It's More Than a Place:

Exploring Connections to Place and Place Identity in Louisiana

by

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Abstract

Louisiana represents the enigma of a modern state shaped by a heritage of colonialism, displacement and adversity, fossil fuel-driven economic development, structural racism and much more. These issues are now compounding as well as being intensified to new heights by climate change driven events and it is impacting the people and the place. This research aims to understand the deep-rooted connection people from Louisiana share with each other as well as the land. Specifically, what role does attachment to place take on when discussing place identities of those from Louisiana and the external forces impacting these inherent identities? Participants range from ages 23 to 84 with the only requirement being the participant must be from Louisiana. Meaning lived in the state from birth to the age of 25 for at least ten years. A snowball technique was used to identify potential community member to talk with. Dialogues transcribed coded for emergent themes as well as those related to sense of place, attachment to place, adaptation, heritage, resilience, kinship, community ties, and social ties. Key findings indicate sense of and attachment to one's place in Louisiana factor into the place identity of those from there and indicate theses identities, when influenced by external factors, are sustained through adaptability, strong social systems, diversity, and the connection to self-definition.

Table of Contents

Table of Contents ..... *iv*
List of Figures ..... *v*
List of Tables ..... *vi*
Acknowledgements ..... *vii*
Positionality Statement ..... *viii*
Introduction *1*
Louisiana, the place **2**
Literature Review *7*
Introduction **7**
Landscapes **8**
Louisiana People **11**
Indigenous Peoples **12**
Louisiana's Ethnic Heritage **15**
People Interacting with The Land **22**
Land Loss, Subsidence & Erosion 23
Hurricanes, Tropical Storms, and Floods – Oh my! **27**
Future Climate Threats **34**
Conceptualizing Louisiana as More Than a Place **37**
Sense of Place 37
Place Identity 42
Conclusion **43**
Methods *45*
Results *48*
Longstanding Ties to Place and Importance of Kinship **51**
Social Networks and Community Ties **54**
Sense of Place and Place Attachment **57**
Place-based Identity **58**
Discussion *61*
Conclusion *62*
Bibliography ..... *ix*

List of Figures

Figure 1: Map showing the totality of the Mississippi River watershed tributaries, and path it takes through Louisiana to the Gulf of Mexico. 9

Figure 2: A map illustrates the concentration of bayous thru Louisiana and surrounding areas. (Luz K. Molina n.d.) 10

Figure 3: Map from Owens (2015) spatially representing Native American tribes in Louisiana. The map shows four federally recognized tribes the Chitimacha Tribe of Louisiana, the Coushatta Tribe of Louisiana, the Jena Band of Choctaw Indians, and the Tunica-Biloxi Indian Tribe. It is not representative of all indigenous or native groups in Louisiana. 15

Figure 4: Map from Owens (2015) displaying the ethnic heritage of Louisiana people..... 17

Figure 5: A map depicting the use of Louisiana French Creole retrieved from Owens (2015) 20

Figure 6 shows the 30 historical hurricane tracks, tropical storms, tropical depressions and there rating to strike Louisiana from 1990-2020 NOAA (n.d.) 30

Figure 7: This map is adapted from Google Maps (n.d.) showing locations where participants grew up. 45

List of Tables

Table 1: Theme indicators for longstanding ties to place and importance of family ties examples from review of scholarship and theme indicators from interview responses in this study..... 51

Table 2 Theme indicators for strong social networks and community ties with examples from review of scholarship and theme indicators from interview responses in this study..... 54

Table 3: Theme indicators for sense of place and place attachment examples from review of scholarship and theme indicators from interview responses in this study..... 57

Table 4 Theme indicators for place identity adapted from work done by DuCros (2019) with examples from review of scholarship and theme indicators from interview responses in this study..... 58

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This essay is featured in the book *All We Can Save* by Johnson and Wilkinson (2021)

Colette Pichon Battle's tribute "An Offering from the Bayou" (329-333)

"It was about two years after Hurricane Katrina that I first saw the Louisiana flood maps. These flood maps are used to show land loss in the past and the land loss predicted to come. On this particular day, at a community meeting, these maps were used to explain how a thirty-foot storm surge that accompanied Hurricane Katrina could flood communities like mine in South Louisiana…More specifically, the graphic showed the disappearance of my community and many other communities in South Louisiana before the end of the century.

We were now bound by the impossible task of ensuring that our communities would not be erased…Friends, neighbors, family, my community: I had just assumed they would always be there. Land, trees, marsh, bayous: I had just assumed that they would be there, as they had been for thousands of years. I was wrong . . .

To survive this next phase of our human existence, we will need to restructure our social and economic systems to develop our collective resilience. The social restructuring must be toward restoration and repair of the Earth and the communities that have been extracted from, criminalized, and targeted for generations. These are the front lines.

*The good news is we come from powerful people...those who have, in one way or another, survived. This is reason enough to fight**. The work starts here. The work starts together**." (Emphasis added)*

Positionality Statement

Rachael Harrell is Caucasian female who grew up in Shreveport, Louisiana living with her single mom who worked as a registered nurse. She spent her college years studying nursing at The University of Louisiana in Lafayette, where she truly fell in love with her connection to Louisiana heritage and culture. Rachael found her connection to the environment in her undergrad years as well but was uncertain how or if that subjective imprint could ever be made into a career. Her home state was crumbling beneath billions of dollars of debt and there was talk of cutbacks to state funded education systems and facilities being a solution. Unsure of the future she moved back home to Shreveport on a mission to graduate as soon as possible ensuring she could start a new journey away from Louisiana. After graduating from Louisiana State University Shreveport, she moved to Washington where she is now a first-generation master's graduate from The Evergreen State College. Louisiana still is, and will always be, a part of her identity. The intrinsic urge to go back and the longing to be with her people on the bayous never quieted. Rachael chose to focus on place identity in Louisiana largely due to her strong attachment to this place and the people who are from there. Her education has led her to understand the magnitude of her place identity, the significance of place-based education, and inspired her drive to assist people and people in our journey to a sustainable future.

Introduction

Louisianians offer a uniquely diverse perspective on the bond, or the attachment, one has with one's place and the impact the heritage has one's self-definition, social identity, and the life decisions they impact. As one interview participant questioned "Can you just eat gumbo, and you know drink beer, dance on Saturday nights, and be Cajun, or you know, is there more to it than that?" There is more to it than that, and even those from Louisiana can't explain it, they just know it is there. The people of Louisiana have long history of thriving along the mighty Mississippi River and her sprawling deltas. Beginning with indigenous peoples followed by the influx of traders and immigrants; their close association with place-based agricultural endeavors (from historic sugar cane and cotton plantations to modern soybean, rice, and sweet potato farms) and fishing (shrimp, crawfish, and oysters); and the distinctive language, food, and musical traditions that emerged from Louisiana are deeply rooted in its people today.

Research by Burley (2010) found place attachment among coastal Louisiana residents arises from experiences embodied by landscapes, melded with social and physical elements, and sutured to identity. The emotional bond to place built through experiences overlays the physicality of places and can give symbolic meaning to landscapes through social construction. Individuals see themselves through both physical and social elements of landscapes (a process called self-definition). Therefore, everyday experiences, symbolized as landscapes, influence place attachment as well as place-based identity. This process of forming bonds with one's place requires cognition (acquiring knowledge through experience) and affect (emotion that changes thought or action), the same factors that influence behavior (Burley, 2010). Building on Burley's ideas, this research aims to understand Louisianian's sense of place by examining the

relationship between sense of place and bonds to place, and how this relationship influences self-definition to shed light on the irreplaceable people of Louisiana. First however, I will explore in a bit more detail this place called Louisiana.

Louisiana, the place

Louisiana, dubbed sportsman's paradise, has varying geography from uplands in the north to lowlands, marshes, and wetlands in the south. As a result, similar a simmering pot of gumbo, Louisiana is a melding pot of uniquely diverse people that contribute to rich cultural and legacy influences scattered about that state. The state has been shaped by a lengthy history of fossil fuel extraction, industry driven investments, oil and gas economy, structural racism, environmental injustices, subsidence, as well as coastal erosion. Future threats from destructive climate related events are predicted hit Louisiana first and the hardest. Research into climate gentrification post hurricane Katrina suggests that minority populations are at a higher risk of experiencing disparities related to climate change disasters, putting an already vulnerable coast and population at a higher risk for damages and destruction (Aune, Gesch, and Smith, 2020; Colten et al., 2018).

Subsidence, or sinking, of coastal Louisiana occurs at a rate of about one inch every three years; the coast has already lost more than 2,000 square miles of land since the 1930s (EPA, 2016). A plethora of human activities, such as dredging and the construction of river levees, have exacerbated coastal erosion, wetland loss, and natural subsidence. These activities have inhibited the Mississippi River from its natural and continual deposition processes that replenished the wetlands, marshlands, and coastal delta. Human activities have also led to increased saltwater intrusion, causing further loss of wetland barriers important in preventing coastal erosion, mitigating storm surge damage, and providing hurricane protection.

This isn't new information to the people of Louisiana; many have witnessed these changes firsthand over time, throughout generations. Subjects interviewed by Burley et al. (2007) referred to land loss as an eerie dimension as if a thief in the night. Channel markers boatmen used for generations to navigate cypress bottomed waterways are now submerged; family hunting grounds are no longer accessible due to highwater; low tides are lower, high tides are higher; and noticeably higher water levels with each storm are just a few experiences reflected through narratives of place from coastal residents (Burley, 2010). "Their identity, their dialect, the challenges of living where they live, the work and pleasure that stems from living in this place, the changing landscape, the unique environment, for residents, all form a symbiotic relationship" (Burley et al. 2007:357). A rapidly approaching threat is on the horizon--the future of Louisiana specifically the existence of its many coastal communities directly depends on limiting rates of sea level rise to the greatest extent possible Devyani (2021).

The state faces rising sea levels accompanied by coastal erosion, exacerbated subsidence, increases in precipitation, more frequent and intense flooding, depleting natural buffer zones, and more powerful tropical storms. Rising sea levels are likely to accelerate coastal erosion currently caused by natural and anthropogenic subsidence, as well as coastal barrier loss and erosion related to human activities. Despite an ongoing migration away from the most vulnerable coastal areas (NOAA Office for Coastal Management, 2022), show that out of a population of 4.6 million in the state, 2.3 million people, 50% of resident state wide, live in coastal areas.

Economically, based on 2015 data, people in the coastal area earned $46 billion in wages annually (NOAA, 2022). Also in 2015, one in 70 Louisiana jobs was linked to the seafood industry, with annual retail sales of over $2 billion (Holland 2015; Smith et al., 2020). The ports along the coast contribute another 160,000 or more jobs Holland (2015). In 2019 the travel and

tourism industry, which supports over 400 annual festivals celebrating authentic culinary, music and outdoor experiences, employed 242,000 people Louisiana Travel Association (2019). Some or all of that could be at risk.

Average temperatures in Louisiana may rise more than 10 degrees Fahrenheit by 2100, as compared to 1901-1960 averages (Climate Reality Project 2020; NOAA State Summaries 2022). Seas are expected to rise by and thereby increasing storm surge depths. In some coastal locations the rate of sea level rise will be more than four times the global rate due to natural variations in the land Louisiana—State Summaries (2022). Louisiana coastal flooding risk estimates by States at Risk (2016) says 955,000 people are at risk for flooding now with sea levels to rise 1.9ft by 2050 and 5.7ft by 2100. Still, sea level rise, flooding, storm surges, and temperature aren't the only climate change related threats on the rise. Floods and drought occurrences will become more severe, and any overall global warming will lead to increasing heat wave intensity but decreasing cold wave intensity EPA (2016).

Aside from the changes mentioned above, Louisiana faces major tropical storms and hurricanes yearly, and those are expected to intensify in power and frequency Knutson et al. (2021). Hurricane Katrina, making landfall in August 2005, is the most talked about Louisiana disaster due the cataclysmic destruction the state faced in the days following the storm. Katrina was the perfect storm everyone knew was coming just not when it would come. She lived up the worst that was predicted by many, leaving calamitous damage in her wake. In the aftermath, more than 80% of New Orleans was under as much as 15 feet of water, causing over $125 billion in property damages and over 1,500 fatalities with NOAA State Summaries (2022).

The NOAA Hurricane Research Division reports that just from 2005 to 2009, six hurricanes made landfall in Louisiana, the largest number to hit the state since the beginning of

the 20th century. From 2005 to 2020, ten major hurricanes struck Louisiana. Category 4 Hurricane Harvey in 2017 caused a whopping $125 billion worth of damages Chute (2020). During the 2020 hurricane season alone, five named storms hit the Louisiana coast, including three major hurricanes. Hurricane Laura, in August 2020, tied with two historical hurricanes to be one of the most powerful to make landfall in U.S. history, and it was followed six weeks later by Category 2 Hurricane Delta, a severe freeze in February and flash floods in May Ballard, Mark, and Mike Smith (2021). This may be perceived as a weather forecast; just listing highlight after highlight. However, each event, big or small, wreaked havoc on the land and the people of Louisiana.

