservation, on the other hand, both focus on maintaining and protecting valuable aspects of contemporary landscapes. As Hall points out, however, the hopeful version of the past championed by many American restoration projects posits an idea of "wilderness," a term that William Cronon has famously noted can be read as a fantasy of the pre-contact North American landscape (1986). The impetus behind restoration ecology, then, could be imagined as a way to recoup the promise of a settler project: to recreate a landscape that promises the very same forms of abundance that have caused its deterioration.

Restoration ecology didn't become explicitly professionalized in the United States until the creation of the Society for Ecological Restoration (SER) in 1988 (Hall 2005: 3). For the first seven years of its existence, SER actually claimed its mission was to restore "pre-settler" environments in the US, with the aim of recuperating wild landscapes (ibid). After 1995, SER changed the way its mission was worded, and now the society says it seeks to "promote ecological restoration as a means of sustaining the diversity of life on Earth and re-establishing

an ecologically healthy relationship between nature and culture" (SER n.d.; emphasis HB). While this updated mission statement does not explicitly reference "pre-settler environments," it still points to an idyllic past, when humans and nature were in an "ecologically healthy relationship."

Recent scholarship addresses the history and material effects of land loss in places where slavery, settler colonialism, and dispossession continue to reverberate in contemporary policy decisions in the American Gulf of Mexico region (Maldonado 2014; Cattelino 2015). These histories are visible in decisions about environmental restoration: in the Florida Everglades, for example, Cattelino (2015) describes the way restoration rhetorically positions members of the Seminole Tribe as part of the landscape, effectively excluding them from the human history of the region. Likewise, in Louisiana, once tribal land disappears underwater, ownership diverts to the state (Maldonado 2014: 69); plans to regenerate wetlands do not suggest that this vanishing territory will be returned to the tribes that occupied it. Environmental restoration is thus animated by a process of settler colonialism that cannot be neatly relegated to the past.

But which specific histories are invoked by restoration? From her work in the Florida Everglades, Jessica Cattelino (2015) has observed that restoration "participates in a…settler colonial spacetime that treats humans and nature as incompatible" (242). In her view, ecosystem restoration projects often both rely upon and reproduce the logics of settler colonialism through the persistent structures of property regimes, systems of value, and affective valences. Ecosystem restoration thus harnesses something akin to what Renato Rosaldo (1989) termed "imperialist nostalgia," and infuses this regretful desire into contemporary landscapes. For Cattelino, the fantasy of these projects succeeds because it is rooted in the collective desire of settler colonialism: an untarnished, resource-rich landscape that can act as terra nullius. In Louisiana,

speculative, uninhabited wetlands seem to function as a similar "untouched" natural past to which Louisiana has never laid claim. Perhaps because Louisiana's restored coast is not projected to manifest for several human generations, the Master Plan does not project much of a human presence in newly regenerated wetlands. Instead, imaginaries of the restored coast remain curiously empty, its role seemingly to function as buffer against storms and sea-level rise rather than to be incorporated into patterns of human work and sociality.

In this low, watery landscape, it seems that coastal restoration projects attempt to revive a version of nature that undergirds the very infrastructures and relationships that now threaten natural systems. Louisiana's deposits of fossil fuels, and a flat, watery topography are seen as rich natural sites for extractive industries. Many people in this region rely on the industries tied to these features of the landscape for their livelihoods; the seafood and oil and gas industries are widespread sources of employment. It therefore comes as no surprise that state officials and environmental scientists have framed large-scale ecological restoration in southern Louisiana around re-creating not just the "coast" but the "working coast;" that is, a coast whose ecosystems are enlisted to support industry, even as these same ecosystems require human help to overcome industry's injurious effects.

Methods and Structure

The research that informed this dissertation was carried out over sixteen months between 2018 and 2020 in the southeastern coastal parishes of Louisiana and the state capitol, Baton Rouge. During fieldwork, I conducted participant observation with oyster fishermen, fisheries biologists at local universities, and restoration specialists at a consortium of NGOs called Restore the Mississippi River Delta. In addition, I regularly attended public meetings of the legislative

Oyster Task Force and public meetings about coastal restoration, where I collected promotional materials and literature, and I volunteered at events in several parishes sponsored by the Coalition to Restore Coastal Louisiana. I conducted thirty unstructured ethnographic interviews with fishermen and restoration scientists and looked at historical materials at the Louisiana Department of Wildlife and Fisheries and the US Army Corps of Engineers – New Orleans District.

I took photos and video footage, recorded interviews, and kept detailed field notes and a journal of my reflections throughout fieldwork. I analyzed my interviews and archival materials with an eye for understanding how fishermen and other coastal residents, scientists, and policymakers think about the temporality of coastal lands: when the future will arrive and how much control they have over it. These questions led me to reconsider the role of race in the project: in many of my interviews with Black fishermen, hopes for the future were infused with memories of anti-racist organizing and moments of solidarity and self-determination. These memories were rooted in communities that formed around an abundance of natural resources. Many of my interviews with white fishermen were full of unsolicited commentaries on people of color, and their narratives about the future and reflections on the past often centered on ideas about deservingness: who deserves to have a literal claim to coastal lands and waterways and who deserves to have a voice in conversations about how interventions on the coast ought to be carried out.

Following these emergent threads, I carried out extensive participant observation with five particular interlocutors, and developed some methods specific to my fieldsite and to the dynamic that was coproduced among us. These include:

- Hanging out in harbors – I spent countless afternoons sitting with friends in oyster harbors that were rapidly falling into disuse. These places cued fond memories from people in different communities and allowed me to track how these memories are inflected against landscape change, against access and property rights, against regional histories of racialization, against environmental disasters, against industrial exploitation, and against historical periods of resistance and self-determination.
- Situated scanning – "Situated scanning" references Donna Haraway's elaboration of feminist standpoint theory into "situated knowledges." I use this term to describe the work of attending to my own positionality in relation to my interlocutors: Often when I visited men who owned oyster leases, we would be in places where multiple conversations were going on. Aware of gendered stereotypes, I blended into the background unless cued by the mention of a concept or idea I knew I wanted to follow, when I would interject to ask for clarification. In these moments, my identity as a petite, white woman meant that my presence did not dissuade conversation about controversial or violent topics. At other times, my presence as a white observer had a very different effect. Particularly when watching Black oystermen at work, my presence recalled the violent surveillance of white people in power throughout American history. At the suggestion of my interlocutors, I limited these interactions, instead focusing my ethnographic gaze on white leaseholders.
- Being part of "the public": I paid close attention to the public I helped comprise at public meetings, noticing at different moments/in different publics different assumptions people made about my research and what questions I would have, and also assumptions people made about when/how I would feel safe doing fieldwork. On tours of new technologies,

such as the scale model of the river diversions (contemporary and historic – I visited the newest models at Louisiana State University and historic models at the Army Corps of Engineers in Vicksburg, MS). When I wasn't allowed access to the everyday maintenance or making of these models, being a nosy visitor on public tours was a good way to glean information.

- Sifting through informal archives: I waded through unsorted paperwork and records in the Department of Wildlife and Fisheries and spent days in the tiny and often disorganized New Orleans Army Corps of Engineers Library. At LDWF, for example, I asked to see examples of historical oyster leases that were held by the state and was told that they're actually kept in parish courthouses, rather than at the central LDWF offices, but "I don't think you'll find a courthouse that hasn't burnt down at least once."

The dissertation builds an argument that interventions on coastal geography at different scales coproduce ideologies of race, shaping claims over the landscape that extend into the future. I examine how this process occurs in several locations: in the delineation of the shoreline, in everyday activities of occupation and surveillance among fishermen, and in the cultivation and maintenance of oyster reefs. Over the course of three chapters about race, space, and property, I elucidate expectations of the landscape that are interrupted by the river over and over again in different ways. Between each of the chapters is an interstitial that interrupts the flow of argument and explores a different element of the river that people imagine will have distinct effects on the landscape: sediment, freshwater, and toxicity.

In these interludes, I follow the Mississippi River through its diversions—those that are predictable and those that are less so—and through what Donna Haraway might call its process

of figuration. According to Haraway, the defining characteristic of figurations is that they're tropic: they are unpredictably responsive to stimuli. Read through Marilyn Strathern's theorization of figure/ground relations, a figure might be imagined as an outline come to life, a sketch of clustered forces whose behaviors are contingent on their surroundings even as they act upon those surroundings. Figures are entities that alter their own boundaries; they are forever changing and mutating in reciprocal, unpredictable ways (Haraway 2018; Strathern 2004). The river itself is a figure in the stories I relate in this dissertation: it enacts a set of material-semiotic processes that have been mediated by human interventions for thousands of years—and which, for the past few hundred years, have been mediated by a regime of river control projects that usually take the form of levees and diversions. These infrastructural interventions in turn become meaningful in ways that produce or reproduce relations of power that are not always easily visible: the project of making the shore is—by virtue its geographic history—also one of racialization.

Interstitial: A River of Sediment follows imaginaries of the river as primarily a vector of sediment and builder of land, drawing attention to the discursive separations required for this narrative to take shape.

Chapter 1, "Stabilizing State Waters," charts the history and stakes of distinguishing between land and water in Louisiana. To do so, I analyze recent historical moments in the state's conceptualization of its coastline, from the 1968 Supreme Court case *Louisiana vs. The United States* to present day legislative efforts to ensure state claims over newly submerged waterways are not contested by private landowners. *Louisiana vs. The United States* sought to extend the

state's southern reach into federal waters at the height of anti-integration efforts in order to secure revenues from offshore oil and gas production, in a move that would help ensure the state's relative independence from federal funds. I argue that contemporary innovations in the legal definition of Louisiana's coastline have resulted in property claims that continue to reproduce patterns of inclusion and exclusion along lines of race and class in the region. By historicizing efforts to restore, map, and model Louisiana's coast, this chapter elucidates the legacy of segregationist politics in contemporary coastal planning and property regimes.

Interstitial: A River of Freshwater follows imaginaries of the river as a vector of freshwater (salinity change) that prompts the reorganization (or loss) of saltwater fisheries, exploring how freshwater is envisioned as a toxic force, even as it is also a source of life.

Chapter 2, "Surveillance and Occupation on Louisiana's Coastal Frontier," argues that proprietary attitudes toward the shifting landscape among white oystermen constitute a frontier affect unique to the rapidly transforming coast. Examining practices of occupation and surveillance, this chapter elucidates the everyday, material interventions that enable experimental legal claims to emergent land and water. Leases of oyster reefs have long been sites of experimental ownership claims and attempts to extend the contours of property into areas excluded to other forms of private ownership. However, unlike frontier landscapes preceded by visions of cartographic expansion, this physically changeable landscape compels cartographic shifts: when the coastline recedes or changes, so too do the maps that outline access and jurisdiction. Here, I follow oystermen who coax waterways into expanding, moving, or

disappearing in order to make new claims over the spaces that emerge and cement their rights over places that are increasingly unstable.

Interstitial: A River of Toxicity follows imaginaries of the river as a vector of different kinds of toxicity, a quality that is selectively visibilized and invisibilized in narratives about environmentalism and restoration in the region.

Chapter 3, "Biomineral Politics and Oyster Reef Solidarities," develops a theory of biomineral politics, a play on "biomineralization," the technical term for the process by which an oyster accrues its shell. Here, biomineralization is re-imagined as a social process, describing a history of racialized management of local geology that prioritizes some lives above others, and profit above all else. Drawing on interviews and maps of oyster leases and oil leases, this chapter analyzes the long decline of both public and private oyster reefs in Black Bay, Louisiana, alongside racially exclusionary regulation of fishing technologies. I argue that the decline of the reef and the imposition of exclusionary regulations are the effects of simultaneous investment in extraction and systemic disinvestment in Black communities, and I describe strategies of local anti-racist organizing in response to these patterns. I show how racialized human relationships manifest in the particular landscape form of the oyster reefs, accumulating and enduring in the bodies of oysters and people.

~Interstitial: A River of Sediment~

In May of 2019, I took an airboat tour of the bayou adjacent to the Caernarvon Diversion, an engineered outflow of the Mississippi River. Designed to mitigate flooding, the diversion was first conceived after catastrophic river floods in 1927, although its construction wasn't completed until 1991. Caernarvon has the capacity to move up to 8,000 cubic feet of water per second[9] through a series of gates between the Mississippi River and the estuaries to its east. However, this tour wasn't designed to demonstrate Caernarvon's utility as a flood-control mechanism. In fact, we weren't gathered to learn about the diversion's capacity to move water at all. Instead, we had come together to see the new land Caernarvon had generated by providing a conduit for river sediment.

The tour would take us by airboat through the labyrinthine waters of Big Mar Lake, where we would see the emergent ecosystem that thrived on this new land. Our tour guide was a scientist on staff at a local nonprofit, whose work demonstrated the potentials of diversions for wetland restoration. As we chatted before our group departed, the scientist described the growing network of tree-lined wetlands we were about to see, which she said had grown out of sediment from the Mississippi River carried by Caernarvon. She spread a poster out on the roof of her car to show me how this sediment had gradually accrued into larger land masses over a period of

[9] To give an idea of how much water this is: 8,000 cfs is often considered to be the most challenging river conditions for recreational white water rafting. In fact, at a dam on the Kennebec River in Maine, a quarterly turnstile opening is advertised as an extreme rafting opportunity, with images of vertical waves inundating rafts full of visitors dressed in helmets and goggles. See: https://www.northernoutdoors.com/maine/kennebec-river-turbine-tests/

twenty years. In these images, it is hard to differentiate streaks of land from muddy tendrils of river water. Rather than talking about the water itself, however, our tour guide focused almost entirely on the generative power of sediment flowing through Caernarvon.

Figure 3: A similar series of images depicting the same phenomenon in Caernarvon's outfall area, retrieved from the Pontchartrain Conservancy. https://scienceforourcoast.org/caernarvon-audio/?utm_source=rss&utm_medium=rss&utm_campaign=caernarvon-audio

> *The breeze was thick and humid as we set out and drifted forward, approaching massive flood gates that loomed at the exit of the marina. Behind me, the airboat's captain—a land manager employed by the company that owned and controlled access to the area we'd be touring—gestured at the giant fan that powered the small skiff, then at his ears. Airboats are notoriously loud, a trade-off for their ability to move through incredibly shallow water; without a subsurface propeller, they can navigate places that would otherwise require a boat like a canoe, or the small wooden vessels that Louisianans call a pirogue. I put on the heavy-duty ear protection the scientist leading the tour had given out when we embarked, and the captain turned the fan on. We began to skim fast across the water of the broad canal beyond the flood gates. The fan's loud, low vibration accompanied us as we turned right to slip through a sunlit, willow-filled waterway.*

Figure 4: Willow trees on the edge of a canal. Photo by author.

Soon we emerged into a wider channel of open water, lined by a marsh plant called cut-grass, along with willow, gum, and cypress trees. At one end of the channel I could just make out a nondescript black iron fence: I knew this marked the outflow of the Caernarvon Diversion structure. Beyond sight—past the iron fence, across Highway 39, atop the high Mississippi River levee – there would be five gates, which I saw from the other side each time I drove down the narrow length of Plaquemines Parish. These gates control the flow of the river through the diversion's outlet and into the canal that our small boat was currently navigating. In fact, the Caernarvon outflow was one of my favorite places to stop and stretch my legs on long car trips further south: there were always alligators gathered here, in search of fish and temperate waters.

Figure 5: View of Caernarvon Diversion. Photo by author.

The engine quieted, and we floated towards the nearest bank. Gesturing at the lush vegetation surrounding us, the scientist pointed out different species of plants and birds, many of which she told us hadn't been present at all—or had been much fewer in number—when she began her work. The grasses and trees that are home to the wildlife we saw depend on the presence of sediment and organic matter, and in turn they hold these new accumulations of land in place.[10] *She told us that the vibrancy of this area was proof that the Mississippi River could create new land – and new life—when it is allowed to flow into bordering wetlands. Amidst such liveliness, her implication was clear: wetlands are valuable, and building them is a good thing. Looking around at the red-winged blackbirds, plovers, alligators, pelicans, dragonflies, and waterlilies—all of which were framed against a backdrop of bright, spring-green foliage—I believed her.*

[10] A concomitant project that I volunteered with, led by another organization, planted thousands of cypress and other water-tolerant species of trees in Caernarvon's outfall area in order to help hold sediment in place and encourage the endurance of new wetlands.

In this interlude, I examine the idea that the river is a generative force that can be harnessed to produce new land. Specifically, I focus on the discursive separation of sediment from freshwater, rendered as conditions necessary for new life to thrive in narratives like the one shared by our tour guide. The main way in which scientists reference the river is as a vector of sediment. Figured in such a way, the river's main function seems to be facilitating a flow of land-building material; it is both pathway for and mover of stuff such as sand, silt, and clay. I suggest that this separation performs two functions. First, it operates as a sleight of hand, making the negative impacts of an inundation of freshwater disappear in favor of the promise of sediment. Second, drawing attention to "sediment" or "land" decontextualizes the process of sedimentation from places that already exist and, likewise, from future places that will emerge from the accrual of silt and mud carried by the river. These rhetorical moves sidestep questions about who will be able to access these emergent landscapes, whether they will be privately owned, or how access to them will be controlled. Imagined as a vector of sediment, river water is rendered an externality, and the carefully calculated sediment it carries becomes a predictable good (c.f. Barra 2019).

Sediment carried by the Mississippi River is the linchpin of coastal restoration projects in Louisiana, where the accumulation of silt, clay, and other alluvial material over the course of thousands of years formed the state's southern geography. The idea that sediment is the primary driver of wetland regeneration is rooted in the oft-repeated geological origin story of Louisiana's coastline, a story that countless scientists have told me in conversation, one that narrates the river's agential relationship with its delta over the course of the past 5,000 years[11]. The story

[11] Most scientists do not, however, acknowledge the role of humans in intervening on the river's channel before colonization; human impacts on the river's route are usually described beginning with levees installed by the French.

goes something like this: Long ago, the land mass that is now Louisiana lacked the iconic, boot-shaped section of its southern region. This part of the landscape is located near the mouth of the Mississippi River, and like any delta region, it has reciprocally formed against the river's shifting path, formed as sediment flows down from throughout the fourth largest river basin in the world. Over time, each path shift has left a soft, new delta lobe of silt in its wake, a material marker of the river's past that in turn has affected its future movements. The first of these lobes formed around 4,600 years ago, fleshing out what is now southwestern Louisiana, at the same time that sediment-rich river water began moving through tributaries into what is now the southeastern part of the state. Over time, the main path shifted eastward, building up several more malleable land masses before the river arrived at its current location.

The Caernarvon Diversion has its origins in a suite of river control projects imagined after the 1927 floods, when New Orleans officials were so worried about the possibility of flooding that they dynamited the levees south of the city. Ostensibly, blowing open a crevasse in the levee downriver would decrease river levels near New Orleans itself. But this effort also required flooding a huge area of rural Louisiana, displacing the people who lived, worked, and relied on land that was newly underwater—and who were never properly compensated for their loss. Construction on Caernarvon finally began in the 1980s, roughly the same time period when land loss and wetland restoration had started to become hot-button issues in Louisiana. By this time, Caernarvon's purpose had been reconceptualized. No longer simply about flood control—a separation of water from the land—scientists and engineers suggested that Caernarvon would help solve the problem of wetland loss by connecting the freshwater river to surrounding estuaries.

On our tour of Caernarvon's outfall area, the wetlands we viewed appeared empty of other people or even signs of their presence. It didn't seem to strike anyone as strange that our boat was captained by a private land manager, whose job is to act as a gatekeeper and to find ways to ensure the property he manages is profitable. For those of us on the boat tour, the value promised by these new wetlands was conjured by their very emptiness; they could easily be imagined as a buffer between New Orleans and the Gulf of Mexico. Yet, for people who rely on coastal places for livelihood, cultural identity, or recreation, the impact of sediment-generating wetlands is much more immediately felt.

Decontextualizing sediment from existing and future places performs a separation that both rhetorically reduces the unpredictability of the river and obscures questions about power: What will it be like to live with these new landscapes that soften and diffuse outflows of freshwater even as they rely on the movement—or flood—of water into places that already exist? The Caernarvon diversion leads directly into the waters in southeastern Louisiana where I conducted most of my fieldwork, waters that are changing as the river slips through the levee in planned and unplanned places, and where people are intervening on the landscape in ways that seek to extend their control or stabilize their relations to place.

> *When we returned from our boat tour of Caernarvon's outfall area, our tour guide again showed us the poster that illustrated the effects of Caernarvon on the local landscape. In the top right section, a series of aerial images of the Caernarvon Diversion's outfall area showed a steady increase in land over time. In these photographs, it is easy to see the swirling forms of sediment as it plumes outward from the diversion, distributing across open water as years pass. Our guide gestured to the images and said, "This diversion was designed to control salinity. In fact, it was built specifically to avoid capturing sediment, and look how much land it's built. Imagine what a diversion that is designed to prioritize sediment will do!"*

Chapter 1: Stabilizing State Waters

When I was a middle school student, I volunteered at a beach clean-up each spring. It was the late 1990s, and my hometown in Mississippi had just instituted a municipal recycling program; at this time, there was a great civic interest in environmental issues. I remember that I would get a free t-shirt and a coupon for a meal at Outback Steakhouse after a long, sandy day picking up trash under the hot sun. At the time, I was a vegetarian, and every year I would go to Outback with friends and order a blooming onion—an entire onion cut to resemble a flower that is breaded and deep fat fried—which I would eat alongside a Barq's root beer. In the eighth grade, I wrote a paper on the history of the beach I was helping to clean up. The actual contents of my essay—saved on a Bugs Bunny themed floppy disk—were lost to the Gulf of Mexico during Hurricane Katrina, but I remember noting that the local beach was an engineering feat: the longest continuous "man-made" beach in the United States. Originally designed as an answer to worries about erosion and hurricane storm surges, by the time I was in middle school the soft white sand was also a local tourist attraction. To maintain the illusion of a natural beach, bulldozers would arrive with piles of sand each autumn after hurricane season, staving off the return of the marsh and the disintegration of concrete, maintaining the façade of a naturally sandy shore.

What I don't remember learning until much later, when I returned to do post-Katrina volunteer work as a college student, was that this same beach was the site of some of the bloodiest Civil Rights protests in Mississippi. In what was up until then the most violent reaction

to Civil Rights actions, white mobs attacked activists at two 1959 "wade-ins" to protest segregation and exclusion on the Mississippi shores of the Gulf of Mexico. These wade-ins were based on the sit-ins happening around the country that highlighted racist practices in a wide variety of public and private spaces, such as libraries and restaurants. The wade-ins on the Gulf Coast brought national attention to places that should have been public by virtue of their location: regardless of who owns adjacent property, the United States shoreline is almost always legally demarcated as public space. Further, these beaches had been built and maintained with public funds; on paper, they were undeniably public space.

This chapter situates the ethnographic work of the dissertation by elucidating the legal history of Louisiana's shore in relation to competing ideas about who constitutes the public. I show that the material separation of land and water—the generation of the shore itself—is imbricated with processes of making social and racial difference through the creation and dissolution of public and private space. This argument is informed by critiques of public land in the United States that emphasize its historic use as a tool of settler colonial expansion (Goldstein 2018, Anson 2019) along with theorizations of property as a form of racial exclusion (Lipsitz 1995, Harris 1993, Moreton Robinson 2015). Here, I focus on the legal history of what a coast line *is*, how it is determined and demarcated, whose interests are at play in this determination, and who has jurisdiction, access rights, and ownership over resource-rich coastal lands. why the history of the southern American shore is so fraught. I describe how conflicts between federal and state control have become localized in contemporary efforts to stabilize state and private claims to coastal property. Ultimately, here I argue that the coproduction of the shore as both a material and legal space has implications for who is considered to be part of the public: the

Louisiana shoreline is a racialized space that is physically and socially constructed in the name of whiteness.

Shorelines are inherently political places. They are at once the cartographic instantiations of a nexus of geopolitical borders (Russell 2020), the locations of multiple zones of jurisdiction (Kahn 2019), and areas where rights are contested, negotiated, and remade (Subramanian 2009). The United States shoreline in particular is the meeting place of state, federal, and international legal doctrines and jurisdictional regimes: for example, it grounds measurements that codify different claims over maritime space, such as the claim the United States makes over waters within two hundred miles of its coast (Kahn 2019; Russell 2020). At the same time, the American shore is almost always technically a public space, open to use by every citizen: in American and European legal traditions, the shore is generally imagined to be common, a place where people can assemble, swim, fish, or freely gather materials such as wood and sand. These various legal notions of the shore—as at once definitive of multiple borders and as constitutive of public space—inform a wide variety of claims that impact people and politics in coastal places.

