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## **Celebrating Wetland Foodways: Joining Ecosystems & Cultures on the Louisiana Gulf Coast**

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# **CELEBRATING WETLAND FOODWAYS: JOINING ECOSYSTEMS & CULTURES ON THE LOUISIANA GULF COAST**

A Thesis

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Master of Landscape Architecture

in

The School of Landscape Architecture

by

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May 2022

*For my mom,  
Meg La Rue*

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## **NOMENCLATURE**

ACS – American Community Survey

CPEX – Center for Planning Excellence

CPRA – Coastal Protection and Restoration Authority

CRS – Community Rating System

EPA – Environmental Protection Agency

GIS – Geographic Information System

LDWF – Louisiana Department of Wildlife and Fisheries

LA SAFE – Louisiana’s Strategic Adaptations for Future Environments

LWI – Louisiana Watershed Initiative

LSU – Louisiana State University

NDRC – National Disaster Resilience Competition

NFIP – National Flood Insurance Program

NOAA – National Oceanographic and Atmospheric Administration

OCD-DRU – Louisiana Office of Community Development – Disaster Recovery Unit

PACIT – Pointe-au-Chien Indian Tribe

RSLR – Relative Sea Level Rise

SLR – Sea Level Rise

UHN – United Houma Nation

USACE – U.S. Army Corps of Engineers

USFWS – U.S. Fish and Wildlife Service

USGS – U.S. Geological Survey

## **ABSTRACT**

Coastal Louisiana is bountiful in cultural and ecological diversity. Spotted with thriving estuaries, meandering bayous and swamps, and rippling grasses of coastal marshes, these wetland ecosystems sequester carbon, purify floodwaters, and buffer against storm surge. Historically, southern wetland landscapes have offered refuge to people of many folk and ethnic traditions escaping violence and oppression. Until the mid-twentieth century, the people living in present-day Terrebonne and Lafourche parishes enjoyed relative isolation from the rest of America, constructing cultural practices that emphasized attachment to wetland plants, animals, and ecosystem dynamics.

Today, changing environmental conditions and high rates of relative sea level rise are causing rapid land loss and habitat destruction, forcing people to reluctantly move inland, “up the bayou.” Wetland ecosystem decline brings increasing vulnerability to hurricanes and flooding, and erodes connections to places, landscapes, and ecosystems central to people’s sense of identity and traditions. This erasure constitutes environmental injustice, separating peoples from their socioecological contexts and their ways of being in the world.

To encourage cultural continuity in the face of environmental change, this thesis looks to expand access to wetland ecosystems in receiver communities up the bayou, imagining renewed domestic relationships between homes and wetlands. It explores the unique and plural ways of relating to the environment through the study of endemic

foodways – food-related traditions that link cultures with geography and are common to the expression of identity. It celebrates and highlights these cultural relationships by mapping samples of wetland foodway traditions from three folk groups – Cajun, Houma Indian, and Black folks – in present-day Terrebonne and Lafourche parishes. Building from local knowledge and resilience projects presented during the 2017 – 2019 the Louisiana Strategic Adaptation’s for Future Environments (LA SAFE) planning process, it draws from oral histories and archival documents, interviews, and literatures on landscape justice and place attachment to propose design strategies that support the continuation of wetland foodway traditions as the sea continues to rise.

## INTRODUCTION

This thesis began as a personal search for ways to repair social and environmental injustice through landscape design in Coastal Louisiana. The concept of landscape justice asserts that environmental and social injustices are integrated and symbiotic, and proposes landscape as a vehicle for reparation or restoration of injustice. It suggests that landscapes can be places that promote equal access to economic, political, social, and cultural rights, especially for those who are more vulnerable. The injustice that this thesis seeks to confront is the forced dislocation of people living along the Louisiana Gulf Coast, a landscape experiencing fast rates of relative sea level rise.<sup>1</sup> Coupled with other anthropogenic factors, the places and ecosystems that weave landscapes into a tapestry of “home” are being erased with land loss. Their erasure erodes the unique ways of life and cultural identities developed through intimate relationships with these wetland landscapes. Land loss cannot be stopped, and significant places will be lost. This thesis seeks to mitigate the harm this process engenders by recognizing, encouraging, and celebrating cultural relationships to coastal wetlands and designing opportunities for their continuation as individuals and communities are forced to migrate inland.

While sea level change is a natural phenomenon, development practices are largely responsible for accelerating the recent period of sea level rise and for implementing infrastructure projects and land use plans that have undermined the

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<sup>1</sup> Relative sea level rise (RSLR) refers to the amount of sea level rise at a given location. It varies dependent on the rate of vertical land movement and the height of ocean water. Ocean circulation patterns, ocean volume, and land subsidence all impact relative sea level rise.

essential ecological rhythms that build and sustain coastal lands and nourish Gulf coastal landscapes.<sup>2</sup> The causes are multiple, complex, compounding, and creeping, obscuring the origins of harm and thereby rendering the injustice harder to see and understand. In Coastal Louisiana, policies and projects routinely elevate economic interests over the self-determination of communities and the health of ecosystems.<sup>3</sup> Through activities such as the construction of the Mississippi River federal levee system, the cutting of channels through marshes, and oil drilling operations, the wetland region of coastal Louisiana is being destroyed by nutrient deprivation, soils that sink from an absence of water, saltwater intrusion, and pollution. These patterns merge to culminate in the rapid erosion of coastal lands and some of the highest rates of relative sea level rise in the world.<sup>4</sup>

Anthony Oliver-Smith coined the term “Development Forced Displacement and Resettlement” (DFDR) to describe the process of involuntarily removing people from their homes and homelands for an ostensibly greater societal benefit.<sup>5</sup> In Louisiana, people living in coastal communities are being slowly displaced from their homes and

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<sup>2</sup> Eustatic sea level, or global average sea level, measures the height of the ocean relative to the Earth’s core. It changes with fluctuations in ocean volume caused by changes in ocean temperatures or increases and decreases in the amount of water held in the ocean. Significant changes to the shape of the seabed may also alter eustatic sea level. The Earth has enjoyed relative stability in eustatic sea levels for the past 4,500 – 6,000 years, but anthropogenic climate change has stimulated a new period of rapid ocean volume expansion.

<sup>3</sup> Allamel, Frédéric. 2016. “The Houma Indians’ Battle Against the Ocean.” *Disaster Prevention and Management* 25 (2): 183-195.

<sup>4</sup> The National Oceanic & Atmospheric Administration reports that the area of coastal Louisiana extending between Atchafalaya Bay and Barataria Bay is experiencing relative sea level rise at a rate of 9mm/year. National Oceanographic and Atmospheric Association. “Sea level trends.” [KML file]. <https://tidesandcurrents.noaa.gov/sltrends/sltrends.html>

<sup>5</sup> Oliver-Smith, Anthony. 2010. *Defying Displacement: Grassroots Resistance and the Critique of Development*. Austin: University of Texas Press.



native landscapes as a result of federal, state, and local land uses and economic development decisions. In the United States, the ethical foundation for these DFDR activities lies in the Takings Clause of the Fifth Amendment, which allows for the exercise of eminent domain to seize homes and displace residents if there is financial compensation and a clear public benefit. Famously, it has been weaponized to coerce displacement for the sake of building highways through Black neighborhoods and green-lighting dams that inundate and decimate communities and places of spiritual importance in exchange for currency in an amount determined by the contemporary “market” price of the property ascribed by outsiders.

Often, it is disenfranchised communities and the places they call home that face DFDR.<sup>6</sup> When such communities are culturally dependent and integrated with the landscapes from which they are forcibly separated, DFDR becomes a legal and socially accepted weapon of cultural erasure, eliminating relationships to places and ecosystems that are critical for the continuation of cultural identity and practices.<sup>7</sup> However, legal acceptance of an action does not make it a just one. In thinking of what justice might look like for the coastal communities experiencing loss of landscapes that are fundamental for cultural preservation, it becomes critical to expand the scope of reparations beyond monetary bounds. Referencing work by Deborah McGregor, Powys Whyte explains this more holistic idea of justice:

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<sup>6</sup> In the American context, “disenfranchised” refers to communities that are typically non-White, poor, or disproportionately lacking in political agency.

<sup>7</sup> Cultural change and adaptation are normal. This thesis does not argue for stasis and does not intend to evoke nostalgia for a past place and time. It seeks to assure opportunities for gradual adaptation rather than traumatic interruption or complete erasure of culture.

*Injustice [...] occurs when the social institutions of one society systematically erase certain socioecological contexts, or horizons, that are vital for members of another society to experience themselves in the world as having responsibilities to other humans, nonhumans, and the environment. Injustice, here, involves one society robbing another society of its capacities to experience the world as a place of collective life that its members feel responsible for maintaining into the future.*<sup>8</sup>

Where the change to and erasure of landscape is a form of injustice, this thesis explores landscape design as an act of reparation. As people migrate inland from the coast, it speculates how landscape design can support the continuation of socioecological relationships with wetland ecosystems.

Concentrating on a coastal area in present-day Lafourche and Terrebonne parishes, this thesis investigates how elements of multiple food cultures may be incorporated into a landscape design process to stimulate more just futures for existing and future residents in receiving communities.<sup>9</sup> It explores options for restoring the health of coastal ecosystems while expanding opportunities for existing and displaced residents to practice traditional lifestyles and preserve cultural identities. Through literature review, stakeholder interviews, historical research including oral histories, and site and community environmental analyses, this thesis will explore landscapes as social infrastructure and investigate the transformational role of landscapes to advance social equity and justice.

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<sup>8</sup> Whyte, Kyle Powys. 2015. "Indigenous Food Systems, Environmental Justice, and Settler-Industrial States." *In Global Food, Global Justice: Essays on Eating Under Globalization*, edited by M.C. Rawlinson and C. Ward, (pp. 143-166). Cambridge Scholars Publishing.

<sup>9</sup> Receiver community is a term used to describe a place where environmentally displaced people have resettled, or where they are anticipated to resettle.

## METHODOLOGY

As its practical foundation, this thesis builds on the community engagement, analysis, and visioning work conducted as part of the Louisiana Strategic Adaptations for Future Environments (LA SAFE) planning process and documented in three parish and regional-scale visioning documents published in 2019: *Our Land and Water: A Regional Approach to Adaptation*, *Terrebonne Parish Adaptation Plan*, and *Lafourche Parish Adaptation Plan*.<sup>10</sup> My work expands upon the concept of a wetland park – identified as a resilience strategy in the Terrebonne Parish and Lafourche Parish adaptation plans – to celebrate Coastal Louisiana’s diverse cultural practices and to knit together additional social, environmental, and economic resilience strategies that residents identified in parish-wide planning workshops in 2017. It envisions the possibility of infrastructure as a vehicle to celebrate local foodways, buttress against cultural erasure, reduce flood risk, and encourage the health of wetland ecosystems.<sup>11</sup>

The research process contains four broad components: literature review, interviews and archival research, multi-scalar site analysis, and foodways diagramming. This thesis began with a recognition that anthropogenic environmental changes are

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<sup>10</sup> Louisiana Strategic Adaptations for Future Environments. *Our Land and Water: A Regional Approach to Adaptation* [Report]. U.S. Department of Housing and Urban Development, 2019.

Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019.

Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.

<sup>11</sup> Bienvenu defines foodways as “the means by which a group selects, prepares, and consumes food... shaped by food taboos, religious prohibitions, climate, economic conditions, regional communications, the availability of specific foods, and culinary aesthetics.” Bienvenu, Marcelle. 2005. *Stir the Pot: A History of Cajun Cuisine*. New York: Hippocrene Books, 107-8.

displacing people from their homes on Louisiana's coast, and with the hopeful idea that landscape design could repair or mitigate some of that injustice. The literature review was structured to develop the theoretical orientation and to explore Indigenous conceptions of environmental injustice. While Western ideas of environmental justice are typically concerned with the equitable distribution of pollution and risk, Indigenous knowledge extends the concept of injustice to apply to disruptions in the ability for humans to maintain healthy relationships with other humans, nonhumans, places, and ecosystems. Gilio-Whitaker explains:

*The origin of environmental injustice for Indigenous peoples is dispossession of land in all its forms; injustice is continually reproduced in what is inherently a culturally genocidal structure that systematically erases Indigenous peoples' relationships and responsibilities to their ancestral places.<sup>12</sup>*

Accordingly, the literature review began with an investigation of environmental justice that focused on the relationships between at-risk landscapes, ecosystems, and Louisiana cultures with an aim of preserving cultural ties to landscape. It understands the tools of environmental injustice to include destruction, pollution, or dislocation from native landscapes, especially when they result in coercive assimilation through erasure of land-based identities and cultural practices. Orienting an understanding of landscape justice to counteract mechanisms and impacts of environmentally grounded cultural erasure became the focus of this work which serves as a personal exploration of a process aimed to proactively assert multiple local folk identities and practices into a landscape design process. In service of this orientation, the literature review expanded to

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<sup>12</sup> Gilio-Whitaker, Dina. 2019. *As Long As Grass Grows: The Indigenous Fight for Environmental Justice, from Colonization to Standing Rock*. Boston: Beacon Press.

include explorations of place attachment and the psychological impacts of displacement, planning for climate change, and local foodways.

Foodways – cultural practices involving the cultivation, collection, storage, preparation, presentation, and consumption of food – figure prominently in the way that people interact with and read their native landscapes. And so, this thesis explores foodway traditions as a means of understanding how different cultural groups interact with and value the landscape.<sup>13</sup> Foodways are also commonly used to establish and maintain cultural identities which makes their study suitable for an area with multiple cultural traditions.<sup>14</sup>

Many folk groups call Coastal Louisiana home. Ideally, all groups with ties to the area would be recognized in this work. However, given the time constraints of the thesis and with a recognition that this work is meant as an exploration of a design process rather than a comprehensive anthropological review of foodway traditions, three cultural groups are indicated as “lenses” that guide the design of the wetland park. These groups – Cajun, Houma Indian, and Black – were chosen after an informal interview with Louisiana Folklife Program Director Maida Owens, a review of folklife resources, and an analysis of present-day distributions in racial identity published by the

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<sup>13</sup> Residents of Terrebonne and Lafourche parishes often talk about experiences of environmental change in terms of changes to gardens, fishing, and hunting. Accordingly, this thesis focuses on those aspects of foodways.

<sup>14</sup> Venable, Jennifer A. 2018. “Cajun Identity Through Food: Between the Exotic ‘Other’ and the White Culinary Imaginary.” *The Southern Quarterly* 56 (1): 118-129.

U.S. Census Bureau (“Census Bureau”) which indicates a continued presence of these groups in the region.

Early interviews with LA SAFE planning practitioners and folklife thought leaders supplement and guide insights gained through literature. Louisiana Folklife Program Director Maida Owens, Center for Planning Excellence (CPEX) Director of Resilience & Adaptation Jeannette Dubinin, and former Louisiana Office of Community Development – Disaster Recovery Unit (OCD-DRU) Resilience Program Analyst Dakota Fisher offered insights into the planning process, unearthed artifacts from public workshops, and shared folklife resources. The original research proposal also called for the interview of the parish presidents and other local experts working in a professional capacity, but when Hurricane Ida devastated the region on August 29, 2021, those plans changed.<sup>15</sup> Out of respect for the urgency and stress of rebuilding, the research program was changed to emphasize archival research in the Louisiana and Lower Mississippi Valley Special Collections at LSU’s Hill Memorial Library, articles and essays created through projects funded by the Louisiana Folklife Program, and oral histories documented in the *T. Harry Williams Center for Oral History*. Resources were combed for insights into the cultural value of wetland plants and animals and their relationships to and roles in local Cajun, Houma Indian, and Black folk traditions.

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<sup>15</sup> Hurricane Ida made landfall at Port Fourchon, southern Lafourche Parish, as a Category 4 storm, clocking sustained winds of 150 miles per hour. The storm wreaked havoc on the area power grid, leaving many stranded without power for upwards of two to three weeks. All public schools closed until late September, with many remaining shuttered into October. Seven months later, many homes and business are still awaiting repair.

Understanding that cultural practices and social life are situated within spatial environments, multi-scalar site analysis began with mapping topography, hydrology, land use, ecosystems, transportation infrastructure data, and with the review of environmental hazards identified by CPRA and in the LA SAFE regional and parish planning documents.<sup>16</sup> The site analysis investigates how water moves through the site, current and potential connectivity and development patterns, and the dispersal of ecosystems and how they are likely to be impacted by anticipated environmental change.

The project concludes with foodways diagramming, which involves a combination of environmental analysis and cultural foodways research. The diagrams illustrate connections between Cajun, Black, and Houma Indian hunting, trapping, and fishing traditions, the wetland ecosystems where they practice those traditions, and the seasonality of those activities.<sup>17</sup> The insights gained from foodways diagramming are then joined with the knowledge and wishes identified in the LA SAFE process to propose a conceptual area plan for a wetland park accessible to receiver communities in the Houma-Thibodaux-Raceland area in coastal Louisiana.

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<sup>16</sup> Coastal Protection and Restoration Authority. Louisiana's Comprehensive Master Plan for a Sustainable Coast. State of Louisiana, 2017.

Regional planning document: Louisiana Strategic Adaptations for Future Environments. *Our Land and Water: A Regional Approach to Adaptation* [Report]. U.S. Department of Housing and Urban Development, 2019.

Lafourche Parish: Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.

Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019.

<sup>17</sup> Louisiana Fish and Wildlife Service regulates hunting, fishing, and trapping of animals on public and private land through the enforcement of quotas, and restrictions of hunting hours or seasons.

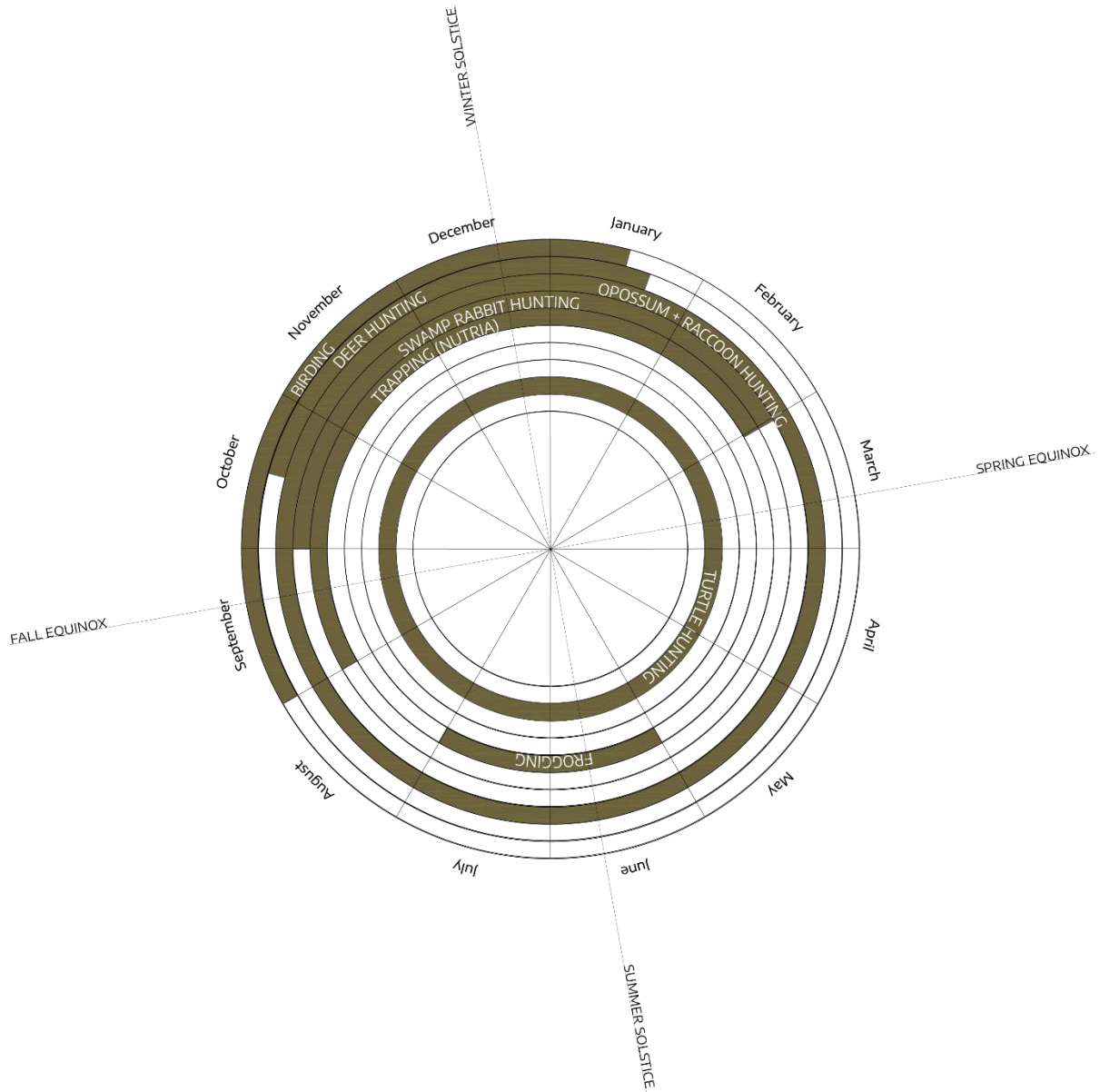


Fig. 1. Seasonal opportunities for hunting, trapping, and fishing in a freshwater forested ecosystem. The types of animals inventoried in the diagram are associated with Cajun, Houma Indian, or Black traditions in present-day Lafourche Parish and Terrebonne Parish.