Rainfall events dumping amounts greater than one inch are also expected to increase in frequency and result in greater flash flood risks inland Laska (2020). Even if average precipitation remains the same, flash flooding will increase throughout the state related to the higher temperatures that will increase the rate of soil moisture loss during dry spells, which could increase the intensity of naturally occurring droughts NOAA State Summaries (2022). Stalled storm systems, as seen in the 2016 floods, or indirect impacts from flooding north of the state as seen in 2011, in combination with more intense droughts, will further increase the risks of dangerous flooding. Because of the flat landscape (the highest point rises only 535 feet above sea level and the lowest 3 feet below) and interconnected waterways, the impact of a rainfall event in one part of the state is often felt far beyond the site of the original downpour.

Louisiana already experiences many forms of flooding, including coastal or surge/tidal floods, fluvial flooding or river floods, pluvial floods related to rainfall-induced flash floods and urban flooding, and backwater flooding. For example, in 2016, consecutive days of heavy rain led to flash floods washing through southern Louisiana. NOAA State Summaries (2022) data

shows 30,000 people were rescued from these floodwaters that caused $10.7 billion in damages and destroyed over 50,000 homes in East Baton Rouge, Ascension, Livingston, and Tangipahoa parishes. With climate change related events on the rise, disaster impacts will be felt way beyond the coastal parishes. Emergency flood disasters have been declared by all sixty-four parishes at least twice over the last 20 years, and climate change has made these events 40% more likely and 10% more intense (Devyani 2021).

Louisianians are seen by outsiders as inherently resilient with a sense of adaptability. They persevere despite facing day by day loss of their beloved place. Bit by bit. Flood by flood. Hurricane by hurricane. Awaiting that one storm, the big one. Norris et al. (2008) found Louisiana communities reestablish their sense of place through rebuilding after a storm, forming a renewed attachment to place. Physical and social aspects of the rebuilding process insert symbolic meaning to the experience socially and through the physicality of space. Observations of interactions with the physical environment, or experiences, are melded with socially derived meaning throughout many aspects of one's existence and attached to place in relation to ourselves (Burley 2010). Thus, individual perceptions of the process and the actual events are influenced by the social context as well as by components of identity.

In the case of Louisianians, resilience can be conceptualized as adaptive capacity. Possibly, this inherent resilience noted by those on the outside can be explained through experiences, symbolism, and attachment to place that is embedded in the identity of individuals, as well as the community, therefore influencing perceptions and behaviors that sustain resilience and adaptive capacity. Those ideas and more will be explored in the literature review that follows.

Literature Review

Introduction

Louisiana resident's experiences and why they live life the way they do offer previews of what can be expected in other locations facing impacts related to rising sea levels in our changing climate, as Louisiana is expected feel the brunt of the first and the worst of coming climate change events. The state's history has been shaped by a lengthy chronicles of fossil fuel extraction, an oil and gas economy, structural racism, subsidence, coastal erosion, and the list goes on. Over time these factors have disturbed many facets of life on the bayou, significantly through social and environmental injustices, a life that now faces increased threats related to climate change. The increase in climate-driven danger and frequency of extreme weather, storms, heat, and flood events will continue to disturb lives of the people of Louisiana. However, Louisiana and its people share something that makes them stand out from other communities predicted to be ravaged by climate change with such force. The people, created from a diverse heritage that is inherently resilient, formed a symbiotic relationship with their environment by relating to commonalities, resilience, and diversity they shared with the land.

This review of research and literature will dig into the bayou land history and what it means to be from Louisiana. To start, the review explains the historical formation Louisiana landscapes, today's Mississippi River Delta, and the landscape transformations that followed due to both natural and anthropogenic influences. Then the review will explore the indigenous groups and the diverse ethnic heritage of the people of Louisiana and its contribution to the community, culture, heritage, and lifestyle that still exists today. The future climate threats Louisiana faces related to climate change are presented next to point out the future these people and their place face. It is important to understand the vast diversity that is Louisiana, from the environment to

the people, to understand the depth of how changes to, or loss of, place impacts self-definition and place attachment. To wrap up, this review will conceptualize Louisiana as more than a place, sharing more than a bond with its people; by examining existing scholarship focused on sense of place, place attachment, inherent resilience and adaptive capacity, and identity.

Landscapes

This section delves into the geographical history of Louisiana's basins and delta formations. Then I discuss the colonization and settlement, environmental exposures people faced, and the impact humans had on the land. Much of Louisiana's landscape consists of wetlands, bottomland forests, swamps, bayous, marshes, and mangroves that are continuously, seasonally, tidally, or inundated (underwater) related to meteorologic events. About 40 percent of the coastal wetlands in the lower 48 states are found in the Louisiana Mississippi River Delta as noted by National Wildlife Federation (n.d.). These millions of acres of wetlands were built over thousands of years by Mississippi River floodwaters that deposited huge amounts of sediment at the river's delta American Rivers (n.d.). The Mississippi River and its tributaries drain all or parts of 31 states. It is the fourth-longest and ninth-largest river in the world American Rivers (n.d.). *Figure 1* puts into perspective the impact the mighty Mississippi river system has on Louisiana.

Figure 1: Map showing the totality of the Mississippi River watershed tributaries, and path it takes through Louisiana to the Gulf of Mexico.

About 20,000 years ago, at the end of last ice age, glaciers began to melt and recede, and seas began to rise; that continued for over 10,000 years leaving the coastlines we have today. Large areas of coastal land were submerged, becoming continental shelves, and shorelines retreated until sea level reached a relatively stable point. The escarpments marking those 7000-year-old shorelines are now far inland from the Gulf Coast, north of Lake Pontchartrain, and just below Baton Rouge and Lafayette Laska (2020). During the period of European settlement of North America rivers had begun discharging sediments causing the world's ocean level to begin

slowly retreating leaving todays marshlands Kemp et al. (2011). For the next 4,600 years or so rivers drained into the Gulf of Mexico refilling the shallow gulf with sediment layer by layer and delta by delta. As the flow gradient diminished due to sediment build-up, the raging river pursued quicker routes to the gulf by finding paths to begin new deltas; eventually forming five or six major deltas (Laska, 2020:36). As Melissa Martin says in her book *Mosquito Supper Club* Mississippi Delta soil is pure fertile magic known as "chocolate gold". As each delta lobe grew through the deposition of river-borne sediments, it created branching distributaries, some of which left remnants as today's bayous Laska (2020). Bayous are usually considered to be closer to the coast but as you can see in *Figure 2,* they are throughout the state. Bayous are often referred to swamps with the main difference being bayous have moving water and swamps remain stagnant.

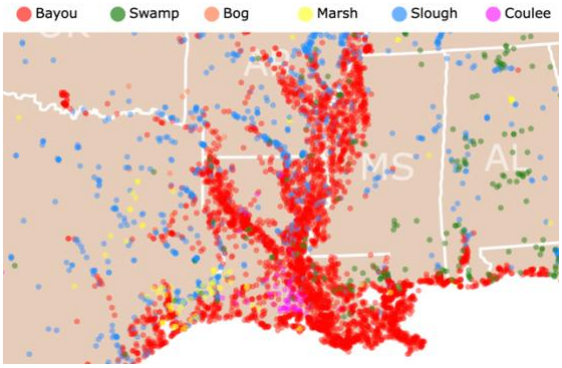

Figure 2: A map illustrates the concentration of bayous thru Louisiana and surrounding areas. (Luz K. Molina n.d.)

A bayou refers to a body of water; a river arm, a slow-moving stream, a swampy marsh inlet, or even an old river path abandoned by the Mississippi long ago. The word *bayou* is likely derived from the Choctaw tribe word *bayok* meaning "small stream" (Martin and Culbert 2020:2; National Geographic Society 2012). Even so, bayous can be tiny or colossal. The intertwined network of bayou waterways covering Louisiana work together to push sediment south to eventually form deltas. Melissa Martin writes her take on the Louisiana bayous in her book *The Mosquito Supper Club* saying they "…are a thoroughfare into history, an artery to the heart of the Cajun life I know" (Martin and Culbert 2020:13). The bayous play a large role in local economy as a natural resource as well as ecotourism.

Louisiana's bayous are home to vast forests of majestic cypress trees draped with Spanish moss. The tree's roots protrude above the surface of the marsh, creating "knees" that provide stability against the punishing winds of storms coming off the Gulf. Labelled as Louisiana's state tree of, a bald cypress can live to be 1,000 years old and reach heights of 100 to 150 feet, also provide protection against erosion, holding tight to soils but also slowing the rush of floodwaters through a swamp area Dayle Wallien (n.d.). Other plants inhabiting the bayous include wiregrass, bottomland hardwoods, mosses, and water celery Michael Evans (2018). Those plants then provide food and habitat for migratory birds, blue herons, alligators, shrimp, hundreds of fish species, and white-tailed deer living on nearly 3 million acres of bayou territory statewide Michael Evans (2018). The bayous teem with life.

Louisiana People

It is cliche to say that Louisiana is culturally diverse. Being from Louisiana can mean so many things. The bayou state is a complex blend of French, Spanish, German, African, Irish, and Native American influences that are supported by unique regional cultures shaped through history (Colten, 2021; Owen, 2015). Few people realize the degree of complexity and variation in the people of the state of Louisiana and the monumental role each group's heritage has played in shaping of not only the cultural environment, but also the people of Louisiana and their relationship with the land. Melissa Martin, who grew up in Terrebonne Parish on the gulf coast, writes in her cookbook "To me, everything above Baton Rouge was the north" (Martin and Culbert 2020:13). If you were to travel throughout the entire state meeting people in every town along your journey, you'd find every place and community to be entirely different. Yet the same, through our bond with all that is Louisiana.

European explorers discovered the first indigenous groups on their expeditions along the Mississippi River. Explorers described several villages they encountered on their journeys. Using the explorer's estimation, once colonization began, 13,000 to 15,000 native people lived in Louisiana, speaking 22 distinct languages National Parks Service (2021). Many were displaced to the area during the forced relocations of 1839 and sought freedom in the bayou wilderness Louisiana State Museum (2014). By 1980, only about one-fifth as many Native Americans remained Britannica (n.d.). In 2020, those who selected only Native American and Native Alaskan on the U.S. Census accounted for only 0.7% of Louisiana's population—just over 32,000 people U.S. Census Bureau (2020). Indigenous groups were the first care takers of the land and relied on the rivers and bayous as a food supply, shelter during storms and floods, and would navigate between settlements on the bayou seasonally to avoid different weather conditions National Geographic Society (2012).

Indigenous Peoples

Before European colonization in the 18th century many Indigenous groups called Louisiana home. These groups had been living in the region for some 10,000 years before European settlement. It's important to know the story of indigenous groups and their relationship with their place for countless reasons. If it was not for these people and their story, we would not have ours. The original inhabitants of Louisiana shared their culture with the arriving European and African settlers by sharing the ways of the land and its natural bounty. The specific contributions of indigenous groups are discussed in more detail under the section on ethnic heritage.

Pre-settlement tribes included Poverty Point, Tchefuncte, Marksville, Troyville-Coles Creek, and Caddo/Plaquemine-Mississippian Louisiana State Museum (2014). Indigenous

groups had followed the gradual growth of the basin and deltas as the sea levels withdrew into to the Gulf, adapted to continually changing environmental conditions, and treated the landscape as a common resource Colten (2016). Thousands of years ago as the seas began to recede the waterways opening to the gulf forming new landscapes that these indigenous groups adapted to and coastal lands, they grew with it. This landscape change is described in more detail in the previous section on landscapes. Coastal Louisiana tribes shared a connection to the coastal landscape that provided subsistence lifestyles deeply rooted in local species, rivers, and bayous that supplied their food and shelter.

Four tribes—the Tunica-Biloxi, Chitimacha, Koasati, and Jena Band of Choctaw—have been federally recognized and have reservations in Louisiana. However, Louisiana considers the following as state, but not nationally, recognized tribes: Adai Caddo Tribe, Bayou Lafourche Band, Choctaw-Apache Tribe of Ebarb, Clifton Choctaw Tribe of LA, Four Winds Cherokee Tribe, Grand Caillou/Dulac Band, Isle de Jean Charles Band, Louisiana Band of Choctaw, Natchitoches Tribe of Louisiana, Pointe-Au-Chien Indian Tribe, and United Houma Nation Indian Affairs - Office of Governor (2019).

The Chitimacha tribe is world-renowned for its skills in rivercane basketry handed down from ancestors (Owens 2015). Choctaw Apache tribe traces its origins back to Spanish peoples stationed at a fort in west Louisiana to resist the French expansion. When the fort closed the residents were displaced to different regions with one being in Ebarb, LA area, where a band of Choctaw settled and eventually united with the Ebarb community Dayna Bowker Lee (2013). Today the Choctaw-Apache Tribal artisans make traditional elaborate regalia for community members who dance in the annual powwow held each spring, bringing people and traditions from the Southeast and the Southwest together (Dayna Bowker Lee 2013). The Clifton Choctaw

Tribe emerged in the 19th century from several small family groupings scattered throughout Rapides and Natchitoches parishes Dayna Bowker Lee (2013).