In most of the United States, the seashore is categorized as both public space and state territory, not claimable by private individuals. This is true even when all the land adjacent to the shore is privately held—as it was in my hometown during the wade-ins—that is, even when access to the shore is strategically restricted by property owners. The wade-ins are a violent example of moments when zones of jurisdiction over coastal areas conflict with exclusionary beliefs about who is constitutive of the public. In the American south, "the public" has historically been a category that people in power have made into an object of racialized

protection: for most of the history of the United States, public schools, public libraries, public universities, and public beaches in the deep south were intended to serve white people.

As a result of this history, questions about the allocation of public resources to bolster or maintain the shore are politically fraught. The section of the Gulf Coast of Mississippi where I spent my childhood is about two hours by car—closer by boat—from the Louisiana marinas where I would spend so much time during dissertation research.[12] Like in Mississippi, discussions about what many call the "shore" or the "coastline"—that narrow swath of land adjacent to the sea—have historically been racialized in Louisiana. I open this chapter by reminiscing about my childhood, because my experience is a common one: environmental causes in America often hide the histories of race and violence that enable the environment to be conceptualized as a resource for an unmarked white public (Finney 2014, Heynan 2018). In Louisiana, coastal lands adjacent to the shore are majority privately owned, yet in the national and local imaginary they function as a public recreational resource: as the descriptor on its license plate proclaims, Louisiana is a "Sportsman's Paradise."

Here, I present a legal history of coastal land in Louisiana that takes as its point of departure the coincidence in of violent segregationist politics and efforts to secure state sovereignty against federal interests in nearshore waterways, as oil and gas were beginning to yield big revenues. I'm interested here in how the argument over who has rights in these spaces continues to reproduce racialized claims by those in power about who does or does not constitute

[12] Many of my interlocutors knew exactly where I'd grown up; some even ordered their oyster dredges from a fabricator based in the next town over. Being known in this way meant I was more trustworthy in some places and less in others. This sense of being known was also one of the first things that made me wonder about the relationship between the mainland and the nearshore Gulf of Mexico: many of the fishermen with whom I conducted fieldwork moved easily—by boat—between Mississippi and Louisiana. Movement between the two states over land was also common, but in such a water-dominated geography, it took easily twice as long.

a public. I connect Louisiana's fight over the coastline in the 1930s-1980s to concomitant discourse about state sovereignty, states' rights, and white resistance to desegregation in Louisiana. I show how these concerns have shaped contemporary coastal restoration projects, many of which have their roots in arguments over where, exactly, Louisiana's shoreline lies and what histories and epistemologies ought to be brought to bear in defining it. As described in the introduction to this dissertation, the issue of coastal restoration is central to state and local politics today; the wetland restoration strategies the state is undertaking to address these erosion issues are still largely funded by settlements with oil and gas companies or by funds set aside as an agreement between the federal government and states that border the Gulf of Mexico.

The legal history examined here underpins contemporary claims to coastal space that have shifted with changes in landscape formation, epistemologies, and use. Shorelines everywhere are emergent spaces the shapes of which are always changing through human interventions and natural processes. Louisiana's shore is particularly unstable due to its deltaic geology: the southern region of the state formed relatively recently from the alluvial deposits of the Mississippi River. In local imagination, Louisiana's "coast" is a region that encompasses hundreds of miles of swamps, bayous, and islands, rather than a clear or fixed border. At the same time, coastal Louisiana has long been the site of resource extraction projects, from lumber harvest and processing in the eighteenth and nineteenth centuries to inland and offshore oil rigs today, and much legal effort has been made to codify a variety of claims over this liminal littoral space and to distinguish private, state, national, and international interests. The result is a complex tangle of land and sea, of tidal zones and submerged land; of private property, state-owned land and water; of regulations around public access, leases, subleases, federal waters, and navigational rights of way.

These claims and jurisdictions do not always overlap coherently; in fact they rarely do. As I will show, this is [partially] because the rights entailed in each claim are not exactly the same, and because the population each purports to serve are quite distinct. As coast lines disappear under rising seas—and as they are bolstered through largescale infrastructural projects questions of territory, jurisdiction, and property are called into question and adjudicated anew. In Louisiana, where the coast line is rapidly disintegrating into the Gulf of Mexico, this question has been addressed in many different spheres: as an environmental issue, as a concern for state sovereignty, and as a problem of national security and international trade. If the shifting shore alters the entity that governs these spaces, changes in regulatory policies ensue that have even been identified as threats to national security, particularly in places like southern Louisiana that are crucial oil and gas production (Austin et al. 2008). After all, when a shore moves or disappears, many other processes are affected: habitat is lost, the state seems to lose territory, property investments change in value and utility, and trade routes and infrastructures are disrupted or made vulnerable to open seas.

Shifts in jurisdiction over the shore affect more than abstracted notions of security, however. The history presented in this chapter highlights moments when the shore becomes a contested space and an object of care and control, informing contemporary debates about coastal restoration in Louisiana. Since the 1980s, Louisiana's legislature, state agencies, and the US Army Corps of Engineers have introduced projects aimed at bolstering and restoring coastal wetlands (see Introduction). In addition to longstanding flood control projects such as levees and spillways, the state has been investing in adding sediment to receding marshlands, planting marsh grass, and cultivating water-tolerant species of trees. Most recently—and most controversially—Louisiana has planned to spend a large portion of the settlement it was awarded

after the BP oil disaster in 2010 altering the course of the lower Mississippi River. This project consists of large-scale diversions that will mimic natural flood events, hopefully depositing sediment along the southernmost section of the river's delta and accruing land in areas where wetland erosion has been the most acute. Here, I explore the multi-scalar political stakes and legal history that undergird these contemporary restoration projects, showing that "coastal restoration" is a project that carries a racialized set of assumptions about who the coast is for.

In what follows, I examine the recent history of jurisdictional zones and property forms that attempt to stabilize claims over coastal spaces in the name of different publics: private, state-owned, and federally regulated land and water. First, I describe what it's like to move through a shore space that is and always has been in flux, and what the stakes of these changes are for emergent rights and access: as the location of water changes, land that was once privately owned becomes part of state territory. The nickname for these places is "dual-claimed" land. Next, I outline the recent history of efforts to define Louisiana's coastline in order to rationalize adjacent claims over both land and sea by different governing entities, showing how changes in the landscape affect these claims and who has access to them. I pick up this history in the 1930s, a decade when a conjuncture of events heightened the stakes of codifying the coast: the local intensification of offshore oil and gas exploration, several moves by the federal government to increase its capacity to regulate the fossil fuel industry, and the completion of an aerial survey of the state's coastal lands. In the same timeframe, the bayous of southeastern Louisiana were rapidly being enclosed by large corporations, and access to public lands and waterways was growing increasingly regulated. I analyze the coincidence of these efforts, all of which would eventually be impacted by the project of distinguishing land from water. Finally, I describe how

these conflicts between federal and state control have become localized in contemporary efforts to stabilize state and private claims to coastal property.

Making the Shore Strange: "Dual-Claimed" Land and Contested Waters

Figure 6: Image of the eroding edge of a bayou. Photo by author.

In 2021, I pulled out my iPhone to show a friend a map of places where I'd conducted fieldwork that I was worried about in the aftermath of Hurricane Ida. Zooming in on southern Terrebonne Parish, I saw a saved location in the middle of the water, and I couldn't remember why I'd marked it. Curious, I tapped the icon to see my note:

[Luke] dual claim state wants to "buy out."[13]

I had marked this location and typed the note quickly to avoid feeling seasick while looking at my phone on a windy, gray day on the water, accompanying a fisherman named Luke to some of the areas where he cultivates oysters. "Dual-claimed land" is the local moniker for privately owned land on Louisiana's coast that has disappeared into the Gulf of Mexico. It's called "dual-claimed" because when private property on the coastline succumbs to open water, ownership over it technically transfers to the state, which—on paper at least—has claim to all navigable waterways and submerged lands within three miles of shore.[14] I was particularly excited about this trip with Luke, because I knew he had several oyster leases with corporate landowners in waterways where property rights had recently become contested. Unsurprisingly, the exact location of dual-claimed land is often kept secret, but as Louisiana's coastline migrates inland, this situation arises more and more often. After asking corporate land managers, fishermen, and representatives from the Office of State Lands if they could show me a dual-claimed area, Luke was the only person who had agreed. From our small boat's position, we could see land in the distance in several directions, but we were undeniably over open water.

In dual-claimed places, there is no formal legal guidance about who has which rights or obligations: no one is sure who has the right to drill, the obligation to pay taxes, the right to develop, or the obligation to restore habitat. As more and more of Louisiana's marshes are inundated by the Gulf of Mexico and as "coastal restoration" has become a rallying cry for the

[13] Throughout the dissertation, I've italicized direct quotes from my field notes to indicate their source, as opposed to secondary sources and citations. To indicate direct speech as recorded in field notes or transcribed from interviews, I use quotation marks.

[14] Among individuals and private parties, this process of landscape change that entails changes in legal status animates what in the next chapter I describe as a "frontier affect."

state, these questions have begun to take on increasing urgency. Oystermen like Luke operate adjacent to these issues, occasionally setting up leasing agreements with private entities that hold title in areas where their continued ownership could be called into question. With no hard and fast rules about how these areas are regulated or by whom, agreements about access and use have been hashed out on a case by case basis by individuals and property owners. The result is a landscape fragmented by overlapping claims, perhaps more formal than a commons but certainly less formal than the maps kept by the Office of State Lands. A singular claim to ownership by the state would destabilize this delicate and ambiguous relational network as it exists now; shifting the cartography of state control would have widespread ramifications for agreements like Luke's, and for all the violences these agreements have afforded and upheld. The proliferation of agreements over use in privately owned swamps and waterways has allowed for the selective policing of these spaces by private security and sheriff's offices, as well as accommodating the coexistence of subsistence and commercial hunting and fishing with pipeline construction and other aging oil and gas infrastructure.

Figure 7: Signage marking a pipeline canal as private property. Image by author.

In contrast to this shifting landscape, the concept of the shore in American and European law has been relied upon as a relatively stable category—at least theoretically—that has been constitutive of domestic and international legal paradigms for much of western history.[15] In the abstract theorization of the law, once it has been surveyed by jurisdictional authorities, the placement of the shore only shifts with the predictable movement of the tide. This assumption about the shoreline allows it to be a sort of baseline measure for territorial claims both inland and offshore, a fact that critical theorist Tiffany Lethabo King has observed when linking land and sea in a historical map of colonial South Carolina: "The coastline both delineates ocean from land and simultaneously conjoins the coast and the [o]cean as a coherent system" (80). King's

[15] The shore is formative of jurisdictional thought at sea (see Grotius on freedom of the seas), and yet its murkiness on the ground has been taken advantage of by people operating across and between these jursidictions. See Dawdy & Bonni 2012 and Benton 2011 for accounts of how piracy practices have long made use of the gaps between bureaucratic borders on paper and their existence in practice on the ground.

analysis of the South Carolina coast weaves together land-based and oceanic geographies with the social worlds of oppression and resistance that each of these realms holds. King identifies the shoreline itself as a site of settler-colonial anxiety for the "White cartographic (Cartesian) subject" that sits between "Black oceanic chaos and Native absence" (85). This cartographic representation of the coast outlines a space of fear and violence at the same time that it gestures towards aspirational settlement and control inland and offshore.

In present-day southern Louisiana, the shoreline is likewise an imaginary that simultaneously calls into question the organization of on- and offshore space, claims over these spaces, and—crucially—the public for whom those claims exist.[16] Despite efforts to pin it in place, the boundary between land and sea in Louisiana has seemingly always been changeable and, at least for as long as European colonizers and their descendants have lived there, political. This is because southern Louisiana is dominated by the Mississippi River delta, which over the course of millennia has built the contemporary shape of the state by depositing sediment into the shallow waters of the Gulf of Mexico, slowly accreting to extend and shift the border between land and water. This coastal zone is comprised of hundreds of miles of swamps, marshes, and wetlands, where people have historically taken advantage of unmapped, difficult-to-access spaces for a variety of purposes: for example, to hide smuggled or pirated contraband, or to establish Indigenous communities and maroon communities of formerly enslaved people. Nowadays, these liminal wetlands are places where people camp, boat, hunt, and fish—for subsistence and for profit—and they're also 80% privately owned. Most of these owners are

[16] Subramanian (2009) has written about this phenomenon in south India, where fishing communities work out rights politics across contested offshore spaces. For a detailed account of how these issues played out in historic oyster fisheries in colonial New Jersey, see McCay, B. *Oyster Wars and the Public Trust*.

large corporations—often oil and gas companies; it's common for these companies to have access agreements with local hunters, farmers, and fishermen—such as Luke. But when these marshes succumb to open water, ownership over them technically reverts to the state; this is when they become "dual-claimed."

Confusion over coastal land ownership is an increasingly urgent issue, because Louisiana's coastal wetlands and marshes are shifting faster now than ever, rapidly disintegrating into the Gulf of Mexico. This situation has come about because of multiple factors, primarily hundreds of years of flood control efforts along the lower Mississippi River, which have prevented floods and thus prevented the river from replenishing its delta with sediment. The pace of land loss is exacerbated by sea-level rise, canal dredging, and the subsidence caused by the oil and gas industry. Open prairies of marsh grass and scrubby trees are flooding more and more often, becoming riddled with small ponds of water, until eventually they disappear. These changes happen so quickly that they are sensible within a single human lifetime.

> *Luke pointed to a narrow strip of trees across the bay from where we were floating and told me it was Isle de Jean Charles, where he'd grown up.*[17] *The so-called island is the most recent home of the Isle de Jean Charles Biloxi-Chitimacha-Choctaw tribe, and I asked if his parents still lived there. He told me they had left, along with the rest of his immediate family, because of the threat of storms and how much land had disappeared.*

A few months later when I visited again, Luke told me that even the landscape near his current home was rapidly changing. He used to catch shrimp by setting out passive nets in the adjacent bayou at high tide, but he doesn't do that anymore, because all those places are now just open water. The new landscape is bad habitat for shrimp, and there is nowhere to anchor a net,

[17] Isle de Jean Charles lies outside of the Army Corps of Engineers' Morganza levee network.

anyway. My conversation with Luke was one of many moments when oystermen pointed out landscape changes to me in places that had once been land and were now navigable by boat, or where flows of water had widened canals or opened them up entirely. This landscape resists cartographic stability, evading easy legal categorization. Such ambiguity has led different governing entities—which each represent different slices of the public—to seek ways to stabilize their claims to different resources and spaces along the shore. Even without such a rapid pace of landscape transformation, contemporary coastal jurisdictional zones are complex: in the US, local and state governments control waterways within three miles of the shoreline, and national jurisdiction picks up after that: the territorial sea of the United States extends 12 nautical miles, and the US maintains many sovereign rights even further, over waters within 200 miles of shore (Russell 2020; NOAA 2021). Because each of these claims to maritime territory depends on the codified location of the shoreline, the stakes for fixing it in place—or at least agreeing on where it is—are high.

Equal Footing: An Origin Story for Louisiana's Southern Boundary

One way to build an argument about where the coast ought to be located in the eyes of the law is to identify an origin story for its placement. In Louisiana, like in many other US states, this origin is often traced to a constitutional law called the Equal Footing Doctrine[18]:

[18] The impulse to point to the constitution as historical evidence or proof of claims over geographic or personal sovereignty is a mode of thinking especially salient at the moment of writing, just after the Supreme Court has overturned the 1976 *Roe v. Wade* decision. Justice Samuel Alito, writing for the majority, states that his opinion was formed because there is no historical evidence of abortion being legal in the time of the 'founding fathers' (find quote).

At our first lunch together, Jamie leaned forward across a plate of roasted oysters to tell me about the Equal Footing Doctrine, which he described as a constitutional law asserting that everything that was "water bottom" when Louisiana entered the union in 1812 would be state owned from that moment forward. Jamie is a lawyer who specializes in maritime and coastal law, and the majority of his clients are private landowners, shipping companies, and other marine businesses. He is a regular attendee at Oyster Task Force meetings, which convene some of the largest oyster leaseholders in the state. I met him at one of these meetings and asked to interview him when it became clear that he litigates cases about rights and access over privately owned nearshore waterways—often arguing against oystermen, but also representing oystermen who lease from private land owners instead of from the state. At this meeting, he explained his view of the foundations of coastal conflicts and law in southern Louisiana, going back to Roman law, the Napoleonic code, and the Equal Footing Doctrine.

In Louisiana, however, the distinction between what is water bottom, what is tidal, and what is land has never been clear. Jamie's eyes glinted as he told me that Louisiana law is as unique as its landscape: of all the states in the US, Louisiana is the only one whose civil legal system is not based on British common law, but rather the French Napoleonic code. Louisiana's continental legal system has ramifications for its claim over coastal waters and the resources they hold; according to Jamie, Louisiana's perspective on coastal property is based on the Roman approach to land rights on the shores of the Mediterranean Sea. In southern Europe, Jamie told me, land that falls between the high water mark and a winter's low tide cannot be claimed by a private entity and is a resource for the public.

The same rule was adopted in Louisiana, he said, even though the tidal conditions in the shallow, consistently warm waters of the Gulf of Mexico are totally different. This history matters, because one way the Equal Footing Doctrine has been interpreted traces contemporary state sovereignty over shorelines and waterways to the laws that existed at the time of Louisiana's entry into the union.

In fact, almost every interview I conducted with coastal lawyers in Louisiana began with a discussion of the Equal Footing Doctrine,[19] a constitutional law from 1789 that set the territorial sovereignty of states within the union in relation to each other. Such an insistence on historical boundaries struck me as strange in a place where no boundary remains fixed for long.

[19] For a history of how Louisiana's application of the Equal Footing Doctrine connects with Grotius' Law of the Sea, see J. Skelly Wright, "Jurisdiction in the Tidelands."

What could a centuries-old legal doctrine add to contemporary disputes over coastal lands? The answer, it turned out, has to do with the unique relationship between the shoreline and legal category of "the public." From its inception, the Equal Footing Doctrine has set state sovereignty claims as "equal" to those of the first thirteen colonies subsequent to the American Revolution, with particular attention to the extension of sovereignty over water: American states "hold the absolute right to all their navigable waters and the soils under them for their own common use" (*Martin v. Waddell,* 41 U.S. 387, 410 (1842). [20] The doctrine has been central in theorizing the contours of private ownership and public use and access in navigable waterways across the United States (Morrison 2015, Wilkins and Wascom 1992). In Louisiana, the Equal Footing Doctrine has been a central piece of evidence in the debate about where the maritime zone of state sovereignty ends and federal sovereignty begins. Another way of looking at this debate is to see it as an argument about the boundaries of the public that benefits from access to or rights over offshore areas, and who has control over delineating this population: does this "public" consist of a population determined by the state of Louisiana or by the federal government?

Until the emergence of discourse about "dual-claimed" lands, this debate had culminated in a mid-century disagreement over offshore mineral rights between Louisiana and the United States during the height of the Civil Rights Movement and anti-integration efforts throughout the Deep South, which I explore below. This disagreement about jurisdiction over mineral rights is what eventually spurred the state of Louisiana to cartographically fix its coast line in place—a decision that has not only affected the relationship between federal and state or state and local governments, but also between the state of Louisiana and private land owners. The Equal Footing Doctrine functioned as evidence in these debates, helping determine an origin story for

[20] FSU law website "Public Rights in Water: Equal Footing Doctrine"

the boundaries of state land that is still brought to bear in conversations about who has which rights in which places: where does state ownership begin and end when the qualities that determine which landscapes are public and which are private are transforming? Legal arguments over contemporary claims to coastal lands often hinge on the same incomplete and sometimes incommensurable historical maps and colonial title transfers relied upon by the state's claim to equal footing.[21] At the same time, origin stories for a codified coastline—like the Equal Footing Doctrine—function to secure private claims over coastal space, claims that have always [since European settlement] been racialized in southern Louisiana. Citational histories such as the Equal Footing Doctrine attempt to legitimize contemporary property relations, and are caught up in an intertwined history of resource extraction, capital, and racial terror that has in turned shaped the landscape.

Racialization and Enclosure in Louisiana's Swamp "Commons"

The connection between landscape and race in Louisiana isn't new. In a place where geography and property have both undergone consistent transformation as a result of human interventions and natural processes, this connection can be traced historically. When the shifting bounds of the landscape are renegotiated by jurisdictional authorities, the laws and customs that regulate landscape use are re-written as well. In the United States, laws about the legitimate use of public land and property have long been sites of prejudice and discrimination, limiting access to certain groups, even in places demarcated as "common" (Cronon 2003, Berlant 2016, McCay

[21] C.f. the case of Isle Derniere, or "Last Island," an island supposedly owned by the Voisin family at the time the United States acquired Louisiana from France. In attempting to prove ownership generations later in the 1980s and 1990s, it became apparent that this island had either been overlooked by United States surveyors, had merged with an island adjacent to it, or both (Dixon 2015).

1998). Logics behind such regulatory frameworks are framed as encouraging "productivity," where productivity is understood to be a set of cultivation practices recognizable to those in power or an attribute of a particular race or ethnic group. Here, I highlight a moment when landscape transformation in southern Louisiana prompted a shift in use and regulation, describing how categories of race and property were coproduced within the context of environmental change, resource extraction, and enclosure.

As William Cronon (2003) has demonstrated, landscape transformations occur in reciprocal relation to processes of racialization and colonization, particularly under conditions of international capital. Writing about seventeenth century New England, Cronon shows that transformations in landscape use, value, and settlement were the result of colonial encounters between Indigenous peoples and Europeans. These transformations, in combination with European notions of property and sovereignty, manifested a set of ideas about race and gender: for example, Europeans were unable to recognize Indigenous approaches to land management as "labor." Instead, they saw a landscape that appeared to yield abundance naturally. Colonizers interpreted this seeming lack of work and productivity as evidence that Indigenous people were lazy. This can be seen, for example, in Locke's famous treatise on private property, when he describes the forms of labor that transform land into property: "Land that is left wholly to Nature, that hath no improvement of Pasturage, Tillage, or Planting, is called, as indeed it is, wast*;* and we shall find the benefit of it amount to little more than nothing." He describes an acre of land in America as "not worth a Penny, if all the Profit an Indian received from it were to be valued" (Chapter V Par 42-43).

Louisiana's southeastern swamps and marshlands—colloquially called "the back" in opposition to areas in "the front" that open onto the Gulf and other larger waterways—went

through a similar process of twinned enclosure and racialization at the turn of the twentieth century. In the eighteenth and nineteenth centuries, the vast swamps of southern Louisiana were treated as a kind of commons, where hunters, trappers, and fishermen could make a living by harvesting for sustenance or for profit. The turn of the twentieth century, however, brought enclosure to these areas that had historically been broadly accessible (Horowitz 2020). After a series of state-sponsored swamp reclamation projects at the turn of the twentieth century, these unsurveyed, saturated areas went from being accessible to anyone—although subject to informal use agreements—to being privately owned. These freshly drained, alluvial lands were meant to help small farmers in the region, but in reality they were often sold in large parcels to corporations, which saw an opportunity for quick profit because of the newly booming international fur trade (Jeansonne 2006). In turn, these corporations re-leased them—and policed them accordingly—to the same people who had moved freely through these spaces before.

Louisiana began draining wetlands after the Swamp Land Act of 1850, legislation that was designed with the intention of generating new parcels of agricultural land that the state could sell in order to fund flood control projects and encourage settlement of the relatively new state (Colten 2014; See Chapter 2). Curiously, an after-effect of this widespread landscape transformation was improved habitat for small land mammals, such as muskrats, which preferred the drained, cleared fields to water-laden marshes and swamps. Around the same time, there was an international boom in the fur trade, and the price of muskrat pelts shot up. This conjuncture between the price of fur and the increase in muskrat habitat in Louisiana spurred the creation and consolidation of huge tracts of land as investment opportunities for private companies: during this period, at least one million acres across coastal Louisiana were consolidated into privately owned “fur ranches” (Bost 2022). The vestiges of this period are still visible today; many large

landholders in southern Louisiana are companies that still contain reference to the fur trade in their names.