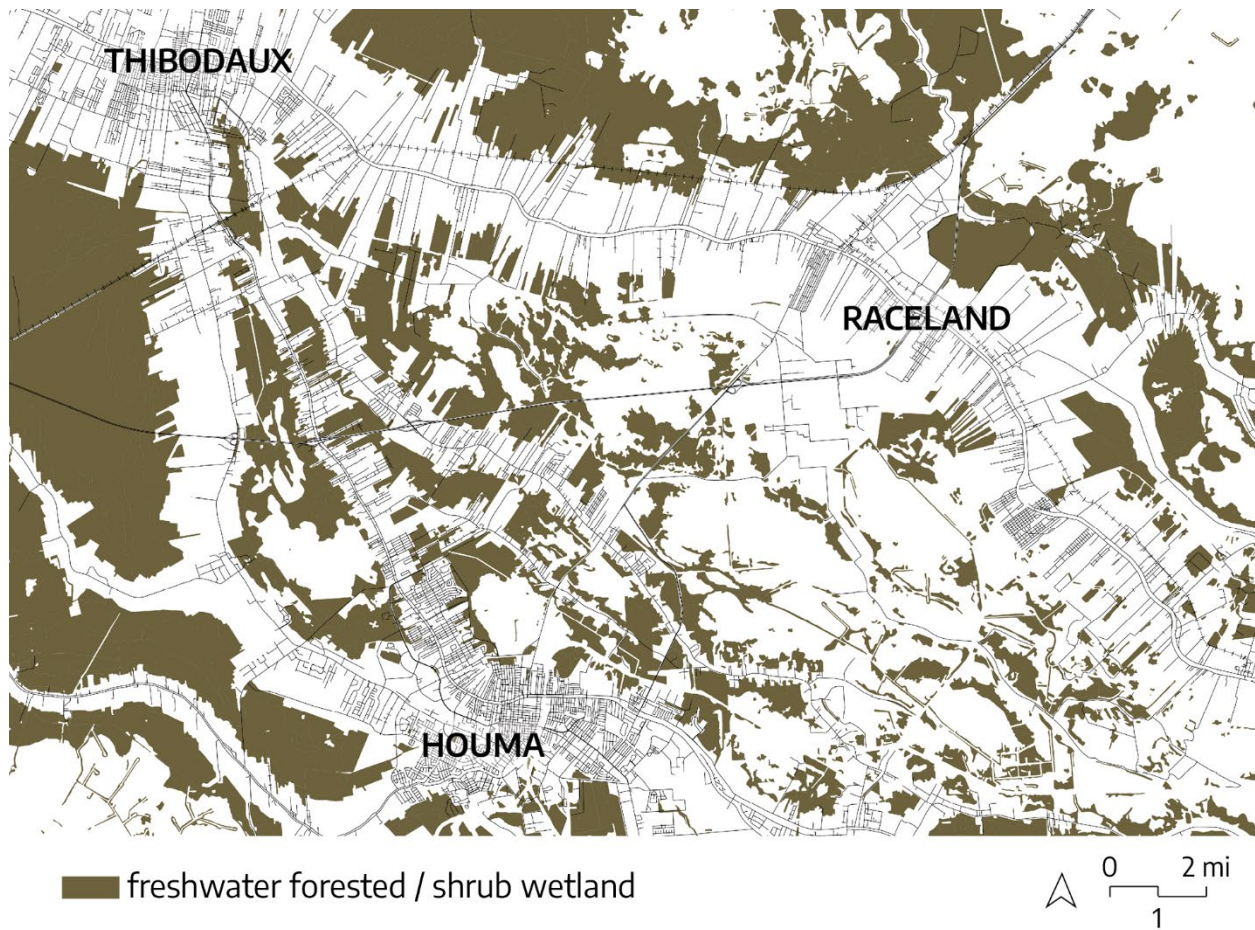


Fig 2. Extents of existing freshwater forested wetlands in the Houma-Thibodaux-Raceland area.<sup>18</sup>

<sup>18</sup> United States Fish and Wildlife Service. "Surface Waters and Wetlands." National Wetlands Inventory. <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>

## ENVIRONMENTAL CONTEXT

In Coastal Louisiana, water reigns supreme as the principal builder and sculptor of land. For millennia, the sediment-laden waters of the Mississippi River have redistributed sediment eroded from its broad watershed, depositing it along its banks at the river mouth. Where the water reaches the Gulf, an abrupt change in current speed causes the river to drop its sediment load in a radiating, fan-like pattern. Larger sediments like sands drop most quickly, settling closest to the river mouth while finer silts travel farther outward before sinking. Over time, the layering sediments build elevation until they come to rise above the ocean surface at low tide, creating new land.<sup>19</sup> Eventually, the river's land building efforts come to impede its path to the Gulf, prompting it to change course in favor of a new, easier outlet to the Gulf where the land building activities recommence.

The Mississippi River built present-day Terrebonne and Lafourche Parishes over the course of two meanders wherein the river ran through present-day Bayou Teche and Bayou Lafourche. The origins of the land remain evident in aerial photographs that show fingers of bayous flanked by levees extending through marshes and into the Gulf.<sup>20</sup>

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<sup>19</sup> Keddy, Paul. A. 2008. *Water, Earth, Fire: Louisiana's Natural Heritage*.

<sup>20</sup> The levee land-building process is like that of lobe formation except that the largest sediments are deposited along the riverbanks when the river is in flood, building high ground along the river's edge. Closer to the coast, it is common for the natural river levees to be the highest ground, most suitable for permanent settlement.

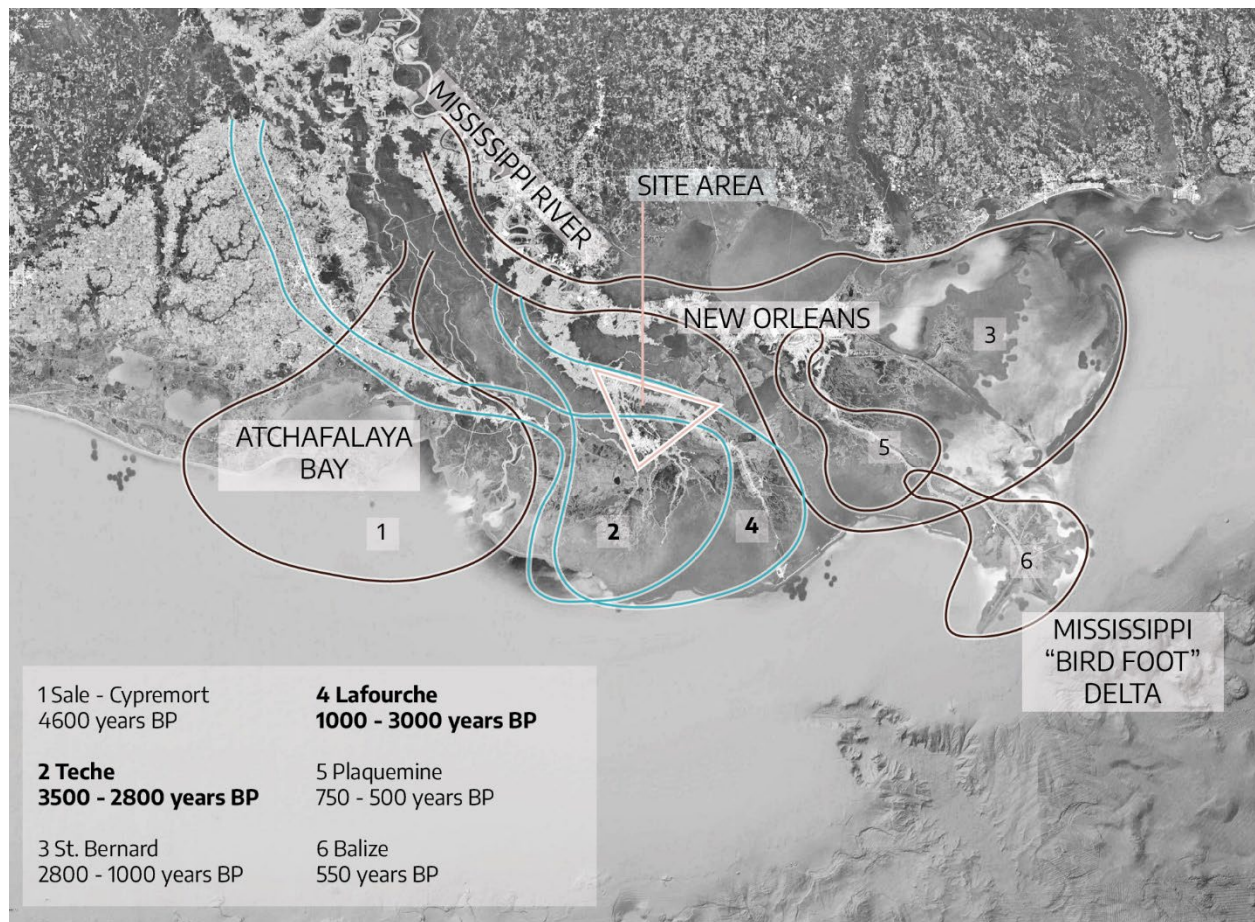


Fig. 3. History of the Mississippi Delta Lobes. Adapted from M. Hillen, first given by Kolb and van Lopik (Day et al., 2007)<sup>21</sup> Annotation by the author.

Having been borne from flood, the resultant low elevation lands are relatively flat with subtle variations in elevation demarcating significant changes in ecosystem type and function.<sup>22</sup> The topography signifies the regularity of flooding, with soils that depend on rain and floodwater to maintain their volume and height. Floodwaters also introduce nutrients into wetland ecosystems, nourishing plants that have adapted to

<sup>21</sup> Hillen, Marten. 2009. "Wave Reworking of a Delta: Process-based Modelling of Sediment Reworking Under Wave Conditions in the Deltaic Environment." MSc thesis, Delft University of Technology.

<sup>22</sup> Keddy, Paul. A. 2008. *Water, Earth, Fire: Louisiana's Natural Heritage*.

these conditions and creating rich estuarine environments for fertile spawning grounds for fish, shrimp, and oysters.

Ecosystems in this area are largely defined by the frequency and depth of flooding and the salinity of floodwaters which is influenced by their proximity to the coast or distributions of channels that permit inland incursions of brackish and saline seawaters. Wetland ecosystems are dispersed in a gradient extending from inland ecosystems and into the Gulf. Freshwater forested, shrub, and emergent wetlands (“swamps”) exist in inland areas subject to seasonal freshwater flooding. They slow and clean floodwaters moving through them, taking up a portion of the floodwater’s excess nutrients that would pollute and endanger the health of estuaries down the bayou. Moving toward the coast, swamp wetlands transition into estuarine and marine wetlands (“marshes”) in the tidal zone where freshwater runoff and seawater intermix in brackish waters that flood the marshes daily. Given the gradual slope of the marshes, the tidal zone is wider than most other places in the continental United States. Notably, marshes are some of the most productive carbon sinks, developing significant root systems and trapping organic matter beneath the water. Oysters, fish, and a host of other marsh-dependent animals thrive here, and the estuarine and marine wetlands play a critical role in greeting and feeding the millions of migratory birds passing over the Gulf of Mexico (“the Gulf”) along the Mississippi Flyway.



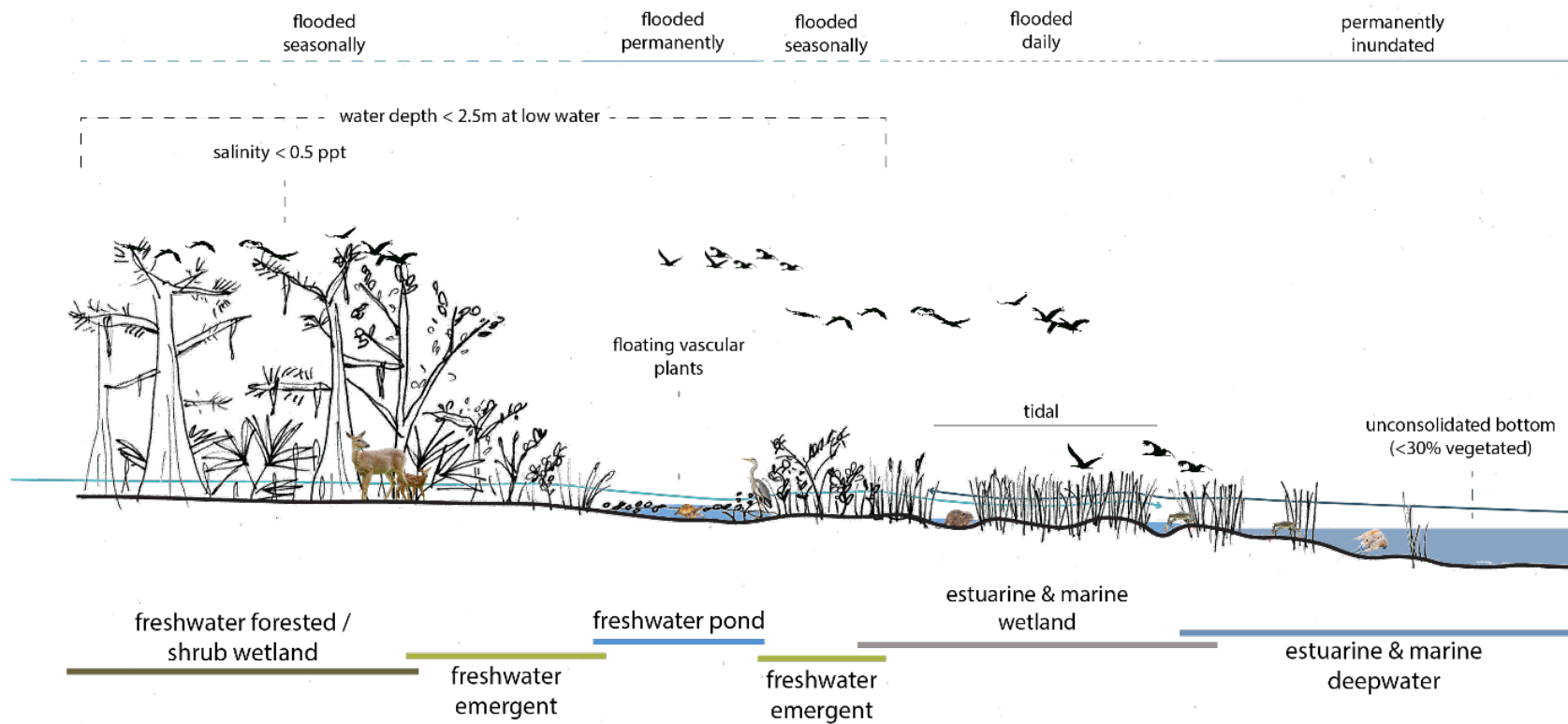


Fig. 4. Illustrative wetland transect. <sup>23</sup>

<sup>23</sup> United States Fish and Wildlife Service. "Surface Waters and Wetlands." National Wetlands Inventory. <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>

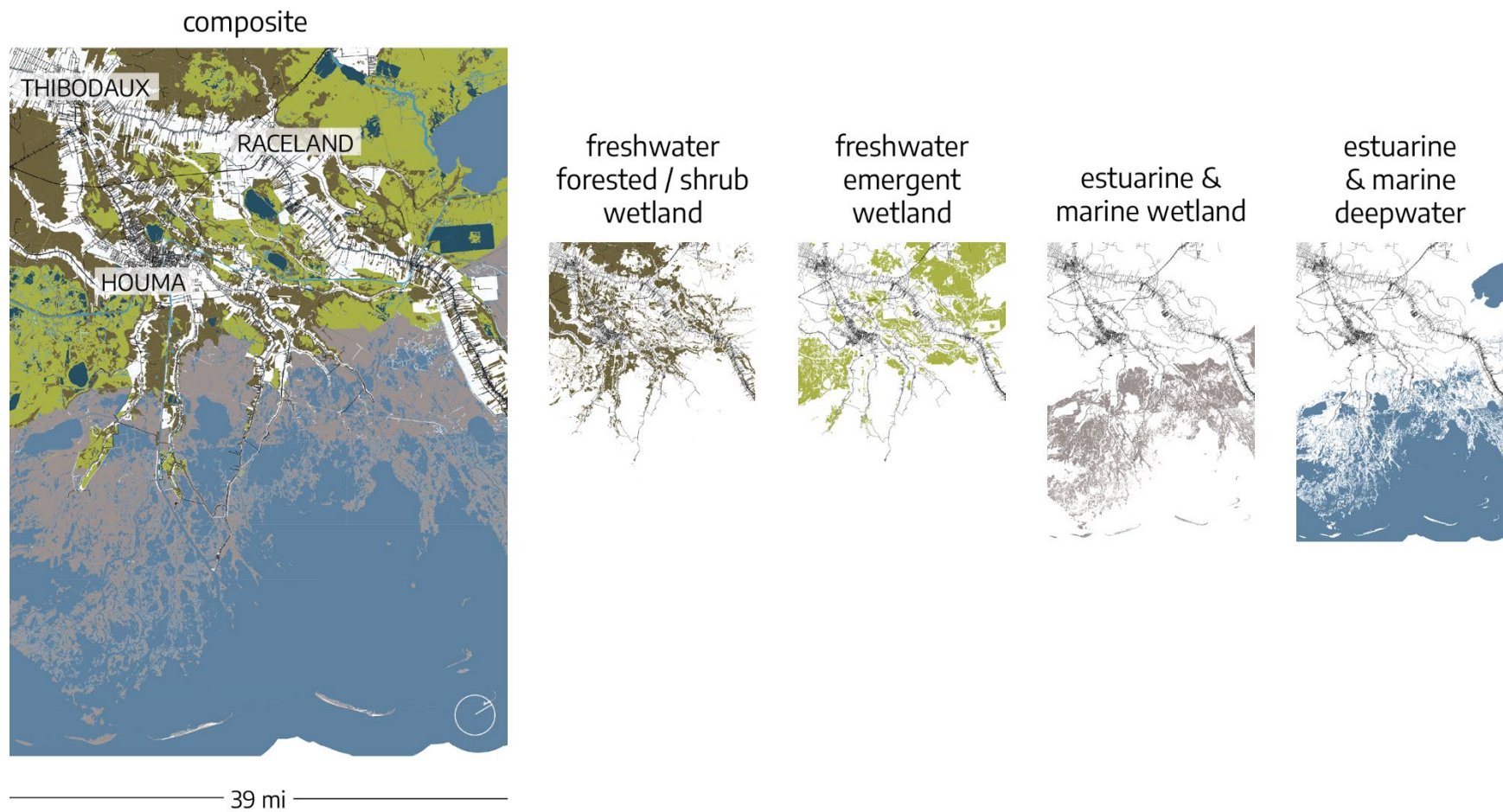


Fig. 5. Wetland ecosystem transition, freshwater forested wetland to the Gulf.<sup>24</sup>

<sup>24</sup> United States Fish and Wildlife Service. "Surface Waters and Wetlands." National Wetlands Inventory. <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>

The abundance of game and fishing, the fertility of levee soils, and the relative isolation afforded by a lack of easy and direct transportation options attracted many people from many different cultural groups to settle the area over the years.<sup>25</sup> Those who call Coastal Louisiana home have adapted their lifestyles to live with the water and flooding in all its forms – pluvial, alluvial, and coastal. However, land use policies and infrastructure projects have significantly altered the ecosystem dynamics in coastal Louisiana, quickening environmental changes that threaten the future and health of the coastal ecosystem.

Leveeing the Mississippi River drastically altered the hydrology and land formation processes in the delta region.<sup>26</sup> The tall levees, intended to protect valuable agricultural areas and plantation towns from major flood events, separated bayous, creeks, and the rest of the flood plain from their sediment source. Loss of critical nutrient and organic matter supplies causes downstream marshlands to decay. The issue is compounded by pollution from oil extraction and exploration activities, and by increased salinity that accompanies the creation of canals cut through the marsh.<sup>27</sup>

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<sup>25</sup> Pitre, Glen (Interviewer). "Memories of Terrebonne oral history." *Memories of Terrebonne Parish 1890-1945*.

LeBlanc, (Jr.) Augustine, J. "A.J." "Augustine J. 'A.J.' LeBlanc, Jr." 1993. *Bayou Lafourche Oral History Series*. 24 October 2010. <https://www.louisianadigitallibrary.org/islandora/object/lsu-thwcoh-bayoulafourche%3A3>

<sup>26</sup> Allamel, Frédéric. 2016. "The Houma Indians' Battle Against the Ocean." *Disaster Prevention and Management* 25 (2): 183-195.

<sup>27</sup> Burley, David, Pam Jenkins, Shirley Laska, and Traber Davis. 2007. "Place Attachment and Environmental Change in Coastal Louisiana." *Organization & Environment* 20 (3): 347-66.

Allamel, Frédéric. 2016. "The Houma Indians' Battle Against the Ocean." *Disaster Prevention and Management* 25 (2): 183-195.