The Tunica people, first encountered in Mississippi, were known as highly successful entrepreneurs; they traded salt, horses, and other goods across the Southeast Dayna Bowker Lee (2013). When the Tunica learned of the French colonists settling in Louisiana, the tribe migrated that way to take advantage of new trade opportunities. The Biloxi tribe crossed the river into Louisiana after 1763 and settled in small groups, with one group settling near the Tunica tribe leading to the convergence of the two becoming the Tunica-Biloxi tribe Dayna Bowker Lee (2013).

Houma is the largest of Louisiana's tribes, numbering about ten thousand. Tribal citizens live in the marshes and along the bayous of Terrebonne and Lafourche Parishes. Known as the "The United Houma Nation," it has been recognized by the state since 1972 but is not federally recognized Wikipedia (2022). Around 1706, the Houma tribe had been pushed south by the Tunica tribe and settled in Bayou Lafourche where traditions such as weaving palmetto which is a native palm; curing Spanish moss to make dolls, bags, and mattresses; and carving duck decoys and model pirogues—traditions they maintain today Owens (2015). Spanish moss, once dried and processed to produce blankets and bags, is still used to make moss dolls dressed in either cloth or palmetto clothing (Dayna Bowker Lee, 2013). Houma artistic traditions but all reflect the natural environment and utilize materials still abundant in the bayous and coastal marshes.

Finally, the Koasati, also known as Coushatta, maintained their native language with most families only speaking Koasati in their homes and they are known for their pine straw baskets and traditional rivercane baskets Owens (2015). *Figure 3* below shows the areas inhabited by some of the tribes mentioned above.

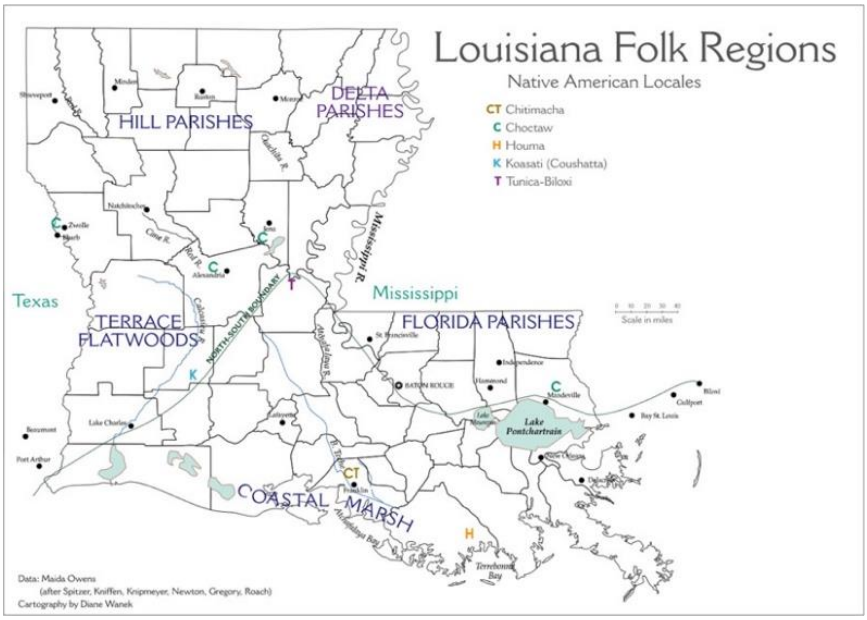

Figure 3: Map from Owens (2015) spatially representing Native American tribes in Louisiana. The map shows four federally recognized tribes the Chitimacha Tribe of Louisiana, the Coushatta Tribe of Louisiana, the Jena Band of Choctaw Indians, and the Tunica-Biloxi Indian Tribe. It is not representative of all indigenous or native groups in Louisiana.

Louisiana's Ethnic Heritage

The settlement of Colonial Louisiana brought many ethnic groups to the region, including those of French, Canadian, Spanish, Latin American, Anglo, German, and African descent. Spaniards were the first non-natives to venture into the Mississippi River region. Hernando de Soto explored the area in 1542, but Spanish settlement was deterred by the hostile climate, wildlife, and geography; colonists chose to look elsewhere for the precious metals and fertile soils they desired Louisiana Department Of Culture Recreation And Tourism (2014).

Well over a century later, France's King Louis XIV began encouraging forays into the Mississippi River regions to halt the expansions of Britain and Spain Louisiana Department Of Culture Recreation And Tourism (2014). René-Robert Cavelier and Sieur de La Salle arrived at the mouth of the Mississippi River in 1682, proclaiming the river and all the lands drained as possessions of France. They decided to name it "Louisiane" or "Louis' land" Louisiana Department Of Culture Recreation And Tourism (2014). Sieur de Bienville from France founded

the city of New Orleans in 1718 named in honor of the ruling regent, the Duc d'Orleans Louisiana Department Of Culture Recreation And Tourism (2014).

The colony went through many changes in ownership before it returned to French hands. This transfer and use of the colony as a site of business brought many groups of people from all over in the form of colonists, slaves, exiles, or immigrants. The first permanent settlement, New Orleans, was formerly saturated with French-speaking South Louisianians compared to the African American and British-American culture of North Louisiana. Irish fleeing the potato famine in the 1840s settled between the Mississippi river and the garden district, an area then known as the Irish Channel (Owens 2015). There were also waves of Germans, Italians, Czechs, Hungarians, Croatians, Filipinos, Latins – Isleño, Mexican, Cuban, Guatemalan, and East Asians – Chinese, Vietnamese, Laotian, Thai (Owen 2015). Native Americans, African Americans, Acadians, Isleños from the Canary Islands, and Vietnamese populated the coastal regions. Louisiana is also home to Africans, Greeks, Pakistanis, Iranians, Japanese, Koreans, Laotians, and Vietnamese. *Figure 4* shows a few of these different ethnic groups by location. Passing ownership of the colony among rulers throughout this time contributed to the vast diversity of ethnic heritage that created the immensely complex people of Louisiana and their way of life.

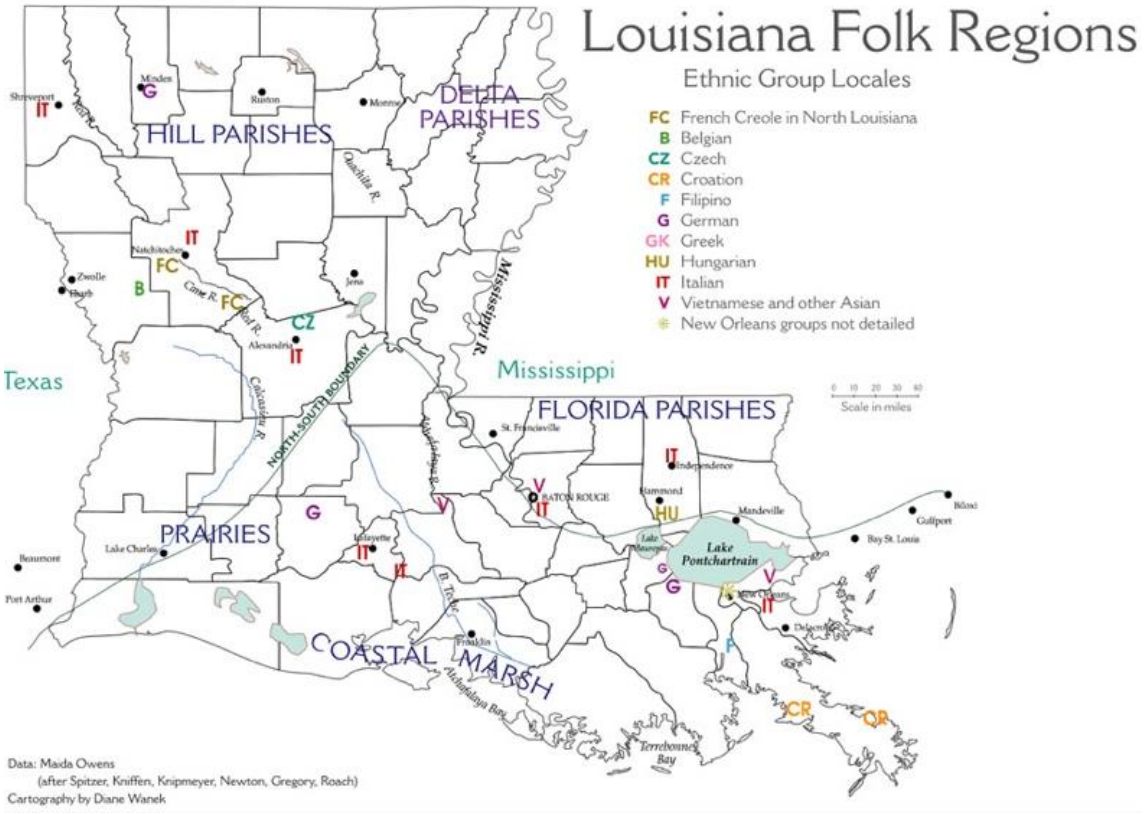

Figure 4: Map from Owens (2015) displaying the ethnic heritage of Louisiana people.

Despite the influx of foreigners, Native Americans made up the largest segment of Louisiana's population in the 1700s. Natives shared their food, medicines, material goods, and building and recreational practices with colonists (Louisiana Department Of Culture Recreation And Tourism 2014). For example, from the Native Americans we gained the powdered sassafras to make filé used in gumbo, place names like Atchafalaya and Kisatchie, hunting practices, and fishing methods like hand fishing Owens (2015). For hand fishing, commonly known today as 'noodling'. Basically, the person fishing wades waist-deep into muddy water and grabs for the catfish, buried deep in the cool mud. Those fish can be upwards of 40 pounds!

Natives also shared knowledge of medicinal plants, seasonal patterns for floods and seafood harvests, and agricultural and building skills suited to the local landscape and handed

down for generations National Parks Service (2021). They brought their knowledge of medicinal plants known known soothe ailments, reduce fevers, or relieve a cough. The Atakapa Ishak and Chitimacha tribes for example, intermarried with creole communities and tribal members with the healing knowledge became known as traiteurs, or community healers (Jonathan Olivier 2021). Traiteurs practiced medicinal knowledge handed down for generations; using groundsel bush (Manglier) for the common cold or flu, lizard's tail as a sedative and an anti-inflammatory, or bitter melon soaked in whiskey to treat stomachaches (Jonathan Olivier 2021). As the colony grew so did the supply of goods and foods from Europe or Spain. The natives took a liking to the European goods offered by settlers such as refined weapons, liquor, cloth, glass beads, and miscellaneous trinkets.

The Europeans used this relationship and their access to a supply of goods to increase Natives dependency on them (Louisiana Department Of Culture Recreation And Tourism 2014). Over time not all native groups intermarried or were as kind to European settlers, and some Louisiana Indians waged war. Most notably, during the Natchez Massacre and War (1729-1731), Natchez warriors attacked a French settlement killing many and rescuing 300 African slaves (Louisiana Department Of Culture Recreation And Tourism 2014). The French governor responded to this attack with deadly force. French white and black troops sent by the governor joined Choctaw warriors to attack Natchez settlements, virtually exterminating the entire Natchez society (Louisiana Department Of Culture Recreation And Tourism 2014).

Africans were a large cultural force during this time as well. Two-thirds of the Africans in Louisiana arriving before 1730 came from the Senegambia region of West Africa, many arrived as slaves from Francophone West Africa, but later some arrived as free-people-of-color from the Caribbean Owens (2015). The end of the Haitian Revolution in 1804 brought another

wave of African to Louisiana. This included free-people-of-color who brought the shotgun style house and the voodoo religion to Louisiana; arriving by way of the Caribbean with most originating in Dahomey (now the Republic of Benin) and Nigeria (Owens 2015). Free-men-of-color who settled the prairies of southwest Louisiana were French-speaking black Creoles and were often landowners (Owens 2015).

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More than 4,000 exiled Acadians from the Canadian Maritimes settled had in south Louisiana by the 1800s (Martin and Culbert 2020). After arriving in Louisiana, the Acadians settled the bayous where they would later join with Creoles. Intermarriage among white Creoles and Acadians marked a major shift in southern Louisiana's cultural landscape by coalescing these two into a new ethnic group, known as the Cajuns Shane K. Bernard (2010). In modern times, the terms "Creole" and "Cajun" generate controversy. It's a complex and complicated story due to the several meanings, some of which concern the innately sensitive subjects of race and ethnicity stemming from intercontinental wars, real estate transfers, politics, economics, language and identity shifts that have occurred over the past 300 years. (Shane K. Bernard 2010; Experience New Orleans n.d.).