Figure 8: A sign marking land as property owned by "Continental Land & Fur Company." Photo by Todd Masson. "Sportsman's Paradox." Louisiana Sportsman. April 14, 2019. https://www.louisianasportsman.com/fishing/sportmans-paradox/

Until these swamps were drained, mapped, and sold, they functioned as a kind of commons: undefined edge spaces where people who didn't fit neatly into plantation logics—or who were seeking to escape them—could live or find sustenance (Horowitz 2020). Many of these were immigrant communities who were not yet considered white; for example, the Isleño population in southern Louisiana, who emigrated from Spanish colonies in the Canary Islands. Before emancipation, Isleño laborers were often called in to maintain sugar productivity and prevent work stoppages when enslaved people went on strike or rebelled—a routine occurrence (Bost 2022). After the collapse of global sugar production, they primarily trapped, hunted, and

fished for sustenance in the swamps that extended behind plantations, areas too wet, unpredictable, and overgrown to be considered agriculturally productive.

Such informal access rights are similar to those that have historically made up more formal arrangements around the idea of "the commons." In historical social and economic thought, the commons is understood as a set of agreements that not only structure public use (Ostrom 1990) but that also have material effects on who constitutes the public (Berlant 2018). As common-use wetlands in southern Louisiana were drained, dammed, and sold as agricultural plots at the turn of the twentieth century, their enclosure violently altered historical patterns of use and access. New corporate landowners employed mercenary security teams to arrest and fine poachers—people who were hunting or trapping in places where they once reliably had access. At the same time, the constitution of the public was newly delineated: these parcels of land were only available to people who qualified as white, a category that during this time period excluded Isleños (Bost 2022).

When new land companies began insisting trappers pay for leases or offer a share of their earnings to corporate landowners, Isleño trappers—who had until then moved freely through the landscape—revolted. Parish government was on the side of the land companies; local politician Leander Perez was at the center of this controversy and the move to enclose the swamps; in 1926, he hired private security to protect corporate interests in St. Bernard Parish. Trappers mounted an armed campaign to protect their right to access and use the swamps they had lived and worked in for generations. This resistance movement, locally known as the "Trappers' Wars," resulted in several deaths and—at one point—successfully drove out newly arrived interests in the fur industry. Ultimately, however, the marshlands of southern Louisiana were enclosed, and large land owners began issuing leases and requiring payment of rent or shares of

trappers' profits, protecting these new boundaries with their own private security (Jeansonne 2006).

The enclosure of swamplands during this period wasn't just an economic question; it had long lasting effects on processes of racialization and possibilities for cross-cultural solidarity as well. The possibility of land ownership in newly drained swampland was only open to white people, and access to newly privatized coastal spaces was limited to a racially constrained public as well. Isleño communities began to self-identify as white, harnessing the preferential treatment that private security firms and the criminal justice system showed towards white people who—legally or illegally—sought access to corporate land in southeastern Louisiana (Bost 2022). This entanglement between the processes of racialization and coastal enclosure would continue into the following decades, as oil and gas exploration heightened the financial stakes of who could control ownership, access, or benefits from coastal lands.

The Shoreline and State's Rights in 20th Century Louisiana

The enclosure of coastal swamps in the early 1900s foreshadowed debates about the cartography of the Louisiana coastline and the constitution of the public that would continue for most of the next century. These debates hinged on the development of oil and gas in newly enclosed nearshore areas, an extractive project that coincided with anti-Black, segregationist violence in Louisiana in the name of "state's rights," a rallying cry in the American South after Reconstruction. "State's rights" is a political movement that explicitly resists racial equality, rejecting federally mandated de-segregation and arguing for state or local control over who counts as a member of the public. As I will show, the discovery of oil and gas in Louisiana's nearshore waters greatly amplified this movement for state control, because revenues from fossil

fuel extraction were viewed as a way to replace federal funding for public institutions—funding that required those institutions to be equally accessible to all. The development of oil and gas in Louisiana also heightened the political stakes of mapping the coast, because—as it would turn out—the placement of the shoreline impacted which governing entity had jurisdiction in oil-rich coastal areas. Here, I outline this intertwined history, showing how coastal cartography is intimately connected with questions about who constitutes the public.

In 1938, Louisiana's first offshore well produced oil 26 miles from the coast. Just a year earlier, President Truman considered a bill expanding its jurisdictional claim in offshore areas, a move that would redirect oil and gas revenues from the states to the federal government (Priest 2008). Although this bill failed, the over the course of the following two decades, Louisiana, Texas, and California would litigate what came to be known as the "Tidelands controversy," referring to the argument between state and federal governments over jurisdiction in the territorial sea. These cases took place in the period between 1930 and roughly 1960, when the United States sought to secure control over the nascent offshore oil and gas industry by limiting state claims to coastal waters.[22] In Louisiana, the tidelands litigation became a hot-button political issue, igniting rhetoric about state sovereignty well into the 1960s.

Concern over the extent of state jurisdiction in coastal areas coincided with the first reliable land survey of coastal land in Louisiana, which was carried out in 1932 (Couvillion et al. 2011).[23] This survey has formed the baseline for countless reports ever since, most recently as the backdrop to the Louisiana Coastal Protection and Restoration Authority's Master Plan for a

[22] The delineation of state, federal, and international waters began as an effort to soothe international tensions around the Alaska salmon fishery (Priest 2008). Sorting out these boundaries also has huge implications for commercial fisheries that harvest other mobile or migratory species, such as shrimp and menhaden.
[23] The first aerial study wouldn't be carried out until fifty years later, in the 1950s.

Sustainable Coast.[24] Public discourse about the Master Plan posits that the disappearance of wetlands in Louisiana is an "existential" issue, and the Plan itself focuses particularly on regenerating wetlands in areas that have had especially high levels of land loss since 1932. While contemporary narratives from state government and the press focus on habitat conservation and storm protection, efforts to maintain the geography of Louisiana's coast have historically had less to do with environmentalism and more to do with holding onto a revenue source for the state.

The idea that the coastline ought to be historically consistent—that erosion might be a problem of cartography—has its origins in the Tidelands legal controversy. Very few coastal US states have an agreed-upon, legally fixed border between land and sea. Most shorelines in the United States are considered "ambulatory," meaning that there is some amount of legal affordance for them to shift with processes like erosion, sea-level rise, or sedimentation. Louisiana's fixed southern border, in contrast, was the culmination of decades of legal battles over "the tidelands," which variously sought to define or extend its sovereignty over the adjacent Gulf of Mexico with the hope of securing the right to offshore revenues from resources such as oil and gas. For Louisiana, delineating a historical basis for a permanent coast line became advantageous once federal claim to offshore spaces was fixed at a certain distance from the shoreline, and once it had become clear the Louisiana's shoreline was receding.

Up until the series of tidelands Supreme Court cases, mineral leases were generally administered and managed by coastal states. In 1938—the same year that the first offshore well

[24] The Master Plan centers around assessments of projected land loss and land generation under a variety of different future scenarios that each incorporate a different combination of environmental restoration projects, water management infrastructures, and predictions about climate change (see Introduction).

was drilled in Louisiana—Secretary of the Interior Harold Ickes stopped sending applicants for offshore drilling licenses to the states and instead began holding these applications, anticipating changes in federal policies regarding offshore resource extraction (Priest 2008). Soon after, a bill was introduced to congress—but not passed—proposing that offshore leases should be administered by the federal government. These early moves happened in response to an increased number of offshore applications, in open water areas that were questionably within federal jurisdiction. While Secretary Ickes was likely holding offshore lease applications until policies could be clarified with regard to international law, several coastal states saw federal rules and regulations shifting and sought to solidify their domestic claims to offshore space.

In the 1920s and early 1930s, Louisiana had used oil revenues to create something of a populist utopia: literacy programs, new hospitals, state-funded retirement pensions, and educational scholarships proliferated. Infrastructural projects funded by oil revenues—such as the first bridge in the state to span the Mississippi River—created much-needed jobs during the Great Depression. And by the 1940s, 30% of the state's operating budget came from oil and gas revenues. The idea that control over these funds would be redirected to the federal level was extremely worrisome to Louisiana politicians (Horowitz 2020). They were right to worry. The series of tidelands cases hinged on the question of how far state sovereignty extended past the shoreline, and they were eventually resolved to limit this area to three miles offshore—although, as I described above, this ruling did not fix the location of the shore itself. This decision significantly curbed Louisiana's access to oil and gas money. Towards the end of the series Tidelands cases, state officials became aware that the coastline was eroding, which posed an even greater problem: if the state's boundary migrated inland, the area of offshore resources it could claim would potentially likewise shrink.

In 1945, President Truman issued a proclamation claiming all open waters and the resources within and beneath them out to the continental shelf for the United States. In 1947 and 1948, the United States filed Supreme Court cases against California, Louisiana, and Texas, claiming federal jurisdiction over submerged lands and any mineral deposits contained there. Each of these cases was decided in favor of the federal government, which the court ruled to have jurisdiction over all submerged lands beyond the low water mark. This decision upset coastal states, which stood to lose significant revenues from offshore drilling. In response to outrage from the states, congress passed the Submerged Lands Act of 1953, setting the general offshore reach of state sovereignty at three miles from the coast line. This new Act determined the extent of state sovereignty over open water, but it did not fix any origin point; it addressed neither historical claims to state jurisdiction offshore nor the parameters for determining where exactly the shore itself was located.

In fact, the Submerged Lands Act went one step further than leaving the location of the coast line as an open question. It noted the inherent instability of coastal areas due to processes of "accretion, erosion, or reliction," which contribute to what is referred to by US law as an "ambulatory boundary" (Sub. Lands Act 1953). Further, the Act noted that states bordering the Gulf of Mexico could attempt to claim more extensive boundaries based on historical precedent:

> (1) all lands within the boundaries of each of the respective States which are covered by nontidal waters that were navigable under the laws of the United States at the time such State became a member of the Union, or acquired sovereignty over such lands and waters thereafter, up to the ordinary high water mark as heretofore or hereafter modified by accretion, erosion, and reliction;
> (2) all lands permanently or periodically covered by tidal waters up to but not above the line of mean high tide and seaward to a line three geographical miles distant from the coast line of each such State and to the boundary line of each such State where in any case such boundary as it existed at the time such State became a member of the Union, or as heretofore approved by Congress, extends seaward (or into the Gulf of Mexico) beyond three geographical miles.

The language referencing states' historical boundaries "at the time such State became a member of the Union" is an explicit reference to the Equal Footing Doctrine, inviting Gulf states to advocate for a legally enshrined boundary based on an imagined point of origin. The Act left open to interpretation what the boundary line of any given state actually was at the time it entered the US, a historical question which would become a central issue as the Louisiana continued to push back against the federal government's claim to offshore areas. As the Supreme Court noted in its penultimate 1980 decision, "The Submerged Lands Act granted Louisiana ownership 'to a distance no greater than three geographical miles from its coastlines, wherever those lines may ultimately be shown to be'" (257). While this statute defines the notion of a coast line in relation to the surrounding geography, it does not fix the location of the shore for any particular state or water body. Without recourse to extend its jurisdiction beyond the three mile limit, Louisiana embarked on a mission to instead define the contours of its historical coast. This project took six years, and in 1986 decades of legal battles culminated somewhat anticlimactically, as the state's congressional delegation established a permanent coast line by attaching an amendment to The Submerged Lands Act to a national budget reconciliation bill (Miller 1997).

Indeed, the Tidelands Supreme Court case decided in 1969 concerned the southern boundary of the state of Louisiana and how to determine it. In this Court decision, not only was the language of the Submerged Lands Act examined and the concept of the "coast line" clarified, but the cartographic method that ought to be employed in determining where the coast line falls was also called into question and decided. This epistemological detail—how to know where the coast line is—formed the basis of the dissenting opinion as well: should determining the location of the coast line be based on the same surveying process as it was in California's tidelands case?

Or, as Louisiana argued, should it be based on rules established for more geologically similar landscapes, such as Norway's complex fjords? The Court ruled in favor of the method deployed in California, even as it noted the strangeness of Louisiana's landscape:

> [M]uch of the Louisiana coast does not fit the usual mold. It is marshy, insubstantial, riddled with canals and other waterways, and in places consists of numerous small clumps of land which are entirely surrounded by water and therefore technically islands. With respect to some spots along the Louisiana coast even the United States has receded from its rigid position and recognized that these insular configurations are really 'part of the mainland' (63).

Because of the complexities of Louisiana's coastal geography, the Supreme Court appointed a "Special Master." This administrator's job was to outline the coast and arbitrate difficult determinations, such as what the contours of the landscape were in 1812 when Louisiana entered the United States, or which islands ought to be considered part of the mainland and therefore constitutive of the baseline from which Louisiana's three miles of offshore jurisdiction would be measured.

In his dissenting opinion, Justice Hugo Black observed the confusing and tedious nature of such a project, noting that:

> [D]iscussion of this case by the Court requires 63 pages in what appears to me to be as succinct and clear an opinion as could have been written. And yet the end of the dispute has not arrived. How many years the Master who must now be appointed will have to work, how many persons must be hired to help him, no one can predict… Shorelines are constantly changing, and thus under the Court's formula even this painstaking work cannot provide a means of marking the boundary for all time. I cannot accept the argument that congress ever intended to impose on this Court such an unjudicial job (85).

By 1980, the Supreme Court was noticeably weary of Louisiana's repeated attempts to claim an increased share of revenues from offshore resources. Writing the last decision in the series of Tidelands cases, the justices note, "We are concerned here with certain features of what appears

to be the final stage of the long-continuing and sometimes strained controversy between the United States and the State of Louisiana over the proceeds of mineral leases on lands off Louisiana's Gulf Coast…" (1980 254-255).

Each of these cases took a different strategy toward arguing for the extent of Louisiana's offshore sovereignty. Alternately, the state's legal team argued for using particular historical maps to establish the baseline of its territory upon entry to statehood or relying on a distinct cartographic method. Each case also spurred studies and methodological innovations that produced different kinds of evidence for the Court. For example, as part of Louisiana's gambit to increase its share of fossil fuel resource revenues in the late 1950s, an aerial study of the coastline was initiated as part of the state's effort to claim a so-called permanent coastline, rather than an ambulatory one (Horowitz 2020, Dodd 1992). In other words, Louisiana wanted to stabilize its southern boundary. This study is still used today, forming the back drop to plans for large-scale wetland restoration.

There were other important things happening in Louisiana in the early to mid-twentieth century as well. In the US South, the period between the 1930s and 1960s was a particularly violent one, when white supremacists are infamous for having formed vigilante militias, the Ku Klux Klan had a resurgence, Black voters were barred or restricted from the polls, and segregationists reigned in local politics. Southern white politicians during this era were particularly activated around the issue of truly equal education in public schools, and equal access to other public spaces as well. In Louisiana, legal battles over defining the state's coast were connected to the battles over public space brought about by segregationist politics and the Civil Rights Movement, and these articulated together in the space of the shoreline itself.

In fact, one of the motivations behind many (white) Louisianans' vitriolic opposition to expanded federal jurisdiction in state waters was a commitment to so-called "states' rights"; the Tidelands issue was taken up by local segregationist politicians as one of state sovereignty. During this period of US history, discourse about "state's rights" or "state sovereignty" was coded language: these terms referred to efforts by southern states to keep federal laws about civil rights at bay. A primary example of this was litigation over segregated public schools, which in Louisiana did not begin the process of integration until 1960. The federal government used its power as a primary funder of public education to force southern states to allow integration; states that did not comply would lose access to federal moneys (Wright 1965; Katagiri 2001). Politicians in Louisiana hoped to use revenues collected from oil and gas development to support the state's public school system, which would enable it to refuse the integration requirement attached to federal funding.

These two issues—establishing state jurisdiction over nearshore waters and resisting federally mandated integration orders—overlapped in time, but they also overlapped in individual politician's agendas. For example, the tidelands case that set Texas's southern boundary was decided on the same Supreme Court docket as the case that forced the state to integrate its schools; the Texas Attorney General at the time noted, appallingly, that this was his "two pronged march on Washington" (Horowitz 2020; Priest 2008). In Louisiana, one of the state's most infamous political bosses, Leander Perez, was key to each of these issues. Perez was a vocal politician from Plaquemines Parish who helped develop the rhetoric that linked state sovereignty to the Tidelands issue. He was also active in blocking school integration: he incited mobs to attack educational buildings during the movement to integrate schools in New Orleans, and he later founded private, whites-only private schools and offered scholarships to white

students who wouldn't otherwise be able to attend. In the late 1960s, Perez transformed the derelict Fort St. Philip—used during the War of 1812 and the site of a siege during the American Civil War—into a dungeon for the civil rights activists whom he feared would infiltrate Plaquemines Parish (Jeansonne 1977). Perez devoted the entire second half of his life to the segregationist project; he was so invested in it that he was excommunicated from the Catholic Church by the Archbishop of New Orleans for impeding the school desegregation order (Monitor, Volume CIV, Number 3, 20 April 1962).

Perez was infamously corrupt: these political activities were funded with income from oil and gas investments, which he sought to protect by defending Louisiana's claim to offshore resources. Recognizing that the swamps of Plaquemines Parish were mineral rich, in the late 1920s Perez introduced legislation bringing swamps under parish control at the same time that he began to establish a network of shell companies that would yield him millions of dollars over the course of his life. In the 1930s, he convinced Louisiana to apply for federal swamplands as well, eventually ensuring they were controlled by parish-level government. As the political boss of Plaquemines Parish, Perez was able to construct a leasing system that undercut the state's Mineral Board and ensured he had an interest in every oil well or mining project carried out in the Parish. These projects didn't only line Perez's pockets; they also brought revenues to the Parish that paid for things such as the construction of roads and—private—schools (Priest 2008). For Perez, the specter of federal intervention or jurisdiction threatened both his extensive, clandestine mineral investments and the racial segregation of Plaquemines Parish, a system of inequality that perpetuates white wealth.

Segregationist regimes functioned to keep economic and political power in the hands of white elite groups and to perpetuate their wealth. In Plaquemines Parish, Leander Perez tightly

controlled voting rights, and as a result he could hold elections hostage if threats to his own investments arose. This power came to bear directly on the Tidelands controversy: when representatives from Louisiana advised then-Governor Earl Long to settle the issue of state control over coastal waters, Perez threatened to pull Dixiecrat support for the Long's nephew and change the appearance of the ballot in a way calculated to confuse voters. In the end, Perez won this stand-off, and Louisiana lost; the state's jurisdiction ends three miles off its coast. In a move that reveals how much white wealth in Louisiana—particularly coastal Louisiana—depended upon racial inequality, Perez wielded the power of the segregationist party bloc in order to maintain exclusionary property regimes and ensure that he didn't lose his own revenue streams from oil and gas holdings.[25]

Oil and gas companies still have outsized power in these debates about how the state should assess and address wetland restoration, property rights, and public access to waterways in light of the receding shore line. For example, the Louisiana Land and Exploration Company (LL&E) is now a subsidiary of ConocoPhillips and continues to operate as one of the largest oil and gas exploration companies in the United States and is the largest landowner in southern Louisiana, with over 630,000 acres of marshland. LL&E has representatives at every legislative meeting where questions about public access and property rights are discussed, and recently established a precedent for maintaining mineral rights in "dual-claimed" areas where wetland restoration projects are being carried out by the state (see Chapter 2).[26] Just as the large landowners that preceded it during the Trappers' Wars, LL&E has its own private security force,

[25] As former lieutenant governor Bill Dodd would opine in his memoir, "*Tidelands* in Louisiana should be a synonym for *disaster*…for no political decision has ever cost the citizens of Louisiana what saying 'no' to the Tidelands compromise cost and is costing us" (Dodd 1991).
[26] The land in question is the chain of barrier islands associated with Isle Derniere, discussed in the next chapter.

with updated technologies of surveillance: the company aerially monitors and polices public access and use, and has an in-house mapping specialist, who ensures leasing agreements with fishermen and others are regularly enforced (ConocoPhillips).

As Louisiana's coastal landscape continues to shift, questions about ownership, race, and access retain saliency. The impetus for the first efforts to map and codify the coastline in Louisiana was the desire by those in power to protect the state's right to maintain its sovereignty in the face of what white Louisiana politicians—like Leander Perez—felt were federal attacks on the dual fronts of both offshore resource extraction and civil rights. To recall Tiffany Lethabo King's observation with which I opened this chapter, all of these issues are interrelated: questions of jurisdiction, processes of coastal erosion and restoration, rights to offshore fossil fuel resources, and the social processes of racial and economic justice, and they are linked in ways that continue to shape coastal relations between people today. As Louisiana's coastal lands recede, the state has continued to adjudicate coastal boundaries: between the public and private land owners; between state and federal governments; or—most recently—between the state itself and private land owners.[27] Here, I've shown how racialized claims to space have influenced the very idea of the coast line, its history, and how it becomes legally knowable. In the next chapter, I will explore how these histories have, in turn, shaped the physical geography of places in southern Louisiana and the attitudes of the people who live there.

[27] Throughout this dissertation, I'm interested in exploring how the coast line differs depending on both *where* you are and *who* you are. The stakes of differentiating between the mainland and the water vary for land owners, commercial fishermen, recreational fishermen and hunters, along with state, parish (the word for a county-level jurisdiction in Louisiana), and federal governments.

~Interstitial: A River of Freshwater~

"*Freshwater is poison*." Arthur was telling me a story he often repeated when I visited him at his home, a pre-fab house he'd assembled on his family's land after Hurricane Katrina. Arthur lives in a predominantly African-American community that sits on a thin strip of land bordered by two levees, located between the east edge of the Mississippi River and the bayou, a place where you can see the barges floating overhead from most front porches, including his. Over the other levee on the side of town opposite the river, there is a marina that was once the town's economic center, before the nearby oyster reefs in Black Bay began to die off. This period of decline began in the 1990s but became more acute after Hurricane Katrina in 2005 and the 2010 BP oil spill.

Arthur primarily blames the massive oyster die-off on the nearby Caernarvon Diversion that has allowed freshwater to flow into the waterways east of town, eventually reaching Black Bay's oyster reefs. Oysters require a delicate balance of fresh and saltwater, and according to Arthur, mismanagement of Caernarvon has resulted in too much river water has been flowing through the diversion, causing a widespread oyster die-off. Even worse, after the BP oil spill, state officials and community stakeholders agreed to allow more river water through the diversion than usual in an effort to flush oil and chemical dispersants out of the marsh. Arthur deeply regrets this choice, and now says it was a death knell for an already dying reef: Black Bay never recovered after the flood of freshwater and petrochemicals. As he says: freshwater—and the pollutants it sometimes carries—is poison.

Arthur isn't the only oyster fisherman who is concerned about freshwater; these concerns span many different groups across race and socio-economic class. In fact, in 1994, a group of wealthy oyster farmers sued the state over the effects of the Caernarvon Diversion, and almost won[28]. They claimed that due to the changes in salinity caused by the diversion, their privately leased oyster reefs had died—and they demanded compensation from the state. In the lower courts, these oystermen were awarded $21,345 per acre; many of the oystermen involved in the suit claimed to have thousands of acres under cultivation. After the state appealed, the case went all the way to the Louisiana Supreme Court, which decided in favor of the state in 2004. In its decision, the court noted:

> [T]he oyster fishermen's right of exclusive use of the water bottoms was not taken as, in spite of Caernarvon, no other private party can use these bottoms to fish for oysters. In addition, their exclusive right to oysters and cultch thereon was not taken as no other private party can enter that lease and extract oysters or cultch. The changes in salinity of the water resulting from Caernarvon affected neither of these rights (Avenal 2004).

This case was largely about the boundaries of property: is a lease of state-owned water bottom a property claim? Does this claim extend to the water that surrounds it? When not harvested from state-managed public reefs, oysters in Louisiana are generally harvested by individuals and companies that lease a section of the water bottom and cultivate a reef there. Oyster fishers can lease almost any area of state-owned water bottom that isn't already held by someone else. These leases are heritable and are often amassed through advantageous marriages; this system perpetuates inequalities in property holdings that fall along racial lines. These inequalities have been exacerbated by recent oyster die-offs in publicly accessible areas

[28] These self-proclaimed oystermen are perhaps more accurately described as small business owners: many own a fleet of boats captained by employees or family members.

administered by the state (as opposed to areas leased by private entities). Those who were once able to work only for themselves or for a relative are now often deck hands for—usually white—families who claim thousands of acres of oyster reefs.