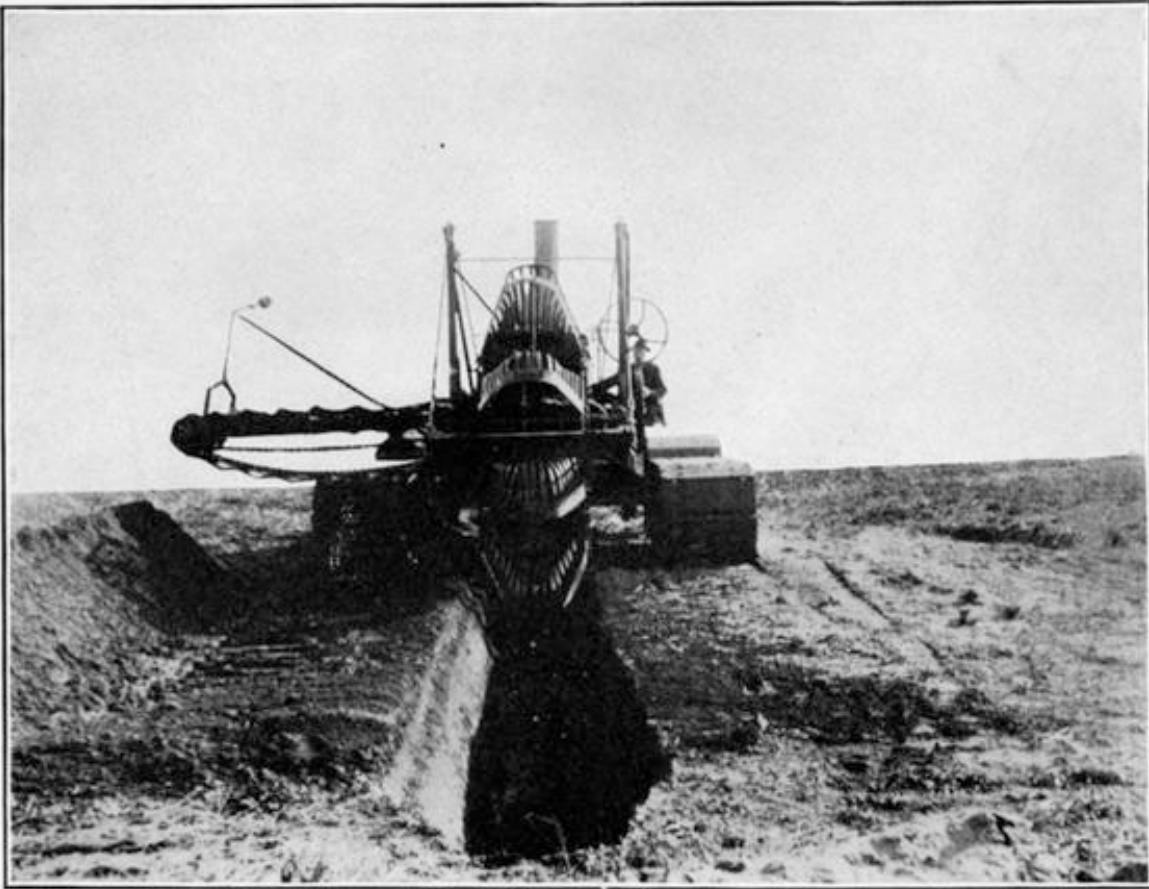


FIG. 1.—APRON-TRACTION DITCHER CUTTING LATERAL DITCH ON AREA NO. 3, RACELAND, LA.

Fig. 6. An apron-traction ditcher cutting a lateral ditch for a pipeline in Lafourche Parish circa 1918.<sup>28</sup>

The ecosystems that comprise Louisiana's coastal landscapes are deeply interconnected. Degradation of one ecosystem inevitably places stress on another. Extending this relationship through the wetlands and into the Gulf, unfiltered excess

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<sup>28</sup> Okey, Charles W. 1918. *The Wet Lands of Southern Louisiana and their Drainage*. U.S. Department of Agriculture Bulletin No. 652. *Source*: Louisiana Sea Grant College Program via Louisiana Digital Library.



agricultural runoff traveling down rivers and bayous that feed the Gulf has created a band of hypoxic environments called the Dead Zone that kills animals and plants who enter it. While environmental policies from places as far as the Northern Plains permit the application and runoff of harmful fertilizers, the loss of swamps and marshes reduces capacity of the coastal area to filter and uptake some of those nutrients before they enter the Gulf.

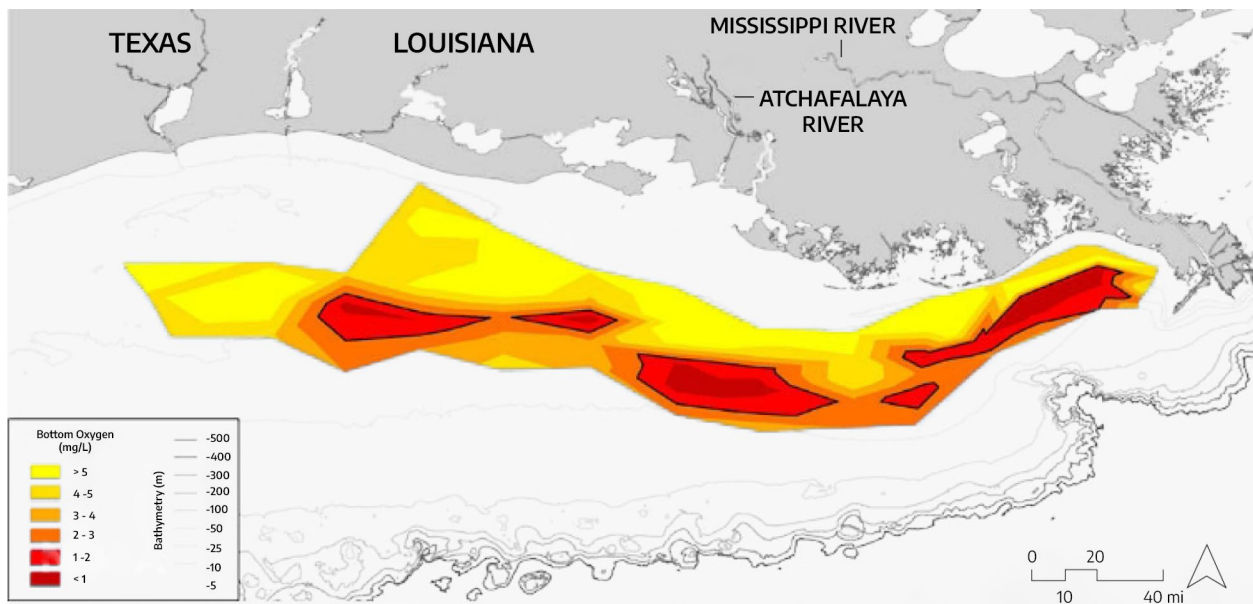


Fig. 7. Image indicating the extent and severity of the hypoxia in the Gulf Dead Zone in the summer of 2020. NOAA. 2020. Map of Measured Gulf Hypoxia Zone, July-August 2020. (Visual adaptations by the author.)

These compounding land use policies and infrastructure projects, coupled with sea level rise and powerful hurricanes, are exacerbating land loss. Deltas naturally experience decay, but infrastructure, land management, and a globalizing carbon-intensive economy have markedly reshaped patterns and rates of land loss and land

gain. As environmental changes cause seas to transgress inland, wetland ecosystems must deteriorate or retreat inland.



Fig. 8. Projected land change by 2050.<sup>29</sup>

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<sup>29</sup> Coastal Protection and Restoration Authority. 2017. "Land Change." [DBF]  
<https://cims.coastal.louisiana.gov/masterplan/GISDownload/>

## PLANNING CONTEXT

In 2017, the State of Louisiana Office of Community Development (OCD)<sup>30</sup> partnered with the Foundation for Louisiana to launch a participatory planning project in six coastal parishes that suffered significant damage from Hurricane Isaac in 2012. The planning initiative, named Louisiana Strategic Adaptation for Future Environments (LA SAFE), received \$41 million through a U.S. Department of Housing and Urban Development (HUD) National Disaster Resilience competitive grant program. The mission of LA SAFE was to “wor[k] together for community resilience, economic prosperity, and a better quality of life for everyone in Louisiana.”<sup>31</sup> To that end, LA SAFE established three overarching goals:

1. *To generate parish-wide, community-driven adaptation strategies focused on opportunities for residents and stakeholders to proactively adapt and prepare for anticipated environmental changes over the next 10, 25, and 50 years.*<sup>32</sup>
2. *To implement a catalytic project in each of the six parishes that demonstrates adaptive development practices that conform to current and future flood risks. Furthermore, LA SAFE is intended to identify and support development of resilience-building projects and practices that can serve as models for the entire region.*
3. *To create a statewide adaptation model that enhances long-term sustainability and resilience for all Louisiana parishes.*<sup>33</sup>

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<sup>30</sup> The Disaster Recovery Unit (OCD-DRU) within the State Office of Community Development directed the initiative.

<sup>31</sup> LA SAFE defines resilience as “the capacity of individuals, communities, and systems to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience. Louisiana Strategic Adaptations for Future Environments. *Our Land and Water: A Regional Approach to Adaptation* [Report]. U.S. Department of Housing and Urban Development, 2019.

<sup>32</sup> *Ibid.* LA SAFE defines adaptation as “the process of modifying behavior to suit changing environmental conditions.”

<sup>33</sup> *Ibid.*

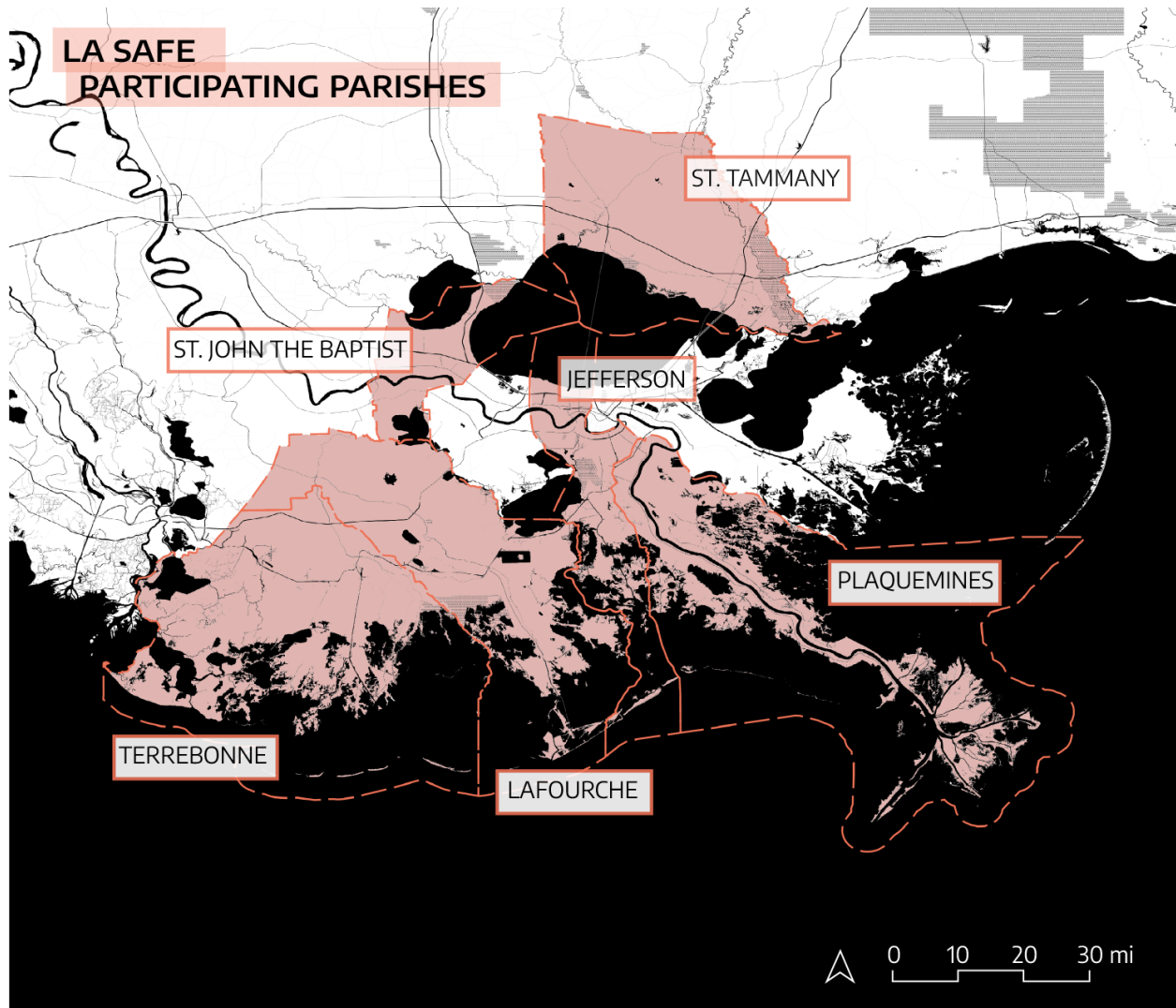


Fig. 9. Political boundaries of the parishes participating in LA SAFE.<sup>34</sup>

In Louisiana, LA SAFE’s participatory planning process was the first of its kind. The Office of Community Development worked together with the Coastal Protection and Restoration Authority (CPRA) to create widely legible illustrations of existing and future flood risk at the community level. For some residents participating in the planning

<sup>34</sup> United States Census Bureau. 2019 TIGER/Lines Shapefiles. SHX file.  
<https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.2019.html>

process, the community meetings constituted their first candid conversations with government officials and planners about ongoing and projected environmental changes.

The State partnered with the Foundation for Louisiana to support an equity-focused outreach and engagement campaign and worked to demonstrate transparent and responsive government participation.<sup>35</sup> Five rounds of meetings were held in each parish at locations strategically selected by residents to encourage participation from people living outside of city centers. Archival notes and photographs from each meeting were published online along with illustrations that offered spatial context for resident-generated ideas for possible resilience projects and sites. LA SAFE staff took an iterative approach to communication – returning to communities having researched ideas, created maps, and collected data in response to requests by residents in prior meetings.

In 2019, the project culminated with the publication of one regional and six parish planning documents and the allocation of \$1 million for each parish to support the implementation of a catalyst project meant to spur resilience-minded development within the region. The unfunded projects were developed conceptually in the LA SAFE planning documents, preparing them for future grant applications.<sup>36</sup> Anecdotally, several of these projects (e.g., Safe Harbors in Bayou Lafourche) are being pushed forward by local, state, and federal actors.

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<sup>35</sup> Ravella, Peter and Tyler Buckingham, interview with Liz Williams Russell, *American Shoreline Podcast*, Podcast audio, November 29, 2020.

<sup>36</sup> It is important to note that while resident participation was affirmatively sought and transparently communicated, technical experts and political leaders played significant roles in defining and ranking the final projects.

## **LA SAFE Regional Adaptation Plan**

The regional planning document thematically ties the parish plans, creating a framework for cross-jurisdictional solutions while emphasizing the inherent regional interdependency of factors contributing to each community's vulnerability, adaptation potential, and resilience. It supports the parish-level visions while illustrating their relationships within a larger system. Like the Louisiana Watershed Initiative, the regional plan encourages collaboration across jurisdictional boundaries.<sup>37</sup>

One such example of cross-jurisdictional planning is the Houma-Thibodaux-Raceland development triangle, an area plan concept that spans the parishes of Lafourche and Terrebonne and forms the foundation of this project's site selection.<sup>38</sup> With the City of Houma located in present-day Terrebonne Parish, and the cities of Thibodaux and Raceland in present-day Lafourche Parish, the cities are connected by two critical, historic bayous that shape the major transportation corridors and whose levees offer high ground for residents and businesses escaping encroaching seas.

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<sup>37</sup> The Louisiana Watershed Initiative was founded after the Great Flood of 2016 that damaged fifty-six of Louisiana's sixty-four parishes. <https://watershed.la.gov/>

<sup>38</sup> LA SAFE defines a small area plan as "any plan that addresses the issues of a portion of the city. Small area plans can cover three different geographic scales – neighborhood, corridor, and district regardless of the size of the area. Small area plans cover a specific geography that often has a cohesive set of characteristics." LA SAFE Regional Adaptation Plan (page 113)



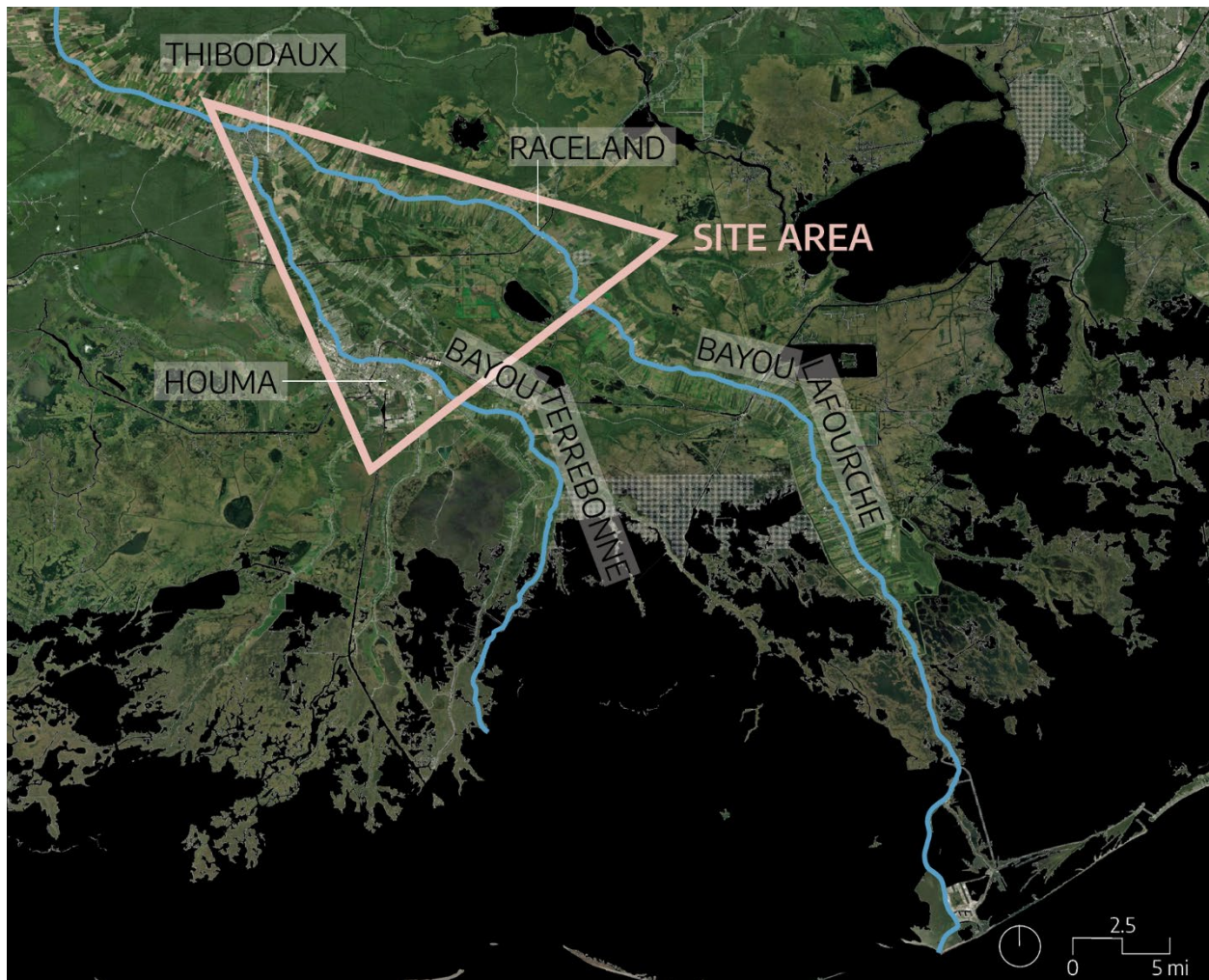
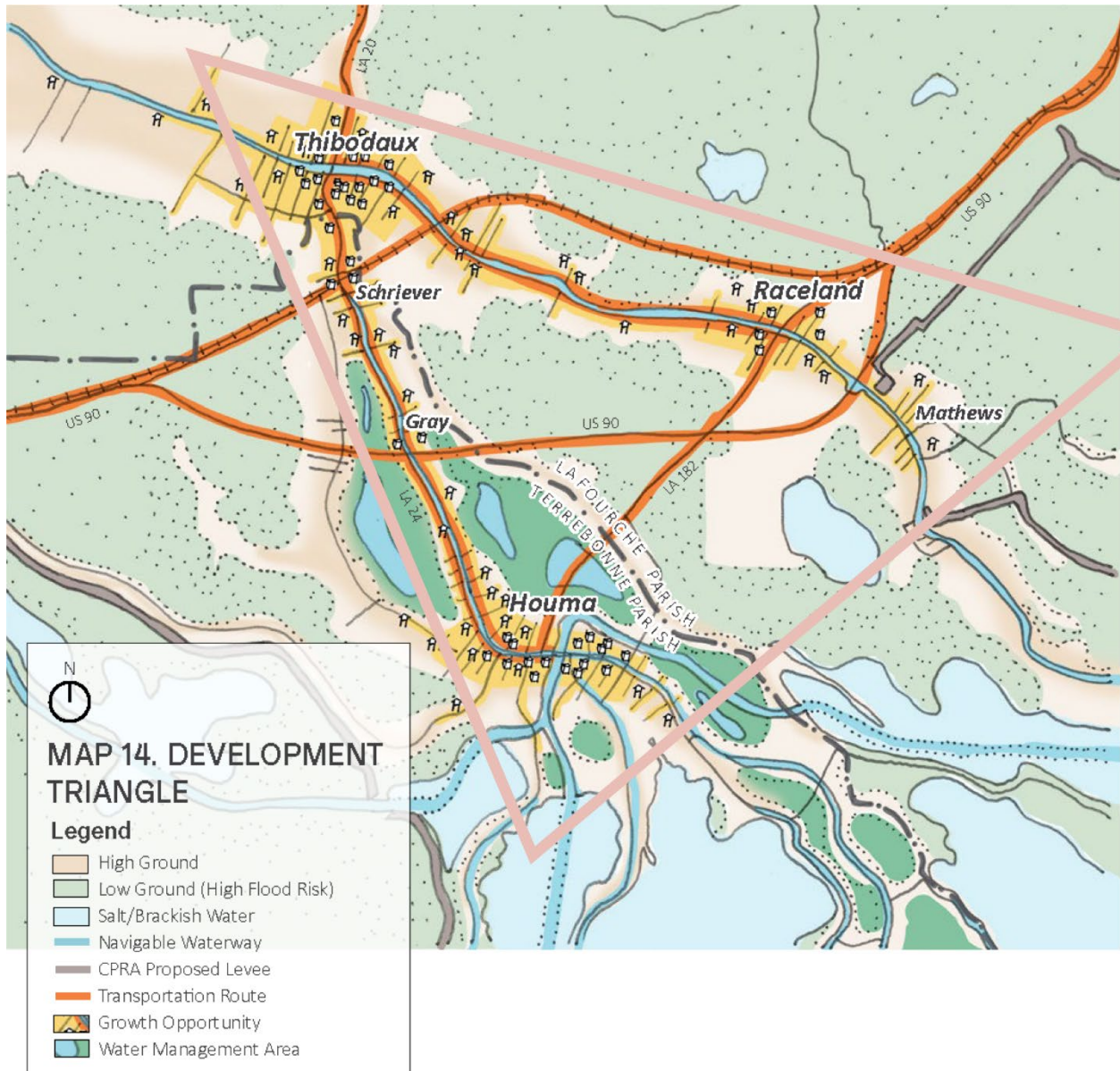


Fig. 10. Project site area.