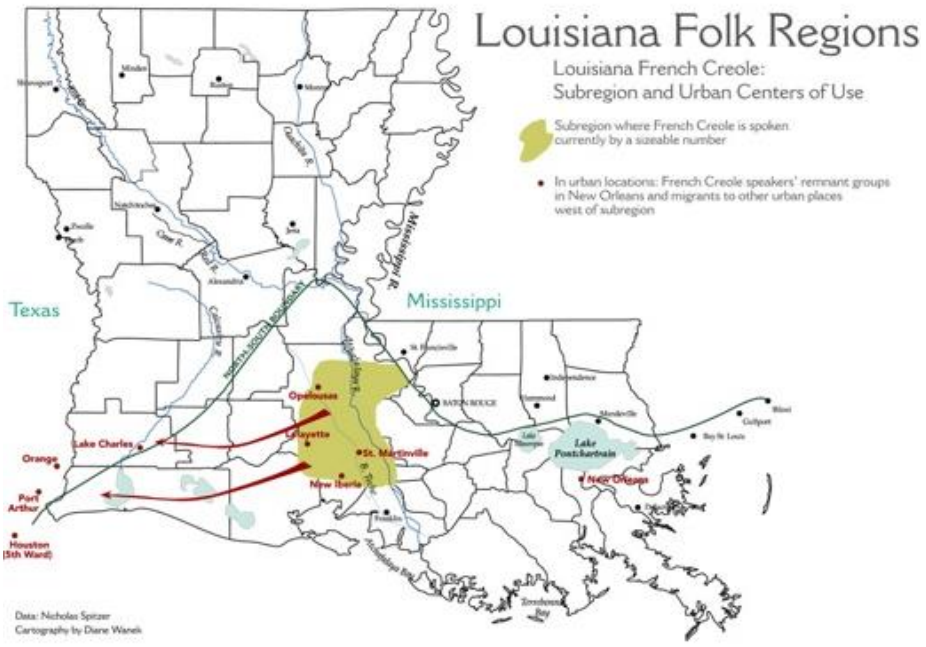

Figure 5: A map depicting the use of Louisiana French Creole retrieved from Owens (2015)

Creole is derived from Latin word *creare* meaning to "beget" or "to create" (Shane K. Bernard 2010). Relative to Louisiana, Creole means "native to the colony" or a French settler born in Louisiana. However, it has historically referred to black, white, and mixed-raced persons who are native to Louisiana (Shane K. Bernard 2010). To break it down, all Cajuns are Creole because they are descendants of exiled Acadians in Louisiana. However, not all Creole are Cajuns because they are not of Acadian descent. The French-speaking black Creoles of the Southwest Louisiana prairie remained racially distinct from their Cajun neighbors, yet they share many cultural traits, including the food, Mardi Gras, Catholicism, musical repertoire, and often the French or Creole language Owens (2015). Black Creoles made significant contributions to music scene. Most notably through zydeco a distinctly black Creole music known for its blending of French songs and African/Caribbean rhythms Owens (2015). Cajun and Creole prairie communities also contributed the tradition of le courier de Mardi Gras, parades led on horseback. The processions traditionally paraded from house to house on horseback or by truck

to gather ingredients for a communal gumbo, one last good meal and lively party before the solemn observance of Lent that begins on Ash Wednesday (Owens 2015).

Mardi Gras, like many other Louisiana staples, runs deep in the historically diverse roots of this place and its people. In fact, 17 years after La Salle claimed Louisiana, French explorer Sieur d'Iberville, sailed into the Gulf of Mexico with high hopes for life in new land. His party reached the mouth of the river on Shrove Tuesday and celebrated Mardi Gras with a mass and chanted a Te Deum. A Te Deum is a Latin Christian hymn, and this chant celebrated the explorers encounter with the Mississippi River. One of the explorers wrote:

> Tuesday, the 3rd, Mardi Gras…the services of the mass were held and we chanted a Te Deum to celebrate our acquaintance with the river Mississippi…Ash Wednesday, everyone received the ashes on the forehead, then we offered the sacrifice of the Mass. After having planted a cross and having had our breakfast, we embarked again (Anon 2005).

Other historians have said Marid Gras was around way before the French. Some theories say it's linked to an ancient fertility ritual performed to welcome Spring and its' time of rebirth, with possible early connections to the Lupercalia observed mid-February in Rome where Church leaders redirected their pagan practices to embody a more Christian focus (Anon 2005).

There are ethnic groups in Louisiana that have resisted absorption by French or Creole culture. They have remained distinct over more than one hundred years of Louisiana residency. In St. Bernard Parish, the Isleños, are descendants of Canary Islanders who settled the area in the 1760s, continue to retain their archaic Spanish dialect and perpetuate the singing of décimas or narrative songs (Owens 2015). Owen's (2015) historical research reports the Croatians from the Dalmatian Coast settled in Plaquemines Parish, where they introduced the oystering industry, and continue to control it.

Diverse culture and plethora of ethnic groups contributed many mouthwatering foods to Louisiana traditions: to name a few fan favorites - crawfish étouffée, gumbo, bisque, sauce

piquante, jambalaya, boiled crawfish, and pastalaya. The state has a wide variety of cuisine from the north to the south, with the north part of the state leaning more towards down home southern cooking and the south being everything else and gumbo.

Diversity and resilience run deep in Louisiana heritage through the people, food, culture, lifestyle, and traditions. Starting decades ago, with indigenous groups adapting to a changing landscape as the sea levels receded and bayous formed. Learning to hunt game, fish and live off what the land gave them. Followed by the influx of multiple ethnic groups of colonial settlers and immigrants tossed about by foreign rulers like a hot potato. The people of Louisiana have historically overcome fundamentally influential trials and tribulations for generations. Whether the challenges be social, environmental, or economical – the people have adapted with and through the environment. An environment diverse and resilient much like themselves. Land that has tirelessly, for over 20,000 years, built and rebuilt delta by delta through connected waterways overpowering any diversions, damns, or levees just to connect with the sea. The diverse and resilient people Louisiana have overcome social challenges and well as environmental impacts and natural disasters for generations. Yet still, they yearn to be on the bayou and are resilient in their efforts to remain connected their identity, their people, and their place.

People Interacting with The Land

Early French and later Spanish settlers were confronted by devastating river floods almost immediately after their arrival, and, despite the flood protection systems and elevated infrastructure that were developed over the next 300 years, the threats of rising waters and damaging winds have remained a fact of life for south Louisiana communities Laska (2020). In making the decision to dub New Orleans the first French settlement in 1718, leaders were aware

of the frequent risks of river flooding. Geographically the mouth of the Mississippi is positioned perfectly for trade routes from the gulf through the continent. Having control of this port was essential to the success to come. Over the next three years construction of the settlement was disrupted or impacted by flooding. New Orleans was built barely 12 feet above sea level on natural levees of the Mississippi River hence why in 1718 Geographer Peirce Lewis noted, it was the "inevitable city" in the "impossible" site (Laska 2020:39).

In September 1722, hurricane winds knocked down makeshift shelters and structures, wiping out the disorganized and unproductive settlement attempts and spurring the construction of artificial levees. Colonial policy that emerged in 1723 and 1743 provided funds for levees around the emerging city and required those who lived beyond city limits on river frontage property to build levees on their private property (Colten 2016; Laska 2020). Even so, floods remained frequent and swamped farms spread along the banks of the river above New Orleans, destroying crops and damaging homes.

Land Loss, Subsidence & Erosion

There are many causes for land loss of land in Louisiana some of which are human caused and others that would occur naturally to some degree. Subsidence has taken around 25 square miles of land per year since the 1930s, sinking at a rate of one inch per year, and if not slowed by the year 2040 shorelines will advance inland as much as 33 miles into areas near or below sea level (EPA 2016; National Wildlife Federation n.d.). As indicated above, the Mississippi River traditionally washed sediment from Minnesota southward to create the river delta that encompasses most of coastal Louisiana. Historically, the occasional overflow of the river would deposit enough new sediments on the banks to gradually compact. This allowed the

land surface to keep pace with the delta's incremental sinking tendencies. As flood control became essential to the settlements survival more human made diversions such as levees and dams which ignited the first stages of the fire that charred the bayou state and its people.

By the time Louisiana became a state in 1812, artificial levees extended from as far north as the Red River to below New Orleans along the west bank and from Baton Rouge to below New Orleans on the east bank (Laska 2020). As development began to extend into the backswamps, canals and levees were constructed to facilitate drainage" (Laska 2020) The dewatering and drainage of these wetlands increased subsidence due to its impacts on the soils. Even before wetland drainage and development, Laska (2020) says bald cypress and other swamp and bottomland trees were mostly cut down for timber. This loss of tree coverage and accompanied by the wetland drainage increased the susceptibility of urban areas to winds, tidal incursions, and storm surges. The tree loss coupled with backswamp development through drainage and pump canals exacerbated existing natural subsidence or sinking of the land and depleted coastal barrier wetlands leading to coastal erosion.

Levees built to prevent flooding of the river, along with other diversion methods, restricted the continued depositions of the Mississippi that would have replenished the marshland created by the earlier flows. As the artificial levees along the lower river became increasingly more effective, people gained a sense of security from levee protection, leading to continued expansion and development. Continued growth, clearing, development, wetland drainage, and other anthropogenic activities such as levee construction, only increased the risks of flooding. Land clearing within the basin during European expansion caused erosion and increased the river's sediment load during the nineteenth century, but then dams constructed throughout the catchment by the middle of the twentieth century trapped sediments upstream Laska (2020). In

addition, due to reduced floodwater outlets such as over the levees or through natural channels, river flooding threats increased.

The sense of security people got from levees, river diversions, dams, or other man-made structures was more of a false sense of security. Reliance on levees is not sustainable. Constraining the flow of the lower Mississippi within its channel by effective flood protection levees and closure of distributary channels almost all the way to its mouth has prevented the broad distribution of riverine sediments to the subsiding wetlands and shallow waters Laska (2020). Laska (2020) found an interesting quote foreshadowing the disappearance of coastal Louisiana from Corthell (1897) in a National Geographic article:

> No doubt the great benefit to the present and two or three following generations accruing from a complete system of absolutely protective levees excluding the flood waters entirely from the great areas of the lower delta country, far outweighs the disadvantages to future generations from the subsidence of the Gulf delta lands below the level of the sea and their gradual abandonment due to this cause (Laska 2020:41).

Despite all that river armoring, the Great Mississippi River Flood of 1927 inundated 26,000 square miles from Illinois to the Gulf of Mexico. The Flood Control Act of 1928 shifted policies from levee only mindset to include control structures and spillways in addition to the massive levees and floodwalls. This shift altered the power structure of flood control designs and projects under the control of the federal government (Laska 2020). With this act the federal government was now in charge of designing and constructing flood control projects for the entire Mississippi River and its tributaries. As major federally funded public works project, this increased awareness on flood control best practices and theory on protecting both sides of the levee in general. Prior to this, every parish had to fend for themselves, meaning flood control projects were pursued without considering the impacts it may have on surrounding communities. Once the federal government completed the flood projects, local entities had to maintain

operations of all flood controls, except for spillway structures and special relief levees. The federal government was also not liable for floods or flood damages, especially not related to flood projects they had completed. For example, one of these flood relief and control levees, built in New Orleans, was breached by flood relief waters during a Hurricane Katrina. The levee system ruptured and was breached in 50 separate places throughout the stretch of wall sending flood waters gushing into unsuspecting communities. The US government was not held liable for any damages related to flooding in the areas of completed projects, or any other land. Douglas Brinkley recollects this disaster in *The Broken Promise of the Levees That Failed New Orleans* over a piece of concrete barricade the Smithsonian Institution curators collected in the aftermath of the Hurricane Katrina. He says it "…resides, neatly tagged, at the National Museum of American History. It seems a powerful symbol to remind us how foolish Americans were to assume that a flimsy wall, only a foot thick, would be strong enough to hold back the surging floodwaters of Lake Pontchartrain" (Brinkley 2015).

Louisiana faces rising sea levels accompanied by natural and anthropogenic subsidence, depleting barrier wetlands and coastal erosion. As bayou and marshland development spread more and larger canals were constructed as well as navigation channels that were dredged perpendicular to the coast exacerbating saltwater intrusion in already vulnerable marshlands. Saltwater intrusion via these canals kills the grasses and important plants that hold the marsh soil, causing additional soil loss through coastal erosion, affecting, and thereby increasing susceptibility of urban areas to experience strong winds, high tides, and storm surges Laska (2020).

These anthropogenic activities drastically increased coastal erosion as well as exacerbated the naturally occurring subsidence processes of the landscape described above.

Almost half of the disappearing land and sinking issues Louisiana faces today are directly related to anthropogenic activities of the past. 1901 was the year the first oil well was drilled in Louisiana Theriot (2021), in a field near the town of Jennings. “In the past two hundred years, we have destroyed an ecosystem that took seven thousand years to build, and 36 to 60 percent of the total lost can be traced back to the oil industry” (Martin and Culbert 2020:12). Direct damage to the landscape from the oil and gas industry was supplemented by anthropogenic environmental impacts from the past such as levees, marshland development, and navigation channels have exacerbated issues with saltwater intrusion, marshland and wetland erosion, and coastal loss. The deteriorating landscape once functioned as a barrier to storms, hurricanes, and mitigated impacts from flooding and storm surges.

Hurricanes, Tropical Storms, and Floods – Oh my!

Throughout this research process two hurricane seasons have passed, and we are coming up on the 2022 season, which is scary considering some Louisiana communities are still in the process of wrapping up a destructive new normal, tornados. This corresponds with a documented shift of the center of tornado activity over the last 60 years from the Great Plains to the Southeast (Nouri and Devineni, 2022). This section will first explore Louisiana’s relationship with hurricanes, floods, and natural disaster events historically starting with the most recent events. Climate change will be a risk multiplier when it comes to disaster related events in Louisiana. The state is expected to be one of the most impacted due to numerous factors discussed in this section. To understand what lies in store for Louisiana, this section will next investigate climate change threats and how they will directly impact both Louisiana and its people. The conclusion will briefly discuss what this means for people from Louisiana.