In conversations with me about their leases, many oyster farmers described their right to retain a productive reef in Lockean, almost agricultural terms[29], emphasizing their commitment to cultivation and improvement in addition to a history of profitability. For them, the right to manage the water for maximum oyster production is implicit in these claims. However, not all leaseholders cultivate oysters, and in many cases oyster leases have become a kind of speculative property whose value hinges on water quality. Because there is no limitation on the way an oyster lease can be used, leases are acquired for many different purposes. Some are held by oil companies that don't want to be liable for leaks or spills near places where oysters are cultivated. Sometimes, individuals sub-lease their own holdings to oil companies for the same purpose—and sometimes, leaseholders sue oil companies for damages to the water quality around their reefs. Thus, many oyster leases are effectively a bet on water quality and liability.

When oysters began to die in waterways adjacent to the Caernarvon Diversion, lease holders nearby claimed the state had knowingly altered the environment in which they grew oysters by deploying the diversion in a way that caused a precipitous drop in salinity. In its 2004 decision, the Louisiana Supreme Court noted that oyster lease holders only have a claim to the water bottom itself: they have no rights over the surrounding water quality. This decision made way for the restoration projects that have been proposed by the state since, including the

[29] In fact, during some public meetings of the Louisiana Oyster Taskforce, members discussed the possibility of moving their organization to the Department of Agriculture, which they believed would help open up a pathway towards acquiring a version of crop insurance. They saw a similarity in protection against weather events and unpredictability in water quality.

largescale diversions that will be the mechanism through which the river will be "reconnected to its delta." At the same time, suggesting that one cannot have legal claim over the constitution of water in certain places performs a kind of erasure: the property interest represented by an oyster lease excludes the water around it, water that is an implicit reason for the lease to exist in the first place. This makes water the source of many legal conundrums: paradoxically, even as its presence defines where one has the right to hold a lease or make a claim to private property[30], its movement, qualities, or changing constitution cannot be accounted for[31]

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[30] Indeed, as wetlands disappear and private property is inundated by coastal waters, ownership theoretically reverts to the state (see Chapter 2).

[31] Property claims over the salinity content of nearshore waters and over the operation of water management projects emerge in less formal conversations, as well. Just north of Arthur's home, I spoke with someone who owns both an oyster fishing business and a commercial marina. In frustration over the state's seeming lack of concern over Mardi Gras Pass, the name given to a rupture in the levee that has allowed freshwater to stream into nearby estuaries, he exclaimed, "If a marine can raise $16 million to build a fucking wall across Mexico, we can raise $1.2 million to close it off!" (See Chapter 2).

Chapter 2: Surveillance and Occupation on Louisiana's Coastal Frontier

Louisiana's coastal wetlands and marshes have always been in flux, but they are shifting faster now than ever, rapidly disintegrating into the Gulf of Mexico. Open prairies of marsh grass and scrubby trees flood more and more often, becoming riddled with small ponds of water, until eventually they disappear. It's common to see saltwater marsh grass take the place of freshwater reeds, and to spot the silhouettes of weathered, dead oak trees killed by saltwater incursion in places that were once lush, green, and fresh. All of this change seems to happen within the blink of an eye: in one of my first forays to the field, I took a small metal skiff out through the bayou with a white oysterman who had been working in these waters for forty years. In my first encounter with a refrain I would hear many times over the course of research—and that is repeated across this dissertation—he told me he could remember when the area we were passing through had been "solid land." In this case, his memory was from thirty years prior, in the late 1980s. I looked around, but saw only open water, with the shoreline barely visible behind us.

Figure 9: View of the canal leading back to shore. Photo by author.

I had joined this oysterman for a tour of the bayou, because I knew him to be one of many coastal Louisianans who are actively intervening on their environment through methods such as bolstering levees, carving out new canals, or evidencing proof of ownership and occupation in other, novel ways. These interventions are often carried out without the help or approval of state or local government, and they aim to maintain white ownership or access in places where erosion or changing water patterns might otherwise threaten such a claim. Interventions like these build on racialized practices of policing that are already common among oystermen and coastal land managers, such as installing fencing or signage, keeping watch over proprietary waters, and reporting trespassers. These practices are deemed necessary, because in a

region comprised of vast tracts of wetlands, it's often not apparent when one is on private property or public land.

The difference between what is "public" and what is "private" in Louisiana—what is owned by the state and what is owned by individuals or other private entities—is a complex issue that is itself changing as the landscape changes. On the ground, this distinction hinges on a variety of topographical and material factors, most of which have to do with what counts as "land," or with the proximity, depth, constitution, and location of water. Navigable waterways, rivers and streams, and the waters within three miles of shore are all considered publicly owned in the Louisiana Civil Code,[32] each subject to distinct access rights and regulations. In order to be privately owned, a tract of land must be durable in the face of the tide, although case law has found some private claims in inland areas to be legitimate, despite being subject to tidal flow.[33] If the tract of land includes waterways, they cannot be navigable, although there is no consistent definition of "navigability." If a waterway borders a navigable water body or tidal waterways, claims to ownership most likely end at the high-water mark of a winter tide—although federal law disagrees with this rule, and it remains contentious.

Needless to say, the places where land touches water matters—indeed, the kind of water land touches matters—and both of these factors matter even more because they are changing. In a recent report by the Louisiana legislative Task Force on Public Recreation Access that attempts to outline the new legal frameworks that will be necessary to address these changes, the

[32] "Public things and common things are subject to public use in accordance with applicable laws and regulations. Everyone has the right to fish in the rivers, ports, roadsteads and harbors, and the rights to land on the seashore, to fish, to shelter himself, to moor ships, to dry nets and the like, provided that he does not cause injury to the property of adjoining owners" (La. Civ. Code art. 452).

[33] Cinque Bambini Partnership v. State 491 So. 29d 508 (Miss. 1986).

committee notes that, in contrast to public or common things, "private things [are] the residual category of things under Louisiana law.[34] In other words, the boundaries of what one can own are not fixed; they are determined first by the boundaries of what one cannot. The contours of the ownable "coast" cannot be represented as a set line demarcating water from land or public areas from private areas. Instead, the coast is an entire region of contested wetlands—of water-laden land—over which rights and obligations shift as water moves. I examine how people wield the distinction between land and water to delineate claims—or strategically blur it in order to enhance such claims. I highlight my informants' theories about what land used to be, what it is now, what it might become, and how to keep or regain one's footing and position of power in the midst of radical change.[35]

Here, I build on the legal history presented in the previous chapter to examine how the ambiguity and instability of public and private claims to coastal lands in Louisiana translate into exclusionary action and racist practices on the ground. I follow several white fishermen who work to maintain their right to certain places through action that intervenes on the present, in the form of interventions on coastal geography, and on the past, by re-storying family histories of ownership. Within the context of a shifting landscape that has never been stable, I investigate how ideas about race inflect historical claims to place, memories, and histories, manifesting in

[34] Public Recreation Access Task Force. 2020. *Final Report of the Public Recreation Access Task Force*. Baton Rouge: Louisiana Legislature. 3.

[35] I am, unavoidably, a character in these stories as well, as a relatively young, white cis-woman moving through what are otherwise often spaces of entirely masculine relation—fishing boats, marinas, and working docks. This gendered delineation isn't universal in southern Louisiana: there are women who fish oysters as well, and they are usually Southeast Asian immigrants. However, my research was conducted primarily with white and black communities where my gender was an anomaly, and my presence shaped the narratives told to me and the encounters I relate. As best I can, I try to take this into account, focusing on moments when the effect of my gender or my race throws the contours of property and power into starker relief.

action in the present and expectations of the future. In particular, I identify two practices carried out by white fishermen across time and space—surveillance and occupation—that resist the constitutional indeterminacy of coastal land and are deemed necessary for maintaining spatial claims amid an unstable landscape.

Among successful, white oystermen and business owners, these transformations motivate inhabitance of a kind of frontier myth (Slotkin 1971; 2000): a fantasy of control that takes shape at the expanding and shrinking edges of "land." This fantasy entails an attunement towards space and jurisdiction that is speculative and changeable; in southern Louisiana, it is also deeply racialized. In what follows, I center connections between property, exploitation, and jurisdiction within systems of domination and violence, knitting together theories of kinship and relation with ideas about property as a technology of domination.[36] I attend to the way attitudes about property and legitimacy on land are translated into similar systems in nearshore waters, paying special attention to the way these attitudes move through a structure of surveillance and enforcement that remains coherent across these material realms. As my informants narrate and revise their own relationships to water and to land, I track moments when contemporary claims to the landscape are legitimized through connections to family history and personal stories.

As water management technologies facilitate the emergence of dry land or as such land fails to endure, opportunities for profit likewise emerge and disappear. I theorize this space of (de)generation as something like a frontier. For the white oystermen with whom I conducted

[36] Lipsitz, George. 1995. "The Possessive Investment in Whiteness: Racialized Social Democracy and the "White" Problem in American Studies." *American Quarterly* 47(3): 369-387; McKittrick, Katherine. 2006. *Demonic Grounds: Black Women and the Cartographies of Struggle*. Minneapolis: University of Minnesota Press; McKittrick, Katherine. 2013. "Plantation Futures." *Small Axe*. 17(3): 1-15; Roane, J.T. 2018. "Plotting the Black Commons." *Souls.* 20(3): 239-266.

fieldwork, interventions into the shape of the shoreline and surveillance of the liminal areas between land and water represent a re-working of territory through which they seek to uphold historically violent forms of enclosure. This conceptualization of space, power, and violence echoes recent theorizations of the frontier specific to the American imagination; Mark Rifkin, for example, describes the frontier as a fantasy of the expanding contours of settlement.[37] Like in Louisiana, Rifkin's notion of the frontier thrives at the outer edge of jurisdiction; it is a violent gesture that simultaneously relies upon and anticipates the imposition of (settler) sovereignty. In what follows, I examine attitudes among white fishermen in the midst of an unstable landscape where zones of jurisdiction are always emergent: as I argue, this is a landscape that is always at Rifkin's outer edge of jurisdiction, remade again and again into a frontier space. These fishermen display attitudes that echo Slotkin's theorization of the frontier as a self-making project for white, American masculinity in a move that simultaneously remakes land as property and reproduces a sense of racially differentiated selfhood (1973). In what follows, I analyze the everyday actions and self-making narratives of several white fishermen, describing the stories they tell themselves about property and access in coastal Louisiana, noting what they are investing in and what they seek to protect.

In rapidly changing coastal lands, everyday practices of surveillance and occupation build on a history of racialized dispossession, affording legitimacy to claims that might be difficult to imagine—much less prove—on paper, and extending them into a future in which they would otherwise be radically unstable. In what follows, I show how these practices of claim-making seek to stabilize access to, exclusion from, and investment in particular places for a white public.

[37] Rifkin, Mark. 2014. "The Frontier as (Movable) Space of Exception." (2014). *Settler Colonial Studies* 4(2): 176-180.

The chapter proceeds by first theorizing occupation as a strategy that extends spatial claims over the present and the past, highlighting revisions to family history that I observed oystermen making in the context of the repeated enclosure of colonial Louisiana's southern wetlands. Next, I describe racialized practices of surveillance that are selectively enforced by oyster lease holders, private security firms, and the Department of Wildlife and Fisheries. I theorize these practices through the politics of looking and the history of surveillance as a mode of anti-Blackness and racialized control, particularly in Louisiana and the southern United States. Finally, I connect this history of racialized surveillance to my own practices of ethnographic observation as a white researcher working in communities of color.

A Note on Oyster Reefs

I focus on oyster reefs, because these areas have long been sites of unusual and emergent property claims: oyster reef leases give lessors rights over the subsurface seafloor, but no authority over the surrounding waters or adjacent underwater oil and gas infrastructure. I show how these leases are leveraged as a tool for claim-making in the strategic maneuvers of individuals as opposed to private corporations or the state. In Louisiana, oyster reefs are heavily managed, cultivated spaces that occupy the liminal edges of saltwater, freshwater, and what is legally considered "land." Oyster reefs are often claimed through heritable leases of state-owned seafloor and water column. Land loss affects these reefs both legally and in terms of productivity: the state of Louisiana leases out the brackish water bottoms extending three miles from the coast, even when the coast is receding. Further than three miles from shore, the water becomes both saltier and subject to federal jurisdiction. Changes in this fragile habitat also have cascading effects for the health and productivity of oyster reefs.

In Louisiana, oyster fishermen have often attempted to alter the contours or productivity of their leases through legal recourse or clandestine alterations of the shape of the landscape. These changes often aim to impede or facilitate the flow of water: I have observed the seemingly small-scale practice of fishermen beaching their boats against sand bars and mudflats to facilitate navigation or water's movement, and also conspiratorial conversations about the much bigger dream of secretly augmenting a federal levee in order to keep freshwater from diluting an oyster-rich estuary. Notably, oystermen have even argued they have a property interest in the constitution of coastal waters: in the 1990s, a group of fishermen brought suit against Louisiana, claiming damages when a state-managed flood control structure caused freshwater to flow into areas under oyster cultivation, changing the salinity of the water and therefore decreasing the productivity of reefs.[38] While this could be interpreted as a way to address increasing levels of toxicity in nearshore waters, it was also an attempt to safeguard the right to predictable profit in a context of continuous change. The state eventually won this case, but it serves as a salient example of the search for novel ways to claim the landscape.

Throughout my fieldwork in southeastern Louisiana, I accompanied oyster fishermen to harvest from reefs, reminisce about long-gone bayous, spread material—usually concrete—on which new oysters might grow, and perform maintenance on the fences marking their territory in otherwise open water. As I rode out with them to observe these tasks and spoke with them about their memories and hopes, I began to see oysters as more than a marker of liminality or an indicator of salty and freshwater co-mingling. As occupants of ambiguous territory between water and land, oysters are indicators of the maintenance of some landscapes and the emergence or disappearance of others. Their shells and bodies are evidence of warm tidal flows, a mixture

[38] Avenal v. State, 886 So. 2d 1085 (La. 2004)

of salt and freshwater and proximity to the shoreline. When these features of the landscape shift, it is often a signal of changing jurisdictions, as well—who has which kinds of rights in which places, and how those rights are enforced—and oysters mark the change.

Figure 10: Poles marking an area an oyster farmer has leased for cultivation. These poles function as fencing and as signage and are often made of bamboo or PVC. Photo by author.

"The state is just a bigger gun": Occupying the Past

Possessive attitudes towards land—and further, frontier-like attitudes towards areas that may become land—can be seen especially well in the biography of one of my primary

interlocutors, an oyster magnate named Gerald. Gerald is a first-generation, white oyster fisherman in Plaquemines Parish who began cultivating oysters in the late 1980s, when the shrimping industry became less profitable for him. As he tells it, because he was late to the oyster industry, it was difficult for him to acquire leases from the state. Leases of state-owned water bottoms are heritable, and oystermen view them as a form of property: like with other property forms, businesses grow and fragment through intergenerational rituals such as inheritance and marriage. Sometimes, the state will open new areas for leasing, and oystermen long established in the business will maneuver to acquire new areas they predict will be especially productive or that are adjacent to the leases they already have. Gerald told me that this process is corrupt and impenetrable; he recalled camping out and waiting overnight to have a chance at leasing oyster reefs from the state, only to be told first thing in the morning that all the leases had already been claimed. So, Gerald did something unusual: he didn't lease oyster reefs from the state, he leased them from oil companies and other private landholders. Others followed in his footsteps.

Gerald now runs something of an oyster empire, enabled in part by settlements he received following the 2010 BP oil disaster. He lives on a piece of land he bought cheaply after Hurricane Katrina that opens out onto a private dock over a bayou west of the Mississippi River, from which he supervises the oyster fishermen who work for him. One of his children lives with him full-time; his other two kids live thirty minutes up the road,[39] and they and their children are often at his house. His home is raised up on pilings twenty feet in the air and faces out towards the back bayou, overlooking the river's western levee and the dock; in fact, you can see the dock

[39] "Up the road" and "down the road" are commonly used phrases that track the river and orient the conversation geographically; the road in question is a state highway that parallels the southernmost section of the Mississippi River levee.

he owns from the windows on his enclosed porch. Gerald loves animals, and while I knew him he had several German shepherds, three wild boar he had raised from infancy, and thirty hunting dogs that resided on their own parcel of land nearby.

Gerald's accumulation of these properties—his house, the lot upon which it is situated, the dock, the boats, and the oyster leases—depended upon a cycle of valuation and devaluation tied to processes of extraction, disaster, and racialized inequality. In 2005, Hurricanes Katrina and Rita ravaged Plaquemines Parish and lowered property values considerably, making the lots Gerald bought for his house—and for his dogs—available and affordable to him. At the same time, publicly accessible oyster reefs across the Mississippi River began a slow die-off, which was exacerbated by the BP oil disaster five years later in 2010. After the BP oil spill, the public reef was irreparably damaged, and—literally adding insult to injury—the predominantly Black fishermen who harvested oysters from public areas rather than private leases qualified for fewer relief funds, because they couldn't claim property damages. As a result, skilled oystermen who had worked for themselves for generations were forced instead to work for people like Gerald, who held leases to state-owned or privately-owned areas (see Chapter 3).

In our conversations, Gerald framed his life as a kind of frontier narrative, working at the edges of enclosure, expropriation, and re-enclosure. But rather than a story of rugged individualism, Gerald's success as a self-styled frontiersman has relied upon a complicated nexus of investments and disinvestments in coastal property: by oil and gas companies protecting their title from state claims to ownership, by the steep decline of public oyster reefs and the racialized devaluation of skilled labor, and by the uneven accessibility of supports in the wake of environmental disasters, even when those disasters threatened Gerald's livelihood as well. The effect of these intersecting investments and disinvestments is something like what Voyles (2015)

calls "wastelanding": a process that "renders an environment and the bodies that inhabit it pollutable" (9). In this section, I describe how the cyclical wastelanding of Louisiana's coastal marshes—and the people who live there—results in an emergent frontier of land and labor that relies upon the consistent marginalization of Black livelihoods (Roane 2018). In what follows, I analyze moments in interviews with Gerald about his life history when these cycles are particularly visible.

The first time we met, Gerald explained his attitude towards land in a conversation about the potential transfer of flooded land to the state: in his view, the threat of the subsidence of land into water is also a threat to the idea of private property itself:

> *"The land owners should never let the state be as aggressive as it is like today, the state keeps taking over everybody's property, as the water gets on it."*
>
> *"Then it becomes public?" I asked.*
>
> *"That's what they say. That's a argument... To me, that's a argument. I've been hollerin' about how can you pay taxes on this for fifty years or a hundred years and the state just says, 'It's ours?' Come on! Cause it got water? It's because they didn't want no litigation. Over the years, the way I looked at it is the state is just a bigger gun. So they just say, 'We claim it.' So, they throw the burden on you. You got to claim your lands. This, this was mine. My daddy's, my generation. You're going to have to fight to prove it's yours. The state is going to challenge you, say, 'It's ours', but you got the burden to prove it."*[40]

Gerald inserted himself and his family into the history he told me, rhetorically casting himself as both an heir to and protector of privately owned land: *"This was mine. My daddy's, my generation"* and *"the state is just a bigger gun."* Yet, Gerald is a first-generation oyster farmer, and he bought his home during his own lifetime; he didn't inherit it from his father or

[40] Throughout the dissertation, I've italicized direct quotes from my field notes to indicate their source, as opposed to secondary sources and citations. To indicate direct speech as recorded in field notes or transcribed from interviews, I use quotation marks.

from another relative. So, what exactly is he trying to protect? Gerald reimagines the land to have a history that it doesn't; he legitimizes his own claims to ownership by asserting a past relationship that actually doesn't exist. With this revisionist history, Gerald stitches his own family into a story about raw deals and unfair land grabs in which he imagines himself staking claims over land won through violence; when he calls the state "*a bigger gun*," he's implying that he's a gun, too. In doing so, he grants himself motivation for his anger and frustration and justifies his own frontier attitude towards coastal lands. Like many parts of Louisiana, Plaquemines Parish has a long history of corruption, of private interests profiting from back-room deals with local government. Gerald doesn't view private interest groups or large corporations as his target, however; here, he takes aim at the state. To Gerald, the coastal landscape is an open playing field as it changes; it is a property frontier over which individuals have as much right as anyone else—the state or private interest groups—to assert their claim.

Gerald continued:

> *"Neither [the state nor private landholders] wants to lose—because how did [these private landholders] acquire all this land in the back? That's what it goes up to, how did they acquire all this land? It goes back to the levee board districts. When the King of Spain or whoever it was, when they were giving them land grants, they gave it to the levee boards. Now this, I don't know, but…somehow it went from the levee board districts to these private individuals. […] Now, I'm just reading between the lines. I've been fighting and there was a lot of these lands that [private companies] don't even own. They don't have titles to go that far back. That's what I would say."*

Here, Gerald is tracing the enclosure of the swamp—"*all this land in the back*." His rough history skips a few steps: the brief transition from Spanish to French colonial rule, the purchase of Louisiana from France by the United States, and—most important for my argument here—the transformation of swamps into valuable land in the mid-nineteenth century. All of these historical steps introduced new survey systems and cartographic technologies designed to

measure the territorial expanse of each sovereign power. However, until the Swamp Land Act of 1849, none of these surveys or sovereign claims bothered to include the vast wetlands that extended for hundreds of miles along Louisiana's coastline. Conceptualized neither as public, nor private nor common, Louisiana's swamps were simply ignored well into the nineteenth century, because they hadn't yet been recognized as territory that could be enrolled in the projects of colonial expansion and global capital. Thus, before swampland could be transferred to private individuals, it first had to be conceptualized as land.

With the exception of some parcels along the edges of the Mississippi River, southeastern Louisiana remained unsurveyed well after its incorporation into statehood in 1803. Surveyors considered the landscape to be an irredeemable morass: in 1820, a federal surveyor noted that the whole region was "thickly interspersed with lakes, swamps, morasses, salt marshes, etc., which appear to occupy more than two-thirds of the whole district" (Quoted in Hall 1970, 130). In the 1830s, another noted that only "small portions…at all fit for cultivation, or anything else" (Quoted in Horowitz 2020, 24). In fact, the assumption that swamps were valueless was so ubiquitous that surveyors simply estimated the area of swamplands, rather than actually surveying them, and large tracts of Louisiana's coastal marshes remained unsurveyed until oil and gas interests took up the project in the late twentieth century (Hall 1970, 131).

As Gerald understands it, large landholders' titles are likely illegitimate not because they were issued for areas that were already occupied or the rightful territory of Indigenous peoples, but because they lack a proper paper trail. Yet, even if these "original" claims to private property are illegitimate, so is the state's claim to ownership. Between these two illegitimate claims, the promises of profit and property beckon. Through a Lockean quirk of the law that values improvement and evidence of use, when Gerald sub-leases an area for oyster cultivation from a

private landholder, that landholder's claim to ownership becomes even more watertight: the sub-lease functions as a legal precedent for the owner. Thus, for Gerald—and for the private entities from which he leases oyster reefs—land and property manifest and endure through occupation: later in the interview, Gerald related a promise he made to an oil company: *"I'm gonna be your eyes."* He would be a bureaucratic look-out, letting the company's land manager know if someone tried to take out a lease on behalf of the state in the same area. Ever savvy, Gerald knew that a lease could eventually become a piece of evidence in court, bolstering claims of state ownership and weakening the oil company's claim to title. Gerald is keenly aware of the power of precedent, understanding his decisions and movements to anticipate the law.

Access to Louisiana's coastal areas is often only possible by boat, and these areas are unevenly monitored; one could, perhaps, get away with hunting or fishing in an area of marsh owned by a private corporation. On the ground, the history of overlapping or unclear jurisdictions and rapidly shifting terrain means people accessing waterways are often totally unaware they are on private property. Any navigable waterway is legally owned by the state, but what counts as "navigable" is still contested. Further, as land disappears, areas that were marshes or ponds once may now be accessible by seemingly state-owned waterways. I say "seemingly" here, because in a landscape that changes year to year and season to season, the state is also often not aware that its claim has shifted.