## The Houma-Thibodaux-Raceland Development Triangle

Fig. 11. Houma-Thibodaux-Raceland Development Triangle.<sup>39</sup>

<sup>39</sup> Louisiana Strategic Adaptations for Future Environments. *Our Land and Water: A Regional Approach to Adaptation* [Report]. U.S. Department of Housing and Urban Development, 2019.



For centuries, people have settled along Bayou Lafourche and Bayou Terrebonne, constructing homes, businesses, and pathways on the high ground afforded by their levees and relying on their perennial waters for transportation and sustenance. Today, major regional evacuation routes still follow these lines which, outside of cities like Houma and Thibodaux, retain a rural or small-town development pattern. Between the corridors lies a mosaic of wetland ecosystems that offer potential for the expansion of a public park and recreation opportunities for existing and future residents. The regional plan proposes the development of these corridors as receiving communities for people moving up the bayou, identifying a series of neighborhood centers along the waterways that could serve as cultural and resource hubs for those who settle here. Census data indicate that this migration trend is already underway with both Lafourche and Terrebonne Parish experiencing population decline in communities down the bayou and population increases in neighboring cities and towns just up the bayou.

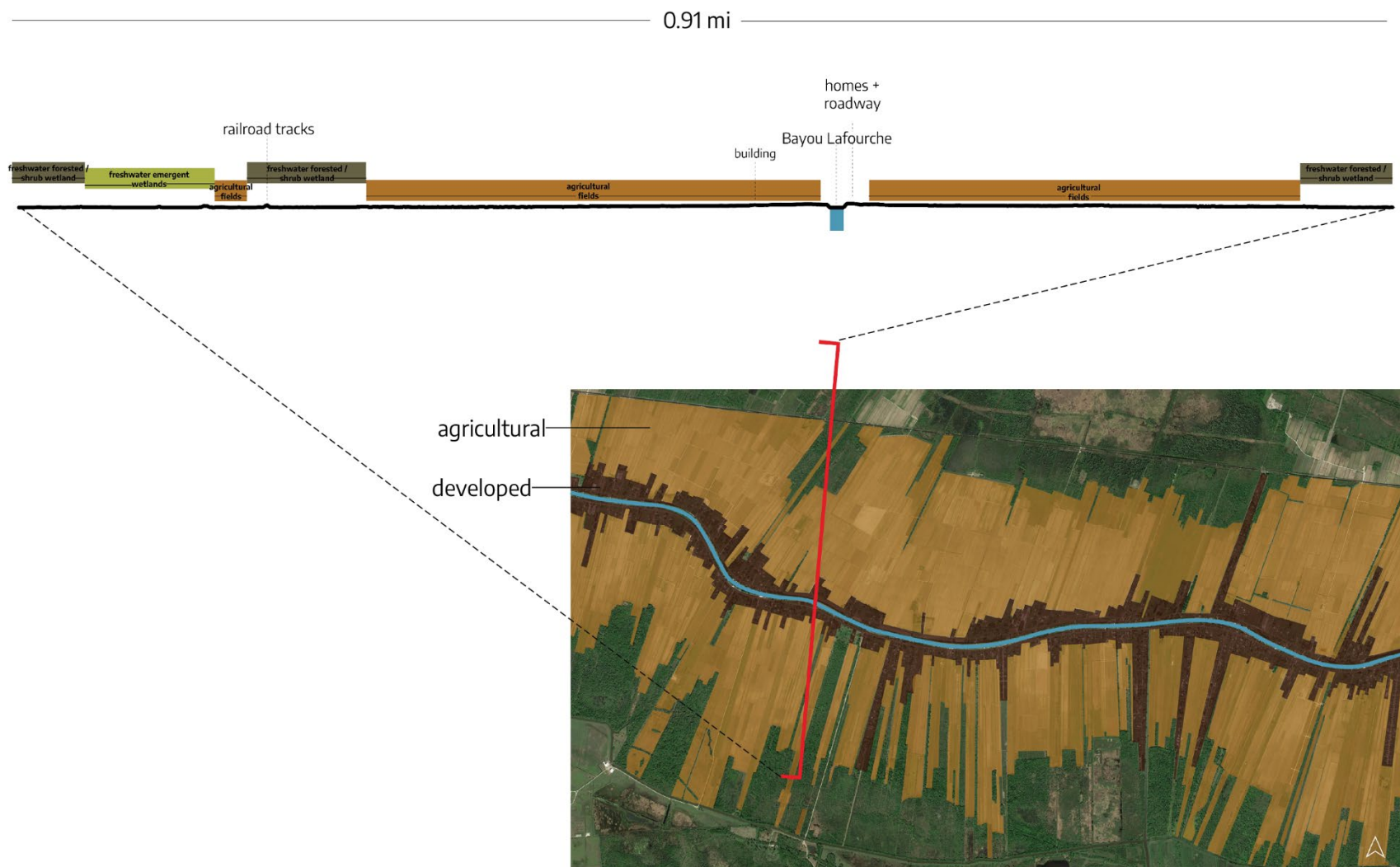


Fig. 12. Section of Bayou Lafourche. Development is concentrated along the levees where elevation is highest.

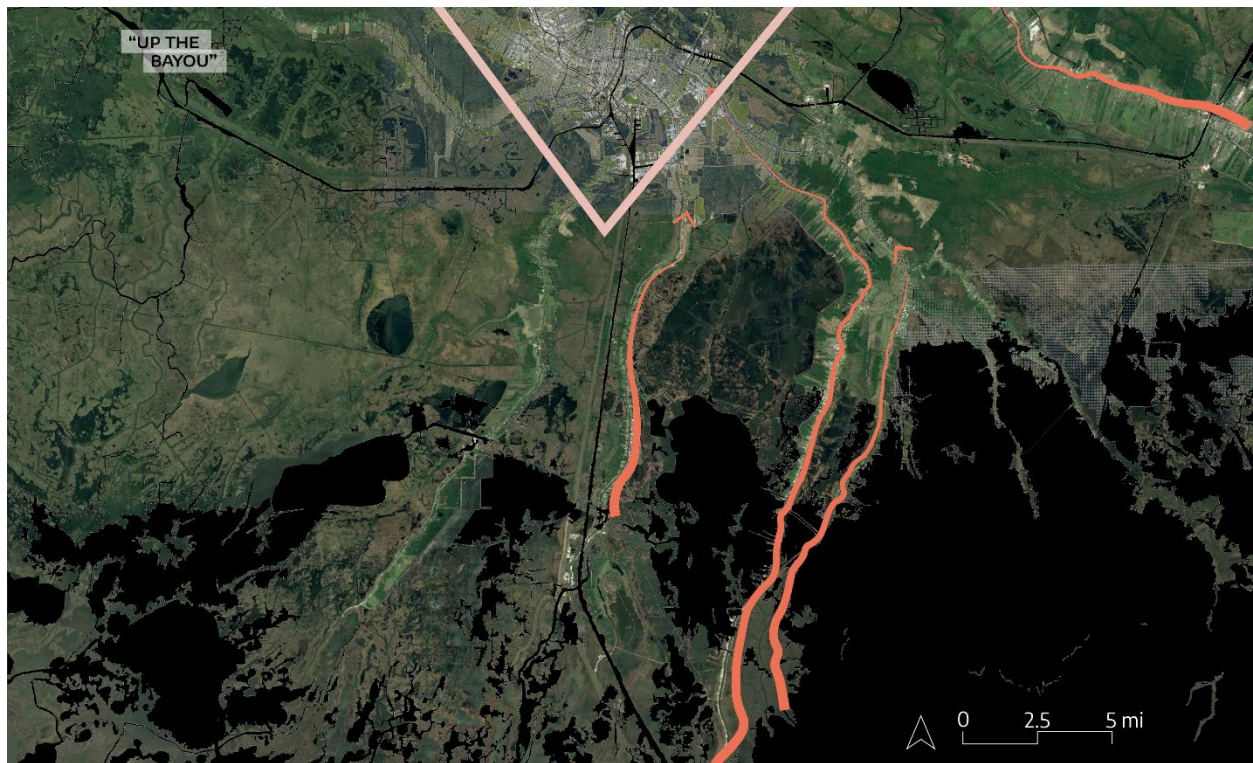


Fig. 13. “Up the Bayou.” In Coastal Louisiana, residents often use the terms “up the bayou” or “down the bayou” to describe their relative locations. As wetlands are lost to the sea, coastal residents often move to towns up the bayou.



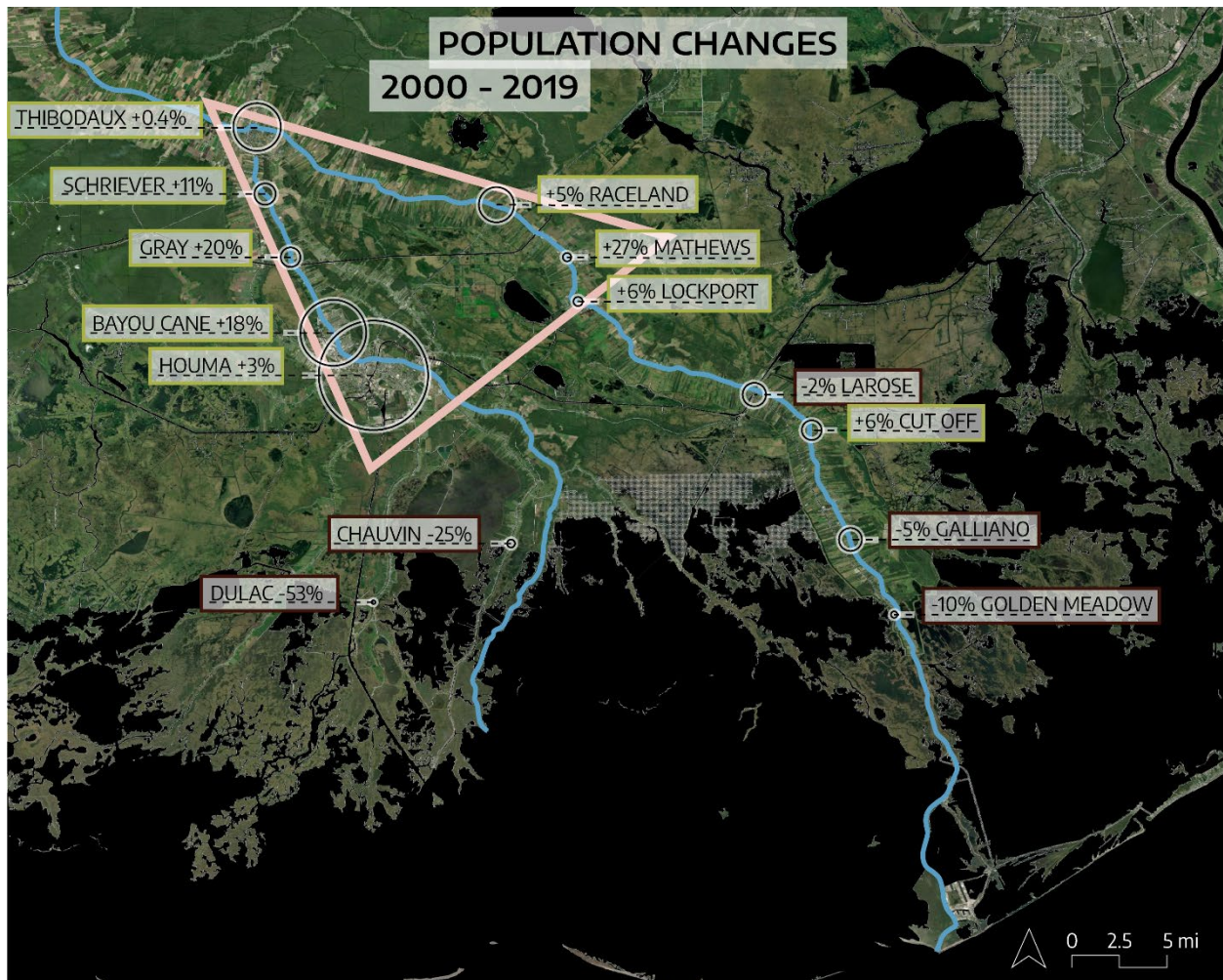


Fig 14. Population changes in towns along Bayou Lafourche and Bayou Terrebonne, 2000 – 2019.<sup>40</sup>

The regional vision outlines fifty-seven broad-reaching policy and design recommendations and implementation strategies aimed to guide multi-scalar and cross-

<sup>40</sup> United States Census Bureau. 2000 Decennial Census, Table B01003, "Total Population." <https://data.census.gov/cedsci/advanced>  
 United States Census Bureau. 2019 American Community Survey 5-Year Estimates, Table B01003, "Total Population." <https://data.census.gov/cedsci/advanced>

jurisdiction resiliency projects moving forward. Examples of goals pertinent to this thesis include:

- “Develop watershed-based stormwater policies across jurisdictional boundaries.”
- “Promote the use of shared detention areas adjacent to property owners.”
- “Create small area plans to accommodate future development in low-risk areas.”
- “Improve connectivity between transportation routes and natural destinations.”
- “Assist the fishing industry to adapt and distribute locally.”
- “Provide ecotourism opportunities at the state level.”
- “Capture the culture and history of high flood risk areas.”

In Lafourche and Terrebonne Parish, several census tracts did not meet all three of the HUD-defined and nationally applied threshold requirements for project funding: “‘most impacted,’ ‘most distressed,’ and having ‘unmet recovery needs as a result of a qualifying disaster.’”<sup>41</sup> While Hurricane Isaac tracked directly over the Terrebonne and Lafourche Parish political boundary, the areas on the coast and on the eastern side of the storm sustained the most damage.<sup>42</sup> As a result, some census tracts in the two

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<sup>41</sup> Louisiana Strategic Adaptations for Future Environments. *Our Land and Water: A Regional Approach to Adaptation* [Report]. U.S. Department of Housing and Urban Development, 2019. (page 22)

<sup>42</sup> In Louisiana, the right side (defined in relation to its trajectory) of a hurricane or tropical depression is colloquially referred to as “the dirty side” or “the bad side.” Given the rotational nature and physics of a

parishes were disqualified for project site selection. However, residents in these areas did participate in the planning process, and their wisdom and ideas are documented in the planning artifacts and contributed to the project scopes and design concepts.

### **Terrebonne Parish Adaptation Plan**

In Terrebonne Parish, residents developed a fifty-year community vision that emphasizes “smart growth and integrated water management,” recommends prioritizing investment in green and blue infrastructure, and establishes Terrebonne Parish as a “cultural and ecological destination.”<sup>43</sup> It advocates for projects that support the longevity and defensibility of developable areas and evacuation routes and calls for the ecological restoration of low-lying, undeveloped areas to enhance their capacity for stormwater detention while simultaneously cultivating them as a resource for recreation and tourism.

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hurricane or tropical depression in the Northern Hemisphere, the right side of the storm receives the brunt of the rain fall, high winds, and tornadoes.

<sup>43</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 82.

# 50-Year Vision

## Louisiana's Bayou Country

Characterized by its numerous Gulf Coast bayou communities, Terrebonne Parish draws residents and visitors alike to its diverse environment, wildlife, and Cajun culture. As these assets are faced with increasing risk, LA SAFE envisions a future where, parallel to the ongoing and planned coastal protection and restoration efforts, investments are prioritized on higher ground. Blue/green corridors and parkways store excess water in the landscape and sustainable industries diversify the economy. In coastal high-risk areas, the challenge of rising water is turned into an opportunity for new cultural and ecological destinations with support for the fishing industry, enhanced connectivity, and improved evacuation routes.

### Smart Growth and Integrated Water Management

Anticipating continued population movement to low-risk areas, Terrebonne Parish directs growth to higher ground north of the Intracoastal Waterway and utilizes natural systems for stormwater management.

- More focused, mixed-use development patterns and town centers between Houma and Thibodaux spur economic development and promote public health through walkable, bikeable neighborhoods.
- Environmental assets and natural buffers are preserved and protected, and new development is restricted in the floodplains.
- Blue/green networks of engineered landscapes delay and store stormwater, reducing flooding and drainage-induced subsidence while providing amenities with multiple benefits to the community.
- Water conveyance across ridges is minimized and water is held in the basins and as close to the source as possible.
- Green infrastructure is incorporated in all new development and redevelopment projects.
- Smart retrofits use permeable materials to replace impervious surfaces.
- Sustainable industries diversify the economy and provide opportunities for waterway redevelopment.

### Investment Prioritization

South of the Intracoastal Waterway, bayou communities prioritize new investments on higher ground and stable soils.

- Communities in moderate-risk areas along the bayous consolidate services and amenities around hubs on higher ground, with agriculture and floodplain management in between.
- Structures are elevated on piers.
- Environmental assets and natural buffers are preserved and protected, and new development in the floodplains is restricted.
- Wetland terraces provide additional risk reduction from storm surge.

### Cultural and Ecological Destination

High-risk areas, both inside and outside the Morganza to the Gulf levee, turn challenges into new opportunities.

- Cultural and ecological assets are preserved.
- Structures are elevated on piers.
- Support for the fishing industry and new incentives for aquaculture, elevated camps, and ecotourism bring new revenue to the parish.
- Connectivity of services and safe evacuation routes are maintained and improved to promote a new water-based economy.

Fig. 15. Strategies and implementation goals for Terrebonne Parish's 50-Year Vision.<sup>44</sup>

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<sup>44</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 82.