Three months into the year 2022, on March 22nd an EF-3 multi-vortex tornado struck south Louisiana. Winds up to 160 mph spun the vortex through Louisiana for 11.5 miles, from Jefferson Parish, through Orleans Parish, over the Mississippi River and ending shortly after in St. Bernard Parish NOAA US Department of Commerce (2022). Some of these communities were still in the process of rebuilding from Hurricane Ida in August of 2021. The multi-vortex tornado caused the most damage in St. Bernard parish especially in the Lower 9th Ward, Lacombe, Mandeville, and Arabi, taking down power lines, destroying cars, and ripping off roofs. One resident interviewed on FOX8 (2022) described what he saw when he emerged from the shelter of his bathroom "…maybe ten seconds tops…It wasn't very long. We come outside and it looks like Ukraine." A week later, severe thunderstorms embedded with EF-4 tornadoes impacted a large portion of Southeast Louisiana NOAA US Department of Commerce (2022). These anecdotes support the contention that stronger more destructive tornados are becoming more common yet are not the disaster event Louisianians are used to enduring. "I been through a lot of things, but I ain't been through this" said St. Bernard Parish president in an interview with ABC *Good Morning America* (2022) later saying "people are helping people with housing and food…this is a resilient community – we are gonna come back bigger and stronger".

Hurricane Ida, one of the most rapidly intensifying and powerful storms to hit the United States, was the talk of the year for 2021, making landfall in Lafourche Parish that August as Category 4 on the 16th anniversary of Hurricane Katrina. Compared to historical storms, Ida tied with Hurricane Laura (2020) and the Last Island Hurricane (1856) as the strongest to ever make landfall in Louisiana (World Vision - From the Field 2021). The impact of the storm crushed the power grids, leaving more than one million without power in suffocating summer heat, some without electricity for over two weeks World Vision - From the Field (2021). In Plaquemine

Parish, an 8-foot storm surge overtopped the 3 to 6 feet of levee protection put in place by the Army Corps of Engineers. The levee had been completed in 2014 and had undergone repairs related to damage from similar events in 2016, 2017 and again in 2020 (Halle Parker 2021; NOAA 2021).

Hurricane categories or scales are based on the Saffir-Simpson Wind Scale. The categories ranked 1 to 5 by the storms sustained wind speed. The ratings by category (C) are as follows: C1= 74-95mph, C2= 96-110mph, C3= 11-129mph, C4= 130-156mph, C5= 157mph and up NOAA (n.d.-a). A 150 mph Category 4 storm is considered catastrophic and has more than 250 times the damage potential of a Category 1 storm NOAA (n.d.-b). Category 1 storms will most likely cause minor damage with the biggest risk being the loss of power. Category 5 hurricanes step up in wind speed with the potential to destroy homes or buildings and demolish communities leaving them displaced for many months. This scale is useful given the variables it uses, however it's not the best predictor of damage. A Category 1 hurricane can potentially be just as damaging as a Category 2 or 3 depending on a multitude of factors. The map below outlines the routes of category 1-5 hurricanes, tropical storms, and tropical depressions impacting coastal Louisiana from 1990-2020 created on NOAA Historical Hurricane Tracks interactive map. This map demonstrates that almost no area of Louisiana has been untouched by storms in the last three decades. NOAA Hurricane Research Division also reports that from 2005 to 2009, Louisiana was struck by six hurricanes, the largest number to hit the state since the beginning of the 20th century.

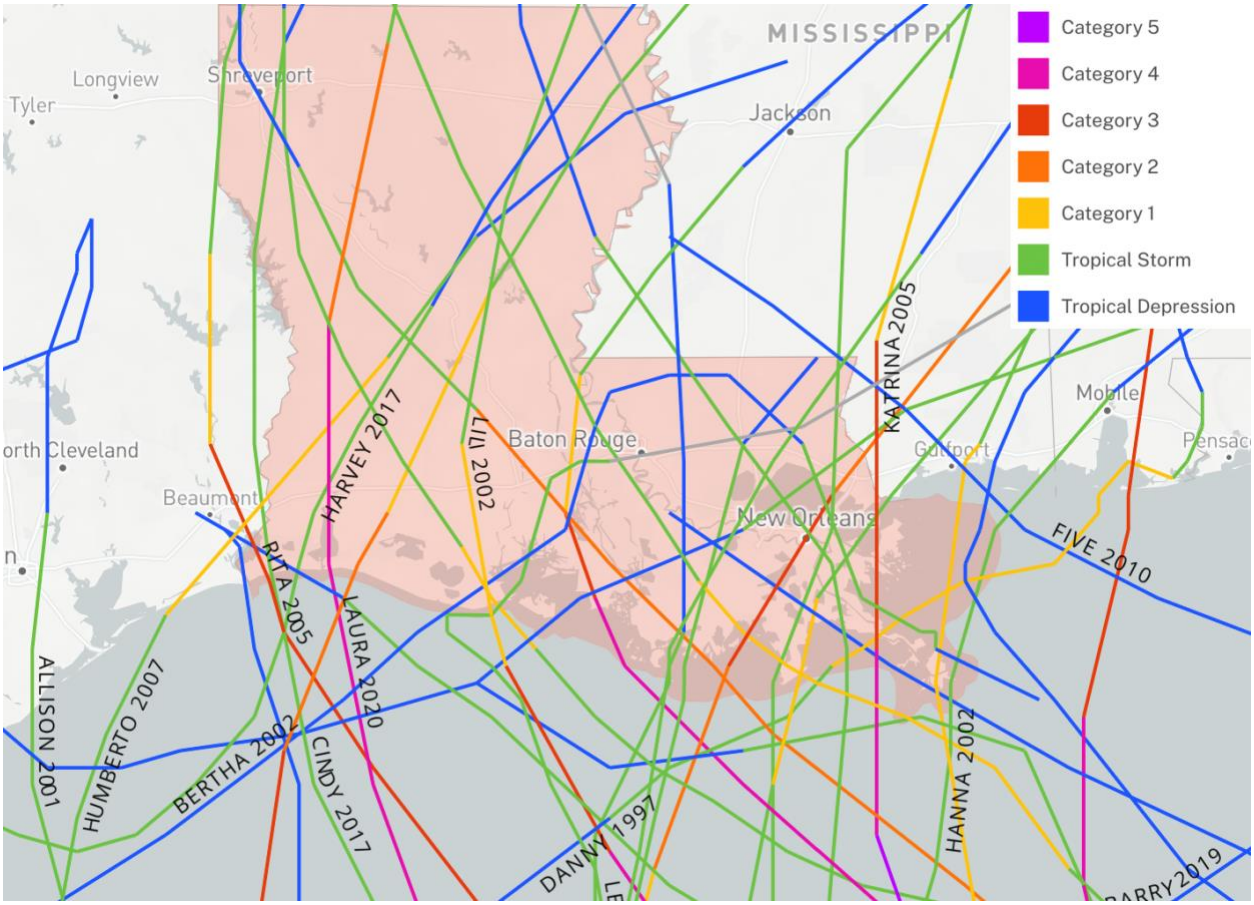

Figure 6 shows the 30 historical hurricane tracks, tropical storms, tropical depressions and there rating to strike Louisiana from 1990-2020 NOAA (n.d.)

A direct hurricane strike on the coast occurs about once every three years, according to the NOAA Hurricane Research Division, and these storms exacerbate severe flooding occurrences in an already climate vulnerable coast. The 2020 hurricane season was a particularly busy one, as mentioned above. Hurricane Laura (2020), a Category 4 hurricane, was one of the most powerful to ever hit the state, and it was followed less than two months later by Category 2 Hurricane Delta, a severe freeze in February and in May another round of flash floods Ballard & Smith (2021). The season started in June with tropical storm Cristobel making landfall in southeast LA in-between Grand Isle and Port Sulphur, causing a total of $310 million of damages across Gulf Coast states (National Hurricane Center 2020). Wave action from tides and storm surges caused beach erosion and damaged piers; homes were damaged by flooding with

many downed trees. In Grand Isle, the storm eroded sand and damaged 2,000 feet of the protective levee on the west side of the island. Rural levees were overtopped or breached in some parts, notably the levee in Delacroix in St. Bernard Parish National Hurricane Center (2020). A storm surge over 6 ft above normal tide levels accompanied Cristobal causing inundation along the coast from 3 ft to 6 ft above ground level, and, as the storm system came aground, it slowed, leading to flood waters up to 3 ft deep National Hurricane Center (2020). According to Laska (2020), most Louisiana floods can be traced to 54 tropical weather events.

Cities under forced drainage, a common flood control measure that uses pumps and flow monitoring systems to keep areas free of excess water, are especially vulnerable to flash flooding. This same year, nearly 10 inches of rain fell on New Orleans, causing extensive flooding exacerbated offline city drainage pumps with unmaintained drain and catch basins (Laska 2020). Also in 2017, Harvey made landfall in southwest Louisiana as a Category 4 hurricane you can see it path in Figure 6. The year before this, in 2016, historical flash flooding area wide came from days of excessive rainfall impacting the Amite and Comite river basins in the Baton Rouge area.

The stalled pressure system led to nearly 30,000 individuals being rescued from floodwaters that caused damage to 50,000 homes, 100,000 vehicles, and 20,000 businesses (NOAA State Summaries, 2022). The Great Flood of Baton Rouge (2016) was the most damaging flood in recent history, with 30 inches of rain falling over several days, causing an estimated $10 billion in damages says NOAA State Summaries (2022). As the river peaked and rainfall hadn’t slowed state officials realized they did not have the capacity to handle it all; leading them to call on civilians (The Cajun Navy Movement) for help Laska (2020). Volunteers are distributed to areas in need equipped with trailers, flat-bottomed boats, and a rescue plan.

This highlights the significance of social networks in Louisiana and their role in recovering from disaster events without relying on the state government.

The disaster response system was put in a bind leaving agencies overloaded by disaster response. This was then intensified by the lack of recovery plans for local flood events of this magnitude. Laska (2020) found 91% homes damaged in the 2016 floods were not in a FEMA identified Special Flood Hazard Area (SFHA), the community had seen recent in-migration from vulnerable coastal communities, and these areas were recognized as being safe from flooding due to them being based on dated hydrological data. SFHA identifies areas that have a 1-percent annual chance of being impacted by the flood event. Meaning the 91% of homes that were damaged were not in a SFHA and were required to have flood insurance -- most of them did not. Of those eligible to apply for FEMA assistance, the majority, 59% in East BR and 82% in St. Helena Parish, were in owner occupied housing (Laska 2020). A homeowner located in a floodplain with a federally backed loan will be required to have flood insurance as mentioned 91% of damaged homes were not identified as in FEMA flood hazard areas. The 2016 floods impacted over 90,000 homes including 28,000 rental households, of which 17,000 were very low income (Laska 2020; FEMA 2018).

Flood events inland like this show the flood risks to coastal-inland systems are not resolved by coastal restoration and protection alone and have the potential to disrupt communities due lacking in infrastructure, planning and disaster response. Almost half of East Baton Rouge Parish, an area heavily impacted by the floods, is designated as in a 100-year-flood plain, at the convergence of the Amite and Comet River 80% of the growing community of Central is also designated as in a 100-year-flood plain, and 70 % of Ascension Parish is in a high-risk zone Colten (2020). Similar events like this are likely to occur in these areas sounded

the Amite and Comet River basin. In reviewing studies that followed the 2016 floods Colten (2020) found the majority attributed flood risks to drainage issues not continued development in flood hazard zones development and did not see the impacts as related to the coastal issues tied up with sea-level rise and climate change.

Category 5 Hurricane Katrina and the flooding that followed a day later revealed a community with massive vulnerabilities. New Orleans was hit hard by Katrina in 2005, leaving more than 80% of the city flooded, areas under as much as 15 feet of water, more than 1,500 fatalities in the state, and over $125 billion in property damages NOAA (2022). The real eye-opener in Katrina's wake was the exposure of many social vulnerabilities– structural inequities, poverty, underlying racism, race divisions, and a government struggling to stay afloat. Those vulnerabilities were the root cause of the catastrophe for the residents, not the wind, rain, storm surge or even the faulty hurricane protection (Laska 2012; Aune et al. 2020).

In one month, two hurricanes destroyed communities along the entire Louisiana coastline and devastated the entire state. A month later, the Category 3 Hurricane Rita struck Cameron Parish in southwest Louisiana, producing 5 to 9 inches of rain, and causing a 15-foot storm surge along the southwestern coast (NOAA 2022). In the aftermath of Rita communities complained of "Rita amnesia" slighting the national media and government for their disregard of those impacted by Rita while focusing on recovery of New Orleans (Ron Thibodeaux n.d.). The rice farmers of southwest Louisiana struggled in the aftermath of Rita. Levees topped by storm surges flooded rice fields with salt water with no way to drain away the brine. Salt seeped into the soil, reaching at toxic levels before farmers could arrive with heavy equipment to break their levees and release the floodwater, preventing farming for almost two growing cycles -- more in some cases (Ron Thibodeaux n.d.). "Residents witnessed widespread and incalculable losses to

property, infrastructure, traditions, and social networks, contributing to some of the most widespread wreckage seen so far this century and adding to a decade of extreme worldwide catastrophe" (Simms 2017:409).