Gerald's thoughts demonstrate that the material and epistemological transformation of Louisiana's swamps into land hinged on one of the expanding settler-state's primary tools: private property. The Swamp Land Act of 1849 transferred almost ten million acres of hazily surveyed wetlands from the federal government to the state, with the understanding that Louisiana would "reclaim" these areas through drainage projects and levees. The state would sell

these parcels to private parties, using the proceeds to fund flood control projects. Early private development following these sales usually entailed draining the wetlands and converting them for agricultural use; in other words, the land would be made recognizably productive in a Lockean sense.

In practice, this meant that thousands of acres of wetlands were sold for a pittance, resulting in uneven flood control efforts and high-risk agricultural speculation (Colten 2014). The landscape is still marked by this history today: there are countless rectangular "lakes" that formed in the aftermath of failed agricultural development, when drained land was flooded by breaches in poorly constructed private levees. In areas abutting the Mississippi River, ownership of large tracts of land during the antebellum plantation economy and in post-Civil War agricultural regimes paved the way for oil and gas production and exploration in the twentieth century, made easier by access to large parcels that were already conceptualized as salable, transferrable real estate. Yet the swamps further from the river continued to slip in and out of schemes of value: most areas converted for agriculture were neglected, and ownership reverted to the state before 1900.

Despite the fact that they were technically owned by the state, these places were home to hundreds of families who also used them for subsistence, fishing, and trapping throughout the late nineteenth and early twentieth centuries. However, the state valued these lands not for their use by those who inhabited them but for their utility for large publicly funded projects, turning them into flood plains and leasing them for exploration and development to oil and gas companies. In the 1890s, Louisiana consolidated these wetlands into levee districts, and largely ignored them for the following thirty years, during which time people continued to use them for subsistence. In the 1920s, the seeming valuelessness of the marshes east of the Mississippi River

made them seem like an attractive sacrifice for flood control efforts: trying to decrease the level of the river at New Orleans, the Army Corps of Engineers and the state levee boards authorized a breach in the eastern levee of the river south of Bohemia (see chapter 1). This necessitated expropriating land from hundreds of families and was a breach of trust that still echoes in conversations today. In the 1930s in Plaquemines Parish, oil leases over these areas were consolidated and monopolized by the corrupt, segregationist politician Leander Perez, whose siphoning of public funds allowed him to maintain undue influence at the state level and strict control over parish finances in the most oil rich region of the state (see Chapter 1).

Following this 170-year historical arc, southern Louisiana's swamps are now conceptualized as a curious type of land, semi-public in the sense that generations have used them for hunting, fishing, and trapping, yet private in the sense that eighty percent of these coastal marshes are privately owned—mostly by oil companies. This situation has come about in part because in Louisiana, if mineral rights are disarticulated from surface rights, they must be developed within ten years of purchase. Holding onto thousands of acres of surface rights indefinitely functions as a way of banking mineral rights for future exploration and development. Thus, land management has become an important, if secondary, endeavor for these corporations. As Apache Corporation[41] said in its 2011 sustainability report, outlining its stakes in preventing the erosion of surface wetlands: "If a marsh turns into open water, it becomes public land with mineral rights reverting to the state of Louisiana" (AC 2011). One land manager, who works for one of the largest landholders in southern Louisiana, told me that the majority of the company's income doesn't come from fossil fuel production at all, but from leases and profits related to

[41] Apache Corporation is an international investment group with holdings on five continents and is the third largest private landholder in Louisiana.

alligator farming. In this way, modes of occupation that continue to produce economic value secure private claims over the landscape.

Oil and gas companies also lease surface rights to oyster farmers: Gerald was the first fisherman in Louisiana to formalize such an agreement. In a context in which wetlands gain and lose value, and in which the state has never seemed to be consistent in how it treats access or individual claims to ownership, Gerald has hedged his bets for stability. For now, his claims to the landscape hinge on petrochemical interests, but he also has a lawyer representing him in legislative task forces as Louisiana rewrites the laws around when submerged land reverts to state ownership, and what happens when it does.

"*Keep a Look Out*": Surveillance as Intimidation

On my first voyage out to an oyster lease during fieldwork, everyday investments in land and Louisiana's weird frontier were immediately obvious, and my conversation with my companions quickly showed how these investments are racialized. It was a cold Monday in February, and I embarked with Donald and Mike from their father's marina at five thirty in the morning. We motored out across the water, headed to their family's oyster leases in a place called Bayou Maroon. I had met Donald and Mike through their dad, who owns a marina in a small town east of the Mississippi River.[42] The boat we rode out in was designed for multi-day trips and had a relatively large enclosed area with a small double bunk, and even a shower.

[42] Donald and Mike's family considers themselves white Isleños, and they trace their lineage back to their ancestors' arrival from Spain's Canary Islands. Southern Louisiana is full of ethnic groups that pride themselves on distinct heritage and that each accessed the category of whiteness at different times. These white groups have each retained a sense of continuity, including Isleños, Croatians, Irish, Italians, and some Cajun communities.

Inside the warm, dark cabin, Mike told me about what we were passing: lakes, pipelines, and a canal cut by his grandfather fifty years ago that still bore their family name.

When we arrived at their leases, the flat gray sky was just beginning to brighten with daylight. The first thing Mike did was lean over the front of the boat to throw down a "cane pole"—actually a length of bamboo—with a mesh purple bag attached to its top, like a flag. He called me over and told me to press the pole against the bottom of the bayou, feeling how hard the bottom was. The harder the water bottom, the easier it is to grow a reef, because soft, muddy areas will swallow oysters and keep them from accessing the nutrients carried by the current. He encouraged me to lean out far from the edge of the boat and poke at the bottom with the pole, demonstrating the difference between one area and another, just 300 yards away. The purple mesh bag on the tip of the cane pole was made out of a "mini-sack," which is the usual denomination for well-shaped oysters destined to be served on the half-shell, rather than shucked and processed. The flag at the end of the pole served to differentiate this piece of bamboo from the various others that were staked equidistantly from one another, a common way of fencing off the boundary of an oyster lease.

I asked how I could best stay out of the way, be helpful, and still talk with them, and they jokingly told me they had thought to ask me to perch on top of the boat with binoculars to "*keep a look out*"[43] for what they called "*Wildlife*"—by which they meant state agents from the Department of Wildlife & Fisheries. We were fishing legally on their family's leases, but the joke suggested we were getting away with something, hoodwinking the LDWF agents who enforce lease boundaries, oyster licenses, boat conditions, and keep fishermen from working in

[43] My fieldnotes from this trip are brief and consist of snippets of conversation with notes about context. Here, I have interspersed my narrative with shore, direct quotes. As in other places, these quotes from fieldnotes are indicated by the use of italics.

areas polluted with sewage run-off—or rather, winking at the LDWF to acknowledge that they could get away with something if they wanted to. Apparently, Donald and Mike had each been look-outs for their dad when they were young while he was poaching oysters and fishing illegally in zones marked off limits by the state due to pollution or overuse. In almost the next breath, Donald echoed Gerald's frontier sensibility, explaining how our presence on the lease worked as a kind of *"security"* against other poachers, because we would be able to see their boats on the horizon. Mike, the younger brother, said if he caught an oyster thief, he would *"take care of him,"* and that his dad was crazy and would kill anyone he found robbing his leases.

In the end, Donald told me my task should be steering the boat: we would circle the flag, dredging around and around the lease until we'd harvested all we could. Then, we would have to shift position. Our goal was to pull up 52 mini-sacks. I took up my spot behind the second steering wheel at the bow of the boat, facing backwards towards the stainless steel tables where dredges full of oysters and debris were dumped when they resurfaced. As they worked, Donald and Mike used small hatchets to chip away the mussels and younger oysters from market-sized ones, which they then tossed into 5-gallon buckets and poured into purple mesh mini-sacks. Once, Donald accidentally broke one of the shells and slurped up the oyster inside—*"not very salty*," he observed. *"But I'll sell it anyway."*

Once we had all settled into our work, Donald broke the amiable silence, initiating conversation by telling me, out of the blue: *"I'm like the least racist person you'll ever meet."* I was surprised, and—assuming he was testing my receptiveness—asked what he meant. He went on to tell me about a new park in St. Bernard Parish, which the Parish had just renovated. To frame the story, he reminded me that this was *"St. Bernard Parish, not the 9th ward!"* New Orleans' 9th Ward is a working-class neighborhood home to many communities of color, and

suffered some of the worst flooding—and systematic disinvestment—during and after Hurricane Katrina in 2005. The neighborhoods in St. Bernard Parish that border Orleans Parish and New Orleans' 9th Ward are recognizable for their residents' relative wealth and whiteness. Donald had taken his kids to the newly refurbished park in St. Bernard near the border between the two parishes just once, he said, because while they were there a black child told his kids that white people *"weren't allowed to be there."* Telling me this was *"like reverse racism,"* Donald continued, "*I'm not bringing my kids back there. I'll build a park in my backyard."* He has 1.5 lots, he told me, and plenty of private space for his wife to play with the kids.

As the day wore on, we talked about domestic relationships, trust, cheating, and what a wife ought to do while her husband is working. We sang along to the radio, opined that new pop-country *"isn't country music,"* and joked about the poor ratings for the Super Bowl the previous day, when seemingly all of Louisiana had boycotted the game after a bad call had kept the Saints from playing. After eight hours—and 52 mini sacks—we drove back to the harbor. On the way in, we passed the St. Bernard Parish Katrina Memorial in the water just outside the harbor, and we motored by many well-maintained shrimp and oyster boats, recreational fishing boats, and elevated single-wide trailers. The brothers waved at all of the people we passed, noting that they know everyone in the bayou, except for the Vietnamese families.[44] Although many still keep their boats here, most white families moved to inland suburbs after Katrina, keeping their property near the harbor and erecting pre-fabricated single-wide houses there, which they now rent out to recreational fishermen. When we pulled into the slip, right next to the St. Bernard

[44] Like many other states that border the Gulf of Mexico, southern Louisiana is home to a large Vietnamese community who migrated as refugees during and after the war in Vietnam. Many first generation Vietnamese migrants throughout the Gulf Coast made their living as shrimpers, boat-builders, or other adjacent skilled trades in the seafood industry that they learned in Vietnam.

Parish Sheriff's speed boat, Donald pointed out the short-term rental owned and managed by his own family.

Donald and Mike's jovial racism and sense of exclusionary entitlement inland—*"I'll build a park in my backyard"*—mirrors the orientation they have towards oyster reefs. I'll *"take care of him,"* Mike told me of an imagined thief. At a public meeting of the Oyster Task Force, a group composed of some of the richest oyster fishermen in the state, one of the Task Force members winked at Donald and Mike's dad and clapped him on the shoulder during a report on enforcement from the Department of Wildlife and Fisheries: at each Task Force meeting, the Department of Wildlife and Fisheries presents an account of each citation and fine they have issued to people who were fishing in restricted areas or on others' property. Their dad grumbled that he "didn't do that anymore," meaning that he no longer poached oysters, and the Task Force member just chuckled.

This interaction lent credence to Donald and Mike's story about keeping watch for their father when fishing oysters as children, but it also indicated a solidarity in attitude among and within communities of white oystermen who want to keep hold of their claims to access and ownership, and also a sympathetic relationship between white oystermen and state and parish law enforcement. In a landscape that is continuously, materially changing, naming places—like the canal named after their grandfather—embeds stories and worldviews into the landscape, extending them beyond the experience of an individual projecting structures of environmental relation into the future. Further, as the canal expanded from a narrow cut through the marsh into a wide channel, so too did their family's mark on the landscape. Stories—often told with a wink—of the continual process of occupation, trespass, and re-occupation, such as cutting a canal or poaching oysters with tacit approval, are their own genre of claim-making. Not only do

these stories communicate a personal, familial claim, they describe a structural one as well, about who is subject to laws about access, territory, and control.

Donald and Mike's dad Jimmy had his own theories about who should have control over the landscape: himself. He was full of self-aggrandizing stories that I heard repeated many times over the course of a few months, when I would visit once a week and sit in a chair to his lower left, situated between cases of soda and the door to the office of the marina that his family owned. He would often begin by leaning back in his chair behind the wide, steel-framed desk or twisting to scope out someone who had just walked in, flipping through his book of open accounts, or pointing out something on the television on the opposite wall. Any of these could provide a segue into a story about his family's history in the region, the decline of the oyster industry, or corrupt government officials who wanted to degrade the estuary by flooding it with fresh water in the name of wetland restoration.

During the time I spent with him, I cultivated a mode of partial attention I think of as situated scanning.[45] Jimmy would speak continuously from the moment I walked in the door, repeating himself or moving on to other topics without my prompting him once he'd answered my first question. Our conversation was an excuse for me to sit by his side for hours, observing the community who gathered at the marina. Situated scanning in this context let me hear snippets of conspiracy theories as they drifted across the small room in hushed tones from the rotating cast of white, single men sipping bad coffee in the opposite corner—or take notes as a wide

[45] "Situated scanning" references Donna Haraway's elaboration of feminist standpoint theory into "situated knowledges" (1988). I use this term to describe the work of attending to my own positionality in relation to my interlocutors; in this instance, my identity as a petite, white woman meant that my presence did not dissuade conversation about controversial or violent topics. Jimmy and his friends knew I was writing about them—indeed, this is how he introduced me to everyone stopping by—but none of them seemed to be bothered by this fact.

range of people passed through the office to pay for gas or bait before they set out for the day. Marinas aren't just places to dock your boat; they also function as gas stations on the water, bait shops for fishermen, and community information centers where people come to ask about fishing trips or guides. The people who came through ranged from tourists to family members, and everyone was greeted with conversation from someone in the office.

One of Jimmy's favorite topics to soap box was a break in the Mississippi River levee known as Mardi Gras Pass. The Pass formed when a section of the levee that had failed in February of 2012 (hence the name), allowing the river to gush across an oil company's access road and out across the marsh beyond. Since the levee breach, the pass has widened, and now the river consistently flows out across a broad channel. For Jimmy, Mardi Gras Pass was an example of government mismanagement of water: neither the Army Corps of Engineers nor the state of Louisiana has yet made a move to close the pass, although it has been the subject of debate ever since it breached. Some said the expense would be too much, and others pointed to the way the river, let free of the levee, was depositing sediment and accumulating land. To Jimmy and his friends, however, Mardi Gras Pass was just the most recent in a long history of federal and state impositions on the local landscape, all of which were causing the oysters in nearby Breton Sound to die off.

When Jimmy got going on this topic, he could work himself up for quite a while. One day, half-listening to him wax on about the Pass, I heard him mention what was at that time a well-covered news item: the 2018 Go Fund Me campaign to "build a wall" along the southwestern U.S. Border (Flynn & Bever 2018). "What do you mean?" I asked. Jimmy went on to tell me that if someone could raise $ 1 million to build the border wall themselves, he could do the same for the levee. He'd already spoken to the Parish President about it, who had promised

that if the funding could be secured, the Parish would provide equipment. Jimmy wanted to take matters into his own hands—or at least into the hands of parish leadership—to control the relationship between land, freshwater, and saltwater, ensuring that his way of life would endure, that his investments in the marina and his family's oyster boats would continue to yield a profit. To Jimmy's way of thinking—once again recalling Gerald's frontier affect—interventions into the landscape should precede distant processes of planning or jurisdiction; lived experience justified immediate action that couldn't wait for bureaucratic governmental structures to catch up. Needless to say, a few weeks later I was taken by surprise when he let it slip that he'd never actually seen Mardi Gras Pass with his own eyes; he'd just heard about it on Facebook.

Intrigued by Jimmy's stories, in the late winter of 2019 I began looking for opportunities to visit Mardi Gras Pass. I wanted to find out what a landscape undergoing such dramatically narrativized change might look and feel like. As it turned out, exploring the pass would prove to be harder than I thought; many fishermen and tour guides refused to take me, because the river was so high that the pass would be too difficult to navigate. I had to wait until spring, when the water was still high, but manageable. The Mississippi River was so high for so long, in fact, that it had transformed the surrounding marshes into a freshwater ecosystem. My chance to see Mardi Gras Pass came about because of this transformation: it was an invitation to join some fishermen who were harvesting crawfish in places where no crawfish had been seen before.

Figure 11: Mardi Gras Pass, with fallen trees visible on the right side. Photo by author.

> "*We didn't know what was back there, because we never had marsh back there. It used to be hard ground."*

In addition to Mardi Gras Pass, there are several places other locations east of the river where the levee has failed. Because of these breaches, a high river means that miles of prairies that are usually dry were suddenly inundated with freshwater, opening some places to exploration by boat that wouldn't have been accessible otherwise. From our boat, the floodwater looked like a pathway: the river spilled across fields and low plains, facilitating movement for vessels that don't draw much water:

I rode out with the oysterman's son and grandson, and we crossed the high, wide river in a tiny aluminum skiff. The water pushed us around, and when I said I was scared by the open, deep expanse, the men laughed. We skimmed to the east side of the river, and we were in the pass. One of them pointed out what was left of the failed levee and road. I took a blurry picture; they offered to turn around for a better one, but we were on our way and the sun was rising quickly. The water was flowing fast, foaming around the base of willow trees and oaks and gums as it rushed through. After several sharp turns, through trees, ponds, and canals, we arrived in a narrower waterway and slowed down. Here, the flora was different—it was flooded, but it didn't look as though the plants liked it.

Figure 12: Flooded prairie. Photo by author.

We pushed the boat up into some marsh grass on the bank, reversed, and drove into it again. I asked what we were doing. "Just waiting a little while for one more person to show up." I realized we couldn't stop the boat without anchoring—but another way to do it was just to beach it, even though that action flattened the grass and eroded the bank. So, we forced our way onto the bank, stopped, and waited for a bigger boat to show up, bearing boxes of crawfish bait. Then, we loaded the bait (pogie and shad, one "for the smell" and the other for how long it takes to get eaten up) into the skiffs, and we all took off together, leaving the larger vessel fastened to a tree.

Across the thin line of bushes, I could see a new expanse of shallow, open water—that's where we were headed. To get there, we aimed our skiff's nose at a small mudflat obstructing our movement and revved the engine. "Hit that ditch with a gator tail a couple times, follow it." We got a running start and then slowly forced our way across the mud. I looked behind us and saw bright water in our wake where mud used to be. Ahead, the red tops of crawfish traps glinted from thickets of water hyacinth. There were tiny veins of bright silver that connected them in a system of capillaries across the open pond. These were the tracks the boats had made the day before.

Figure 13: Crawfish traps in a flooded field. Photo by author.

We were catching crawfish in Plaquemines Parish, the southernmost stretch of land in Louisiana. Plaquemines straddles the last section of the Mississippi River before it reaches the Gulf of Mexico and is entirely comprised of the scant land on either side of the river, an increasingly narrow strip of dry ground between the federal levees and a network of disintegrating bayous east and west of the Mississippi. The levees protect the parish from floods, but in doing so they also keep sediment from replenishing the marshes that make up the majority of its land; along with canal dredging by oil and gas companies, the channelization of the Mississippi River is one of the primary reasons that southern Louisiana is disappearing. Once the Mississippi was contained by federally managed levees and controlled spillways throughout its course, the bayous on either side of its southernmost banks were starved of freshwater, transforming the ecosystem into good habitat for shrimp, finfish, oysters, and other species that thrive in saltier zones.

Still, the river runs through the center of the parish like a vein or an artery, carrying water from thirty-one states to the Gulf of Mexico and shaping ecosystems and daily life. Some mornings, people set up lawn chairs on the levee to fish or watch cargo ships and oil tankers pass by, and at night you can hear the low horns and metallic clangs of boat traffic. There are no bridges here; to get from one side of the river to the other, you have to pay a dollar to take your car on the ferry; if you're on foot, it's free. People take the ferry to get to work, to go to Christmas concerts, to visit family, and to go to the doctor. When a ferry is out of service, you have to drive—or get a ride—to the next landing upriver, or to the bridge in New Orleans. From the ferry, the river looks wider than the land on either side of it, but anywhere in the parish, the water feels close. Even when you can't see the river, you can often see the levee: a low green swell holding the water at bay. This is a place where the divisions between water and land

organize everyday life; where relationships are formed through and alongside the presence of the river.

In June of 2019, the river was at flood stage and had been since January. In fact, in 2019 the river remained at flood stage for longer than it ever had in recorded American history; its waters surged for 235 consecutive days—much longer than the 152 days of high water during the historic 1927 floods (MRD 2019). The Mississippi inundated towns and farmland upriver, spurring the Army Corps of Engineers to open the massive Bonnet Carré Spillway just north of New Orleans twice in one year—another first. In New Orleans, the Mississippi was swollen and high, and at the start of hurricane season in June everyone in the city was worried about whether it would top the levees if a storm hit and pushed water back up along the river's course.

South of the city, however, the freshwater was already finding its way into places where it shouldn't have been. This bracingly cold, fresh water was killing shrimp, crabs, dolphins and oysters throughout Louisiana's estuaries, all of which rely on a brackish mix of fresh and saltwater to survive. Yet, some species were thriving: flooded fields were full of crawfish in where no one would have expected to find them, because these fields were normally too salty or too dry, and because it was the wrong season. Crawfish country in Louisiana is traditionally west of the Mississippi River, where they are cultivated in fallow rice fields during the agricultural off-season. In February and March, farmers flood their fields and harvest the crawfish that thrive in shallow freshwater. When the Mississippi River spilled across the prairies to the east of its levee throughout the spring and summer, everyone was surprised to find a bounty of crawfish in June, July, and August.

As it killed some species and fed others, river water was also making new places accessible by boat in places where ownership has always been unclear. The bayous and prairies

at the far back end of narrow river-front properties have never been bounded by property law and claim over them has never been formalized. The colonial French arpent system still influences the way this landscape is used and occupied today: riverfront property slopes back from the levee, gradually meeting bays and inlets of the Gulf of Mexico to the east and west. These swamps have historically been a refuge for people who wanted to stay out of sight as they escaped enslavement and other forms of persecution, and they have long been treated as a kind of commons by people who rely on them for hunting, trapping, and fishing. Claims over the prairies, marshes, and bayous behind the Mississippi River remain hazy even today. So, when we embarked across a newly flooded pond to fish crawfish east of the Mississippi, we weren't actually sure whose land we were on.

Looking Out: The Racial Politics of Ethnographic Observation

Plaquemines Parish is due south of St. Bernard, and as I described above, it consists of the land on either side of the Mississippi River's southernmost stretch. In Plaquemines Parish, the Mississippi River functions as a de facto segregation line. While there are white and black communities on both sides of the Mississippi, the east side of the river is home fewer people, and a higher percentage of them are communities of color. On the west side of the river, there is a regional hospital and a state-of-the-art recreation center; on the east side of the river, there is a prison. Communities on the east side of the river open onto waterways and oyster reefs that are in sharper decline than those to the west, and the obviously unequal parish infrastructure makes this feel as though this is by design. Getting from one side of the river to the other isn't easy: you have to get to the ferry landing, give yourself enough time to take the ferry, and then get from the

opposite landing to wherever you're going. If the ferry is out of service—which it often is—you have to get to the next landing, which is usually ten or fifteen miles away.

Much of my fieldwork on the east side of the river took place in a small town—a neighborhood, really—that opens onto an inlet east of the Mississippi River now known as Black Bay. This is a politically correct revision of a much more offensive name, one supposedly garnered because many of those who lived and worked on these waters were—and still are—descendants of enslaved people. For at least two generations before Hurricanes Katrina and Rita, Black Bay was home to a thriving public oyster reef that supported several marinas and the neighborhoods and towns around them. After the hurricane and the 2010 BP oil disaster, however, the reef never came back to life. Now, the people who grew up harvesting oysters from Black Bay on the east side of the river often have to take the ferry to work private leases to the west, dredging oysters for much wealthier leaseholders who are usually white (see chapter 2).

One Sunday afternoon as I was leaving the home of a middle-aged Black oysterman named Charles, I heard him telling his friend that I wanted to tag along on his boat. "I told her to ask Jeff," I remember Charles saying over his shoulder with a scoff. Jeff is a white leaseholder whose family owns thousands of acres of oyster leases, and he sits on the state's legislative Oyster Task Force. "He's always out there watching us anyway. If she wants to watch what we do, she should go out with him." This was a moment when my gender and race surfaced as an unspoken presence: I was a white woman asking to watch black men work. Watching Charles work was a fundamentally different question than hanging out with him and his family after church. White people in the Deep South have long surveilled black labor as a form of domination, a way of violently maintaining claims to property in the form of land, labor, and bodies. I felt the historical weight of white watching, and I felt myself reproducing it: there were

myriad ways my presence on his boat could invite questions or increased scrutiny, because Jeff would be there, burning gas as he checked up on his hired fleet.