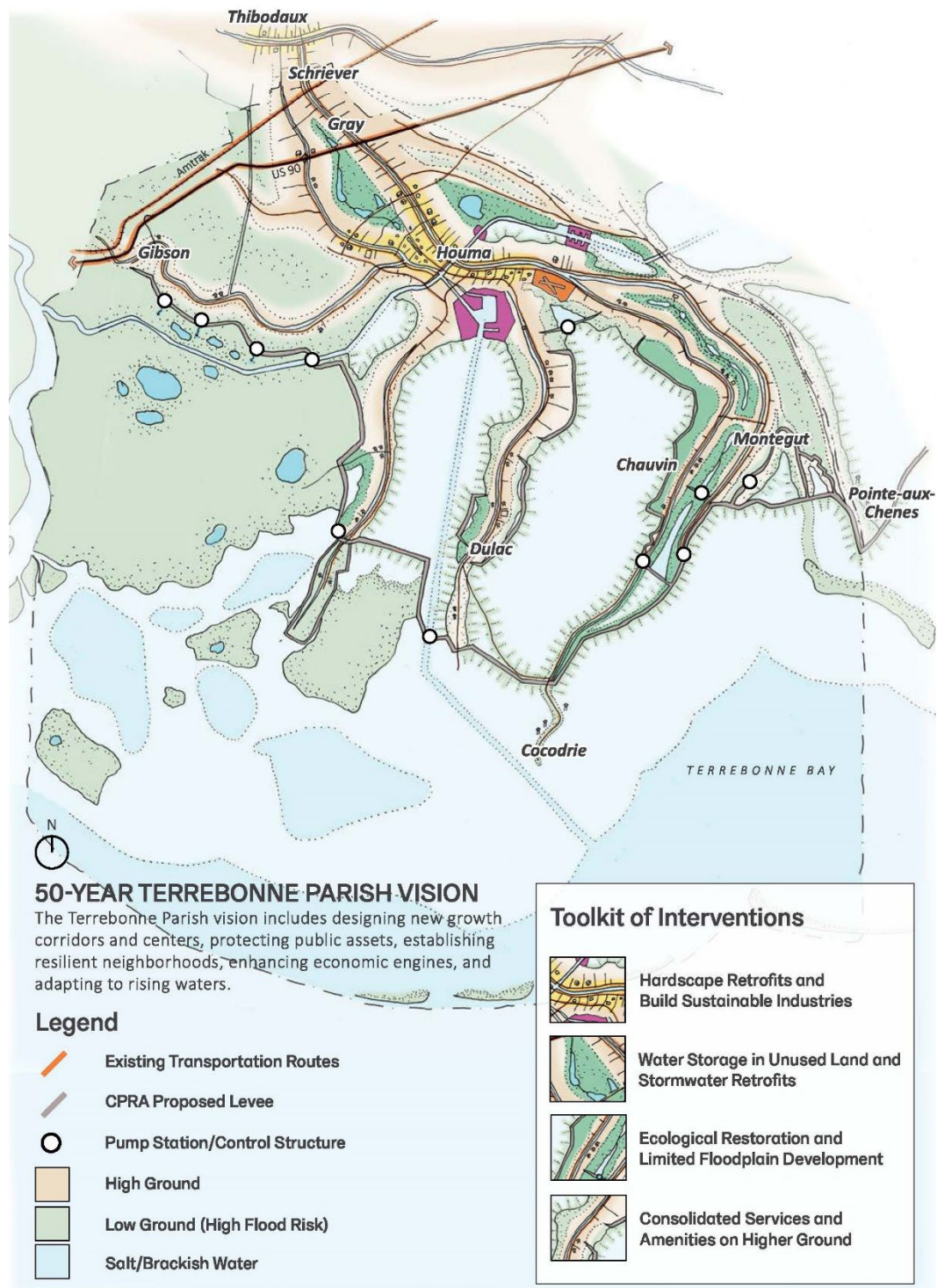


Fig. 16. Illustrative map of Terrebonne Parish's 50-Year Vision.<sup>45</sup>

<sup>45</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 83.





Fig. 17. Adaptation goals and implementation strategies for Terrebonne Parish.<sup>46</sup>

<sup>46</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 100-1.

Terrebonne Parish residents and professionals voted to prioritize six catalyst projects for initial implementation. Two of the projects directly tie the protection of foodway culture to native wetland ecosystems while offering risk reduction for existing and future residents.

The first, Bayou La Cache Wetland Park, proposes the ecological restoration of a former gravel pit mine located in a low-lying area between Bayou Terrebonne and Bayou Petit Gaillou. In concept development, residents identified opportunities such as “building to live with water, improving land and water management, and promoting the parish’s natural beauty through restoration efforts, education, and access to these assets.”<sup>47</sup> The concept calls for walking paths, bird watching amenities, and the construction of a cultural center that specializes on the history and process of “sugar cultivation and water literacy.”<sup>48</sup>

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<sup>47</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 178.

<sup>48</sup> *Ibid.*



media Commons CC BY-SA 3.0



Photo Credits: Jamie\Wikimedia Commons\CC by SA 2.0



Above Left, Above Middle, Above Right:  
Precedent image of terraced wetlands,  
boardwalks, and overlooks  
Photo Credit: Turenscape Landscape  
Architecture

Above: Precedent image of Archimedes



Fig 18. Aerial illustration of the Bayou La Cache Wetland Park concept.<sup>49</sup>

<sup>49</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 179.

The second project, the Houma Seafood Market and Harbor of Refuge, proposes the construction of a new public area to accommodate monthly seafood and farmers markets. It also supports local fisher people through the establishment of a sizable marina and harbor to protect boats during major storm events, safeguarding them from becoming lose in the channel and damaging bridges or other infrastructure.<sup>50</sup> The marina would expand local access to waterways through the inclusion of a public boat launch and increase local access to everyday goods and foods for local families and tourists through the creation of a permanent convenience store.

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<sup>50</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 182.



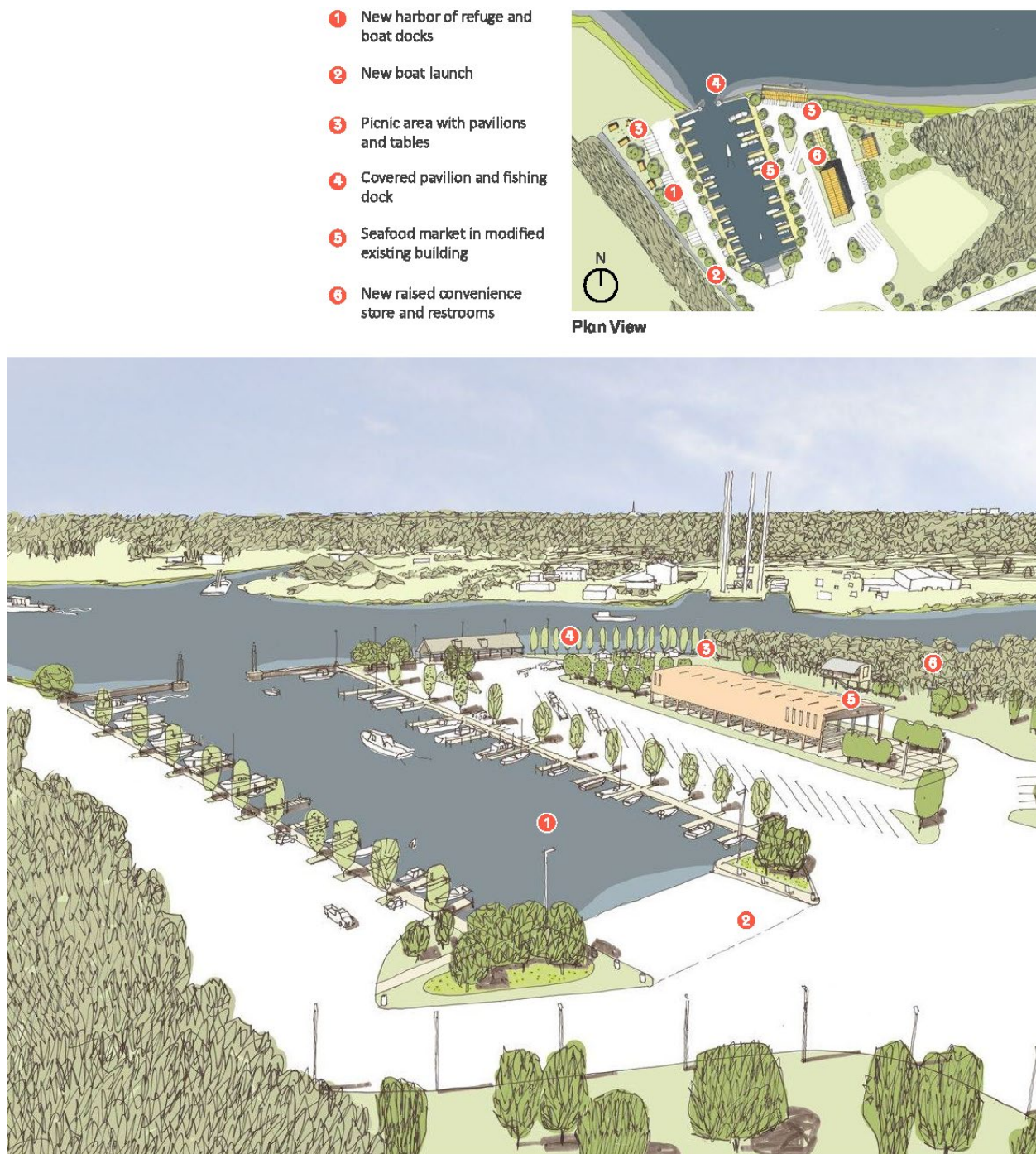


Fig 19. Conceptual rendering of the Houma Seafood Market and Harbor of Refuge.<sup>51</sup>

<sup>51</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 183.

## **Lafourche Parish Adaptation Plan**

In Lafourche Parish, residents crafted their fifty-year vision with a set of goals and implementation strategies similar to that of neighboring Terrebonne Parish. The plan prioritizes blue and green infrastructure and strategic land use planning. Like Terrebonne, it also envisions the parish as a cultural and ecological destination. However, the Lafourche Parish Adaptation Plan also prioritizes the development of transportation infrastructure that ensures access along Bayou Lafourche extending south to Port Fourchon, a significant economic driver and place of employment.

# 50-Year Vision

## The Gulf's Energy Connection

Named after Bayou Lafourche, a 106-mile-long bayou in Southeast Louisiana that flows into the Gulf of Mexico, Lafourche Parish is known to have the longest main street in the US. Lying entirely within the Mississippi River Delta, the parish draws residents and visitors alike to its diverse environment, wildlife, and Cajun culture. As these assets are faced with increasing risk, LA SAFE envisions a future where, parallel to the ongoing and planned coastal protection and restoration efforts, investments are prioritized on higher ground. Blue/green corridors and parkways store excess water in the landscape and sustainable industries diversify the economy. In coastal high risk areas, the challenge of rising water is turned into an opportunity for new cultural and ecological destinations with support for the fishing industry, enhanced connectivity, and improved evacuation routes.

### Up the Bayou: Smart Growth and Integrated Water Management

**Anticipating continued population movement to low-risk areas, Lafourche Parish directs growth to higher ground north of the Intracoastal Waterway and utilizes natural systems for stormwater management.**

- More focused, mixed-use development patterns and town centers between Thibodaux, Raceland, and Lockport spur economic development and promote public health through walkable, bikeable neighborhoods.
- Environmental assets and natural buffers are preserved and protected, and new development is restricted in the floodplains.
- Blue/green networks of engineered landscapes delay and store stormwater, reducing flooding and drainage-induced subsidence while providing amenities with multiple benefits to the community.
- Water conveyance across ridges is minimized and water is held in the basins and as close to the source as possible.
- Green infrastructure is integrated into new development and redevelopment projects.
- Smart retrofits use permeable materials to replace impervious surfaces.
- Sustainable industries diversify the economy and provide opportunities for waterway redevelopment.

### Down the Bayou: Investment Prioritization

**South of the Intracoastal Waterway, bayou communities prioritize new investments on higher ground and stable soils.**

- From Larose to Golden Meadow, communities within the South Lafourche Levee District consolidate services and amenities along the bayou's ridges, with agriculture and floodplain management in between.
- Support services for Port Fourchon are protected and enhanced.
- Structures are elevated on piers.
- Environmental assets and natural buffers are preserved and protected, and new development in the floodplain is restricted.

### Cultural and Ecological Destination

**High-risk areas, both inside and outside the levee district, turn challenges into new opportunities.**

- Cultural and ecological assets are preserved.
- Structures are elevated on piers.
- Support for the fishing industry and new incentives for aquaculture, elevated camps, and ecotourism bring new revenue to the parish.
- Connectivity of services to Port Fourchon and safe evacuation routes are maintained and improved to protect the parish's largest economic engine and promote a new water-based economy.

Fig. 20. Strategies and implementation goals for Lafourche Parish's 50-Year Vision.<sup>52</sup>

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<sup>52</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 88.



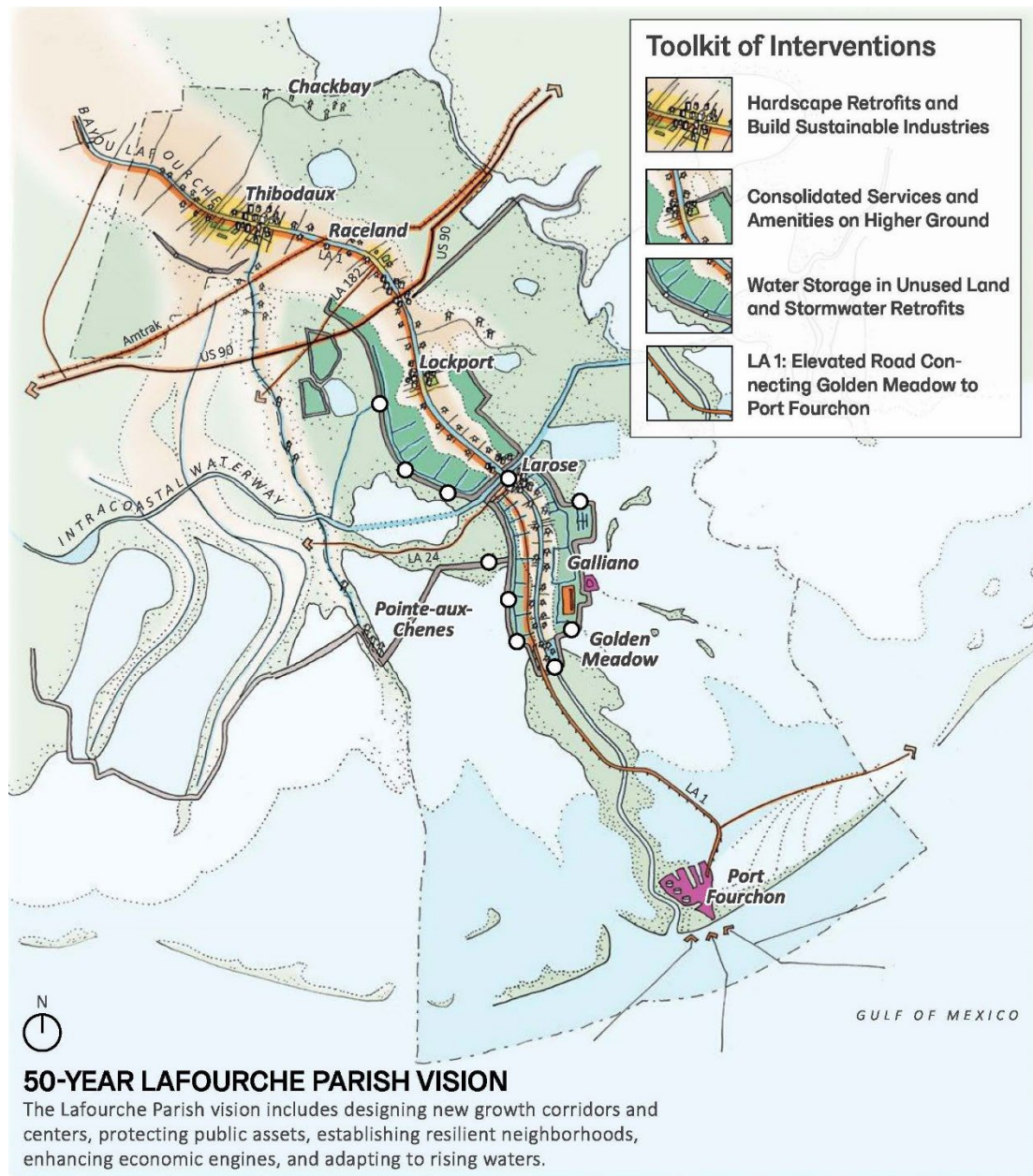


Fig. 21. Illustrative map of Terrebonne Parish's 50-Year Vision.<sup>53</sup>

<sup>53</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 89.





### Goal 1: Manage Flooding and Subsidence

**Implement water management strategies that are based on natural systems and address all scales, which include regional, parish, and community programs as well as initiatives targeted to individual property owners.**

- Strategy 1: Retain and detain stormwater
- Strategy 2: Reduce impervious surfaces
- Strategy 3: Review and update stormwater policies and programs
- Strategy 4: Reduce the impact of storm surge



### Goal 2: Direct Growth to Low-Risk Areas

**Create safe, inclusive, and vibrant communities with amenities that attract and retain residents of all ages.**

- Strategy 1: Encourage housing and commercial development on higher ground
- Strategy 2: Continue revitalization of downtown Houma
- Strategy 3: Plan for a Houma-Thibodaux growth corridor



### Goal 3: Improve Mobility Throughout the Parish and Region

**Support a resilient transportation system that includes multiple modes of transportation and promotes the creation of walkable communities.**

- Strategy 1: Expand and diversify transportation options between the coast and areas of higher ground
- Strategy 2: Adopt and implement a complete streets program



### Goal 4: Strengthen and Diversify Local Economies

**Integrate risk and adaptation practices into all levels of government and educational systems. Build a robust economy that diversifies the parish's economic base, supports residents' entrepreneurial spirit, and trains and retrain parish workers in emerging industries.**

- Strategy 1: Support local fisheries
- Strategy 2: Expand public access to parish waterways
- Strategy 3: Enhance job training and education
- Strategy 4: Provide business incubation and adaptation assistance



### Goal 5: Retain Local Culture and Enhance Recreation Opportunities

**Retain the parish's culture and values—arts, music, food and the value of the land and water—as residents migrate to northern parts of the parish. Incorporate diverse recreation opportunities—from fishing, birdwatching, and kayaking in higher-risk areas of the parish to more traditional parks and open spaces in the low-risk areas of the parish—to promote a healthy environment that allows residents to experience the parish's natural beauty.**

- Strategy 1: Ensure public and community assets provide recreational and educational opportunities
- Strategy 2: Enhance public access to Terrebonne Parish's waterways for recreational purposes

Fig. 22. Adaptation goals and implementation strategies for Terrebonne Parish.<sup>54</sup>

<sup>54</sup> Louisiana Strategic Adaptations for Future Environments. *Terrebonne Parish Adaptation Strategy* [Report]. U.S. Department of Housing and Urban Development, 2019, 100-1.

The Lafourche planning process also resulted in the selection of six catalyst project concepts. Here, the projects ranged from Emerging Industry Business Incubators to built landscapes, harbors, and structures. Three of the projects encourage the maintenance of wetland foodways: the Golden Meadow Wetland Park and Outdoor Classroom, the Oak Ridge Seafood Market, and the Bayou Lafourche Harbor of Refuge. A fourth project supports the continuation of intimate, everyday relationships with wetland ecosystems through the development of an affordable housing prototype in a coastal community.

Like the residents of Terrebonne, the people of Lafourche Parish found value in the creation of a wetland park that serves dual purpose as educational and cultural amenity. The Golden Meadow Wetland Park and Outdoor Classroom is envisaged as “providing coastal residents with educational opportunities to learn more about environmental changes and holistic stormwater solutions [that are] critical to planning for a sustainable future along [the] coast.” The project aims to reduce ground subsidence by encouraging resaturation of the soils and to mitigate pluvial flood risk for neighboring residences. Programmatically, parish residents seek to incorporate educational signage into a proposed system of pathways winding through a freshwater forested wetland system. The concept also features an educational pavilion, permeable parking lot, and bioswales.<sup>55</sup>

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<sup>55</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.



Precedent images of pathways and in a wetland park.



Precedent images of permeable parking and



Precedent image of water storage area that doubles as terraced gathering space.

Fig. 23. Golden Meadow Wetland Park and Outdoor Classroom.<sup>56</sup>

<sup>56</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.

The fishing industry continues to be a major source of employment and a key determinant of local foodways in Lafourche Parish. Recreational fishing presents another major draw to the area, where fishing enthusiasts from around the world charter guided trips. Appreciating the risk that land loss and other environmental changes pose to the future of the industry, the residents chose to prioritize the design and construction of a centralized seafood market near an existing boat launch. The concept for the Oak Ridge Seafood Market includes creation of “market stalls, a fishing dock, a covered open-air picnic pavilion, restroom facilities, permeable parking, and bioswales.”<sup>57</sup>

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<sup>57</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.





Left: Precedent image of bioswale; Photo Credit: Eric Fischer\Flickr\CC by SA 2.0; Right: Precedent image of permeable parking

- 1 Seafood market stalls and fishing dock
- 2 Permeable parking and bioswales
- 3 Picnic pavilion with restrooms and storage
- 4 Existing Oak Ridge Boat Launch
- 5 Future opportunities for water storage
- 6 Existing pump station—future upgrades can include windows & signage retrofits for educational purposes



Plan View

Fig. 24. Oak Ridge Seafood Market.<sup>58</sup>

<sup>58</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.

The project statement for the Bayou Lafourche Harbor of Refuge identifies “Lafourche Parish’s commercial seafood industry [as] an important part of the seafood supply chain” and emphasizes the importance of creating a harbor where commercial fishing vessels can safely dock during significant storm events. The seafood industry plays a critical role in local economic vitality and cultural practices. The final proposal includes the creation of “a picnic pavilion and seafood market, multi-use pathways, permeable parking, and bioswales” to encourage use of the harbor throughout the year.<sup>59</sup>

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<sup>59</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.