From this history of misfortunes in Louisiana and the effects it has on residents one can assume continuing this way of life would be perilous, hazardous, and expensive. Simms (2017) conducted a study on influences place attachment has on environmental migration through interviews with 76 coastal Louisiana residents. Interviews typically ended with "Do you see yourself living in this place forever or for the rest of your life?" with Simms (2017:414) noting most residents zealously affirmed this; with one saying, "Even if I won the Lotto, I would stay" (resident interview, 1 October 2014) and another "Why would I live anyplace else?" (Resident interview, 7 June 2014). Evacuating versus staying to ride out the storm, and rebuilding what you can when you return, looks different to coastal residents versus inland communities, since there will come a time, they will not have dry land to rebuild on.

Future Climate Threats

Rising sea level is likely to accelerate coastal erosion already taking place due to naturally occurring subsidence as well as anthropogenic activities. Rising sea level will also further exacerbate existing coastal environmental issues like barrier wetland loss, inundated marshland, saltwater intrusion, and erosion. The variability of sea level rise is high on the coast due to its geography. Exacerbated existing environmental issues is not the only challenge Louisiana will see due to climate change and increased sea level rise.

The higher the seas, the higher the risk for inundating tides and storm surges encroaching up to 50 miles inland from the coast. Local rivers can start flowing backwards as coastal storms

and hurricanes approach from the Gulf. Due to natural variations of the land, communities locate 50 miles inland are only anywhere from ten to thirty feet above sea level. So, when the inland communities see rivers flowing backwards, they know what can come next--flooding. Whirling tropical storms tend to crash into areas of land protruding into the Gulf of Mexico. In addition, southeast Louisiana lies at a "corner" along the coast, with the angle made by the Mississippi Delta with the Gulf coast to the east at approximately ninety degrees. This corner funnels and amplifies the effect of incoming water piling up from whirling tropical storms and hurricanes Roth (2010).

Climate Check's Risk Rating is a 1-100 score that measures historical risk and increased exposure to risk due to climate change, as compared to other locations in the United States. A rating of 100 is the highest risk in the country, a risk rating of 1 is the lowest rating of anywhere in the country. According to ClimateCheck (2021), Louisiana has a risk rating of 61 for storms. In parallel, the percentage of hurricanes reaching Category 4 or Category 5 is increasing Laska (2020). A Category 4 has more than 250 times the damage potential of a Category 1, and Category 4 and 5 hurricanes are defined as catastrophic.

Soils have become drier, annual rainfall has increased, and rain arrives in heavier downpours. Climate change impacts are to be seen as "the frequency of rainfall events of one inch or more which are projected to increase, and at the same time dry spells are likely to become more frequent" (Laska 2020:53). According to ClimateCheck (2021), Louisiana's risk rating for heat is 78, and when compared to other states Louisiana is ranked 2nd after Florida for maximum heat risks. Hurricane season begins annually around June and extends into summer months which is also when temperatures outside are rising with summertime. During this time of year prolonged heat waves or very warm and humid conditions that coincide with power outages

increase risks of hazardous living conditions. Conditions that can lead to heat related illness like heat stroke, dehydration, or lack of food and resources.

From the outside looking Louisiana is a place ridden with systemic issues across the board influenced by the people and their heritage as well as todays social, economic, and environmental factors at play. Now climate change is exacerbating these existing issues. Those from Louisiana see these as experiences they would have in any other region, such as wildfires or drought in California. Seeing it as 'their place' at the same time one that is unique in physical landscape, culture, and people. The natural ecosystem resilience of coastal Louisiana is increasingly recognized as an important contributor to social resilience in research done by Laska (2020).

Yet the challenge is not just resilience to extreme weather events but also rational responses to substantial long-term biophysical changes that ensure human well-being and sustain the sociocultural fabric of communities (Laska, 2020). Sociocultural fabric of Louisiana people is deeply embedded in who they are which can lead to the questions such as how these socio-environmental changes are to place perceived and in what ways can this loss influence attachment and self-definitions rooted in place.

The weight of recent events has impacted the state, the nation, as well as global population. The alarming uncertainties of COVID-19 pandemic and anxieties surrounding climate change are now icing the cake of historically high unemployment rates and low minimum wage, racial and gender inequities, record-breaking hurricane season, and the list that continues to grow have increased apprehension among residents causing feelings of uncertainty. With the 2022 hurricane season upon us, many are questioning if this is the year they will have

to leave. Prior research on sense of place, place attachment, and place identity as it pertains to people from Louisiana are discussed in the next section.

Conceptualizing Louisiana as More Than a Place

There is existing research regarding sense of, and attachment to place in Louisiana and how this bond may affect behaviors. Attachment to place is strong is Louisiana this finding is represented in the sense of place scholarship (Adger et al. 2011; Burley 2010; Burley et al. 2007; Colten 2019; Colten 2020, Cutter et al. 2008; DuCros 2019; Hemmerling, DeMyers, and Carruthers 2022; Simms 2017; Simms 2021). Existing research on sense of place theory among Louisiana residents has shown it a factor in restoration planning, disaster recovery, climate change mitigation, as well as in the formation and influence of place identities over time and place. This section takes a dive into questions regarding sense of place, place attachment, and place identity as well as the significance it has in the lives of those from Louisiana.

Sense of Place

Sense of place is a multidimensional concept that embodies emotions, beliefs, and behavioral actions specific to a geographic setting in the natural environment. ("Frontiers | Solastalgic Landscapes: Prospects of Relocation in Coastal ...") Sense of place can be conceptualized through a variety of lenses and connections differ in forms of manifestation, sensitivity, and force. Place attachment can be described as an emotional bond or connection between humans and their natural environment. The construction of this bond within the mind, through the body and ones' environment is well represented in the scholarship.

Cooke et al. (2016) argued that the human–environment connections are not produced solely within the mind, but through relations between mind, body, and environment over time. The relationship between humans and the environment is not always restricted to one experience or memory in time. Over time the emotional connection grows through encounters and increased familiarity. As Relph (2015) describes it: sense of place is a living relationship between a person and particular place that produces feelings of wellbeing and refuge.

What Time is This Place? Kevin Lynch (2009:241) described it thus: "…space and time, however conceived, are the great framework within which we order our experience. We live in time-places." This suggests time-places are consistent with the structure of reality as we experience it and with the nature of our minds and bodies, or manifestations of temporality (Relph, 2017; Lynch, 2009). The ideas of past, present and future, resulting from the relationship we've experienced over time, only come forward when we choose to think about them or when we experience abrupt changes, economic disruptions, natural disasters, even changes to city historical neighborhood/downtown in a city Relph (2017).

Interrelationships between place meaning and place attachments change over time. Evidence from Raymond et. al (2017) suggested that place attachment and the meanings they stem from evolve slowly, and occasionally don't match the physical or social reality (shared meanings, practices, and experiences of the group) triggering a lag effect that led to tendencies that inhibit change. The misalignment of place meaning and attachment with the material or social reality can contribute to a lag effect, explained as the aptitude to increases information recall when time between repeated exposure to that information increases Raymond et. al (2017). This conclusion claimed that "sense of place scholarship has been conservative, non-dynamic,

and principally focused on aspects of place meaning that unfold over time through a process of social construction" (Raymond et. al 2017:11).

Sensory experiences come from cognitive and practical activities of an individual and can established through combining temporal and spatial stimuli Raymond et. al (2017). Existing social reality knowledge (social interaction and experience of doing the activity) and emotional relationship with experiences are examples of temporal and spatial influences (Relph 2017; Raymond et. al 2017). Relph (2017) wrote that social-cultural processes influence "perceived place" meaning and that what we experience is "temporality" described as a continually shifting blend of memories and things inherited from the past, intentions, expectations, and occasional moments.

Particularly in Louisiana, most of the research on place attachment has been focused on impacts to coastal parish communities related to land use, land loss and coastal restoration, and meanings behind decisions to relocate (Burley et. al 2004; Burley 2010; Colten 2019; Laska 2020). Others focused on identities that stem from place and the need to account for risks climate change poses to cultures and social systems Adger et al. (2011) by focusing on sense of place in terms of the local environment and symbolic contexts that give meaning and value to place based identity DuCros (2019). Dating back to 2007, shortly after Hurricane Katrina, Burley's research concluded to increase the integration of communities into land-use decisions and restoration projects it is imperative to understand the meaning behind residents' place attachment. To examine residents understanding of land loss Burley et al. (2007) these used guiding questions which elements best characterize respondents' landscapes, how is change in place conveyed and understood, and what role does coastal land loss play in their narratives? Burley et. al. (2007) questioned how Louisiana residents perceived environmental changes to place such as land loss

by examining how its meaning was conveyed in their personal narratives. The purpose was to highlight the significance of community input policy and coastal restoration planning, as plans were evolving in the state during this time.

Burley et al. (2007) found a heightened sense of place among coastal residents with elements of fragility and uniqueness and reasoned this attachment could stem into collaborative advocation for increased community involvement in land-use decisions and restoration projects. The research found amid heightened awareness of loss of place residents still hope to put off moving up the bayou if they can saying "perhaps it is this attachment and awareness of vulnerability that facilitates their resilience" (Burley et al. 2007:361). The research made a point to note it was yet to be seen if these residents can mobilize this attachment to affect the restoration of their environment. Newer scholarship on place attachment in Louisiana paints a similar picture of communities wanting more of a voice in decision making process when in directly impact them.

Colten (2019) discusses the unsustainable conservation policies aimed at protecting certain species ultimately limited certain traditional hunting and trapping activities while producing sustainable yields of commercial marine life and promoting sport hunting and fishing. Wetlands, that once supported traditional livelihoods, subjected to forestry, farming, and marsh drainage efforts no longer have the carrying capacity they once did, and the social costs of these efforts fell on the economically and socially marginalized wetland communities Colten (2019). To be from Louisiana can mean so many things as this paper has shown. The melding gumbo pot ultimately boils down to the deep-rooted attachment to place these people share inherently with the land and each other.

Recent research by Simms (2021) studied the relationship between coastal Louisiana residents' perceptions of socio-environmental changes and instability of place both biophysically and culturally; and in what ways external factors influence the decision-making process behind to relocation as an adaptability. Theoretical insights from the concept of "solastalgia" guided the research. Solastalgia the feeling of distress associated with degrading environmental conditions close to one's place that triggers an evolving pain due to the inability to draw 'solace' from one's surroundings as they once could Simms (2021).

The findings suggested residents' migration decisions are always context dependent and location-specific, with the outcome contributing to a broader understanding of coastal residents' experiences of staying or going. Simms focused on perceptions of loss of place quoting a participant saying, "we're not doing a good job of facing those challenges (the effects of climate change including stronger storms and sea level rise) in a way that shows that people can continue to live in those communities" (resident interview, July 24, 2016) Simms (2021:8). Large part of existing research in this area are centered around how place attachment can influence decision making processes or behaviors, with many focusing on decisions of relocation. This emotional bond is formed over time varying across a multitude of scales. Sense of place definitions can be multifariously observed as something in our heads, as a property of landscapes, or as a product of social and personal identities.

A place can have distinctive qualities that makes it stand out influencing an individual in a multitude of ways. Burley (2007) explained sense of place as individuals combining and arranging information from the senses of sight, smell, touch, hearing, memory, and imagination. Rajala, Sorice, and Thomas (2020) and Burley (2007) explains place becomes saturated with symbolic meaning based on values and beliefs embedded in self-definition. Results from DuCros

(2019) surrounding place attachment, place identity, and migration builds on the interactionist approaches to identity construction and relationships to place.

Place Identity

The study *"That's Still Home": Constructing Second-Generation Place Attachment and Place Identity via Time Work* (2019) conducted in-depth life history interviews with 22 second-generation migrants from Louisiana to Los Angeles, CA. This research defined a second-generation migrant as the child of migrants from Louisiana born in California and the 1.5 generation as those children born in and migrated from Louisiana before the age of 12. The sample included 11 California-born migrants and eleven Louisiana-born migrants. Most respondents had a connection to the Louisiana Creole community via language, ancestry, or culture and cited racial contexts in Louisiana as a cause for their migration. DuCros (2019) noting this is consistent with most Southern Black outmigration during this period, participants reported that their parents' reasons for leaving the South included escaping Jim Crow racism. The analysis is structured around three indicators of place attachment and identity these were: continued associations with home, the low level of substitutability of Louisiana, and a sense of pride in place. Responses from a 58-year-old migrant who arrived in Los Angeles from Cane River in 1963 as a preteen, demonstrated Louisiana attachments through the many uses of "back home" in interview by DuCros (2019). The 58-year-old "engaged in post-displacement interaction talk, emphasizing the frequency of returning home throughout childhood and adulthood, where a ritual of visiting relatives consistently reinforced the ties to his birthplace across time and place" (DuCros 2019:684).