I had met Jeff several times, and I knew he often rode out to keep tabs on the people he'd hired to dredge his oysters. While I hadn't accompanied Jeff, I had been out on the water with other large leaseholders who had volunteered to show me around. As we motored through the Gulf, it was common for these leaseholders to point out boats that were "working their reefs." Sometimes—especially if the people working on board were family members—we would stop to wave, say hi, or even pull up alongside and hop aboard for a quick visit. More often, however, we would pass at a distance, the leaseholder pointing to indicate the boats and people working his reefs. Close enough to make out the size, color, style, and markings of another vessel, the people working on those boats would doubtless have recognized their employer as well, whether or not he stopped to identify himself.

This practice of watching is a kind of intimidation and a technique of racialized power that was once finessed on land by surveyors who watched over enslaved people as they transformed the landscape into the productive order of plantation logics. Simone Brown (2015) has described how the white gaze expanded to all white citizens—not just law enforcement—who were deputized into the project of surveillance and race terror: "[A] cumulative white gaze…functioned as a totalizing surveillance. Under these conditions of terror and the violent regulation of blackness by way of surveillance, the inequities between those who were watched over and those who did the watching are revealed" (Brown 2015, 21). Today, these practices of surveillance over land and labor continue as a technique of white domination in Plaquemines Parish—both on land and over the water. In a conversation about the intertwined history of civil rights activism in the parish, a longtime activist and civil servant described the derogatory, White

gaze of supervisors who oversaw work for the parish such as mowing grass, repairing roads, and maintaining other infrastructure:

> *"These guys [the parish government]…find them a bully to be in a supervisor position […] They would give the head guy binoculars to spy on these folks…to make sure they [were] cutting grass all day, [that] they…were taking their breaks when they were supposed to. Because 90% of the workforce—that's the grass cutters, the recreation guys, all that—are African Americans."*

The everyday violence of white supremacy is nothing new in the Deep South, and these stories are perhaps almost boring to a reader who has familiarity with American history, but they are important, both because they are still happening, and because they describe a set of relations that people are invested in preserving. When Jimmy winked at the Oyster Task Force member, or when his sons joked about getting away with poaching oysters from someone else's leases, or when Gerald that he be able to keep cultivating oysters in areas where titles were murky and told the oil company, "*I'm gonna be your eyes,*" they were each acting to preserve unfettered access to a landscape that is by design racially exclusionary. These attitudes continue to reinforce a long legacy of uneven power relationships, and they also function to continue to make the landscape legally legible and to give it meaning. As I will show in the next chapter, this set of historically situated meanings is being built into plans for the future coast.

One of the first aspects of oyster cultivation that fascinated me were the fences used to delineate one fisherman's territory from another's. In the nearshore waters of Louisiana, vertical clusters of bamboo poles or PVC piping extending eight or ten feet from the water's surface are a common sight. Usually, these markers bear a painted marking or a sticker denoting the name of the family, individual, or corporation that claims the oysters growing below. These crude fences are one of several genres of signage in the marshy waterways along the coast; others include

large signs marking pipelines and the canals dredged to accommodate them, channel markers that indicate safe passage for large boats that ride low in the water, and—much rarer—signs that let boaters know they might be entering private property. Each of these markers indicates a distinct slice of jurisdictional intersections that require maintenance from different parties and afford a variety of uses and claims.

Here, I've demonstrated that it isn't just large landholders or state or federal government who have a vested interest in maintaining these claims. Individuals also enact claims every day to maintain their access and harvest rights through what I would call a racialized frontier-affect: an attitude that reproduces and romanticizes the violent settler imaginary of a right to property that depends on dehumanization and dispossession (Wolfe 2006; Rifkin 2014; Bhandar 2018; Launius & Boyce 2021). Further, these claims intersect with and support a broader network of ownership across the coast: the state's monumental plans for wetland restoration depend upon and reproduce these intersecting jurisdictions. In the first chapter, I elucidated Louisiana's most recent attempts to legally stabilize the boundaries, rights, and obligations of the state towards its public lands and waterways through novel technologies of law, visualization, and prediction. Both of these scales of intervention—the everyday actions of individuals and monumental, top-down projects implemented by the state—seek to maintain some aspect of the historical relationships that underpin contemporary regimes of property.

In what ways do different temporal frames of the past inflect the present and expectations of the future? The political implications of the question with which I opened the chapter crystallize when read through Katherine McKittrick's (2013) analytic of "plantation futures" and Christina Sharpe's concept of "the wake" (2016). McKittrick and Sharpe focus on the violent logics upheld by the belief that the present is entirely shared or that the past is equally past for

everyone, pointing out that slavery is not an event that can be neatly circumscribed to the past; it is not “over” in that sense. Instead, slavery endures in the present and unevenly constrains possible futures. As Sharpe defines it, the wake is “a past that is not past, a past that is with us still; a past that cannot and should not be pacified in its presentation” (2016: 62). Theorists of settler-colonial violence also emphasize that colonization is an ongoing process that continues to injure in the present (Wolfe 2006; Smith 2008; Todd 2017.) In coastal Louisiana, human history has not only shaped the local environment. Through plantations, petrochemical pipelines, and the uneven arrangement of industry across the landscape, a history of racialized structures of power has imposed its spatiotemporal logics upon the lives of people, as well. These relationships of violence and injury must be considered as constitutive of local ecologies, because without human histories of violence, the landscape as it now exists would never have manifested.

Crucially for McKittrick and Sharpe, it's not just that the past can't be contained, but the future that shouldn't be predicated on false notions of pastness. Doing so places false constraints on what shape the future might take and suggests a false starting point for "progress." For example, McKittrick notes that containing slavery within the past sets the trajectory of modernity as one that progresses away from racist violence when in fact plantation logics still organize spatial operations of power. McKittrick's theorization makes clear how spacetime is tied to systems of value and histories of violence in the United States. Pointing out that the rise of contemporary America depended upon the dehumanization of slaves and indigenous people, McKittrick notes that these communities were relegated to landscapes considered antithetical to life—such as plantations, reservations, or toxic dumps—in the act of foundational dispossession. The legacy of these spatial logics remains palpable in the everyday attitudes of white fishermen in southern Louisiana. They also persevere in the very landscape that restoration projects in this

region propose to save and also in the predictive epistemologies utilized to make projections about the future environment. For McKittrick, alternative futures are only possible by understanding that foundational violences extend into the present—and what kinds of lives and resistances have thrived in spite of and within them.

In the next chapter, I continue to trace the histories and effects of these spatial logics as they accrue in the landscape: particularly in the form of the oyster reef. I theorize oyster reefs as a geologized form of social and ecological relationships of domination and control. Proposing that reefs are sites of both extraction and resistance, I follow the practices that white oyster farmers deploy to extract value from the seafloor, exploiting Black labor and life. Imagining the oyster reef as a site of offshore socialiaty in addition to one of exploitation, I show how shared memory functions to animate communities of solidarity, even as an approach to ecosystem management that privileges economic extraction has depleted Louisiana's waters of oysters. As I'll show, the geological form of the oyster reef grows out of these social contours, making reefs into a material political formations that hold together contradictions imminent to a transforming landscape.

~ Interstitial: A River of Toxicity ~

I was standing in the shop in front of a shucking house, talking to an oyster farmer and a health inspector about seafood and toxicity. Shucking houses are usually small, industrial buildings where low-paid workers—in this case immigrant women from Southeast Asia—do the dangerous, fast-paced labor of hammering oysters apart and forcing their shells open with a thick, short knife in order to get at the tender flesh within. Oyster meat is then collected and sold to distributors and restaurants in sealed half- and full-gallon buckets. Seafood processing plants like the shucking house where we stood are often sites of human trafficking and labor violations that are so bad that they have made national headlines (Sammon 2016). However, the health inspector wasn't concerned with working conditions; he was here to make sure everything met sanitary standards for safe oyster consumption, a project that centers the economic viability of the seafood industry rather than the wellbeing of those who work in it.

The inspector spent an hour or so with his back to a wall of cold cases stocked with buckets of oyster meat, chatting with me and the oyster farmer—who owned this shucking house—about how to extract the most value from the people shucking oysters in the room behind us. As the two men spoke about river pollutants and the jurisdictional differences between the Department of Health and the Department of Wildlife and Fisheries, I jotted down snippets of the discussion, but I didn't note who was saying what. The fragments here instead represent the encounter itself, a conversation between two people in positions of relative power, both invested in questions of toxicity, river, and oysters in different ways: a businessman who owns vertically integrated docks, oyster leases, and shucking houses, and a regulatory authority.

"Oysters dying behind Buras, but they have that area open. Isn't the river polluted? If the oysters are dying?"

The men were discussing the river water flowing through the Bonnet Carré Spillway northwest of New Orleans, and the conversation pivoted from the deadly effects of freshwater—saltwater dependent dolphins were dying when they couldn't escape the river surging out into the bay—to the deadly effects of the things carried by freshwater: chemicals and human waste. The Mississippi River, which drains water from the heartland of the American Midwest, collects runoff full of agricultural fertilizers and pesticides, in addition to the wastewater from many cities. Yet while there is active monitoring of the presence of human waste in the coastal waters of Louisiana, there is much less data collected about the proliferation of toxic chemicals.[46] Neither is there active monitoring for the presence of petrochemicals in coastal waters, which are crisscrossed by a voluminous and leaky network of oil and gas pipelines as well as orphaned wells, refineries, chemical plants, and cargo ships carrying fossil fuels.

"Houston just had a flood, they're gonna close Galveston Bay. They do it by what's coming, we don't. That map was drawn six months ago. They've already drawn the September map."

Each season, state regulators generate a map of areas where oysters cannot be harvested because of "pollution"—for these purposes, pollution is considered to be the presence of bacteria and nutrients associated with sewage outflows. The regulators assess pollution levels from the previous year and use this data to determine which waterways will be closed to fishermen and

[46] Wastewater in the United States is processed to remove biological contaminants such as *E. Coli*, but is not regularly treated to address the presence of chemicals such as PFAs, microplastics, or pharmaceuticals, such as statins, anti-depressants, or hormonal birth control (Masco 2016)

oyster farmers going forward. These maps are representative of a future projection that is based on a snapshot of specific conditions in the past. If an emergent event like an oil spill occurs—and, crucially, if it is reported—surrounding fisheries may be closed as well. However, there is no systematic monitoring of such spills, or of the river's toxic load in any given season, and so there is no way to know what kinds of chemical contaminants are present in coastal waters from one moment to the next. ‘

When there is an oil spill or a high water event, "pollution" and fresh water can show up in unexpected places. That is, petrochemicals and nutrients are all pollutants that hitch a ride with fresh water, even if their effects are visible in different places and times. For fishing communities, recent experiences with fresh water are linked to this movement of pollution with the water, and the different ways pollution causes harm, depending on its level, its concentration, or its spatiotemporal proximity. During my interviews with fishermen, our conversations about the river would easily slip from being about oysters and their inability to survive in fresh water to oyster die-offs caused by the presence of oil and petrochemical dispersants. Yet, restoration scientists who are advocates of diversions have all told me that pollution in the river is too diluted to pose a risk to the health of coastal wetlands. For them, "pollution" tends to refer exclusively to nutrients, and nutrients do not appear in high enough concentrations to affect wetland habitats[47].

"*Sediment accumulation probably outweighs potential hypoxia."*

[47] This viewpoint is ubiquitous in the state's plans for restoration, which as a rule naturalize petrochemical infrastructure, often sidestepping the problems associated with local oil spills, leaks, and other pollution events that are unevenly dispersed by local waterways.

A few months after I observed the encounter between the health inspector and the oyster fisherman at the shucking house, I was interviewing a geologist about sedimentation and subsidence. I asked whether the toxic load of the river would impact the state's land-building projects. He shrugged and speculated about how diluted any chemical or nutrient contents of the river might be. This point of view was shared by most of the geologists I spoke with about the contents of river water. Sediment flowing from the Midwest is accompanied by all the other components of wastewater and runoff draining into the Mississippi River, but for the most part, the geologists—along with many other experts I interviewed—agreed that the promise of sediment outweighed any potential harm from other aspects of the river.

However, not all scientists agree with this view. In the 2019, a wetland restoration scientist published an article claiming that river water from Caernarvon Diversion had actually caused net land loss rather than land gain because of the long-term effects of freshwater inundation and increased nutrient levels (Turner et al. 2019). Later that summer, I joined a conference call with scientists and restoration advocates from a variety of organizations to discuss the article. Everyone on the call was flummoxed by its claims and by the methods the author employed. There was a lively discussion about why he chose the control sites he did and how he collected as much historical data as he said he had; the conclusions seemed implausible. Towards the end of the call, however, someone added in exasperation, "I think he just hates nutrients. He's been doing hypoxia studies in the Gulf too long."

Chapter 3: Biomineral Politics and Oyster Reef Solidarities

On a boat trip with two brothers who were in the family oyster business—Donald and Mike—we made a pit stop in Lake Borgne. The weather had been rainy off and on throughout the day, and the lake was utterly still and glassy. Thunder clouds billowed against the horizon, and fog closed in from all sides, making it seem as though we were on the open sea, rather than within easy sight of land. Donald and Mike wanted to show me that this lake[48] had the potential to be a perfect habitat for oysters—as it had been for many years before the 2010 BP oil disaster.

The landscape we traversed before arriving at Lake Borgne held defunct oil and gas wells, a nineteenth century fort that is now surrounded by water on all sides, and numerous human-made canals, including the Mississippi River-Gulf Outlet Canal, or MRGO. MRGO is an industrial canal partially responsible for the catastrophic flooding from Hurricane Katrina in New Orleans and elsewhere. Originally conceived in the 1950s as a shortcut for international trade from the Gulf of Mexico to Lake Pontchartrain, MRGO also caused rapid marsh erosion at its edges and—worse—provided a direct funnel for storm surges to travel inland at an intensified speed. In the years following Hurricane Katrina, MRGO was closed and storm surge barriers were constructed across its width.[49] The broad channel remains, however, and after we crossed it, we passed an offshore memorial that commemorates those who died during Hurricane Katrina.

Once we'd arrived at Lake Borgne, they handed me a long cane pole to use as a probe against the sea floor, so I could see for myself that the substrate in this area was hard and solid—good for oysters. Sure enough, my pole didn't sink into mud; instead, it scraped against what felt like gravel or small rocks. Young oysters need solid ground like this in order to thrive, because a muddy surface will swallow them up and keep them from accessing oxygen and nutrients from the water column. Donald and Mike dredged for a few passes and only brought up

[48] Many brackish and saltwater areas in Louisiana are called "lakes." Here, I adopt the colloquial language I found in fishing communities—and on maps—where "lake" refers to places that might elsewhere be called "bays"; they are stretches of nearshore water semi-bounded by wetlands. In other chapters I explore the notion of "lakes" in Louisiana law, which defines them in relation to the movement of the water table and whether they are subject to the tide.

[49] The closure of MRGO was accompanied by a multi-billion dollar plan for ecological restoration to ameliorate the damages caused by its construction, namely: marsh erosion and increased salinity in adjacent waterways. However, this plan was never undertaken, because of a stalemate over funding.

about fifteen oysters, just three of which were market-sized. Many were covered in mussels, a sign of shifting ecosystem dynamics. While the geology was right for oysters, they told me, the water had changed.[50]

Donald and Mike told me that nothing had grown here since the BP oil spill, but that no one could pinpoint the exact reason why: whether the cause might be an increase in freshwater, too much oil, that too many chemical dispersants had been used to clean up the oil, or something else altogether. In Louisiana, the location and flow of water has changed for all kinds of reasons, because of dams, because of canals dredged by oil and gas companies, and because of a sinking landscape that meets a rising sea further and further inland. Its contents have changed as well: it has become saltier in some places and fresher in others, while oil spills, leaks, and wastewater flows have made the water more habitable in some places and less so elsewhere. The oysters in Lake Borgne are disappearing because of a combination of all these factors and more, and Donald and Mike knew that this seemingly mysterious disappearance could never be explained by one sole reason.

While they didn't name one discrete cause, like other oystermen I met, Donald and Mike did blame oyster loss on some combination of changes in the water, rather than on other factors such as fishing technologies, over harvesting, or the presence of predators. Even so, the primary way that fishermen and biologists attempted to recuperate oyster populations in Louisiana was to change the constitution of the seafloor, rather than the water surrounding it. Oysters live in communities that need a hard surface to get started and then continue to build on each generation of shells. Eventually, they amass a solid substrate of living and dead that is called an oyster bed

[50] Throughout the dissertation, I've italicized direct quotes from my field notes to indicate their source, as opposed to secondary sources and citations. To indicate direct speech as recorded in field notes or transcribed from interviews, I use quotation marks.

or, more commonly in Louisiana, an oyster reef. Because the nearshore seafloor is now widely considered to be a form of property (see Chapter 2), significant effort is put forth in Louisiana to maintain the productivity oyster reefs in particular places or to cultivate them in new, carefully chosen areas. Louisiana oysters have also been enrolled in shoreline protection projects; in these cases, their reef formations are deployed to protect property interests onshore rather than at sea.

In this chapter, I explore how this strategy of ecosystem management that prioritizes economic productivity and property maintenance has altered the subsurface geology of nearshore waterways in a process that I theorize as "biomineral politics." I elucidate this process in three scenes: first, I describe the process by which human-managed oyster reefs are built up from the seafloor by layering old oyster shells and hurricane debris, commoditized detritus that oyster farmers call "cultch." Next, I show how the dangerous work of motorized dredging functions as an exploitative labor practice that mirrors the agricultural regimes of the region's plantation history. This work is also imagined as performing a kind of ecosystem maintenance: keeping oyster shells uniform and reefs aerated. Finally, I show how the social space of the oyster reef becomes a site of political imagination, organizing, and resistance.

Biomineralization is a term that biologists use to refer to the process of calcification through which an oyster generates its shell, cementing itself in attachment to place as it does so. Here, I examine the social and political dimensions that are embedded in this process by analyzing the ways in which humans intervene on the shape and makeup of oyster reefs. When people cultivate oysters, they alter the plane of the seafloor, both in terms of physical makeup and conceptually. Cultivating oysters is a practice that transports agricultural logics of ecosystem

management offshore into subaquatic space.[51] Even the language used to refer to these places reflects this: oyster reefs are clearly demarcated areas where oysters are "planted" and contained as they grow, making subsequent harvest easier. Yet, as I will show, this strategy requires ignoring an oyster's milieu, alienating it from relationships to water, toxins, and people. In what follows, I describe how oyster cultivators spread debris and concrete across the seafloor, seeking to lure young oysters into attachment with the bounded zone of a human-made reef. Next, I discuss the labor of harvesting oysters through a practice of dredging, elucidating this work as a site of exploitation that has generated traditions of solidarity. By analyzing human attention to improving the seafloor—as delimited from the water column—I show how extractive and profit-oriented forms of environmental management, and resistance to them, have shaped the very geology of coastal waters.

In this chapter, I center the oyster—its individual lifecycle and its collective reef formation—in order to illuminate the definition and enclosure of offshore spaces, actions that bring them in line with an organization of property and labor onshore. While in other chapters I have explored efforts to control and manipulate water, here I consider what happens when attention to water is suspended in favor of what lies beneath it. If the presence of water implies mutability, navigability, and motion, in this chapter I explore what happens when the seafloor becomes water's foil: that which is predictable, contained, and immobile. In social theory, offshore formations such as reefs and shoals have been interpreted as dangerously risky navigational hazards, emerging unexpectedly and compelling slowness or a reorganization of

[51] In his history of enclosure in the Chesapeake Bay region, J.T. Roane has described the "subaquatic" in conversation with Tiffany Lethabo King's (2019) concept of the "shoal" as "the unique meeting of fresh and salt water and land in the brackish Tidewater [that] bring[s] into focus the indeterminacy of Indigenous and Black histories of the region" (2022: 229).

thought and social relationships (King 2019). Oyster reefs, however, are in many ways the inverse: they are highly managed offshore places where social relations are reproduced through structures of labor and ecology modeled after those onshore.

Whether cultivated with the intention of harvesting oysters for profit or with the hope of creating an added layer of storm protection for economic interests onshore, an oyster reef is a hedge against uncertainty. A reef—if comprised mainly of coral—is a surprising underwater nexus of biology and geology that interrupts assumptions about location, life, and control. An oyster reef, on the other hand, is a carefully constructed and mapped plane of cultivation that lurks under the surface, extending social relationships of power and violence into the unexpected space of open water. A reef might make these social relationships visible by disrupting a sense of smooth sailing; an oyster reef, however, smooths the transition from land to water by maintaining those relationships across contexts.

Oysters spawn when the water is warm and the current feels right. When gametes meet in the swirling estuarine tide, they produce microscopic, baby oyster zygotes. At this earliest developmental stage, oysters are (almost) autonomously mobile for the only time in their lives. As larvae, they are able to control their movement vertically, but not horizontally. Although they rely on the current to carry them away from their parents, they are able to rise and fall with intention along the water column, exerting some amount of control over where they alight. Shell formation in oysters begins before they set on the hard surface that will become their home; however, it is only once they set—attach to a solid substrate—that they fully transform into a creature recognizable as an oyster. After setting, oysters generate a full shell by producing a mixture of biological material and calcium carbonate, which hardens into their two-sided

protective structure. This process of autopoetic metamorphosis and settlement—of autonomously generating, forming, and hardening a shell—is called "biomineralization."

An oyster's life history in the Gulf of Mexico generally does not occur uninterrupted, however. Humans intervene at every moment, moving and attending to the small bivalves at each stage, aggregating them according to their health and size, and in response to the surrounding water quality. These practices imbricate an oyster reef—which one might otherwise imagine as a discrete deposit of oysters and their attachments—with a broad set of human investments. Offshore fishing grounds rely on a wide range of infrastructures onshore that firmly entangle fisheries with systems of global capital such as road access, seafood processing plants, and commercial docks that determine prices based on global markets (Howard 2019). These entanglements also implicate people in the development of oyster bodies, the shape of their shells, and the location of their reefs—in the form and attachment to place of oysters: in the process of biomineralization.

Biomineralization can be imagined as a social process as well: a kind of biomineral politics that sits at the intersection of geology, ecology, and biopower. I think through this term in conversation with what Valerie Olson has called "ecobiopolitics," or the management of human life and health by managing the surrounding environment (2010), and alongside calls to understand biopolitics as a process that produces and reproduces racial hierarchies (Mbembe 2016, Weheliye 2014, Wynter & McKittrick 2015). In southeast Louisiana, the environment has long been managed to facilitate the health and well-being of some humans and not others—and profit above all else. This is an ecology of inequality, what J.T. Roane has described as a "characteristically (racial) capitalist landscape defined by radical, racialized inequality mapped over uneven, delicate ecologies" (2018, 241). Looking to the oyster reveals the sedimented

effects of such human inequality on the landscape and the extension of systems of inequality into spaces that might otherwise seem to escape them. In this place, biomineralization results in twinned geologic and ecosystem formations, experienced and generated through the body.

Lake Borgne holds one of several public reefs[52] east of the Mississippi River that oyster zygotes have consistently refused to settle in recent years. Public reefs are generally places that have what people here call "good bottoms," meaning that the seafloor is firm, rather than soft and muddy. In theory, baby oysters can easily settle down for the rest of their lives in these places without the threat of being buried in the sulphuric muck that lines the bottom of many other shallow nearshore waterways. However, as Donald and Mike demonstrated, oysters here have been disappearing despite ideal landing conditions. I say "disappearing" instead of "dying," because no new oysters are settling there—and no one seems entirely sure why. Of course, there is death as well: when an oyster dredge pulls up seemingly mature oysters, their shells are often empty, or they smell rotten. But I imagine that oyster larvae—if there are any who pass through these waters—are opting to remain aloft in the current rather than touching down.