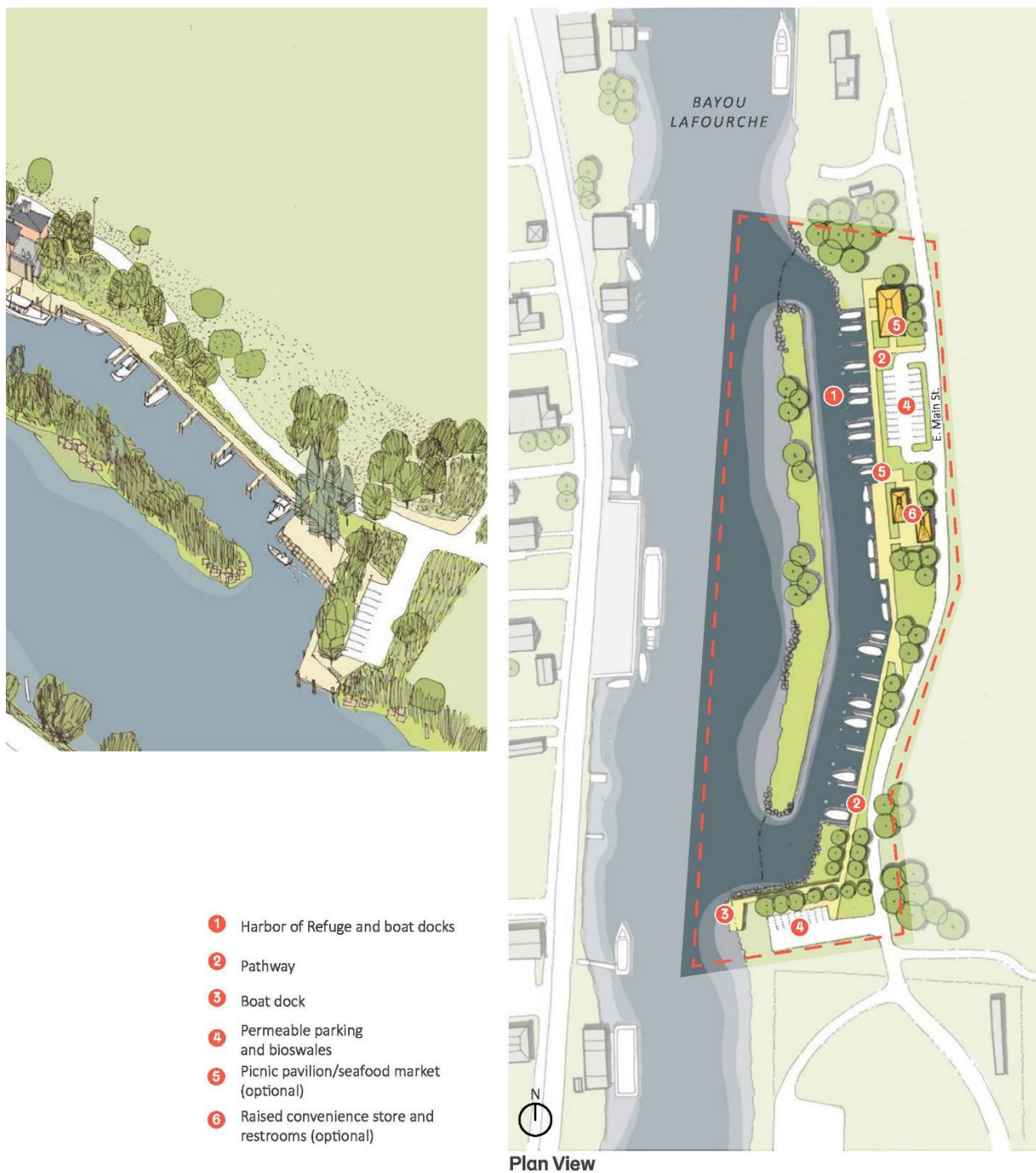


Fig. 25. Bayou Lafourche Harbor of Refuge.<sup>60</sup>

<sup>60</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.

For locals to maintain intimate, domestic relationships with wetlands, they must live or work near them. Inland migration pressures continue to grow, and given the scarcity of safe and affordable housing stock that follows storm events, the residents of Lafourche Parish elected to prioritize the construction of a Resilient Housing Prototype for lower-income households. The prototype is described as encouraging natural ecosystem processes while protecting residents from risks such as storm surge and long-term electricity loss.





### Moderate-Risk Example

Existing Housing Density: 2.1 units per acre  
Proposed Density: 8 units per acre

**Elevated housing** in moderate-risk areas protect from flooding and provide space underneath for parking and gathering. In the model above, homes share a single elevated platform, reducing construction costs while preserving a single-family housing typology.



Design;  
iil Bradley\  
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Solar Power



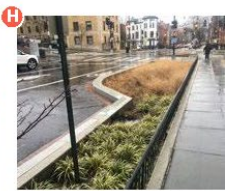
Community & Market Space



Permeable Paving;  
Photo Credit: Lombroso\  
Wikimedia Commons\CC  
by SA 3.0



Stormwater Park &  
Recreation Paths; Image  
Credit: USFWS Midwest\  
Flickr\CC by SA 2.0



Complete Green Street;  
Photo Credit: Eric Fischer\  
Flickr\CC by SA 2.0

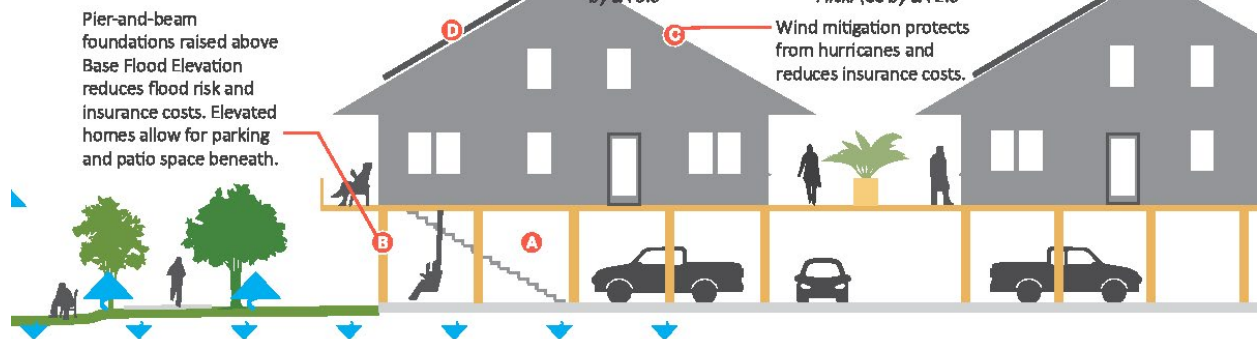


Fig. 26. Resilient Housing Prototype.<sup>61</sup>

<sup>61</sup> Louisiana Strategic Adaptations for Future Environments. *Lafourche Parish Adaptation Plan* [Report]. U.S. Department of Housing and Urban Development, 2019.

## **Synthesizing Plans**

This thesis aims to incorporate elements from the seven proposals mentioned in the previous two sections. While projects are listed singly, there is opportunity for them to be joined together, particularly in a thesis exploration that ignores parish boundaries.

LA SAFE designed and packaged the catalyst project proposals with scopes sized to be attractive to state and federal funding agencies. However, many of the projects propose complementary or symbiotic elements. For example, both Lafourche and Terrebonne residents prioritized the creation of seafood markets near harbors of refuge and public boat launches, and designed to include walking paths, and educational or picnic pavilions, and fishing piers. Both parishes also emphasized the importance of multi-use wetland parks that offer increased stormwater detention capacity.

## MAKING LANDSCAPE – SOCIAL CONTEXT

Landscapes are social constructions that represent human perceptions of environment. Two ingredients are necessary to make a landscape: physical place and an ascribed interpretation of it.<sup>62</sup> Agyeman et al. explain that “places are largely socially constructed expressions of the self and [...] what we see in our surroundings reflects the characteristics, beliefs, and elements that we see in ourselves.”<sup>63</sup> Culture, our social context, influences our behaviors and personal identities and shapes the way we experience ourselves in the world. In doing so, it subtly forms our ideas of landscapes, which are physical manifestations of the relationships between cultures and physical environments.

As multiple cultures may coexist within one environment, so too can multiple landscapes coexist there. Native Land Digital identifies the present-day Houma-Thibodaux-Raceland area as within the territories of the Houma and Chitimacha tribes, but there are more self-identified bands in the area.<sup>64</sup> For example, the Pointe-au-Chien Indian Tribe (PACIT) identify as descendants of the Chitimacha Indians, but their ancestry also draws from the Biloxi, Acolapissa, and Atakapas Indians.<sup>65</sup> In 2004, the State formally recognized PACIT in a legislative resolution that also recognized three

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<sup>62</sup> Burley et al. define place as “a geographic location that includes the people, objects, practices, and meanings of that place.” Burley, David, Pam Jenkins, Shirley Laska, and Traber Davis. 2007. “Place Attachment and Environmental Change in Coastal Louisiana.” *Organization & Environment* 20 (3): 347-66.

<sup>63</sup> Agyeman, Julian, Patrick Devine-Wright, and Julia Prange. 2009. “Close to the Edge, Down by the River? Joining up Managed Retreat and Place Attachment in a Climate Changed World: Commentary.” *Environment and Planning A* 41 (3): 509-13.

<sup>64</sup> Native Land Digital. <https://native-land.ca/>

<sup>65</sup> Pointe-au-Chien Indian Tribe. n.d. <https://www.pactribe.com/>

bands of the Biloxi-Chitimacha Confederation of Muskogeans (BCCM) Indians as distinct from the Houma Nation: the Isle de Jean Charles Band, the Bayou Lafourche Band, and the Grand Caillou/Dulac Band.<sup>66</sup> While federal recognition does not solely dictate cultural identity, the change speaks to the dynamism of social landscapes.

In the 18<sup>th</sup> century, French, Spanish, African, German, English, and Anglo-Americans began settling along bayous in Lafourche and Terrebonne Parish.<sup>67</sup> Migrants from Italy, Yugoslavia, Haiti, Vietnam, Ireland, China, Philippines, and Croatia followed in the ensuing two centuries, contributing technological expertise and sharing adaptation strategies. For example, Chinese immigrants radically changed the seafood industry in Terrebonne Parish with the introduction of drying platforms that made possible the commercial export of dried shrimp and dried salted trout.<sup>68</sup> In an oral history interview from Terrebonne Parish, one participant remarked on the speed at which Houma and Cajun people adopted Chinese platform drying techniques, noting how quickly many were constructed along Bayou Terrebonne.<sup>69</sup> In other examples, the area inhabitants

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<sup>66</sup> Louisiana Congress, Senate. *Recognizes four individual tribes to allow Native American children to continue receiving Indian education and health care benefits*, SCR 105, 2004 regular sess. Introduced in Senate May 12, 2004.

The Houma Nation was formed in 1979 with the merger of the Houma Tribe and the Houma Alliance. The Houma Tribe and the Houma Alliance received State recognition in 1972 and 1974 respectively.

<sup>67</sup> The term Creole refers to a person born on Louisiana soil with some combination of European, African, or Native American heritage. Folse, John D. *The Encyclopedia of Creole & Cajun Cuisine*.

<sup>68</sup> Gramling, Robert and Ronald Hafelman. 2005. "A Working Coast: People in the Louisiana Wetlands." *Journal of Coastal Research* 44: 112-133.

<sup>69</sup> Pitre, Glen (Interviewer). "Memories of Terrebonne oral history." *Memories of Terrebonne Parish 1890-1945*.

adopted “oyster harvesting techniques from Yugoslavia, [and] sugar processing methods from the West Indies.”<sup>70</sup>

The dynamic commingling of cultural practices plays a formative role in the area’s unique cultural identity. Despite the regional blending, distinct and multiple cultural identities and folk groups have remained.

In their essay “Lifeways,” the Walter Hood and Grace Mitchell Tada write:

*We are constantly engaged in the process of acculturation and assimilation. Rarely is difference validated, unless it is economically profitable. Urban design and planning projects often seek to organize, tidy, and homogenize environments through standards that can be easily understood by all. But if the focus is given to unique ways of life, alternative narratives can emerge that describe how people live in different places.*<sup>71</sup>

This thesis seeks to champion the rights of cultural groups to maintain relationships with native landscapes in the face of DFDR. As an exploration of how multiple cultural perspectives may be explicitly acknowledged and integrated into a landscape design process, this thesis applies cultural lenses of three folk groups – Cajun, Houma Indian, and Black – to design a foodway-celebrating wetland park in an area connecting the cities of Houma, Thibodaux, and Raceland in Terrebonne and Lafourche parishes.<sup>72</sup>

These three lenses allow the audience and researcher to understand these sample cultures as dynamic, with commonalities and differences. This thesis is not meant to be

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<sup>70</sup> Gramling, Robert and Ronald Hafelman. 2005. “A Working Coast: People in the Louisiana Wetlands.” *Journal of Coastal Research* 44: 112-133.

<sup>71</sup> Hood, Walter and Grace Mitchell Tada. (2020). *Black Landscapes Matter*, edited by W. Hood & G. M. Tada, 28-49. Charlottesville: University of Virginia Press. (p 35)

<sup>72</sup> Cultural lens refers to the general perspective of a social group, as informed by their history and traditions.

an evaluation or romanticization of any one of perceived “type” of culture and the three studied cultures are not meant to be representative of all people in the area. They are chosen as a sample through which to explore a design process that asserts multiple folk identities.

### **Selection of Cultural Lenses**

The Census Bureau reports that people identifying as White, Black, and Native American constitute the top three most populous racial categories between Terrebonne and Lafourche Parish.<sup>73</sup> The Census Bureau employs certain problematic methods in the solicitation and analysis of census data (e.g., the racial identity of the primary respondent is applied to all members of the household), and survey questions do not encourage the identification of ethnic identities outside of the broad term “Hispanic.” It therefore fails to tabulate the population of people who identify as Cajun, and it omits nuances in Native identity like tribal affiliations.<sup>74</sup> Despite these limitations, Census Bureau Decennial Census and American Community Survey (ACS) data is nonetheless the standard for assessing racial demographics by place.

Maps created by the Louisiana Folklife Program offer further insight as to the extent of folk regions throughout the state. The “Louisiana Folk Regions: Native American Locales” map identifies Lafourche and Terrebonne Parish as the modern

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<sup>73</sup> United States Census Bureau. 2019 American Community Survey 5-Year Estimates, Table B02001, “Race.” <https://data.census.gov/cedsci/advanced>

<sup>74</sup> At present, Cajun people generally identify as racially White.

cultural hub for the United Houma Nation. A second map indicating the “Nine Major Cultural Subregions” identifies the two parishes as within the “contemporary Cajun core” and finds a significant presence of “levee-plantation bottomlands / predominant location of rural Blacks” areas extending along Bayou Lafourche.

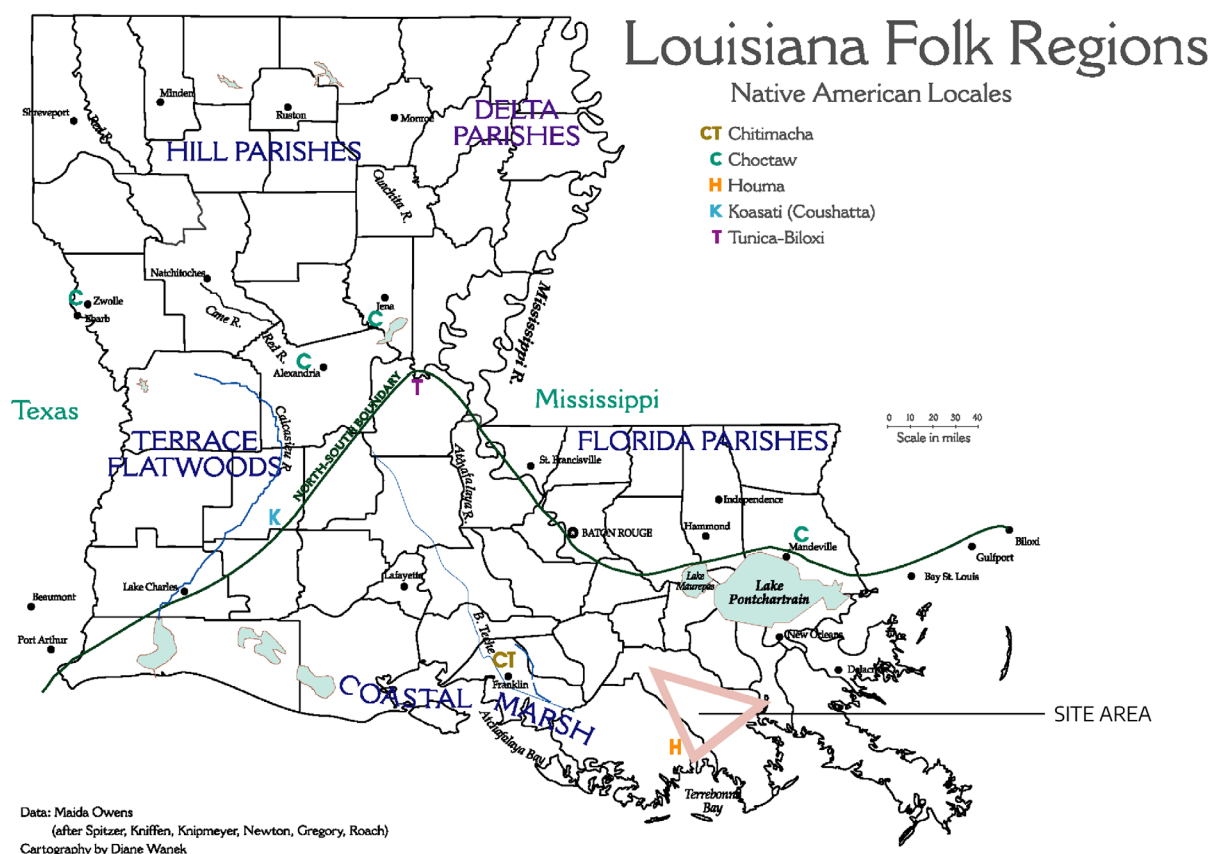


Fig. 27. Louisiana Folk Regions: Native American Locales.<sup>75</sup>

<sup>75</sup> Owens, Maida. “Native American locales.” [Baton Rouge, LA: Louisiana Division of the Arts Office of Cultural Development] PDF file. [https://www.louisianafolklife.org/LT/creole\\_maps.html](https://www.louisianafolklife.org/LT/creole_maps.html)

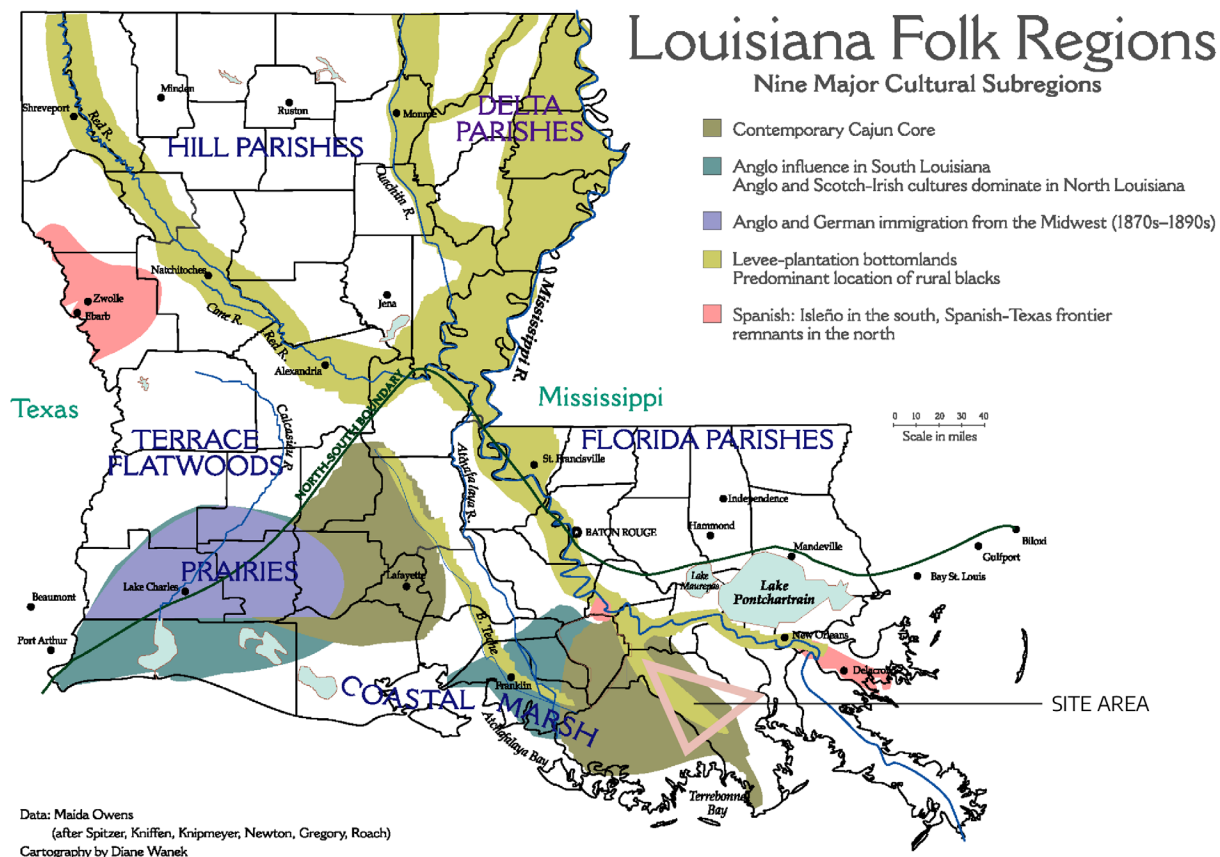


Fig. 28. Louisiana Folk Regions: Nine Major Cultural Subregions.<sup>76</sup>

## Historical Overview - Cajuns in Terrebonne & Lafourche Parishes

Cajuns trace their origins from France and to Acadia, an area along the northeastern seaboard extending into present-day Nova Scotia.<sup>77</sup> The Acadians began settlement on the American continent in 1604, but were driven out of their homes by

<sup>76</sup> Owens, Maida. "Nine major cultural subregions." [Baton Rouge, LA: Louisiana Division of the Arts Office of Cultural Development] PDF file. [https://www.louisianafolklife.org/LT/creole\\_maps.html](https://www.louisianafolklife.org/LT/creole_maps.html)

<sup>77</sup> Acadia is the American English name for the settlement area referred to by Acadian and Cajun French speaker as "L'Acadie."