Post-displacement interaction is described by DuCros (2019) as recurrent (temporary or occasional) interactions in the original site of attachment after displacement which gives the place and the identities associated with it a more complex meaning. Return visits become part of the interactional past as an association of meaningful experiences coupled with a place constructed through recurrent interactions. Talking about interactions post-displacement in terms of sequencing and frequency of return visits; embeds place identities and attachments in the context of interactions that occurred in homeland gives legitimacy in the context of the present (DuCros 2019). The study also focused on nativity talk as time-based strategy to legitimize identities and attachments linked to the past and to specific places as references to birthplace or one's nativity signify a starting point in a personal timeline DuCros (2019). A participant in their early 50s was born in Los Angeles and her mother migrated in 1942, explained her sense of home experienced via her mother's perspective or post-displacement talk. The research by DuCros (2019) illustrates how the attachments are constructed distinctively by each birthplace generation by showing that even in later life, the experiences of visiting and nativity sustain the connections to the homeland, whether through a first-person experience or those filtered through the parents' perspective.

Sense of place is evident in Louisiana people through research presented above and many are aware of their place in disappearing. Sense of place research can "identify the place-based connections and relationships central to vulnerable populations providing insights into human welfare and potential responses to change" (Raymond, Kyttä, and Stedman 2017:730). Identities constructed through attachment to place or place identity will be impacted when the physicality of this place is gone.

Conclusion

In today's world, the existence and role of place in people's lives is proving essential in contributing to the global solution from a bottom-up approach. To begin the process of collaborating with communities on a local scale it is imperative to examine the meaning and symbolism behind one's attachment to place and place based identities. Previous research has shown "Louisiana residents - their homes, livelihoods, social relations, sense of self and attachment - are each key constituents of many residents' identities" (Simms 2017:412). Place attachments built into the identity of those from Louisiana is sustained through return visits, social relations, and passed their attachment to place onto their children through nativity talk as found by DuCros (2019). Loss of place has been researched in terms of the influence it has on relocation decisions (Laska 2020; Simms 2017) and its ability to ignite communities to advocate for more say in land loss mitigation decisions (Burley 2007; Colten 2019). Research has shown the influence of loss of place or change to place has on place attachments and place identities stems from the meanings behind those place attachments. Like place attachments, manifestations of loss of place or relocation, differ in forms of expression, sensitivity, and force. To better comprehend research aims to examining the relationship between place attachment and place identity is influenced by exogenous factors of social networks, the built environment, and natural systems over time.

Methods

I began my thesis project by compiling a list of potential respondents via article, blogs, archival history, news postings, and locally relevant ongoings in the areas of interest. Recruitment for key informants then began as I reviewed public documents, newspapers, social media, and blogs. With my initial key informant recruitment, I aimed to speak with at least one community activist, environmental lawyer, farmer, small business owner, governing official, environmental group leader, and possibly a parish position holder for the state climate task. The only two requirements were participants had to be eighteen years old or older and must have grown up in south Louisiana. The goal was to speak with at least 15, possibly 20, Louisianians.

Once identified, contacted, and after obtaining their consent to participate, I conducted the key informant interviews. Post interview, I used a snowball sampling technique, asking key informants to refer others in their networks who might be interested in participating. I provided key with a pre-written outreach informational email they could send to other possible interview respondents. The email also provided instructions for signing up to participate. It was up to potential respondents to contact the me, preventing potential privacy issues. Participants were provided a link in the outreach email to schedule and manage interview sessions.

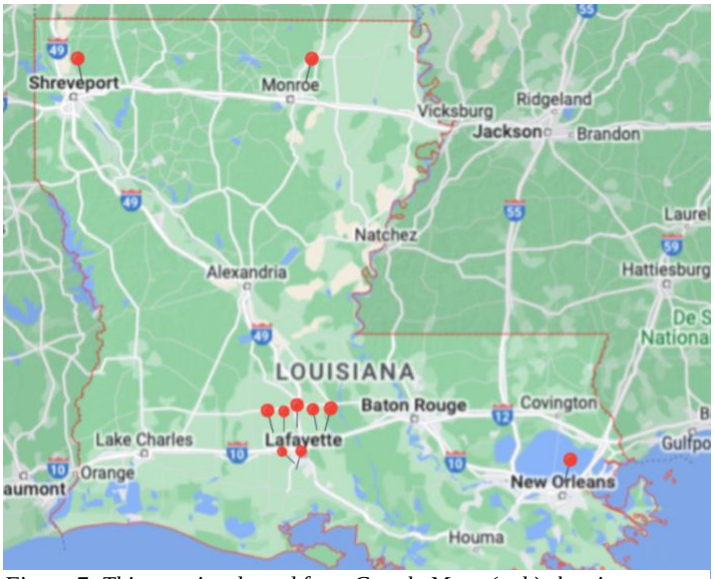

Figure 7: This map is adapted from Google Maps (n.d.) showing locations where participants grew up.

The map in *Figure 7* shows the areas participants grew up in and have a strong connection with. The geographical area of focus was intended to be south Louisiana. However, respondents who moved to other areas but who may have grown up on the bayou and still have family ties and attachments to Louisiana do have valuable experiences in Louisiana therefore their narratives of place matter. I included them in my sample. Due to the distance between researcher and respondents, interviews were conducted remotely using the audio/video platform most accessible to respondents. Interviews lasted around 60 minutes and were documented using the record feature on Zoom, downloaded onto a password protected computer, and transcribed. Once transcribed, the audio and video materials were deleted. Transcriptions will be kept for a maximum of three years on a password protected computer.

Interviews were semi-structured in style, focusing on personal narratives and history oriented to place. Interview respondents were familiarized with the intended purpose of the research and interviewed using open ended questions to guide the conversation. The guiding intended to examine place as it emerges in personal narratives, experiences, and history with the landscape and social networks. The interviews focused on understanding respondents' attachment to place through longstanding ties to place and family ties, community, and social ties, and how this attachment supports a place-based identity. This perspective enables a better understanding of how external factors and changes to place may impact one's place-identity.

The interview guide avoided bringing up issues of land loss or climate induced changes such as increased frequency and magnitude of weather events and sea level rise. I preferred to let those topics emerge organically from the conversations. The research is to create a bigger picture of those from Louisiana through of respondents' narratives and lived experiences. Over half of the participants mentioned experiences of climate change related events in their responses to

inquiries about recent changes to place. If the topic did come up, I did allow for the participants to engage in that discussion. I remained neutral and encouraged participants to elaborate on their experiences they felt relevant to their attachment and place-based identity.

Once interviews were complete, they were reviewed and transcribed. The interview transcripts were first coded for emergent themes common across interviews. Next the interviews were analyzed for indicators themes relating to sense of place, place attachment, features of place identity, longstanding ties to place, family, social/community networks, sense of pride in place culture and heritage, reasons for leaving or staying, and climate impacts. For indicators of sense of place and place attachment this study referred to existing sense of place research specific to people from Louisiana from authors Burley (2007) Burley (2010) and Simms (2017) and Simms (2021). Structures of place identity were adapted from those used by DuCros (2019) study on generational place identity among those from Louisiana.

All interviews were read and annotated four to five separate times to ensure theme indicators matched the context of the conversation and no emergent themes were missed. Theme were recorded in spread sheet form for organization. Each transcript was reviewed and added to spreadsheet format by code. This was used to analyze the entirety of the responses in terms of this research.

Results

The scene has been set and incorporates all the external factors the people of Louisiana faced in the past, the present, as well as what the future holds. Putting the lengthy history of socio-environmental impacts aside, it is easy to say the people of this place and their identities that stem from it truly exemplify what it means to be from Louisiana. The ten interviews revealed prominent themes of family/kinship, community/social networks, place specific identities, and pride in culture/heritage. The special bond to place possessed by those from Louisiana influenced who they are today; its prevalence signified the role this bond had in shaping their self-definition or place identity.

Louisianian's identities, even when influenced by external factors, are sustained through resilient practices such as adaptability, strong social systems, pride in the diversity and culture, and ultimately stimulate processes behind self-definition. Participants discussed the influence their strong bonds to place had on the construction of their self-definition or identity in various ways, with multiple participants suggesting strong inherent influences in construction of their identity through deep rooted place-based heritage and culture. According to one participant, being from Louisiana has taught them to "[e]ach day on a personal level, use that history, not trying to tell you how you should act because what I know [rather], how can I inform my own decision making, and what I say, and what I share, and whatnot".

Those from socially and environmentally vulnerable populations spoke of hardships they'd faced indicating a sense of resilience and adaptability ingrained in Louisiana people. Yet being resilient, or inherently resilient, because of recovering from repetitive trials and tribulations was not the focus of this research. Resilience as a word versus the personal

experience and feeling of being labeled resilient are very different things. Resilience can be conceptualized as capability or an ability. The ability to adapt. This is an ability Louisianians have built through their relationship with the land and each other. It is a way of life that has been lived for generations. A participant spoke of being labeled resilient saying "we are very resilient people, and we will always rebuild, because this is our home" … "But when we are called resilient it's a different feeling. Why do I have to be resilient? Why do I have to continue to be resilient?" These communities are tough and fearless in the face of adversity, or the eye of hurricane, but that doesn't mean they enjoy fighting to have a just enough.

It is important to understand the inherent processes from which this sense of inherent resilience stems and the role these processes have when exploring connections to place and identity structures of those from Louisiana. When it comes to being resilient in terms of meteorologic events, as discussed in the review of literature, historically Louisianians have been exposed to destructive events like floods, tropical storms, tornadoes, and hurricanes since native populations and the European colonies. People have lived symbiotically with the land, unphased. To label a group of people as 'inherently resilient' or 'resilient' due to their ability to overcome events they see as part of life; can be seen as a unilateral view of the situation. What may look like resilience from the outside is these communities trying to hold on to the last bit of who they are and where they come from. With climate change disaster events predicted to displace millions in Louisiana, being resilient isn't enough.

This section will first dive into the discussion of the most prominent and repetitive themes seen in interview data. These significant themes are place attachment, importance of family ties, longstanding ties to place, strong social networks and community ties, pride in heritage and culture, and place-based features of identity. Each theme will be explored through

interview quotes and analyzed in relation to this research. Following the breakdown of key themes, other relevant themes that emerged strongly across interviews are discussed. Emergent themes were prominent throughout many interview responses but were not strongly discernable in all interview responses.

Longstanding Ties to Place and Importance of Kinship

Table 1: Theme indicators for longstanding ties to place and importance of family ties examples from review of scholarship and theme indicators from interview responses in this study.

Theme	Example from literature	Interview Quotes
Longstanding ties to place & Importance of kinship	"My husband's parents and his brothers live next door. My sister lives a little down the road. Everybody down here is related somehow" (Simms 2017, 416)	My father grew rice maybe for 10 and 15 years. She [mother] was born in 1909, and the father was born in 1913"
	"My family is here, I wouldn't move" (resident interview, July 13, 2015) (Simms 2021,7)	"There's something about Louisiana families they're very very close"…"very big families. Mom's family so she's one of seven and, 5 out of the 7 live in Louisiana"
	"I have a son here with kids. If he goes to Houston I will go too...I have to be with family, you know" (resident interview, July 10, 2015) (Simms 2021,7)	"Just like being together…"when I think of home I never think about being alone. I feel like I never really did that growing up"
	"I want to move back because of my family history. I want to continue working where my grandfather works, my great-grandfather worked and my great-great grandfather worked. It's very humbling to keep on with traditions and ways of life in that way" (resident interview, November 11, 2015) (Simms 2021, 8)	

Living next door to, or at least in the same city as, grandparents, aunts, uncles, and cousins is just how it has been in Louisiana for a long time. One participant shared the history of

their family in area dating back to colonial times: “My mother’s side…a man moved down to Mississippi, and eventually found his way to Louisiana near Eunice. Current day Eunice, and so most of my family in Louisiana come from the Eunice area". Families are big, very close, widespread, diverse, and having this network has been important. Parent or grandparents watched their kids and grandkids grow up in the backyard—they were always together. Younger generations spoke of memories from these backyards. “I grew up with a backyard we shared with my grandparents” was a very prominent theme among participants in their 20s and 30s.

For the older generations, proximity to family made childcare much easier: you could leave the kids with family members on the way to work, and you knew your kids were safe. One 81-year-old interview participant commented that "I was secure in the fact that they were being taken care of the way I would have taken care of them". This family has been on their land since their great-grandparents arrived in 1895. Their parents were born in the area in 1909 and 1913. Many families were tenant farmers and sharecroppers and relied on the support of family to get the work done. It was common for children of the farmers to take on that responsibility. As one 83-year-old participant noted, “[the] son was tenant farmer for [his father] but they all helped each other".

Younger participants told stories of growing up in their grandparents’ land and the memories they would cherish forever. A twenty-nine-year-old participant who has now moved away from Louisiana said, "We would have family gatherings all the time growing up… in this old house from the 1800s in the middle of the cane field". Others remembered “just being together” and “when I think of home I never think about being alone. I feel like I never really did that growing up". Being close to family and spending time together was a prominent theme among all interviews.