What does it mean for oysters to depart from a place at such a collective scale? What conditions have made life untenable for them? The disappearance of oysters from Lake Borgne

[52] Public oyster reefs in Louisiana are areas of oyster cultivation managed by the state. Private oyster reefs, by contrast, are areas leased from the state by private individuals or companies. Public reefs cover most of seafloor in Louisiana's offshore waters: 1.7 million acres as opposed to the 400,000 acres of private reefs. Public reefs are managed with the aim of maintaining oyster habitat generally, and also as a resource for augmenting oyster production on private reefs. Fishermen may harvest mature market-sized oysters from the public reef to sell, or they may harvest younger "seed oysters" to relocate to their own leases. Private reefs, on the other hand, are leased from the state to private individuals or corporations, and there are no regulations about how they are used. (See Chapter 2). As I will discuss below, Louisiana has invested in these vast areas of oyster habitat for decades in order to maintain or recuperate their productivity, even in the face of waters that are changing—waters that will perhaps never again be constituted in such a way that they reliably support oyster life.

and other areas is perhaps a species-level refusal of the form of life available to them: oysters here rely on their relationship with people, one that is driven by market rhythms and a commoditized view of oyster life. Perhaps it is a refusal of place as well, since the coastal marshes of southeastern Louisiana are shot through with eroding canals, leaky oil and gas infrastructure, and increasingly common freshwater flooding as storms throughout the Mississippi River watershed become more numerous and intense. Here, I argue that the oyster's departure indexes an approach to ecosystem management that prioritizes the production of economic value and seeks to bind life to place, even as it makes places increasingly unlivable.

Framing the disappearance of oyster life as a mystery hides the nexus of reasons behind it and also hides the reverberations of such a loss across scales and communities. In Louisiana, the disappearance of oysters from certain places is an effect of repeated toxic exposures, overfishing, and water management projects, but it is also the outcome of a dominant approach to ecosystem management that prioritizes the extraction of maximum economic value. This paradigm of habitat management is what makes the disappearance of oysters seem like a mystery at all. The persistent belief that life and economic value can be reliably held in place despite an increasingly unlivable surround sets up a sense of surprise—of mystery—at any aberration from that norm. As I will explore, even as this paradigm of management has shaped the landscape itself, it has also opened grounds of resistance.

Cultch: Managing for Accumulation

During my last spring in the field, I made a day trip to visit a company called Spat-Tech, which I'd heard mentioned by an oysterman after I asked him about the business of "cultch." Cultch refers to the hard, underwater substrate to which oysters attach, and it can be comprised

of old oyster shells, limestone, concrete, or any other solid material. He told me that Spat-Tech had called him a few times to try and sell him a cultch comprised of a proprietary blend of concrete made to mimic prehistoric shells. Spat-Tech claims their concrete cultch is the ideal substrate for baby oysters to thrive, and the company has made the news a few times for providing cultch to large, state-contracted restoration projects. Intrigued by these mythological narratives about the virtues of ancient shells for contemporary oyster life I decided to visit.

Planning my trip proved difficult, however. Spat-Tech had no website and a surprisingly paltry internet presence beyond a handful of stories in local news outlets. I called the only number I could locate, affiliated with a different company that seemed to be related to Spat-Tech and was headquartered nearby. It turned out to be the mobile phone number of a former state senator who had served the oil-rich, politically powerful 1st Senatorial District in southeastern Louisiana, the region where I had conducted most of my fieldwork. He was surprised that I had found his personal contact information online, but nevertheless he gave me the number of the site manager, and I was able to arrange for a tour.

In my notes, I described the road Google Maps led me down to reach Spat-Tech headquarters as "*cooooountry*," a spelling which evokes an idiomatic use of the word as an adjective, a way of talking gleaned from my childhood in Mississippi. Indeed, the two-lane road wasn't maintained by the state; it was full of potholes with trees and agricultural fences on both sides, and the houses were few and far between. "*Surrounded by poplar and oak-lined acres of white pine, I FELT this place. Afraid, at home, all that*." My trip led me through a rural county not far from where I'd grown up, a place I'd heard stories about it but rarely visited. Here, the red clay and pulpwood plantations hugged close to the road and marked it as part of the pine savannah, an ancient beach that once fronted the Gulf of Mexico before the Mississippi River

deposited the silt that formed southern Louisiana. I knew that on a road similar to this one, not too far away in place or time, a good friend—White and Jewish like me—was chased down by the Ku Klux Klan on his way home from school in the 1990s. Nowadays, this county is a place where many White New Orleanians are buying property for weekend trips and for easily accessible hurricane evacuation. These associations made the road feel remote, unfriendly, and achingly familiar all at the same time. The obfuscation of Spat-Tech's management and funding, its entanglement with state politics, the color of the soil, the embodied memory of fear and aloneness, and the dense pines made it easy to imagine my journey was dangerously mysterious.

Despite the seeming secrecy surrounding the trip, my destination was well-marked. Turning down a gravel road next to the SPAT-TECH sign, I saw two Black men loading concrete into large crates lined in bright purple mesh. Behind them, industrial buildings loomed. I called the manager's phone number, and he came out to greet me and show me around the campus, asking me to refrain from taking any photographs without checking first. As we walked around large vats filled with water and growing oysters, he told me that six-million-year-old shells are "*oyster magnets*." Spat-Tech uses these ancient materials as the chemical basis for big mats of articulated before seeding them with baby oysters—"spat"—and distributing them along the coastline as part of largescale restoration projects. Giving oysters the right start in life, the manager told me, is key; here in the warehouse, oysters spawn in a controlled environment of nutrient-rich water and then attach to specially calibrated concrete. He noted that Spat-Tech's oysters survived the last opening of the Bonnet Carré Spillway: "*two months at zero salinity*." His implication was clear: the substrate—or cultch—mattered more than the water around it.

Figuring out what materials young oysters will tolerate as cultch is an area of investigation that unites fisheries biology and ecosystem restoration. Each of these fields is

invested in a search for strategies that will help oysters adapt to nearshore waters that are becoming less reliably salty and more and more toxic. The idea that cultch might provide an answer to this problem is alluring, because it enables researchers to ignore variables that are beyond the scope of easy control, such as warming oceans, toxicity flows, or the structures of labor and property. In this section, I argue that the political economy of cultch in Louisiana—both for fisheries and for ecosystem restoration—relies on bracketing the social and biophysical context of both oyster and cultch, reinterpreting materials ahistorically and alienating them from space and time. At the same time, addressing oyster habitat solely through additions of cultch directs attention at improvements tied to bounded sections of the seafloor, a kind reckoning that mirrors the way that property is parceled and evaluated onshore—what historian J.T. Roane has written about as the enclosure of "subaquatic" space (2022). In this section, I describe how Spat-Tech's millenia-old shells, concrete of a certain pH, rubble extracted from hurricane debris, and other detritus of human social life are imagined as a quick fix for ailing oyster habitat, attending to the histories embedded in these materials. After all, it's much easier to dump solid material on the seafloor and hope for the best than it is to change the watery, increasingly unlivable conditions that constitute an oyster's surround.

Everyone I spoke with about cultch—scientists, fishermen, and coastal property managers—said that old shells work best, because they are the surface onto which newborn oysters are most likely to attach while briefly mobile in their larval stage. These days, however, oyster shells are expensive and hard to find, and while an old shell may be the ideal support for a young oyster, as long as they have access to food and a solid footing, oysters can manage to grow on almost anything. So, when people need a large quantity of solid material to augment existing oyster reefs or build new ones, they tend to use something else. Most often, concrete is

the alternate material, whether it's a proprietary blend like the one developed by Spat-Tech or the remnants of demolished buildings and transportation infrastructure: people expect oysters to build on the material remains of human activities in much the same way people build on oyster shells.

> *He threw a rusty chain overboard and looked back at me. "Building a reef," he winked.*

Good cultch is hard material imagined to attract oyster larvae and hold young oysters up out of the mud and into flows of nutrient rich water. In addition to their role in building oyster reef habitat, shells have a long history of use in coastal infrastructure and architecture, and it's common to see them mixed into asphalt or poking out of old foundations. More recently, coastal cities across the country have deployed oyster reefs as a strategy to combat sea-level rise and buffer storms. As Wakefield & Braun (2018) have argued, building oysters into coastal protection systems extracts value from them even after death, entangling them in systems of capital within a timeframe that exceeds their lifespan. Extending the bounds of urban governance into offshore spaces by managing oyster life and death thus becomes a way to manage human life and resilience. A dead oyster's shell can endure long after its inhabitant or the material that anchors it, making it seem an attractive foundation for the next generation of bipeds and bivalves, be they oysters, mussels, barnacles, or people.

Figure 14: View of what remains of the Leeville Cemetery, with the causeway to Grand Isle visible in the background. (AP/Dave Martin. Featured in Martinez, Edecio. Sinking Cemeteries in Louisiana. CBS News. January 3, 2013. https://www.cbsnews.com/pictures/sinkin

One of my field sites was directly engaged in finding ideal materials to use as cultch: I assisted a master's student in marine biology who was researching the efficacy of different concrete mixtures at attracting oyster spat. By the time I joined her, she had already spread uniform hunks of concrete in the water along a narrow embankment lining a canal in Lafourche Parish. On each trip, we would pull a certain number of oysters from each zone, and she would note the material on which they grew, their approximate age, and density. Her advisor was one of my mentors in the field, a fisheries biologist named Pat who knows seemingly every oysterman in the state. On other trips with him, I heard him connect oystermen to funding to supplement cultch spread on their own private oyster leases or to pay them to spread cultch in places owned

by private foundations. Now, he quizzed us on common oyster predators and pointed out evidence of their presence as we examined every rock we pulled onto the deck for bivalves.

On research trips, we would cast off from a small dock under the massive causeway that leads to one of Louisiana's barrier islands, Grand Isle. One day, the graduate student pointed across the bay to show me the crumbling remains of a small cemetery that had almost entirely subsided into water and was no longer easily accessible from land.[53] The cemetery had eroded so much that I had never noticed it before, even though—like most cemeteries in southern Louisiana—it had once been comprised of easily recognizable above-ground tombs. The broken brick and cement headstones now formed a kind of jetty extending out from the shoreline and into open water. At the time, it didn't occur to me that oysters might be lurking below the water there as well, building on the remains of human life. However, as the record of cultch plants below indicates, many oyster reefs in Louisiana's waters have been built up using materials sourced from the destruction and death wrought by strong hurricanes, materially binding onshore deaths with the offshore formation of the oyster reef.

[53] There is now a movement in southern Louisiana to restore or relocate cemeteries that are at risk of subsidence.

1994	Sister Lake (3 plants)	5W	Reef	42,576.1	306	$891,118.61
1994	Marsh Island	6	Oyster	19,595.0	27	$410,123.35
1994	Bay Crabe	1S	Oyster	8,594.0	137	$202,130.88
1994	Black Bay	1S	Oyster	29,655.0	708	$697,485.60
1994	Hackberry Bay	3	Shell, limestone, concrete	10,585.0	145	$304,212.90
1995	Sister Lake (3 plants)	5W	Oyster	70,902.0	672	$1,730,008.80
2000	Half-moon Island	1N	Shell, limestone, concrete	3,800.00	70	$138,776.00
2001	California Bay - Pelican Island	1S	Limestone	4,000.00	133	No cost to state; oil company mitigation
2004	Hackberry Bay	3	Crushed concrete	2,322.40	10	$85,835.90
2004	Hackberry Bay	3	Crushed concrete	4,005.00	25	$148,024.80
2004	Barataria Bay	3	Crushed concrete	7,536.30	40	$228,600.00
2004	Lake Chien	5E	Limestone	6,083.00	25	$419,727.00
2004	Lake Felicity	5E	Crushed concrete, limestone	9,179.00	40	$302,907.00
2004	Sister Lake	5W	Shell, limestone, crushed concrete	10,300.00	67	$399,949.00
2004	Lake Mechant	5W	Limestone	9,460.00	40	$406,780.00
2007	Black Bay - Lonesome Island	1S	Limestone	30,421.83	200	$1,725,830.42
2007	MS Sound - Turkey Bayou	1N	Limestone	29,944.98	200	$1,607,446.53
2008	Hackberry Bay	3	Shell, limestone, crushed concrete	10,171.75	50	$559,039.38
2009	MS Sound - 3-mile Bay	1N	Limestone	22,312.59	45	$1,372,224.29

Figure 15: Detail from the Louisiana Oyster Fishery Management Plan. (Banks, Steve, et al. 2016. LA Oyster Fishery Management Plan. Baton Rouge: Louisiana Department of Wildlife and Fisheries. 175-178.)]

Like restoration specialists, oyster farmers cultivate reefs by making sure the seafloor is comprised of something sturdier than mud. This practice, which oystermen colloquially call "planting cultch," involves navigating small barges laden with broken bits of material to spray out over the water. Planting cultch takes a lot of time and resources, but largescale oyster farmers generally regard it as necessary maintenance and habitat upkeep, or a first line of intervention for a reef that has become unproductive. Finding a consistent supply of sturdy surfaces for oysters to attach to is difficult, so perhaps it is not surprising that the cultch used by the fishing industry these days is often repurposed as concrete—what oyster fishermen call, generically, "rock." Fishermen can buy rock in many different kinds and sizes, but they usually choose to use pieces that average a bit smaller than my fist. Often, the cost and supply of rock cultch is subsidized by the state. This concrete is sourced from a variety of places, but it is often composed of hurricane debris, taken from the foundations of homes or roads that were washed out during past storms.

This practice of using rock—concrete or limestone debris—to build up a reef, rather than clam or oyster shells, is relatively new. The Louisiana Department of Wildlife and Fisheries has been adding cultch in the form of cured clam and oyster shells to oyster reefs since at least 1917, but they didn't begin intentionally adding concrete debris to oyster habitat until fifty years later. The above record of cultch plants carried out on public oyster reefs reveals that this shift occurred in 1994, when the state received federal disaster funds after Hurricane Andrew to build back oyster production in Hackberry Bay. Although records do not indicate where the cultch itself came from in this instance, the source of funding ties these materials to a hurricane that came ashore two years before. Since 1994, essentially all the cultch added to state-managed public reefs has been comprised of crushed concrete and limestone, paving thousands of acres of the seafloor.

Throughout my fieldwork, massive piles of oyster shells or concrete were a common sight, looming on shore near docks and marinas, awaiting distribution across the seafloor. In the image below, piles of crushed concrete debris from Hurricane Katrina have been amassed to spread over the water bottom in just this way. Katrina's destruction and death toll in New Orleans are infamously racialized: after decades of disinvestment and real estate development on drained wetlands in and around the city, the storm ravaged infrastructure and flooded neighborhoods that were historically working class and majority occupied by people of color (Bullard & Wright 2010). In many neighborhoods, open space and empty lots are the only evidence now remaining of the homes and businesses that once defined them. Katrina's destruction laid the groundwork for rebuilding projects that are not equally accessible to everyone and for transforming New Orleans into a whiter city: Katrina displaced 250,000 people from New Orleans, including almost 60% of the city's Black community. In the period between

2000 and 2019, the number of Black New Orleanians dropped by over 100,000. The material remains of Katrina's unequal impacts continue to be broken down, decontextualized, and reconvened in support of the oyster industry—the contemporary model of which relies upon and reproduces racialized inequality. The transformation of hurricane debris into oyster reefs generates economic value from widespread destruction and also provides a direct material link between slow violences both inland and offshore, as I will describe in the next section.

Figure 16: From The Times-Picayune New Orleans Advocate: "In this file photo, an oyster boat, top right, passes huge piles of chopped concrete that are the leftovers of the cement foundations from homes that flooded following Hurricane Katrina." Photo by Chris Granger, *The Times Picayune New Orleans Advocate*: https://www.nola.com/image_4401a36a-da86-11ea-a508-cbe86eeefb11.html

Louisiana's oyster reefs biomineralize: they unite the material remains of racial capital, gentrification, and unequal development with an unjust system of labor, all embedded in place.

Cultch carries with it a material history, radically decontextualized from place and time.[54] These days, planting cultch—for restoration or to bolster the oyster industry—is a form of disaster capitalism: the political economy of cultch relies upon the transformation of debris into a valuable commodity, paid for by government funding that is unlocked by the impact of environmental disasters. Clearing the destruction brought about by strong storms not only provides a blank slate onto which real estate developers project value, a new source of profit is created from the rubble itself: cultch wrought from the dregs of disaster. At the same time, the production of cultch retrenches the importance of property both on and offshore. As a method of shoreline protection, the augmentation of oyster reefs is imagined to decrease the risk of property damage from flood events further inland (Master Plan 2017, Wakefield 2020, Guerin 2019). As a method of bolstering fisheries, adding cultch to oyster reefs functions as a kind of improvement, an investment in the productivity of a strategically managed property form. In the next section, I describe the racialized form of labor this property form relies upon and the openings of resistance that emerge from these offshore spaces.

Drudging: The Labor of Oyster Cultivation and Extraction

> *I lifted the so-called "light" hand dredge from the side of the small boat and made sure the rope wasn't tangled before hefting it onto my hip. I looked at Pat and waited for his cue to throw the oyster dredge out across the water. He carefully maneuvered the boat over the area where we were dredging for oysters—or, as Pat and all the oystermen I would meet would say: "drudging." Once we were in the right place and I was ready, Pat accelerated the motor to drag the hand dredge across the water bottom. After I slung the dredge overboard, I kept my hand on the rope to feel the quality of the vibration. If the rope was taught and thrumming with the rumble of a rake across gravel, we would know we'd hit oysters. Then, I braced one foot on the bench, bent my knees, and hoisted the dredge back up to the surface, holding it alongside the boat. Pat accelerated again, letting the rushing water clean off the inevitable clumps of*

[54] C.f. Dawdy (2006): "The Taphonomy of Disaster and the (Re)Formation of New Orleans."

sulphuric mud. Then, with his help, I heaved the dredge onto the deck. I only used the hand dredge once; full of oysters, it was almost 100 pounds, and too heavy for me to manage.

There are several ways that fishermen harvest from Louisiana's oyster reefs: they use gigantic wooden tongs with metal rakes on the bottom, they crawl through shallow water on hands and knees to collect oysters by hand, and—most common—they dredge. Oyster dredges can be large or small, operated by hand or by motorized pulley system. A dredge is a kind of large metal rake with a net attached to it that is generally between two and five feet wide. When the dredge is lowered onto the seafloor from a moving vessel, the rake collects solid material from the water bottom, and the netting catches it as the motion of the boat drives the rake forward. Both hand dredges and motorized dredges rely on the boat's movement to propel their heavy frames across a reef, but hand dredges are lifted from the water by a fisherman standing on the deck of the boat, while a motorized dredge is operated by a chain pulley system. With the advent of motorized dredging, oyster reefs the world over have been overharvested and degraded. In fact, the collapse of oyster fisheries in a wide range of locations can be pinned to the introduction of bottom dredging, which is usually followed by a peak in harvests before the advent of a long decline (Kirby 2004).

Figure 17: Brand new, large, galvanized steel oyster dredge, used with a motorized hoist. Photo by author.

Motorized dredging is fast and full of opportunities for injury among the people who work on oyster boats. On a large boat, two or three deck hands might operate the heavy, steel dredges at metal tables fastened to the flat deck. The diesel motor controlling the overhead pulley system is controlled by a switch that is often located on the steering housing, across the deck from the tables and dredges where the work is carried out. When a dredge has been dragging long enough, someone will flip the switch to lift it up out of the water, and someone else will tilt it to dump out whatever it has collected. Workers' hands move fast on the table, darting in and out of a shower of heavy shells and rock to separate debris from oysters, and market-sized oysters from those that are too small to sell. As the dredge falls back over the side, they sweep all

the rocks, small oysters, dead oysters, and debris back into the water, keeping any oysters fit to sell. It's not uncommon for three or four oysters to grow together on a single piece of cultch in the right kind of water. When a fisherman encounters such a cluster, he will first assess the oysters' sizes, then hold the cluster in one hand and break it apart with the other using a hammer or small hatchet. On one of my first attempts at breaking up such a cluster, I aimed poorly and cut open my left thumb. There was no first aid kit on board, so I rinsed my finger with bottled water, wrapped it in a paper towel underneath my gardening gloves—the same paltry protection everyone wore—and got back to work.

Dredging always requires the expenditure of huge amounts of energy—be it human energy or fossil fuel—because collectively oysters are extremely heavy. The shells they accrue over the course of their lifetimes are meant to hold fast to a sturdy anchor, to resist opening, breaking, or movement. Unlike other fishing methods that can sometimes be almost completely passive,[55] harvesting oysters requires effort: a heaping mound of oysters resembles a water-logged pile of rocks, and weighs just as much. The work has to happen quickly; once removed from the water, oysters must be refrigerated within a certain time period. They are so heavy that harbors where oyster boats dock usually have a conveyer belt that carries fifty-pound sacks from boats to pallets where they are arranged for distribution. Oyster boats have historically been designed to carry a very heavy load: sailing schooners had wide, flat decks and could draw a lot of water. Modern oyster boats are essentially small barges designed to carry heavy loads on their broad decks.

[55] For example, people sometimes collect bait and shrimp by setting up passive nets in places where they know the water will flow by, carrying their catch along with it.

Despite evidence to the contrary, oystermen in Louisiana also tout dredging as a practice of maintenance that they claim aerates the highly-managed reef, preventing oysters on the bottom from suffocating in silt or mud. As it flattens and tousles the reef, the dredge also breaks the edges off oyster shells, supposedly giving them a more palatable shape for consumers. This practice of management reshapes the reef ecosystem, flattening it and spreading it out across the muddy seafloor. Dredging alters the use-value of a reef; no longer a community of a variety of filter feeders such as sponges and coral, a regularly dredged "reef" is comprised primarily of oysters. Rather than effectively filtering nutrient-rich organic matter from an estuarine ecosystem, the managed reef is made to produce oysters that are as close as possible to their final commodity form.

In Louisiana, dredges are also used to transplant small young oysters from public reefs to privately leased areas where they grow to market size before they are dredged once again for harvest.[56] Transplanting oysters, like bottom-dredging, is a signal of imminent reef degradation and decline, but the practice can help prop up an oyster industry for years in places that are becoming less hospitable to reef habitats. The system of transplanting oysters from one place to another has been in practice in Louisiana since at least the nineteenth century (Wicker 1979). At a continental scale, the advent of transplanting oysters has been taken to be indicative of estuarine ecosystem degradation in particular places, a sign that reefs have been so overfished that they require re-stocking. In a paper that links the boom and bust of oyster reefs with the decline of coastal estuaries in the United States and Australia, oceanographer Xavier Kirby posits that the location of specific settlements and urban centers correlates with the decline of nearby

[56] The practice of transporting seed oysters from one place in order to cultivate another dates back to the early nineteenth century, when tongs would have been the equipment used for this work.

reefs. He traces the decline of reefs further and further afield over time as they are used as a source of seed oysters to augment the dwindling numbers of oysters near places like New York, San Francisco, and New Orleans. Mapping the wide-scale decline of oyster reefs over time draws an unsurprising correlation between European settlement and ecosystem degradation. Here, oysters become a sentinel of the combined effects of capitalism and settler colonialism.

The process of planting cultch, transplanting, and harvesting oysters is dangerous and physically demanding. The deck hands who carry out these tasks have historically been Black and Indigenous, and now migrant workers from Central America and Southeast Asia do this work as well. Their labor is undervalued and organized in a system similar to sharecropping: they are paid by the day according to how many sacks of oysters their boat brings in. If they don't have a boat, the pay is even less. Many oyster magnates own thousands of oyster reef leases, as well as shucking houses and trucking companies. The oyster industry is similar to agriculture in ways beyond its structure of labor and vertical integration as well. Like large monoculture farms, building and maintaining oyster reefs depends on a logic of artificial containment: private oyster leases are fenced sections of what would otherwise be open water, and dredging separates oysters from what would otherwise be a biodiverse reef ecosystem. In Louisiana's waterways, dredging to transplant and harvest oysters is a practice that holds reefs in place. Reefs are cultivated by intervening on oysters throughout their lifecycle, actively shaping their relationship to each other, to the water, and to the muddy seafloor.