Britain in 1755 at the start of the French and Indian War.<sup>78</sup> While some Acadians successfully fled to Nova Scotia, many others were deported back to Europe, to the West Indies, or to other American colonies along the eastern seaboard.<sup>79</sup> Thus began *Le Grand Dérangement*, the Great Acadian Upheaval.

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<sup>78</sup> The “French and Indian War” is an American term for a conflict that Europeans call the “Seven Years’ War.”

<sup>79</sup> In oral history interviews, Cajun interviewees often discuss vacations to Nova Scotia where linguistic similarities between Cajun and Acadian dialects of French allow them to enjoy conversations with local people. Melancon, Loyman P. “Loyman P. Melancon oral history interview.” *Bayou Lafourche Oral History Series*. 24 October 2010. <https://www.louisianadigitallibrary.org/islandora/object/lsu-thwcoh-bayoulafourche%3A16>; Orgeron, Clyde. “Clyde Orgeron oral history interview.” *Bayou Lafourche Oral History Series*. 24 October 2010. <https://www.louisianadigitallibrary.org/islandora/object/lsu-thwcoh-bayoulafourche%3A6>.



Fig. 29. *Le Grand Dérangement* Monument. Picture taken outside the Bayou Terrebonne Waterlife Museum. The monument maps the forced migration patterns of Acadians dislocated from their homes in the mid-eighteenth century. Picture by the author.

Between 1764 and 1767, a few hundred Acadians began settling in Louisiana, including an area along the northern stretches of Bayou Lafourche.<sup>80</sup> In Louisiana, Acadians came to be known under their current moniker, “Cajun.” Scholars suggest that Cajun leadership initially rejected the areas along Bayou Lafourche, but subsequent Acadian immigrants soon settled the area.<sup>81</sup> The second half of the 18<sup>th</sup> century brought additional waves of Acadian migrants who were drawn to Louisiana for the fertility of its soils and the relative social isolation afforded by lack of reliable roadways through the wetlands in bayou country. They continued settlement west of the Mississippi River in the bayou areas along the southwestern prairie where they resumed an agrarian lifestyle.<sup>82</sup> Cajuns families who initially settled the upper stretches of Bayou Lafourche were pressured to move down the bayou by rich American plantation owners seeking to establish lucrative plantations on that stretch of the bayou.

In oral history interviews, Cajun interviewees often discuss vacations to Nova Scotia where linguistic similarities between Cajun and Acadian dialects of French allow them to enjoy conversations with local people.

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<sup>80</sup>Voorhies, Jacqueline K. 1983. “The Acadians: The Search for the Promised Land.” In G. R. Conrad’s (Ed.) *The Cajuns: Essays on Their History and Culture* (pp.79-94). Lafayette: Center for Louisiana Studies University of Southwestern Louisiana.

<sup>81</sup> Conrad, Glenn R. (Ed.) 1983. *The Cajuns, Essays on Their History and Culture*. Third edition. Lafayette: Center for Louisiana Studies, University of Southwestern Louisiana. Page 11

<sup>82</sup> Maldonado, Julie K. 2019. *Seeking Justice in an Energy Sacrifice Zone: Standing on Vanishing Land in Coastal Louisiana*. New York: Routledge. (p 65)

## Historical Overview - Houma Indians in Terrebonne & Lafourche Parishes

Houma Indians are linguistically and culturally related to the people of the Choctaw and Chickasaw tribes.<sup>83</sup> Anthropologists speculate that the Houma were likely a band of the Chakchiuma [Sa'ktcihuma] people that Hernando De Soto encountered in the Yazoo River Basin, near present-day Vicksburg, Mississippi, in the sixteenth century. French explorers used the names “Houma” and “Chakchiuma” interchangeably to refer to the people presently known as Houma, who adopted the French language before reaching their contemporary home in present-day Louisiana. In the Choctaw language, Sa'ktcihuma translates to “red crawfish,” understood in the sixteenth century as the symbol or totem of the tribe. The Houma people maintain the red crawfish as their spirit animal or war animal to this day.<sup>84</sup>

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<sup>83</sup> Speck, Frank G. 1975. “The Houma Indians in 1940.” *American Indian Journal* 2 (1): 4-15.

<sup>84</sup> Louisiana Folklife Program. “Houma Blowgun and Darts.” [Website]  
<https://www.louisianafolklife.org/ImageBase/ImageBase/SearchImageList>



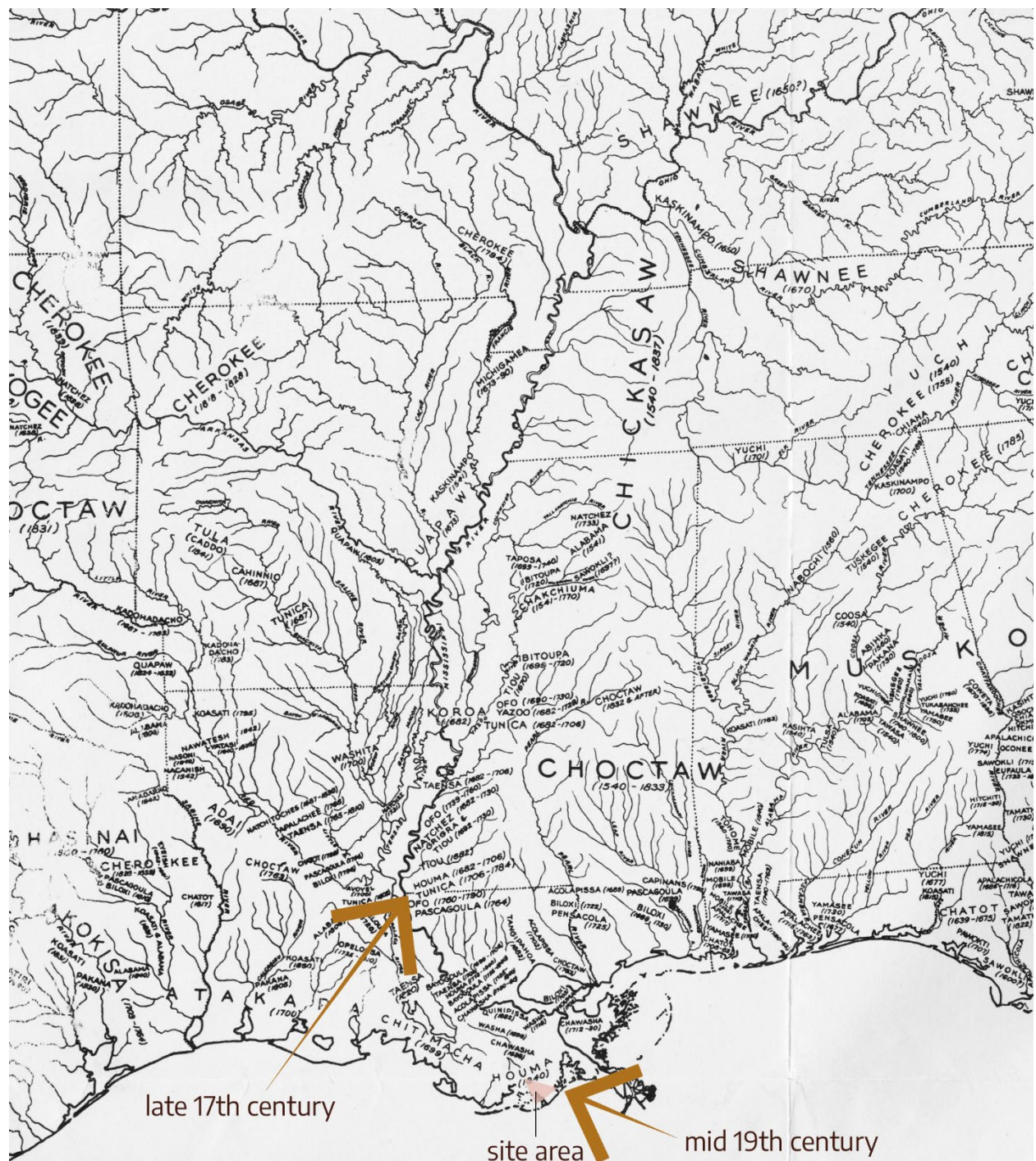


Fig. 30. Historical map illustrating the general migration of the Houma Indian people in the seventeenth through nineteenth centuries.<sup>85</sup>

<sup>85</sup> Swanton, John Reed. 1911. *Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico*. New York.

By the early eighteenth century, the Houma had settled along Bayou Lafourche where they developed villages and settlements from the upper reaches where the bayou meets with Mississippi River and down the bayou into the coastal marshlands.<sup>86</sup> The Spanish government awarded the Houma with a land grant around 1763 given in exchange for their allyship and unspecified aid against the English, presumably in the time of the French and Indian War.<sup>87</sup> The land grant is said to extend “a hundred miles, from Barataria to Atchafalaya River,” but no written record of the grant was preserved by the Spanish, French, or American governments. The record of a second land grant for a small holding at the northern extent of their historical territory, now called “Point Houmas” in present-day Donaldsonville, was preserved but the land was sold out of the tribe.

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<sup>86</sup> Louisiana Folklife Program. “Houma Blowgun and Darts.” [Website] <https://www.louisianafolklife.org/ImageBase/ImageBase/SearchImageList>

Allamel, Frédéric. 2016. “The Houma Indians’ Battle Against the Ocean.” *Disaster Prevention and Management* 25 (2): 183-195.

Villages were typically situated on the high ground afforded by levees and hummocks. Speck, Frank G. 1975. “The Houma Indians in 1940.” *American Indian Journal* 2 (1): 4-15.

<sup>87</sup> Spain occupied this area of present-day Louisiana from 1763 to 1802. France granted the Louisiana Territory to Spain in the secret Family Compact in 1762, thus cementing their allyship against the English in the war known in the United States as the French and Indian War. In Europe it is referred to as the Seven Years’ War. Britain recognized Spain’s occupation of North American lands west of the Mississippi River in the Treaty of Paris, signed 1763.





Fig. 31. “Indian family on lower Bayou Caillou,” Terrebonne Parish, ca. 1920s. State Library of Louisiana Historic Photograph Collection.<sup>88</sup>

Colonial laws were established to dispossess Indian people of their lands. For many years, the State of Louisiana maintained a law that forbade children born out of wedlock from inheriting property.<sup>89</sup> Because Houma Indian people often did not “go in for white marriage procedure,” they were considered legally ineligible to inherit property recognized by the White settler government as being owned by family members. As a result, land privately held by Houma Indian people was often sold outside of the tribe at the time of the owner’s death.<sup>90</sup> Houma people were also stripped of their lands through laws commonly known as “squatters rights,” tax laws, and formal requirements to

<sup>88</sup> d’Oney, J. Daniel. 2020. “Adaptation and Erasure in Bayou Country.” In *A Kingdom of Water*, 53-77.

<sup>89</sup> In present-day Louisiana, unwed fathers must legally acknowledge paternity for their children to inherit.

<sup>90</sup> Speck, Frank G. 1975. “The Houma Indians in 1940.” *American Indian Journal* 2 (1): 4-15.

declare a person's succession to land in a White settler courthouse.<sup>91</sup> In other cases, legal advisors cheated Houma people out of their lands. In a letter written on October 22, 1938, Dr. Ruth Underhill reports:

*It is found that land transactions prompted by unscrupulous local advisers in the employ of the large corporations, has voided the land claims which a number of Houma families had inherited from their ancestors. It is needless now to review upon the question of claims since Dr. Underhill found after tracing them that they are legally substantiated.*<sup>92</sup>

In that same letter, Dr. Underhill writes: "My present opinion is that the Indians have been robbed of their property but by entirely legal procedure, hard to upset in court." As Houma people were dispossessed of their lands, American settlers continued to push Houma people down the bayou into more marginal habitats where they lived as neighbors with Cajun and Black people in relative isolation from White society until the intrusion of the offshore oil industry in the twentieth century.<sup>93</sup>

By the mid-twentieth century, American reports estimated the Houma population to be 2,000 people.<sup>94</sup>

## **Historical Overview - Black People in Terrebonne & Lafourche parishes**

Black folk culture in this area traces its origins to slavery, when millions of West Africans were kidnapped and sold into forced labor in the United States and Louisiana.

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<sup>91</sup> *Ibid.*

<sup>92</sup> *Ibid.*

<sup>93</sup> <https://www.louisianafolklife.org/ImageBase/ImageBase/SearchImageList> - Houma Blowgun and Darts (detail)

Gregory, H. F. 'Pete.' 1985. "'A Promise from the Sun:' The Folklife Traditions of Louisiana Indians." In N. R. Spitzer's (Ed.), *Louisiana Folklife: A Guide to the State*. Office of Cultural Development.

<sup>94</sup> Speck, Frank G. 1975. "The Houma Indians in 1940." *American Indian Journal* 2 (1): 4-15.

Plantations in this area were concentrated along Bayou Lafourche, but plantations were also developed along Bayou Terrebonne. As in other places where Black people were held as slaves, Louisiana developed a strong tradition of *marronage*. While most people who escaped from slavery would go to cities, others decided to live in places where they could practice self-determination. Many escapees, called *Maroons*, lived in areas “that weren’t too far away [from plantations] but difficult to access” – like swamps and wetlands.<sup>95</sup> Their proximity allowed them to maintain kinship networks and granted them occasional access to plantation supplies. The wetland environments offered some protection for *Maroons* since slave catchers and White people were usually deterred from pursuing them through neck-high water and mosquitoes.<sup>96</sup> In *Working Cures*, Fett describes the relationship between enslaved people and wetlands:

*Forests and swamps, though dangerous, offered encampments for runaway slaves, hiding places for appropriated goods, and retreats from punishment and overwork. Sanctuary and spirituality merged in the brush arbors of the deep forest, where enslaved congregations stole away to sing and pray.<sup>97</sup>*

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<sup>95</sup> More than a runaway: Maroons in Louisiana, *TriPod: New Orleans at 300*, Podcast audio, December 10, 2015.

<sup>96</sup> *Ibid.*

<sup>97</sup> Fett, Sharla M. 2002. *Working Cures: Healing, Health, and Power on Southern Slave Plantations*. Chapel Hill: The University of North Carolina Press.

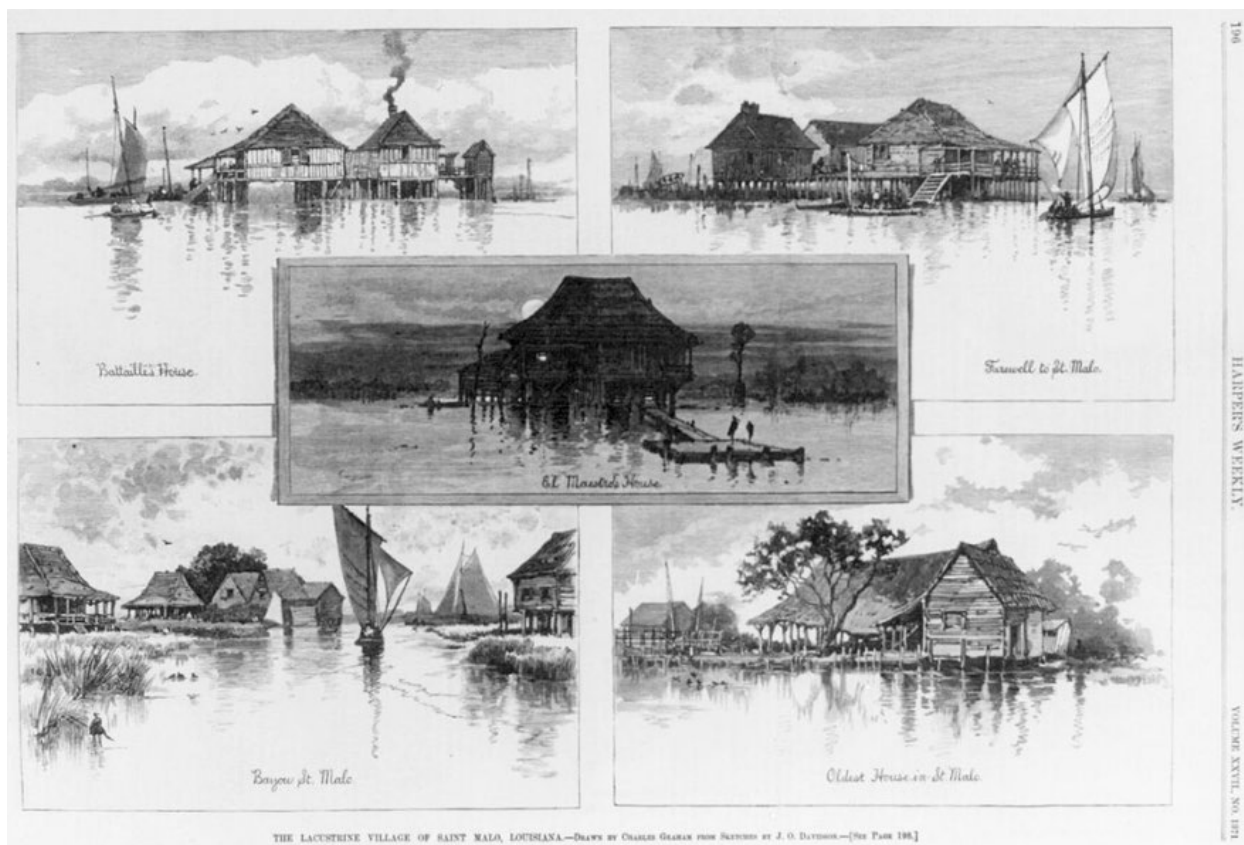


Fig. 32. Image of the St. Malo Maroon Community.<sup>98</sup>

After emancipation, many Black people who were formally enslaved remained in the area, continuing to apply their agricultural expertise as farmers.<sup>99</sup> However, many Black farmers have since lost their land through racist USDA policies and other forms of violence.<sup>100</sup>

<sup>98</sup> St. Malo is one of the most famous Maroon communities in Louisiana. Located near Lake Borgne, east of New Orleans, more than fifty people lived there at its height.

Graman, Charles. 1883. Harper's Weekly. [Illustration]. *The Historic New Orleans Collection*. Source: More than a runaway: Maroons in Louisiana, *TriPod: New Orleans at 300*, Podcast audio, December 10, 2015.

<sup>99</sup> Jackson, Willie. "Wille Jackson oral history interview." *Adrienne LaCour Four Corners Oral History Series*. 2 December 1993. <https://www.louisianadigitallibrary.org/islandora/object/Isu-thwcoh-fourcorners%3A14>

<sup>100</sup> Chatlani, Shalina. "Black Louisiana Farmers' Land Leases Are Vanishing. Some Say Racist Policies Are to Blame." *WWNO – New Orleans Public Radio*, October 19, 2021.

## Conclusion

Although originating from markedly different places, Cajun, Houma, and Black people shared significant commonalities. Arriving in the mid-eighteenth century, none were considered White at the time of their arrival, and they have each experienced land dispossession by White settlers since establishing themselves in Louisiana. Together they enjoyed relative isolation from White society until the mid-twentieth century, when an oil rush and expanding vehicular transportation system facilitated the incursion of Texans and White people into the area. Each of the three cultural groups has adapted their cultural practices in response to Louisiana's unique wetland environment. Their identities are bound together with local landscapes.

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Newkirk, Vann R. 2019. "The Great Land Robbery: The Shameful History of How 1 Million Black Families Have Been Ripped From Their Lands." *The Atlantic*.  
<https://www.theatlantic.com/magazine/archive/2019/09/this-land-was-our-land/594742/>

## FOODWAYS – CONNECTING CULTURES & ECOSYSTEMS

Foods figure prominently in the cultural traditions of Cajun, Houma, and Black cultures in Terrebonne and Lafourche parishes. Oral histories and planning artifacts describe the practice of foodway traditions as creating a vital connection between local cultures and wetland landscapes. The concept of foodways represents all aspects of food culture, including cultivation, preservation, preparation, hunting, foraging, presentation, and consumption. Bienvenu defines foodways as “the means by which a group selects, prepares, and consumes food [...] shaped by food taboos, religious prohibitions, climate, economic conditions, regional communications, the availability of specific foods, and culinary aesthetics.”<sup>101</sup> Cultural groups often use foodway traditions to identify in and out group members, but sharing aspects of foodway traditions with outsiders does not necessitate weakening of the uniqueness of the group. For cultures that retain close relationships to the land, foodways play a key role in how groups register, interpret, and interact with landscapes.