Over time this closeness of family has become harder to hold onto. Participants noted migration after storms becoming more prevalent saying “the family that came from New Orleans [evacuating for the hurricane] almost all never went back like they normally did”. Participants in older age groups commented on family moving farther away, disrupting the closeness their kids had grown up with. "Eventually that's really coming to an end because our children are having to move to get the good jobs". The ability of people from Louisiana to maintain such a strong sense of place and connection to place relies also on support of community and social networks. As younger generations leave in search of new opportunities or because storms have destroyed their homes, the connections to place may weaken.

Native Heritage

Another participant coming from native heritage “1/16th native American and fifth or sixth great grandfather was the native American chief for the Atakapa, Indian native Americans”. He was also the first generation to intermarry with the white man, or French Acadians arriving from Canadian Maritime area. This participant had moved away but was drawn back to Louisiana with hopes of giving back to their community and Louisiana as a whole. They seemed to have rediscovered their indigenous heritage over time and with education outside of Louisiana. Yet there was a deep connection to their indigenous heritage saying, “I feel like I am, and a reflection of my ancestors, and their attachment to place right but I’ll tell their story, or my perception of their story first, because it's still mine.” In their education journey sense of place theory stood out and did their graduate research project on sense of place in Louisiana. They spoke of combining their indigenous knowledge with what they had learned in academic research from local farmers to predict the route of a recent hurricane and predicted it right.

Social Networks and Community Ties

Table 2 Theme indicators for strong social networks and community ties with examples from review of scholarship and theme indicators from interview responses in this study.

Theme	Example from literature	Interview Quotes
Social Networks and Community Ties	"People help out wherever they can. Everyone knows each other. People know what to do, and they help each other" (Simms 2017, 416)	"it's such a Louisiana thing to like, have festivals and gatherings, and like, just be with your people, and like all I don't know just like being together" 23yo
	"Well, they're my neighbors' family. We all know each other. I try to help [in a hurricane] whoever we can help" (Simms 2017,416)	"that's like something That's beautiful about Louisiana as well it's like we all come together" 29yo "So basically, my house is ground for anyone who wanted to stay" 30yo
	"There was a sense of unity, working through all these crises together" (Simms 2017,416)	
	"Our tribe works together to sort things out for others" (Simms 2017,416)	
	"Survival. We have it ingrained in us that we have to depend on each other for survival. (Resident interview, August 5, 2014)" (Simms 2021,7)	

As discussed in the literature review, the bayou state is a complex blend of French, Spanish, German, African, Irish, and Native American influences that create the cultural gumbo that is Louisiana. From this heritage stems the strong social and community influences in Louisiana today. Helping one another rebuild after storms or other hardships is commonplace. This appeared throughout the interviews in the theme of social networks functioning as family.

One participant, who has moved out of state, described everyone coming together after a devastating event as “a beautiful thing that I hope isn’t lost and like the Louisiana culture, we are all family". Subjects’ experiences with place in the past and present were fundamentally influenced by social connections within the community and family.

A participant with family still living in vulnerable coastal areas described their mother’s house when preparing for storms: “basically, my house [was] ground for anyone who wanted to stay”. The property is the highest point above sea level in the neighborhood and became the hub for storm preparation, rescue, and recovery. Before the storm locals would park boats at the participants house to remain protected on high ground for easy launch when the waters rise.

Another participant commented on the influence of festivals and gathering with social groups as “such a Louisiana thing to do” and “have festivals and gatherings, and just be with your people, and just being together," later saying "I feel like the roots growing up here, have run really deep in me, and I will definitely always cherish the community, and the family”. Those that had moved out of state yet still felt a strong connection to place were adamant they would sustain social and community connections. All responses mirrored the work of Simms (2021) who found that social networks among Louisiana communities serve as survival tactics in the face of hardships; generate and build trust; facilitate social mobility; offer business opportunities; and dissuade or persuade residents to eventually migrate.

In this study, the idea maintaining social ties after relocating, both participants who’d relocated or planned to, was prominent in responses. This expanse of sense of place maintaining social ties regardless of relocation was pinpointed in the result responses such as “I’ll always have some kind of social ties [to Louisiana]” but that this wouldn’t keep them living there

forever. It was common for dispersed participants to cherish where they come from and talk about Louisiana as irreplaceable.

In connection with maintaining social ties to place; participants exhibited a sense pride in place, culture, and heritage that was linked to those from Louisiana and their relationships with each other. No matter if you've met before; you are family, related through Louisiana. This connection with each other is built on sharing that uniqueness of place, heritage, and culture. It has contributed to connections beyond the borders of the state. A participant spoke of a time they were in Switzerland studying abroad. While on a day outing to a local restaurant they spotted someone sporting familiar purple and gold attire. Across the street was a gentleman wearing a Louisiana State University (LSU) shirt, excitedly they scurried over to him. Thrilled to chat with a fellow Louisianian. The participant found the ability to "start up this conversation about Louisiana halfway across the world" as something special and unique to those from Louisiana and their attachment to place.

Sense of Place and Place Attachment

Table 3: Theme indicators for sense of place and place attachment examples from review of scholarship and theme indicators from interview responses in this study

Theme	Existing Scholarship	Interview Responses
Sense of Place Place attachment	From Colten (2018) Table 2 ‘’People feel a very strong sense of belonging here....‘There’s a strong connection to the land and belonging to it’’ [nonprofit director, *30, interview, Village de L’Est, 2013] ‘’There’s no other place to be. If I get born again and end up another place, I’ll find my way back here’’ [shrimper, *70, interview, Chauvin, 2014] “The environment provides the opportunity for a connection to your family and friends’’ [retired shrimper, *70, interview, Chauvin, 2015]	“Louisiana people are so deep rooted in that culture that it'll never go away because it's like a part of everyone so deeply and it's an identity” 29yo “I think that that theme of sort of always coming back here. It'll never end” 28yo “I feel like the roots growing up here, have run really deep in me, and I will definitely always cherish the community, and the family. I think the culture, the food the attitude towards life it’s really wholesome” 23yo “Hurricanes and climate change are real. A lot of people were being like. Well, why do you keep going back, and I said, it's my home.” 29yo my affinity for the land, because I've seen what land does, I've seen it. What it makes people feel like the freedom it gives people you know like in the fact that there's just so many things you can say about land that it doesn't get enough attention So, you tell a 90-year-old man, that he can't go home. I saw it. I saw the change in him, because they really thought that they were gonna have to live with us in Maurice and not rebuild. But he is physically and emotionally attached to that land, and he would not have survived and lived to 90 if he would’ve moved”

Place-based Identity

Table 4 Theme indicators for place identity adapted from work done by DuCros (2019) with examples from review of scholarship and theme indicators from interview responses in this study

Theme	Review of Literature Reference	Interview Quotes
Place Identity ▪ Continued associations with home or being *from* Louisiana ▪ Low level of substitutability for Louisiana ▪ Sense of pride in place, heritage, & culture	[Subject describes return visits to LA] "Now, there is a definite distinct lifestyle back home, because I go back home quite often, you know" (DuCros 2019, 684) "I guess I didn't really appreciate it as much or didn't realize how much I appreciated it even though I could never—I don't think that I could live there [again]" (DuCros 2019, 688) Eating a 5-cent snow cone on a hot day, and sitting on the porch and swinging and battin' mosquitoes, and all that stuff, I wouldn't even, I wouldn't want to give that away. I wouldn't sell those memories for a million dollars" (DuCros 2019 686) "Still have family there and friends there. I still go to visit. Still enjoy being there, but I love coming back home. I like being home. I like being—I like saying that I'm from Louisiana, put it that way." (DuCros 2019, 690)	"it's a part of everyone [from Louisiana] so deeply and it's an identity" 29yo "Louisiana is such a complex, rich, heavy place historically, in so many different ways. It's a mosaic." 28yo "Louisiana people are so deep rooted in that culture that it'll never go away because it's like a part of everyone so deeply 29yo

Indicators of place attachment and identity used by DuCros (2019) in a study on place identity were adapted and used in this research as a guide for identifying place-based features of identity among interview responses. The DuCros (2019) place identity indicators were continued associations with home, the low level of substitutability of Louisiana, and a sense of pride in place. The identifier "pride in place" was adapted to align with this research study to include sense of pride in place, culture, and heritage. The theme of continued place attachment was very prominent among all participants even those who had relocated. Connections to place were sustained through family and social ties still living in Louisiana and well as return visits.

Pride in place and culture was very high among participants, one saying “I will definitely always cherish the community, the family…I think the culture, the food the attitude towards life it’s really wholesome". This pride seemed to grow with age as well as with education, experience, and among those who had moved out of Louisiana.

A participant who had moved away and returned spoke of this draw to return. Only after pursuing educational paths that led to them learning their heritage did, they appreciate what it meant to be from Louisiana. They remarked, “I think that that theme of sort of always coming back here - It'll never end” … “something was always bringing me back I couldn't really get away even though [I didn’t understand why or what that meant]”. This participant questioned what it really meant to be “Cajun”, saying that the term had lost real meaning “because it's so saturated, and I didn't know what that meant I just knew that was me". However, “now that I know more, I have this sort of hyper consciousness of all things going on in Louisiana".

Another participant moved out of state and worked to attain their Ph.D. After graduating, they felt a similar pull to return, saying “I felt like it was my life's mission to bridge some kind of gap [in Louisiana], whether it be land, whether it be research, whether it be whatever topic just felt like I was a bridge connector for communication”. By gaining a new perspective on making change they were able to conceptualize what this meant for Louisiana from an insider lens. Their ability to maintain that sense of place through who they are is an adaptive quality. They continued: “I will be most useful back here in Louisiana, helping my people, who are so very passionate about change, but don't really have the wheels to turn it and I’m helping them by bringing them a wheel…they just know I came back for them, and they see me here”.

For communities in turmoil, it can be seen as up to the younger generations to set the futures tone. Yet as mentioned, many are moving away. This participants road to change is an

example of place attachment being sustained in the absence of material or physical matters of place because it is embedded in who they are. They continued to see the world through the lens of their place, learning and growing along the way.

Discussion

This research adds to the existing scholarship exploring place attachment influences on identity among Louisiana people. Place-based identities and strong place attachment are notably influenced fundamentally by inherent processes. Being from Louisiana is an innate affinity with intrinsic placed-based magnetism. This research adds a new viewpoint to the sense of place scholarship based on Louisiana. A unique bond with place is apparent in those from Louisiana and it is interwoven throughout their identity. Place attachments to do some extent play a role in communities advocating for a bottom-up approach to climate change mitigation and adaptation that allows residents to remain connected to their cultural heritage, generational knowledge, and the land that they live on. This research sheds light on place attachment in Louisiana and how it is not a driving factor in immediate change and not a determining factor in relocation decisions and more situational. As relocated participants still identified with being from Louisiana and were prideful in being a part of the cultural heritage, place, and community. The meanings behind place attachment in Louisiana should be used as a tool in mitigation and decision making. Not as a tool for gauging their decision in response to external factors or explanation for their resilience.

The people of Louisiana have long been reliant on each other and the symbiotic relationship they have with the land. Existing research has shown these communities want to be heard yet are continually steamrolled by those in positions of power. If attachment to place is a major contributor towards inherent resilience in Louisiana, then it would be contradictory for those who have moved away to share the same quality of attachment. Yet, those who relocated are resilient and adapting in their own way while remaining connected to place. The time comes when people no longer have the capability, power, and ability, to be resilient or survive in place.

Those who relocate don't lose who they are, they grow. Louisiana people do not forget where they came from.

This research infers place attachment among those from Louisiana can be seen as a mobile phenomenon grounded by place-based identities. The meaning behind this attachment is important in inclusive creating change. With a plethora of external factors impacting the people of Louisiana further research is needed on the mobility of place attachment in the form of place-based identities. In what ways can external factors such as climate change, social-economic vulnerabilities potentially impact place identity. As well as how external factors will influence action in terms of staying and fighting for change in one's place.

Conclusion

To conclude, this research highlights the innate affinity and intrinsic placed-based magnetism experienced by those from Louisiana as well as the fundamental role place has in self-definition. This research adds a new viewpoint to the sense of place scholarship that is focused on Louisiana and helps to understand the identities stemming from one's attachment to place. A unique bond with place is apparent in those from Louisiana and it is interwoven throughout their identity. Place attachments to do some extent play a role in communities advocating for a seat at the table but is not the major contributor to decision making process among all residents. A bottom-up approach to climate change mitigation and adaptation is vital to cultural and community sustainability. An approach that allows residents to remain connected to their cultural heritage, generational knowledge, and the land that they live on is imperative. If the dynamic relationship people have with the place, they come from cannot be sustained communities face disintegration and dissolution of their rooted cultural heritage. This research

suggests that place attachment among those who are from Louisiana can be expressed in diverse ways yet can be sustained when challenged by external factors. In younger generations attachment to place is an element that can contribute to communities advocating for change or influence relocation decisions, but it is not a main driver. The decisions to stay, rebuild, or advocate for change in one's community can be hindered by social status, race, income, and ultimately equal opportunity. As shown in this research, those from Louisiana can maintain their bond with place without still physically living there. When discussing the impacts of land loss, climate change, social inequities, and economic turmoil that the state faces - decision processes surrounding relocation, in state or out of state, are more situational in construction.

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