Containment is a hallmark of capitalist supply chains, which strive towards the predictable and smooth movement of commodities alienated from relationships to people, place, and other ecological ties (Tsing 2019). In her work on matsutake mushrooms, Anna Tsing counters containment with contamination, or what she describes as "transformation through

encounter" (2019: 38). Containment aspires to a kind of autonomy that disavows relationality and interdependence in service of the myth of abstracted value and alienated labor. Contamination, on the other hand, recognizes that relationships—whether toxic or nourishing—open possibilities. Just like Tsing's matsutake fungal spores that float in the atmosphere before gently settling on the Earth, oyster zygotes cannot be contained within the water column, and it is impossible to predict where they will settle. However, traveling oyster zygotes rely on particular qualities of the water in which they float in order to survive. While she considers contamination in the places where fungal spores eventually settle down, Tsing spends far less time imagining the airy conditions of their sporadic movement. Instead, her supply chain analysis focuses on the situated sphere of relation that she calls pericapitalist sites. These places are comprised of the "non-capitalist endeavors that drive capitalism" and are locations of what Tsing calls "salvage": activities that continuously fuel the movement of capital even as they cannot be captured by it. For Tsing, salvage is also marked by the joy that comes with unexpected motivations, interactions, and relationships.

In places like southern Louisiana that continue to be actively shaped by extraction, pollution, and exclusion, however, what Tsing calls pericapitalist sites look less like places that facilitate mutual flourishing and more like landscapes of constraint. Here, the ecosystem is carefully managed for the maximum production of profit. This results in conditions of life—for oysters and for the human relationships that form around them—that allow for something less than thriving yet more than mere survival. In his work on the Black commons, J.T. Roane has named this "bare autonomy": a set of lively relations to land and people that forms in extractive landscapes, persisting in places and relationships that remain invisible to power (2018). Bare

autonomy is not the same as thriving; it is a sustaining social space that exists within and alongside the forces that undermine and disavow Black life.

The dichotomy between containment and contamination that Tsing sets up uses the logic of plantations as its most extreme example of containment. In her work with Donna Haraway, Tsing expands on the aspirational containment of monoculture, which hopes for the total eradication of multi-species relationships and relies upon the isolation of desirable plants in order to maximize production of particular commodity crops (Edge Effects 2018). Yet, their description of plantation systems sidesteps one of the most fundamental modes of containment these systems rely upon. In their effort to think ecologically, Tsing and Haraway fail to adequately address the exclusionary category of "the human" within these systems: in plantation economies and ecologies, humanity is only extended to the white owner class, and a constitutive feature of plantation logics is the conceptualization of Black life as non-human (Davis et al. 2019; Jegathesan 2021).

While oysters reproduce and disperse unpredictably, they are also cultivated in highly managed areas that—in terms of labor—often resemble agricultural operations, and the human relationships that emerge around oyster production are contained in similar ways. The oysters I harvested or observed being harvested all came from private leases, with few exceptions. Oyster lease owners I worked with were overwhelmingly white, while the employees who maintained and harvested the leases were almost always Black, Southeast Asian, or Latinx. This arrangement of labor on the water reflects the plantations developed on land in southern Louisiana: on both terrains, the movement of non-white people is policed, and their labor is undervalued.

In Louisiana, logics of containment and contamination combine in ways that intensify violence. The intersection of containment thinking with the devaluation of Black life has led to

the layering of multiple extractive uses of the landscape, each of which intensifies the lived effects of toxicity. Pesticide-drenched rice fields adjacent to petrochemical plants are used for crawfish production in the off season; oyster leases or public seed grounds abut oil leases and pipelines in many areas. In fact, the oyster leasing system was not formalized in Louisiana until the rise of oil and gas exploration in the state (Theriot 2018). This situation has led to the continuous contamination of oysters—and the other species people gather alongside them—with petrochemical spills and leaks.

Biomineral Politics: The Reef as Grounds of Solidarity

When I went back to southern Louisiana after a year away, I brought my mother with me. It was the end of a long day of driving, and on our way to Joseph's house, she looked at the Mississippi River levee to our right and told me she couldn't believe we were still driving south. Joseph met us outside, smiling through his mask and wearing his hair longer than I'd ever seen it—he hadn't had it cut since before the pandemic, he said with a huff of laughter. Joseph is the only Black person on the state's all-male legislative Oyster Task Force, but he told us he'd stopped attending meetings during the coronavirus pandemic when the other members refused to wear masks. We sat with him on the carport in the golden, late afternoon sunlight and waved to his nephew and his friends as they walked by, headed back out after a hunting trip. That's all they want to do when they visit, Joseph sighed with an approving smile, and said they'd be back to start cooking a little later on. The last time I'd visited, his backyard had been full of other people: friends, siblings, cousins, and neighbors who had come to help build a small pavilion behind the house and equip it with the outdoor kitchen Joseph's nephew was using to process game. Now, Joseph chatted with me and my mom—"*I see where she gets her good manners.*" And, "*You're*

both family here, just come on down, you don't even have to call."—before he started regaling my mom with one of his favorite topics: the heyday of Black oyster fishing in Plaquemines Parish, and the story of the hand dredge law.

In 1979, Louisiana legislators changed the laws regulating what equipment fishermen could use to harvest oysters, ostensibly to protect public reefs from over-harvesting and other kinds of habitat degradation. In reality, the new regulations meant that poor fishermen with small boats would be unfairly penalized. In the decades leading up to this change, publicly managed oyster reefs were thriving, which meant fishermen who didn't hold a private lease could work for themselves. The new regulations prohibited the use of "hand dredges," which is the common term for any oyster dredge less than two feet wide. Because of their size, these small dredges can be wielded by hand, rather than relying on the motorized system I described above. Using hand dredges requires less equipment and less investment upfront. Dredging by hand on the public reef, an oysterman could make a good living on his own terms, instead of earning low wages working someone else's private oyster leases.

Larger dredges, obviously, pick up more oysters at a faster rate than smaller "hand dredges"—and they are not limited by human strength. Private leaseholders with large dredges and mechanized equipment harvest from publicly managed oyster reefs in addition to their own reefs. That is to say: banning small dredges wouldn't have had an effect on whether or not public oyster reefs were degraded from over-harvesting. Why, then, would the law preclude hand dredges, instead of larger ones? As many Black oystermen will tell you, and as Joseph told my mom: this was an obvious attempt to limit access to a public resource by low-income people of color in a place and time wherein such attempts were explicit, recognizable, and frequent. Instituting a ban on hand dredges limited access to oyster reefs for small-scale fishermen, and it

also meant those fishermen had few options other than to work for—predominantly white—oyster lease holders. Viewed in this light, the hand dredge law was an attempt to undermine the increasing independence of Black oystermen and to hold these communities in place, bound to an unjust labor arrangement in order to survive.

The decline in oysters wasn't just an effect of overharvesting. Black oystermen were being blamed for decreasing oyster populations that—then as now—didn't have a singular or discrete cause.[57] The 1979 hand dredge prohibition directed attention at overfishing in areas that by the late 1970s had been repeatedly polluted by sulfur mining and oil and gas extraction. As the map below shows, oyster reefs east of the Mississippi River abut a broad area of oil and gas development, a trend that began in the 1960s and intensified in the following decades (Free 1966; Fogarty 1983). The impacts of long-term toxic exposure on ecosystems and human health is infamously difficult to prove: as the timeline between exposure and symptoms expands, so do the number of theoretical causes of harm. Legally, this allows corporations to sidestep responsibility for the injuries they inflict—and to continue business as usual (c.f. Jain 2013). Scholars of environmental justice have emphasized that toxic exposure and proximity to harmful pollutants is not a random event; the deadly effects of extractive approaches to economy and environment are felt more acutely by lower income communities of color (Allen 2003, Bullard 1990, Hoover 2017, Voyles 2015, Lerner 2010, Nixon 2011). These same communities are often either blamed for these injuries or praised for their resilience in the face of such harm.

[57] In a similar vein, many white shrimpers blame Vietnamese migrants and refugees for the disappearance of shrimp in nearshore waters since the 1980s. See Kang (2018).

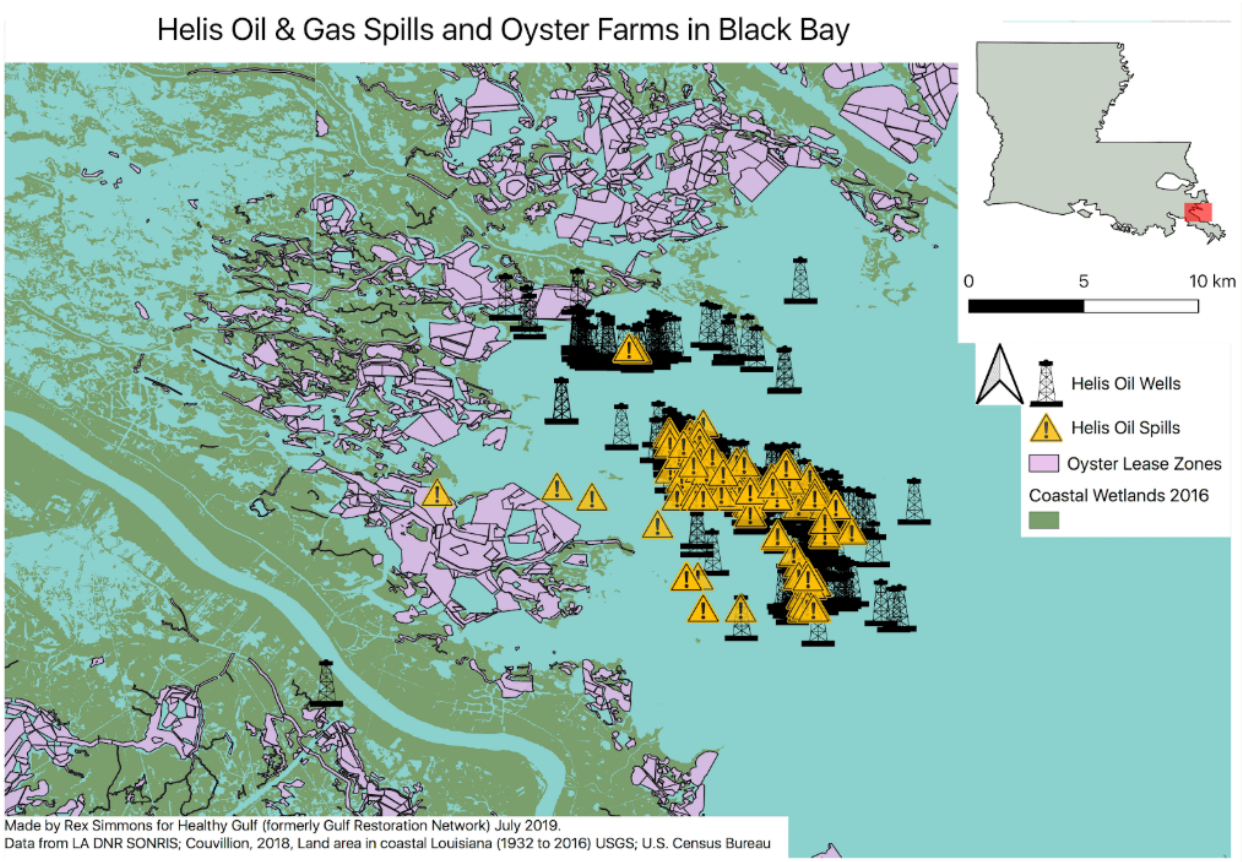

Figure 18: Map of oyster leases and oil spills documented in Black Bay (public reef not pictured). This map was created during a participatory mapping exercise with Healthy Gulf. https://www.antenna.works/mapping-party-no-oil-in-our-oysters/

Environmental injustice can become the grounds for new lines of solidarity, built from a sense of shared vulnerability and emerging with new forms of biopolitical subjectivity. Local historian Reverend Tyronne Edwards points to this unjust law as the starting point of many anti-racist actions in Plaquemines Parish in his community-based history, *The Forgotten People: Restoring a Missing Segment of Plaquemines Parish History*. In response to the exclusionary hand dredge law, fishermen in the parish began meeting with civil rights activists in nearby New Orleans to develop a strategy to repeal it. Through local organizing and protest, Black fishermen and their communities put pressure on elected officials and succeeded in repealing the law. The core organizing group that emerged from this effort was called the Fishermen and Concerned Citizens Association (FCCA), and at the center of their logo was an oyster.

Figure 19: FCCA Logo, FCCA Facebook page

The oyster logo is circled by text denoting the organization name and location, resembling a state seal. Louisiana's seal features a different coastal creature, however: the migratory white pelican. On the official state seal, the pelican is depicted against a royal blue background, a self-sacrificing parent pricking its chest in order to nourish its young with its own blood. This imagery was adapted from a medieval catholic symbol of Christ, the "pelican in her piety," as described by Saint Augustine: a parent sacrificing its own body to nourish its children.

Figure 20: Louisiana State Seal: WikiMedia Commons https://en.wikipedia.org/wiki/Seal_of_Louisiana

Unlike a pelican, an oyster is immobile, bound to place by its own biology. Despite lacking freedom of movement, the oyster in the FCCA logo represents self-sufficiency and abundance, a decoupling from dependence on the unequal distribution of state resources. The contour drawing of an oyster in the logo looks like it could be an aerial map of the very landscape where it lives, a parish comprised as much of water as it is of land. If the purview of the FCCA connects communities across Plaquemines Parish, its logo implicitly indexes the place to which oysters are bound and the solidarity and self-determination that formed alongside the oyster reef.

The FCCA went on to take on many other racial justice issues in Plaquemines Parish,[58] most famously leading a national campaign and strategic movement in 1980 to bring running water to the historic Black community of Ironton, Louisiana. Ironton, a small town on the west bank of the Mississippi River, had until then been purposely left out of government-funded

[58] The FCCA had been on hiatus for many years when I arrived in Louisiana. At the tail end of my fieldwork in late 2019, I learned that meetings had recently begun again.

public works projects. After attaining access to running water in Ironton, the FCCA went on to build a coalition of activists who restored property rights to hundreds of Plaquemines Parish families—of many different backgrounds—whose land had been expropriated in the 1920s to make way for a flood control project that was never finished (see Chapter 1). Work on that project was quickly abandoned in favor of oil development, resulting in fifty years' worth of oil revenues being directed to the state, rather than to those who had once owned the land.[59]

As one interviewee from Ironton told me:

> *"…[T]he Fishermen organization became as a result of the dredging. But it took on so many[…]it was the only source. Like if you had a discriminatory issue in the schools, you went to the Fishermen. No matter what your issue was, you went to this organization, and it was such a huge…because you had chapters in every[…]it was parish wide. So, whatever the issue in your community, you would meet monthly, and you would bring your concern to this organization, and they would be willing to address it."*

It is no accident that the FCCA emerged from the social space of the public oyster reef. In a time of abundance, harvesting oysters from the public reef was a way to earn a living entirely on one's own terms, accessible to anyone with a boat, regardless of race or class. Moreover, oyster reefs and oyster docks are places where people from different towns and communities gather together offshore. The first days that publics reefs are open to fishermen, they are crowded with boats, and the ambience is celebratory. These vessels often work in such close proximity that their crews can recognize each other and exchange greetings; boats are recognizable from a distance because they have different names and license numbers, are painted different colors, are different sizes, and feature different adornments, such as the style of shade structure on deck.

[59] To give an idea of the political climate in Plaquemines Parish at the time: In 1980, the Plaquemines Parish president was the son of Leander Perez, a political boss so invested in an anti-Black segregationist agenda that he chose to be excommunicated from the Catholic church rather than allowing the integration of parish schools (see Chapter 3).

People call out to each other from one boat to another, exchanging greetings. On some occasions, I even observed oystermen idling side by side so that a crew member could jump from one boat to another. New friendships and relationships of trust grow out of this spatially bounded practice that in some ways is not unlike a more traditional brick-and-mortar workplace, a church, or a school.

In southeastern Louisiana, it's often faster and easier to move through space over water than it is to travel over land. This is a linear community: in Plaquemines Parish, there are fewer than five routes—including the river itself—that traverse a north-south course. By car, each bank of the Parish is accessible by just one or two roads that parallel the Mississippi River. Yet, there are no bridges here; to get from one side of the river to the other, you have to pay a dollar to take your car on the ferry. If you're on foot, it's free. People take the ferry to get to work, to go to Christmas concerts, to visit family, and to go to the doctor. If one ferry landing is out of service, you have to drive—or get a ride—to the next one upriver, or to the bridge in New Orleans, which can be up to an hour away. I have known people who contracted to work on private oyster reefs who had to take the ferry to a private dock across the river from the place where they lived, and then had to ride out by boat from there to a privately leased area, a commute that took place almost entirely over water. This lack of roads and bridges constrains and controls movement, limiting access to places and communities on land. Yet modes of transportation over water combined with the geography of the reef unite people from various communities in the social space of offshore areas.

The particular public reefs that generated income and a sense of self-determination for many Black oystermen have been in decline since Hurricane Katrina in 2005 and since the 2010 Deepwater Horizon BP oil disaster (c.f. Burnett 2017). However, aging fishermen still gather at

their local marina to drink, catch up, and collectively remember days of abundance. Although no longer productive of oysters, this reef continues to hold relationships together through story and memory. Groups of former fishermen spend the day sitting in the shade, looking out over an increasingly empty harbor, recollecting what made life good then, and what continues to do so now. This social life of memory is revived and embodied through encounters with the extended geography of the oyster reef—in this case, with a particular harbor (c.f. Agard-Jones 2012, Roane 2022, Reese 2019).

Oysters are able to grow on a wide variety of media, but they cannot thrive in a wide variety of media. Their attachment to place gives them access to a particular surround—one that needs to provide certain qualities in order for them to thrive. Oyster fishermen and restoration professionals direct much attention towards enticing oysters to set upon a particular substrate, despite their surroundings: increasingly unlivable temperatures, salinity, nutrients, or petrochemicals. Other attributes of an environment inhospitable to survival, such as the intensity and scale of oyster farming, are taken simply as conditions of life. Reef cultivators expect oyster bodies settle down within rapidly changing mileu; to attach to a surface, and hold together unstable ground, the remains of disaster, and toxic contamination alongside an expectation of natural productivity and growth.

In the ethnographic opening to this chapter, I described encountering a subaquatic ecology that had been abandoned of oysters, despite seemingly ideal conditions. These are places where the state maintains oyster reefs for public harvest and to augment private oyster stock, where the landscape is marked by aging petrochemical infrastructure and efforts to hold water in specific places to facilitate global trade. Ramshackle oil platforms, canals bearing signs for pipelines, elevated homes, low levees, and bare oak trees that have died from saltwater incursion

are all common sights visible from the water. Here, political and economic investments have been built into the geology of the landscape, concretized through processes that mediate, constrain, and produce a form of life that is constrained by the landscape as much as it relies upon it. Louisiana's oyster reefs biomineralize these relations and social processes into enduring subaquatic, geologic formations. These reefs, however, are not just the residual outgrowth of social processes; they constitute the grounds of an enduring sociality that resists ecologies of domination and extraction that have been organized by generations of white violence.

Oyster reefs are at once places where extractive environmental management becomes ossified in the landscape and also places where socialities of resistance have formed. Physically situated amidst pipelines, shipping channels, and other commercial fisheries, oyster reefs help pin these infrastructures in place, and at the same time form the material grounds for social and economic relationships that become the basis for political solidarities. They instantiate what Katherine McKittrick has described as a Black sense of place: a "spatial [practice] wherein the structural workings of racism kept black cultures in place and tagged them as placeless, as these communities innovatively worked within, across, and outside commonsense cartographic and topographical texts." Black oystermen in southern Louisiana manifest strategies to make increasingly unlivable places emergent of practices of resistance. In this way, an oyster reef is a formation of biomineral politics: it holds together social and material formations within a particular ecology.

Epilogue: A River of No Water

As I have researched and written this dissertation, the water in the Mississippi River has waxed and waned, always conjuring the specter of a flood. My fieldwork encompassed a period when the river was so high that meteorologists worried a small storm surge might cause it to overtop the levees around New Orleans. When it was diverted north of the city, so much freshwater poured through that ecosystems a hundred miles away were altered, and politicians across the state line in Mississippi campaigned on the promise of controlling the river. Throughout the past ten years—indeed, the past several hundred years—engineering plans and projects have been carried out in order to anticipate the problem of too much water; flood control and channelization has long been at the center of river infrastructure projects from the headwaters in Minnesota to the Louisiana delta. The state's suite of restoration projects, which hope to undo some of the damage wrought by centuries of levees, rely on the idea that there will always be enough water, if not too much. And yet, as I write this epilogue in the autumn of 2022, the river is disappearing.

Drought conditions have not been unique to the Mississippi River in recent years. Throughout 2022, national news in the United States flashed with reports of the shipwrecks and human remains revealed by the increasingly low levels in California's Lake Mead, a reservoir fed by the dwindling Colorado River. In New Mexico, friends of mine were mourning dry riverbeds, sharing stories about walking in the strangely sandy center of the Rio Grande's path. Satellite imagery from around the world revealed newly dry landscapes where China's Yangtze

River usually flows and the strikingly bare, brown edges of Germany's shrinking Rhine River (Rodriguez 2022). Across all these regions, low river levels this year have affected agriculture, drinking water supplies, and global trade—cargo ships have had to carry lighter loads to accommodate shallower channels. At the same time, they have had disastrous effects on wildlife and ecosystems that depend on a steady supply of freshwater, systems that are not separate from human economic, social, and biological necessities.

In Louisiana, the idea of a dry river is such an anathema that I once heard a state official make the optimistic suggestion that the new river diversions proposed in the state's plans for restoration will work "like the stock market" – that land will reliably increase over time. This promise, however, relies upon the continuous flow of sediment-rich water. Presuming a watery future is something these restoration projects have in common with critiques of river control projects that imagine a more responsive way of living with water: writing in 2009, sociologist Andrew Pickering proposes letting the Mississippi River jump course once people living in the region are "prepared for it." (8). What it means to be prepared, however, remains unstated. While it's easy to demonize the way the Mississippi River has been managed, doing so detaches the argument from the lived reality of people who often lack the financial means of easy relocation. Pickering continues: "We could [let the river flood] gracefully; we could go with the flow; we could start afresh with a new geography." (8-9). Even Pickering, however, wouldn't have predicted that the problem at hand might be inverted. Too much water trying to carve a different course might be unwieldy, but it is at least predictable; insofar as the problem remains the same it is possible to "prepare" for it. Too little water, on the other hand, presents an entirely different suite of problems.

In the autumn of 2022, a "saltwater wedge" began moving up the historically low Mississippi River. Saltwater has a higher density than freshwater, so this so-called wedge has seeped along the bottom of the Mississippi, gradually infiltrating drinking water supplies, which in southern Louisiana are sourced from river water. In response to this problem, the U.S. Army Corps of Engineers has begun construction of a "barrier sill," a kind of underwater levee made of sediment (US ACE). This is the fourth time since 1988 that the Army Corps has had to build such a structure, yet the presence of a drought in the Mississippi River remains surprising. The sill will keep the deep, salty current from moving further upriver, protecting drinking water in New Orleans and its suburbs. In southern Plaquemines Parish, however, by the time construction began on the sill, drinking water was already so salty that people with chronic health conditions such as diabetes were advised to drink bottled water (Murphy 2022). The parish is importing desalination equipment with the aim of helping residents "and industrial operations," and still places that have been systematically disinvested from continue to be underserved.

Like the future imaginaries that animate the state's restoration projects, this ethnography was conceptualized and written in the shadow of a high river. In fact, I do not think it would be an exaggeration to say that I have lived my life in the shadow of high water: I grew up on the Gulf Coast, where I drove the long way home on days when the road was blocked by high tides. I evacuated for countless hurricanes, lost my childhood home to Katrina, and moved to New York City just in time for Superstorm Sandy. When I returned to Louisiana for fieldwork, I brought a trauma-informed attention to the water along with me, and my own life experiences inflected my decision to study life in and near coastal waters.

Insofar as it fixes a worldview in time, ethnography not entirely dissimilar from infrastructural projects. Neither is nimble and both take years to complete, seeking to answer a

question the grounds of which will have doubtless changed in the meantime. This is not to say that the problem of too much water has become any less urgent, or that its effects have ceased to be unjustly distributed. Rather, I simply want to highlight that the places and people—and oysters—who collaborated with me to manifest this project continue to exist, facing emergent conditions that are not predictable and that may even have been unimaginable from the standpoint at which I began. This glitch in the temporality of ethnography has long animated conversations about anthropological writing (Fabian 1983, Munn 1992, Strathern 2005), and perhaps is a moment at which to learn from the figure of the oyster. Oyster reefs accumulate over the course of generations, but even after the conditions for their emergence are no longer possible, the residue of their liveliness remains: abandoned harbors, old shells, and reefs continue to affect how people come together within and against the water, and how they envision living with its change.

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