For many groups, the maintenance of foodways is about practicing a relationship with the environment and keeping perspective of their place within it. Referring to Native foodways, Gilio-Whitaker explains:

*It was not just the type of food that sustained Native health, but also their relationship to those foods, which existed on a spiritual continuum of reciprocity that nourished their spirits as well. Food traditions evolved to become inseparable*

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<sup>101</sup> Bienvenu, Marcelle. 2005. *Stir the Pot: A History of Cajun Cuisine*. New York: Hippocrene Books, 107-108.



*from religious traditions, and sacred foods were perhaps unsurprisingly also their most nutritious foods, especially corn.*<sup>102</sup>

Foodways are often tied to religious or spiritual traditions and act as a bond connecting a culture's spiritual practices to the vitality of local landscapes. Where landscapes are the setting in which people practice spiritual foodway traditions, landscapes themselves become imbued with spiritual and emotional meaning.

### **Cajun Foodways**

When they lived in France, the Acadian diet mirrored that of the French peasant class, consisting primarily of soups and grains with little fresh or cured meats.<sup>103</sup> After settling in the Americas, Acadians continued farming grains such as millet and barley, but changed their diet to emphasize a newfound abundance of fish, game, pork, and poultry.

<sup>104</sup> Despite the shift in ingredients, Acadian cooking methods remained constant, favoring the stewing of soups in single cast-iron cauldrons that would slow cook over the kitchen hearth. The Acadians also continued to use deep cast iron skillets that doubled as a fry pans or Dutch ovens for baking grains when the lid was on.<sup>105</sup>

After *Le Grand Dérangement*, Acadians who resettled in Louisiana changed their diet again, forgoing crops of millet and barley for maize better suited to the tropical Louisiana environment. Initially, the Acadians cultivated rice as a supplemental crop,

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<sup>102</sup> Gilio-Whitaker, Dina. 2019. *As Long As Grass Grows: The Indigenous Fight for Environmental Justice, from Colonization to Standing Rock*. Boston: Beacon Press, 76.

<sup>103</sup> Bienvenu, Marcelle. 2005. *Stir the Pot: A History of Cajun Cuisine*. New York: Hippocrene Books. (p. 18)

<sup>104</sup> *Ibid.*

<sup>105</sup> *Ibid.*

planting it in low-lying areas subject to spring flooding. Rice grew in culinary importance in the early twentieth century when advancements in agricultural technologies increased the scale and geographic extent of rice farming opportunities.<sup>106</sup> In keeping with traditions from Acadia, Cajuns planted large vegetable and fruit gardens that offered seasonal variety – crops such as lima beans, peaches, plums, pomegranates, pecans, and muscadine.<sup>107</sup> Fresh, seasonal foods still feature prominently in Acadian cooking. Today, Cajuns who no longer keep gardens may rely on farmers' markets to source the fresh foods for Cajun dishes."<sup>108</sup>

In early days, hunting, trapping, and fishing figured prominently in Cajun subsistence practices with swamps, bayous, and forests near their settlements supplying ample game and fish.<sup>109</sup> In the coastal areas of Terrebonne and Lafourche parishes, Cajun culinary traditions relied more heavily on fresh and saltwater fish, shrimp, crab, and oysters.<sup>110</sup> Most households fished regularly or received fish from friends and family members who did.<sup>111</sup>

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<sup>106</sup> Bienvenu, Marcelle. 2005. *Stir the Pot: A History of Cajun Cuisine*. New York: Hippocrene Books. (p. 20)

<sup>107</sup> Melancon, Loyman P. "Loyman P. Melancon oral history interview." *Bayou Lafourche Oral History Series*. 24 October 2010. <https://www.louisianadigitallibrary.org/islandora/object/lsu-thwcoh-bayoulafourche%3A16>

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<sup>108</sup> Bienvenu, Marcelle. 2005. *Stir the Pot: A History of Cajun Cuisine*. New York: Hippocrene Books. (p. 109)

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<sup>110</sup> Vincent, Timothy James "Timmy." *Louisiana Sea Grant Coastal Change Oral Histories Project*. 14 June 2012. Retrieved from <https://louisianadigitallibrary.org/islandora/object/lsu-thwcoh-seagrant%3A10>

<sup>111</sup> Bienvenu, Marcelle. 2005. *Stir the Pot: A History of Cajun Cuisine*. New York: Hippocrene Books.(p118-22)

Louisiana Chef John Folse defines contemporary Cajun cooking as a:

*Hearty, rustic country fare created as a family project. Cajun cooking is home-style cuisine served over or with cooked white rice. Most often it is found simmering in a cast iron pot with its main ingredients harvested from the abundance of the land, swamps, bayous, and streams.*<sup>112</sup>

Cajun food culture is inherently social. In an oral history from 2012, Timmy Vincent reflected on the specialness of the camaraderie felt around a Cajun dinner table.<sup>113</sup>

Traditionally, Cajun families would host large family dinners and barbecues on Sundays.

<sup>114</sup> Cajun men typically developed specialty dishes that they were known for cooking.

Before the days of refrigeration, neighbors and family members would often go in together on a pig or cow and split the meat between them to ensure a steady supply.<sup>115</sup>

The *boucherie* facilities where community members would meet to process the animals were social spaces where Cajuns would talk and socialize while they worked.<sup>116</sup>

## Houma Indian Foodways

The Houma are a formerly agricultural people who practiced large-scale maize cultivation when they lived farther north in present-day Mississippi. But as the tribe

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<sup>112</sup> Folse, John D. *The Encyclopedia of Cajun & Creole Cuisine* (p. 43)

<sup>113</sup> Vincent, Timothy James "Timmy." *Louisiana Sea Grant Coastal Change Oral Histories Project*. 14 June 2012. Retrieved from <https://louisianadigitallibrary.org/islandora/object/lsu-thwcoh-seagrant%3A10>

<sup>114</sup> Williams, Larry. "Larry Williams oral history interview." *Bayou Lafourche Oral History Series*. 25 October 2010. Retrieved from <https://www.louisianadigitallibrary.org/islandora/object/lisu-thwcoh-bayoulafourche%3A15>.

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<sup>115</sup> Orgeron, Clyde. "Clyde Orgeron oral history interview." *Bayou Lafourche Oral History Series*. 24 October 2010. <https://www.louisianadigitallibrary.org/islandora/object/lisu-thwcoh-bayoulafourche%3A6>.

<sup>116</sup> LeBlanc, (Jr.) Augustine, J. "A.J." "Augustine J. 'A.J.' LeBlanc, Jr." 1993. *Bayou Lafourche Oral History Series*. 24 October 2010. <https://www.louisianadigitallibrary.org/islandora/object/lisu-thwcoh-bayoulafourche%3A3>

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moved south into bayou country, the Houma adapted their foodways to emphasize trapping, hunting and fishing.<sup>117</sup> Houma living in bayou country did keep animals and maintain gardens in which they grew a variety of crops, including maize, beans, and squash, but the scale of agricultural production was greatly reduced.<sup>118</sup> Allamel describes this adaptation in cultural terms: “they changed their pattern of subsistence from agriculture to trapping and fishing, thus reconstructing their material culture entirely and adopting an ‘amphibious’ worldview.”<sup>119</sup>

As part of this shift, “Houma men [became] famous boat wrights [with] their inland waterway shrimp boats, a type of Lafitte Skiff [...] famous among Gulf Coast fishermen from Galveston to Mobile Bay... They are still among the best fishermen in south Louisiana.”<sup>120</sup> D’Oney emphasizes the relationship between Houma people and the watery networks of the bayou country:

*It is impossible to understand the Houma without understanding their relationship to water. Water was their highway, their economic base, the producer of their food, their means of escape from enemies, and the route via which the nation maintained political and social ties with family and friends.*<sup>121</sup>

The Houma largely share hunting, trapping, fishing, and foraging practices with their Black and Cajun neighbors, except relating to crawfish. The Red Crawfish, *Shakei*

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<sup>117</sup> Speck, Frank G. 1975. “The Houma Indians in 1940.” *American Indian Journal* 2 (1): 4-15. (page 5)

<sup>118</sup> Louisianafolklife.org. <https://www.louisianafolklife.org/ImageBase/ImageBase/SearchImageList>  
Robichaux, Brenda Dardar. “Brenda Dardar Robichaux oral history interview.” *Bayou Lafourche Oral History Series*. 11 November 2010.

<sup>119</sup> Allamel, Frédéric. 2016. “The Houma Indians’ Battle Against the Ocean.” *Disaster Prevention and Management* 25 (2): 183-195.

<sup>120</sup> Gregory, H. F. ‘Pete.’ 1985. “‘A Promise from the Sun:’ The Folklife Traditions of Louisiana Indians.” In N. R. Spitzer’s (Ed.), *Louisiana Folklife: A Guide to the State*. Office of Cultural Development.  
[https://www.louisianafolklife.org/lt/virtual\\_books/Guide\\_to\\_state/gregory.html](https://www.louisianafolklife.org/lt/virtual_books/Guide_to_state/gregory.html)

<sup>121</sup> d’Oney, J. Daniel. 2020. “Adaptation and Erasure in Bayou Country.” In *A Kingdom of Water*, 53-77. (57)

*Houma*, is described as the tribal guardian spirit, and many Houma people do not eat them.<sup>122</sup>

Historically, the Houma enjoyed great food security. Past accounts of Houma foodways in bayou country document regular access to an abundance of nutritious foods.<sup>123</sup> Describing the resources of the Houma people in 1940, anthropologist Frank Speck writes: “The Houma are seldom hopelessly hungry except during temporary stress periods of hurricane and flood.”<sup>124</sup>

## **Black Foodways**

In the context of this thesis, Black foodways refer to the rural foodway traditions of Black culture developed in Lafourche and Terrebonne parishes since the era of enslavement. It differs from the more urban, Creole foodways of New Orleans. While many Black people have moved up the bayou and into cities like Houma or Thibodaux, the traditional rural foodway traditions persist - a change in geography does not necessitate a rapid change in custom and practice of engagement in food culture.

Like their Cajun neighbors, *Maroons* and Black people enslaved on plantations cultivated gardens, hunted, and fished for food. Deep agricultural knowledge accompanied kidnapped Africans across the Atlantic Ocean and was applied in the

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<sup>122</sup> Gregory, H. F. ‘Pete.’ 1985. “‘A Promise from the Sun:’ The Folklife Traditions of Louisiana Indians.” In N. R. Spitzer’s (Ed.), *Louisiana Folklife: A Guide to the State*. Office of Cultural Development. [https://www.louisianafolklife.org/lt/virtual\\_books/Guide\\_to\\_state/gregory.html](https://www.louisianafolklife.org/lt/virtual_books/Guide_to_state/gregory.html)

<sup>123</sup> Robichaux, Brenda Dardar. “Brenda Dardar Robichaux oral history interview.” *Bayou Lafourche Oral History Series*. 11 November 2010.

<sup>124</sup> Speck, Frank G. 1975. “The Houma Indians in 1940.” *American Indian Journal* 2 (1): 4-15. (page 6)

United States through the introduction and management of crops like rice, okra, black-eyed peas, and watermelon.<sup>125</sup> Okra, used as a thickener in stews and the namesake of the stew “gumbo,” “comes from the Igbo language of Nigeria where the plant is referred to as *okuru*.”<sup>126</sup> Rice, now a staple of southern cuisine, was a staple crop in West African nations from which many people enslaved in Louisiana were taken.<sup>127</sup>

Harris describes enslaved Black food cultivation and hunting practices:

*In the cracks and quiet times that they created in their harassed lives, they found a way to make a world. Many worked for themselves and their own benefit. Some saved and foraged seeds and tended gardens by moonlight or fished and hunted nocturnal animals like possum; others raised yard fowl for their eggs or hogs for their meat.*<sup>128</sup>

Throughout the Upper and Lower South, there existed markets that featured prominently as social spaces for Black people. Run and patronized by slaves who were free to barter, sell, or purchase foodstuffs and homemade goods, they often took place early on Sunday mornings – days when enslaved people were permitted a little time away from standard plantation work. Some enslaved people walked hours to the market where they could meet friends and relations and exchange news about happenings at different plantations. Fiddle music was not uncommon, and marketgoers could relax, smile, and be as themselves.<sup>129</sup>

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<sup>125</sup> Harris, Jessica B. 2011. *High on the Hog: A Culinary Journey from Africa to America*. New York: Bloomsbury USA. Page 6-7

<sup>126</sup> The French word for okra is *gombo*.

<sup>127</sup> Harris, Jessica B. 2003. *Beyond Gumbo: Creole Fusion Food from the Atlantic Rim*. New York: Simon & Schuster. Page 9

<sup>128</sup> “They” refers to the Black people who were enslaved or perhaps sharecropped on southern farms. Harris, Jessica B. 2011. *High on the Hog: A Culinary Journey from Africa to America*. New York: Bloomsbury USA. Page 84

<sup>129</sup> Harris, Jessica B. 2011. *High on the Hog: A Culinary Journey from Africa to America*. New York: Bloomsbury USA. Page 84



Feasting and barbecues were common on harvest or cornshucking days, or when there was a celebration at the Big House. On those days, Black men would “use their talents to create iconic Afro-Southern dish.”<sup>130</sup> On other days, cooking in the slave yard encouraged the preservation of an African cooking technique of one-pot meals.<sup>131</sup> The meals sometimes included “possum, turkey, racoon, and rabbit” hunted by enslaved women and men after dark.<sup>132</sup>

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<sup>130</sup> Harris, Jessica B. 2011. *High on the Hog: A Culinary Journey from Africa to America*. New York: Bloomsbury USA.

<sup>131</sup> *Ibid.*

<sup>132</sup> *Ibid.*

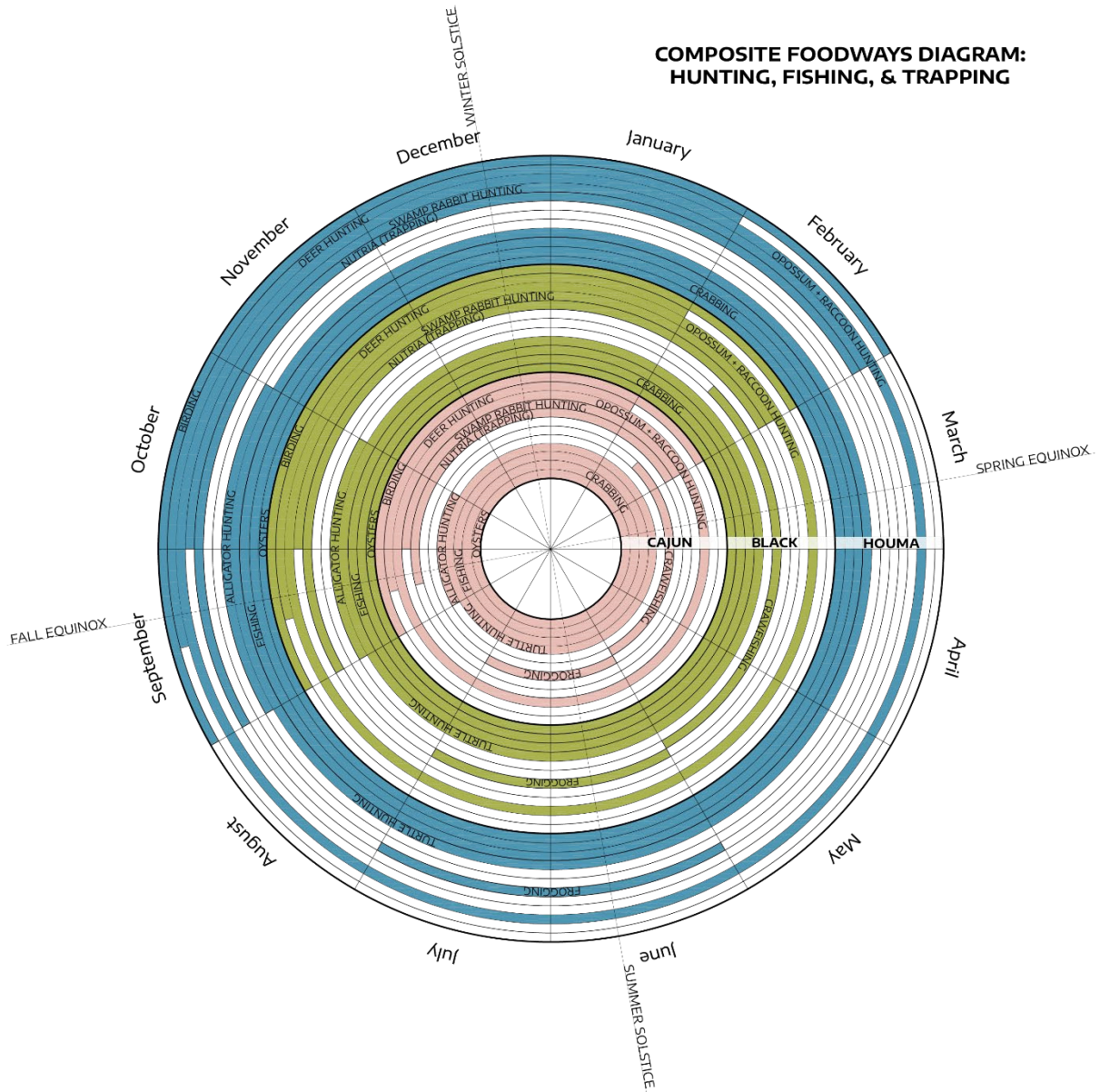


Fig. 33. Composite Foodways Diagram: Hunting, Fishing & Trapping. Illustration of the contemporary seasonality of animals fished, hunted, and trapped in local Cajun, Black, and Houma Indian traditional foodways.

## DESIGN IMPLICATIONS

The LA SAFE regional planning document identified “a migratory shift as a result of [...] flood risk.”<sup>133</sup> An awareness that migration is already underway in low-lying areas permeated the LA SAFE community engagement work. In a place where cultural identity is so enmeshed coastal ecosystems, designers must approach projects with the intention to cultivate places in which displaced people and existing residents can practice traditional lifestyles, safeguarding cultural knowledge and ways of being and passing them down to future generations.

In Terrebonne and Lafourche Parish, people are moving up the bayou, reducing their flood and storm risk by leapfrogging just one or two towns up the bayou, while retaining physical, social, and cultural connections to home, land, work, and social networks institutions in their native communities. But as land loss continues its march inland, displaced residents will increasingly rely on the resources of receiving communities to fill these cultural needs.

The following recommendations aim to encourage place attachment and to cultivate opportunities for the continuation of the multiple cultures that reside in Lafourche Parish and Terrebonne Parish.

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<sup>133</sup> Louisiana Strategic Adaptations for Future Environments. *Our Land and Water: A Regional Approach to Adaptation* [Report]. U.S. Department of Housing and Urban Development, 2019. (page 8)

## Recommendations

1. Design parks, walking trails, and other public amenities that explicitly celebrate multicultural wetland foodway practices and histories.
2. Provide for the expansion of existing housing stock in areas with direct access to navigable waterways and wetlands where residents can continue practicing traditional lifestyles while being protected from flooding.<sup>134</sup>
3. Expand opportunities for recreational fishing through the creation of new public boat launches and fishing pier amenities. Locate amenities near existing and proposed population nodes to encourage regular use. Naturalize drainage ditches to balance detention and conveyance and to create recreational and educational canoeing and kayaking opportunities. Expansion of these opportunities are important because proportionately fewer residents will have direct access to navigable waterways as migration continues.
4. Develop seafood and farmers markets in conjunction with boat launches, fishing piers, and fish cleaning stations. If possible, expand the design to include harbors of refuge for commercial fishing vessels. Program elements like educational or picnic pavilions and walking paths would animate the markets as multiple purpose, year-round cultural centers.

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<sup>134</sup> Allamel, Frédéric. 2016. "The Houma Indians' Battle Against the Ocean." *Disaster Prevention and Management* 25 (2): 183-195. Page 190

5. Develop gathering spaces for food-centric events and large family meals.  
Explore opportunities for the creation of a community *boucherie* for processing of game and domestic animals.
6. Consider alternative transportation options to and from Port Fourchon. The roadways flanking Bayou Terrebonne and Bayou Lafourche are the primary thoroughways in the region and they double as evacuation routes. As population increases, vehicular traffic will worsen. Lafourche Parish is also seeking funds to support the elevation of a vehicular bridge to Port Fourchon, a primary employment hub. Alternately, the parish could consider establishing a water taxi service running between Thibodaux and Port Fourchon. The service would reduce vehicular demand and reinforce the area's maritime ties.
7. Implement and maintain ecological restoration efforts in low-lying areas within and around the Houma-Thibodaux-Raceland Development Triangle to reduce flood risk in developed areas. Create new hunting and trapping opportunities in remediated areas that are accessible to the public.
8. Conserve prime agricultural land to safeguard the area supply of fresh fruit, vegetables, grains, and meats. Explore economic incubators and grant programs that support Black and Native farmers.

## **Conclusion**

Development-induced environmental changes in coastal Louisiana are causing significant land loss and erasure of landscapes critical for the continuation of local cultural practices. This thesis explores the capacity of landscape design to serve as a reparation for some of that injustice. The previous recommendations seek to expand access to native landscapes that encourage maintenance of foodway practices and traditional lifestyles for Cajun, Houma, and Black people.



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## **VITA**

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